NEW HAMPSHIRE
DEPARTMENT
OF
ENVIRONMENTAL SERVICES

SOLID WASTE REPORT
TO THE LEGISLATURE 2007

October 2008

Make Your Old Man Proud!
NH Recycles Paper

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2007 SOLID WASTE REPORT TO THE LEGISLATURE

A. Generation of Solid Waste in New Hampshire

In 2007, the total volume of solid waste, including waste from residential and commercial sources and construction/demolition (C&D) debris, generated in New Hampshire is estimated at 1,701,424 tons. Residential sources generated approximately 621,197 tons of waste, a decrease of 18.9 percent over the previous year, while commercial/industrial sources generated approximately 715,736 tons of waste, an increase of 25.5 percent during that same period. The volume of C&D waste generated in New Hampshire was approximately 364,492 tons, a decrease of 6.1 percent from 2006. Commercial/industrial sources include businesses, multifamily housing, institutions, government, and commercial waste pick-up services. It is likely that the growth in commercial reflects an increase in curbside service in the more urbanized areas of the state. Further, given the inconvenience of bringing trash to a transfer station that may have limited hours, more and more homeowners are opting to use private waste haulers to remove their trash. Overall, the amount of waste generated, not counting C&D, decreased 0.48 percent.

Waste disposal information used in this report is derived from Annual Facility Reports, which are required by rule to be submitted by all permitted solid waste facilities. Some data is gathered from informal surveys of commercial/industrial generators for whom reporting is not required.

A summary of the sources and volumes of solid waste generated in New Hampshire from 2003 through 2007 is shown in Table 1. This table is the sum total of all materials generated, including recycled materials and does not necessarily reflect the amount disposed of in landfills and incinerators. That is covered later in the report.

Table 1: Generation of Solid Waste (Tons) in New Hampshire in 2007

Source of waste	2003	2004	2005	2006	2007
Residential	712,738	727,920	791,678	765,772	621,197
Commercial/industrial	657,636	723,230	651,689	570,535	715,736
Construction & Demolition	326,942	451,750	402,602	388,073	364,492
Total Tonnage	1,697,316	1,902,900	1,845,969	1,724,380	1,701,424

Source: NHDES/SWTAS, 2007

The 2005 national per capita generation rate, as reported by EPA, was 4.5 pounds/person/day of residential and commercial/industrial waste. New Hampshire's rate for 2007 is estimated at 5.4 pounds/person/day. The New Hampshire rate is likely higher than the national rate because of the influence of tourism. The number of visitor days in 2007 was 53.2 million, effectively increasing the state's population by 145,000. The effect of visitors can clearly be seen in the solid waste data for the town of Waterville Valley. Waterville Valley has a resident population of 278, yet generated 898 tons of solid waste in 2007. This gives Waterville Valley an effective daily population of 912. The Maine State Planning Office has reported a similar increase in the summertime disposal of solid waste due to the influx of tourists. Additionally, New Hampshire has a very effective tracking and accounting system. In 2007, the New Hampshire per capita generation of C&D was 1.5 pounds/person/day. The total daily per capita generation of waste in New Hampshire in 2007, including C&D, was 6.9 pounds. This amounts to a yearly per capita

contribution of 2,514 pounds. For comparison purposes, the Maine State Planning Office has reported a yearly per capita rate of 3,160 pounds.[1] The USEPA estimates the nationwide average yearly per capita rate is approximately 2000 pounds. While the New Hampshire rate compares favorably to that of Maine, it is significantly higher than the national rate.

B. Management of Solid Waste in New Hampshire

In 1990, per RSA 149-M:3, the legislature supported integrated solid waste disposal solutions which are environmentally safe and economically sound. The legislature endorsed, in order of preference, the following waste management methods:

1. Source Reduction
2. Recycling and reuse
3. Composting
4. Waste-to-energy technologies (including incineration)
5. Incineration without resource recovery
6. Landfilling

Per RSA 149-M:2, the legislature declared that the goal of the state, by the year 2000, was to achieve a 40 percent minimum weight diversion of solid waste landfilled or incinerated on a per capita basis.

1. Residential and Commercial Waste

A summary of the management of residential and commercial wastes in New Hampshire in the year 2007 is presented in Table 2. As mentioned above, the major sources of this data are Annual Facility Reports. These reports provide DES with information including the amount of waste handled by transfer stations/recycling centers, incinerators and landfills. Many towns have mixed services, with residents either using the town-run facility or contracting with a private hauler to remove their solid waste. In many cases where a contract hauler is used, the collected solid waste is transferred directly to a disposal facility with no recycling. Data from hauling companies, if available, would allow DES to more accurately calculate statewide waste diversion rates and to better direct technical assistance in the areas of waste reduction, reuse, and recycling. Many states regulate waste haulers, requiring both licensing and recycling.

[1] Maine State Planning Office, *Solid Waste Generation and Disposal Capacity Report to the 123nd Legislature*, March 2007.

Table 2: Management of Residential and Commercial Solid Waste in 2007 (excluding Construction and Demolition Debris and Imported Wastes)[2]		
Disposal/Diversion	**Amount In Tons**	**Percentage**
Commercial Recycling	296,708	22.19%
Residential Recycling	124,113	9.29%
Total Recycling	**420,821**	**31.49%**
Commercial Composting	3,972	0.30%
Residential Composting	27,187	2.03%
Total Composting	**31,158**	**2.33%**
Waste To Energy In NH	232,382	17.38%
Incineration w/o recovery	4,391	0.33%
Landfilling	607,776	45.46%
Disposal Total	**844,549**	**63.17%**
Exports	**40,253**	**3.01%**
Totals	**1,336,932**	**100.00%**
Construction and Demolition	364,492	*Shown in order to reconcile this table and Table 1 above*
Total Waste	**1,701,424**	

Source: NHDES/SWTAS, 2007

2 Construction & Demolition Debris

The fate of C&D managed in New Hampshire in 2007 is depicted graphically in Figure 1. The figure shows that 222,074 tons or 41 percent was disposed of in landfills, 67,498 tons or 12 percent was exported and 250,919 tons or 47percent was diverted. The total volume of C&D managed, 540,490 tons, includes C&D generated in-state as well as that imported. Table 3 provides information on the sources of C&D.

Table 3 – C&D Management	
Source	**Tons**
Imports for processing	175,998
Imports direct to landfill	28,592
Municipal	80,497
Commercial in-state	255,404
Total C&D (Processed or Disposed)	540,490

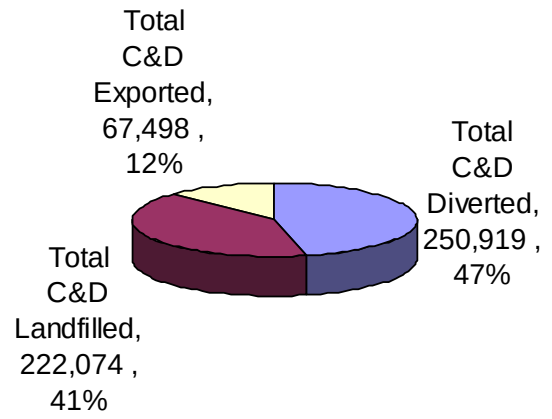
[2] New Hampshire uses USEPA criteria for determining recyclable materials in order to maintain consistency with other state and federal reporting entities. Because C&D is not included in the USEPA criteria, it is excluded from this table. Inclusion of imported waste would skew the recycling numbers. It is assumed that the imported waste has been subject to recycling efforts in its state of origin.

Diverted C&D underwent processing to separate the C&D into its component constituents for recycling and reuse. Recycled constituents include wood, concrete, brick, asphalt shingles and metals.

The volume of C&D managed in New Hampshire was 23 percent lower than in 2006. Housing starts have decreased which would lead to a decrease in construction debris. There is also a decrease in residential C&D which would reflect the beginning of the downturn in the economy. According to the U.S. Census Bureau, 1,350 new housing permits (one to five unit dwellings) were issued by New Hampshire municipalities through April 2007. That figure was 24% below the 1,774 permits issued during the same four month period in 2006. Again, C&D generation is a good economic indicator.

Of the 318,416 tons of materials received by processors, 250,919 tons were diverted for a processor's diversion rate of 78.8%. 289,572 tons went directly from the generators to the landfills or was exported. A portion of this was residue from processing but the majority did not go through the processing facilities. Overall, the diversion rate was 47%. Outreach to the construction industry on recycling of C&D would be one way to divert materials from the landfill. The Massachusetts Department of Environmental Protection (MassDEP) amended 310CMR 19.017 to add certain construction and demolition materials (asphalt pavement, brick, concrete, metal and wood) to the list of items prohibited from disposal, transfer for disposal, or contracting for disposal. This went into effect on July 1, 2006. MassDEP is reviewing the ban for effectiveness and NHDES has asked for a copy of the report when it is issued.

Figure 1 - Management of C&D in NH 2007



The volume of C&D imported to New Hampshire decreased from 266,641 tons in 2006 to 204,590 tons in 2007. Most of this was from Massachusetts with some from Maine and Vermont. Approximately 28,592 tons of this amount went directly to a landfill for disposal while the remaining amount was subjected to processing and recycling. Again, this reduction probably reflects the current housing market.

C. Projected Solid Waste Management Capacity Needs

The goal of solid waste capacity analysis is to evaluate long-term supply and projected demand. This involves projecting how much waste will be generated and how much permitted capacity is available in landfills and incinerators to dispose of that waste. This determination is complex

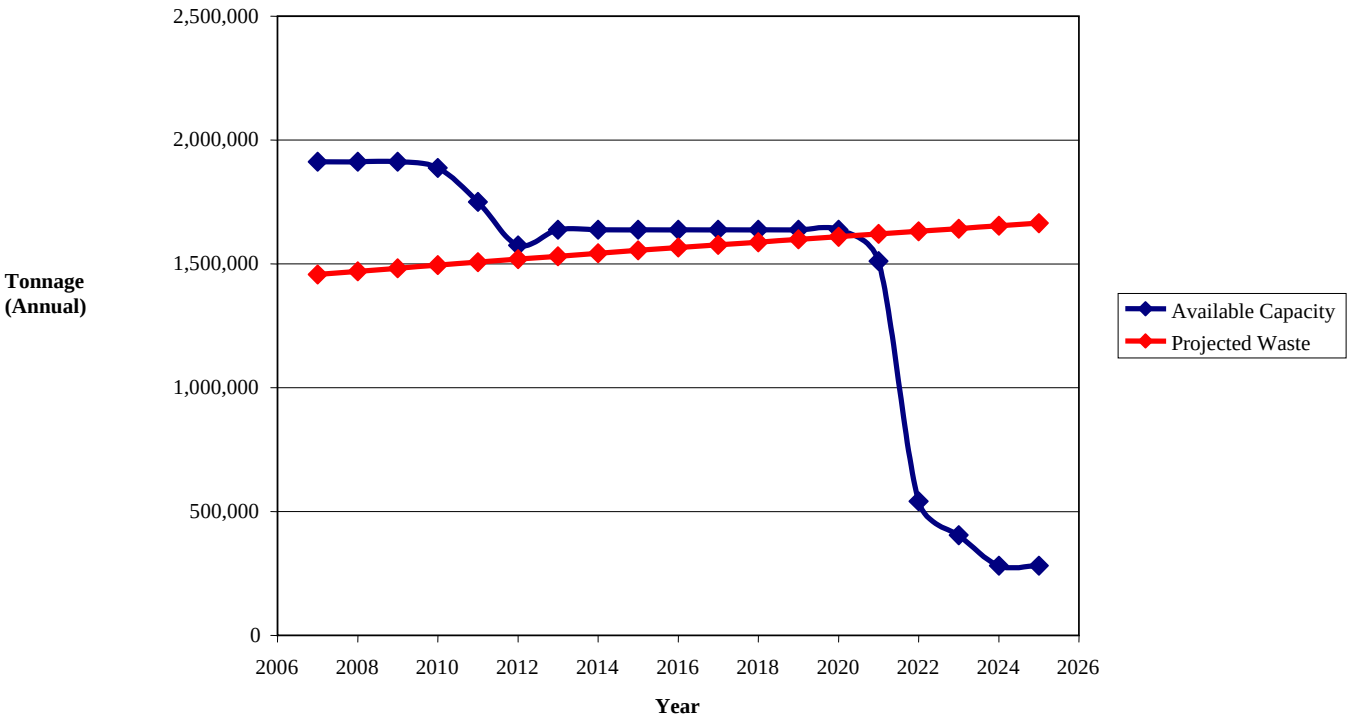
due to the variety of factors, such as population growth, economic climate, the level of diversion of the waste stream, and levels of imports that influence capacity. It should be noted that of RSA 149 M:II,V provides that the department determine the capacity need based on projected amounts of waste generated within the state, not projected imported wastes.

During the period 1989-2002, there were additions to disposal capacity in the state that approximated disposal volumes. Thus, for that period, supply and demand for disposal capacity were in approximate balance. Although the majority (75 percent) of capacity additions were developed by the private sector, in 2003, DES approved a solid waste permit modification for expansion of the Mount Carberry landfill in Berlin. The Androscoggin Regional Refuse Disposal District purchased the landfill in December of 2002. In 2004, Mount Carberry increased its disposal of C&D from 39,804 to 114,000 tons. C&D waste going into Mount Carberry has remained at over 100,000 tons since then. In 2004, Mt. Carberry received a total of 139,630 tons of waste in addition to 98,000 tons of waste paper fiber from the Fraser Paper mill. With the closing of the mill in 2006, this capacity will become available for Municipal Solid Waste (MSW) but transportation costs may not make it economically feasible to bring in waste from other parts of the state.

Permitted in-state disposal capacity is projected to be adequate for residential and commercial solid waste until 2021 (see Figure 2). The assumptions used in the projection are:

1. No change in recycling rate
2. No increase or decrease in the amount of waste disposed of by individuals
3. All permits are granted as written as of June 2006
4. No facilities are taken out of service except the five small municipal incinerators
5. No imported waste is included in the disposal projections (imports will shorten projections by approximately four years at current rates.)

Figure 2 - Disposal Capacity Projection



Other major private providers of disposal capacity are the two Wheelabrator (A subsidiary of Waste Management, Inc.) waste-to-energy incinerators located in Concord and Claremont. The New Hampshire/Vermont Compact, which uses the Claremont incinerator, expired in 2007. The 14 towns in Vermont, representing 22,000 tons per year, do not plan to renew the compact. The majority of these towns will seek to dispose of their waste in the available Vermont landfills although some may continue to use the incinerator due to their proximity to it. That capacity will become available for use by NH towns or for commercial use. Currently, there are 29 Vermont towns using the incinerator to some extent. There are 35 New Hampshire towns, 1 Massachusetts town and 1 town from Ohio also using the Claremont facility, not all of which are in the compact.

There is additional municipal landfill capacity in Conway, Lebanon, and Farmington with a combined disposal of about 45,000 tons per year. The Unity Landfill stopped accepting waste in the summer of 2007. This landfill served only the Town of Unity. The unlined landfill in Colebrook was reopened in 2005. It receives about 20,000 tons per month and will be completely filled and shut down in late summer 2008. The majority of the waste going into the Colebrook facility is imported from Massachusetts, with a small portion from either Vermont or local in-state sources.

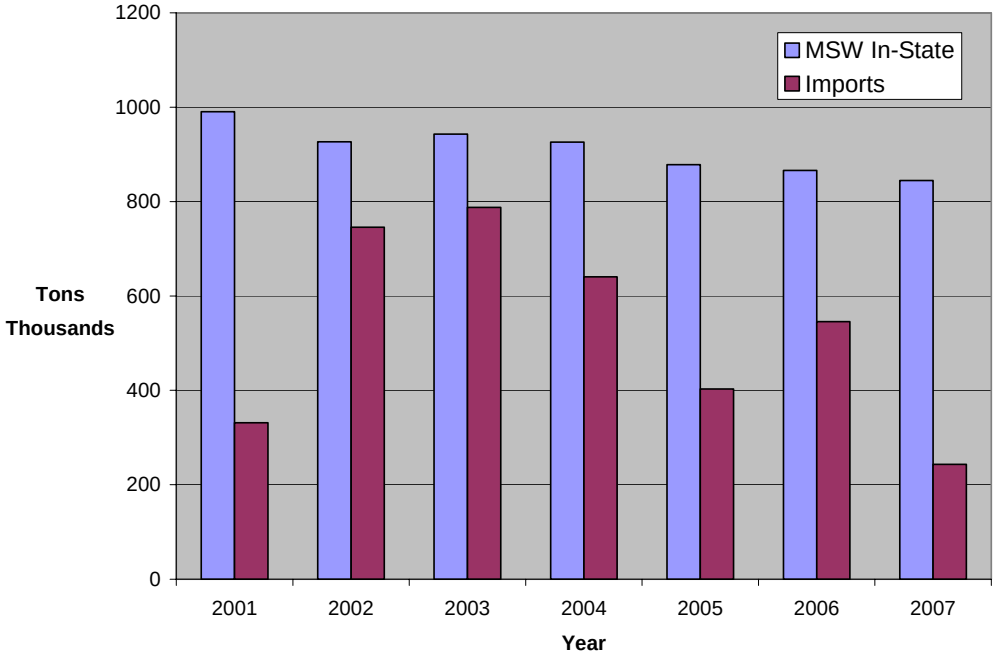
There are five small municipal incinerators in the state with a cumulative capacity of 5,000 tons/year. USEPA air emission standards that became effective in December 2005 will require the installation of expensive air emission controls and it may not be cost effective for these towns to comply with the standards. Two of these facilities have shut down. Wilton and Ossipee are

still operating but it is likely that they will shut down before the deadline of 2010. The cost of upgrading these aged facilities will be too great. The fifth, and newest, facility has not yet met the new emission standards and additional stack testing will be required.

The Concord Cooperative, which uses the Wheelabrator waste to energy incinerator in Penacook, is exploring construction and operation of a single stream materials recovery facility for the Cooperative. This would substantially increase the recycling rate for the participating municipalities by making recycling much easier for the "customers". A decision on construction is likely to occur in mid-2008. Additional recycling capacity, again in the form of a single stream materials recovery facility, is proposed for Manchester. A decision on this facility should be made in 2008.

Imported waste is, and will continue to be, an important factor in projecting solid waste disposal capacity for New Hampshire. Figure 3 compares disposal of waste generated from in-state and out-of-state sources for the period 2001 through 2007. This figure illustrates that, in 2007, the volume of imported waste disposed in New Hampshire was 243,278 tons, a decrease of 55.4 percent over 2006 disposal. The majority of imported waste was disposed at the Turnkey Landfill in Rochester and the Colebrook Landfill in Colebrook. Solid waste is very much an interstate commodity and is disposed of at the best available price. Landfills in New York and Ohio are bidding very competitively in order to maintain sufficient flow to cover fixed costs. This easily explains most of the import variation we see. Certainly, economic factors also determine the amount of waste being created and the current downturn is mirrored in the reduction of waste.

Figure 3 -
Disposal of MSW Imports and Local



D. State and Regional Trends in Solid Waste Management

1. Recycling Rate

The State of New Hampshire calculates its recycling rates using the methodology outlined by the USEPA. This is done for consistency and for the ability to compare rates from municipality to municipality and from state to state. The rate is simply the total material recycled divided by the total material generated. Recycled material includes both recyclables and compost. Generated materials include recyclables, compost, MSW, and commercial waste, if reported. C&D, universal wastes, sludge, automotive wastes, contaminated soils and hazardous wastes are not included in either the numerator or denominator. In order to be fair to those municipalities that report commercial waste, two rates are reported, one including commercial waste and one exempting it.

Nearly 99 percent of the state's population, representing 228 of the state's 234 communities, has access to recycling. In most towns, citizens can recycle a variety of materials. In some towns, only a relatively few materials are recycled. In New Hampshire, the tonnage of commercial and residential recycling and composting has increased ten-fold from 40,000 tons in 1990 to 420,821 tons in 2007. The latter amount represents a 4.7% decrease from 441,575 tons in 2006. The primary reason for a decrease in recycling in 2007 is that the amount of steel recovered for recycling has decreased as inventories of scrap steel have decreased. Scrap iron and steel and all metals remain at record high values. Continued world demand for scrap metal remains strong and should continue strong well into the future.

Residential recycling, as reported by the municipal facilities, remained constant from 2006 to 2007 at about 20.5 percent. Municipal recycling rates range from a high of 71 percent to 0 percent. The relatively higher commercial recycling rate results in an overall state recycling rate of 28.5 percent. Unfortunately, the state has not met the goal of 40 percent diversion by the year 2000 established by RSA 149-M:2.

Table 4 provides the tons of recyclables by type collected by the municipalities. The decreases in glass and cans are noteworthy and indicative of the switch from these traditional container materials to plastics. There has been an increase in separated #1 and #2 plastics with a concomitant increase in commingled containers. In order to decrease the cost of separation, a number of facilities have gone to single or dual stream recycling rather than having to maintain separate bins for each type of material. Single or dual stream allows local facilities to avoid the cost of equipment and personnel used to separate materials. Rather, materials are sent to larger material recovery facilities and separated with automated equipment.

Table 4 – Municipal Recycling Tonnages			
	2006	**2007**	**% Difference**
Paper	50,729	51,921	+2.3%
Glass	9,159	8,572	-6.4%
Cans	2,334	1,879	-19.5%
Plastics	2,086	2,121	+1.7%
Commingled Containers	10,377	9,308	-10.3%
Textiles	813	1,088	+35%
Electronics	1,230	1972	+60.3%
Scrap Metal	24,848	20,196	-18.7%
Other	31,639	26,684	-15.7%
Total	135,221	125,748	-7.0%

2. Regional Trends

The handling of solid waste in the 10 northeastern states is interesting. Interstate movement of waste remains a large industry primarily due to the localized high population densities along the seacoast. Few of the larger cities such as New York and Boston have local disposal options. New York City ships waste to Pennsylvania and up-state New York. Boston uses many out of state facilities for its waste, including shipping waste as far away as Virginia and South Carolina. Rhode Island, Maine, and Delaware operate disposal facilities either directly, as a quasi-governmental agency, or own the land and contract with a commercial company to operate the facility. In this manner, they can control costs and imports.

Mandated recycling and bans on disposal of certain wastes are increasing. Massachusetts has banned disposal of glass, metal and plastic containers, paper, leaf and yard waste, CRTs, and some types of construction debris. Pennsylvania requires each landfill and incinerator to provide a drop off facility for at least three designated recyclables. In Rhode Island, under the "Maximum Recycling" program, municipalities and single-family residences are required by state regulations to recycle the following: aluminum and tin cans; foil and pie plates; scrap metal; empty aerosol and paint cans; white goods; glass bottles and jars; milk, juice and asceptic drink cartons and boxes; HDPE and PET plastics; old mail; glossy paper; phone and paper books; writing paper; corrugated cardboard; paperboard; newspapers; textiles; and leaf and yard waste.

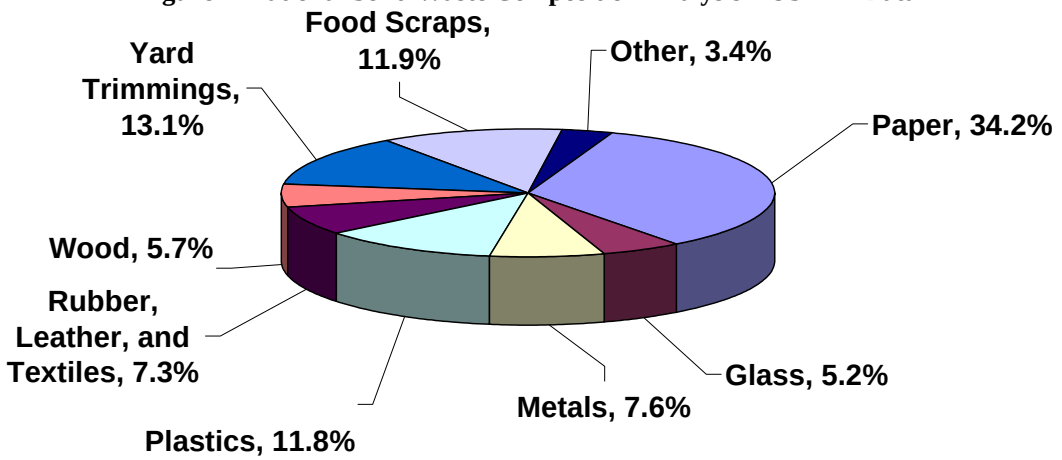
E. Recycling As A Municipal Revenue Source

1. Overview of waste

"Solid waste" means any matter consisting of putrescible material, refuse, residue from an air pollution control facility, and other discarded or abandoned material. It includes solid, liquid, semisolid or contained gaseous material resulting from industrial, commercial, mining, and

agricultural operations, and from community activities. That's what is listed in the state law governing solid waste management. Putrescible is a tactful term for what we normally consider solid waste, those green, fuzzy things from the back of the refrigerator that are not kiwi fruit. But that portion, nominally called food scraps, represents only 12% of the waste stream. The USEPA performs a biannual analysis on the proportion of different materials in solid waste and this is presented as figure 4.

Figure 4 National Solid Waste Composition Analysis – USEPA Data



The largest portion is paper, which includes newsprint, white paper, cardboard, corrugated boxes, and all sorts of other paper-based materials. Over the years, the relative proportion of plastics to glass has changed, virtually swapping in magnitude. Glass beverage and food containers are becoming less common as new plastics are created. The other material categories have stayed the same, with some minor decrease in metals relative to plastics.

Paper at 34.2% of the waste stream is recyclable at a 70% rate, the remaining 30% being too contaminated or laminated with plastics, thus making recycling difficult. Nationally, it is being recycled at a 56% rate.[3] Corrugated is being recycled at a 70% rate with most other types less than 50%.

The recycling market is aiding towns and cities in New Hampshire cope with rising costs and tax burdens. A July 2, 2008 article in the Eagle-Tribune newspaper reported on the recycling revenues for several towns. In the last 12 months, Derry has made $330,000 selling recyclables compared with $225,000 in the 12 months prior. Pelham, Windham and Salem reported similar results.[4] The major recyclable materials markets will be discuss below but it should suffice to say that the markets are at or near all time highs. Thus any encouragement of recycling will help municipalities cope with rising costs. Even if a recyclable is at a break-even point between cost to collect and market price, the avoidance of the disposal cost of a ton of material, which averages $75 per ton, will make recycling a financially sound endeavor.

[3] American Forest and Paper Association, 2007 data.
[4] Bencks, Jarrett, *The Eagle Tribune On-line*, July 2, 2008.

2. Aluminum

Used beverage cans (UBC) have gone over $1.00 per pound baled recently. This is an all-time high for the material. Yet, of the U.S. aluminum beverage can market of over 1.5 million metric tons per year, only about 800,000 tons, or 53%, of UBCs are currently being recycled. The U.S. recycling rate has fallen steadily from its high of 68% in 1992. In comparison, Brazil and Japan report phenomenal recycling rates of nearly 95% and 92%, respectively, and the global average is 60%.[5] The 800,000 metric tons represents $1.8 billion in value to the recyclers and a cost avoidance at $75 a ton disposal fee of $66 million. Still, $1.5 billion was thrown away.

There are several reasons why recycling has fallen in North America, including inconvenient collection systems, technology stagnation in coated scrap processing and commercial objectives that have not been aligned with recycling. Even in those states that have bottle redemption laws, recycling rates have declined. Part of the reason is that the economy has been strong and there has been a decline in scavenging. The major reason is likely that a nickel has declined in value since the majority of the bottle bills were enacted in the early '70s. To maintain the redemption at inflation rates, the value would now need to be about $0.22 per container.[6]

Convenience is another issue. Venue or event recycling is not wide-spread. There is little opportunity to recycle when people are not at home. New Hampshire is a destination state for vacationers and setting up convenient recycling systems at parks, events and venues such as sporting events would help capture containers. Towns can gain access to aluminum beverage containers by requiring recycling at events that they authorize. They can then require that the event bring the materials to their transfer station.

Aluminum recycling is also part of a clean air solution. If 75% of UBCs not currently recycled in North America are brought back into the system, that equates to about 600,000 metric tons of aluminum. That 600,000 metric tons is equal to a savings of 1,286 megawatts of electricity, or the equivalent of two average sized coal fired power plants running at maximum efficiency 24/7. Aluminum recycling is part of the clean air solution. By recycling 75% of UBCs not captured today, we achieve an environmental savings of reducing 11.8 million metric tons of carbon dioxide emissions a year.

The American Beverage Association, in cooperation with several states, has produced a variety of advertising campaigns, including the "We've got plans for your bottles and cans". This campaign has been used in several states, including North Carolina, Pennsylvania, Virginia, and Ohio. Supported by the these state's surcharges on waste disposal, long term radio and print campaigns have been used to increase beverage container recycling. The State of Wisconsin has implemented a law requiring all special events such as fairs, sporting events, and festivals to have recycling in place for the containers and paper types that they have banned from landfills. Wisconsin also provides recycling opportunities at the state's 32 highway rest areas. The USEPA has developed "Recycle on the Go" guidelines as part of their Resource Conservation Challenge. Some of this may be usable by New Hampshire.

[5] Alcoa Aluminum press release, January 22, 2008.
[6] Gitlitz, Jenny, "Oregon's Bottle Bill at 30: How is it Doing?", Container Recycling Institute, September 8, 2001.

Is it worth it to recycle aluminum cans? It is in Epping, where thieves cut open the lock on the recycling center's gate and loaded up seven 250-pound bales of crushed aluminum cans. Police believe the cans, which were valued at about $1,350, were likely sold for scrap metal.[7]

Aluminum metal itself is also valuable. This would include items like aluminum window, siding, screening, cast aluminum, and kitchen utensils. Currently this material is running between $0.20 and $1.22 a pound. Because aluminum takes a lot of energy to extract from raw bauxite, the recycling price will likely stay high. Towns should consider separating aluminum from other metals.

3. Paper

The largest portion of solid waste is paper and paper-based products. Overall, paper represents 34% of the waste stream. In 2007, the American Forest and Paper Association reported that 56% of the paper consumed in the United States is recovered. Nearly 80 percent of America's paper mills use recovered fiber to make some or all of their products. Approximately 140 mills use recovered paper exclusively. Every ton of paper recycled saves more than 3.3 cubic yards of landfill space. More than 36% of the fiber used to make new paper products in the United States comes from recycled sources**.**

In 2007, New Hampshire municipalities generated 704,316 tons of waste, including recyclables. Based on USEPA analysis, 242,989 tons of this should be paper. Nationally, 53% of this available paper is recovered but NH only recovered 47,145 tons of paper, giving us a 37% recovery rate. Clearly, we have a long way to go.

Part of the problem is a lack of awareness as to the type of paper and paper based materials that can be recycled. For example, most people know that newspapers can be recycled but somehow they also "know" that colored newspaper, glossy advertisements, and Sunday comics and magazines cannot be recycled. That's wrong. Envelopes with labels and plastic windows can be recycled as can books, magazines, Post-it notes and shredded paper. MassRecycle surveyed the paper mills and material recovery facilities in Massachusetts and found that they would take just about any paper based material as long as it rips.

Paper products are worth money. As recently as June 18, 2008, scrap paper was selling at all time highs. Mixed paper loose was at $25 per ton and hard white envelope was at $200 per ton. Other grades are listed below in Table 5. Needless to say, a ton of paper recycled is a ton of trash not sent to a landfill. This adds the cost avoidance of the tipping fee to the overall advantage gained by recycling.

Table 5 – June Average Price

Baled Prices	**Price per ton $**
White Ledger (baled)	200
Regular News (baled)	60
No. 8 News (baled)	80

[7] Schreiber, Jason, New Hampshire Union Leader, April 11, 2008.

Coated Book (baled)	80
Corrugated 500 lb. Bales	90
Corrugated 1,000 lb. Bales	110
Source: Recycling Today Magazine	

Given the prevalence of paper in the waste stream and the fact that New Hampshire is not up to the national average, it would seem that this is a good area to concentrate limited resources. Our neighboring states of Maine and Massachusetts have "branded" recycling as Mass Recycles and Maine Recycles. These brands are then used to get out the message to the citizens of the state through a number of different programs, including billboards, media ads and handouts.

Figure 5 is an example of a Mass Recycles paper mailer. This mailer has been shown to be effective in getting the message to citizens. It is eye-catching and it shows what can be recycled. Massachusetts has also placed similar ads on idle billboards. Often the billboard owners are willing to provide the space as a tax break.

Figure 5

4. Glass

Clear and brown glass can be reprocessed into new containers but even small amounts of other colors and ceramics from cups and dishes make this a difficult process. Perhaps the best and easiest means to recycle glass and glass-like materials is to create Processed Glass Aggregate (PGA). PGA has a number of uses including fill around water and sewer pipes, electric conduits, and fiber optic lines and as utility trench bedding. It can also be used as a substitute for gravel, sand, and crushed stone in a number of roadway applications and PGA used for drainage often works better than sand and gravel. Examples include: drainage fill behind retaining walls, in foundation drains, draining blankets, and in French drains.

In New Hampshire, there have been a number of success stories with PGA. Richard Lee, Director of Public Works in New London has used PGA for many years. His crew built a crusher to grind glass. They use PGA straight or mixed 50/50 with gravel. Then they use it in place of gravel and sand in various projects. New London has found that PGA works well under

sidewalks, as backfill, and in road reconstruction as a base material. They have found no drawbacks to PGA use, and continue to find new uses for it. New London, Littleton, and several other transfer stations have glass crushers or use the NRRA to bring in portable crushers. These towns act as consolidation stations for neighboring towns.

Certainly, there is not a lucrative market for glass containers at this time but by using cost avoidance of tipping fees for disposal and by not having to purchase gravel, towns can save a considerable amount of money. One side benefit is that research carried out in the Cold Regions Research Laboratory in Hanover, NH, has found that when glass aggregates are used as road base, the roads display a very low susceptibility to frost heave, primarily because PGA does not hold water like gravel.[8]

5. Plastics

The landfilled volume of all plastics, foam, film and rigid; toys, utensils and packages, amounted to between 20 and 24 percent of all garbage, as sorted; when compacted along with everything else, as it is in landfills, the volume of plastics fell to only about 16 percent. Paper volume, as discussed above, was 40%.[9] Contrary to common belief, all plastics are recyclable. The difficulty in recycling plastic usually boils down to the cleanliness and quantity of the materials. For example, plastic sheeting such as shrink wrap used to protect boats and plastics used for agriculture are invariably made with Recycling Grade #4 low density polyethylene (LDPE). LDPE is recyclable into plastic lumber and other items but the issues are that the material is difficulty to bale or compress, making shipping expensive and in the case of agricultural plastic, the material is often dirty, requiring cleaning lest the dirt damage extrusion dies.

The quantity of post-consumer plastics recycled has increased every year since at least 1990. In 2006, the amount of plastic bottles recycled reached a record high of 1.1 million tons. The amount of PET bottles recycled in 2006 increased more than 51,000 tons compared to 2005. HDPE bottle recycling increased in 2005 to 464,000 tons. However, the overall recycling rate for plastic containers has declined. In 1995, when there was just 1.95 billion pounds of polyethylene terephthalate ("PET 1") bottles in circulation in the U.S., the country boasted recycling rates of nearly 40 percent. By 2005, when retailers were stocking up to 5 billion pounds of PET bottles, recycling rates had dropped to 23 percent. The bottling industry alone now uses up around 100 million barrels of oil a year to produce their product packaging, and that doesn't include the fuel used to transport them around the world.[10] All of this material is recyclable, either as new containers or other materials such as fleece clothing, carpets, film and sheeting, and tote bags.

Table 6 lists the plastic grades and both uses and recycled products.

[8] Henry, K.S. AND Morin, S.H., "Frost susceptibility of crushed glass used as construction aggregate", *Journal of Cold Regions Engineering*, Vol.11, 1997, pp326-33
[9] Rathje, William and Murphy, Cullen, *Smithsonian Magazine*, July 1992
[10] Oliver, Rachel, CNN Report, April 7, 2008.

Table 6 – Plastic Packaging Resins				
Resin Codes	Description	Properties	Product Applications	Products made with recycled content
	**Polyethylene Terephthalate (PET, PETE).** PET is clear, tough, and has good gas and moisture barrier properties. This resin is commonly used in beverage bottles and many injection-molded consumer product containers. Cleaned, recycled PET flakes and pellets are in great demand for spinning fiber for carpet yarns, producing fiberfill and geo-textiles. Nickname: Polyester.	• Clear and optically smooth surfaces for oriented films and bottles • Excellent barrier to oxygen, water, and carbon dioxide • High impact capability and shatter resistance • Excellent resistance to most solvents • Capability for hot-filling	Plastic bottles for soft drinks, water, juice, sports drinks, beer, mouthwash, catsup and salad dressing. Food jars for peanut butter, jelly, jam and pickles. Ovenable film and microwavable food trays. In addition to packaging, PET's major uses are textiles, monofilament, carpet, strapping, films, and engineering moldings.	Fiber for carpet, fleece jackets, comforter fill, and tote bags. Containers for food, beverages (bottles), and non-food items. Film and sheet. Strapping.

Table 6 – Plastic Packaging Resins				
Resin Codes	Description	Properties	Product Applications	Products made with recycled content
	**High Density Polyethylene (HDPE).** HDPE is used to make many types of bottles. Unpigmented bottles are translucent, have good barrier properties and stiffness, and are well suited to packaging products with a short shelf life such as milk. Because HDPE has good chemical resistance, it is used for packaging many household and industrial chemicals such as detergents and bleach. Pigmented HDPE bottles have better stress crack resistance than unpigmented HDPE	• Excellent resistance to most solvents • Higher tensile strength compared to other forms of polyethylene • Relatively stiff material with useful temperature capabilities	• Bottles for milk, water, juice, cosmetics, shampoo, dish and laundry detergents, and household cleaners. • Bags for groceries and retail purchases. • Cereal box liners. • Reusable shipping containers. • In addition to packaging, HDPE's major uses are in injection molding applications, extruded pipe and conduit, plastic wood composites, and wire and cable covering	Bottles for non-food items, such as shampoo, conditioner, liquid laundry detergent, household cleaners, motor oil and antifreeze. Plastic lumber for outdoor decking, fencing and picnic tables. Pipe, floor tiles, buckets, crates, flower pots, garden edging, film and sheet, and recycling bins.

Table 6 – Plastic Packaging Resins				
Resin Codes	Description	Properties	Product Applications	Products made with recycled content
	**Polyvinyl Chloride (PVC, Vinyl).** In addition to its stable physical properties, PVC has good chemical resistance, weatherability, flow characteristics and stable electrical properties. The diverse slate of vinyl products can be broadly divided into rigid and flexible materials	• High impact strength, brilliant clarity, excellent processing performance • Resistance to grease, oil and chemicals	• Rigid packaging applications include blister packs and clamshells. • Flexible packaging uses include bags for bedding and medical, shrink wrap, deli and meat wrap and tamper resistance. • In addition to packaging, PVC's major uses are rigid applications such as pipe, siding, window frames, fencing, decking and railing. Flexible applications include medical products such as blood bags and medical tubing, wire and cable insulation, carpet backing, and flooring.	• Pipe, decking, fencing, paneling, gutters, carpet backing, floor tiles and mats, resilient flooring, mud flaps, cassette trays, electrical boxes, cables, traffic cones, garden hose, and mobile home skirting. • Packaging, film and sheet, and loose-leaf binders.

Table 6 – Plastic Packaging Resins				
Resin Codes	Description	Properties	Product Applications	Products made with recycled content
	**Low Density Polyethylene (LDPE).** LDPE is used predominately in film applications due to its toughness, flexibility and relative transparency, making it popular for use in applications where heat sealing is necessary. LDPE also is used to manufacture some flexible lids and bottles as well as in wire and cable applications. Includes Linear Low Density Polyethylene (LLDPE).	• Excellent resistance to acids, bases and vegetable oils • Toughness, flexibility and relative transparency (good combination of properties for packaging applications requiring heat-sealing)	• Bags for dry cleaning, newspapers, bread, frozen foods, fresh produce, and household garbage. • Shrink wrap and stretch film. • Coatings for paper milk cartons and hot and cold beverage cups. • Container lids. • Toys. • Squeezable bottles (e.g., honey and mustard). In addition to packaging, LDPE's major uses are in injection molding applications, adhesives and sealants, and wire and cable coverings.	Shipping envelopes, garbage can liners, floor tile, paneling, furniture, film and sheet, compost bins, trash cans, landscape timber, and outdoor lumber.

Table 6 – Plastic Packaging Resins				
Resin Codes	Description	Properties	Product Applications	Products made with recycled content
	**Polypropylene (PP).** PP has good chemical resistance, is strong, and has a high melting point making it good for hot-fill liquids. This resin is found in flexible and rigid packaging, fibers, and large molded parts for automotive and consumer products.	• Excellent optical clarity in biaxially oriented films and stretch blow molded containers • Low moisture vapor transmission • Inertness toward acids, alkalis and most solvents	• Containers for yogurt, margarine, takeout meals, and deli foods. • Medicine bottles. • Bottle caps and closures. • Bottles for catsup and syrup. • In addition to packaging, PP's major uses are in fibers, appliances and Containers for yogurt, margarine, takeout meals, and deli foods.	• Automobile applications, such as battery cases, signal lights, battery cables, brooms and brushes, ice scrapers, oil funnels, and bicycle racks. • Garden rakes, storage bins, shipping pallets, sheeting, trays

Table 6 – Plastic Packaging Resins				
Resin Codes	Description	Properties	Product Applications	Products made with recycled content
	**Polystyrene (PS).** PS is a versatile plastic that can be rigid or foamed. General purpose polystyrene is clear, hard and brittle. It has a relatively low melting point. Typical applications include protective packaging, foodservice packaging, bottles, and food containers. PS is often combined with rubber to make high impact polystyrene (HIPS) which is used for packaging and durable applications requiring toughness, but not clarity	• Excellent moisture barrier for short shelf life products • Excellent optical clarity in general purpose form • Significant stiffness in both foamed and rigid forms. • Low density and high stiffness in foamed applications • Low thermal conductivity and excellent insulation properties in foamed form	Food service items, such as cups, plates, bowls, cutlery, hinged takeout containers (clamshells), meat and poultry trays, and rigid food containers (e.g., yogurt). These items may be made with foamed or non-foamed PS. Protective foam packaging for furniture, electronics and other delicate items. Packing peanuts, known as “loose fill.” Compact disc cases and aspirin bottles. In addition to packaging, PS’s major uses are in agricultural trays, electronic housings, cable spools, building insulation, video cassette cartridges, coat hangers, and medical products and toys.	• Thermal insulation, thermometers, light switch plates, vents, desk trays, rulers, and license plate frames. • Cameras or video cassette casings. • Foamed foodservice applications, such as egg shell cartons. • Plastic mouldings (i.e., wood replacement products). • Expandable polystyrene (EPS) foam protective packaging.

Table 6 – Plastic Packaging Resins				
Resin Codes	Description	Properties	Product Applications	Products made with recycled content
	**Other.** Use of this code indicates that a package is made with a resin other than the six listed above, or is made of more than one resin and used in a multi-layer combination	Dependent on resin or combination of resins	Three- and five-gallon reusable water bottles, some citrus juice and catsup bottles. Oven-baking bags, barrier layers, and custom packaging.	Bottles and plastic lumber applications.

Plastics have considerable value as recyclables and obviously, there is a market for all the materials. But recycling rates are low. Part of the problem is that consumers have little understanding was to what is recyclable and what is made of plastic. Short of extensive education campaigns, the simplest way to increase recycling of plastics is to collect them as either single stream or as co-mingled containers and allow the material recovery facility to do the sorting. Although some direct value will be lost, it is likely that it will be made up by an increase in recycling and a decrease in tonnage going to the disposal facility.

6. Electronics

A survey by Nokia (Espoo, Finland) has found that only three percent of people recycle their mobile phones. Of the 6,500 people surveyed, 74 percent said they did not think of recycling their phones, but only four percent said they actually threw their unwanted phones away. Half said that they did not know that mobile phones could be recycled.[11] This despite the fact that cell phones are easy and free to recycle. Indeed, Motorola has established a program called Race to Recycle. This program rewards schools for every intact phone received by Motorola for recycling. Some schools have earned as much as $21,000. Certainly a town facility could act as a receiving point for cell phones in partnership with the community schools. Electronics recycling is covered in a following section.

7. Metals

MANCHESTER – June 23, 2008

A local man is under arrest this morning after police found him with a duffel bag of copper pipes near a burglarized home where copper piping was removed.

MERRIMACK — May 9, 2008

[11] Resource Recycling, July 10, 2008.

Two New Hampshire men face charges they tried to steal a large spool of copper and steel cable from FairPoint Communications.

ROCHESTER – July 2, 2008

Police are investigating a Saturday afternoon copper theft at a Route 108 building housing radio station equipment.

PELHAM – October 18, 2006

Pelham police arrested four people who they allege were involved in the theft of roughly 5,000 pounds of copper wiring. The copper, had it been sold at a local salvage yard, could have yielded roughly $15,000 to the thieves.

MANCHESTER – Oct. 27, 2007

A Hooksett man, already charged with stealing storm drain covers in Goffstown, was arraigned yesterday morning in Manchester District Court on felony charges that cite 14 such thefts in Manchester, which cost the city nearly $1,000 for replacements.

And so it goes on and on. Metals of all types are at all time high values. Some grades of steel have gone over $500 per ton. Copper is over $3.50 per pound and with 5 minutes and a battery-powered reciprocating saw, a thief can make a quick $40 to $50 by removing the catalytic converter from a parked car.

Almost every town that has a transfer station has some form of metal recycling. Next to paper, the 22,000 tons of iron and steel collected by the municipalities, represents the second largest recycled commodity. There were also 668 tons of aluminum cans collected. Overall nationally, steel was recycled at 68% in 2006 with some steel rates actually being close to 100%, as in the case for automobile steel. Steel container ("tin cans") recycling is only 63% so there is room for improvement. Although the steel beverage can has basically gone away, most canned goods still use the traditional steel can and these need to be recycled. Hangers from clothing, most small appliances are made of steel and iron. Lots of types of construction and demolition debris have some amounts of steel and iron that can be recovered. Improving steel recycling is a matter of education and having a magnet at the transfer station. If it sticks, its recyclable.

Other metals are also recyclable and should not be thrown in the disposal dumpster. At $3.50 a pound, even small amounts of copper wire are valuable. Aluminum from old lawn chairs, siding, and windows should be placed in the recycling bins rather than the dumpster.

8. Composting

Another form of diversion or recycling is composting. New Hampshire has a landfill and incineration ban in place for leaf and yard wastes so many people already compost these. They are ½ of the compost equation. About 12% of solid waste is food waste and this material is the other 1/2 of the equation. While not all food waste is compostable, the majority is, and this can result in a substantial reduction in solid waste.

Many municipal transfer stations compost leaf and yard waste with some food waste added in. Overall, New Hampshire only composts 20,200 tons at the municipalities and another 4,000 tons commercially. It is not known how much backyard composting is done but each year the Northeast Resource Recovery Association distributes about xxx 50 gallon compost bins to its members. In addition, the state does not regulate or require permits for composting facilities that only compost leaf and yard waste and manures. There are a number of facilities in the state that do only that.

Recently, the Northeast Recycling Coalition, using a grant from the US Department of Agriculture, worked with the NH Department of Agriculture and the NH Department of Environmental Services to do outreach on the composting of animal manure. Basically, the state has seen a remarkable growth in so-called hobby farms where a homeowner will have a couple of horses, chickens, llamas, and so-forth. They often do not have an easy means of disposal of the manure. This outreach taught techniques to compost the manure in-situ and stressed best management practices to avoid pollution of water and land. Over 140 people attended the three workshops.

Municipalities should either develop composting operations or facilitate backyard composting. Municipalities that have high residential density with small yards can set up convenient "green-waste" drop off facilities and then actively manage the waste in composting piles or windrows. Many multifamily housing units use landscape services. Allowing these services to drop off yard waste would increase the materials in the compost pile accordingly. The municipality then has the option to either sell or give away the compost to its citizens. Municipalities also can use the compost in highway projects and in general maintenance of municipal facilities.

Municipal food waste composting does have some issues. Primarily, food waste done incorrectly has the ability to generate some rather foul smells. However, techniques and equipment have been developed to make the task easier. For example Herkimer County Community College in New York has started a on-campus composting system. Officials with the college as well as the Oneida-Herkimer Solid Waste Authority teamed up to launch the initiative. It is the first food comporting program on a college campus in the two county region, according to HCCC.

The composting system is called the Earth Tub. The closed system is capable of breaking down 40 to 200 pounds of pre-consumer food waste per day. College officials say they are going to start with kitchen waste and expand efforts from there. The benefits of composting food waste include reducing the amount of garbage being sent to landfills and creating an agricultural product. The results of composting can be used to landscape the campus. College officials also hope this initiative will educate students, faculty and Herkimer residents. This is just the latest step as the college goes green.

This can be expanded at transfer stations or individual restaurants can be encouraged to consider composting to reduce costs. Solid Waste Technical Assistance has worked with one large hotel complex in the state and they are installing an Earth Tub at one of the restaurants in the area. If it is successful, their intent is to expand the composting to their ski resort and the main hotel dining areas.

9. Recycling Incentives

Single Stream recycling is an option for most towns. A recent example is St. Johnsbury, Vermont. St. Johnsbury went from a citizen sort program to a co-mingled bag for all recyclables. This doubled their recycling rate. Further, they were able to go from multiple 30 cubic yard containers to a single 100 cubic yard container, thus reducing transportation costs. Every ton not disposed of is a direct cost savings to the town[12]. A number of New Hampshire towns are considering starting single stream recycling. Goffstown has implemented a curbside single stream using two large wheeled bins. The "Big Blue" is for single stream recyclables such as paper products, containers, and glass, the green container is for regular trash. Other materials need to be taken to the transfer station. Single stream is an incentive for citizens in that it makes recycling easy. There is no need to sort or maintain many different storage bins. Goffstown has seen a remarkable increase in recycling by implementing this system and by educating its citizens.

Pay as you throw (PAYT) is also a widespread incentive program. The concept is simple, recycling is free and you pay for the materials that go to the landfill or incinerator. Pay as you throw is used in 45 towns and cities in the state and in over 7000 towns and cities nationwide. Most of the towns that have implemented it have shown an increase in recycling rates and a concomitant reduction in overall cost. The Solid Waste Technical Assistance Section has been actively promoting PAYT in NH through presentations at town meetings and to recycling committees and selectboards.

A recent innovation is RecycleBank®. RecycleBank® gives money in the form of coupons and gift certificates for grocery and pharmacy items for simply recycling bottles, cans, and paper at home. The program has been up and running in communities in Pennsylvania, Virginia, New York, Connecticut, Vermont, Nebraska, Maine, and New Jersey and will expand to Minneapolis and Dallas next. Each household in a RecycleBank® area receives a bin with a computer chip in it. The household then fills the bin with paper, glass, plastic and metal, no sorting needed, and sets the bin on the curb. When the recycling is collected, an arm on the truck weighs the bin and uses the computer chip to record the weight. The data is added to an online account, and customers can log in to redeem their points each month for coupons and gift certificates. This incentive program works where a municipality has set up curbside. A version of it can be used at a drop-off station, but accounting would be a difficult task. Municipalities that have instituted it have seen a doubling to tripling of recycling rate.

An interesting incentive program was developed in rural Bradford County, Pennsylvania. This program set up drop off locations that are manned by local organizations such as scout troops, granges, and church groups. The county provides a multi-bin recycling container and the organization is responsible for sorting recyclables into the container. The group then gets $0.01 per pound for recyclables and $0.40 per pound for aluminum beverage cans. The groups are given educational material and can act in their own best interest by encouraging recycling. Bradford County has a county-wide PAYT system also. Groups received anywhere from $246

[12] Reed, Taylor, "Recycling Nearly Doubles in St. Johnsbury", *The Caledonian-Record*, July 3, 2008.

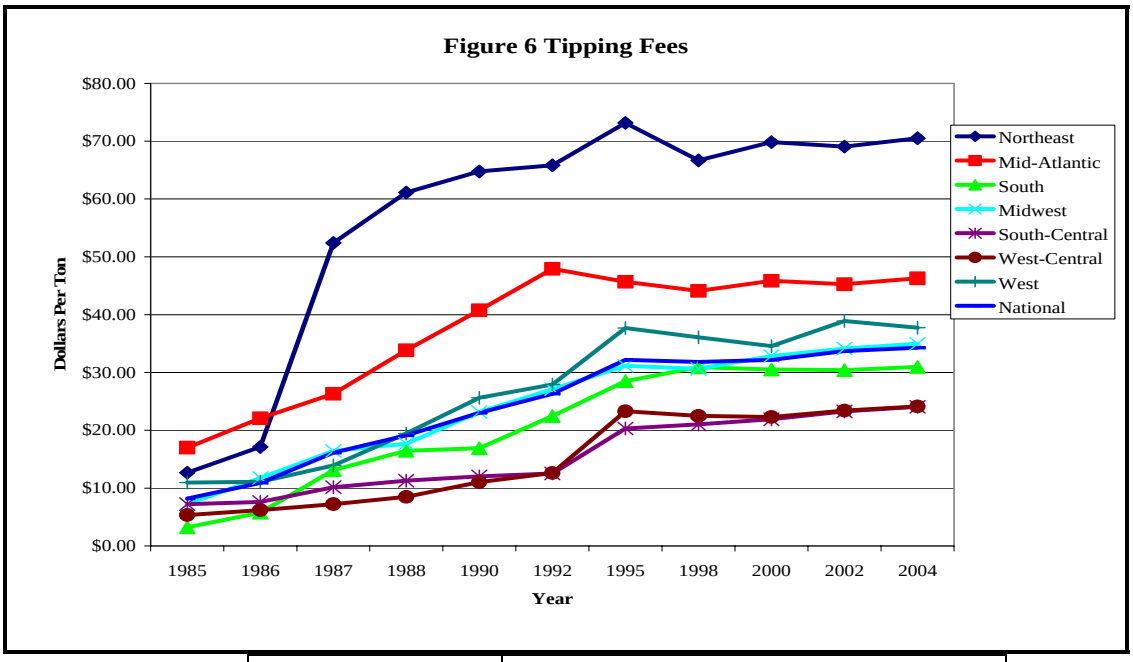
to over $11,000 in revenue sharing in 2007. An incentive program like this could be set up in any solid waste district with sufficient population.

F. Tipping Fees

Figure 6 presents the trend in national tipping fees.[13] The Northeast, in which New Hampshire is included, has the highest fees at more than twice the national average. The National Solid Waste Management Association report referenced below also presented information that the cost of incineration at $61.64 per ton averaged nationally was about 80 percent higher than the national landfill average fee. This difference in rates has stayed stable since 1982 when the incinerator fee was $12.91 per ton and the landfill fee was $8.07 per ton. The consistent upward trend in tipping fees will be exacerbated as the cost of fuel increases. While there is now a substantial amount of solid waste exported to states and regions with excess capacity and low tipping fees, increasing transportation costs will rapidly make this less of an option. New Hampshire must continue to provide and develop in-state capacity or face even higher costs of disposal in the near future.

The nearest operating facility that can accept waste from New Hampshire long term is in Schuyler Falls, New York, across Lake Champlain from Burlington, Vermont and it is 250 miles away from Concord. A permit has been issued by the State of Vermont for a landfill in Hartland, and there is exploratory work ongoing for a facility near Williston Vermont for the Chittenden County Co-operative District.

[13] Repa, Edward W., "National Solid Wastes Management Association 2005 Tip Fee Survey," March 2005.



Regions	State Postal Codes
Northeast:	CT, MA, ME, NH, NY, RI, VT
Mid-Atlantic:	DE, MD, NJ, PA, VA, WV
South:	AL, FL, GA, KY, MS, NC, SC, TN
Midwest:	IA, IL, IN, MI, MN, MO, OH, WI
South Central:	AR, AZ,LA, NM, OK, TX
West Central:	CO, KS, MT, ND, NE, SD, UT, WY
West:	AK, CA, HI, ID, NV, OR, WA

G. Disposal Trends

Municipal Solid Waste disposed of in the state has remained fairly stable over the 5 year period presented in Figure 7 below. Solid waste imported to New Hampshire and mainly disposed at the Waste Management, Inc. landfill in Rochester, NH, vary widely year to year. In 2007, Waste Management experienced a decrease in the amount of imported waste but the Colebrook landfill had a marked increase in imports. As the filling of Colebrook is completed in 2008, it is expected that imports will increase at the other facilities. Significantly, construction and demolition debris generated and disposed in New Hampshire has been stable since 2004 as has the volume of imported C&D. In New Hampshire, all C&D for disposal was sent to landfills. Combustion of the wood component of C&D is not permitted in New Hampshire.

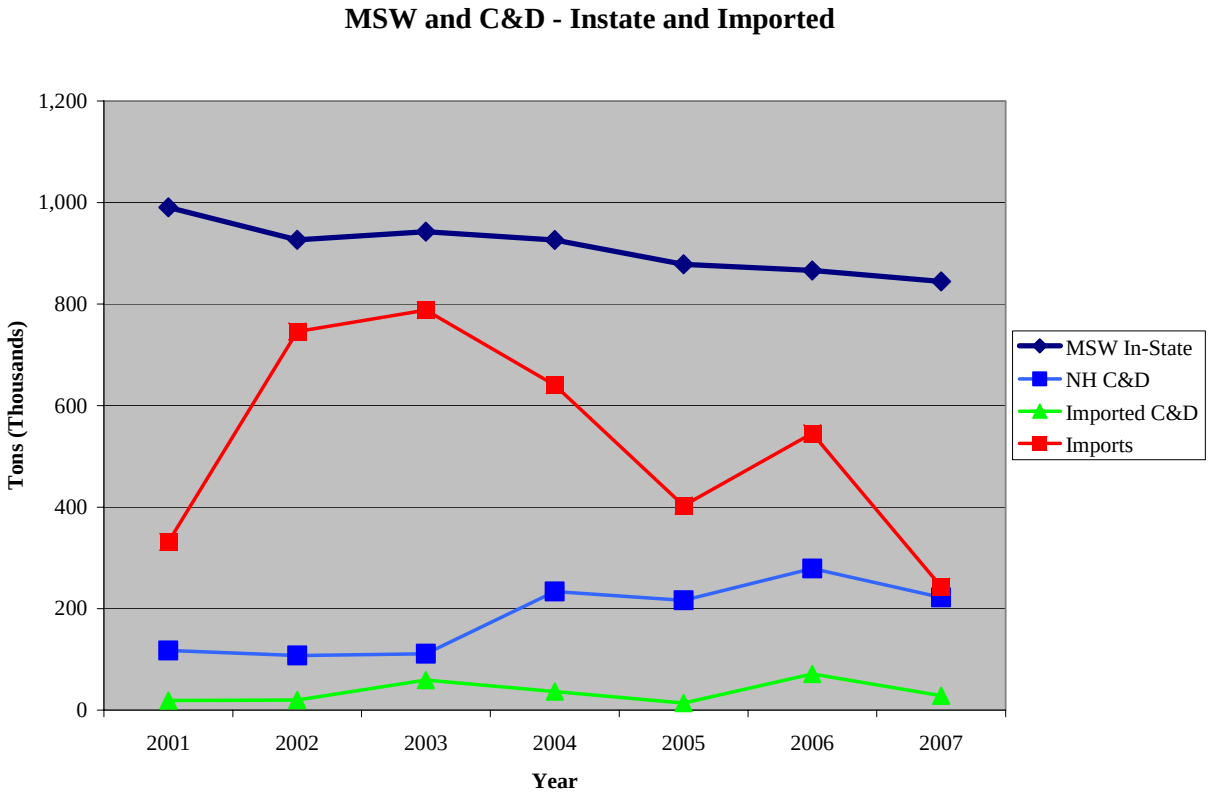


Figure 7

H. Municipal Trends

The municipal solid waste trends shown on Figure 8 are from data derived from the 2007 Annual Facility Reports. This information is only representative of the municipal facilities. Significantly, the overall recycling rate is consistently at about 20 percent for municipalities although it has increased recently. The volume of materials recycled has increased slightly faster than the growth rate in population.

Municipal Solid Waste Trends

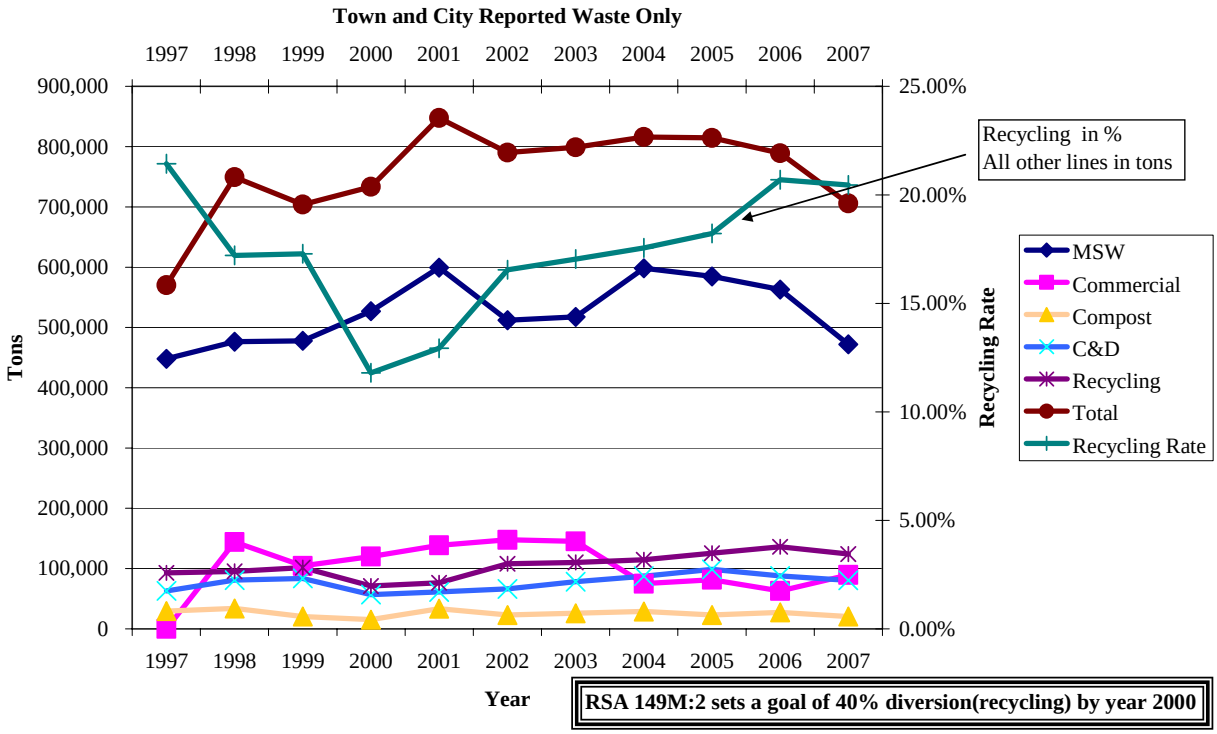


Figure 8

The rate for composting has remained relatively flat. Only 95 of the 235 municipalities submitting Annual Facility Reports indicate that they do any composting at all. There is a ban on the landfilling and incineration of yard waste in New Hampshire. It is assumed that, in those municipalities that do not report composting, the majority of this material is either composted or burned on site by homeowners. As the southern part of the state becomes more urbanized, open air burning of leaf and yard waste will become less feasible. Further, less open land will be available for composting. The long term solution is to foster the development of compost facilities.

I. Electronics Waste

Electronics are becoming an ever increasing part of our lifestyle. Many commonplace items now have some form of electronics built into them such as drills, saws, watches, lights, toys and even some forms of packaging, either as a functional part of the package or as part of the advertising. Consider a simple greeting card. The versions that play music or have audible message included actually contain a small electronic device. This device has copper, lead, and the other materials normally associated with transistors and such. After the novelty wears off or the batteries die, the card is usually disposed of into the solid waste stream.

Over 100 million computers, monitors and televisions become obsolete each year in the US. About 300 million other consumer electronics such as cell phones and DVD players become obsolete each year in the US. E-Waste accounts for 40 percent of the lead and 75 percent of

the heavy metals found in landfills. Consumers have, on average, two or three obsolete computers in their garages, closets or storage spaces. Computers contain valuable metals including gold, silver, palladium, platinum, aluminum and copper.[14]

On February 17, 2009, all full-powered television stations will switch to digital broadcasting and analog signals will no longer be available. There is considerable anxiety about this switch, mainly with a concern that a family would need to purchase all new televisions. This is simply not the case. All TV reception devices sold after March 1, 2007, including DVRs, VCRs, and such, are required to have a digital tuner. Any video device that is attached to either cable or satellite signal service will still work. It is only some devices sold prior to March 2007 that receive the signal through an antenna that will not work. For these devices, there are digital to analog converter boxes that will change the signal so that the device will still work. Indeed, the majority of the TV antennas in use today will be able to receive the digital signal. There is little need for anyone to replace the televisions in their home. The primary issue is that people will unwittingly dispose of perfectly good televisions. More public service announcements will be necessary to minimize the impact of the analog to digital switch-over.

In 2007, New Hampshire passed a ban on the disposal of video display devices in landfills or incinerators in the state. The display devices, commonly the computer display or a television tube, occupy a large amount of landfill space and contain, on average, six pounds of lead. This legislation has had the effect of increasing e-waste recycling in the state. In 2007, over 4 million pounds of electronic waste were collected by the municipalities. From the data provided in the annual facility reports or from town websites, 86 percent of the municipalities have some form of e-waste recycling opportunity. These opportunities vary widely. Some facilities will accept e-waste any time they are open, some only during household hazardous waste events, and some once a year on a special day. These municipalities service 95.5 percent of the state's population. Many of the major brands of computers have established take-back programs, some free, some with a nominal cost to the consumer. Several retailers have established "swap out" programs where they will take away a television if you purchase a new one from them and have it delivered. Several of the major manufacturers have set up recycling programs. For example, Sony, working with Waste Management, Inc., has set up a program where any Sony product will be taken and recycled for free and a fee will be charged for any other manufacturer's product. Staples has established a fee-based recycling program for any "office" type product such as printers, faxes, computers, telephones, and displays.

There remains two basic concerns with electronics. First, some people may have physical difficulty in moving large items to a recycling center. There may be an opportunity for local volunteer organizations to fund-raise by assisting these citizens. Otherwise, purchasing a new unit from a retailer that offers both delivery and removal may be a viable alternative. At least for computers, most of the computer manufacturers that offer a take-back service use United Parcel Service to pick up the unit at the home.

[14] Iowa Department of Natural Resources website, 2008.

The second concern really requires national legislation to solve. There has been numerous documented cases of e-waste being sent overseas and being improperly handled. The Basel Action Network has produced two outstanding films showing environmentally dangerous disposal of e-waste in the Peoples Republic of China and in Nigeria. A federal ban on overseas disposal similar to that imposed on hazardous waste is necessary. No single state could set up such a ban and reasonably expect to enforce it.

J. Legislative Actions

a. State Legislation

In 2007, there was considerable legislative activity in the area of C&D, electronics, and landfilling. Appendix I contains a list of bills relative to solid waste or recycling that were passed.

b. Congressional Actions and Federal Court Rulings

i. Congressional Actions

There were solid waste related bills introduced in the United States Congress (both House and Senate) in 2007 and 2008 focused on the issue of interstate transportation, bans on incineration of solid waste, electronics waste recycling and/or the ability of the States to limit excessive imports. In addition, there was at least one bill seeking to restrict importation of solid waste from foreign countries in response to disposal of Canadian solid waste in Michigan landfills. This passed. A summary of the bills can be found in Appendix I.

ii. Federal Court Rulings

Federal Rules for "Other" Solid Waste Incinerators

The Environmental Protection Agency (EPA) was bound by a consent decree to establish a new source performance standard (NSPS) (codified in 40 Code of Federal Regulations Part 60 Subpart EEEE and FFFF) for existing "other" solid waste incinerators). These new rules were issued December 16, 2005. The rules require the state to submit a State Plan implementing the emission guidelines within one year after promulgation of the guidelines. The State Plan must be at least as protective as the proposed federal rule and the facilities will have three years after the promulgation of the State rule to demonstrate compliance with the regulations. NHDES has put Env-A-4300 Rules for Other Solid Waste Incinerators in place.

Facilities affected by this federal rule are incineration units burning municipal solid waste (MSW) with a capacity less than 35 tons per day, which includes the municipal incinerators operating in the towns of Candia, Bridgewater-Hebron, Litchfield, Ossipee and Wilton. EPA estimates the annual costs of installing and operating a wet scrubber (Maximum Achievable Control Technology required to comply with the proposed limits) to range from $162,000 to $253,000 per year for existing very small municipal waste

incinerators. With the possible exception of Bridgewater-Hebron, none of the facilities noted above will be able to comply with the rule without installing more pollution control equipment.

As of the date of this report, Candia, Wilton and Litchfield have indicated that they will be shutting down their facilities and seeking other means of disposal by 2010. Ossipee is investigating the cost to stay in operation. Bridgewater-Hebron's initial stack testing indicated that they were not able to meet some of the emission criteria. They indicated that a second test would be performed now that the facility has been running for some time to see if they can meet the standards with existing equipment.

Overall, these small incinerators provide no more than 5,000 tons per year capacity that can readily be absorbed by the large landfill facilities or waste to energy incinerators.

On April 30, 2007 the U.S. Supreme Court ruled in *United Haulers Association, Inc. v. Oneida-Herkimer Solid Waste Management Authority*, 127 S. Ct. 1786 (2007) that "flow control" laws favoring local governments that "treat every private business" exactly the same do not discriminate against interstate commerce under the Commerce Clause. Narrowing the scope of the Court's 1994 decision in *C&A Carbone, Inc. v. Town of Clarkstown*, 511 U.S. 383 (1994), the Court ruled that local governments are allowed to establish local governmental waste disposal monopolies. A flow control law is a local ordinance that requires solid waste haulers to dispose solid waste in specific landfills, transfer stations, or incinerators. Under the *United Haulers* decision, local governments can mandate that haulers dispose waste in government owned disposal facilities, even if there is a cheaper or more convenient alternative.

Important State Court Rulings:

In February 2008, the Washington State Supreme Court affirmed the broad powers of local government to regulate solid waste handling, including the right to contract for collection of construction and demolition debris. In *Joseph Ventenbergs et al. v. City of Seattle, Waste Management and Rabanco, et al.*, Wn.2d., 178 P.3d. 960 (2008), plaintiffs claimed their constitutional rights to engage in a selected livelihood were infringed by exclusive city contracts entered into between Seattle and two national waste companies. The 6-3 decision from the Washington Supreme Court upheld the city's authority to exercise its police powers and the logical extension of that authority to prohibit other private parties from collecting demolition and construction debris from job sites.

K. DES Solid Waste Programs

1. Toxics Reduction

   a. Household Hazardous Waste (HHW)

Regulatory changes are being made that will streamline the current HHW rules. These changes will eliminate some requirements a collector of household hazardous waste must meet. The amended rules are being designed to encourage the collection, reuse, and

recycling or proper disposal of HHW by municipalities, regional agencies and even private collectors.

New Hampshire households generate approximately 7,500,000[15] pounds of household hazardous waste annually. This represents less than 1% of NH's residential solid waste stream. Although this portion of the waste stream is small, it causes a large percentage of the pollution problems associated with landfills and incinerators. Many of the materials commonly used by homeowners would be classified as hazardous wastes if used in an industrial setting. For example, muriatic acid is commonly used in homes to clean tile grout; many drain-opening products contain concentrated sodium hydroxide; and many paints and cleaning products contain organic solvents. In the business sector, these are subject to New Hampshire's Hazardous Waste Rules and USEPA regulations.

In the past 16 years, the DES Household Hazardous Waste Collection Program has provided over 541 grants totaling more than $3.45 million for HHW collection projects. In 2006, there were 37 HHW events that collected approximately 550,000 pounds of homeowner-generated hazardous waste. DES grant funds provided more than $146,600 in assistance to New Hampshire communities to offset costs associated with these collection events. DES has also supported the development of permanent HHW collection centers in Keene, Wolfeboro, Goffstown and Nashua.

b. Toxics in Packaging

In 1990, New Hampshire passed a 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. Nineteen states have adopted the same model as New Hampshire and 10 of these states, New Hampshire included, work together to ensure consistent application of the law through the Toxics in Packaging Clearinghouse (TPCH). A recent project by the Clearinghouse has shown that a significant number of packages distributed or sold in the state are not in compliance with the law (www.toxicsinpackaging.org). The department and the TPCH are working together to educate industry, and the member states may pursue enforcement under state laws.

c. Used Oil Grant Program

Used Oil is a common groundwater and surface water contaminant. It takes only one pint of oil to produce a one-acre oil slick or one quart to contaminate 250,000 gallons of groundwater. Used oil is also a valuable commodity. The department provides grants to encourage recycling and proper management of "do-it-yourself" (DIY) used oil and filters. Since 1995, used oil grants totaling more than $500,000 have benefited 178 municipalities, and the program has helped to collect over 1,000,000 gallons of DIY used oil. In calendar year 2006, awards were made to 15 municipalities and totaled

[15] Estimate based on State of New Hampshire population estimates and a four-city study called *The Garbage Project*, conduced by William Rathje at the University of Arizona in 1987.

$32,109.15. Since some of the municipalities that received grants also serve nearby communities, a total of 19 municipalities benefited from the grants.

2. Source Reduction, Reuse, Recycling, and Composting Assistance

The Solid Waste Technical Assistance Section within the Waste Management Division works with communities, organizations, and businesses to encourage source reduction, reuse, recycling and composting, all of which divert solid waste from disposal in landfills and incinerators. Specifically, the program provides information, technical assistance and planning support to communities, solid waste districts and businesses, and works with other state agencies and outside organizations to further common waste diversion goals.

3. Product Stewardship

Product stewardship means that manufacturers accept responsibility for the end-of-life problems associated with their products. Due in large part to budget constraints, DES has not be able to participate in the National Product Stewardship Institute initiatives. However, through our membership in the Northeast Recycling Council, we have been able to make our thoughts know on product stewardship issues. NERC has taken an active interest in carpet recycling and has worked with the Carpet Council to establish a dialog of interested parties at the Fall 2007 NERC Conference.

4. Capacity Planning

In addition to the efforts to divert wastes from disposal methods, the Solid Waste Technical Assistance Section collects the data from the annual facility reports submitted by municipalities and other permitted facilities, and uses that data to report on the status of solid waste management and to project future capacity needs. This process involves analysis of current generation, diversion and disposal activities in order to determine future solid waste disposal needs for the state. The department has completed an in-depth analysis of solid waste capacity in New Hampshire for the next twenty years. The analysis is also used to project waste generation and growth. These analyses are kept current based on data collected in the annual facility reports. A full discussion of capacity is provided earlier in this report.

5. Permitting

DES's permitting process ensures that facilities are sited, designed and built with emphasis on protecting public health and the environment. Toxics reduction and contaminant control are central to permitting requirements, which include setbacks to wetlands and water bodies, and design features such as leachate collection systems that protect groundwater. Air quality is protected by requiring the control of gaseous emissions for large sources of methane and toxics generated from some landfills. Because it is a proactive process, permitting avoids problems using such tools as operation plans to ensure that waste is managed in an environmentally sound manner and that permit storage limitations are not exceeded. Closure plans ensure that, after their useful lifetime, facilities will be maintained in a manner that continues to protect public health and the environment.

In 2007the Solid Waste Permitting and Design Review Section reviewed 1 standard permit application; 26 permit modification applications; 18 permit-by-notification permit applications; 1 certified waste derived product application; and 3 waiver applications.

6. Financial Assurance

Solid waste facilities are required to provide and maintain financial assurance for closure and post-closure costs to protect the State's interest and to ensure that adequate funds are available when needed. The objective of financial assurance is to assure that the State does not have to expend resources for closure and/or post-closure. Municipalities can use a local government financial test to verify their ability to close and maintain their facilities. As of August 2008, approximately $87.5 million of municipal and private funds have been dedicated for closure and post closure costs for 97 facilities.

7. Compliance

a. Solid Waste Operator Certification

As required by RSA 149-M:6, XIII, the Waste Management Division administers the Solid Waste Operator Training and Certification Program to provide education and training on waste management technology and practices. Through this program, solid waste facility operators are better prepared to keep landfills, incinerators and transfer stations in compliance with applicable laws and administrative rules. Over 2,200 operators have successfully completed the program and the total number of operators with current certification is over 1,100. Four basic operator training sessions were given in 2007. Further, 15 workshops on various topics, such as Universal Waste, plastic recycling, fire safety, vehicle maintenance, safety and health, facility tours, first aid and household hazardous waste were offered at several locations across the state to provide continuing education for operators. The section also conducted a full day conferences where presenters from across the region talk about pharmaceutical disposal, electronic waste, green yards, source separation, recycling, plastics, composting, land use and solid waste planning, emergency preparedness, and construction and demolition debris disposal

b. Inspections

The Solid Waste Compliance Section oversees adherence to permits and closure plans through inspections of solid waste facilities. The Section performed 88 inspections in 2007 and issued one Letter of Deficiency

8. Remediation

a. Unlined Landfill Closure

Because unlined landfills can negatively affect groundwater quality, over 90 of the 155 municipally-owned solid waste landfills in New Hampshire have been closed or are in the process of closing. Through an aggressive program funded by a combination of 20 percent state grants to the communities and low interest loans from the State Revolving Loan Fund (see Section 9, below), an additional 65 active and inactive unlined landfills are scheduled for closure by 2011.

b. Inactive Asbestos Disposal Site Program

For over 70 years, asbestos-containing building materials were manufactured in Nashua by a company that regularly delivered its asbestos waste, free of charge, to area property owners for use in filling low-lying areas. As a result, hundreds of residential, commercial, industrial and public properties in Nashua and Hudson are now filled with tons of asbestos waste. Because the inhalation of asbestos fibers causes serious illness in humans, the DES implements a program to control the sites and assure that asbestos is not released to the environment. The program includes public education, site monitoring and remediation, and technical assistance to ensure land development projects are protective of human health and the environment.

9. Unlined Landfill and Incinerator Closure Grant Program

The Unlined Municipal Landfill Closure Grant Program became effective on July 1, 1995 and was expanded on January 21, 2000 to include 18 municipal incinerators constructed prior to July 1, 1998. The purpose of the program is to reimburse municipalities 20 percent of the eligible capital costs associated with unlined landfill/incinerator closures. These costs include hydrogeological investigation, engineering design, and construction of closure elements.

The department has awarded 144 grants totaling $38.3 million, with over $26 million in reimbursements paid as of August 11, 2008. To date, of the 144 grants awarded, DES has awarded two incinerator grants totaling $116,069 and anticipates spending an additional $1 million more for incinerator closures. The remaining 142 grants are for landfill closure. Grant money awarded was much greater in the first few years of the program due to previously completed closures that were eligible for lump sum reimbursement. Over the last two years, the rate of amortized grant money awarded has been more consistent with the current rate of landfill and incinerator closures.

10. New Hampshire Green Yards Initiative

The motor vehicle salvage business is one of the best examples of recycle / reuse in the country. It is estimated that 95% of end-of-life automobiles are sent to auto recycling facilities and that approximately 85% by weight of the material in the vehicle is recycled or reused. The dismantling of vehicles for used parts and fluids and the sale of remaining materials as scrap have gone a long way toward conserving natural resources and reducing the burden on our landfills. Unfortunately, some methods used to dismantle and store salvaged vehicles can result in serious negative impact on the environment. The money and time spent cleaning up the problems after they occur is better spent implementing good environmental business practices that prevent pollution of our air, water, and soils.

Therefore, working in partnership with the NH Auto & Truck Recyclers Association, DES established the award winning NH Green Yards Program to improve environmental management practices auto salvage yards in New Hampshire. The program has three key components:

(1) Education and compliance assistance, including publications and DVDs to increase environmental awareness among facility operators; materials, supplies and guidance for implementing best management practices (BMPs); training workshops; and free confidential on-site technical assistance for achieving compliance;

(2) Compliance assurance, including not only inspections by DES enforcement staff, but also annual self-inspections by the facility owners who must submit a signed declaration of compliance with BMPs to town officials when applying to renew their local junkyard license each year;

(3) Incentive for facilities to go beyond compliance, by awarding the elite designation "Certified NH Green Yard" to auto salvage yards that demonstrate a high commitment to environmental protection. *(As of the date of this report, 21 out of approximately 180 auto salvage yards in NH have earned this designation).*

In addition, new legislation in 2008 directs DES to establish a general permit for auto salvage yards and auto crushers, with terms and conditions to regulate all aspects of a motor vehicle salvage facility, including requirements for managing gasoline, oil, antifreeze, and other regulated substances, as well as solid waste, hazardous waste, universal waste, refrigerants and other potential air pollutants. When the related rulemaking process is completed sometime in 2009, all auto salvage yards and auto crushers operating in New Hampshire will be required to register to use the general permit and declare compliance with the permit terms and conditions.

Although measurable progress has occurred since the NH Green Yards Program commenced in 2003, much work remains to be done. Current staffing limitations are an obstacle to vigorously continuing the work. Based on most current inspection data from 2005 and 2006, less than 35 percent of NH auto salvage yards were in compliance with

BMPs for properly managing gasoline, oil and other fluids, and fewer that 15% of the facilities were fully compliant with all BMPs established for the industry. In addition, a significant number of facilities have been referred for state monitored clean-up action, due to releases of petroleum products impacting groundwater quality. These statistics demonstrate the need for continued education, technical assistance and compliance assurance efforts and the agency will continue to seek resources to accomplish the needed work.

Appendix I: Legislative Actions

Federal Bills

A number of federal bills were introduced during the 110th congress. Specific bills affecting New Hampshire are as follows:

H. R. 518 To amend the Solid Waste Disposal Act to authorize States to restrict receipt of foreign municipal solid waste and implement the Agreement Concerning the Transboundary Movement of Hazardous Waste between the United States and Canada, and for other purposes**.** (H. R. 518 has passed as of the date of this report).

H. R. 274 - To impose certain limitations on the receipt of out-of-State municipal solid waste, and for other purposes. (Referred to the Subcommittee on Environment and Hazardous Materials).

In addition, there are several bills and commissions on establishing a national electronics recycling program.

NH Legislation (Passed in 2008 Session)

HB 877 Chapter 359 Effective: September 9, 2008
Relative to the state recycling program. Requires each state agency to recycle recyclable waste materials. Requires each agency to work toward 100 percent recycling of waste, with the goal of maximizing savings and lowering environmental impacts. Requires each agency to submit to the director of the division of plant and property management a plan for a recycling program, which should be submitted two months before the agency's submission for budgeting purpose.

HB 1215 Chapter 28 Effective: July 1, 2008
Relative to the NH-VT interstate waste compact. Repeals the New Hampshire-Vermont interstate waste compact.

HB 1278 Chapter 69 Effective: July 20, 2008
Relative to the purchase of computer services and supplies for state agencies. Clarifies the procedure by which the division of plant and property management purchases computer services and supplies, including maintenance agreements for such supplies, on behalf of state agencies.

HB 1332 Chapter 286 Effective: August 26, 2008
Defining "hauler" of solid waste and requiring haulers to register with DES, and relative to the weight and measurement of solid waste. Defines "hauler" of solid waste. Requires haulers to register with DES. Allows the commissioner of agriculture, markets and food to make rules regarding the exemptions of solid waste from inspection requirements.

HB 1346 Chapter 287 Effective: June 27, 2008
Relative to the regulation of junk dealers, scrap metal dealers and pawnbrokers. Clarifies the authority for municipalities to regulate junk dealers, scrap metal dealers and pawnbrokers.

HB 1502-FN Chapter 259 Effective: June 26, 2008
Establishing a commission to develop alternatives to the disposal of medical sharps in household waste. Establishes a commission which shall include the DES commissioner, or designee. Requires the commission to report its findings on or before April 1, 2009.

HB 1584-FN Chapter 33 Effective: May 12, 2008
Creating a commission to study the recycling and disposal of electronic waste. Establishes a commission which shall include a member from the DES waste management division, appointed by the DES commissioner. The commission shall report its findings and recommendations on or before December 1, 2008.

HB 1635 Chapter 191 Effective: August 10, 2008
Relative to permits for motor vehicle salvage facilities and motor vehicle crushers. Requires DES to establish permits for maintaining and operating a motor vehicle salvage facility and operating a motor vehicle crusher, which shall contain terms and conditions such as, but not limited to: fluids, including gasoline, oil, antifreeze and other regulated substances; solid waste; hazardous waste; universal waste; refrigerants and other potential air pollutants; and other regulated substances, materials, and waste.

HB 1636 Chapter 164 Effective: August 5, 2008
Relative to automotive recycling. Clarifies certain laws regarding junk yards and automotive recycling yards by eliminating out of date terminology.

SB 368 Chapter 41 Effective: July 11, 2008
Relative to exemptions for toxics reduction in packaging. Extends an exemption for vitrified labels in toxics reduction in packaging but excludes mercury.

SB 528 Chapter 383 Effective: July 11, 2008
Relative to a mercury-added thermostat collection program. Establishes a mercury-added thermostat collection program under the auspices of DES.

Appendix II: Other Organizations Involved in Solid Waste Issues

STATE/LOCAL ORGANIZATIONS

UNH Cooperative Extension
Address: Grafton County UNH Cooperative Extension, RR 1 Box 65 F
North Haverhill, NH 03774-9708
Telephone: 603-787-6944
Contact: Thomas E. Buob, Ext. Educator
E-mail: tom.buob@unh.edu

Typically, the Cooperative Extension has identified and initiated projects in specific areas, rather than committing dedicated staff to an ongoing program in recycling. For example, the Cooperative Extension developed a kindergarten through twelfth grade educational curriculum on source reduction and recycling for statewide distribution, and took a leadership role promoting municipal leaf and yard waste composting and source separated food waste composting in New Hampshire. Additionally, the Cooperative Extension has worked with DES and New Hampshire industry in the Wood Ash Program. Recently, the DES, the Cooperative Extension, and the Department of Agriculture offered joint programs on composting and small farm manure disposal options.

New Hampshire the Beautiful
Address: 2101 Dover Road, Epsom, NH 03234
Telephone: 1-888-784-4442 Toll-Free in NH, (603) 444-9812
E-mail: nhtb@ncia.net

New Hampshire the Beautiful, Inc. (NHtB) is a private, non-profit Charitable Trust established in 1983 and voluntarily funded by the soft drink distributors and bottlers, retail grocers, and the malt beverage industry. The Board of Directors of NHtB has awarded the Northeast Resource Recovery Association (NRRA) a contract to administer the grants and sign programs in addition to overseeing the distribution of roadside litter bags. NRRA will not perform the lobbying efforts of NHtB, and the Board of Directors of NHtB will maintain the anti-bottle bill lobbying efforts through the Board.

REGIONAL and NATIONAL ORGANIZATIONS

Northeast Resource Recovery Association
Address: PO Box 721, Concord, NH 03302-0721
Telephone: (603) 798-5777
Web Site: www.recyclewithus.org
E-mail: nrra@tds.net
Contact: Fuat Ari, Executive Director

Founded in 1981 as a private, non-profit organization, the Northeast Resource Recovery Association (NRRA) provides technical, educational, and marketing support to New Hampshire municipal recycling programs. NRRA provides marketing and brokerage services for municipalities in New Hampshire, Massachusetts, Maine and Vermont. This cooperative approach combines materials from many communities to gain economies of scale in transportation, and offering access to markets which would typically be denied to individual small communities. NRRA also provides extensive outreach and technical assistance to its member communities designed to strengthen and expand municipal recycling activities. NHDES is a Trustee and Donald E. Maurer, SWTAS, is ex-officio member of the Board of Directors.

Northeast Waste Management Officials' Association (NEWMOA)
Address: 129 Portland Street, 6th Floor, Boston, MA 02114
Telephone: (617) 367-8558
Website: www.newmoa.org
Contact: William Cass, Executive Director, ext. 301 or wcass@newmoa.org

NEWMOA is a nonprofit, nonpartisan, interstate association established in 1986 by the governors of the New England states as an official interstate regional organization. The membership is composed of state environmental agency directors of the hazardous waste, solid waste, waste site cleanup, pollution prevention and underground storage tank programs in Connecticut, Maine, Massachusetts, New Hampshire, New York, New Jersey, Rhode Island, and Vermont. NEWMOA's mission is to help states articulate, promote, and implement economically sound regional programs for the enhancement of environmental protection. The group fulfills this mission by providing a variety of support services that facilitate communication and cooperation among member states and between the states and EPA, and promote the efficient sharing of state and federal program resources.

Northeast Recycling Council (NERC)
Address: 139 Main Street, Suite 401, Brattleboro, VT 05301
Telephone: (802) 254-3636
Web Site: www.nerc.org
Contact: Lynn Rubinstein, Executive Director, lynn@nerc.org

The Northeast Recycling Council provides technical assistance, information access, research, and networking opportunities on recycling market development for state and regional programs in the six New England states as well as New York, New Jersey, Pennsylvania, and Delaware. In addition to providing a forum for the exchange of information between states and state agencies, NERC undertakes research and education projects that address regional recycling,

market development and waste management issues. DES is a member of NERC and Donald E. Maurer, SWTAS, serves as Treasurer.

Association of State and Territorial Solid Waste Management Officials (ASTSWMO)

Address: 444 North Capitol Street, NW, Suite 305, Washington, DC 20001
Telephone: (202) 624-5828, Fax (202) 624-7875
Website: www.astswmo.org
Contact: Thomas Kennedy, Executive Director

The Association of State and Territorial Solid Waste Management Officials (ASTSWMO) supports the environmental agencies of the States and trust territories. ASTSWMO focuses on the needs of State hazardous waste programs; non-hazardous municipal solid waste and industrial waste programs; recycling, waste minimization, and reduction programs; Superfund and State cleanup programs; waste management and cleanup activities at federal facilities, and underground storage tank and leaking underground storage tank programs. The Association's mission is: "To Enhance and Promote Effective State and Territorial Waste Management Programs, and Affect National Waste Management Policies." The organization is structured to accomplish this two-part mission through both member committees and Association staff efforts.

Toxics In Packaging Clearinghouse (TPCH)

Address: Toxics in Packaging Clearinghouse c/o NERC
139 Main Street, Suite 401, Brattleboro, VT 05301
Telephone: (802) 254-3636
Website: www.toxicsinpackaging.org
Contact: Patty Dillon, TPCH Program Manager (info@toxicsinpackaging.org)

In 1990, New Hampshire was the second state in the nation to adopt the Toxics in Packaging model legislation developed by the Coalition of Northeastern Governors (CONEG). Nineteen states have adopted a toxics-in-packaging law based on the CONEG model and the model has been used internationally. To ensure consistent and effective implementation of the laws, the Toxics in Packaging Clearinghouse (TPCH) was created in 1992 to: simplify the law's administrative procedures; promote cooperation and information sharing between participating states; minimize procedural burdens on affected industries; and promote understanding and greater awareness of the law's objectives. The TPCH is assisted in its mission by technical advisers from representatives of industry and public interest organizations. The nine member states are New Hampshire, Maine, Rhode Island, Connecticut, New York, New Jersey, Minnesota, California, and Iowa.

Appendix III: Status of the Recycling Market Development Steering Committee

The Recycling Market Development Steering Committee was established by Chapter 151, Laws of 1995, to "promote the establishment and expansion of recycling related industries and companies in New Hampshire." Its duties, as specified in the legislation, include:

1. Advocating and securing funding for recycling market development.
2. Facilitating close communication and interaction between the state's recycling and economic development agencies and other involved organizations.
3. Providing continuity to the State's recycling market development efforts by reviewing and revising market development priorities, evaluating the impact of market development initiatives, and recommending new directions for market development efforts.

The Steering Committee was formed as a direct result of work completed between 1993 and 1995 by a task force established by the legislature on recycling market development. This task force made four primary recommendations to the Governor and Legislature in its final report (January 1995):

1. Establish a full-time, permanent professional position for a recycling market development specialist;
2. Establish a permanent recycling market development steering committee;
3. Take immediate steps to more aggressively support and promote existing recycling-related businesses in New Hampshire; and
4. Maintain and expand the state's commitment to purchasing products with recycled content.

The legislation establishing the Steering Committee fulfilled Recommendation No. 2 of the task force. A position was established at the Department of Resources and Economic Development (DRED) in 1996 to fulfill Recommendation No. 1. In 1996 and 1997, the position was funded through a federal grant, Jobs Through Recycling, but in 1998, the position became funded by general funds. The position was discontinued in October 2003 due to budget cuts and has not been budgeted since.

The State of North Carolina operates the Recycling Business Assistance Center (RBAC). Recycling provides more than 14,000 jobs to North Carolina citizens. RBAC's mission is to support and grow the state's recycling industry through technical assistance and partnerships. RBAC is a partnership of the N.C. Department of Environment and Natural Resources' Division of Pollution Prevention and Environmental Assistance, and the Department of Commerce. A study of the impact of recycling on North Carolina's economy can be found at http://www.p2pays.org/ref/34/33912.pdf.

RSA 149-O:5 imposes an annual reporting requirement on the Recycling Market Development Steering Committee. This committee and its responsibilities are currently under review by the Environment and Agriculture Committee of the N.H. State House of Representatives.

Appendix IV: Municipality Data

2007 Municipal recycling Rates and Per Capita Costs

TOWN	2007 NH Population (NH OEP)	2007 Resid. MSW Tons/Year	Combined 2007 MSW Tons/Year	2007 Commerical and Industrial Tons/Year	2007 Cons/Demo Tons/Year	2007 Other MSW	2007 Compost Tons/Year	2007 Recycling Tons	Recycling Rate	Recyling Rate w/o Commercial	2007 Budget Line Item	Per Capita Cost per Year
Acworth	932	306	306	0	139			106	25.72%	25.72%	$84,500	$90.67
Albany-R	724	N/A	With Conway	With Conway	With Conway	With Conway	With Conway	With Conway	N/A	N/A	$67,250	$92.89
Alexandria	1,504	585	585	0	227	0	0	116	16.61%	16.61%	$143,102	$95.15
Allenstown	5,266	3,150	3,150	0	167	0	113	128	7.09%	7.09%	$143,416	$27.23
Alstead	2,080	1,009	1,009	0	117	0	0	182	15.29%	15.29%	$84,070	$40.42
Alton	5,526	1,837	1,837	0	975	0	39	482	22.11%	22.11%	$475,202	$85.99
Amherst	11,910	3,138	3,138	0	488	0	113	941	25.13%	25.13%	$768,792	$64.55
Andover	2,296	1,240	1,240	0	85	0	10	363	23.10%	23.10%	$159,590	$69.51
Antrim	2,624	500	500	0	0	0	10	159	25.27%	25.27%	$295,000	$112.42
Ashland	2,052	575	575	0	353	0	23	256	32.64%	32.64%	$154,840	$75.46
Atkinson	6,862	N/A	N/A	0	0	0	0	465	N/A	N/A	$553,875	$80.72
Auburn	5,210	1,231	1,231	0	0	0	0	454	26.96%	26.96%	$10,500	$2.02
Barnstead - R	4,896	N/A	With Pittsfield	With Pittsfield	With Pittsfield	With Pittsfield	With Pittsfield	With Pittsfield	N/A	N/A	$162,415	$33.17
Barrington	8,470	680	680	0	0	0	0	0	0.00%	0.00%	$223,501	$26.39
Bartlett-R	3,088	1,826	With Jackson	With Jackson	With Jackson	With Jackson	With Jackson	With Jackson			$230,000	$74.48
Bath-NF	958	N/A	N/A	0	0	0	0	Private Hauler	N/A	N/A	$1,200	$1.25
Bedford	21,464	8,725	8,725	0	0	0	56	1,331	13.72%	13.72%	$2,223,088	$103.57
Belmont-NF	7,882	6,091	6,091	3,396	238	0	0	Private Hauler	N/A	N/A	$495,200	$62.83
Bennington	1,520	357	357	0	75	0	93	143	39.75%	39.75%	$97,054	$63.85
Benton-NF	328	N/A	N/A	0	0	0	0	Private Hauler	N/A	N/A	$0	$0.00
Berlin-RH	10,206	4,533	4,533	0	568	0	0	0	0.00%	0.00%	$847,997	$83.09
Bethlehem	2,410	337	337	0	0	0	4	208	38.60%	38.60%	$0	$0.00
Boscawen	4,178	2,473	2,473	1,063	40	0	23	261	10.39%	17.04%	$273,113	$65.37
Bow	8,346	2,291	2,291	3,311	0	0	0	978	14.86%	29.92%	$773,531	$92.68

TOWN	2007 NH Population (NH OEP)	2007 Resid. MSW Tons/Year	Combined 2007 MSW Tons/Year	2007 Commerical and Industrial Tons/Year	2007 Cons/Demo Tons/Year	2007 Other MSW	2007 Compost Tons/Year	2007 Recycling Tons	Recycling Rate	Recyling Rate w/o Commercial	2007 Budget Line Item	Per Capita Cost per Year
Bradford	1,700	835	835	0	1	0	36	500	39.11%	39.11%	$113,043	$66.50
Brentwood	4,088	1,456	1,456	0	0	0	0	216	12.92%	12.92%	$245,006	$59.93
Bridgewater-RH	1,062	162	162	0	0	0	10	197	56.06%	56.06%	$236,100	$222.32
Bristol	3,246	2,925	2,925	0	0	0	0	203	6.49%	6.49%	$614,002	$189.16
Brookfield-R	712	N/A	With Wakefield	With Wakefield	With Wakefield	With Wakefield	With Wakefield	With Wakefield	N/A	N/A	$72,360	$101.63
Brookline	4,846	N/A	N/A	0	0	0	0	403	N/A	N/A	$302,867	$62.50
Campton-R	2,964	N/A	N/A	0	437	0	0	679	N/A	N/A	$238,657	$80.52
Canaan	3,554	2,202	2,202	0	53	0	5	310	12.53%	12.53%	$211,109	$59.40
Candia	4,284	808	808	0	0	0	15	453	36.67%	36.67%	$368,944	$86.12
Canterbury	2,232	658	658	0	150	0	23	422	40.29%	40.29%	$112,000	$50.18
Carroll	678	237	237	0	80	0	1	227	49.04%	49.04%	$108,000	$159.29
Center Harbor-R	1,152	N/A	With Meredith	With Meredith	With Meredith	With Meredith	With Meredith	With Meredith	N/A	N/A	$163,925	$142.30
Charlestown	5,202	1,534	1,534	0	366	0	56	501	26.66%	26.66%	$386,605	$74.32
Chatham-R	288	90	90	0	0	0	5	30	28.00%	28.00%	$25,000	$86.81
Chester	4,706	533	533	0	0	0	4	366	40.98%	40.98%	$181,658	$38.60
Chesterfield	3,846	751	751	0	196	0	23	442	38.21%	38.21%	$231,120	$60.09
Chichester-R	2,564	N/A	To Pittsfield	To Pittsfield	To Pittsfield	To Pittsfield	To Pittsfield	To Pittsfield	N/A	N/A	$89,029	$34.72
Claremont	13,458	8,273	8,273	0	52	0	68	221	3.37%	3.37%	$200,000	$14.86
Clarksville-R	296	N/A	To Pittsburg	To Pittsburg	To Pittsburg	To Pittsburg	To Pittsburg	To Pittsburg	N/A	N/A	$22,300	$75.34
Colebrook	2,264	715	715	0	271	0	9	634	47.36%	47.36%	$218,961	$96.71
Columbia-R	748	130	To Stewartstown	0	10	0	0	120	47.99%	47.99%	$27,000	$36.10
Concord	43,954	18,500	18,500	29,500	0	0	0	1,874	3.76%	9.20%	$3,818,650	$86.88
Conway-RH	9,266	3,092	3,092	308	971	0	215	2,030	39.77%	42.07%	$680,258	$73.41
Cornish	1,846	479	479	0	3	0	0	169	26.05%	26.05%	$13,000	$7.04
Croydon	804	139	139	0	220	0	0	0	0.00%	0.00%	$71,350	$88.74
Dalton	930	140	140	0	34	0	0	53	27.39%	27.39%	$55,000	$59.14
Danbury	1,182	608	608	0	127	0	0	143	19.03%	19.03%	$82,886	$70.12
Danville-NF	4,542	N/A	N/A	0	0	0	0	231	N/A	N/A	$397,693	$87.56

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Deerfield	4,336	1,377	1,377	0	43	0	23	341	20.88%	20.88%	$218,915	$50.49
Deering -R	2,082	547	To Hillsborough	To Hillsborough	To Hillsborough	To Hillsborough	To Hillsborough	To Hillsborough	N/A	N/A	$112,939	$54.25
Derry	36,346	9,279	9,279	18	1,265	0	593	3,559	30.87%	30.91%	$1,592,134	$43.80
Dorchester-R	388	N/A	To Rumney	To Rumney	To Rumney	To Rumney	To Rumney	To Rumney	N/A	N/A	$26,122	$67.32
Dover	29,106	N/A	N/A	0	750	0	1,030	2,832	N/A	N/A	$1,559,111	$53.57
Dublin	1,582	281	281	0	59	0	3	216	43.89%	43.89%	$138,132	$87.31
Dummer-R	306	224	224	0	7	0	0	0	0.00%	0.00%	$50,489	$165.00
Dunbarton	2,558	1,003	1,003	0	131	0	8	360	26.86%	26.86%	$209,669	$81.97
Durham	13,682	1,690	1,690	0	379	0	0	1,497	46.96%	46.96%	$2,143,758	$156.68
E. Kingston	2,020	N/A	N/A	0	0	0	0	166	N/A	N/A	$170,000	$84.16
Easton-R	288	N/A	With Franconia	With Franconia	With Franconia	With Franconia	With Franconia	With Franconia	N/A	N/A	$16,168	$56.14
Eaton-R	436	N/A	With Conway	With Conway	With Conway	With Conway	With Conway	With Conway	N/A	N/A	$67,000	$153.67
Effingham	1,466	449	449	0	196	0	0	174	27.97%	27.97%	$189,597	$129.33
Ellsworth-R	94	N/A	To Campton	To Campton	To Campton	To Campton	To Campton	To Campton	N/A	N/A	$8,373	$89.07
Enfield	5,000	2,552	2,552	0	357	0	0	332	11.50%	11.50%	$700,516	$140.10
Epping	6,084	1,850	1,850	0	0	0	0	116	5.88%	5.88%	$305,075	$50.14
Epsom - R	4,598	N/A	With Pittsfield	With Pittsfield	With Pittsfield	With Pittsfield	With Pittsfield	With Pittsfield	N/A	N/A	$162,507	$35.34
Errol-R	326	123	123	0	13	0	0	50	28.81%	28.81%	$67,650	$207.52
Exeter	15,044	2,865	2,865	0	0	0	0	1,970	40.74%	40.74%	$676,046	$44.94
Farmington	6,622	1,350	1,350	0	1,488	0	0	270	16.64%	16.64%	$177,568	$26.81
Fitzwilliam	2,330	295	295	0	174	0	9	201	41.64%	41.64%	$127,250	$54.61
Francestown	1,652	515	515	0	100	0	0	263	33.78%	33.78%	$131,925	$79.86
Franconia-RH	1,008	552	552	0	345	0	5	388	41.51%	41.51%	$53,279	$52.86
Franklin	8,668	6,215	6,215	268	602	0	0	328	4.82%	5.01%	$611,435	$70.54
Freedom	1,500	487	487	0	244	0	35	252	37.06%	37.06%	$179,353	$119.57
Fremont	4,024	1,885	1,885	0	0	0	0	261	12.17%	12.17%	$268,473	$66.72
Gilford-R	8,006	6,839	6,839	6,432	476	0	0	227	1.68%	3.21%	$539,717	$67.41

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Gilmanton	3,668	1,344	1,344	0	0	0	0	311	18.79%	18.79%	$240,054	$65.45
Gilsum	846	153	153	0	33	0	0	52	25.54%	25.54%	$55,313	$65.38
Goffstown	18,406	5,271	5,271	0	647	0	124	2,701	34.89%	34.89%	$1,221,158	$66.35
Gorham-R	2,800	1,752	1,752	1,440	50	0	270	443	18.25%	28.91%	$413,031	$147.51
Goshen	854	149	149	0	3	0	8	121	46.51%	46.51%	$106,013	$124.14
Grafton	1,222	570	570	0	100	0	0	161	22.02%	22.02%	$118,300	$96.81
Grantham	2,578	768	768	0	299	0	0	487	38.81%	38.81%	$323,950	$125.66
Greenfield-R	1,834	259	259	0	79	0	0	0	0.00%	0.00%	$121,934	$66.49
Greenland	3,556	1,364	1,364	0	0	0	0	262	16.13%	16.13%	$204,453	$57.50
Greenville - R	2,340	N/A	To Wilton	To Wilton	To Wilton	To Wilton	To Wilton	To Wilton	N/A	N/A	$79,129	$33.82
Groton	496	N/A	N/A	0	0	0	0	0	N/A	N/A	$61,485	$123.96
Hampstead	8,958	3,154	3,154	0	0	0	0	673	17.58%	17.58%	$676,460	$75.51
Hampton	15,954	8,622	8,622	0	0	0	0	1,671	16.23%	16.23%	$3,798,918	$238.12
Hampton Falls NF	2,096	N/A	N/A	0	0	0	0	5	N/A	N/A	$204,100	$97.38
Hancock	1,874	360	360	0	0	0	23	214	39.64%	39.64%	$87,964	$46.94
Hanover	11,464	6,824	To Lebanon	0	3,978	0	0	861	11.20%	11.20%	$1,622,242	$141.51
Harrisville	1,144	230	230	0	63	0	0	129	35.91%	35.91%	$85,500	$74.74
Harts Location - NF	34	N/A	N/A	0	0	0	0	0	N/A	N/A	$4,500	$132.35
Haverhill-NF	4,714	200	200	0	0	0	0	0	0.00%	0.00%	$16,500	$3.50
Hebron-R	542	N/A	To Bridgewater	To Bridgewater	To Bridgewater	To Bridgewater	To Bridgewater	To Bridgewater	N/A	N/A	$235,850	$435.15
Henniker	5,000	3,172	3,172	0	283	0	8	605	16.18%	16.18%	$596,072	$119.21
Hill	1,108	458	458	0	0	0	0	22	4.54%	4.54%	$73,960	$66.75
Hillsborough	5,590	3,571	4,118	2,426	707	0	0	722	10.75%	16.82%	$551,612	$98.68
Hinsdale	4,386	725	725	15	141	0	7	48	6.92%	7.06%	$547,432	$124.81
Holderness	2,082	837	837	0	377	0	0	384	31.46%	31.46%	$200,700	$96.40
Hollis	7,900	2,637	2,637	0	0	0	0	827	23.87%	23.87%	$535,921	$67.84
Hooksett	13,794	4,627	4,627	28	607	0	113	576	12.88%	12.95%	$966,536	$70.07
Hopkinton	5,874	4,206	4,206	0	818	0	300	931	22.64%	22.64%	$734,866	$95.02

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Hudson	25,322	8,554	8,554	0	605	0	125	2,157	21.06%	21.06%	$1,809,992	$71.48
Jackson -RH	926	2,329	4,155	0	557	0	0	489	17.36%	17.36%	$111,800	$120.73
Jaffrey	5,884	918	918	0	552	0	0	342	27.15%	27.15%	$395,759	$67.26
Jefferson-R	980	278	278	0	132	0	0	95	25.52%	25.52%	$94,000	$95.92
Keene - RH1	23,200	16,186	16,186	0	2,306	0	2,110	5,338	31.51%	31.51%	$3,166,243	$136.48
Kensington	2,122	630	630	0	0	0	0	88	12.30%	12.30%	$124,168	$58.51
Kingston	6,394	N/A	N/A	0	0	0	0	485	N/A	N/A	$514,783	$80.51
Laconia-RH	16,920	16,088	16,088	10,038	1,133	0	135	785	3.40%	5.41%	$1,892,230	$111.83
Lancaster	3,208	497	497	0	496	0	80	717	61.60%	61.60%	$169,023	$52.69
Landaff-R	392	N/A	To Lisbon	To Lisbon	To Lisbon	To Lisbon	To Lisbon	To Lisbon	N/A	N/A	$27,414	$69.93
Langdon	666	222	222	0	0	0	0	0	0.00%	0.00%	$60,000	$90.09
Lebanon	13,250	17,730	24,554	0	17,903	0	23	1,896	9.77%	9.77%	$3,791,000	$286.11
Lee	4,560	1,175	1,175	0	280	0	12	662	36.45%	36.45%	$325,550	$71.39
Lempster	1,120	458	458	0	81	0	0	86	15.84%	15.84%	$98,265	$87.74
Lincoln-RH	1,338	1,135	1,135	0	555	0	250	504	39.91%	39.91%	$277,525	$207.42
Lisbon-RH	1,700	477	477	0	428	0	0	332	41.06%	41.06%	$182,259	$107.21
Litchfield	8,568	1,500	1,500	0	740	0	0	591	28.26%	28.26%	$400,509	$46.74
Littleton	6,294	643	643	0	260	0	75	1,471	70.63%	70.63%	$110,000	$17.48
Londonderry	25,552	9,733	9,733	0	93	0	1	1,881	16.20%	16.20%	$2,042,796	$79.95
Loudon	5,120	3,711	3,711	1,388	209	0	0	471	8.45%	11.25%	$284,493	$78.41
Lyman-R	546	N/A	To Lisbon	To Lisbon	To Lisbon	To Lisbon	To Lisbon	To Lisbon	N/A	N/A	$36,552	$66.95
Lyme	1,778	273	273	0	53	0	0	289	51.42%	51.42%	$73,735	$41.47
Lyndeborough - NF	1,818	N/A	To Wilton	To Wilton	To Wilton	To Wilton	To Wilton	To Wilton	N/A	N/A	$62,776	$34.53
Madbury	1,784	N/A	N/A	0	0	0	0	779	N/A	N/A	$99,501	$55.77
Madison	2,290	801	801	0	331	0	0	120	13.06%	13.06%	$231,010	$100.88
Manchester	112,130	43,323	43,323	0	3,014	0	5,944	7,880	24.19%	24.19%	$2,703,253	$24.11
Marlborough	2,122	540	540	0	168	0	3	209	28.22%	28.22%	$250,678	$118.13
Marlow	806	90	90	0	146	0	0	105	53.84%	53.84%	$58,000	$71.96

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Mason -R	1,292	N/A	To Wilton	To Wilton	To Wilton	To Wilton	To Wilton	To Wilton	N/A	N/A	$45,601	$35.29
Meredith-RH	6,924	2,534	2,534	0	982	0	0	270	9.61%	9.61%	$807,471	$116.62
Merrimack	27,832	8,491	8,491	432	611	0	450	2,041	21.82%	22.68%	$1,451,992	$52.17
Middleton	1,710	N/A	N/A	0	0	0	0	0	N/A	N/A	$135,697	$79.35
Milan-R	1,286	576	576	0	113	0	0	0	0.00%	0.00%	$153,909	$119.68
Milford	15,160	3,014	3,014	0	1,072	0	75	1,426	33.24%	33.24%	$705,221	$46.52
Milton	4,500	600	600	0	75	0	0	414	40.83%	40.83%	$168,652	$37.48
Monroe-NF	840	N/A	N/A	0	0	0	0	0	N/A	N/A	$76,000	$90.48
Mont Vernon	2,376	N/A	N/A	0	0	0	0	135	N/A	N/A	$134,677	$56.68
Moultonborough	5,164	899	899	0	721	0	120	568	43.36%	43.36%	$721,402	$139.70
Nashua	89,560	37,616	37,616	25,200	9,280	0	6,908	5,969	17.01%	25.50%	$6,743,991	$75.30
Nelson - NF	668	N/A	N/A	0	0	0	0	0	N/A	N/A	$575	$0.86
New Boston	4,984	1,109	1,109	0	229	0	9	883	44.55%	44.55%	$367,803	$73.80
New Castle -NF	1,068	N/A	N/A	0	0	0	0	212	N/A	N/A	$130,174	$121.89
New Durham	2,648	1,132	1,132	0	312	0	2	418	27.04%	27.04%	$282,831	$106.81
New Hampton	2,288	1,007	1,007	0	87	0	100	231	24.71%	24.71%	$174,340	$76.20
New Ipswich	5,054	203	203	0	143	0	0	277	57.70%	57.70%	$16,955	$3.35
New London	4,602	2,809	2,809	0	1	0	0	811	22.41%	22.41%	$401,439	$87.23
Newbury	2,042	842	842	0	212	0	7	230	21.98%	21.98%	$272,736	$133.56
Newfields-NF	1,694	581	581	0	0	0	0	139	19.30%	19.30%	$132,085	$77.97
Newington	830	N/A	N/A	0	454	0	0	216	N/A	N/A	$125,900	$151.69
Newmarket	9,098	925	925	0	389	0	11	847	48.12%	48.12%	$419,970	$46.16
Newport	6,588	2,755	2,755	0	1	0	0	0	0.00%	0.00%	$718,207	$109.02
Newton	4,690	1,695	1,695	0	557	0	28	369	18.97%	18.97%	$387,190	$82.56
North Hampton	4,690	N/A	N/A	0	0	0	7	459	22.00%	N/A	$229,267	$48.88
Northfield	5,034	3,040	3,040	1,143	73	0	6	269	6.17%	8.30%	$295,345	$58.67
Northumberland-R	2,360	851	851	0	449	0	8	387	31.66%	31.66%	$182,594	$77.37
Northwood	3,958	755	755	0	69	0	0	272	26.49%	26.49%	$209,034	$52.81

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Nottingham	4,248	605	605	0	265	0	0	345	36.34%	36.34%	$205,364	$48.34
Orange	312	36	36	0	7	0	0	0	0.00%	0.00%	$24,000	$76.92
Orford	1,188	506	506	0	73	0	0	0	0.00%	0.00%	$41,950	$35.31
Ossipee	4,780	1,061	1,061	0	885	0	30	311	24.32%	24.32%	$461,000	$96.44
Pelham	13,556	2,893	2,893	0	0	0	0	1,203	29.37%	29.37%	$536,169	$39.55
Pembroke	7,604	4,906	4,906	1,757	376	0	225	193	5.90%	7.85%	$500,409	$65.81
Peterborough-R	6,382	1,776	1,776	0	216	0	1,004	871	51.34%	51.34%	$460,690	$72.19
Piermont	740	126	126	0	0	0	4	112	48.01%	48.01%	$49,901	$67.43
Pittsburg-RH	868	382	382	0	141	0	0	368	49.04%	49.04%	$103,700	$119.47
Pittsfield	4,444	2,466	2,466	0	876	0	0	1,323	34.92%	34.92%	$156,498	$35.22
Plainfield	2,512	862	862	0	143	0	0	184	17.60%	17.60%	$211,921	$47.69
Plaistow	8,260	N/A	N/A	0	0	0	0	579	N/A	N/A	$697,190	$84.41
Plymouth	6,534	725	725	150	150	0	35	2,125	71.17%	74.87%	$421,120	$64.45
Portsmouth	21,600	5,144	5,144	0	288	0	3,204	2,861	54.11%	54.11%	$1,139,083	$52.74
Randolph-R	402	98	98	0	6	0	0	0	0.00%	0.00%	$34,545	$85.93
Raymond	10,682	2,500	2,500	0	1,411	0	0	1,466	36.97%	36.97%	$276,814	$25.91
Richmond - NF	1,178	N/A	To Winchester	To Winchester	To Winchester	To Winchester	To Winchester	To Winchester	N/A	N/A	$57,200	$48.56
Rindge	6,184	604	604	0	296	0	56	452	45.72%	45.72%	$170,736	$27.61
Rochester	31,018	10,538	10,538	0	0	0	0	3,619	25.56%	25.56%	$462,628	$14.91
Rollinsford	2,812	653	653	0	200	0	11	241	27.88%	27.88%	$110,393	$39.26
Roxbury -NF	244	N/A	To Marlborough	To Marlborough	To Marlborough	To Marlborough	To Marlborough	To Marlborough	N/A	N/A	$13,755	$56.37
Rumney-RH	1,600	450	450	0	153	0	5	194	30.65%	30.65%	$122,000	$76.25
Rye	5,490	1,467	1,467	0	230	0	0	1,036	41.38%	41.38%	$381,754	$69.54
Salem	30,056	12,197	12,197	0	1,498	0	0	2,299	15.86%	15.86%	$5,054,256	$168.16
Salisbury	1,340	583	583	0	31	0	0	98	14.36%	14.36%	$83,559	$62.36
Sanbornton	3,068	470	470	0	208	0	1	256	35.25%	35.25%	$329,885	$107.52
Sandown	5,836	2,200	2,200	0	300	0	100	600	24.14%	24.14%	$435,185	$74.57
Sandwich	1,428	324	324	0	166	0	0	139	30.08%	30.08%	$102,476	$71.76

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Seabrook	8,754	4,187	4,187	0	956	0	23	542	11.88%	11.88%	$1,421,290	$162.36
Sharon - NF	388	N/A	To Peterborough	To Peterborough	To Peterborough	To Peterborough	To Peterborough	To Peterborough	N/A	N/A	$32,155	$82.87
Shelburne	366	75	75	0	0	0	2	99	57.39%	57.39%	$32,150	$87.84
Somersworth	12,016	2,197	2,197	0	0	0	1,800	1,342	58.84%	58.84%	$2,796,203	$232.71
South Hampton	920	N/A	N/A	0	0	0	0	0	N/A	N/A	$62,674	$68.12
Springfield - NF	1,094	N/A	To Sunapee	To Sunapee	To Sunapee	To Sunapee	To Sunapee	To Sunapee	N/A	N/A	$87,750	$80.21
Stark-R	502	94	94	0	88	0	0	70	42.95%	42.95%	$42,900	$85.46
Stewartstown-RH	974	478	608	0	113	0	0	162	25.27%	25.27%	$151,000	$155.03
Stoddard	986	468	468	0	239	0	0	148	24.07%	24.07%	$178,524	$181.06
Strafford	4,150	974	974	0	358	0	0	413	29.78%	29.78%	$258,932	$62.39
Stratford	934	165	165	0	144	0	0	141	45.99%	45.99%	$126,800	$135.76
Stratham	7,084	2,760	2,760	0	0	0	0	814	22.78%	22.78%	$647,477	$91.40
Sugar Hill-R	646	N/A	To Franconia	To Franconia	To Franconia	To Franconia	To Franconia	To Franconia	N/A	N/A	$34,962	$54.12
Sullivan - NF	826	N/A	N/A	0	0	0	0	0	N/A	N/A	$0	$0.00
Sunapee RF	3,460	1,178	1,178	0	804	0	59	490	31.78%	31.78%	$528,205	$152.66
Surry - NF	742	N/A	N/A	0	0	0	0	0	N/A	N/A	$500	$0.67
Sutton	1,792	300	300	120	150	0	50	742	65.37%	72.55%	$160,255	$89.43
Swanzey	7,290	1,064	1,064	56	205	0	10	705	38.96%	40.19%	$375,600	$51.52
Tamworth	2,754	729	729	0	217	0	0	345	32.10%	32.10%	$225,000	$81.70
Temple - R	1,516	861	To Wilton	To Wilton	To Wilton	To Wilton	To Wilton	To Wilton	To Wilton	To Wilton	$53,663	$35.40
Thornton-RH	2,020	1,789	1,789	0	437	0	0	679	27.51%	27.51%	$366,131	$181.25
Tilton	3,836	5,689	5,689	0	0	0	0	110	1.90%	1.90%	$392,512	$102.32
Troy	2,066	206	206	0	120	0	0	174	45.72%	45.72%	$138,483	$67.03
Tuftonboro	2,444	989	989	0	309	0	0	298	23.17%	23.17%	$290,814	$118.99
Unity	1,770	450	450	0	700	0	0	141	23.87%	23.87%	$53,000	$29.94
Wakefield-RH	4,938	1,616	1,616	0	375	0	24	694	30.76%	30.76%	$519,646	$105.23
Walpole	3,818	641	641	0	30	0	18	571	47.88%	47.88%	$310,959	$81.45
Warner	3,100	2,044	2,044	0	51	0	25	494	20.25%	20.25%	$281,795	$90.90

TOWN	2007 NH Population (NH OEP)	2007 Resid. MSW Tons/Year	Combined 2007 MSW Tons/Year	2007 Commerical and Industrial Tons/Year	2007 Cons/Demo Tons/Year	2007 Other MSW	2007 Compost Tons/Year	2007 Recycling Tons	Recycling Rate	Recyling Rate w/o Commercial	2007 Budget Line Item	Per Capita Cost per Year
Warren	954	166	166	0	19	0	0	60	26.55%	26.55%	$53,211	$55.78
Washington	1,070	421	421	0	82	0	5	223	35.04%	35.04%	$124,563	$116.41
Waterville Valley	278	823	823	0	180	0	45	75	12.72%	12.72%	$156,888	$564.35
Weare	8,920	3,032	3,032	0	613	0	0	594	16.39%	16.39%	$403,558	$45.24
Webster	1,860	N/A	To Hopkinton	To Hopkinton	To Hopkinton	To Hopkinton	To Hopkinton	To Hopkinton	To Hopkinton	To Hopkinton	$135,948	$73.09
Wentworth	884	267	267	0	168	0	0	50	15.79%	15.79%	$65,910	$74.56
Westmoreland	1,916	316	316	0	42	0	0	88	21.76%	21.76%	$95,600	$49.90
Whitefield	1,974	363	363	0	191	0	0	155	29.90%	29.90%	$127,615	$64.65
Wilmot	1,272	525	525	0	0	0	0	174	24.92%	24.92%	$183,047	$143.90
Wilton-R	4,124	861	1,721	0	0	0	0	867	50.18%	50.18%	$594,246	$144.09
Winchester	4,400	1,396	1,396	0	121	0	23	356	21.33%	21.33%	$284,193	$64.59
Windham	12,692	4,227	4,227	0	915	0	180	1,467	28.04%	28.04%	$1,078,050	$84.94
Windsor-R	238	N/A	To Hillsborough	To Hillsborough	To Hillsborough	To Hillsborough	To Hillsborough	To Hillsborough	N/A	N/A	$17,553	$73.75
Wolfeboro	6,868	1,628	1,628	507	1,197	0	277	1,228	41.35%	48.04%	$851,059	$123.92
Woodstock-R	1,212	N/A	To Lincoln	To Lincoln	To Lincoln	To Lincoln	To Lincoln	To Lincoln	N/A	N/A	$157,557	$130.00
TOTALS	1,347,756	472,053	472,053	88,996	83,872	0	20,301	123,005	20.39%	23.35%	$103,367,844	$86.07

Notes:

1. R and RH are regional facilities
2. NF indicates town has no facility. Town either has curbside, outsources operation of facility or shares a facility with another town.
3. Budget line items are as indicated in either town report or in data provided by the LGC.
4. Budget line items may not reflect income from sale of recyclables, sale of bags by pay as you throw towns, or from fees collected for disposal of construction and demolition debris, electronics, bulky waste, or white goods.
5. In the case of Waterville Valley, the per capita rate is excessively high because the line item reflects the cost to operate the facility which allows both commercial and non-residents use of the facility.
6. The recycling rate calculations include MSW, Compost, Commercial Waste, and Recycling tonnages. The rates, in keeping with USEPA guidelines, do not include construction and demolition debris.