Interstate Flow of Municipal Solid Waste Among the NEWMOA States in 2000

February 22, 2002

About NEWMOA

The Northeast Waste Management Officials' Association (NEWMOA) is a nonprofit, nonpartisan, interstate association. 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 Jersey, New York, Rhode Island, and Vermont. NEWMOA was established by the governors of the New England states as an official interstate regional organization, in accordance with Section 1005 of the Resource Conservation and Recovery Act (RCRA) in 1986 and is funded by state membership dues and contracts and EPA grants.

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.

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Introduction

This report is the second annual report on the movement of municipal solid waste among the northeast states and presents data from the 2000 calendar year, as well as a comparison between 1999 and 2000. A change in this report from the 1999 data report is the addition of New Jersey as a NEWMOA state. New Jersey rejoined NEWMOA in 2001 and therefore was included as a non-NEWMOA state in the 1999 data report. In order to make comparisons between 1999 and 2000 data, import and export data for 1999 for New Jersey was also collected.

All of the NEWMOA states gather data on solid waste imports and most collect data on exports in order to assess disposal capacity and to measure the impacts of recycling and other waste diversion activities. Beginning in 1999, several NEWMOA states expressed an interest in working with the other states to characterize the flow of solid wastes among the NEWMOA states in order to better validate the information they collect. States have a responsibility to monitor and manage disposal capacity, and policy is created from the data states have. This project has directly resulted in the increased accuracy of the data available to develop state policy.

In addition, states want a mechanism to understand and monitor the interstate flow of solid wastes, particularly to assess impacts of the recent consolidation in the solid waste management industry and the resulting vertical integration of companies, with many owning the whole chain from collection services through to the disposal facility. Before a new commercial disposal facility can be permitted, all the NEWMOA states have a public benefit or need determination requirement. States can use the data in this report to enhance this assessment and verify claims made by commercial interests.

The data collection and interpretation that has occurred as a result of this project has proven useful to the states, particularly those states that are attempting to address increased waste generation and/or the import issues often associated with large commercially-owned disposal facilities. For example, the New Hampshire Governor's Solid Waste Task Force utilized the per-capita disposal data from the first report (1999 data) to illustrate the extent that imports have impacted the state's total waste infrastructure. This project and the resulting reports have assisted regional, state, and local planning efforts by detailing the tonnages that cross state borders and illustrating the pros and cons of existing facility reporting systems.

Through this project, the NEWMOA states established an infrastructure by which information can be shared and compared on a regular basis. This annual information sharing and analysis effort has improved the quality of data states use and also ensures that states have as much information as possible to monitor trends in waste flow in the Northeast. Another important outcome of this project is the identification of the gaps in data collection and other sources of potential data inaccuracies. Through the project each state shared the limitations of their own data and its possible impact on regional interpretation. Utilizing this information, states learn what information is needed to more accurately characterize flow and what reporting changes might be beneficial on both the state and regional level. States have also used the information contained in this report to encourage discussion on strengthening recycling and other waste diversion efforts in individual states and regionally.

Project Scope and Process

In June 2001, NEWMOA reconvened the workgroup that produced the December 2000 *Interstate Flow of Municipal Solid Waste Among the NEWMOA States* report. Over the summer the states collected and compiled the data reported by the facilities in their state and summaries of this data were provided to NEWMOA during July and August. NEWMOA developed the tables and graphs of the available data and worked with the workgroup to complete and refine the data during September and October. NEWMOA prepared this report which underwent workgroup review prior to publication.

Possible Sources of Data Inaccuracies

After review of the data provided and discussions with the states, the project has uncovered several possible sources of inaccuracies in the data presented in this report:

- If waste is hauled directly from the pick-up route to an out-of-state disposal facility or transfer station, the waste is not likely to be included in data from the generating state. In addition, the waste might not be recorded as out-of-state waste at the disposal facility. New Jersey and Vermont are the only NEWMOA state that obtains information from waste haulers about their activities. Connecticut requires haulers to be registered by the municipalities from which they obtain their wastes.

- Not all facilities provide specific data on waste type or state of origin to allow for a state-by-state determination of the accepted quantity of a particular waste type. For example, New Hampshire's largest facility reported the quantity of waste brought to the facility by each hauler or generator, but not necessarily where that hauler obtains the waste. Fortunately, New Hampshire is a relatively small state and has general knowledge of haulers and their routes. Despite changes in New York's report forms, one of the largest commercial facilities in New York that accepts out-of-state MSW reported the total quantity of waste accepted from each state with MSW, C&D, industrial, and other wastes all lumped together.

- States do not define all their waste types the same, leading to a possible comparison of "apples and oranges." For example, Connecticut does not have a C&D waste category - demolition debris is a bulky waste by definition and construction debris is technically MSW, although it is usually reported as bulky waste, and white goods are included in MSW. However, in practice, the NEWMOA states do not believe this contributes significant error.

Generally, states believe the information from disposal facilities is fairly reliable. Data inaccuracies tend to arise from information obtained from transfer stations. However, problems with transfer station information can affect the accuracy of disposal facility information. The issues relating to transfer stations are:

- Not all states obtain data from their transfer stations that can be used to determine the quantity of waste that was received from or sent to each state. For example, Maine does not collect any relevant information from transfer stations. Some transfer stations in Vermont reported only the total quantity of waste that was sent out-of-state and did not break this down into the individual states or their respective quantities.

- Some transfer facilities could be reporting the destination facility location as the business address of the hauler rather than the facility's location. If the two are located in different states this would lead to discrepancies in the data presented in this report.

- As mentioned above, if waste enters a transfer station from out-of-state, and is then sent to a disposal facility in the same state as the transfer station, in most states it would not be recorded as out-of-state waste by the disposal facility (unless the transfer station provides the information to the disposal facility).

- During data interpretation, waste entering a transfer station from out-of-state was not included in the import numbers for that state, since the final disposition of that waste in many cases is unknown - it could end up at an in-state disposal facility or become transferred back out-of-state again. This practice creates a degree of uncertainty in the export data and is likely to be occurring throughout the region.

The last two items merit further discussion as they could have a potentially significant affect on the import/export data for a state. In the first instance, out-of-state waste can be reported as in-state waste on solid waste facility reports. The state would not uncover this error unless detailed reporting is obtained from both the transfer station and the disposal facility, and the state spends the resources to closely examine the information received and reconcile it. Connecticut's reporting and tracking system allows this type of waste to be detected.

The second instance can lead to substantial confusion and possible double counting of the waste. The facility in the third state would record the waste as imported from the second state, when in actuality they are servicing the disposal needs of the first state, not the second. The first state might believe that a facility in the second state is providing the waste disposal capacity they rely on when in fact it is the third state. In addition, the second state might report the waste as having originated in their state when export numbers are determined, overstating the quantity of MSW exported. Again, the only way to mitigate these inaccuracies is to obtain detailed reporting from both transfer stations and the disposal facilities, and to expend state resources to closely examine the information received and reconcile it.

Report Structure

The report begins with a section that provides a summary of the MSW flow in the region including a comparison of the1999 and 2000 data. Then the report contains a section for each state that describes the import and export information for that state, also including comparisons between the 1999 and 2000 data. After the eight state-specific sections, the report contains a Recommendations section which includes an outline of possible future efforts to improve state understanding of waste flows in the region.

Each of the state-specific sections that follow contains some summary information about the states' MSW disposal in 2000, including bar graphs illustrating the import and export data for that state. The bar graphs from the 1999 report are also included for comparison. In both the 1999 and 2000 graphs, the figures shows two sets of data for each state: the number of tons the subject state reports they received from each state; and the number of tons each state reports they sent to the subject state. This project focused on the NEWMOA states and therefore, exports to non-NEWMOA states are aggregated into an "other" category. For comparison purposes, the import and export graphs are done in the same scale, although some data resolution might be lost. More detail on the data shown in the figures is provided in the data tables contained in Appendix A.

The discrepancies that show up in the bar graphs between the data collected by the state and the data provided by other states are discussed. The data that states collect from facilities is not consistent among the NEWMOA states. Therefore, the data collection process in the state is also summarized to provide additional information about the possible source of discrepancies. Example reporting forms from each state are included as Appendix B to this report.

Each state-specific section provides information about the total quantity, and out-of-state portion, of waste disposed of at landfills and waste-to-energy (WTE) facilities. Information was not collected about facilities that disposed of in-state waste only. Each state-specific section concludes with a summary of changes in the solid waste situation that occurred, or might occur after the 2000 data.

Region-Wide Summary

An analysis of the data from the year 2000 found that the movement of MSW among the NEWMOA states continues to be substantial. The overall waste flow picture in the Northeast is illustrated on the attached map. Overall imports and exports for each state in 2000 are illustrated on Figure 1 below. All figures and tables in this report are based on the data received from disposal facilities in the NEWMOA states, as it is generally considered more accurate than data reported from transfer stations, except in cases where transfer stations reported sending more than the disposal facility reports receiving. In these cases transfer station data is used under the assumption that transfer stations have little incentive to over-report waste they send to other states. For exports to non-NEWMOA states, data provided by transfer stations in the exporting state was used.[1]

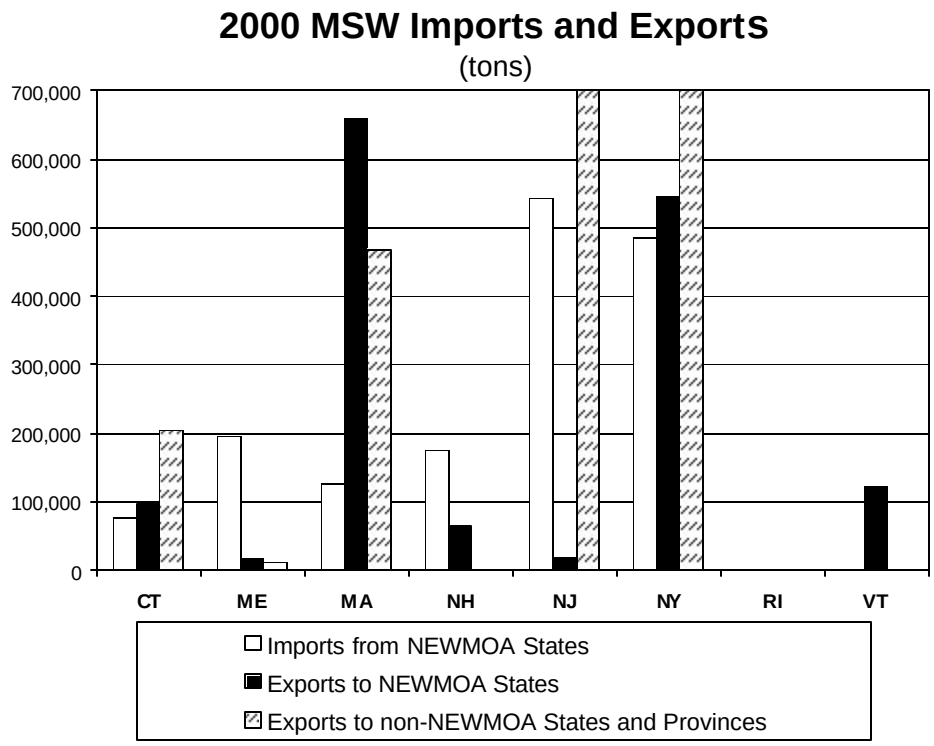


Figure 1

* For New Jersey:

Exports to non-NEWMOA states and provinces = 1.46 million tons

***** For New York:

Exports to non-NEWMOA states and provinces = 5.18 million tons

Imports from non-NEWMOA states and provinces = 148,595 tons

To place the import and export tonnages in context, the following pages contain additional figures: Figure 2 shows where the MSW generated by each state is disposed, including exports and Figure 3 shows the quantity of MSW disposed of in each state, including imports. In addition, Table 1 relates the information from Figures 2 and 3 to state population. Figures 4, 5 and 6, located at the end of this section show a comparison of 1999 and 2000 data.

[1] Disposal facilities in non-NEWMOA state-- such as Pennsylvania and Virginia-- report receiving significantly more MSW than NEWMOA states-- such as Connecticut, New Jersey and New York-- report sending to those states.

The following general observations characterize the flow of MSW in the region in 2000:

- The majority of MSW generated in each state continues to be managed using in-state disposal facilities.

- Generally, a substantial quantity of MSW was either imported into a state or exported from it.

- Significantly more MSW was imported into both Maine and New Hampshire than was exported, with the majority imported from Massachusetts.

- Due to state policies and other factors, MSW was not imported for disposal in Rhode Island and Vermont:

  - Rhode Island's Central Landfill is the only large landfill in the state and it receives virtually all of the residential and commercial waste generated in Rhode Island. The Central Landfill is owned and operated by the Rhode Island Resource Recovery Corporation, a quasi-public entity established in 1974 by an act of the Rhode Island Legislature. Legislation, as last amended in 2000, states that "No person, firm, corporation, transfer station, or any other entity... shall deposit or cause to be deposited solid waste that is generated or collected outside the territorial limits of this state at the central landfill. Each deposit in violation of the provisions of this subsection shall be punishable by imprisonment for up to three (3) years and/or a fine not to exceed five thousand dollars ($5,000)."

  - The two commercial landfills in Vermont are not large and have daily and annual limits on the quantity of MSW they can accept. In addition, the permits for these landfills require that prior to accepting waste from a municipality, the municipality must certify that yard waste, hazardous wastes, and recyclables are removed from their MSW in accordance with minimum requirements set by the state.

- Significantly more MSW is exported from Massachusetts and New York to other NEWMOA states than is imported. Massachusetts and New York also export significant quantities of MSW to non-NEWMOA states.

- When only the NEWMOA states are considered, significantly more MSW was imported into Connecticut and New Jersey than was exported from those states to facilities in the NEWMOA states. However, facilities in Connecticut and New Jersey, along with Massachusetts and New York, sent substantial quantities of MSW to disposal facilities located outside the NEWMOA region.

- Other than the large volumes of MSW exported from the four largest NEWMOA states, most importing and exporting occurred between transfer and disposal facilities located near state borders.

- With the exception of some facilities in New York and New Jersey, no disposal facilities in the NEWMOA states imported MSW generated outside the NEWMOA states. Generally, New Jersey imports MSW from Pennsylvania, and New York imports MSW from Ontario, Canada.

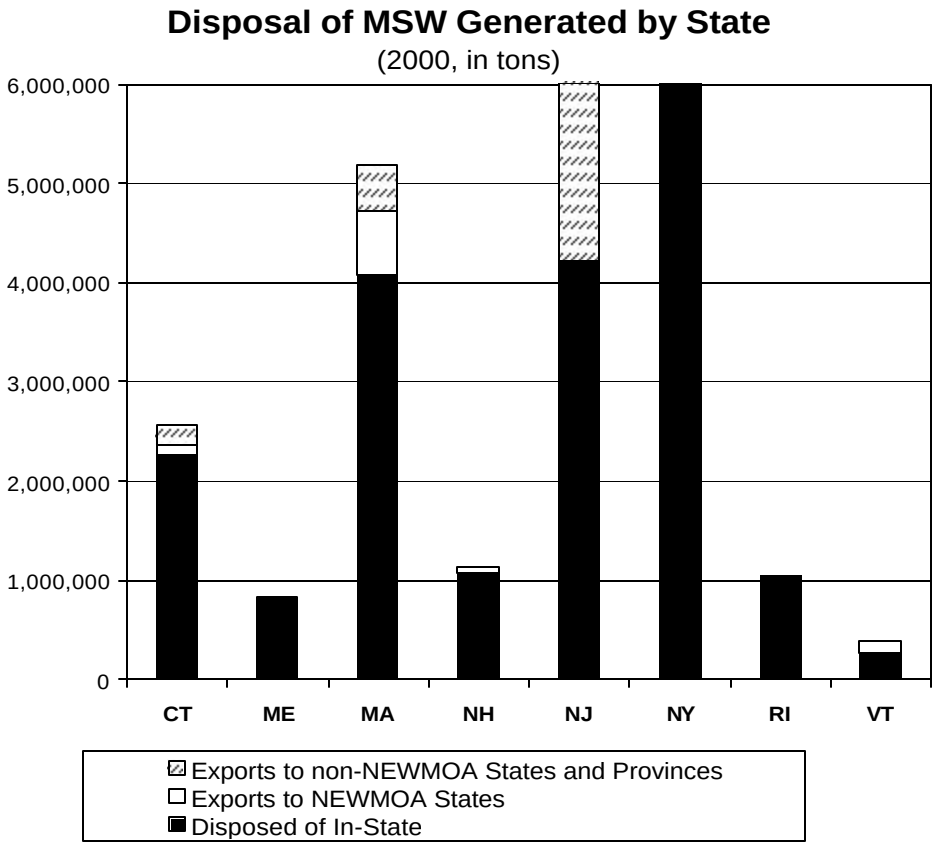


Figure 2

*For New Jersey:

Exports to non-NEWMOA states and provinces = 1.46 million tons

* For New York:

Disposed of In-state = 11.6 million tons
Exports to NEWMOA states = 544,181 tons
Exports to non-NEWMOA states and provinces = 5.18 million tons

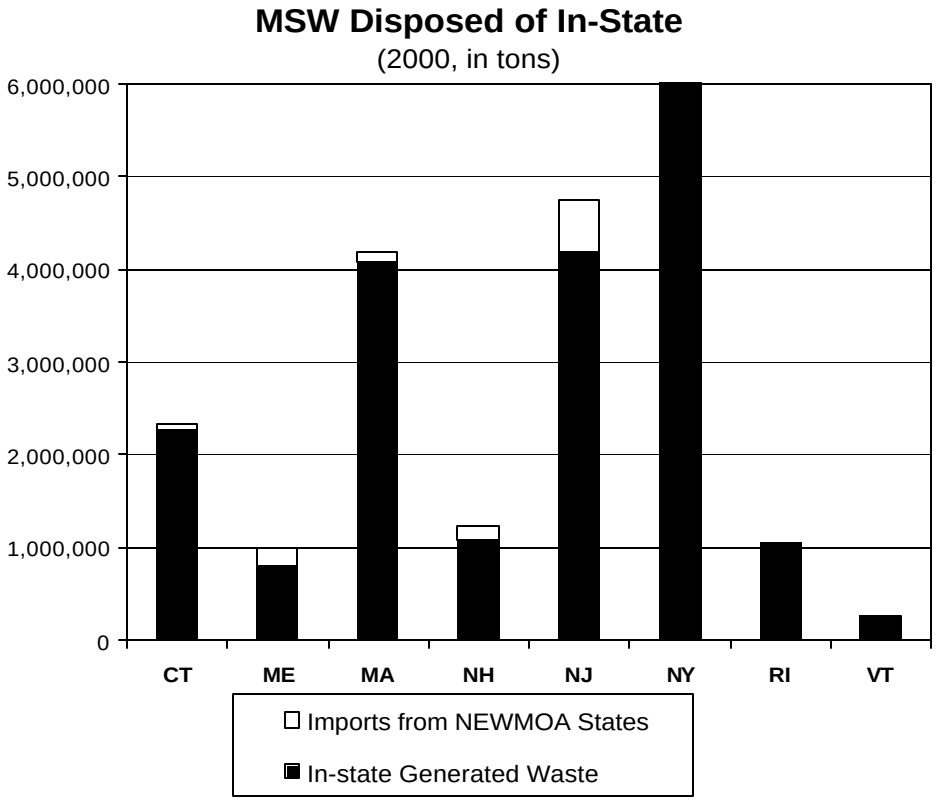


Figure 3

***** For New York:

In-state generated MSW = 11.6 million tons

Imports from NEWMOA states = 401,169 tons

Imports from other states and provinces = 148,595 tons

Normalize for Population

The population of the various northeastern states differs greatly, from 18,976,457 million in New York to just 608,827 in Vermont. Correlating the data shown in Figures 2 and 3 with population can provide additional information about waste generation and management in the states. Table 1 normalizes the data in Figures 2 and 3 to account for the differences in population among the NEWMOA states. The third and fourth columns show the per capita quantity of MSW generated in a state that is disposed, including exports using the data shown in Figure 2. The fifth column shows the per capita quantity of MSW that is disposed of in the state, including imports, using the data shown in Figure 3.

Table 1: Data Normalized for Population

State	2000 Population (Source: U.S. Census Bureau)	1999 Per Capita MSW Disposed (tons/year)[2]	2000 Per Capita MSW Disposed (tons/year)	2000 Per Capita MSW Disposed of At Facilities in the State (tons/year)
Connecticut	3,405,565	0.73	0.75	0.69
Maine	1,274,923	0.69	0.64	0.77
Massachusetts	6,349,097	0.81	0.82	0.66
New Hampshire	1,235,786	0.87	0.92	1.03
New Jersey	8,414,350	0.66	0.68	0.56
New York	18,976,457	0.98	0.91	0.64
Rhode Island	1,048,319	1.01	1.01	1.01
Vermont	608,827	0.62	0.64	0.44

The data in Table 1 illustrates whether a state imported or exported a significant portion of its MSW in 2000. If the numbers in column 4 and 5 are equal, then the MSW flow would be at equilibrium, meaning that imports and exports are equivalent. This would mean that facilities in the state are disposing of a volume of MSW equivalent to the quantity generated in the state that requires disposal. A decrease between column 4 and column 5 indicates that in-state generated MSW is sent out-of-state for disposal. Conversely, an increase indicates that a portion of the MSW disposed of in the state is imported from other states. Table 1 clearly shows that Maine and New Hampshire import more MSW than they export, while the other six states export much more than they import.

As the third and fourth columns of the table indicate, the per-capita amount of MSW generated in the state that is disposed of varies among the states. These differences could be attributable to a combination of the following factors:

[2] 1999 data was calculated using US Census Bureau Estimated Population for 1999 (extrapolated from the 1990 census) to be consistent with individual states reporting for 1999.

- different state demographics: the proportions of commercial, industrial, agricultural and residential MSW generation vary among states;

- the definition of MSW differs among states (what gets included in the numbers);

- the type of data that is collected from facilities varies among states (the accuracy of the numbers);

- the quantity of MSW that is generated per capita could vary among states. For example, there are differences between rural and urban area MSW generation rates. Income levels have also been shown to influence waste generation rates; and/or

- the proportion of MSW that is recycled varies among the northeast states.[3]

In general, when comparing the per-capita MSW disposed data for 1999 to 2000, it is important to factor in that the population numbers used to calculate per-capita were not the same. In all states, the estimated 1999 population was less than the census population in 2000. The increased population would tend to reduce the per-capita numbers for 2000. This effect is greatest in New York where the population figure was the most changed between 1999 and 2000, adding over 779,800 people (a 4.3 percent increase) and in Connecticut, which had a 4 percent increase. However, increased population is not the only factor affecting per capita numbers in 1999 and 2000. For example, all of the NEWMOA states have reported stagnant or decreasing recycling rates. Less recycling increases the amount of waste requiring disposal, raising per capita figures.

A state-by-state discussion of the 1999 and 2000 per capita MSW generated in a state that requires disposal (in state and exports) in the third and fourth columns of Table 1 is presented below:

Connecticut: At 0.75, the per capita MSW disposal rate is on the low side for the NEWMOA states and is similar to rates in Maine and New Jersey. The increase from 0.73 to 0.75 from 1999 to 2000 is most likely due to increased consumption in the strong economy and the inclusion of 44,000 tons reported as Connecticut waste by a Massachusetts landfill that was not reported as exported from a Connecticut transfer station. This was most likely direct haul and was not detected in 1999 data.

Maine: At 0.64, the per capita MSW disposal rate is the lowest of the NEWMOA states and is the same as the Vermont rate. The significant decrease from 1999 to 2000 (0.05 tons or 100 pounds re person) is attributed to decreased disposal of in-state MSW at an incinerator in southern Maine. This incinerator reported a corresponding increase in out-of-state waste from 1999 to 2000. It is possible that an out of state hauler collected MSW in southern Maine leading to in-state MSW being labeled as out of state MSW at the incinerator in 2000.

Massachusetts: At 0.82, the per capita MSW disposal rate is on the higher side of the NEWMOA states, 0.07 tons per person higher than Connecticut and 0.09 tons lower than New York. The slight increase between 1999 and 2000 could be due to increased consumption in the strong economy.

[3] More information about recycling in the Northeast states can be obtained in the Northeast Recycling Coalition (NERC) report, *Northeast States Recycling Data Collection Programs*, 2000, available at www.nerc.org.

New Hampshire: At 0.92, the per capita MSW disposal rate is on the high side, particularly when compared to other northern NEWMOA states such as Maine and Vermont, or even Connecticut and Massachusetts. New Hampshire attributes their high rate to a comparably low recycling rate. New Hampshire believes the significant increase from 1999 to 2000 (0.05 tons or 100 pounds per person) could indicate an increase in the amount of out of state waste that is entering New Hampshire transfer stations, and is therefore being recorded as in-state waste by New Hampshire disposal facilities, artificially inflating the per capita figure. Other factors could be increased consumption in the strong economy and decreased recycling and composting rates.

New Jersey: At 0.68, the per capita MSW disposal rate is on the low side for the NEWMOA states, higher than Maine and Vermont, but lower than Connecticut. The increase between 1999 and 2000 from 0.66 to 0.68 could be due to increased consumption in the strong economy.

Rhode Island: At 1.01, the per capita MSW disposal is the highest of the NEWMOA states by a significant margin. This could indicate that out of state waste is being recorded as in state waste by Rhode Island disposal facilities, artificially inflating the per capita numbers.

Vermont: At 0.64, the per capita MSW disposal rate is the lowest of the NEWMOA states and is the same as Maine. Vermont attributes this low rate to the overall rural nature of the state and successful recycling programs in the more populated areas. The increase from 0.62 to 0.64 from 1999 to 2000 is most likely due to increased consumption in the strong economy.

Comparison of Data from 1999 and 2000

The following figures compare the overall 1999 and 2000 import and export data for each NEWMOA state.[4] More detail on comparisons of state-to-state data is contained in each of the following state-specific sections. Figure 4 shows a comparison of MSW imported from NEWMOA states into each state for 1999 and 2000. As can be seen from Figure 4, imports from NEWMOA states decreased significantly in New Hampshire and increased significantly in New York. Both trends can be attributed to changes in the flow of MSW from Massachusetts. The reduction in MSW imports to Connecticut resulted from a corresponding increase in the disposal of in-state generated MSW by Connecticut facilities.

Figure 5 shows a comparison of MSW exported from each state to other NEWMOA states for 1999 and 2000. There is not much change other than the reduction in exports to NEWMOA states from Massachusetts. As can be seen by examining Figure 6, this reduction is accounted for by an increase in exports from Massachusetts to non-NEWMOA states in 2000.

[4] It should be noted that, as discussed earlier, for all states, there can be significant differences between the data provided by the "home" state and the data provided by the importing/exporting state. For the purposes of these comparison graphs, data from disposal facilities is used, as it is assumed to be more accurate than data from exporting transport facilities.

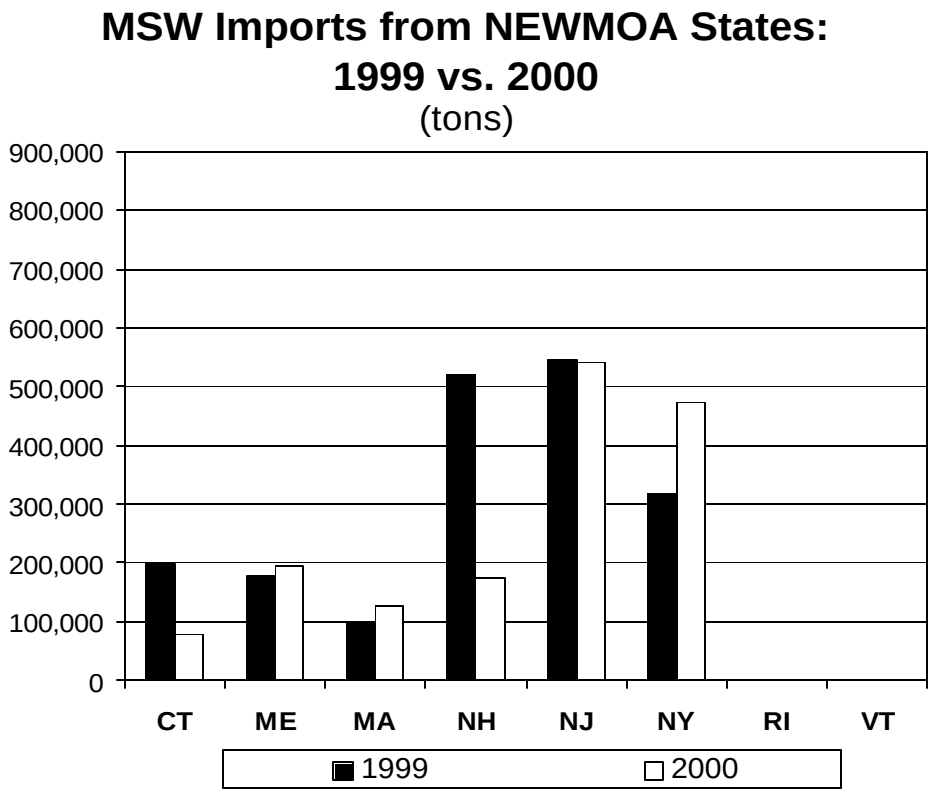

MSW Imports from NEWMOA States:
1999 vs. 2000
(tons)
900,000
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
CT
ME
MA
NH
NJ
NY
RI
VT
1999
2000

Figure 4

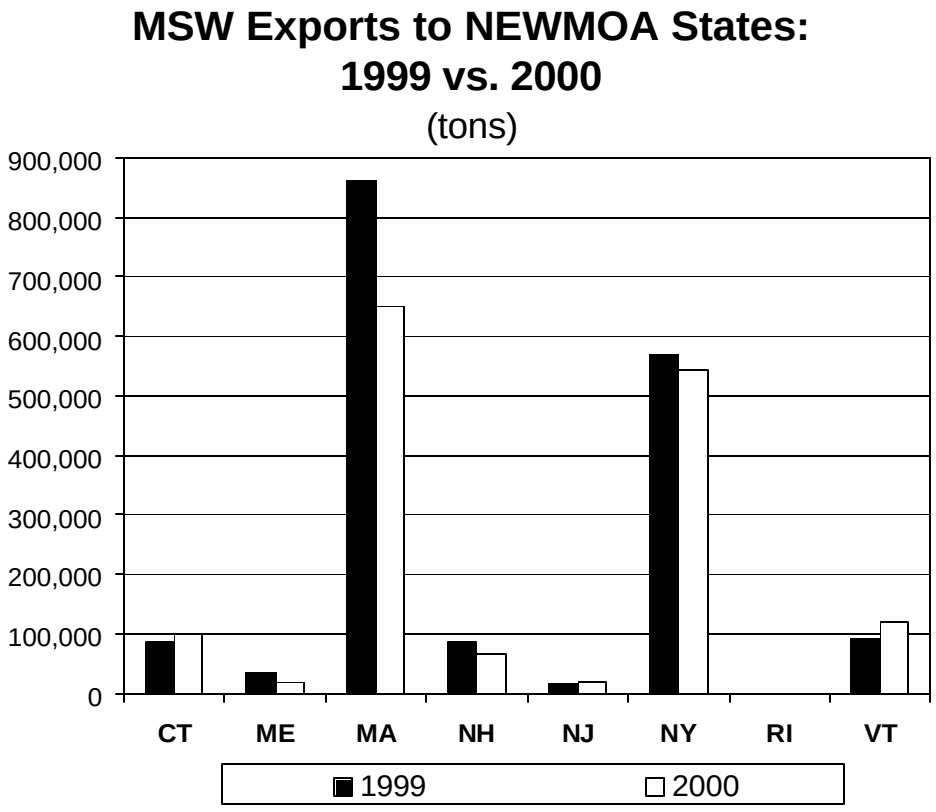


Figure 5

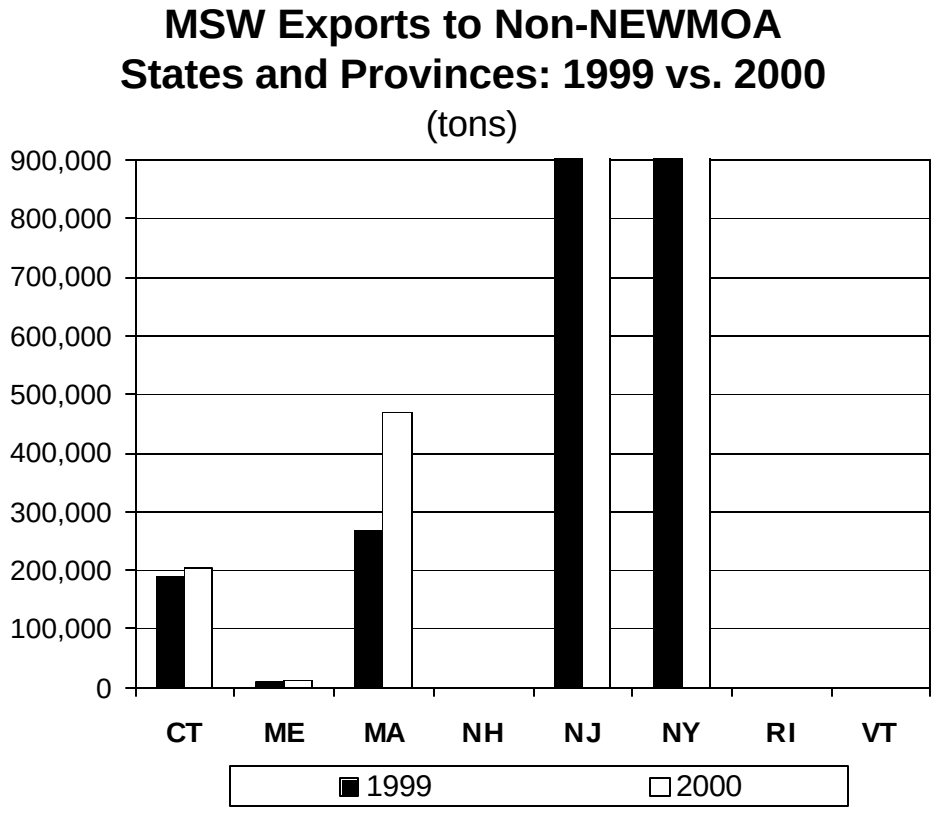


Figure 6

*For New Jersey:

Exports to non-NEWMOA states and provinces in 1999– 1.49 million tons

Exports to non-NEWMOA states and provinces in 2000– 1.46 million tons

*For New York:

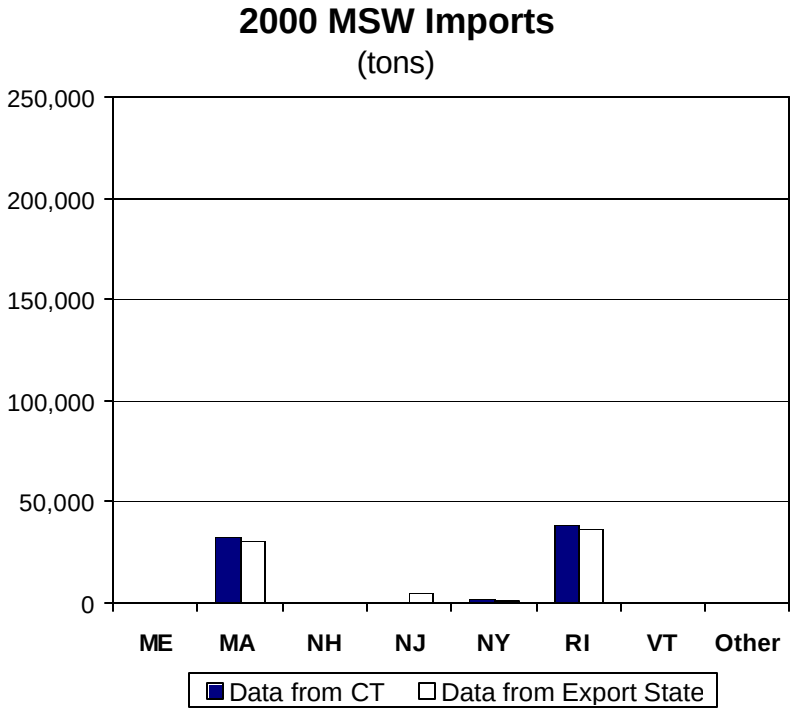
Exports to non-NEWMOA states and provinces in 1999– 5.01 million tons

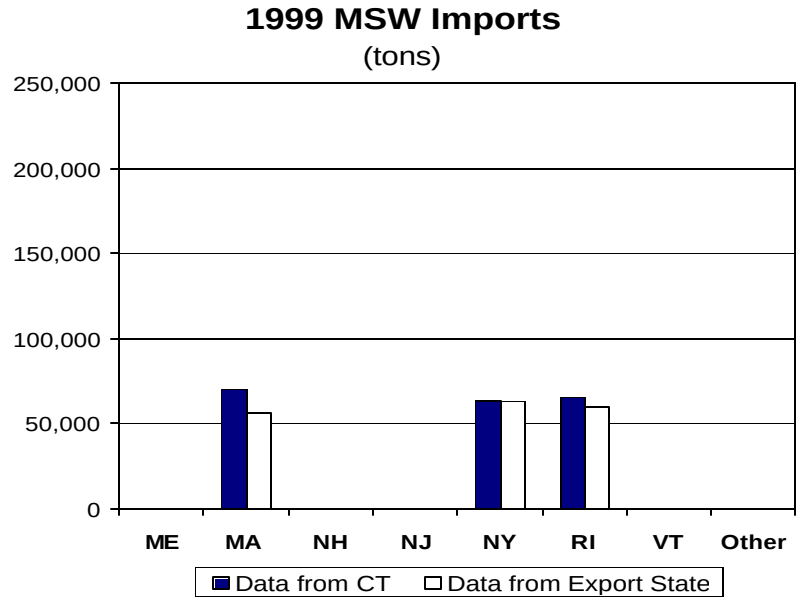
Exports to non-NEWMOA states

and provinces in 2000– 5.18 million tons

Connecticut

Connecticut disposed of 2.3 million tons of municipal solid waste (MSW) generated from in-state sources in 2000: 164,000 tons at landfills and 2.1 million tons at waste-to-energy (WTE) facilities. In terms of MSW imports and exports, Connecticut is a net exporter, sending more waste out-of-state than it accepts from other states. However, when only the NEWMOA states are considered, Connecticut becomes a net importer of waste, accepting more MSW from the NEWMOA states than it exports to NEWMOA states. According to Department of Environmental Protection (DEP) records, Connecticut WTEs imported 72,715 tons of MSW generated from other NEWMOA states. Facilities in Connecticut did not import MSW from a non-NEWMOA state in 2000. A state-by-state breakdown of imports in 2000 and in 1999 is shown in the figures below.



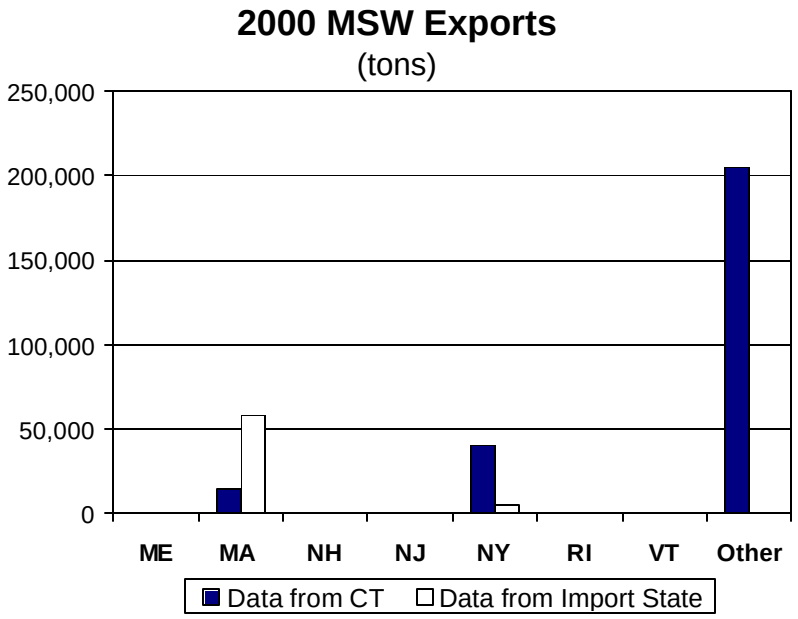


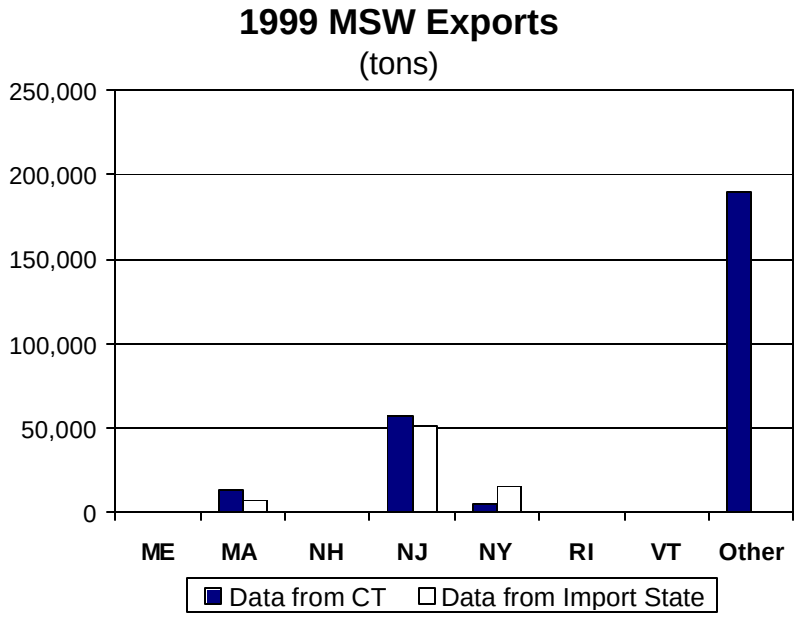
According to DEP records from Connecticut transfer stations and resource recovery facilities, in 2000, facilities in Connecticut exported 54,598 tons of MSW (approximately 54,156 tons of which was generated within Connecticut) to disposal facilities located in NEWMOA states and 248,125 tons of MSW (approximately 204,701 tons of which was generated within Connecticut)[5] to facilities located in non-NEWMOA states.6 A state-by-state breakdown of Connecticut's exports to NEWMOA states for 2000 and 1999 is shown in the figures on the following page.

Data Collection Summary

[5] The remainder is out of state MSW that entered Connecticut transfer stations and was re-exported.
[6] Disposal facilities in Ohio and Pennsylvania together report receiving a significantly greater quantity of MSW from Connecticut.

All solid waste transfer stations are required to report quarterly to the DEP. The reports contain monthly summaries of the amount, type, and source of material received and the monthly summaries of the amount, type and destination of material transferred. All WTEs and landfills are also required to report quarterly. Those reports contain monthly data on the type, amount and origin of waste received for disposal and, additionally for WTEs, the amount, type and destination of any material sent out of the facility (such as ash and by-pass waste).





Discussion of 2000 Data

Import Data: Connecticut numbers correlate well with numbers reported by other states.

Export Data: Connecticut facilities report sending approximately 44,000 less tons of MSW to Massachusetts facilities than Massachusetts reports disposing of from Connecticut. There could be some MSW that is hauled directly to disposal facilities in Massachusetts. Generally, data from disposal facilities is considered to be more accurate than data from transfer stations, so the Massachusetts figures are more likely to be correct. Connecticut facilities report sending approximately 35,000 more tons of MSW to New York facilities than New York facilities report disposing of from Connecticut. There is little motivation for a transfer facility to over report exports, therefore, when transfer station data exceeds disposal facility data, the higher number is more likely to be accurate. The difference could result from Connecticut MSW being sent to a New York transfer station prior to disposal. The New York disposal facility would then report the waste as New York MSW.

Comparison of Data from 1999 to 2000

In-state disposal of MSW generated from Connecticut sources increased by 136,000 tons between 1999 and 2000. Import and export comparisons for the two years are described below, along with the source of the data being compared.

Import Data: The total amount of MSW imported by Connecticut decreased by 126,000 tons (63%) between 1999 and 2000, from 199,168 tons to 72,715 tons. This difference was determined by using the data provided by Connecticut disposal facilities in both years. Imports from Massachusetts decreased by 37,000 tons. Imports from New York decreased by 61,000 tons. Imports from Rhode Island decreased by 27,000 tons. Transfer station data from export states correlates fairly well and is also considered less accurate than disposal facility data.

Export Data: The total amount of Connecticut-generated MSW exported by Connecticut through Connecticut transfer stations and resource recovery facilities decreased by approximately 7,000 tons (3%) between 1999 and 2000, from 266,232 tons to 258,857 tons. This difference was determined by using the data provided by Connecticut transfer stations and resource recovery facilities in both years. According to DEP records, Connecticut MSW exports to Massachusetts remained relatively constant between 1999 and 2000. However, if Massachusetts disposal facility reports are used, exports from Connecticut to Massachusetts increased by 45,000 tons between 1999 and 2000. As mentioned previously, there could be some direct haul and the data from disposal facilities is likely to be more accurate. Exports to New York increased by 34,000 tons between 1999 and 2000. For New York, these general trends and relative changes in data hold when disposal facility data in the importing state is examined. Exports to non-NEWMOA states increased by approximately 15,000 tons between 1999 and 2000.

Capacity Summary of Facilities that Accepted Out-Of-State MSW in 2000

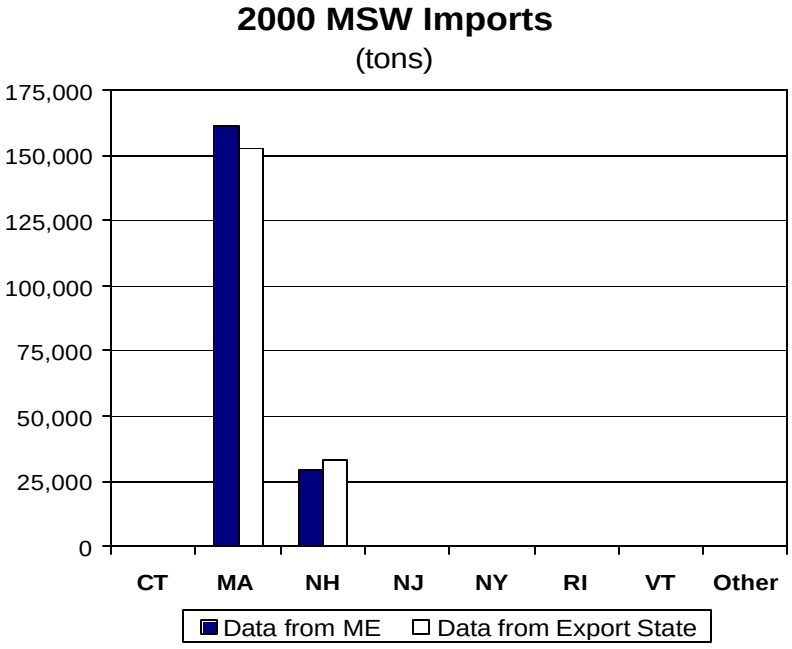
Connecticut has six resource recovery facilities (RRFs) that accepted MSW from out of state in 2000 (this does not include the tire RRF). Combined, these facilities have a permitted design capacity of 7,358 tons per day. Combined, these facilities received approximately 2.3 million tons of MSW in 2000, of which approximately 73,000 was from other NEWMOA states.

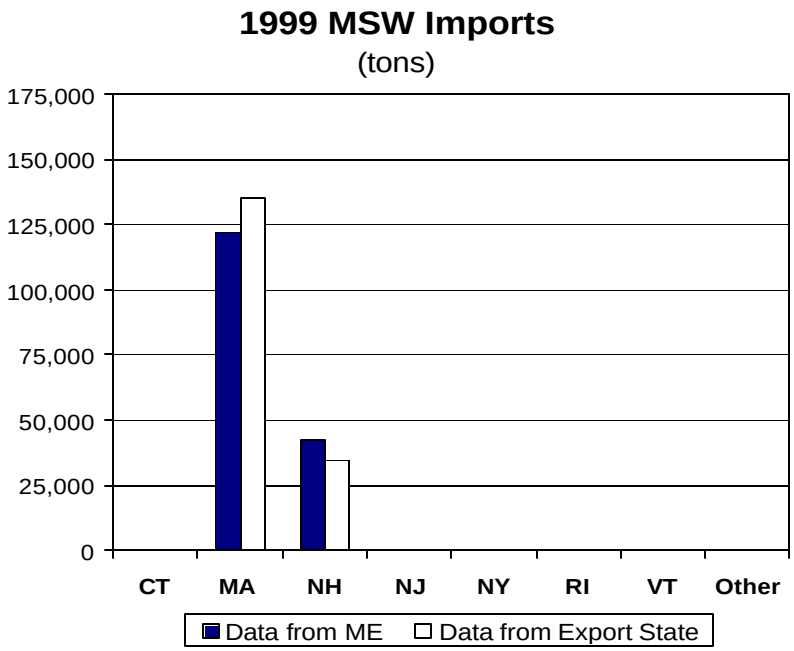
Recent Changes in Connecticut

None reported.

Maine

Maine disposed of 792,047 tons of municipal solid waste (MSW) generated from in-state sources in 2000: 188,502 tons at landfills and 603,545 tons at waste-to-energy (WTE) facilities. In terms of MSW imports and exports, Maine is a net importer, accepting significantly more waste from out-of-state than it sends to other states. According to Department of Environmental Protection (DEP) records, facilities in Maine imported 191,007 tons of MSW generated from other NEWMOA states: 25,000 tons to landfills and 166,007 tons to WTEs. Maine did not import MSW from a non-NEWMOA state in 2000. A state-by-state breakdown of Maine's imports for 2000 and for 1999 is shown in the figures below.





Maine does not require reporting of the amount of waste exported, so has no "official" export data. Facilities in New Brunswick, Canada have verbally reported receiving 11,568 tons of MSW from Maine in 2000. A state-by-state breakdown of Maine's out-of-state exports for 2000 and 1999 is shown in the figures on the following page.

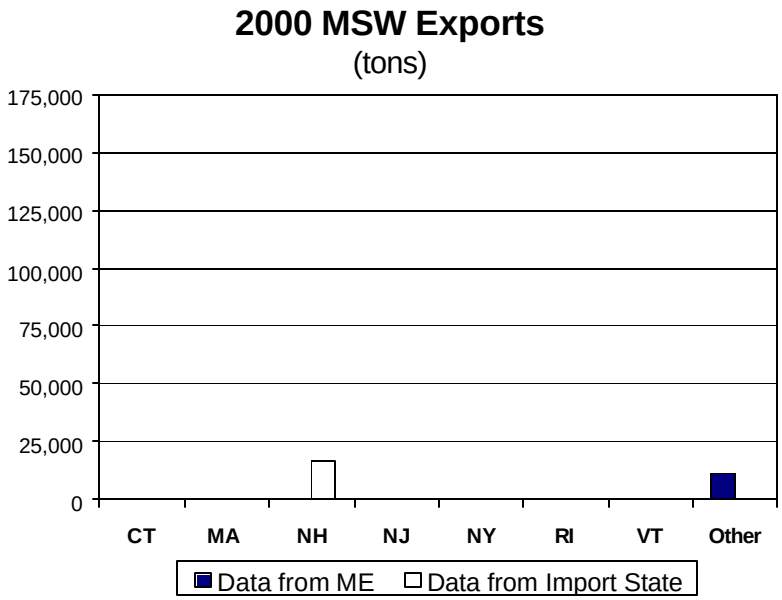
Data Collection Summary

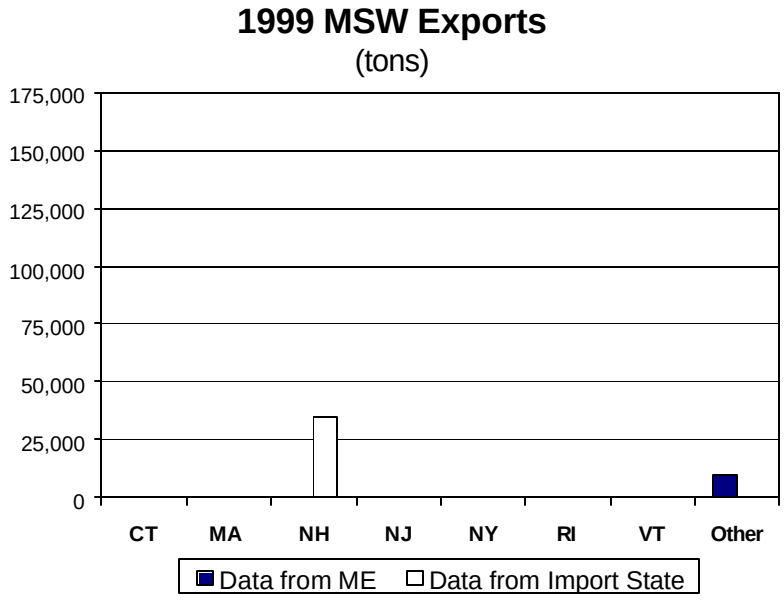
Maine's imported waste information is collected from annual reports, review of the facility's license, and phone conversations with the facilities and DEP project managers. Landfills are required to submit an annual report that includes a summary of the type, quantity, and origin of waste received, and estimates of the capacity of the landfill used during the past year as well as the landfill's remaining capacity.

Incinerators are required to submit an annual report to DEP that includes a summary of the wastes accepted for incineration, the amounts and destinations of residues and ash generated by the facility, and a demonstration that sufficient disposal capacity is guaranteed for the ash and residues expected to be generated

during the next year. Incinerators are also required to submit an annual report to the Maine State Planning Office delineating the amount of waste received from each state, the amount recycled, and the amount of ash generated.

Maine has no reporting requirements for collecting export numbers from transporters or transfer stations.





Discussion of 2000 Data

Import Data: Maine facilities report receiving approximately 8,590 tons more MSW than Massachusetts facilities reported sending. This small difference could result from a lack of data from small transfer stations in Massachusetts. Maine numbers correlate well with numbers from New Hampshire.

Export Data: Maine has no system for collecting MSW export numbers from their transfer stations. However, the DEP does call a landfill in New Brunswick to determine how much Maine MSW was sent during the previous year. The data provided by New Hampshire is the only other export number available and is likely to be accurate. No other state reports receiving MSW from Maine.

Comparison of Data from 1999 to 2000

In-state disposal of MSW generated from Maine sources appears to have decreased by 21,885 tons between 1999 and 2000.

Import Data: The total amount of MSW imported by Maine increased by 26,000 tons (16%) between 1999 and 2000 from 164,536 tons to 191,007 tons. This difference was determined by using the data provided by Maine disposal facilities in both years. Maine imports from Massachusetts increased by 39,450 tons between 1999 and 2000. Imports from New Hampshire decreased by almost 13,000 tons between 1999 and 2000.

Export Data: The total amount of MSW exported by Maine decreased by 17,000 tons (37%) between 1999 and 2000 from 45,571 tons to 28,625 tons. This difference was determined by using the data provided by the receiving facilities in Canada and New Hampshire due to the fact that Maine does not collect export information

from transfer stations. Exports to New Hampshire decreased by 18,000 tons between 1999 and 2000. Exports to the landfill in New Brunswick remained relatively constant between 1999 and 2000.

Capacity Summary of Facilities that Accepted Out-Of-State MSW in 2000

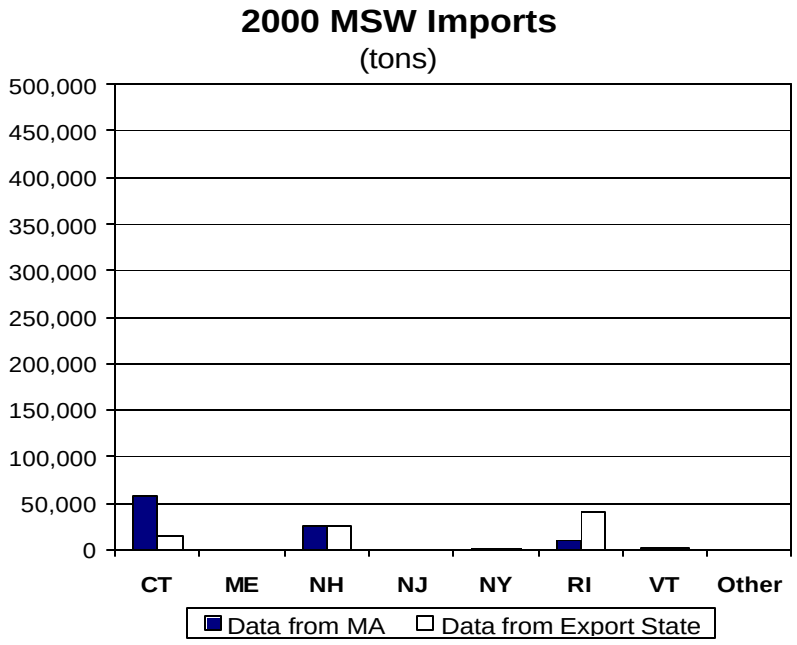
Maine has one landfill that accepted out-of-state MSW in 2000. The total quantity of waste (MSW and C&D) accepted at that landfill was 216,989 tons with 25,000 tons coming from out-of-state. Maine has two WTE facilities that accepted out-of-state MSW in 2000. Combined, these facilities are licensed to process 2,000 tons per day and processed 769,902 tons of MSW in 2000; 166,007 tons of which was from out-of-state.

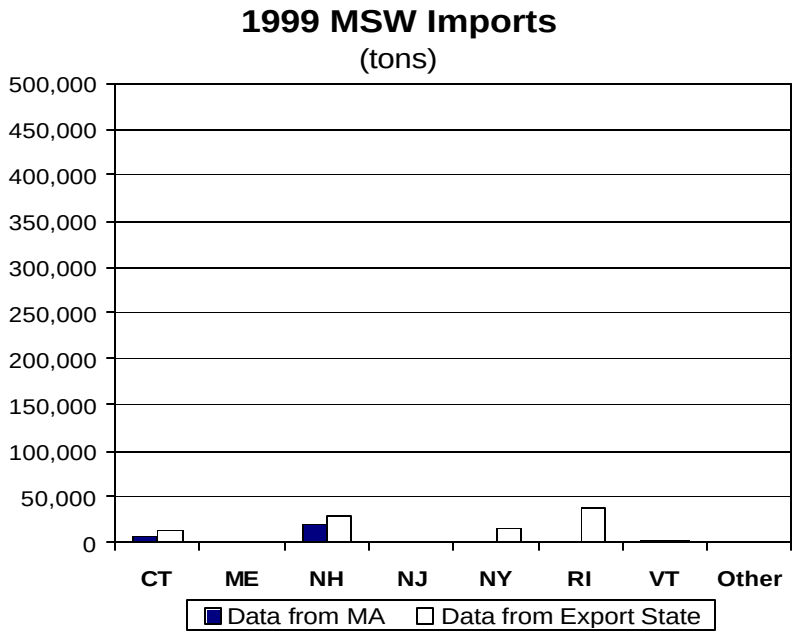
Recent Changes in Maine

There have not been any recent MSW capacity or policy changes in Maine. Existing landfills are proposing expansions to continue to handle MSW at the current rates. The Maine Department of Environmental Protection is proposing rule changes for 2002 that are designed to help track interstate waste flows.

Massachusetts

Massachusetts disposed of 4,069,137 tons of municipal solid waste (MSW) generated from in-state sources in 2000: 921,271 tons at landfills and 3,147,866 tons at waste-to-energy (WTE) facilities. In terms of MSW imports and exports, Massachusetts is a net exporter, sending significantly more waste out-of-state than it accepts from other states. According to Department of Environmental Protection (DEP) records, facilities in Massachusetts imported 95,700 tons of MSW generated from other NEWMOA states: 69,380 tons to landfills and 26,320 tons to WTEs. Massachusetts did not import MSW from a non-NEWMOA state in 2000. A state-by-state breakdown of Massachusetts' imports is shown in the figures below.





According to DEP records, in 2000, facilities in Massachusetts exported 589,770 tons of MSW to disposal facilities located in NEWMOA states and 468,895 tons of MSW to facilities located in non-NEWMOA states. A state-by-state breakdown of Massachusetts' exports is shown in the figures on the following page.

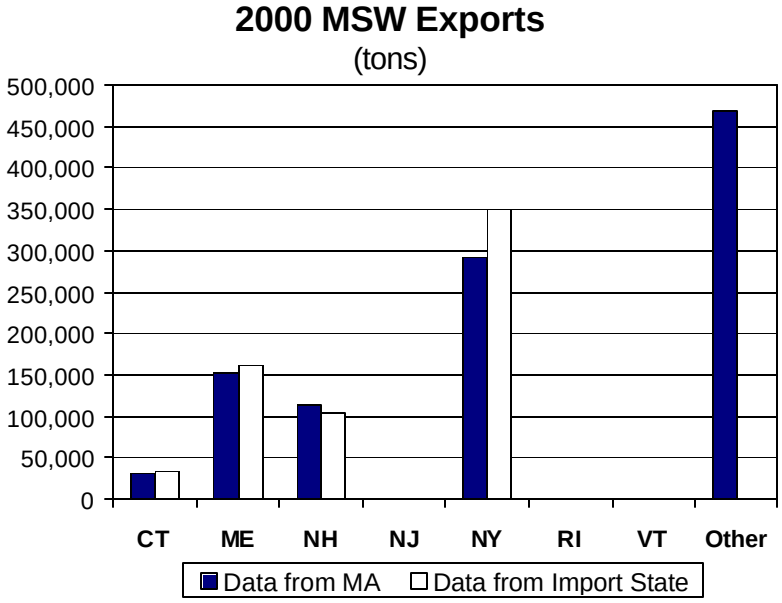
Data Collection Summary

Massachusetts requires that all landfills, WTEs and transfer stations submit annual report forms to the DEP that include the type, tons, and state-of-origin of all waste accepted. Transfer stations must also report the type, tons, and destination facility name, town and state for all materials leaving the transfer station. Enforcement action is taken for non-reporting and therefore, the response rate from facilities is high. All annual reports are checked by DEP for accuracy, including contacting other states.

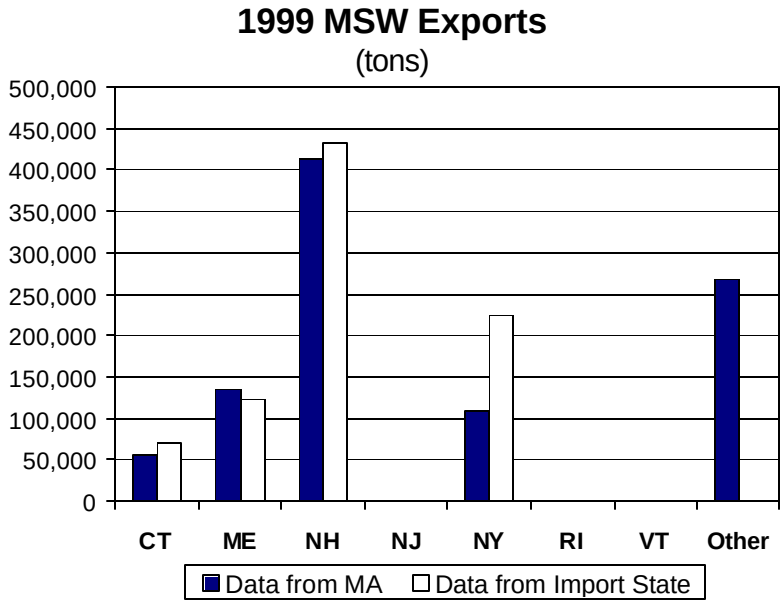
Discussion of 2000 Data

Import Data: Massachusetts reports receiving 44,000 more tons of MSW from Connecticut than Connecticut facilities

report sending to Massachusetts. There could be some direct haul and ,generally, data from disposal facilities is considered to be more accurate than data from transfer stations, so the Massachusetts figures are more likely to be correct. Massachusetts data correlates well with data from New Hampshire and New York. Massachusetts reports receiving 31,000 less tons of MSW from Rhode Island than Rhode Island facilities report sending to Massachusetts. There is little motivation for a transfer facility to over report exports, therefore, when transfer station data exceeds disposal facility data, the higher number is more likely to be accurate. The difference could result from Rhode Island MSW being sent to a Massachusetts transfer station prior to disposal. The Massachusetts disposal facility would then report the waste as Massachusetts MSW.



Export Data: Massachusetts reported sending approximately 44,000 tons more MSW to Maine than facilities in Maine report receiving. There is little motivation for a transfer facility to over report exports, therefore, when transfer station data exceeds disposal facility data, the higher number is more likely to be accurate. The difference could result from Massachusetts MSW being sent to a Maine transfer station prior to disposal. The Maine disposal facility would then report the waste as Maine MSW.



New York reports receiving 59,000 more tons of MSW from Massachusetts than Massachusetts reports exporting to New York. Although New York revised their facility report forms for 2000, the report from the largest landfill that accepts most of the out-of-state MSW still combines all waste types and therefore, the import numbers for that facility could include industrial, C&D, and/or other non-MSW wastes. The uncertainties inherent in transfer station reporting combined with the uncertainties regarding New York's import data lead to the conclusion that the quantity of MSW exported by Massachusetts is likely to be somewhere between the numbers that Massachusetts and New York report.

Comparison of Data from 1999 to 2000

In-state disposal of MSW generated from Massachusetts sources increased by 213,000 tons between 1999 and 2000.

Import Data: The total amount of MSW imported by Massachusetts increased by 67,000 (233%) tons between 1999 and 2000 from 28,777 tons to 95,700. This difference was determined by using the data provided by Massachusetts disposal facilities in both years. Imports from New York and Vermont remained relatively constant between 1999 and 2000. Imports from Connecticut increased by 51,000 tons between 1999 and 2000. Imports from New Hampshire increased by 6,000 tons between 1999 and 2000. Imports from Rhode Island increased by 9,000 tons between 1999 and 2000. Data from export states correlates fairly well and is also considered less accurate than disposal facility data.

Export Data: The total amount of MSW exported by Massachusetts increased by 74,000 tons (8%) between 1999 and 2000, from 984,558 tons to1,058,665 tons. This difference was determined by using the data provided by Massachusetts transfer stations in both years. Massachusetts exports to Connecticut decreased between 1999 and 2000 by 26,000 tons. Exports to New Hampshire decreased by almost 300,000 tons between 1999 and 2000. Exports to Maine increased by 17,000 tons and exports to New York increased by 182,000 tons between 1999 and 2000. Exports to non-NEWMOA states increased by 200,000 tons. These general trends and relative changes in data hold when disposal facility data in the importing state is examined.

Capacity Summary of Facilities that Accepted Out-Of-State MSW in 2000

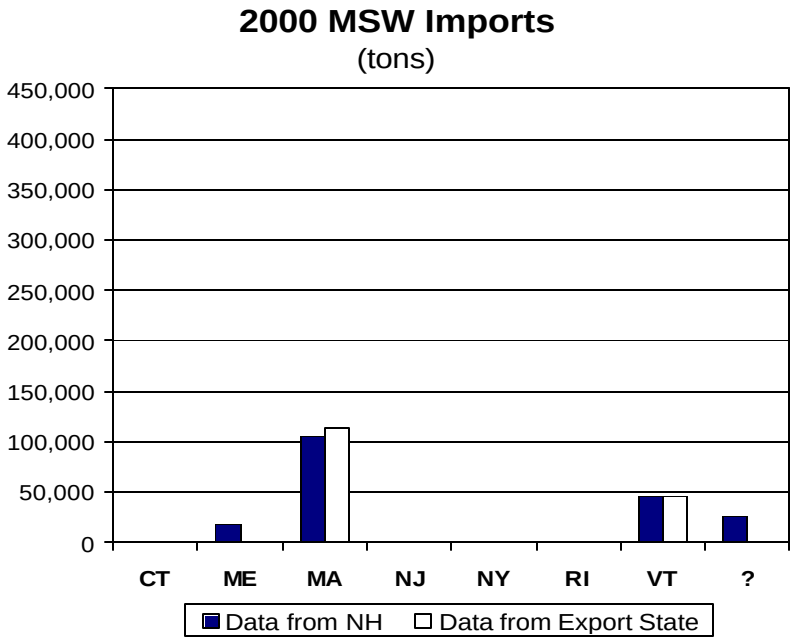
Massachusetts has five landfills that accepted out of state MSW in 2000. Combined, the total quantity of waste (MSW and C&D) accepted at the landfills was 645,361 tons with 77,604 tons coming from out-of-state. Massachusetts has four resource recovery facilities that processed out of state MSW in 2000. Combined, these facilities are licensed to process 4,950 tons per day and processed 1,908,058 tons of MSW (and 4042 tons of C&D waste) in 2000, 26,320 tons of which was MSW from other NEWMOA states.

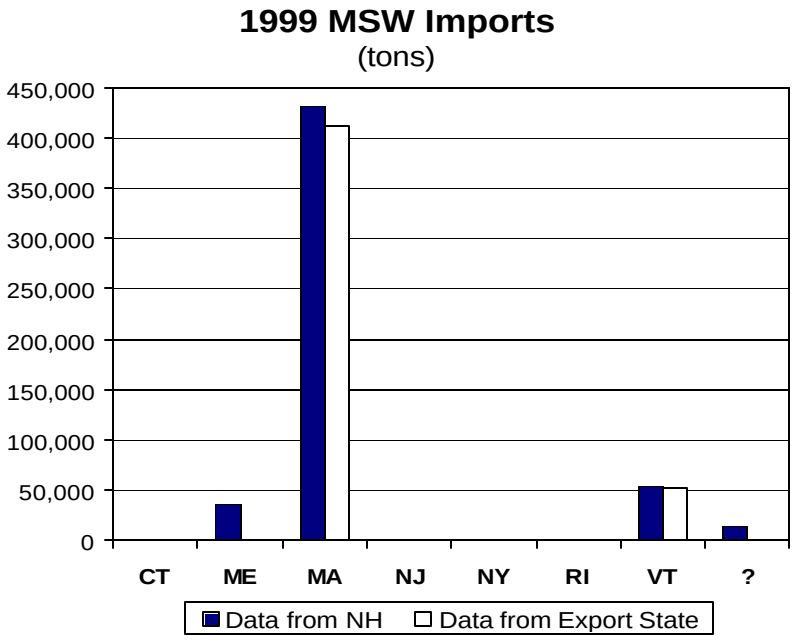
Recent Changes in Massachusetts

In December 2000, DEP published the *Beyond 2000 Solid Waste Master Plan*. For the first time, DEP set an overall waste reduction goal of 70 percent. This goal combines diversion achieved through both recycling and source reduction, and accounts for both MSW and non-MSW. The Beyond 2000 Plan includes a comprehensive strategy for source reduction, recycling, and toxicity reduction to meet both the 70 percent waste reduction goal and a goal of reducing the toxicity of Massachusetts' waste stream.

New Hampshire

New Hampshire disposed of 1,067,926 tons of municipal solid waste (MSW) generated from in-state sources in 2000: 836,265 tons at landfills and 231,661 tons at waste-to-energy (WTE) facilities. In terms of MSW imports versus exports, New Hampshire is a net importer, accepting more waste from out-of-state than it sends to other states. According to Department of Environmental Services (DES) records, in 2000 facilities in New Hampshire imported 192,235 tons of MSW generated from other NEWMOA states: 169,154 at landfills and 23,081 at WTEs. New Hampshire did not import MSW from a non-NEWMOA state in 2000. A state-by-state breakdown of New Hampshire's imports in 2000 and 1999 is shown in the figures below. New Hampshire's largest disposal facility itemizes by hauler or generator, and not by state. In most cases, DES is knowledgeable about service routes and can determine state of origin. However, there is approximately 25,000 tons of MSW that DES is unable to attribute to a specific state.



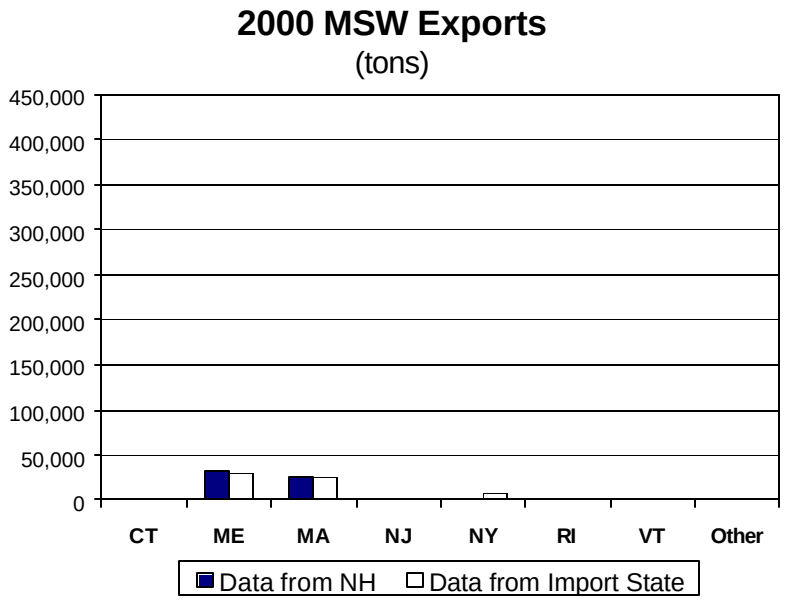


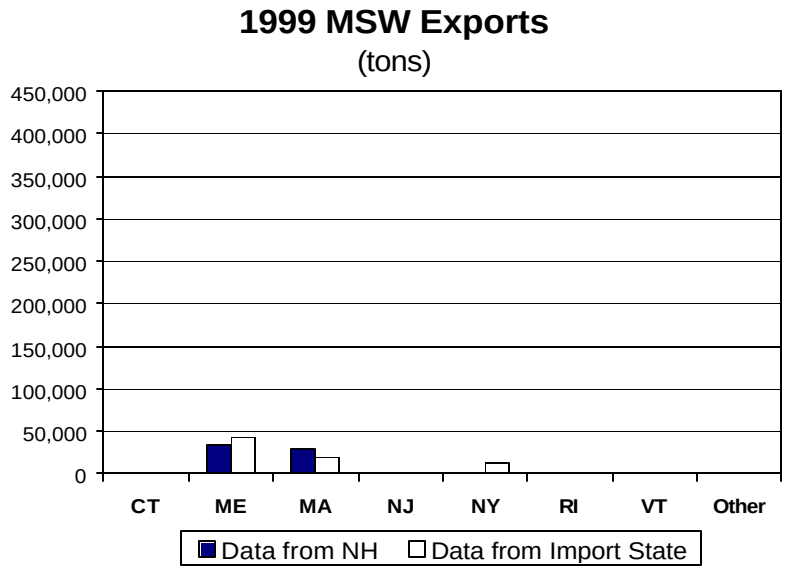
In 2000, facilities in New Hampshire exported 59,582 tons of MSW to disposal facilities located in NEWMOA states. New Hampshire did not export MSW to a non-NEWMOA state in 2000. A state-by-state breakdown of New Hampshire's exports to NEWMOA states in 2000 and 1999 is shown in the figures on the following page.

Data Collection Summary

The DES uses multiple sources of information to arrive at waste generation figures and to track the flow of incoming wastes. Of primary importance is the Annual Facility Report, which is required of all solid waste facilities, including collection and storage facilities. The report details waste generation, the markets and tonnages for recycling, level of composting, the tonnages of imports and the amounts and destination of exports. Once the report is received by

DES and verified for accuracy by staff, the information is entered into a database. The final numbers are compared for accuracy to the disposal amounts reported by in-state disposal facility figures, and the numbers from the disposal facilities are also compared to the data obtained from other states. Disposal facilities are also required to submit quarterly tonnage reports, which allows for real time estimates of imports and capacity. There is no tracking or permitting of solid waste haulers within New Hampshire.





Discussion of 2000 Data

Import Data: New Hampshire and Vermont numbers correlate well. Maine does not collect export information from transfer stations and therefore does not report sending MSW to New Hampshire, while New Hampshire reports receiving 17,000 tons of MSW from Maine.

Facilities in New Hampshire reported receiving approximately 9,000 tons of MSW less than facilities in Massachusetts report sending. There is little motivation for a transfer facility to over report exports, therefore, when transfer station data exceeds disposal facility data, the higher number is more likely to be accurate. The difference could result from Massachusetts MSW being sent to a New Hampshire transfer station prior to disposal. The New Hampshire disposal facility would most likely report the waste as New Hampshire MSW.

The department is attempting to seek clarification on the amount of material "directly hauled" to transfer stations and its ultimate destination. One transfer facility, which is located in Londonderry, New Hampshire, has reported approximately 116,000 tons of imported MSW received from other states. The department does not have information from the facility, which has recently changed management, regarding specific sources or the destinations of this waste. The department is seeking clarification on the tonnages, but suspects that most of the wastes were directly hauled from Massachusetts with the majority disposed in the Turnkey Facility in Rochester. This may mean that Massachusetts's import numbers are in fact higher than reported, and New Hampshire's per-capita disposal number in Table 1 on page 7 is artificially high. New Hampshire will be modifying its annual facility report to require more specific source (generating state) and destination data for the coming year.

Export Data: The figures reported by Maine and Massachusetts correlate well with New Hampshire figures. New York reports receiving 7,000 tons of MSW from New Hampshire, while New Hampshire reports sending no MSW to New York. Although New York revised their facility report forms for 2000, the report from the largest landfill that accepts most of the out-of-state MSW still combines all waste types and therefore, the import numbers for that facility could include industrial, C&D, and/or other non-MSW wastes. The uncertainties inherent in transfer station reporting combined with the uncertainties regarding New York's import data lead to the conclusion that it is likely that no New Hampshire MSW was sent to New York.

Comparison of Data from 1999 to 2000

In-state disposal of MSW generated from New Hampshire sources decreased by 55,000 tons between 1999 and 2000.

Import Data: The total amount of MSW imported by New Hampshire decreased by 343,000 tons (64%) between 1999 and 2000, from 535,030 tons to 192,235 tons. This difference was determined by using the data provided by New Hampshire disposal facilities in both years. Imports to New Hampshire from Maine decreased by 18,000 tons between 1999 and 2000. Imports from Massachusetts decreased by 328,000 tons and imports from Vermont decreased by 8,000 tons. Imports from unknown sources increased by 12,000 tons between 1999 and 2000. Data from export states correlates fairly well and is also considered less accurate than disposal facility data.

Export Data: The total amount of MSW exported by New Hampshire decreased by about 5,000 tons (7%) between 1999 and 2000, from 64,133 tons to 59,582 tons. This difference was determined by using the data provided by New Hampshire transfer stations in both years. Exports from New Hampshire remained relatively constant to all NEWMOA and non-NEWMOA states between 1999 and 2000. These general trends and relative changes in data hold when disposal facility data in the importing state is examined.

Capacity Summary of Facilities that Accepted Out-Of-State MSW in 2000

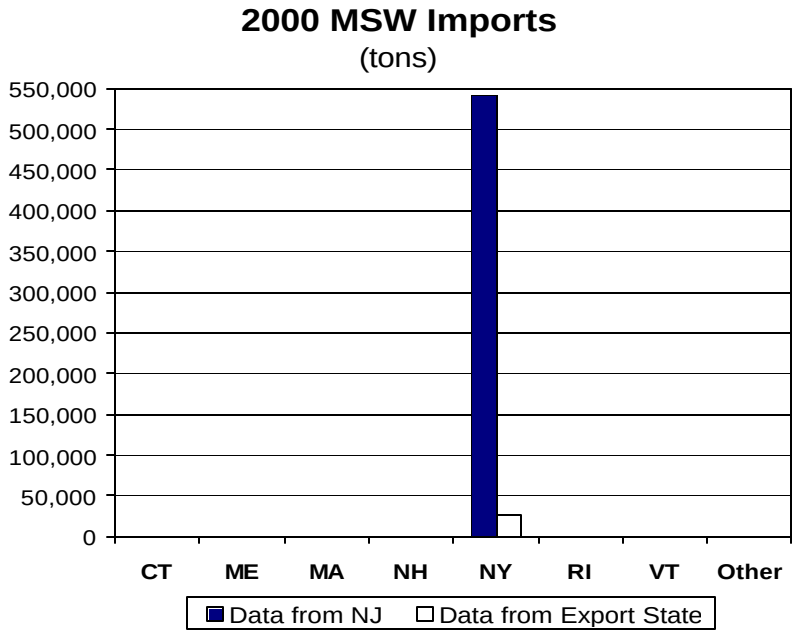
New Hampshire has four landfills that accepted MSW from out of state in 2000. Combined, the total quantity of waste (MSW and C&D) accepted at the landfills was 1,219,794 tons with 402,183 tons (including C&D waste) coming from other NEWMOA states. New Hampshire has one waste to energy facility that processed out of state MSW in 2000. This facility is licensed to process 200 tons per day and processed 68,991 tons of MSW in 2000; 23,081 tons of which was from other NEWMOA states (Vermont).

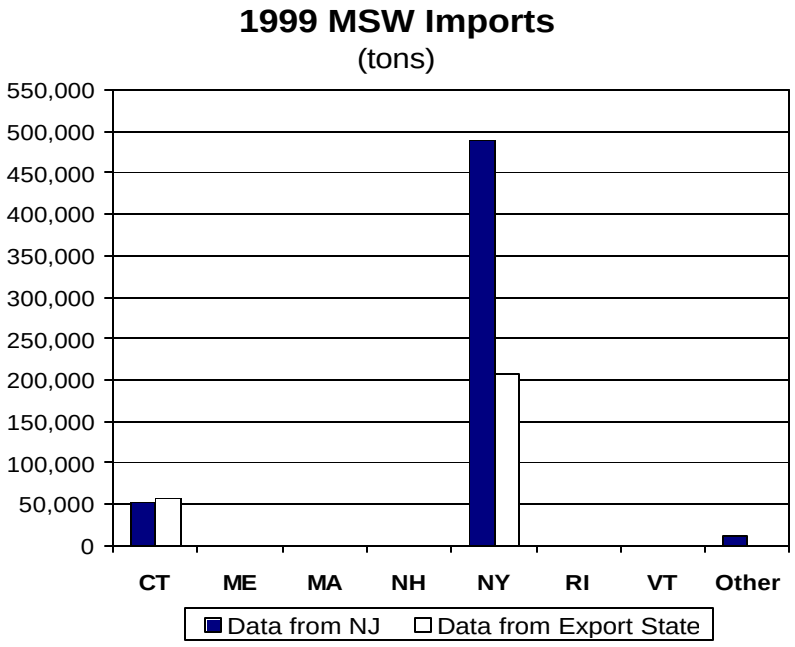
Recent Changes in New Hampshire

The Governor's Solid Waste task Force Report was released in 2001 and provides recommendations for extending capacity and strategies to maintain imports at a reasonable level. A cost analysis of solid waste both in New Hampshire and in the region is included with the report. The document can be downloaded for free by visiting the department's website at http://www.des.state.nh.us/pcas.

New Jersey

New Jersey disposed of 4.2 million tons of municipal solid waste (MSW) generated from in-state sources in 2000: 2.7 million tons at landfills and 1.5 million tons at waste-to-energy (WTE) facilities. In terms of MSW imports versus exports, New Jersey is a net exporter, sending more waste out-of-state than it accepts from other states. However, when only the NEWMOA states are considered, New Jersey is a net importer, accepting more waste from the NEWMOA states than it sends to NEWMOA states. According to Department of Environmental Protection (DEP) preliminary records, in 2000, facilities in New Jersey imported and disposed of 541,291 tons of MSW generated from other NEWMOA states, all from New York. A state-by-state breakdown of New Jersey's imports for 2000 and 1999 are shown in the figure below.





According to DEP records, in 2000 facilities in New Jersey exported 18,266 tons of MSW to disposal facilities located in NEWMOA states and 1.8 million tons to facilities located in non-NEWMOA states.[7] The 1.8 million figure includes 337,239 tons of New York generated MSW that passed through New Jersey transfer stations and was disposed of in Pennsylvania. A state-by-state breakdown of New Jersey's exports to NEWMOA states in 2000 and 1999 are shown in the figures on the next page.

Data Collection Summary

New Jersey State's import/export waste quantities are obtained from solid waste management facility monthly reports submitted to the DEP. New Jersey State's Solid Waste Regulations at NJAC 7:26 require each facility to submit monthly reports on forms acceptable to or provided by the Department. Items such

[7] Disposal facilities in Ohio and Pennsylvania together report receiving a significantly greater quantity of MSW from New Jersey.

as total waste quantity by type, remaining site life/capacity, groundwater/leachate quality, amount of leachate collected, gas migration, operational changes, and tipping fees are required by regulation. Each facility is requested to identify the waste origin indicating municipality, county, state, type and tons; and to identify the transfer or disposal destination indicating transfer/disposal facility, county, state, and tons.

Discussion of 2000 Data

Import Data: New Jersey facilities report receiving 534,000 more tons of MSW from New York for disposal than New York reports sending to New Jersey. There could be a significant quantity of MSW that is hauled directly from New York City to New Jersey for disposal. Generally, data from disposal facilities is considered to be more accurate than data from transfer stations, so the New Jersey figures are more likely to be correct.

Export Data: New Jersey reports sending 13,000 more tons of MSW to New York than New York facilities report receiving from New Jersey. There is little motivation for a transfer facility to over report exports, therefore, when transfer station data exceeds disposal facility data, the higher number is more likely to be accurate. The difference could result from New Jersey MSW being sent to a New York transfer station prior to disposal. The New York disposal facility would then report the waste as New York MSW.

Comparison of Data from 1999 to 2000

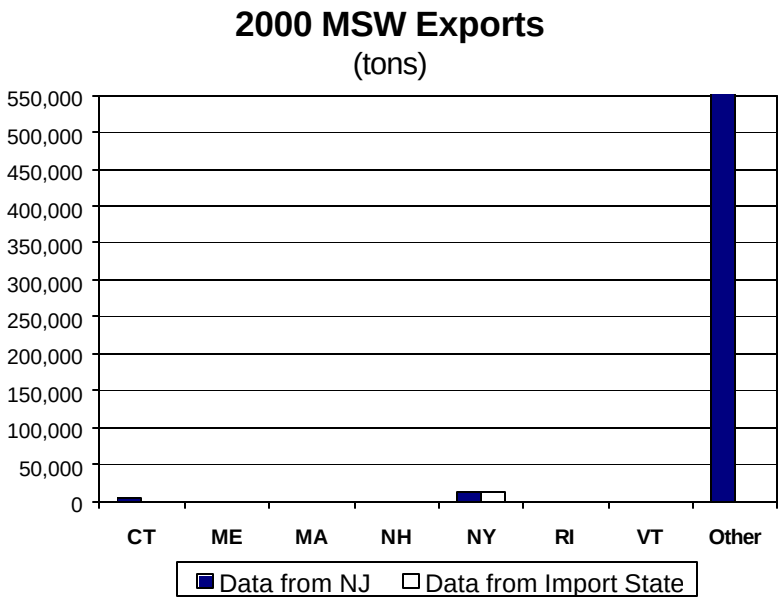
In-state disposal of MSW generated from New Jersey sources increased by 300,000 tins between 1999 and 2000, from 3.9 million tons to 4.2 million tons.

Import Data: The total amount of MSW imported by New Jersey decreased by approximately 11,000 tons (2%) between 1999 and 2000, from 552,019 tons to 541,291 tons. This difference was determined by using the data provided by New Jersey disposal facilities in both years. Imports from Connecticut fell from almost 52,000 to zero between 1999 and 2000. Imports from New York increased by approximately 53,000 tons between 1999 and 2000 and imports from non-NEWMOA states and provinces decreased by 12,000 tons. Data from export states correlates fairly well and is also considered less accurate than disposal facility data.

Export Data: The total amount of New Jersey-generated MSW exported by New Jersey through New Jersey transfer stations and resource recovery facilities decreased by approximately 21,700 (1%) between 1999 and 2000. This difference was determined by using the data provided by New Jersey transfer stations in both years. New Jersey exports to Connecticut increased by almost 5,000 tons (from no MSW to 4,795 tons). Exports to non-NEWMOA states and provinces decreased by 24,000 tons. Exports to New York remained relatively constant. These general trends and relative changes in data hold when disposal facility data in the importing state is examined, except that Connecticut reports receiving no MSW from New Jersey in 2000.

Capacity Summary of Facilities that Accepted Out-Of-State MSW in 2000

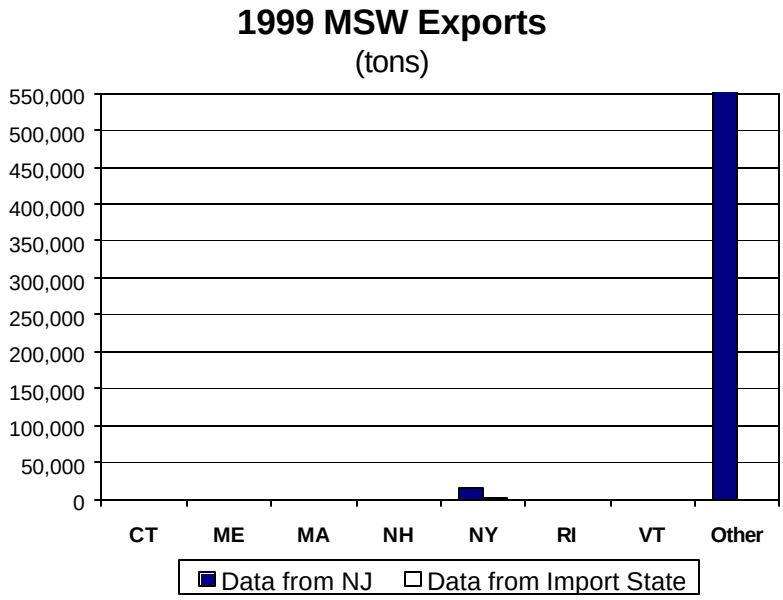
Only one landfill (Warren Landfill) in New Jersey accepted MSW from out-of-state (8,885 tons from New York). Also, while three incinerators in New Jersey reported accepting 532,406 tons of MSW from New York, the Essex Resource Recovery Facility accepted 473,508 tons of the total. The Essex Resource Recovery Facility has an annual capacity of 985,500 tons. The Union Resource Recovery facility and Warren Resource Recovery Facility accepted 58,898 tons of MSW from New York.



Recent Changes in New Jersey

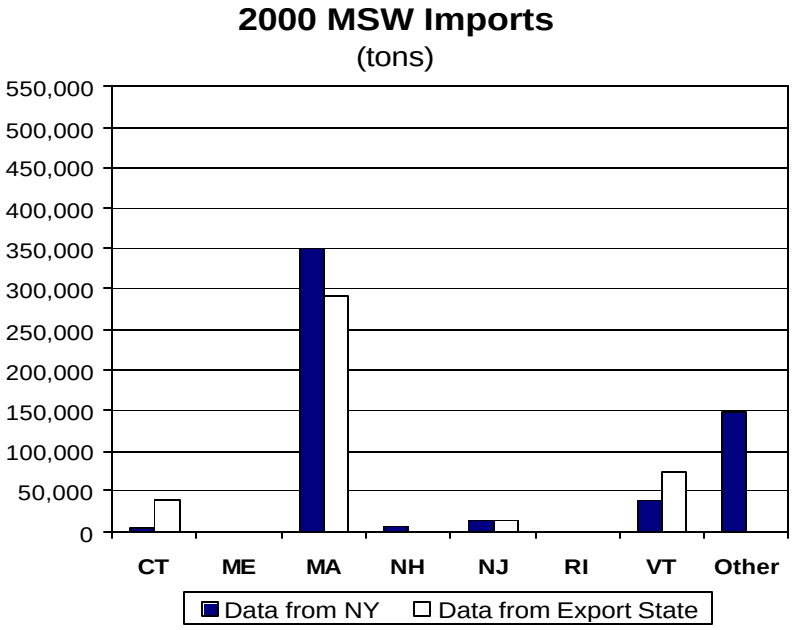
With the recent closure of the Fresh Kills Landfill in New York, New Jersey facilities are reporting an increased waste flow from New York from about 80,000 tons per month to about 130,000 tons per month.

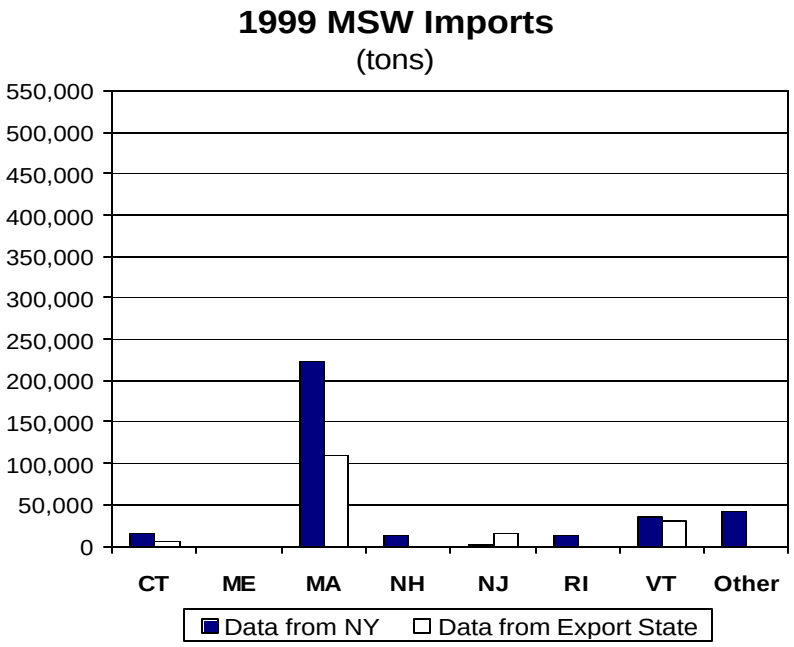
* Exports to non-NEWMOA states and provinces = 1.46 million tons



* Exports to non-NEWMOA states and provinces = 1.49 million tons

New York





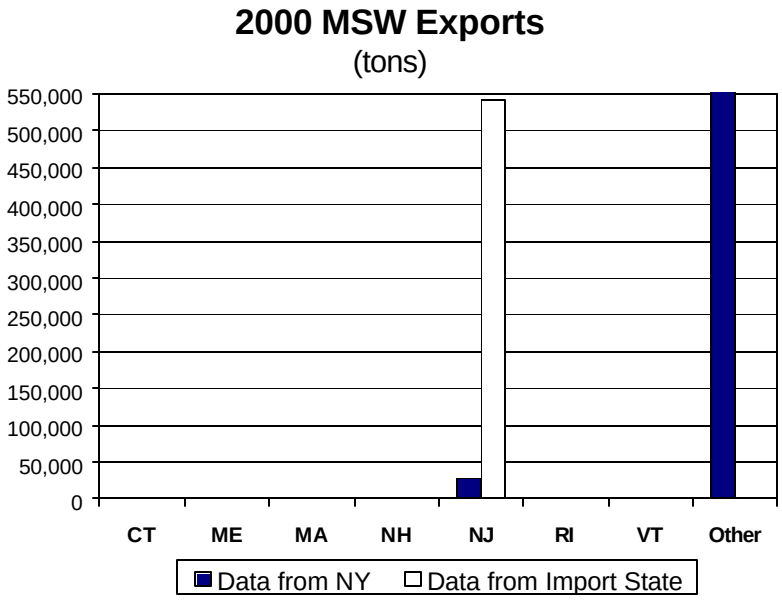
New York disposed of 11.6 million tons of municipal solid waste (MSW) generated from in-state sources in 2000: 8 million tons at landfills and 3.6 million tons at waste-to-energy (WTE) facilities. In terms of MSW imports versus exports, New York is a net exporter, sending more waste out-of-state than it accepts from other states. According to Department of Environmental Conservation (DEC) records, in 2000 facilities in New York imported 549,764 tons of MSW generated from other states: 401,169 tons from NEWMOA states and 148,595 tons from non-NEWMOA states and provinces. A state-by-state breakdown of New York's imports for 2000 and 1999 is shown in the figures below.

According to DEC records, in 2000 facilities in New York exported 9,865 tons of MSW to disposal facilities located in NEWMOA states[8] and 4.8 million tons to facilities located in non-NEWMOA states.[9, 10] A state-by-state breakdown of New York's exports to NEWMOA states in 2000 and 1999 is shown in the figures on the following page.

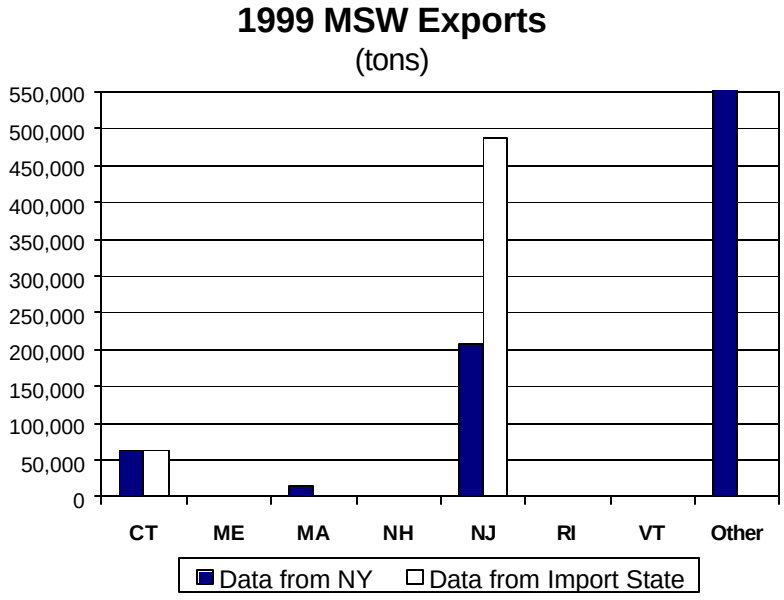
[8] New Jersey disposal facilities report a total of 541,291 tons of MSW exported from New York to New Jersey.
[9] Disposal facilities in Ohio, Pennsylvania and Virginia together report receiving a significantly greater quantity of MSW from New York.
[10] In addition, Connecticut and New Jersey document 43,424 tons and 337,239 tons, respectively, of New York generated waste that passed through their transfer stations and were disposed of in Pennsylvania.

Data Collection Summary

New York State's import/export waste quantities are obtained from solid waste management facility annual reports submitted to the DEC. New York State's 6 NYCRR Part 360 Regulations require each facility to submit annual reports on forms acceptable to or provided by the Department. Items such as total waste quantity by type, remaining site life/capacity, groundwater/leachate quality, amount of leachate collected, operational changes, and tipping fees are required by regulation. Each facility is requested to identify the facility's service area indicating the type of solid waste (new for 2000 reporting), county, state, and tons; and to identify the transfer or disposal destination indicating transfer/disposal facility, county, state, and tons.



* Exports to non-NEWMOA states and provinces = 5.18 million tons



* Exports to non-NEWMOA states and provinces = 5.01 million tons

Discussion of 2000 Data

Import Data: New York reports receiving 59,000 more tons of waste from Massachusetts than Massachusetts reports exporting to New York. Although New York revised their facility report forms for 2000, the report from the largest landfill that accepts most of the out-of-state MSW still combines all waste types and therefore, the import numbers for that facility could include industrial, C&D, and/or other non-MSW wastes. The uncertainties inherent in transfer station reporting combined with the uncertainties regarding New York's import data lead to the conclusion that the quantity of MSW exported by Massachusetts is likely to be somewhere between the numbers that Massachusetts and New York report. New York reports receiving 7,000 tons of waste from New Hampshire while New Hampshire reports exporting no waste to New York. For the above reason, it is likely that no MSW was exported from New Hampshire to New York.

New York reports receiving 35,000 less tons of waste from Connecticut than Connecticut reports exporting to New York, 13,000 less tons of waste from New Jersey than New Jersey reports, and 32,000 less tons of waste from Vermont than Vermont reports. There is little motivation for a transfer facility to over report exports, therefore, when transfer station data exceeds disposal facility data, the higher number is more likely to be accurate. The difference could result from Connecticut, New Jersey and Vermont MSW being sent to a New York transfer station prior to disposal. The New York disposal facility would then report the waste as New York MSW.

Export Data: Connecticut and New York numbers correlate well, as do Massachusetts and New York numbers. New York reports exporting 534,000 less tons of MSW to New Jersey facilities than New Jersey facilities report receiving from New York. There could be a substantial quantity of MSW that is hauled directly from New York City to New Jersey. In addition, data from disposal facilities is considered to be more accurate than data from transfer stations, so the New Jersey figures are more likely to be correct.

Comparison of Data from 1999 to 2000

In-state disposal of MSW generated from New York sources decreased by 920,000 tons between 1999 and 2000.

Import Data: In 1999, New York's service area and disposal destination data combined all waste types and therefore, New York's import numbers could include industrial, C&D, and/or other non-MSW wastes. In addition, in 1999, at one large disposal facility, New York estimated the quantity of waste received from each state. In 2000, New York instituted changes to their report forms to obtain data by waste type. Therefore, it is difficult to compare 1999 and 2000 data.

The total amount of MSW imported by New York increased by 217,000 tons (63%) between 1999 and 2000, from 346,289 tons to 563,235 tons. This difference was determined by using the data provided by New York disposal facilities in both years. Imports to New York from Vermont remained relatively constant between 1999 and 2000. Imports from Connecticut decreased by 11,000 tons between 1999 and 2000. Imports from New Hampshire decreased by 6,000 tons and imports from Rhode Island decreased by 13,000 tons. Imports from Massachusetts increased by 126,000 tons between 1999 and 2000. Imports from New Jersey increased by 11,000 tons and imports from non-NEWMOA states and Canadian provinces increased by 106,000 tons.

However, if data supplied by Connecticut is used, imports from Connecticut increased, rather than decreased, from 1999 to 2000 by 34,000 tons (645 %) from 5,000 tons to almost 40,000 tons. Likewise, if data supplied by Vermont is used, imports from Vermont increased significantly from 1999 to 2000 by 44,000 tons (142 %) from 31,000 tons to 75,000 tons. These increases are more likely to be accurate than the changes reported by New York.

Lastly, if data supplied by Massachusetts is used, imports from Massachusetts increased by 182,000 tons (166 %) from 1999 to 2000, from 110,000 tons to 292,000 tons. However, as explained previously, the true numbers for 1999 and 2000 are likely to be somewhere between that reported by Massachusetts and that reported by New York.

Export Data: The total amount of MSW exported by New York decreased by approximately 171,545 tons (3%) between 1999 and 2000, from 5,000,649 tons to 4,829,104 tons. This difference was determined by using the data provided by New York transfer stations in both years. Exports to Connecticut decreased by 62,000 tons between 1999 and 2000. Exports to Massachusetts decreased by 15,000 tons. Exports to New Jersey decreased by 180,000 tons. However, if disposal facility information from New Jersey is used, exports to New Jersey increased by 53,000 tons. This is more likely to be accurate. Incorporating data supplied by Connecticut and New Jersey, exports to non-NEWMOA states and provinces increased by 170,000 tons.

Capacity Summary of Facilities that Accepted Out-Of-State MSW in 2000

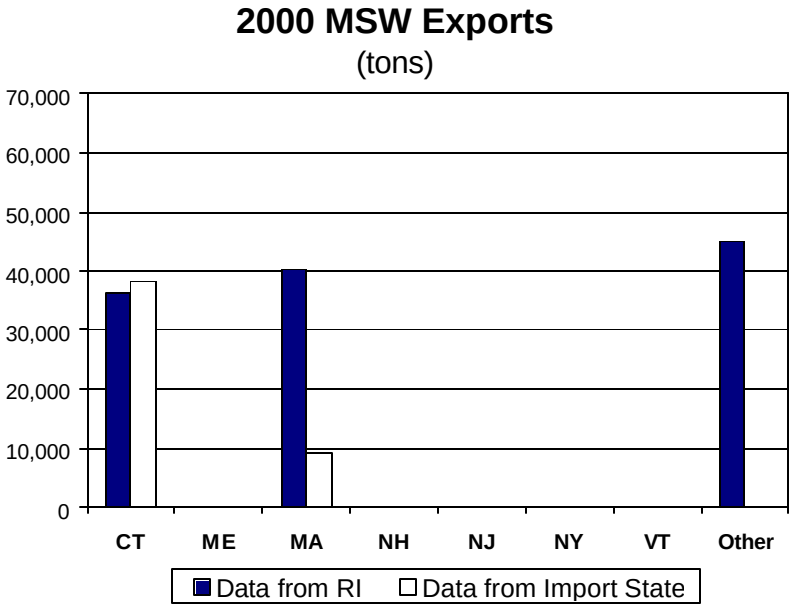
New York reported five landfills that accepted MSW from out of state in 2000. Combined, the total quantity of waste (MSW and C&D) accepted at the landfills was 2,775,857 tons with 411,347 tons coming from the NEWMOA states. New York reported two waste-to-energy facilities that accepted MSW from out of state. The facilities are permitted to process 973,750 tons per year and received 866,387 tons in 2000 (with 43,369 tons from other NEWMOA states).

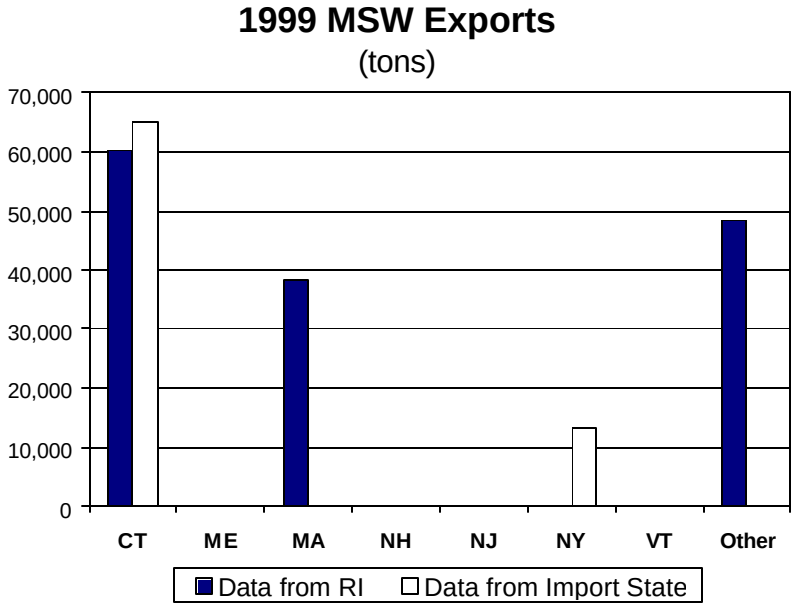
Recent Changes in New York

Fresh Kills landfill on Staten Island ceased accepting MSW on March 22, 2001.

Rhode Island

Rhode Island disposed of 1,054,290 tons of municipal solid waste (MSW) generated from in-state sources in 2000, all at landfills. In terms of MSW imports and exports, Rhode Island is neutral – virtually all MSW that is imported to Rhode Island transfer stations is sent out of state for disposal. Officially, facilities in Rhode Island do not accept MSW from out-of-state. However, facilities in some states do report sending some small amounts of MSW to Rhode Island (7 tons from Connecticut and 1,021 tons from Massachusetts). According to Department of Environmental Management (DEM) records, Rhode Island transfer stations imported 121,930 tons of MSW and then exported 121,631 tons of MSW in 2000: 76,692 tons to NEWMOA states, 21,599 tons to a non-NEWMOA state, and 23,340 tons to an unknown location(s). A state-by-state breakdown of Rhode Island's exports for 2000 and 1999 is shown in the following figures.





Data Collection Summary

The Rhode Island DEM requires all licensed and registered solid waste management facilities, including landfills, transfer stations, C&D processing facilities, and composting facilities, to submit an Annual Solid Waste Survey. The Survey details the tonnages of solid waste, construction and demolition waste, recyclables, and leaf and yard waste received, stored, and removed by facilities and the tonnages of waste landfilled within Rhode Island. In addition, facilities are required to provide the amount of waste exported to other states and the destination location of those exports.

Discussion of Discrepancies in 2000

Export Data: As noted above, MSW

exported from Rhode Island in 2000 was imported MSW. NEWMOA was unable to determine the origins of this imported MSW. Numbers for Rhode Island and Connecticut correlate well. Rhode Island facilities report sending 31,000 more tons of MSW to Massachusetts facilities than Massachusetts facilities report receiving from Rhode Island. There is little motivation for a transfer facility to over report exports, therefore, when transfer station data exceeds disposal facility data, the higher number is more likely to be accurate. The difference could result from Rhode Island MSW being sent to a Massachusetts transfer station prior to disposal. The Massachusetts disposal facility would then report the waste as Massachusetts MSW.

Comparison of Data from 1999 to 2000

In-state disposal of MSW generated from Rhode Island sources increased by 53,000 tons between 1999 and 2000.

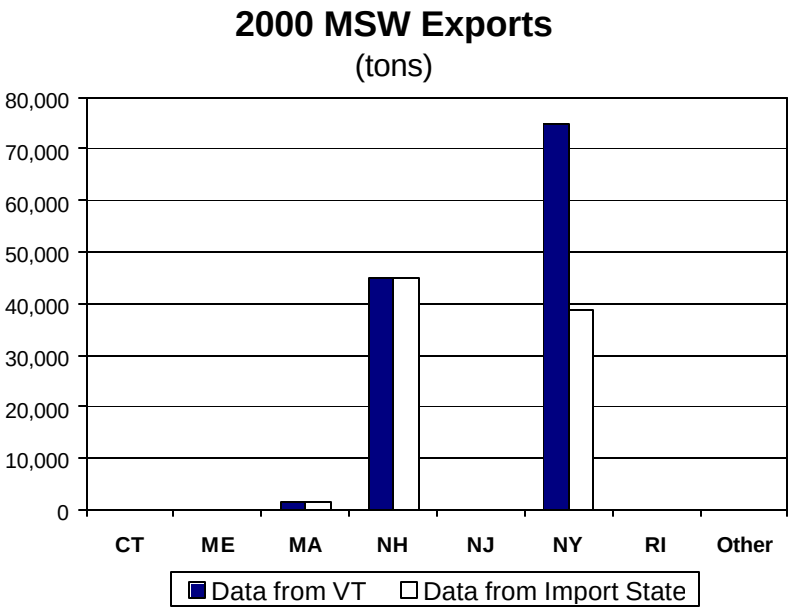
Export Data: The total amount of MSW exported by Rhode Island decreased by 25,000 tons (17%) between 1999 and 2000, from 146,948 tons to 121,631 tons. This difference was determined by using the data provided by Rhode Island transfer stations in both years. Rhode Island exports to Connecticut decreased by 24,000 tons between 1999 and 2000. Exports to Massachusetts and non-NEWMOA states remained relatively constant. These general trends and relative changes in data hold when disposal facility data in the importing state is examined.

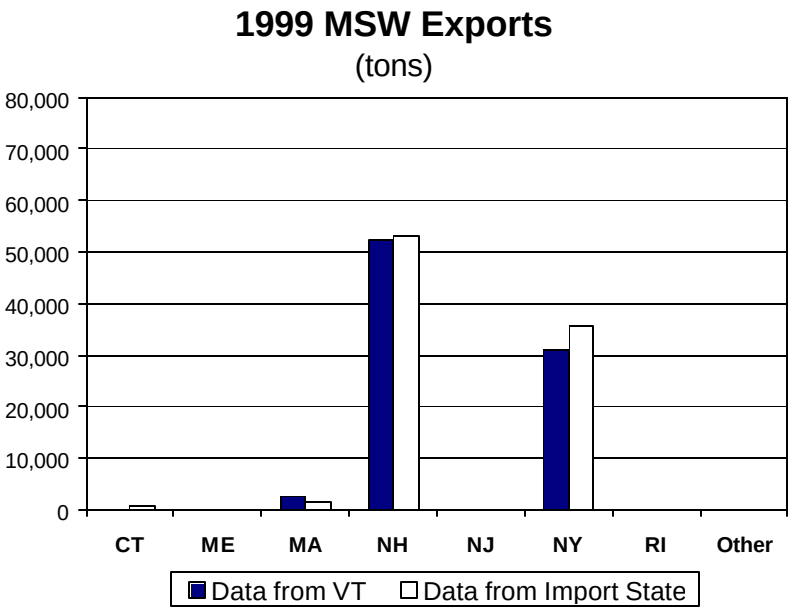
Recent Changes in Rhode Island

None reported.

Vermont

In 2000, Vermont landfills disposed of 265,850 tons of municipal solid waste (MSW) generated from in-state sources. Vermont does not have any waste-to-energy facilities (WTEs) in operation. In terms of MSW imports versus exports, Vermont is a net exporter, sending more MSW out-of-state than it accepts from other states. According to Department of Environmental Conservation (DEC) records, facilities in Vermont did not import MSW in 2000, although, through a comparison of facility records and tax returns, approximately 1,200 tons of MSW from other states and provinces may have been disposed of in Vermont landfills.





According to DEC records, in 2000 facilities in Vermont exported 121,546 tons of MSW to disposal facilities located in NEWMOA states. Approximately 19 percent of this exported MSW was incinerated at a New Hampshire facility that is under contract with a solid waste management district that consists of both Vermont and New Hampshire municipalities. Vermont did not export MSW to a non-NEWMOA state in 2000. A state-by-state breakdown of Vermont's exports to NEWMOA states in 2000 and 1999 is shown in the following figures.

Data Collection Summary

Vermont's import/export waste quantities are obtained from solid waste facility quarterly reports submitted to the DEC. The facilities identify whether waste was transferred out-of-state, including the amount and specific destinations. The reports are fairly accurate in terms of the total tonnage because weight records (using scales) are required for payment of a state franchise tax on all solid waste incinerated or disposed. Vermont also relies upon facility reports from transfer stations, incinerators and landfills in other states in order to obtain more accurate data for Vermont solid waste exported for incineration or disposal.

Discussion of Discrepancies in 2000

Export Data: Vermont and Massachusetts numbers correlate well. Vermont and New Hampshire numbers correlate well. New York reports receiving 36,000 tons less MSW from Vermont than Vermont facilities report sending to New York. Vermont's estimate is likely to be the correct figure because New York's estimate does not appear to account for waste received at one facility.

Comparison of Data from 1999 to 2000

In-state disposal of MSW generated from Vermont sources decreased by just over 10,000 tons between 1999 and 2000.

Export Data: The total amount of MSW exported by Vermont increased by about 36,000 tons (41%) between 1999 and 2000, from 85,966 tons to 121,636 tons. This difference was determined by using the data provided by Vermont transfer stations in both years. Exports to Massachusetts remained relatively constant between 1999 and 2000. Exports to New Hampshire decreased by about 7,000 tons between 1999 and 2000. Exports to New York increased by about 44,000 tons between 1999 and 2000. These general trends and relative changes in data hold when disposal facility data in the importing state is examined, with the exception of the New York data, as discussed above.

Recent Changes in Vermont

None reported.

Conclusions and Recommendations

A comparison of the 1999 and 2000 data has shown that the interstate flow of solid waste in the region did not remain constant. For example, the significant reduction in the disposal of waste from Massachusetts at New Hampshire facilities lead to a corresponding increase in exports from Massachusetts to New York and states outside the NEWMOA region. Vermont also reduced exports to New Hampshire and increased exports to New York. Connecticut disposed of more Connecticut-generated MSW in-state in 2000, reducing exports and simultaneously reducing imports of out of state waste.

In this report the states examined in greater detail the information that normalizes waste disposal numbers to population for 1999 and 2000 (Table 1 on page 8). The comparison uncovered several errors with the 1999 data used that were subsequently corrected and also determined several important trends. For example, five states experienced increased per capita disposal rates from 1999 to 2000 indicating increased waste generation. The high per capita disposed rates in New Hampshire and Rhode Island could indicate that a significant quantity of imported MSW is entering disposal facilities as in-state waste. As a result of this finding, both states plan to look into this issue further and improve reporting from suspect facilities.

It is interesting to note that the data collection and interpretation performed to prepare this report did not show significant discrepancies between export data reported by Massachusetts transfer stations and New Hampshire disposal facility import data. As discussed in this report, due to the significant increase in per capita waste disposed in Table 1, New Hampshire has concerns that a significant quantity of MSW is direct hauled from Massachusetts to New Hampshire transfer stations. However, under current reporting schemes, it is difficult for disposal facilities (and the states) to detect, verify, or account for out-of-state waste that is direct hauled to transfer stations prior to disposal. This could mean that a significant quantity of out-of-state waste enters disposal facilities as in-state waste in New Hampshire and other states, artificially increasing per capita numbers for the importing state and artificially decreasing per capita numbers for the exporting state. In addition, when MSW is direct hauled outside of the NEWMOA region, it might not be detected by the exporting state, particularly if there is no data exchange with the importing state, therefore artificially decreasing the per capita numbers for the exporting state.

Due to the numerous benefits, NEWMOA's Solid Waste Interstate Flow Measurement Workgroup recommends that the information sharing and report preparation effort continue on an annual basis. Preparation of this report by NEWMOA provides a forum for the states to: reconcile data; monitor trends in waste flow; and discuss new or anticipated developments that could impact solid waste interstate flow in the Northeast. The NEWMOA workgroup offers the following specific recommendations for additional efforts to share information and improve data quality and comparability:

- State agencies should use this report when planning and assessing state and regional MSW disposal capacity.

- The NEWMOA states should undertake a similar data collection and information sharing effort for the year 2001 data. As discussed above, states have benefited greatly from a comparison of 1999 and 2000 data. The addition of another year of data analysis is likely to uncover additional trends and other useful information.

- In order to better verify the quantity of MSW sent to non-NEWMOA states, and thus develop a clearer picture of MSW disposal and flow, the NEWMOA workgroup should seek to better understand and use the data collected by the non-NEWMOA states that receive the bulk of the MSW exported from the Northeast. In 2000, these states were: Ohio, Pennsylvania, Virginia, and South Carolina. As stated previously, data from disposal facilities is generally considered more accurate than data provided by transfer facilities. For example, there could be significant direct haul from both New Jersey and New York to Pennsylvania disposal facilities. This waste would not be accounted for by relying solely on New Jersey and New York transfer station data for export quantities.

- The NEWMOA workgroup should serve as a forum for states to share information about their experiences with reporting forms and to provide information to support changes. States should explore efforts to improve reporting quality. For example, in order to help detect situations where out-of-state waste is reported as in-state waste at disposal facilities, states might want to consider enhanced reporting from transfer stations to capture the source by type, state, and tonnage. Requirements for reporting from haulers could reduce the uncertainty created by the direct haul of MSW from one state to a disposal facility in another.