Interstate Flow of Municipal Solid Waste Among the NEWMOA States in 2002

June 9, 2004

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 develop and sustain an effective partnership of states to explore, develop, promote, and implement environmentally sound solutions for the reduction and management of materials and waste, and for the remediation of contaminated sites, in order to achieve a clean and healthy environment. 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 the US EPA; and
- support the efficient sharing of state and federal program resources to help avoid duplication of effort and to facilitate development of regional approaches to solving critical environmental problems in the region.

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Introduction

This report is the fourth annual report on the movement of municipal solid waste among the northeast states and presents data from the 2002 calendar year, as well as observations of changes in the data over the years 1999, 2000, 2001 and 2002.

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 2000, 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 consolidation in the solid waste management industry that has resulted in the 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 by 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, and several states have subsequently modified their facility report forms. 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

This project was limited to examining data on municipal solid waste (MSW). Other types of solid waste, such as construction and demolition (C&D) wastes are not included in this study. In 2000, the director of the solid waste program in each NEWMOA-member state appointed at least one representative to serve on the NEWMOA Solid Waste Measurement Workgroup. Each summer the states collect and compile the data reported by the facilities in their state for the prior calendar year, and summaries of this data are provided to NEWMOA by September. NEWMOA develops the tables and graphs of the available data and corresponds with the workgroup to complete and refine the data each fall. NEWMOA then prepares this report which underwent workgroup review prior to publication.

Data Sources and Possible Inaccuracies

Unless noted otherwise, all figures and tables in this report are based on the data from disposal facilities, as it is generally considered the most accurate data received by the states. However, in some cases transfer station data was used when the quantity reported as exported to a particular state exceeded the quantity reported as received, since there is little motivation for transfer stations to misreport the quantity exported. When states had detailed information available to determine that MSW was imported to a transfer station and then exported, adjustments were made to both their data and the state that provided the imported MSW. More information on the data used is presented in the notes below the graphs in the Regional Summary section and in the text of the state-specific sections.

The 2002 data is the first to use disposal facility data from states outside the NEWMOA region to determine export numbers. When looking at trends from 1999 through 2002, this report used the same data in the state-specific sections that was used in the Regional Summary section. This was not necessarily the case in previous reports where two sets of data were presented in the state-specific sections: data from the import state(s) and data from the export state(s). Therefore, additional information about the data used in the Regional Summary section can be found in the state-specific sections and visa versa.

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 is not likely to be recorded as out-of-state waste at the disposal facility, particularly if the hauler is from the same state as the disposal facility and/or the MSW first goes to a transfer station in the same state as the disposal facility.

- 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 which leads to estimating quantities in some cases. For example, in Rhode Island, MSW imported into transfer stations is reported only as out-of-state waste and the state of origin is not indicated. Despite changes in New York's report forms, one of the largest commercial facilities in New York that accepts out-of-state MSW continues to report 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 difficulties. 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. Each state's definition of MSW is listed in Appendix A of this report.

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. As mentioned before, transfer stations in Rhode Island do not break down imports of "out-of-state" MSW into the individual states or their respective quantities.

- 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, or the disposal facility reports the waste as coming from the transfer station and the transfer station reports the origin of its waste).

- During data interpretation, waste entering a transfer station from out-of-state was not included in the import numbers for that state when the final disposition of that waste was unknown - it could end up at an in-state disposal facility or become transferred back out-of-state again. The later practice also creates a degree of uncertainty in the export data for the state with the transfer station – did all the waste reported as exported originate within the state, or was some of it imported? NEWMOA analyses the data received to account for this import/export uncertainty to the extent possible.

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 data regarding the origin of MSW received is obtained from both the transfer station and the disposal facility, and the state analyzes the information and reconciles it. For example, Connecticut's reporting and tracking system allows this type of waste to be detected.

The second instance, where out-of-state MSW is imported to a transfer station and then exported back out-of-state for disposal, 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 examine the information and reconcile it as Connecticut does.

Report Structure

The report begins with a section that provides a summary of the MSW flow in the region in 2002 and includes four graphs showing, by state: overall imports and exports; MSW generated by each state and disposed (in-state and exports); total quantity of MSW disposed of in each state (in-state generated and imported); and exports to non-NEWMOA states and provinces. For the first time, the report contains data from non-NEWMOA states on imports from NEWMOA states, and compares that data to the data available from the NEWMOA states. The Regional Summary contains a section where the data is also normalized for population with a table comparing the data across the four years 1999 to 2002, and a discussion of differences between states and over time. The Regional Summary section concludes with a discussion of trends shown in the four year's of data collected, 1999 through 2002, including a graphical presentation of the four year's of data showing, by state: in-state disposal of MSW generated in-state; MSW imports from NEWMOA states; MSW exports to NEWMOA states; and MSW exports to non-NEWMOA states and provinces.

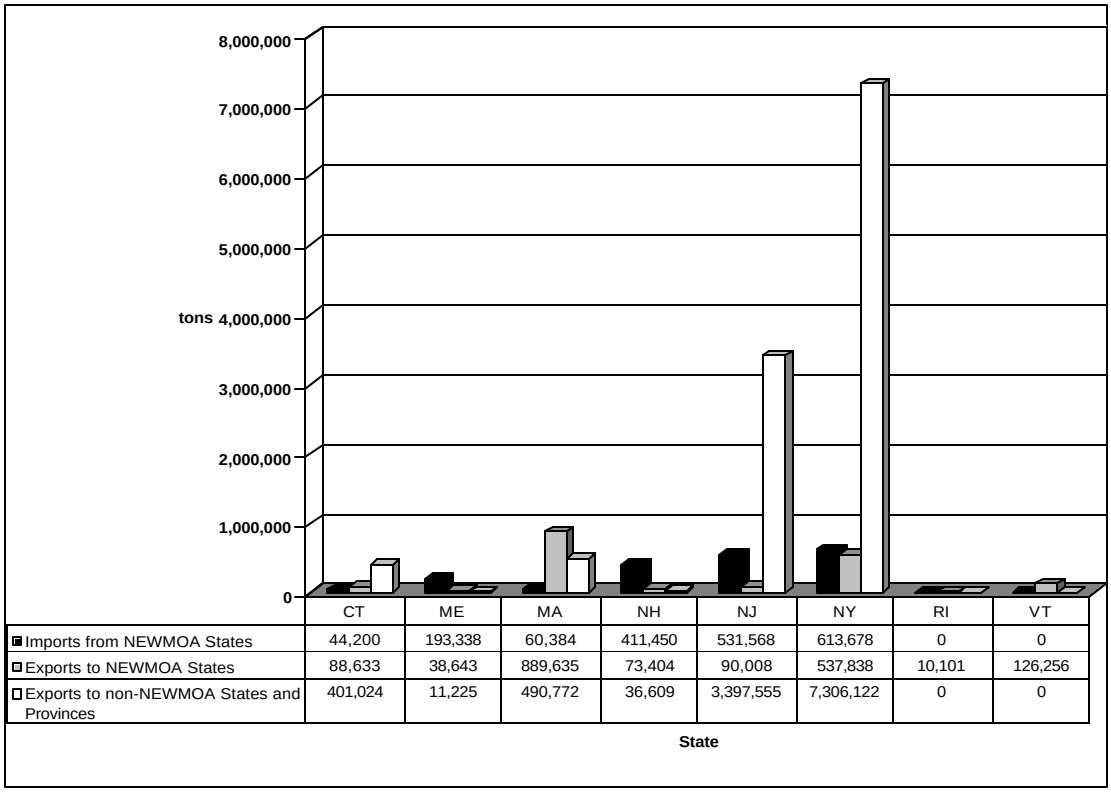
Following the Regional Summary, the report contains a section for each state that describes the import and export information for that state. Each state-specific section starts with a summary of the total quantity, and out-of-state portion, of waste disposed of at landfills and waste-to-energy (WTE) facilities in 2002, as well as exports to other NEWMOA states and out of the region. The discussion of 2002 data includes bar graphs illustrating the import and export data for that state that each show two sets of data for each state: the number of tons the subject state reports they imported (exported) from each state; and the number of tons each state reports they exported (imported) to the subject state. This project focused on the NEWMOA states and therefore, imports from and exports to non-NEWMOA states are aggregated into an "other" category. 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. For comparison purposes, within each state-specific section, the import and export graphs are done in the same scale, although some data resolution might be lost. More detail on the 2002 data shown in the figures is provided in the data tables contained in Appendix B.

Each state-specific section also contains a discussion of the trends in MSW imports and exports over the four years 1999 through 2002, including bars graphs. 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 C to this report. Each state-specific section concludes with a summary of capacity at disposal facilities that accepted out-of-state MSW in 2002 and changes in the solid waste situation that occurred, or might occur after the 2002 data. After the eight state-specific sections, the report contains a Conclusions and Recommendations section.

Region-Wide Summary

The flow of municipal solid waste (MSW) among the NEWMOA states in 2002 continued to occur at a rate similar to previous years. The overall waste flow of imports and exports for each NEWMOA state in 2002 is presented in Figure 1.

Figure 1: 2002 MSW Imports and Exports (tons)



	CT	ME	MA	NH	NJ	NY	RI	VT
Imports from NEWMOA States	44,200	193,338	60,384	411,450	531,568	613,678	0	0
Exports to NEWMOA States	88,633	38,643	889,635	73,404	90,008	537,838	10,101	126,256
Exports to non-NEWMOA States and Provinces	401,024	11,225	490,772	36,609	3,397,555	7,306,122	0	0

State

Notes:

- Exports from Connecticut and Vermont to New York. Data from New York included a general estimation from the facility that reports receiving the majority of the Connecticut and Vermont MSW imported to New York. Therefore transfer station data provided by Connecticut and Vermont is used for exports to New York.
- Exports from Rhode Island to Connecticut and Massachusetts. Data for Connecticut and Massachusetts does not include MSW that Rhode Island transfer stations imported from other states and then exported to Connecticut and Massachusetts (known as pass-through).
- For the non-NEWMOA states, only Pennsylvania disposal data was used. For Ohio, South Carolina, and Virginia, transfer station data was used from the export states. 949,644 tons of MSW was exported from New York to New Jersey and then passed on to Pennsylvania. This amount was thus subtracted from the amount Pennsylvania imported from New Jersey and added to the amount Pennsylvania imported from New York.

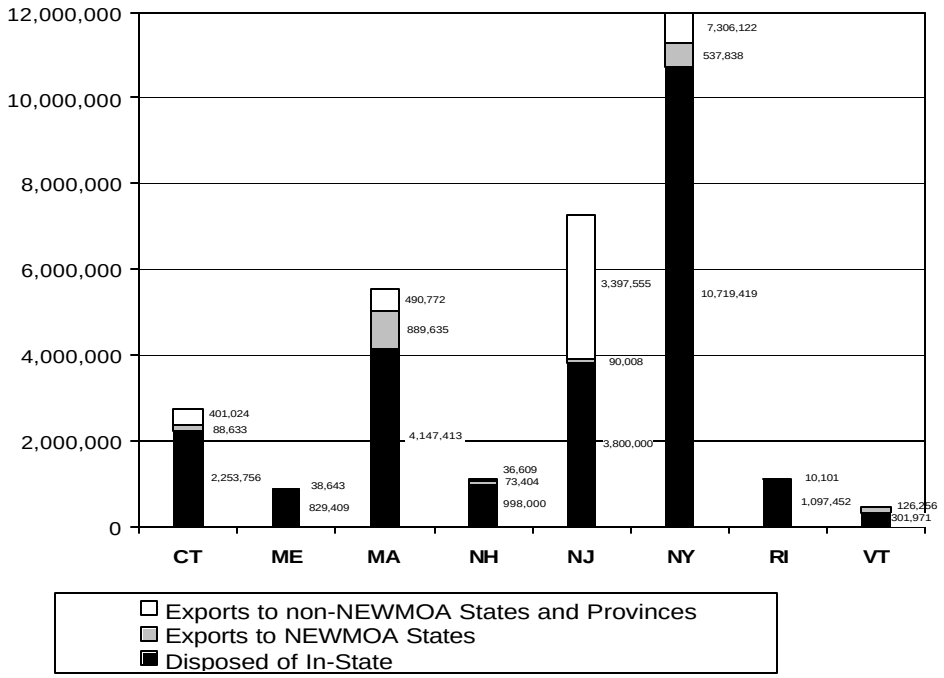
Further breakdowns of MSW imports and exports are provided in Figures 2 and 3. Figure 2 shows the total amount of MSW generated by each state *that is ultimately disposed of* and generally, where the MSW is disposed, including exports. Figure 3 shows the quantity of MSW disposed of in each state, including imports.

Table 1 relates the information from Figures 2 and 3 to state population. Figure 4 and Table 2 present more detail on exports to non-NEWMOA states. Figures 5, 6, 7, and 8 present the trends of in-state disposal, imports and exports for the NEWMOA states from 1999 through 2002.

The following general observations characterize the flow of MSW in the NEWMOA region in 2002:

- The majority of MSW generated in each state continues to be managed using in-state disposal facilities.
- Except for Rhode Island, a substantial quantity of MSW was either imported into a state, exported from it, or both.
- Significantly more MSW was imported into Maine and New Hampshire than was exported.
- Due to state regulations and policies, MSW was not imported for disposal in Rhode Island and Vermont.
- Significantly more MSW was exported from Massachusetts to NEWMOA states than was imported.
- Connecticut, Massachusetts, New Jersey and New York all exported significant quantities of MSW to non-NEWMOA states.
- When only the NEWMOA states are considered, more MSW was imported into New Jersey and New York than was exported to facilities in the NEWMOA states. However, facilities in New Jersey and New York sent a much larger quantity of MSW to disposal facilities located outside the NEWMOA region, greatly surpassing the total amount of MSW they imported.

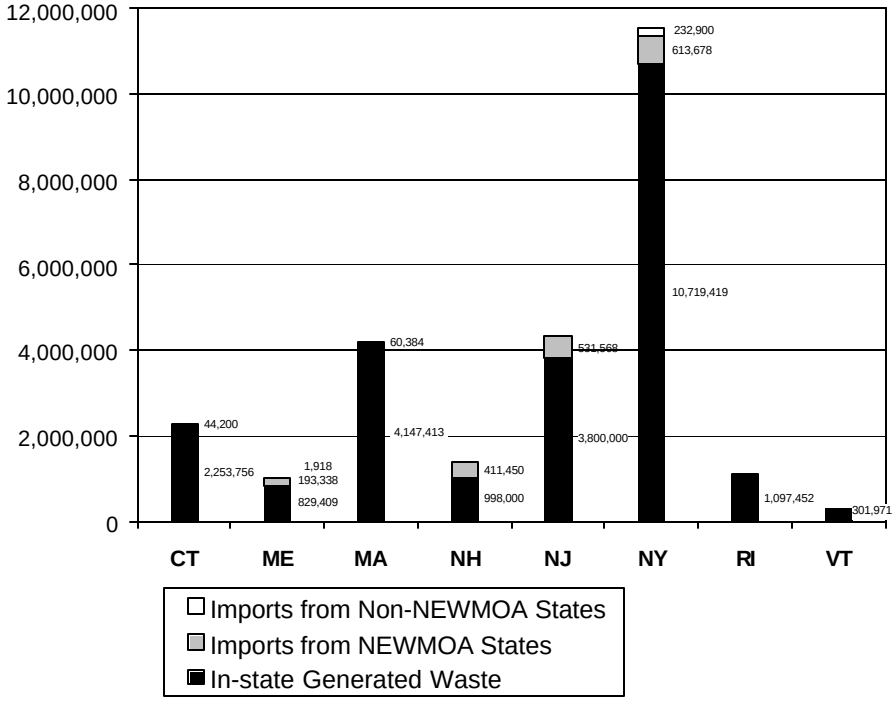
Figure 2: MSW Generated by State and Disposed (2002, in tons)



Note: All data from disposal facilities in the importing state, except:

- Exports from Connecticut to New York and Ohio. Data from New York included a general estimation from the facility that reports receiving the majority of the Connecticut MSW imported to New York. Data from Ohio can include waste types other than MSW. Therefore transfer station data provided by Connecticut is used for exports to New York and Ohio.
- Exports from Massachusetts to Ohio and South Carolina. Data from Ohio can include waste types other than MSW. Data from South Carolina shows a quantity imported that is less than Massachusetts reports exporting to South Carolina. Transfer stations have little incentive to over-estimate amount of waste sent to other states. The transfer station data from Massachusetts was used for Ohio and South Carolina.
- Exports from New Hampshire to Ohio. Data from Ohio can include waste types other than MSW.
- Exports from New Jersey to Ohio and Virginia. Estimate fromOhio includes other waste types besides MSW. The reliability of Virginia data is uncertain. The transfer station data from New Jersey was used for Ohio and Virginia.
- Exports from New York to Ohio and Virginia. Data from Ohio can include waste types other than MSW. The reliability of Virginia data is uncertain. The transfer station data from New York was used for Ohio and Virginia.
- Exports from New York to non-NEWMOA states include 949,644 tons that was direct hauled to New Jersey transfer stations and then exported to Pennsylvania for disposal (reported by New Jersey), and 949,644 tons was subtracted from the data reported by Pennsylvania for imports from NJ.
- Exports from Rhode Island to Connecticut and Ohio. Data from Connecticut includes pass-through waste that Rhode Island received from other states and then exported to Connecticut. Data from Ohio can include waste types other than MSW. Therefore, data from Rhode Island transfer stations regarding only Rhode Island-generated MSW was used for Rhode Island exports.
- Exports from Vermont to New York and Ohio. Data from New York included a general estimation from the facility that reports receiving the majority of the Vermont MSW imported to New York. Data from Ohio can include waste types other than MSW. Therefore transfer station data provided by Vermont is used for exports to New York and Ohio.

Figure 3: Total Quantity of MSW Disposed of In-State (2002, in tons)



Note: All data provided by disposal facilities in each state, except:

- Imports to Connecticut from Rhode Island. Data from Connecticut includes pass-through waste that Rhode Island imported from other states and then exported to Connecticut. Therefore, data from Rhode Island transfer stations regarding only Rhode Island-generated MSW was used for Connecticut imports from Rhode Island.
- Imports to New York from Connecticut and Vermont. Data from New York included a general estimation from the facility that reports receiving the majority of the Connecticut and Vermont MSW imported to New York. Therefore transfer station data provided by Connecticut and Vermont is used for imports to New York.

2002 Exports to Non-NEWMOA States

Figure 4 below shows the data that each NEWMOA state reports they exported to non-NEWMOA states in 2002 compared to the combined data that the non-NEWMOA states report they received from each NEWMOA state.

The non-NEWMOA states to which the NEWMOA states exported MSW include primarily Pennsylvania, Ohio, South Carolina, and Virginia. Pennsylvania keeps accurate records by state of MSW that each facility received from out-of-state. Significant fees are assessed on waste disposal in Pennsylvania and there is a strong auditing and inspection program to ensure accurate reporting and fee collection. In addition, there is likely to be significant direct haul from New Jersey and New York to Pennsylvania which would not be detected in New Jersey or New York's reporting systems. Therefore the disposal facility data from Pennsylvania is considered

reliable and was used in 2002. Note: this is new for 2002 – previously, disposal data from Pennsylvania was not obtained or used in these reports.

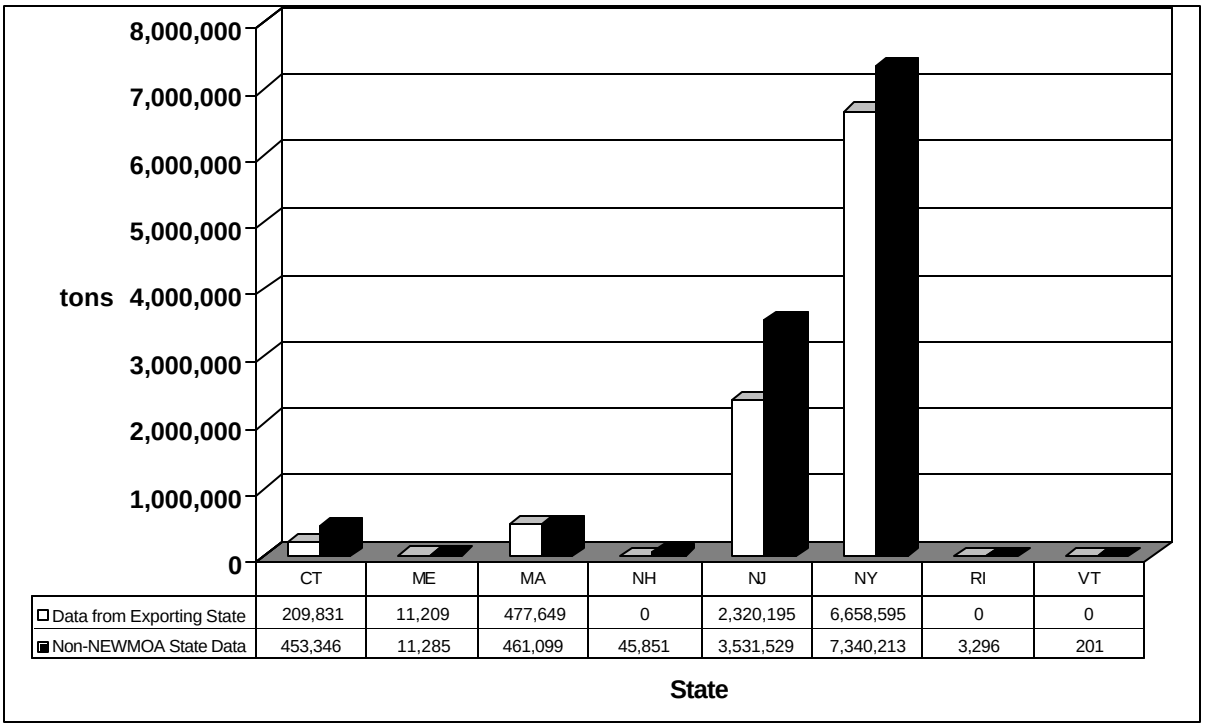
However, regarding the Pennsylvania data, Connecticut and New Jersey document that 49,151 tons and 949,644 tons of waste, respectively, sent to Pennsylvania for disposal originated in New York. Therefore, these amounts are not included in the amount of MSW reported by Pennsylvania (a non-NEWMOA state) for Connecticut and New Jersey exports, and instead, the 998,795 tons of MSW was added to the New York exports reported by Non-NEWMOA states. However, in this graph, these amounts are not included in the export data reported by New York.

Ohio's definition of general solid waste includes non-MSW types of waste, such as contaminated soil, municipal waste water treatment sludge, household hazardous waste, MSW incinerator ash, and scrap tires. Data collected by Ohio from facilities does not separate out MSW from general solid waste. Therefore, disposal data from Ohio was not used in this report. For exports to Ohio, this report continues to rely on data provided by transfer stations in the exporting states (Massachusetts and New York).

Massachusetts sent MSW to South Carolina, but Massachusetts transfer facilities reported sending more MSW to South Carolina than South Carolina reported receiving from Massachusetts. Since transfer stations have little incentive to over-estimate exports, it is likely that the data from Massachusetts is more accurate and was used in this report.

New York reports exporting MSW to Virginia, but the reliability of Virginia data is uncertain. Therefore the transfer station data from New York was used for exports to Virginia. New York also exported a small quantity of waste to Maryland and Washington, D.C., but the quantities so small (less than 35,000 tons combined) in relation to overall exports from New York that they have an insignificant impact and the New York transfer station export data was used.

Figure 4: 2002 Exports to Non-NEWMOA States and Provinces



	CT	ME	MA	NH	NJ	NY	RI	VT
Data from Exporting State	209,831	11,209	477,649	0	2,320,195	6,658,595	0	0
Non-NEWMOA State Data	453,346	11,285	461,099	45,851	3,531,529	7,340,213	3,296	201

Table 1 below shows the amounts that each NEWMOA state reported as exporting to the four main states that accept waste from states in the NEWMOA region - Ohio, Pennsylvania, South Carolina, and Virginia - in 2002 compared to the data that each of these non-NEWMOA states reported as receiving from each NEWMOA state.

Table 1: Exports to Non-NEWMOA States: NEWMOA vs. Non-NEWMOA State Data

Data from:	Ohio		Pennsylvania		S. Carolina		Virginia	
	NEWMOA	OH	NEWMOA	PA	NEWMOA	SC	NEWMOA	VA
CT	5,806	58,128	204,025	395,218	-	-	-	-
ME		60		16		-		-
MA	73,294	98,253	1,252	14,375	401,318	348,472	1,785	-
NH	-	9,243	-	36,609	-	-	-	-
NJ*	-	133,063	2,320,195	3,397,555	-	-	-	910
NY**	875,000	659,736	3,700,000	5,346,322	-	-	1,050,000	1,334,154
RI	-	3,296	-	-	-	-	-	-
VT	-	201	-	-	-	-	-	-

*A portion of the amount New Jersey reports sending to non-NEWMOA states may be sent to Ohio instead of Pennsylvania.

**New York also reports sending small quantities of MSW to Maryland (34,000 tons) and Washington, DC (800 tons) - In addition, Connecticut and New Jersey can document that 49,151 tons and 949,644 tons of waste, respectively, originated in New York but passed through Connecticut and New Jersey transfer stations on its way to Pennsylvania for final disposal. These amounts were subtracted from the amounts Pennsylvania reports receiving from Connecticut and New Jersey, respectively, and added to the amount Pennsylvania reports receiving from New York

Normalize for Population

The population of the NEWMOA states varies from 19,157,532 in New York to 616,592 in Vermont. Table 2 below uses the data from Figures 2 and 3 and population data to normalize waste generation and management information in the states for the differences in population among the NEWMOA states. Columns 2, 3, 4, and 5 show the per capita quantity of MSW generated in a state that is disposed (including exports) for 1999, 2000, 2001, and 2002. For 2002, the data shown in Figure 2 was used. Data for other years was obtained from similar graphs in prior reports. Column 6 shows the per capita quantity of MSW that is disposed of in the state (including imports) using the data shown in Figure 3.

It is important to note that disposal data from Pennsylvania was obtained and used for the first time in 2002[1]. In 1999, 2000, and 2001, calculations were based on the data provided by Connecticut, New Jersey, and New York transfer stations for their exports to Pennsylvania. The use of Pennsylvania disposal data has had the affect of increasing the per capita MSW disposed values for Connecticut, and more significantly, New Jersey and New York for 2002 when compared to prior years.

The data in Table 2 illustrates whether a state imported or exported a significant portion of MSW in 2002. If the numbers in Columns 5 and 6 are equal, then the MSW flow would be at equilibrium for that state, 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. If Column 5 is greater than Column 6, then in-state generated MSW is sent out-of-state for disposal. If Column 5 is less than Column 6, then a portion of the MSW disposed of in the state is imported from other states. Table 2 shows that Maine and New Hampshire import more MSW than they export. Connecticut, Massachusetts, New Jersey, New York and Vermont export much more than they import. Rhode Island does not export or import a significant portion of MSW.

[1] Pennsylvania keeps accurate records by state of MSW that each facility received from out-of-state. Significant fees are assessed on waste disposal in Pennsylvania and there is a strong auditing and inspection program to ensure accurate reporting and fee collection. Therefore the disposal facility data from Pennsylvania is considered reliable.

Table 2: Data Normalized for Population

	Column 1 2002 Estimated Population	Column 2 1999 Per Capita MSW Disposed (tons/year)	Column 3 2000 Per Capita MSW Disposed (tons/year)	Column 4 2001 Per Capita MSW Disposed (tons/year)	Column 5 2002 Per Capita MSW Disposed (tons/year)	Column 6 2002 Per Capita MSW Disposed of At Facilities in the State (tons/year)
	(Source: U.S. Census Bureau)					
State						
Connecticut	3,460,503	0.73	0.75	0.76	0.79	0.66
Maine	1,294,464	0.69	0.64	0.65	0.68	0.79
Massachusetts	6,427,801	0.81	0.82	0.84	0.86	0.65
New Hampshire	1,275,056	0.87	0.92	0.85	0.87	1.11
New Jersey	8,590,300	0.66	0.68	0.61	0.85	0.50
New York	19,157,532	0.98	0.91	0.84	0.97	0.60
Rhode Island	1,069,725	1.01	1.01	1.04	1.04	1.03
Vermont	616,592	0.62	0.64	0.68	0.69	0.49

Notes:

1. All data provided by disposal facilities in each state, except for: imports to Connecticut from Rhode Island, imports to New York from Connecticut and Vermont, exports from all NEWMOA states to Ohio, exports from Massachusetts to South Carolina, and exports from New Jersey and New York to Virginia. See Figure 2 above for explanations.
2. The "Per Capita MSW Disposed" data in Columns 2, 3, 4, and 5 include MSW generated by the state and disposed, including exports (does not include imports).
3. The "Per Capita MSW Disposed of at Facilities in the State" data in Colu mn 6 includes MSW disposed of in-state, including imports (does not include exports).
4. Disposal data from Pennsylvania was used for the first time in 2002. This has had the affect of increasing the per capita MSW disposed values for Connecticut, and more significantly, New Jersey and New York. In 1999, 2000, and 2001, calculations were based on the data provided by Connecticut, New Jersey, and New York transfer stations for their exports to Pennsylvania.

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:

- different state demographics: the proportions of commercial, industrial, agricultural and residential MSW generation vary among states;
- the definition of data that is collected from facilities varies among states (what gets included in 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.

In general, when comparing the per-capita MSW disposed data from 1999 through 2002, it is important to keep in mind a couple of factors besides the total quantity of MSW generated that can influence the per-capita values either negatively or positively. For example, population numbers have grown steadily each year, having a decreasing effect on the per-capita values. On the other hand, stagnant or decreasing recycling rates would tend to have an increasing effect on per-capita values.

A state-by-state discussion of the per-capita MSW generated in a state from 1999 through 2002 that requires disposal (in state and exports) is presented below:

Connecticut: At 0.79 in 2002, the per-capita MSW disposal rate for Connecticut is lower than it is for the other more populous and urban NEWMOA states such as Massachusetts, New Jersey, and New York. Connecticut's estimated per-capita disposal rate has increased every year between 1999 and 2002. Some of those increases are due to using improved methodologies for calculating the disposal rates. The increase from 1999 to 2001 is likely due to increased consumption in the strong economy as well as a low starting figure in 1999 due to the likely direct haul of MSW from Connecticut to a Massachusetts landfill that was not included in the 1999 calculation, but is accounted for in 2000. The increase from 2001 to 2002 is due primarily to the inclusion of disposal data from Pennsylvania in the calculation of Connecticut's per-capita figure rather than relying solely on Connecticut transfer station data as in previous years.

Maine: At 0.68 in 2002, the per-capita MSW disposal rate for Maine is the lowest of the NEWMOA states and is very close to Vermont's per capita MSW disposal rate. This is likely due to the overall rural nature of the state. From 1999 to 2000, there was a decrease in the per-capita disposal rate and then a relatively steady increase between 2000 and 2002. The decrease between 1999 and 2000 was likely due to better reporting starting in 2000 of MSW that is direct hauled from out-of-state to an incinerator in Maine. In 1999, some MSW at this incinerator was most likely mis-labeled as in-state MSW.

Massachusetts: At 0.86 in 2002, the per-capita MSW disposal rate for Massachusetts is in the middle of the NEWMOA states and is similar to rates in New Jersey and New Hampshire. Between 1999 and 2002, there has been a relatively steady increase in this disposal rate. This is likely due to increased consumption in the strong economy and then from 2001 to 2002 it is also due to the use of disposal data from Pennsylvania rather than relying on Massachusetts transfer station data as in previous years.

New Hampshire: At 0.87 in 2002, the per-capita MSW disposal rate for New Hampshire is in the middle of the NEWMOA states and is similar to the rate for Massachusetts and New Jersey. Between 1999 and 2000 there was an increase in this rate and then a decrease between 2000 and 2001. The increase between 1999 and 2000 was most likely due to out-of-state waste (mostly Massachusetts waste) entering New Hampshire transfer stations and then being reported as in-

state waste when received by the landfill (in 2000). The decrease between 2000 and 2001 was due to efforts by the New Hampshire Department of Environmental Services (DES) to improve reporting from transfer stations.

New Jersey: At 0.85 in 2002, the per-capital MSW disposal rate for New Jersey is in the middle of the NEWMOA states and is similar to the rate for Massachusetts and New Hampshire. Between 1999 and 2000 there was a slight increase in this rate, likely due to increased consumption. Between 2000 and 2001 there was a decrease, and then between 2001 and 2002 there was a large increase, due primarily to the use of disposal data from Pennsylvania rather than relying on New Jersey transfer station data as in previous years.

New York: At 0.97 in 2002, the per-capita MSW disposal rate for New York is on the high side of the NEWMOA states. Between 1999 and 2001 there were noticeable decreases in this rate, most likely due to the closure of the large in-state landfill that serviced New York City (Fresh Kills) and the corresponding increase in MSW that was direct-hauled out-of-state. Between 2001 and 2002 there was a large increase in the per capita rate, due primarily to the use of disposal data from Pennsylvania rather than relying on New York transfer station data as in previous years.

Rhode Island: At 1.04, the per-capita MSW disposal rate for Rhode Island is the highest of the NEWMOA states by a significant margin. This rate has remained steady between 1999 and 2002. The high per capita disposal rate 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.

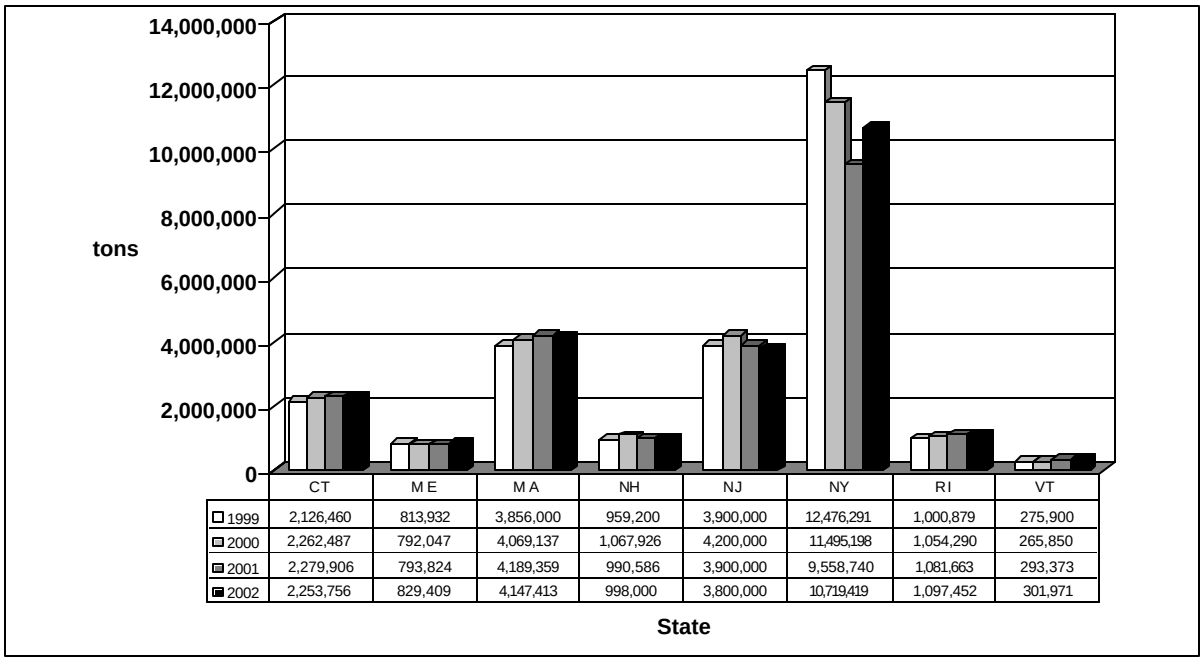
Vermont: At 0.69, the per-capita MSW disposal rate for Vermont is on the low side of the NEWMOA states and is similar to the rate for Maine. Vermont attributes this low rate to the overall rural nature of the state and successful recycling programs in the more populated areas. There has been a relatively steady increase in this disposal rate between 1999 and 2002, which is most likely due to increased consumer consumption.

Data Trends from 1999 through 2002

The following figures compare the overall import and export data for each NEWMOA state for the years 1999 through 2002. More detail on comparisons of state-to-state data is contained in each of the following state-specific sections. Figure 5 shows the trend in in-state disposal of in-state generated waste for each of the NEWMOA states. Figure 6 shows the trend of MSW imported from NEWMOA states into each state from 1999 through 2002. Figure 7 shows the trends of MSW exported from each state to other NEWMOA states for 1999 through 2002. Lastly, Figure 8 shows the trends of MSW exported from each state to non-NEWMOA states for 1999 through 2002.

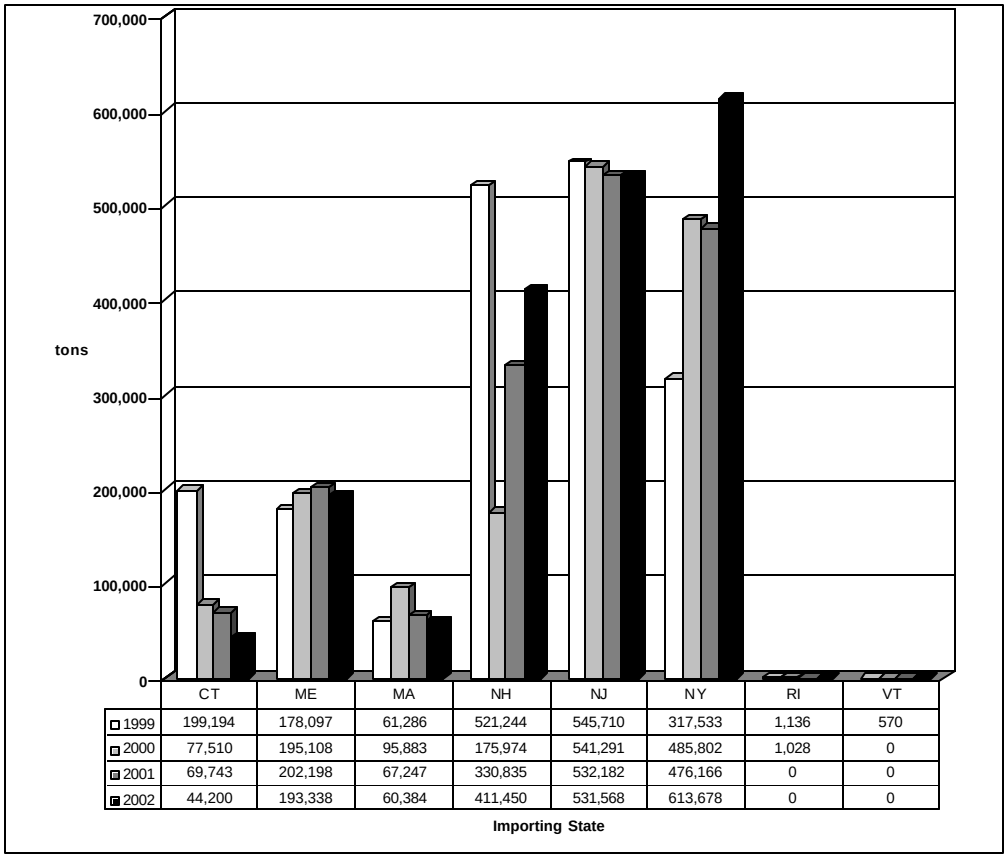
The quantities of in-state disposal of waste generated in-state (Figure 5) has remained relatively steady in states over the years 1999-2002 with the exception of New York. As explained previously, in 2000 the in-state landfill serving New York City, Fresh Kills began to limit the quantity of MSW accepted in preparation for its eventual closure early in 2001. Much of New York City's waste was then exported out-of-state, accounting for the drop in in-state disposal.

Figure 5: In-State Disposal of MSW Generated In-State: 1999 through 2002



	CT	ME	MA	NH	NJ	NY	RI	VT
1999	2,126,460	813,932	3,856,000	959,200	3,900,000	12,476,291	1,000,879	275,900
2000	2,262,487	792,047	4,069,137	1,067,926	4,200,000	11,495,198	1,054,290	265,850
2001	2,279,906	793,824	4,189,359	990,586	3,900,000	9,558,740	1,081,663	293,373
2002	2,253,756	829,409	4,147,413	998,000	3,800,000	10,719,419	1,097,452	301,971

Figure 6: MSW Imports from NEWMOA States: 1999 through 2002 (tons)



	CT	ME	MA	NH	NJ	NY	RI	VT
1999	199,194	178,097	61,286	521,244	545,710	317,533	1,136	570
2000	77,510	195,108	95,883	175,974	541,291	485,802	1,028	0
2001	69,743	202,198	67,247	330,835	532,182	476,166	0	0
2002	44,200	193,338	60,384	411,450	531,568	613,678	0	0

Imports of MSW from NEWMOA states are negligible in Rhode Island and Vermont and remained relatively steady from 1999 to 2002 for Maine and New Jersey.

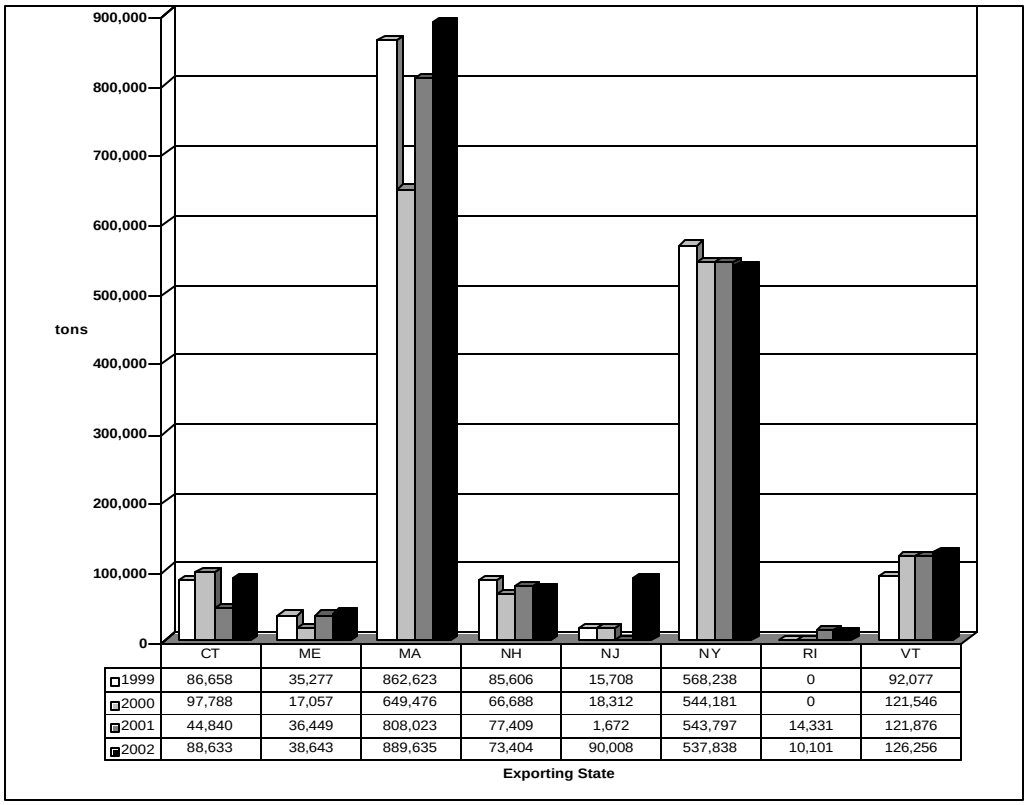
Connecticut imports from NEWMOA states decreased significantly between 1999 and 2000 because disposal of in-state generated MSW increased by 136,027 tons and Connecticut has a limited overall disposal capacity requiring a corresponding decrease in imports. Imports continued to decline less drastically throughout the period.

Massachusetts imports from NEWMOA states increased between 1999 and 2000 and then decreased between 2000 and 2001 and held relatively steady between 2001 and 2002. The increase and decrease in imports was mainly due to changes in exports from Connecticut.

New Hampshire imports from NEWMOA states decreased significantly in 2000 due to a decrease in exports from Massachusetts to New Hampshire as well as a likely increase in out-of-state waste that was direct hauled to New Hampshire transfer stations and then labeled as in-state waste by disposal facilities. The increase in imports in 2001 and 2002 was due to an effort by the New Hampshire Department of Environmental Services (DES) to improve reporting from transfer stations to account for this out-of-state MSW. Imports continued to increase in 2002 due to market forces.

Imports from NEWMOA states to New York increased significantly from 1999 to 2000 primarily due to an increase in MSW exported from Massachusetts corresponding to the decreased exports to New Hampshire. Imports from NEWMOA states to New York increased from 2001 to 2002 due to increases in exports from Connecticut, Massachusetts, and New Jersey.

Figure 7: MSW Exports to NEWMOA States: 1999 through 2002 (tons)



	CT	ME	MA	NH	NJ	NY	RI	VT
1999	86,658	35,277	862,623	85,606	15,708	568,238	0	92,077
2000	97,788	17,057	649,476	66,688	18,312	544,181	0	121,546
2001	44,840	36,449	808,023	77,409	1,672	543,797	14,331	121,876
2002	88,633	38,643	889,635	73,404	90,008	537,838	10,101	126,256

Generally, exports of MSW from NEWMOA states to other NEWMOA states remained relatively stable during the period 1999 to 2002, with the following exceptions noted.

Connecticut exports to NEWMOA states decreased significantly from 2000 to 2001 and then increased significantly from 2001 to 2002 back up to levels similar to 1999 and 2000, most likely due to market forces.

Maine exports to NEWMOA states decreased in 2000 most likely due to exports from Maine to New Hampshire that were labeled as in-state waste by New Hampshire disposal facilities. The subsequent increase in 2001 most likely resulted from efforts by the New Hampshire DES to improve reporting.

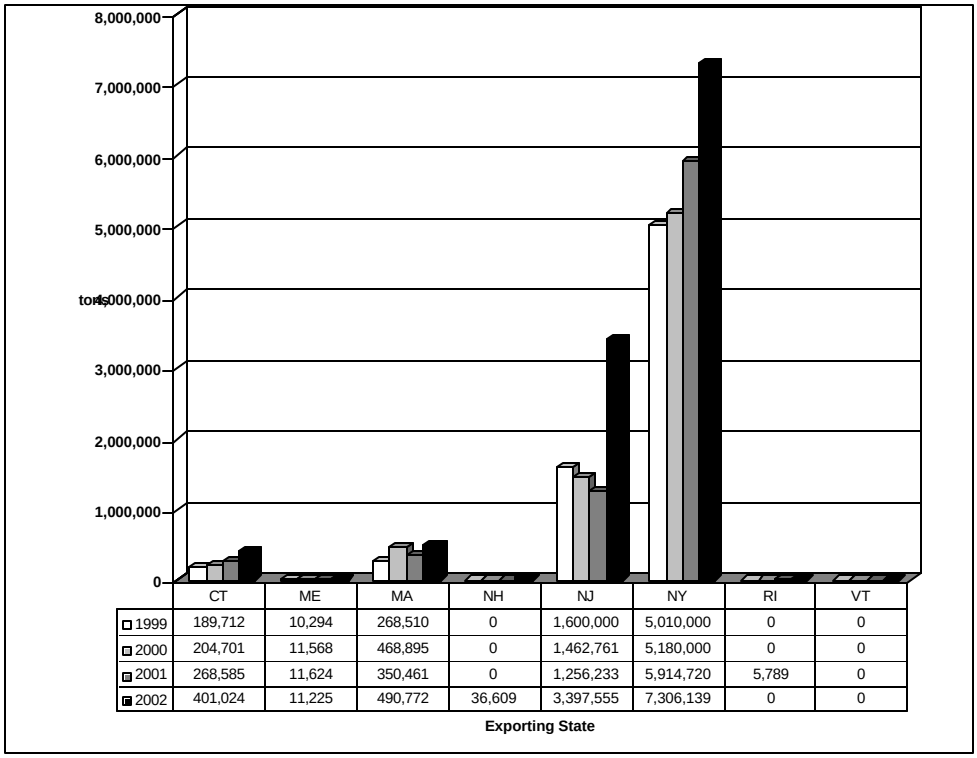
Massachusetts exports to NEWMOA states decreased in 2000 due to a corresponding increase in exports to non-NEWMOA states combined with the large reduction in MSW exported to New Hampshire (partially off-set in Figure 7 by increased export to New York). The increases in 2001 and 2002 are likely due to increased export to New Hampshire as well as market forces.

New Hampshire exports to NEWMOA states decreased in 2000 due to a decrease in the amount of MSW sent to Maine. The increase in 2001 was likewise due to an increase in the amount of MSW sent to Maine back to approximately 1999 levels.

New Jersey exports to NEWMOA states increased significantly from 2001to 2002. The increase was due completely to an increase in MSW sent to New York, likely due to market forces.

Rhode Island exports of Rhode Island-generated MSW to NEWMOA states were much higher in 2001 and 2002 than in 1999 and 2000. This was likely due to market forces making out-of-state disposal attractive to some transfer stations.

Figure 8: MSW Exports to Non-NEWMOA States and Provinces: 1999 through 2002 (tons)



	CT	ME	MA	NH	NJ	NY	RI	VT
1999	189,712	10,294	268,510	0	1,600,000	5,010,000	0	0
2000	204,701	11,568	468,895	0	1,462,761	5,180,000	0	0
2001	268,585	11,624	350,461	0	1,256,233	5,914,720	5,789	0
2002	401,024	11,225	490,772	36,609	3,397,555	7,306,139	0	0

Notes:

- All data supplied by the exporting states except that, in 2002 only, Pennsylvania disposal data was used. (For the other three states that received MSW from NEWMOA states, Ohio, South Carolina, and Virginia, data from transfer stations in the exporting NEWMOA state was still used in 2002.)
- Maine obtains its export figures to Canada by directly contacting the disposal facility in Canada to which its waste is sent.
- Exports from New York include 949,644 tons that was direct hauled from New York to New Jersey transfer stations and then exported to Pennsylvania (reported by New Jersey).
- For Connecticut, data does not include out of state MSW that was imported at a Connecticut transfer station and then transferred out of state for disposal (pass-through).

Vermont exports to NEWMOA states increased significantly from 1999 to 2000. This was due to an increase in the amount of MSW that was sent to a New York incinerator.

The significant increases in the amount of MSW exported from Connecticut, New Jersey and New York to non-NEWMOA states in 2002 was due primarily to the use, for the first time, of disposal data reported from Pennsylvania. Prior to 2002, disposal data was not obtained from non-NEWMOA states and export data from transfer stations in Connecticut, New Jersey, and New York was used.

Massachusetts exports to non-NEWMOA states increased in 2000 due to the need to find alternatives to exports to New Hampshire. Once the political pressure in New Hampshire decreased, exports to New Hampshire increased again in 2001, lowering the amount sent to non-NEWMOA states. The increase from 2001 to 2002 was due partly to the inclusion of disposal data from Pennsylvania, which was not used in prior years, and an increase in exports to a facility in South Carolina.

Connecticut

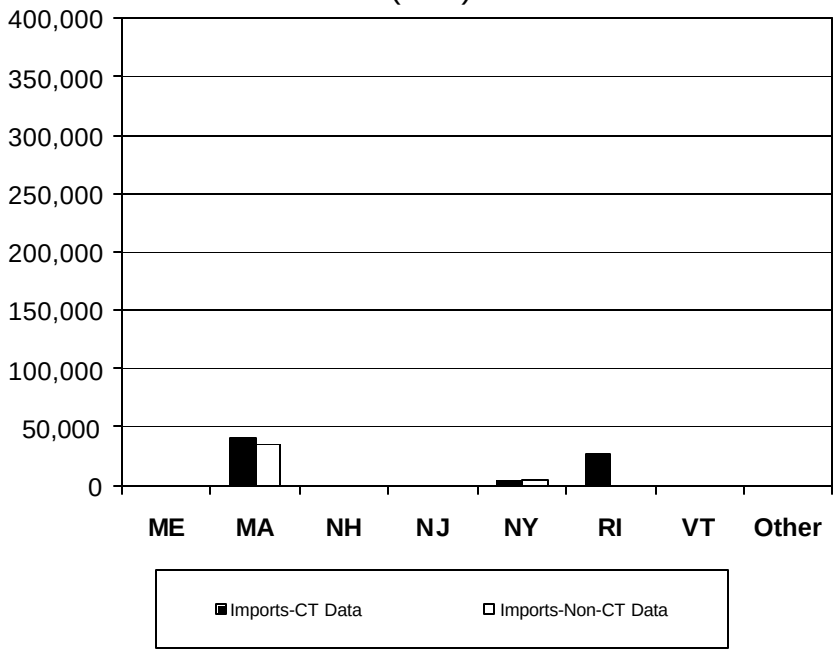
Facilities in Connecticut disposed of 2.3 million tons of municipal solid waste (MSW) generated from in-state sources in 2002: 120,987 tons at landfills and 2,132,769 tons at waste-to-energy (WTE) facilities. Connecticut is a net exporter, sending more waste out-of-state than it accepts from other states. According to Department of Environmental Protection (DEP) records, in 2002, Connecticut landfills and WTE facilities imported 71,255 tons of MSW generated from other NEWMOA states, mostly from Massachusetts and Rhode Island. Facilities in Connecticut did not import MSW from a non-NEWMOA state in 2002.

According to DEP records from Connecticut transfer stations and resource recovery facilities, in 2002, facilities in Connecticut exported 88,118 tons of MSW to disposal facilities located in NEWMOA states, all to New York and Massachusetts, and 209,831 tons of MSW to facilities located in non-NEWMOA states, 204,025 tons to Pennsylvania and 5,806 tons to Ohio.

Discussion of 2002 Data

The discussion and figure below present Connecticut's reported imports from NEWMOA and non-NEWMOA states compared to data regarding NEWMOA and non-NEWMOA states' reported exports to Connecticut. Following the discussion of imports is a section and figure illustrating Connecticut's reported exports to NEWMOA and non-NEWMOA states compared to data regarding NEWMOA and non-NEWMOA states' reported imports from Connecticut.

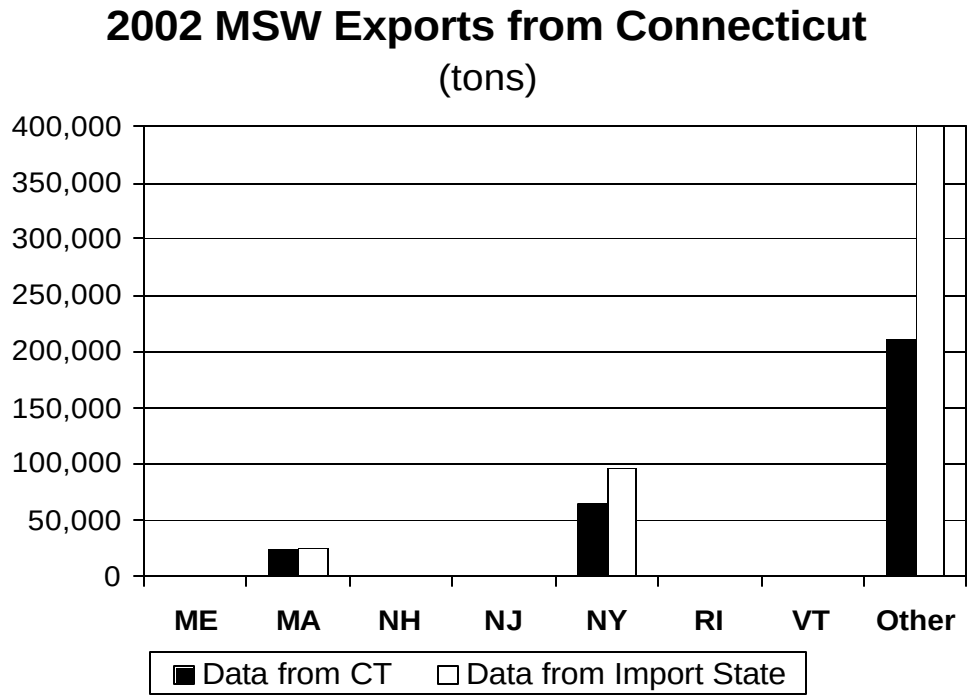
Import Data: Connecticut's import numbers correlate well with the export numbers reported by other states. Connecticut facilities report receiving 27,221 tons of MSW from Rhode Island and Rhode Island reports sending 27,078 tons of MSW to Connecticut. However, only 167 tons was generated by Rhode Island, the rest being comprised of MSW that was imported to Rhode Island from unknown locations (most likely Connecticut and/or Massachusetts) and then exported out to Connecticut (referred to as pass-through MSW). Since the 167 tons is a more realistic portrayal of Rhode Island-generated MSW exported to Connecticut than the 27,078 tons, 167 tons is used as the data provided



by Rhode Island in the import figure.

Export Data: Connecticut's export numbers correlate well with the import numbers reported by most of the other NEWMOA states, with the exception of New York. Connecticut facilities report sending 64,471 tons of MSW to New York disposal facilities in 2002, while New York disposal facilities report receiving 104,000 tons of MSW from Connecticut transfer stations and resource recovery facilities. The Connecticut data is likely to be more accurate because the New York number is based on a general estimation reported by one disposal facility. In addition, a total of 8,268 tons of MSW received at a Connecticut transfer station was from New York and then subsequently exported back out to New York for disposal. Connecticut data accounts for this pass-through, but New York data does not.

Connecticut's export numbers also do not correlate well with non-NEWMOA state data. Connecticut facilities report sending 251,666 tons of MSW to Pennsylvania disposal facilities in 2002, of which only 204,025 tons was generated in Connecticut, the remaining consisting of pass-through MSW that was generated in New York. Subtracting this pass-through of New York MSW from the data provided by Pennsylvania, Pennsylvania disposal facilities report receiving 395,218 tons of MSW that was generated in Connecticut. The Pennsylvania data is assumed to be more accurate because in general, disposal facility data is more accurate than transfer station data and Pennsylvania has a good recordkeeping and reporting system. In addition, Connecticut reports sending 5,806 tons of MSW to Ohio, whereas Ohio report receiving 58,128 tons of general solid waste from Connecticut. However, Ohio classifies many materials as general solid waste, such as household hazardous waste, wastewater treatment sludge, and MSW incinerator ash, and therefore Ohio data is likely to overestimate the quantity of MSW received. Therefore, the quantity reported by Connecticut was used.

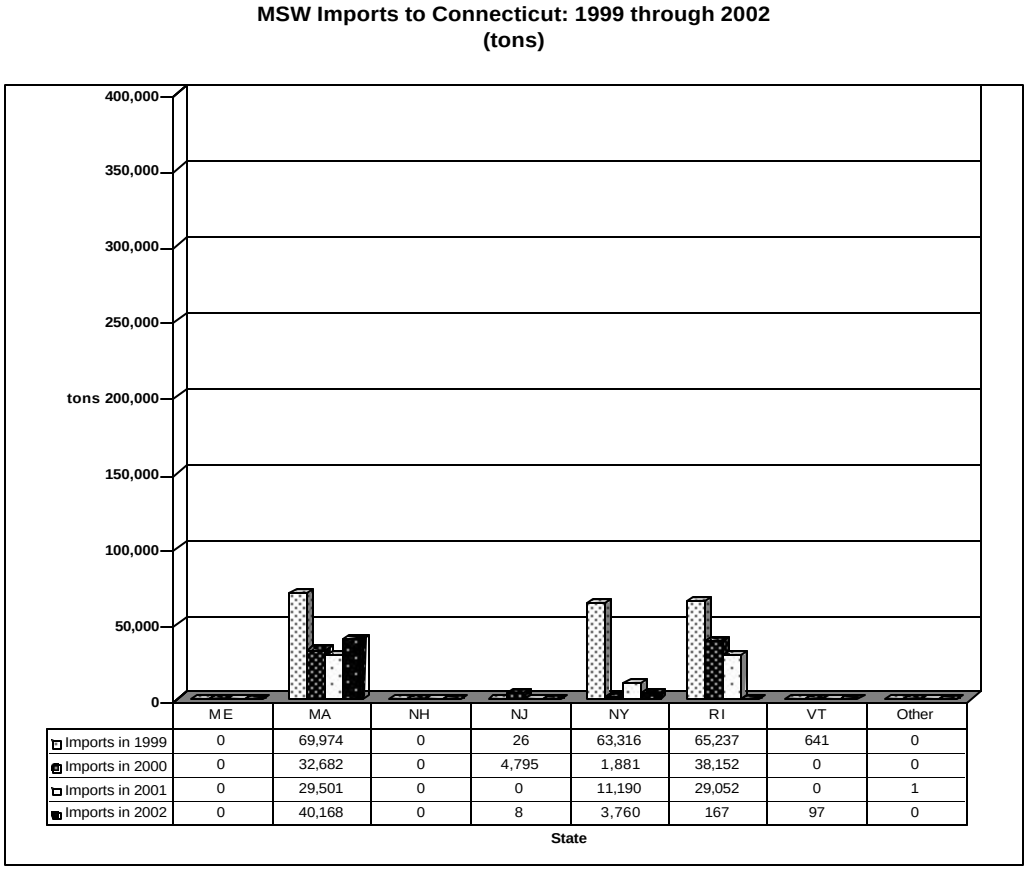


Discussion of Trends - 1999 through 2002

The quantity of MSW generated in Connecticut that was disposed (including exports) increased by 14% between 1999 and 2002, from 2.4 million tons to 2.74 million tons. As stated earlier, some of this increase is due to improved methodology for calculating disposal tonnages, and may not reflect actual increases in MSW disposed. In-state disposal of MSW generated from Connecticut sources has remained relatively stable from 1999 through 2002, increasing by 6.0% from 2,126,460 tons in 1999 to 2,253,756 tons in 2002. There was an increase of 6.4% between 1999 and 2000, a 0.8% increase between 2000 and 2001, and a decrease of 1.2% between 2001 and 2002. The higher increases between 1999 and 2000 are most likely due to increases in population and economic activity. Import and export trends for the period between 1999 and 2002 are discussed below and presented in the following figures.

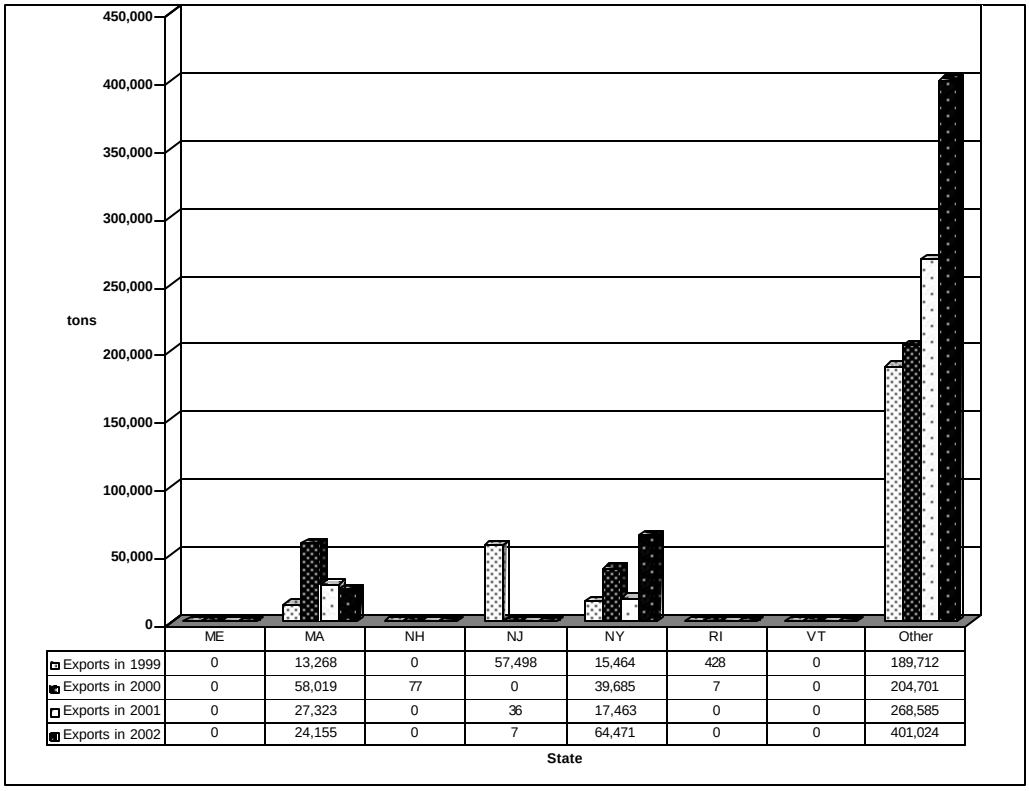
Import Data: The total amount of MSW imported by Connecticut decreased by almost 78% over the time period between 1999 and 2002. Most of the decrease was seen between 1999 and 2000 (61%--from 199,914 tons to 77,510 tons). There were across the board decreases in imports from Massachusetts and New York, and changes in the way the Rhode Island data is handled. Connecticut has a relatively fixed disposal capacity, so the increase in disposal of in-state generated MSW that occurred between 1999 and 2002 necessitated a corresponding decrease in imports. With the exception of Rhode Island, these trends were determined by using the data provided by Connecticut disposal facilities for the years 1999 through 2002 and correlates fairly well with export data reported by Massachusetts and New York.

Most of the MSW exported from Rhode Island transfer stations is not generated in Rhode Island, but rather imported from out-of-state. However, because it came from a Rhode Island transfer station, Connecticut disposal facilities record this MSW as generated in Rhode Island. Beginning in 2002, this pass-through MSW was removed from the Rhode Island export numbers. Rhode Island reporting does not indicate which states send MSW to their transfer stations, and therefore, this MSW cannot be attributed to any particular state. That tonnage of MSW essentially becomes lost from the accounting. However, it also distorts the data to attribute the MSW to Rhode Island.



Export Data: The total amount of MSW exported by Connecticut increased by 44% between 1999 and 2002, from 276,370 tons to 489,657 tons. Between 1999 and 2000, exports increased by 8.6%, from 276,370 tons to 302,489 tons and a switch occurred in where some of the exports were sent, from New Jersey to Massachusetts. Between 2000 and 2001, exports increased by 3.5%, from 302,489 tons to 313,425 tons. In addition, fewer exports were sent to Massachusetts and more were sent to New York and non-NEWMOA states. Then, between 2001 and 2002, exports increased by 64%, from 313,425 tons to 489,657 tons. The substantial increase between 2001 and 2002 is due mainly to using data from Pennsylvania disposal facilities in 2002, which is assumed to be more accurate than data from Connecticut transfer stations. Previous to 2002, Pennsylvania data was not obtained for these reports and Connecticut transfer station export data was relied on.

MSW Exports from Connecticut: 1999 through 2002
(tons)



	ME	MA	NH	NJ	NY	RI	VT	Other
Exports in 1999	0	13,268	0	57,498	15,464	428	0	189,712
Exports in 2000	0	58,019	77	0	39,685	7	0	204,701
Exports in 2001	0	27,323	0	36	17,463	0	0	268,585
Exports in 2002	0	24,155	0	7	64,471	0	0	401,024

Data Collection Summary

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).

The data from the quarterly reports is entered into a Microsoft Access solid waste data base by a data entry staff. Questionable or ambiguous data is verified by calls to the reporting facility.

Before final numbers are calculated – standard reports are run to flag data discrepancies or potentially erroneous data (i.e. disposal numbers for a specific town that are 20% higher or lower than in previous years); total amounts reported received by facilities significantly different from amounts reported in previous years; significant discrepancies between amounts reported received by transfer stations and amounts reported sent out from those transfer stations; discrepancies between the amounts reported received at a specific solid waste facility from a transfer station and amount that transfer station reported transferring to that facility, etc. Data which is flagged is then verified by calls to the reporting entities. In addition, reports are run to check that data has been entered for each month in the time period being analyzed.

Capacity Summary of Facilities that Accepted Out-of-State MSW in 2002

Connecticut has six resource recovery facilities (RRF's) (not including the tire RRF) which reported receiving a total of 2,326,488 tons of solid waste in 2002; about 71,030 tons of that was imported from NEWMOA states. Due to material received but not burned (i.e. pre-combustion iron; processing residue; non-processibles) Connecticut RRF's burned approximately 2,203,781 tons in 2002. Combined these six RRF facilities have a permitted design capacity of 7,358 tons per day.

Recent Changes in Connecticut

None reported.

Maine

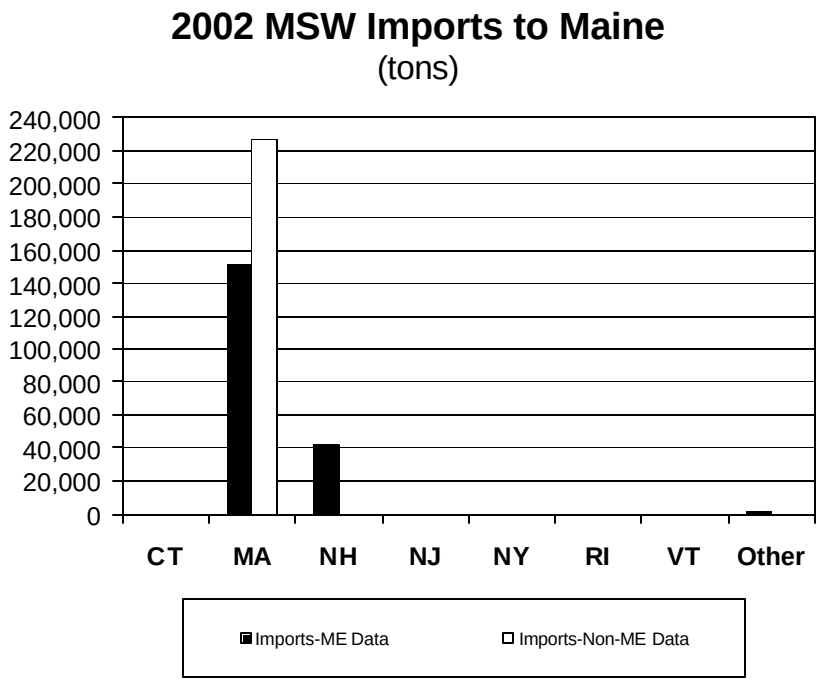
Facilities in Maine disposed of 829,409 tons of municipal solid waste (MSW) generated from in-state sources in 2002: 219,776 tons at landfills and 609,633 tons at waste-to-energy (WTE) facilities. Maine is a net importer, accepting significantly more waste from out-of-state than it sends to other states. According to Department of Environmental Protection (DEP) records, facilities in Maine imported 195,256 tons of MSW generated from other NEWMOA states, primarily from Massachusetts and the rest from New Hampshire. Maine did not import MSW from a non-NEWMOA state in 2002.

Maine has no system for collecting MSW export numbers from their transfer stations, however the DEP does contact a landfill in Canada that reports receiving 11,209 tons of MSW from Maine.

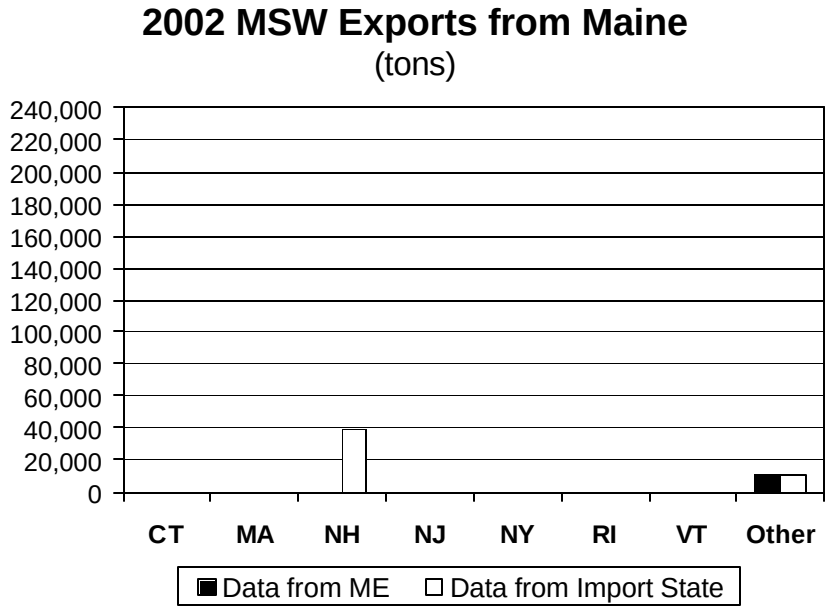
Discussion of 2002 Data

The discussion and figure below present Maine's reported imports from NEWMOA and non-NEWMOA states compared to data regarding NEWMOA and non-NEWMOA states' reported exports to Maine. Following the discussion of imports is a section and figure illustrating Maine's reported exports to NEWMOA and non-NEWMOA states compared to data regarding NEWMOA and non-NEWMOA states' reported imports from Maine.

Import Data: Maine facilities report receiving 74,400 tons less MSW than Massachusetts reported sending. Maine contacted the landfill in question and was told the material from Massachusetts was C&D waste. Therefore, Maine's data is assumed to be correct and is used throughout the report. Maine facilities report receiving 42,000 tons of MSW from New Hampshire, while New Hampshire does not report sending any MSW to Maine. This MSW from New Hampshire is likely to be direct-hauled to the facilities in Maine without going through a New Hampshire transfer station and therefore, the data from Maine is used. Maine landfills also report receiving 1,918 tons of MSW from unknown sources, which is presented in the "Other" column in the figure above as well as in the trends figure below.



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. In 2002, this amount was 11,209 tons. The 11,209 tons to New Brunswick, along with 16 tons to Pennsylvania is the MSW exported to "Other" in the Figure. The disposal facility data provided by New Hampshire is the only other export number available regarding exports from Maine, 38,643 tons, and is likely to be accurate. No other state reports receiving MSW from Maine.



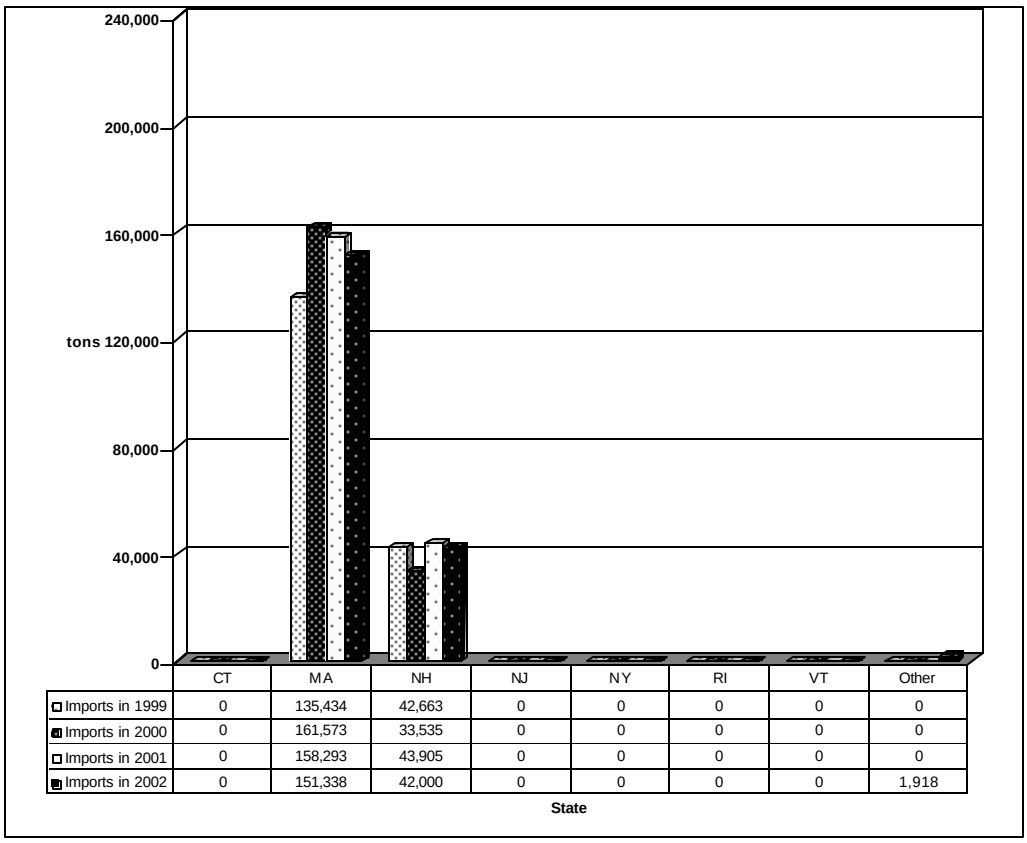
Discussion of Trends- 1999 through 2002

The quantity of MSW generated in Maine that was disposed (including exports) increased by 2.3% between 1999 and 2002, from 859,503 to 879,277 tons. In-state disposal of MSW generated from Maine sources remained relatively stable during the period from 1999 through 2002, with an overall increase of 1.9% from 813,932 tons in 1999 to 829,409 tons in 2002. Import and export trends for the period between 1999 and 2002 are discussed below, as well as presented in the following figures.

Import Data: The total amount of MSW imported by Maine increased by 9.6% over the time period 1999 through 2002. During this time period, all MSW imported into Maine was from Massachusetts and New Hampshire. Virtually all of this change was seen between 1999 and 2000, when imports increased by 9.5%, from 178,097 tons to 195,108 tons due to a large increase in the amount of MSW imported from Massachusetts, which was partially offset by a decrease in the amount of MSW imported from New Hampshire. Between 2000 and 2001, imports increased by 3.6%, from 195,108 tons to 202,198 tons and between 2001 and 2002 imports decreased by 3.4%, down to 195,256 tons.

The data from Maine disposal facilities generally correlates well with data from the exporting states' transfer stations, except for 2002 data from Massachusetts and 2001 and 2002 data from New Hampshire. As discussed previously, the 2002 data from Massachusetts was determined by Maine to consist of 75,397 tons of C&D waste as well as MSW. The Maine data for New Hampshire imports is more likely to be correct because New Hampshire MSW is likely to be direct-hauled into Maine, therefore not entering New Hampshire transfer stations or reporting system.

MSW Imports to Maine: 1999 through 2002 (tons)

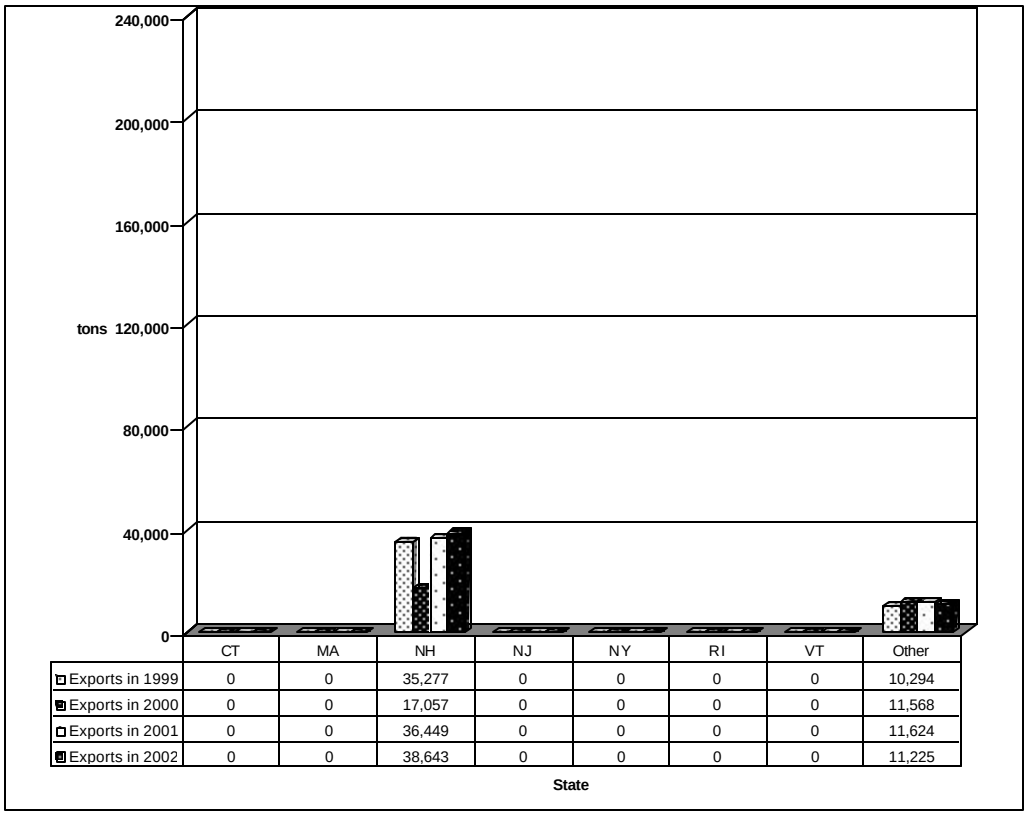


	CT	MA	NH	NJ	NY	RI	VT	Other
Imports in 1999	0	135,434	42,663	0	0	0	0	0
Imports in 2000	0	161,573	33,535	0	0	0	0	0
Imports in 2001	0	158,293	43,905	0	0	0	0	0
Imports in 2002	0	151,338	42,000	0	0	0	0	1,918

Export Data: The total amount of MSW exported by Maine increased by 9.4% between 1999 and 2002 from 45,571 tons to 49,868 tons. Between 1999 and 2000, MSW exported decreased by 37% from 45,571 tons to 28,625 tons largely due to a decrease in the amount of MSW exported to New Hampshire. Then from 2000 to 2001, exports increased by 68% from 28,625 tons to 48,073 tons mainly due to the increase in the amount of MSW exported to New Hampshire. From 2001 to 2002 exports increased by 3.7% from 48,073 tons to 49,852 tons. The large fluctuation reported by New Hampshire in MSW exported from Maine between 1999 and 2000 and then between 2000 and 2001 are most likely tied to political pressure in New Hampshire to focus on MSW imports (1999-2000 decrease) and then subsequently less emphasis the following year. Exports to the landfill in New Brunswick have remained relatively stable. Due to the fact

that Maine does not collect export information from transfer stations, these trends were determined by using data provided by the receiving facilities in Canada and New Hampshire.

MSW Exports from Maine: 1999 through 2002
(tons)



	CT	MA	NH	NJ	NY	RI	VT	Other
Exports in 1999	0	0	35,277	0	0	0	0	10,294
Exports in 2000	0	0	17,057	0	0	0	0	11,568
Exports in 2001	0	0	36,449	0	0	0	0	11,624
Exports in 2002	0	0	38,643	0	0	0	0	11,225

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.

Once a report is received by DEP, the information is entered into a database. The final numbers are compared for accuracy to the disposal amounts reported by in-state disposal facilities to DEP

and the Maine State Planning Office. The numbers from disposal facilities are finally compared to the data obtained from other states. Maine has no reporting requirements for collecting export numbers from transporters or transfer stations. Maine does not allow transfer stations to import out-of-state MSW.

Capacity Summary of Facilities that Accepted Out-of-State MSW in 2002

Maine has one landfill that accepted out-of-state MSW in 2002. The total quantity of MSW accepted at that landfill was 227,694 tons with 7,918 tons coming from out-of-state. Maine has two WTE facilities that accepted out-of-state MSW in 2002. Combined, these facilities are licensed to process 2,000 tons per day and processed 796,965 tons of MSW in 2002; 187,338 tons of which was from out-of-state.

Recent Changes in Maine

Maine is purchasing the West Old Town Landfill from Fort James Paper Company. This landfill will be operated by Casella and will be licensed to accept wastes from the Fort James mill and other wastes generated in Maine. It will also accept the minimal amount of out-of-state waste that is by-pass from the Maine Energy Recovery Company (MERC) and the Penobscot Energy Recovery Company (PERC) MSW incinerators when they experience shutdowns. The by-pass waste currently goes to the Pine Tree Landfill in Hampden. However, Pine Tree is planning to decrease its daily disposal rate to only the out-of-state C&D and special wastes (not MSW) it is currently accepting, so there is no anticipated impact to interstate MSW waste flow. This change enables Pine Tree Landfill to extend the operating life of the landfill and to forego seeking additional licensing for increased capacity.

Massachusetts

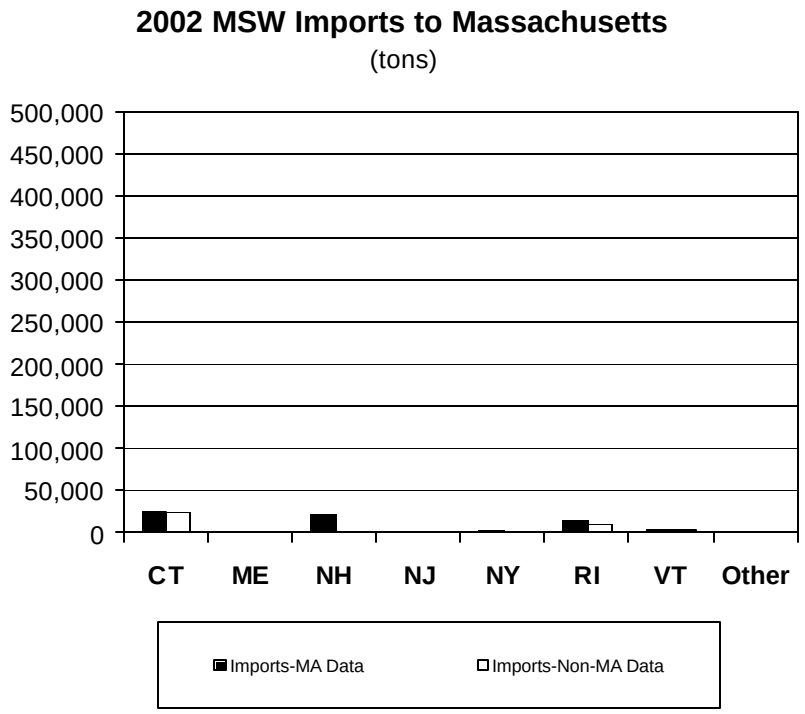
Facilities in Massachusetts disposed of 4,147,413 tons of municipal solid waste (MSW) generated from in-state sources in 2002: 1,007,437 tons at landfills and 3,139,976 tons at waste-to-energy (WTE) facilities. Massachusetts is a net exporter, sending significantly more waste out-of-state than it accepts from other states. According to Department of Environmental Protection (DEP) records in 2002, facilities in Massachusetts imported 64,483 tons of MSW generated from other NEWMOA states, mostly from Connecticut and New Hampshire. Massachusetts did not import MSW from a non-NEWMOA state in 2002.

According to DEP records, in 2002, facilities in Massachusetts exported 720,208 tons of MSW to other NEWMOA states, primarily to Maine, New Hampshire and New York. Massachusetts also exported 477,649 tons of MSW to non-NEWMOA states, primarily to South Carolina.

Discussion of 2002 Data

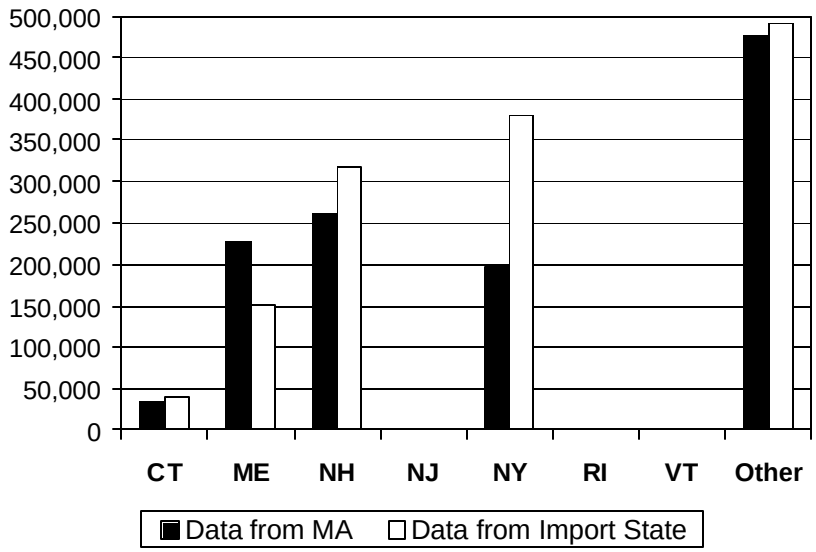
The discussion and figure below present Massachusetts' reported imports from NEWMOA and non-NEWMOA states compared to data regarding NEWMOA and non-NEWMOA states' reported exports to Massachusetts. Following the discussion of imports is a section and figure illustrating Massachusetts' reported exports to NEWMOA and non-NEWMOA states compared to data regarding NEWMOA and non-NEWMOA states' reported imports from Massachusetts.

Imports: Massachusetts data correlates well with data from Connecticut, New York, Rhode Island and Vermont. Massachusetts disposal facilities report receiving 20,952 tons of MSW from New Hampshire, however New Hampshire does not report sending MSW to Massachusetts facilities. Some MSW is likely to be direct-hauled to Massachusetts from New Hampshire. In addition, New Hampshire reports sending some types of waste to Massachusetts, but it does not distinguish between MSW and C&D, nor does it distinguish whether this waste was generated in New Hampshire or out-of-state.



Exports: Massachusetts data correlates well with data from Connecticut. Maine reports receiving 75,000 less tons of MSW than Massachusetts reports sending to Maine. Maine contacted the landfill in question and was told the material from Massachusetts was C&D waste. Therefore, Maine's data is assumed to be correct and is used throughout the report. New Hampshire and New York report receiving 56,000 more tons and 183,000 more tons, respectively, of MSW than Massachusetts reports sending to these states. The extra MSW New Hampshire reports receiving is most likely direct hauled from Massachusetts. Compared to the New York data, the Massachusetts data is likely to be more accurate because the New York number is based on a general estimation from the facility that reports receiving the majority of the MSW imported to New York from Massachusetts.

Massachusetts reports sending 401,318 tons of MSW to South Carolina, while South Carolina reports receiving only 348,472 tons of MSW from Massachusetts. The Massachusetts data is likely to be more accurate because transfer stations have little incentive to over-estimate the amount of MSW that they export to other states. Massachusetts reports sending 73,294 tons of MSW to Ohio, while Ohio reports receiving 98,253 tons of waste from Massachusetts, however the Ohio estimate is likely to include non-MSW types of waste, such as contaminated soil, municipal waste water treatment sludge, and scrap tires and therefore the Ohio data is not used.



Massachusetts reports sending 1,252 tons of MSW to Pennsylvania while Pennsylvania reports receiving 14,375 tons of MSW from Massachusetts. The Pennsylvania number is more likely to be correct because in general, disposal facility data is more accurate than transfer station data and Pennsylvania has a good recordkeeping and reporting system. Massachusetts reports sending 1,785 tons of MSW to Virginia that Virginia does not report receiving.

Discussion of Trends - 1999 through 2002

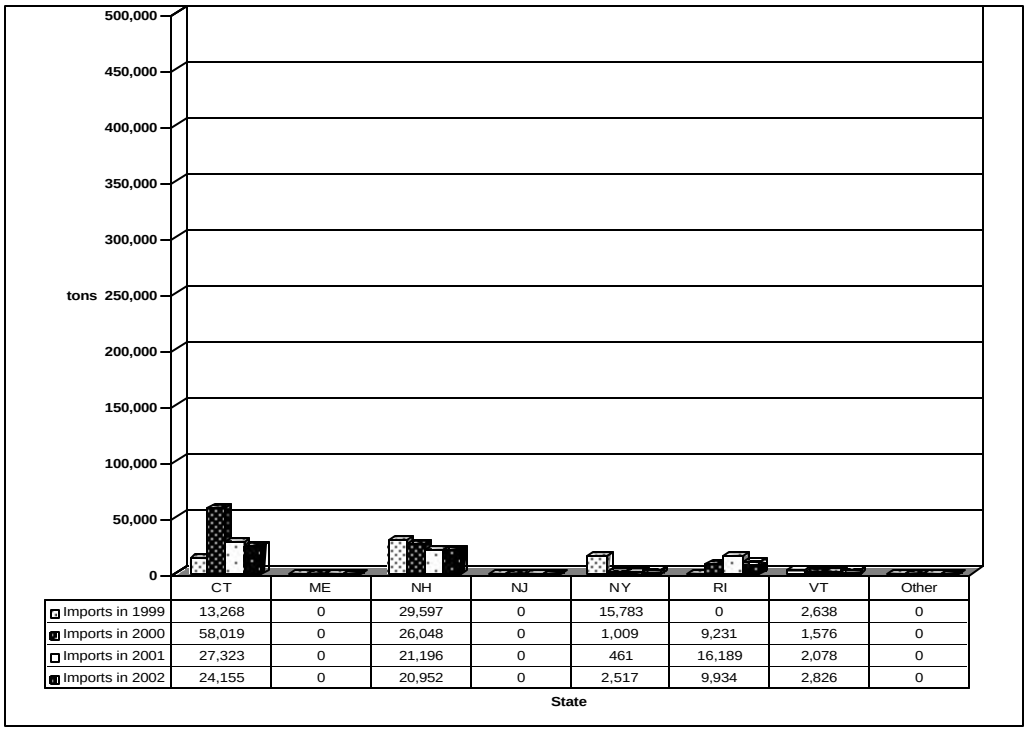
The quantity of MSW generated in Massachusetts and was disposed (including exports) increased by 11% from 1999 to 2002, from 4.99 million to 5.53 million tons. In-state disposal of MSW generated from Massachusetts sources remained relatively stable during the period from 1999 through 2002, increasing by 7.6% from 3,856,000 tons to 4,147,413 tons. Import and export trends for the period between 1999 and 2002 are described below.

Import Data: The total amount of MSW imported by Massachusetts decreased by 1.5% from 1999 to 2002 from 61,286 tons to 60,384 tons. Between 1999 and 2000, the amount of MSW imported increased substantially by 56%, from 61,286 tons to 95,883 tons. Most of this increase came from Connecticut, likely due to increases in the amount of MSW generated in Connecticut which subsequently increased exports out-of-state. Between 2000 and 2001, imports decreased by 30% from 95,883 tons to 67,247 tons, again due to changes in exports from Connecticut. Between 2001 and 2002, imports further decreased by 10% from 67,247 tons to 60,384 tons.

Data from exporting facilities in Vermont correlates well with the Massachusetts disposal facility data. New Hampshire's data does not correlate with Massachusetts data over the years; however that is most likely because of direct haul from sources in New Hampshire to Massachusetts disposal facilities. Connecticut export data also does not correlate well with Massachusetts import data, again likely due to MSW that was direct-hauled from Connecticut sources into Massachusetts. The data from New York transfer stations fluctuates every year between 1999 and 2002 from sending more MSW to sending less MSW to Massachusetts than Massachusetts disposal facilities report receiving from New York.

Rhode Island transfer stations report sending more MSW to Massachusetts from 1999 to 2001 than Massachusetts reports receiving. However, for all states receiving MSW from Rhode Island in those years, disposal data in the receiving state is used. Therefore, Massachusetts disposal data is used for exports from Rhode Island in 1999 to 2001. In 2002, Rhode Island export data was adjusted to only account for Rhode Island generated MSW, and therefore, Massachusetts reports receiving more MSW than Rhode Island reports sending. The adjusted Rhode Island data is used in this report for 2002.

MSW Imports to Massachusetts: 1999 through 2002
(tons)

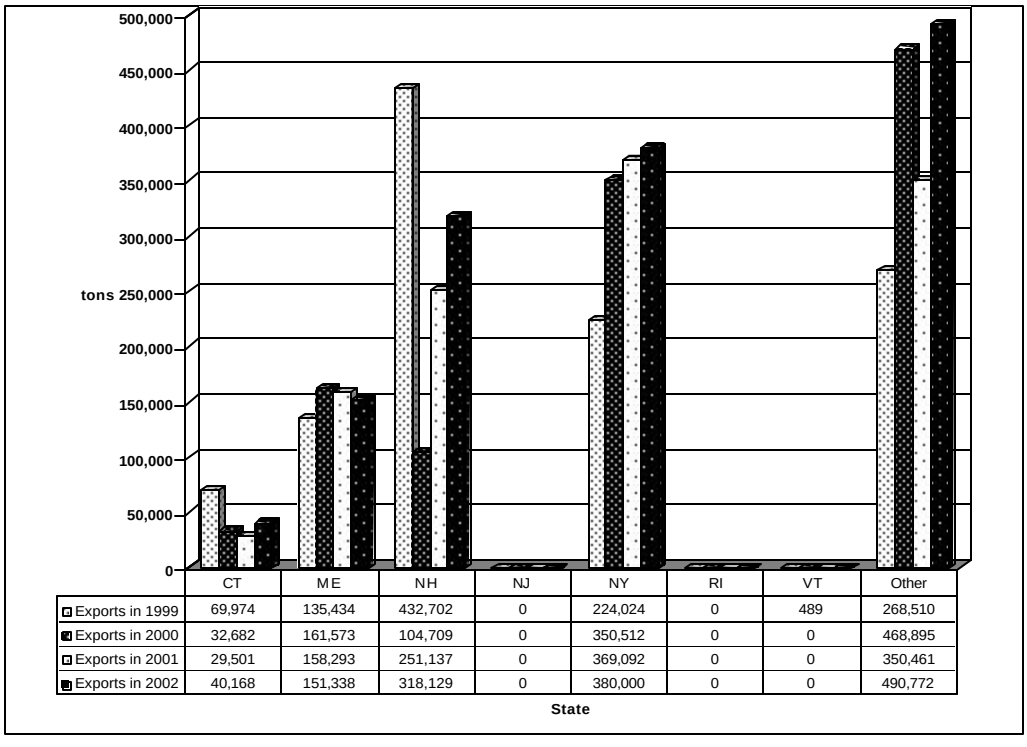


	CT	ME	NH	NJ	NY	RI	VT	Other
Imports in 1999	13,268	0	29,597	0	15,783	0	2,638	0
Imports in 2000	58,019	0	26,048	0	1,009	9,231	1,576	0
Imports in 2001	27,323	0	21,196	0	461	16,189	2,078	0
Imports in 2002	24,155	0	20,952	0	2,517	9,934	2,826	0

Export Data: The total amount of MSW exported by Massachusetts increased by 22% between 1999 and 2002 from 1,131,133 tons to 1,380,407 tons. From 1999 to 2000 and from 2000 to 2001, the changes were small, but from 2001 to 2002, the exports jumped 19%, from 1,158,484 tons to 1,380,407 tons, mostly due to increases in MSW sent to New Hampshire and non-NEWMOA states. The large decrease of MSW sent to New Hampshire from 1999 to 2000 was most likely due to political pressure in New Hampshire to focus on MSW imports. The large increases between 2000 to 2001 and then from 2001 to 2002 of MSW sent to New Hampshire are due to market forces and efforts by the New Hampshire Department of Environmental Services to improve reporting from their transfer stations to include the disposal destination of imported MSW. The large increase from 1999 to 2000 of exports to non-NEWMOA states is likely due to Massachusetts' need to find an alternative to exports to New Hampshire. The decrease in exports to non-NEWMOA states from 2000 to 2001 was likely due to an increase in exports to New Hampshire.

Data was not obtained from the non-NEWMOA states from 1999 through 2001 and Massachusetts transfer station data was used for these years. In 2002, data was obtained from non-NEWMOA importers of Massachusetts waste, however only the data from Pennsylvania is used in this report. The data from Ohio, South Carolina and Virginia is considered unreliable (see above section on discussion of 2002 data for more detail).

MSW Exports from Massachusetts: 1999 through 2002 (tons)



	CT	ME	NH	NJ	NY	RI	VT	Other
Exports in 1999	69,974	135,434	432,702	0	224,024	0	489	268,510
Exports in 2000	32,682	161,573	104,709	0	350,512	0	0	468,895
Exports in 2001	29,501	158,293	251,137	0	369,092	0	0	350,461
Exports in 2002	40,168	151,338	318,129	0	380,000	0	0	490,772

Therefore, for Ohio, South Carolina, and Virginia, export data from Massachusetts transfer stations was also used in 2002. The large increase in MSW exported to non-NEWMOA states

from 2001 to 2002 is due partly to the use of Pennsylvania disposal data in 2002 and also because Massachusetts increased the amount of MSW they exported to South Carolina in 2002. These general trends and relative changes in export data hold in most cases when data from Massachusetts transfer stations is used.

Data Collection Summary

Massachusetts requires that all landfills, WTEs and transfer stations submit annual report forms in hardcopy 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 reviewed for completeness, and entered into a database. After entry, the reports are checked by DEP for accuracy and internal consistency (the sum of all waste amounts accepted equals the total amount accepted), including contacting other states. Transfer Station reports are further checked to verify that the materials accepted are roughly equal to those sent off-site. DEP staff call facilities to clarify missing or inconsistent data. There are no on-site checks of scale data or other records.

Capacity Summary of Facilities that Accepted Out-of-State MSW in 2002

Massachusetts has four landfills that accepted out-of-state MSW in 2002. Combined, the total quantity of waste (MSW and C&D) accepted at the landfills was 883,565 tons with 100,735 tons coming from out-of-state. Massachusetts has four resource recovery facilities that processed out of state MSW in 2002. Combined, these facilities are licensed to process 4,950 tons per day and processed 1,851,890 tons of MSW (and 5,427 tons of C&D waste) in 2002, 33,441 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.

The Massachusetts waste reduction rate has increased from 51% in 1999 to 57% in 2001, largely due to reduced generation and disposal. Due to funding and staffing cuts, Massachusetts is reviewing and revising its waste reduction strategies to continue to target priority waste streams and sectors and to make waste management more cost effective. These efforts are being informed by two recent reports, both of which can be found on the DEP Web site at http://www.mass.gov/dep/bwp/dswm/dswmpubs.htm#other:

-- Waste Reduction Program Assessment and Analysis, prepared for DEP by the Tellus Institute and published in February 2003
-- Commercial Waste Disposal Assessment, prepared by DEP and published in November 2002

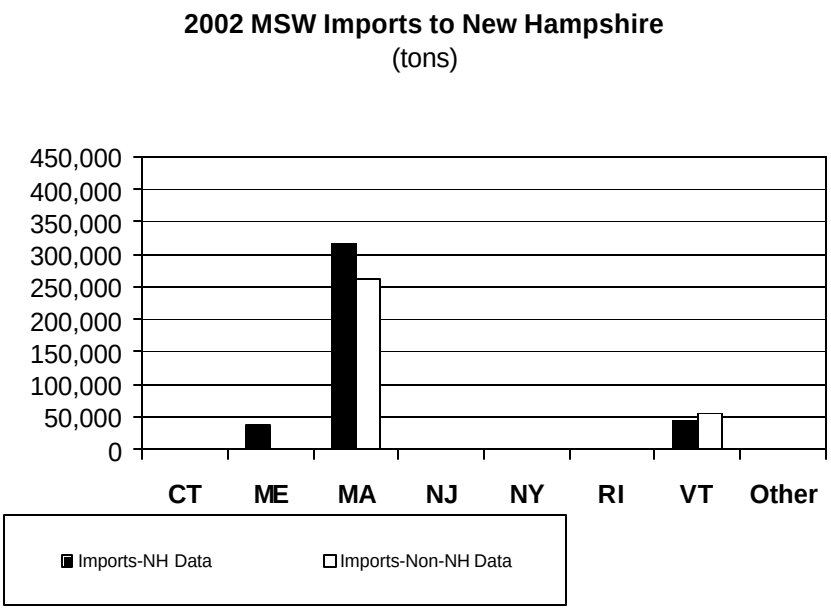
New Hampshire

Facilities in New Hampshire disposed of 998,000 tons of municipal solid waste (MSW) generated from in-state sources in 2002: 766,763 tons at landfills and 231,237 tons at waste-to-energy (WTE) facilities. New Hampshire imports more MSW from other states than it exports. According to Department of Environmental Services (DES) records, in 2002, facilities in New Hampshire imported 401,852 tons of MSW generated from other NEWMOA states, mainly from Massachusetts: 376,758 at landfills and 25,094 at waste-to-energy (WTE) facilities. New Hampshire did not import MSW from a non-NEWMOA state in 2002.

In 2002, facilities in New Hampshire exported 73,404 tons of MSW to disposal facilities located in NEWMOA states, mostly to Maine with some also going to Massachusetts and New York. According to DES records, New Hampshire did not export MSW to a non-NEWMOA state in 2002, however Pennsylvania reports receiving 36,609 tons of MSW from New Hampshire.

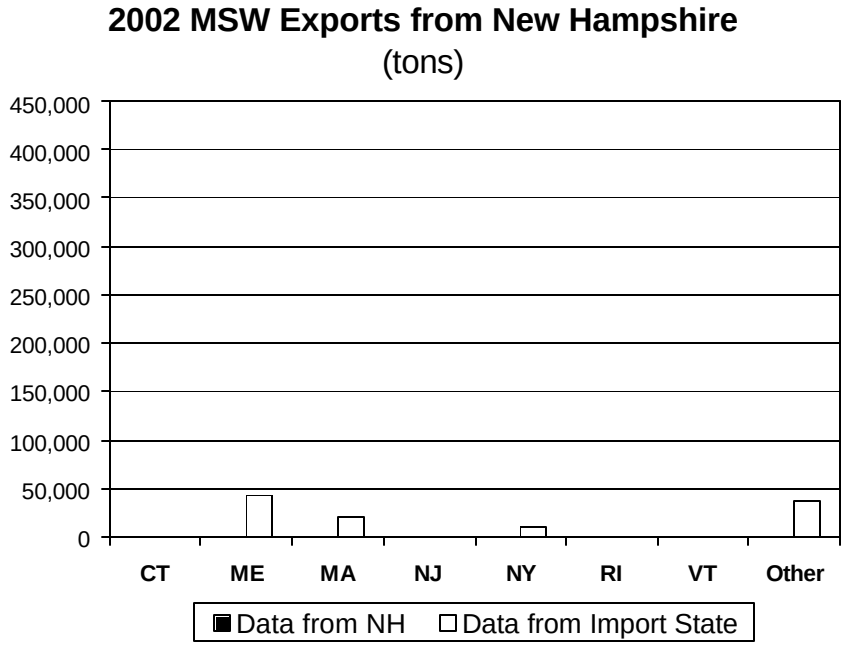
Discussion of 2002 Data

The discussion and figure below present New Hampshire's reported imports from NEWMOA and non-NEWMOA states compared to data regarding NEWMOA and non-NEWMOA states' reported exports to New Hampshire. Following the discussion of imports is a section and figure illustrating New Hampshire's reported exports to NEWMOA and non-NEWMOA states compared to data regarding NEWMOA and non-NEWMOA states' reported imports from New Hampshire.



Imports: New Hampshire data correlates well with data from Vermont. Maine does not collect export information from transfer stations, but New Hampshire reports receiving 39,000 tons of MSW from Maine. Facilities in New Hampshire report receiving 56,000 tons more of MSW from Massachusetts than Massachusetts reports sending to New Hampshire. This extra MSW is most likely hauled directly from Massachusetts, and therefore, New Hampshire disposal data is used.

Exports: New Hampshire does not report that MSW was sent to out-of-state facilities. However, Maine, Massachusetts and New York respectively report receiving 42,000, 21,000 and 10,000 tons of MSW from New Hampshire. It is likely that some MSW is direct-hauled to Maine and Massachusetts from New Hampshire, accounting for the discrepancy. In addition, for Massachusetts and also for New York, New Hampshire does report sending some types of waste to these states, but the New Hampshire transfer station data does not distinguish this waste between MSW and C&D, nor does it distinguish whether this waste was generated in New Hampshire or out-of-state. Pennsylvania reports receiving 36,609 tons of MSW from New Hampshire. Disposal facility data from Massachusetts, New York, and Pennsylvania were used in this report.



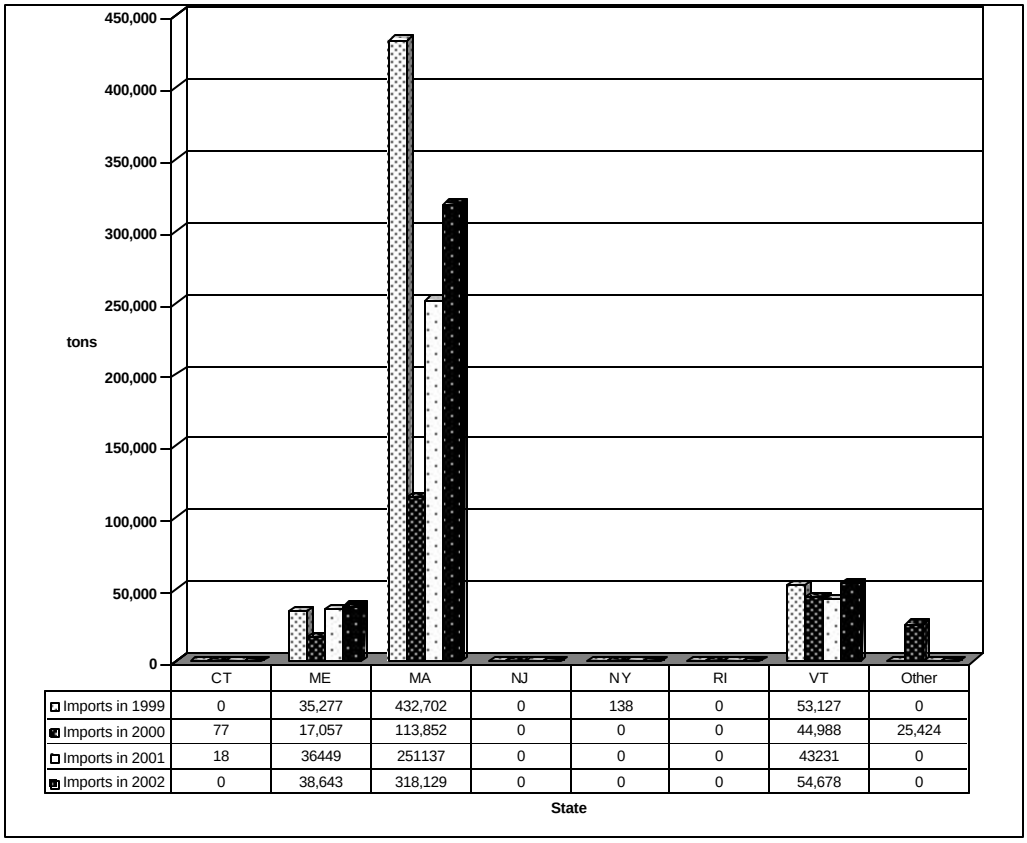
Discussion of Trends - 1999 through 2002

The quantity of MSW generated in New Hampshire that was disposed (including exports) increased by 6% from 1999 to 20002, from 1.04 million to 1.11 million tons. In-state disposal of MSW generated from New Hampshire sources has fluctuated moderately during the period from 1999 through 2002, with a net increase of 4.1% from 959,200 tons to 998,000 tons. Between 1999 and 2000, there was an 11.3% increase from 959,200 tons to 1,067,926 tons. Between 2000 and 2001, there was a 7.2% decrease from 1,067,926 tons to 990,586 tons. Then, between 2001 and 2002, there was a 0.8% increase from 990,586 tons to 998,000 tons. The first increase from 1999 to 2000 might have been largely due to political pressure focused on the large quantity of out-of-state MSW imported to the major commercial landfill. This could have increased MSW imports to New Hampshire transfer stations that were then reported as New Hampshire-generated MSW when reaching the disposal facility. The following year's decrease likewise is most likely due to New Hampshire DES efforts to improve transfer station record-keeping and

reporting to account for this out-of-state waste. Import and export trends for the period between 1999 and 2002 are described below.

Import Data: The total amount of MSW imported by New Hampshire decreased between 1999 and 2002 by 21% from 521,244 tons to 411,450 tons. There was a decrease of 61% between 1999 and 2000 from 521,106 tons to 201,398 tons, and then an increase of 64% between 2000 and 2001 from 201,398 tons to 330,835 tons and an increase of 24% between 2001 and 2002 from 330,835 tons to 411,450 tons. The large decrease from 1999 to 2000 is most likely tied to political pressure in New Hampshire to focus on MSW imports. The large increases from 2000 to 2001 and then from 2001 to 2002 are due to less political pressure regarding MSW imports and to efforts by DES to improve reporting from transfer stations to better account for out-of-state waste.

MSW Imports to New Hampshire: 1999 through 2002
(tons)



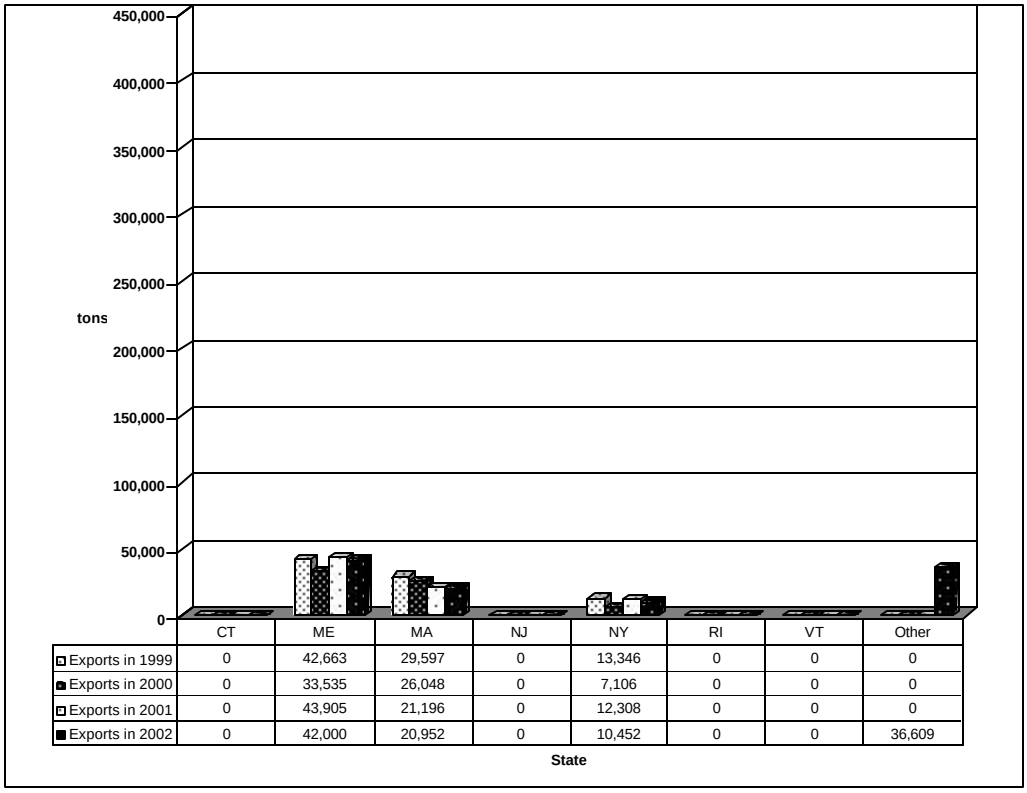
	CT	ME	MA	NJ	NY	RI	VT	Other
Imports in 1999	0	35,277	432,702	0	138	0	53,127	0
Imports in 2000	77	17,057	113,852	0	0	0	44,988	25,424
Imports in 2001	18	36449	251137	0	0	0	43231	0
Imports in 2002	0	38,643	318,129	0	0	0	54,678	0

Note that the 25,424 tons listed under "other" in 2000 is MSW that DES is unable to attribute to a specific state – therefore, it's origin is "unknown" and it is most likely not from a non-NEWMOA state.

Export Data: The total amount of MSW exported by New Hampshire increased between 1999 and 2002 by 28.5% from 85,606 tons to 110,013 tons. There was a decrease of 22% between 1999 and 2000, from 85,606 tons to 66,688 tons. There was then an increase of 16% between 2000 and 2001 from 66,688 tons to 77,409 tons and a further increase of 42% between 2001 and

2002 from 77,409 tons to 110,013 tons. The fluctuation from 1999 to 2001 was due to changes in the amount of waste sent to Maine which decreased in 2000 and then increased to approximately 1999 levels again in 2001. The increase from 2001 to 2002 was due to the use of disposal data from Pennsylvania, which was not collected for the first three years studied in this report.

MSW Exports from New Hampshire: 1999 through 2002
(tons)



	CT	ME	MA	NJ	NY	RI	VT	Other
Exports in 1999	0	42,663	29,597	0	13,346	0	0	0
Exports in 2000	0	33,535	26,048	0	7,106	0	0	0
Exports in 2001	0	43,905	21,196	0	12,308	0	0	0
Exports in 2002	0	42,000	20,952	0	10,452	0	0	36,609

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.

Capacity Summary of Facilities that Accepted Out-of-State MSW in 2002

New Hampshire has four landfills that accepted MSW from out of state in 2002. Combined, the total quantity of waste (MSW and C&D) accepted at the landfills was 1,488,959 tons with 552,905 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 2002. This facility is licensed to process 200 tons per day and processed 70,122 tons of waste (MSW and C&D) in 2002; 25,411 tons of which was from other NEWMOA states (Vermont).

Recent Changes in New Hampshire

Reporting: In 2003, the DES implemented a new system to track the collection of annual facility reports and to follow-up on delinquent submittals. Since this system has been put in place, the DES has collected 96% of all required reports, which accounts for about 99% of the population. Additionally, it is anticipated that delinquent facilities that did not respond to the inquiries for submittal will receive a letter of deficiency ordering the report to be completed and submitted. It is the department's goal to receive 100% of all solid waste annual facility reports each year.

The agency that previously collected recycling data in the state, the Governor's Recycling Program (GRP), was not included in the last budget and they ceased activities early in 2003. The DES undertook the data collection that was normally accomplished by the GRP and additional forms were included with the 2002 annual facility report distributed in March. In 2004, the forms will be fully integrated into one report.

All reporting forms are available on line at www.des.state.nh.us/SWTAS/afrdwnj.htm in both word or pdf format. The DES is currently developing an online reporting system whereby users will be able to access forms and submit the reports through the state's website. The reporting system will populate a database that is expected to be operational by late 2004.

Capacity: New capacity was added to the state in 2003. The Mt. Carberry Landfill in Berlin, New Hampshire was approved for expansion from 32,000 tons/year to 120,000 tons per year of MSW. The Androscoggin Regional Refuse Disposal District purchased the landfill in 2002.

The DES recently conducted a thorough analysis of existing and projected solid waste capacity for the next twenty years. The analysis is a statutory responsibility, but was also completed to assist potential applicants for solid waste permits as they address concerns of public benefit. All solid waste applicants are required to demonstrate that the proposed facility will provide a public benefit to New Hampshire. Applicants now have access to the same tables and reasoning that DES used in conducting their analysis. The capacity web page is located at http://www.des.state.nh.us/SWTAS/Capacity/.

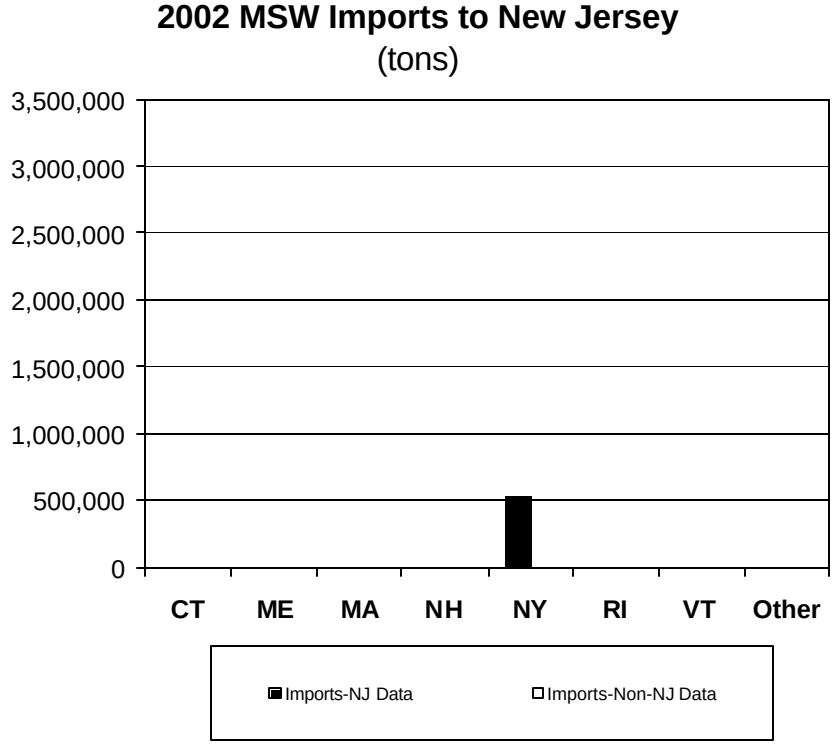
New Jersey

Facilities in New Jersey disposed of 3.8 million tons of municipal solid waste (MSW) generated from in-state sources in 2002: 2.3 millions tons at landfills and 1.5 million tons at waste-to-energy (WTE) facilities. 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, disposing of more MSW from NEWMOA states (primarily from New York) than it sends to NEWMOA states (to New York). Most of the MSW exported by New Jersey is exported out of the NEWMOA region to Pennsylvania.

According to Department of Environmental Protection (DEP) records, in 2002 facilities in New Jersey imported and disposed of 531,568 tons of MSW generated from NEWMOA states, all but 282 tons of which was from New York. New Jersey did not import MSW from non-NEWMOA states in 2002. According to DEP records, in 2002 facilities in New Jersey exported 35,062 tons of MSW to disposal facilities located in NEWMOA states (all to New York) and 2.3 million tons to facilities located in non-NEWMOA states (all to Pennsylvania).

Discussion of 2002 Data

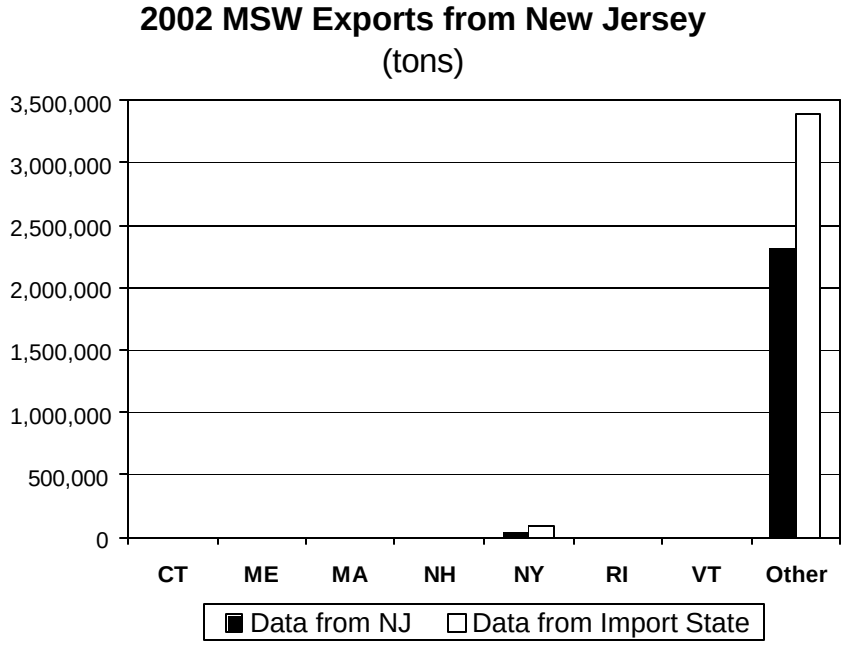
The discussion and figure below present New Jersey's reported imports from NEWMOA and non-NEWMOA states compared to data regarding NEWMOA and non-NEWMOA states' reported exports to New Jersey. Following the discussion of imports is a section and figure illustrating New Jersey's reported exports to NEWMOA and non-NEWMOA states compared to data regarding NEWMOA and non-NEWMOA states' reported imports from New Jersey.



Imports: New Jersey disposal facilities report receiving 531,561 tons of MSW from New York, while New York reports sending only 200 tons of MSW to New Jersey. It is likely that a significant quantity of MSW 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.

Exports: New Jersey reports sending 35,062 tons of MSW to New York, while New York reports receiving 90,000 tons of MSW from New Jersey. This is likely due to MSW that is hauled directly from New Jersey to New York for disposal, without passing through a New Jersey transfer station. Therefore, the New York figure is more likely to be correct. New Jersey reports sending 2.3 million tons of MSW to Pennsylvania, while Pennsylvania reports receiving 4.3 million tons of MSW from New Jersey. Almost half of this discrepancy is due to 949,644 tons of pass-through MSW that is sent from New York City to New Jersey transfer stations, and then sent on to disposal facilities in Pennsylvania. The MSW originated in New York, but Pennsylvania facilities record it as New Jersey MSW. NEWMOA has corrected for this pass-through and uses the Pennsylvania disposal data minus the New Jersey DEP-documented pass-through as the amount of New Jersey MSW sent to Pennsylvania for disposal (3.4 million tons is the figure used). The remaining discrepancy is likely due to MSW that is directly hauled from New Jersey to Pennsylvania disposal facilities without going through a New Jersey transfer station.

Virginia reports receiving a small amount of MSW from New Jersey—910 tons—that New Jersey does not report sending to Virginia. However, Virginia data is not considered reliable and is not used in this report. Ohio also reports receiving 133,063 tons of waste from New Jersey that New Jersey does not report sending to Ohio; however the Ohio data can include non-MSW types of waste, such as contaminated soil, municipal waste water treatment sludge, and scrap tires and is therefore not used.



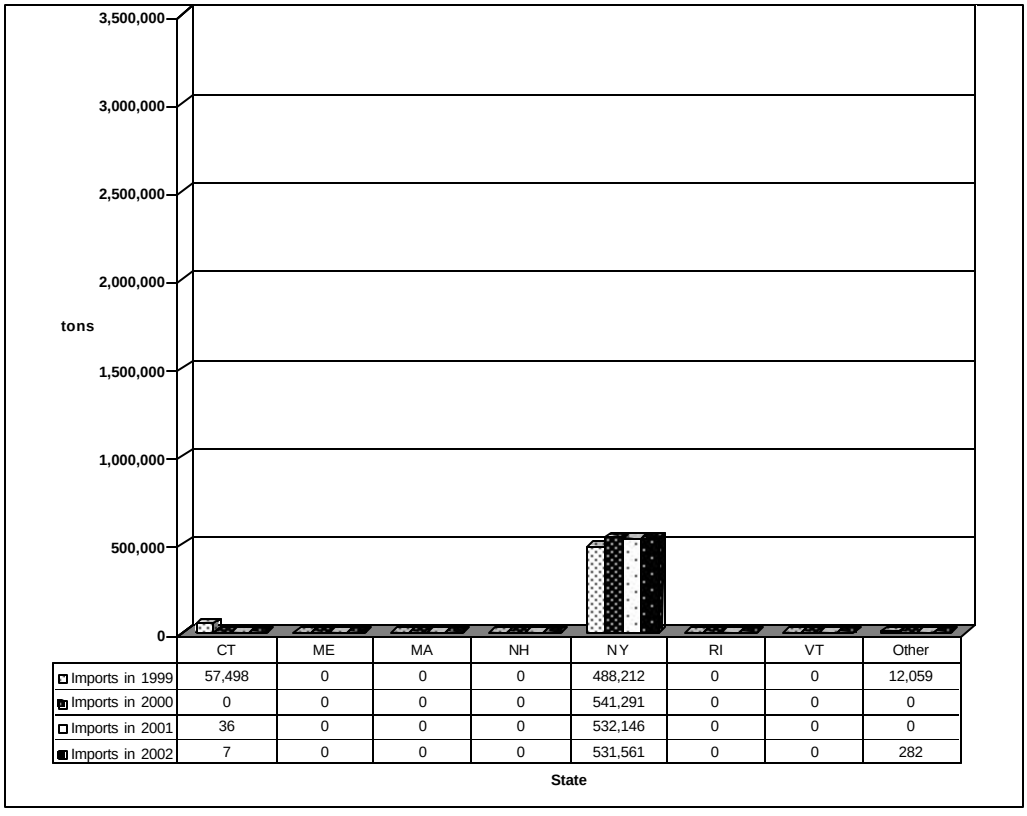
Discussion of Trends - 1999 through 2002

The quantity of MSW generated in New Jersey that was disposed (including exports) increased by 32% from 1999 to 2002 (primarily due to the use of data from Pennsylvania in 2002), from 5.52 to 7.29 million tons. In-state disposal of MSW generated from New Jersey sources

remained stable during the period from 1999 through 2002, decreasing by 2.6% from 3.9 million tons to 3.8 million tons. Between 1999 and 2000, there was a 7.7% increase from 3.9 million tons to 4.2 million tons. After that, there was a decrease between 2000 and 2001 of 7.1% from 4.2 million tons to 3.9 million tons and between 2001 and 2002 there was another decrease of 2.6% from 3.9 million tons to 3.8 million tons. Import and export trends for the period between 1999 and 2002 are described below.

Import Data: The total amount of MSW imported by New Jersey decreased by 4.65% between 1999 and 2002 from 557,769 tons to 531,850 tons. This decreased occurred steadily, with a 3.0% decrease between 1999 and 2000, a 1.7% decrease between 2000 and 2001, and a 0.06% decrease between 2001 and 2002. New York reports exporting significantly less MSW to New Jersey for disposal than New Jersey disposal facilities report importing from New York. There is likely to be direct haul of a substantial quantity of MSW from New York to New Jersey and data from transfer stations is generally less accurate than data from disposal facilities of importing states. Therefore, the New Jersey disposal data is used.

MSW Imports to New Jersey: 1999 through 2002 (tons)



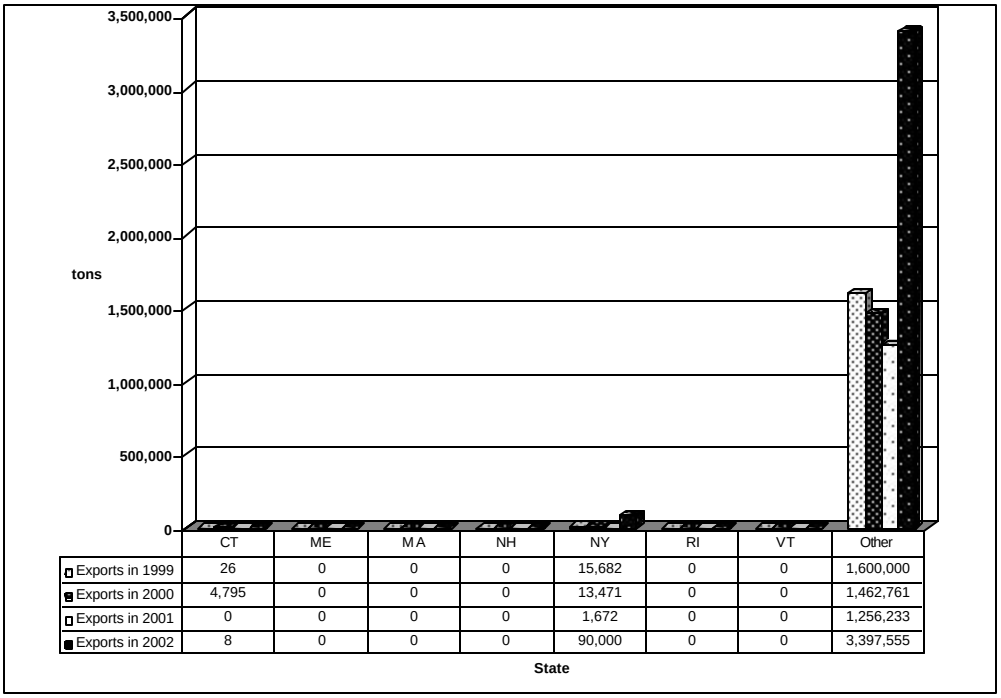
	CT	ME	MA	NH	NY	RI	VT	Other
Imports in 1999	57,498	0	0	0	488,212	0	0	12,059
Imports in 2000	0	0	0	0	541,291	0	0	0
Imports in 2001	36	0	0	0	532,146	0	0	0
Imports in 2002	7	0	0	0	531,561	0	0	282

Export Data: The total amount of MSW exported by New Jersey increased by 116% during the time period from 1999 to 2002 from 1.61 million tons to 3.49 million tons. Between 1999 and 2000, exports decreased by 8.3% from 1,615,708 tons to 1,481,027 tons. Between 2000 and 2001, exports decreased again by 15% from 1,481,027 tons to 1,257,905 tons. Between 2001 and 2002, exports increased substantially by 177%, from 1,257,905 tons to 3,487,563 tons. The

substantial increase between 2001 and 2002 is due mainly to using data from Pennsylvania disposal facilities in 2002, which is assumed to be more accurate than data from New Jersey transfer stations. Previous to 2002, Pennsylvania data was not obtained for these reports and export data from New Jersey transfer stations was relied on.

New York data does not correlate well. From 1999 through 2001, New Jersey transfer stations reported sending more MSW to New York than New York disposal facilities reported receiving from New Jersey. Transfer stations have little incentive to mis-report exports of MSW and therefore, the New Jersey data is used. In addition, during those years, New York disposal facilities were undergoing changes in their reporting and recordkeeping systems, so it is likely that transfer station data from New Jersey is more accurate and was thus used in this report. In 2002, New York reports receiving more waste from New Jersey than New Jersey reported exporting to New York and since disposal facility data is generally assumed to be more accurate than transfer station data, New York's data is used for 2002. The substantial increase in MSW exported from New Jersey to New York in 2002 could be due to market forces.

MSW Exports from New Jersey: 1999 through 2002
(tons)



	CT	ME	MA	NH	NY	RI	VT	Other
Exports in 1999	26	0	0	0	15,682	0	0	1,600,000
Exports in 2000	4,795	0	0	0	13,471	0	0	1,462,761
Exports in 2001	0	0	0	0	1,672	0	0	1,256,233
Exports in 2002	8	0	0	0	90,000	0	0	3,397,555

Data Collection Summary

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

Items such 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.

A statewide disposal report is prepared by the DEP each month to compare the facility data against the same month's facility data for the previous year. When significant changes are noticed, the numbers are analyzed to determine the origin of the waste. The total tons generated and disposed of by each county are available to the counties in New Jersey for comparison with their data.

Capacity Summary of Facilities that Accepted Out-of-State MSW in 2002

Only one landfill (Warren Landfill) in New Jersey accepted MSW from out-of-state (3,719 tons from New York). The remaining capacity for the Warren Landfill is 498,428 tons. Also, while three incinerators in New Jersey reported accepting 527,842 tons of MSW from New York, the Essex Resource Recovery Facility accepted 435,009 tons of the total. The Essex Resource Recovery Facility has an annual capacity of 985,500 tons. The Union Resource Recovery facility and Camden Resource Recovery Facility together accepted 92,833 tons of MSW from New York.

Recent Changes in New Jersey

With the recent closure of the Fresh Kills Landfill in New York, facilities in New Jersey are reporting an increased waste flow from New York from about 45,000 tons per month in 2000 to about 125,000 tons per month in 2002.

The movement of all this MSW from New York City has increased interest in using trains to haul MSW from transfer stations in New Jersey to disposal facilities out of the NEWMOA region. DEP was attempting to set some standards to protect the environment during this transfer from truck to rail and require facilities to obtain a permit. However, due to recent court proceedings of the Federal Service Transportation Board regarding preemption of permitting for Intermodal Container facilities, New Jersey has rescinded its permitting requirements for such facilities, while at the same time maintaining certain operational requirements for environmental control.

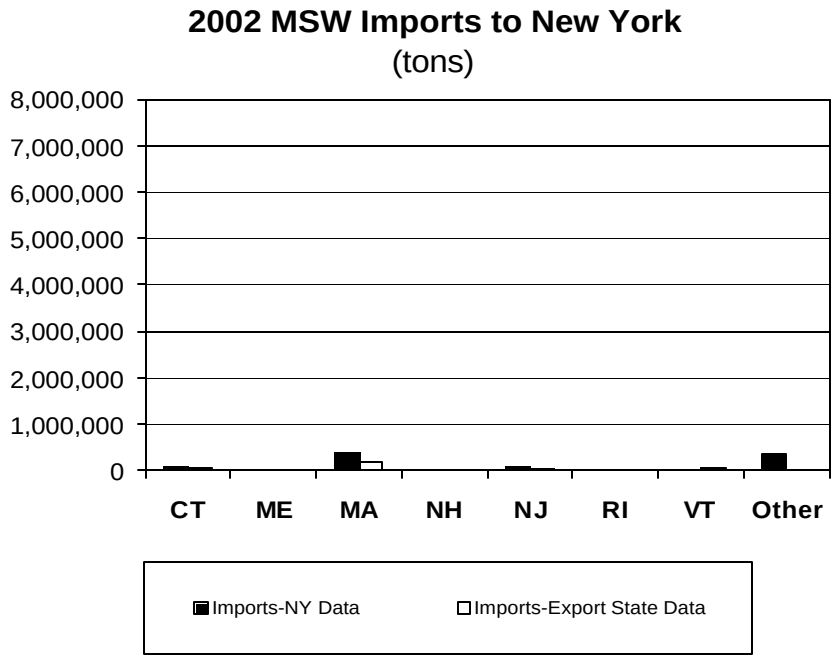
New York

Facilities in New York disposed of 10.7 million tons of municipal solid waste (MSW) generated from in-state sources in 2002: 7.0 million tons at landfills and 3.7 million tons at waste-to-energy (WTE) facilities. 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 2002, facilities in New York imported 788,976 tons of MSW generated from other states: 556,076 tons from NEWMOA states (primarily from Massachusetts and New Jersey) and 370,172 tons from non-NEWMOA states and provinces (primarily from Pennsylvania and Ontario, Canada). According to DEC records, in 2002, New York exported 5,200 tons of MSW to NEWMOA states (primarily to Connecticut) and 5.7 million tons to non-NEWMOA states (primarily Pennsylvania, Virginia and Ohio).

Discussion of 2002 Data

The discussion and figure below present New York's reported imports from NEWMOA and non-NEWMOA states compared to data regarding NEWMOA and non-NEWMOA states' reported exports to New York. Following the discussion of imports is a section and figure illustrating New York's reported exports to NEWMOA and non-NEWMOA states compared to data regarding NEWMOA and non-NEWMOA states' reported imports from New York.

Imports: New York reports receiving 31,261 more tons of MSW from Connecticut* than Connecticut reports exporting to New York. The data from the main New York disposal facility that accepted MSW from all of those states was based on a percentage of all waste, not just MSW, received at the landfill. Therefore, the export data from Connecticut is likely to be more accurate. New York also reports receiving 183,000 tons more from Massachusetts than Massachusetts reports exporting to New York, also due to data from the same landfill. However, there could also be some direct haul from Massachusetts to New York, so the quantity of MSW



* (after adjusting for 8,268 tons of pass-through MSW that originated in New York, was sent to Connecticut transfer stations, and was subsequently sent back to New York for disposal)

exported by Massachusetts is likely to be somewhere between the numbers that Massachusetts and New York report, and for simplicity, the data provided by New York was used in this report.

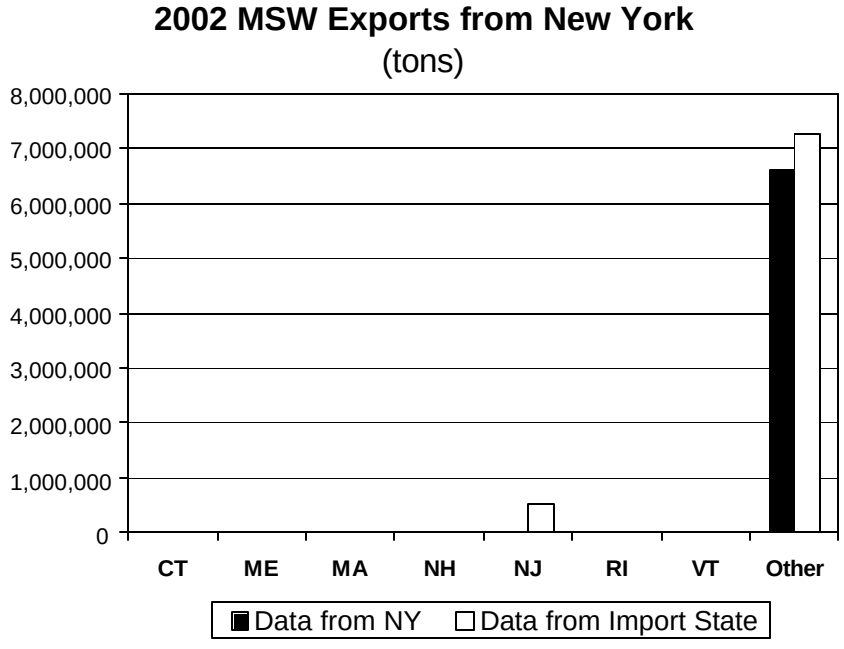
New York also reports receiving 10,000 tons more from New Hampshire than New Hampshire reports exporting to New York. New Hampshire does report sending some waste to New York, but it does not distinguish between MSW or C&D, nor does it distinguish whether this waste was generated in New Hampshire or out-of-state. The New York data regarding imports from New Hampshire is used. Finally, New York reports importing 55,000 tons more from New Jersey than New Jersey reports sending to New York. The additional amount from New Jersey is likely due to MSW that is direct-hauled to New York disposal facilities from New Jersey and therefore, the New York data is also used.

New York reports receiving 47,000 less tons of MSW from Vermont than Vermont states report sending to New York. Vermont's data is likely to be more accurate because Vermont Department of Environmental Conservation staff contact all of the facilities in New York to which Vermont transfer stations report sending MSW.

New York also reports receiving 370,172 tons of MSW from non-NEWMOA states, mostly from Pennsylvania and Ontario, Canada, with small amounts from Ohio and Delaware.

Exports: New York export data correlates well with data from Connecticut and Massachusetts. New York reports sending only 200 tons of MSW to New Jersey, while New Jersey reports receiving 531,000 tons of MSW from New York. It is likely that a significant quantity of MSW 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.

New York reports sending 3.7 million tons of MSW to Pennsylvania, while Pennsylvania reports receiving 5.3 million tons of MSW from New York. It is likely that waste was hauled directly into Pennsylvania from New York without going through a New York transfer station. The Pennsylvania data is assumed to be more accurate because in general, disposal facility data is more accurate than transfer station data and Pennsylvania has a good recordkeeping and reporting system. New York reports sending 875,000 tons of MSW to Ohio, and Ohio reports imports of approximately

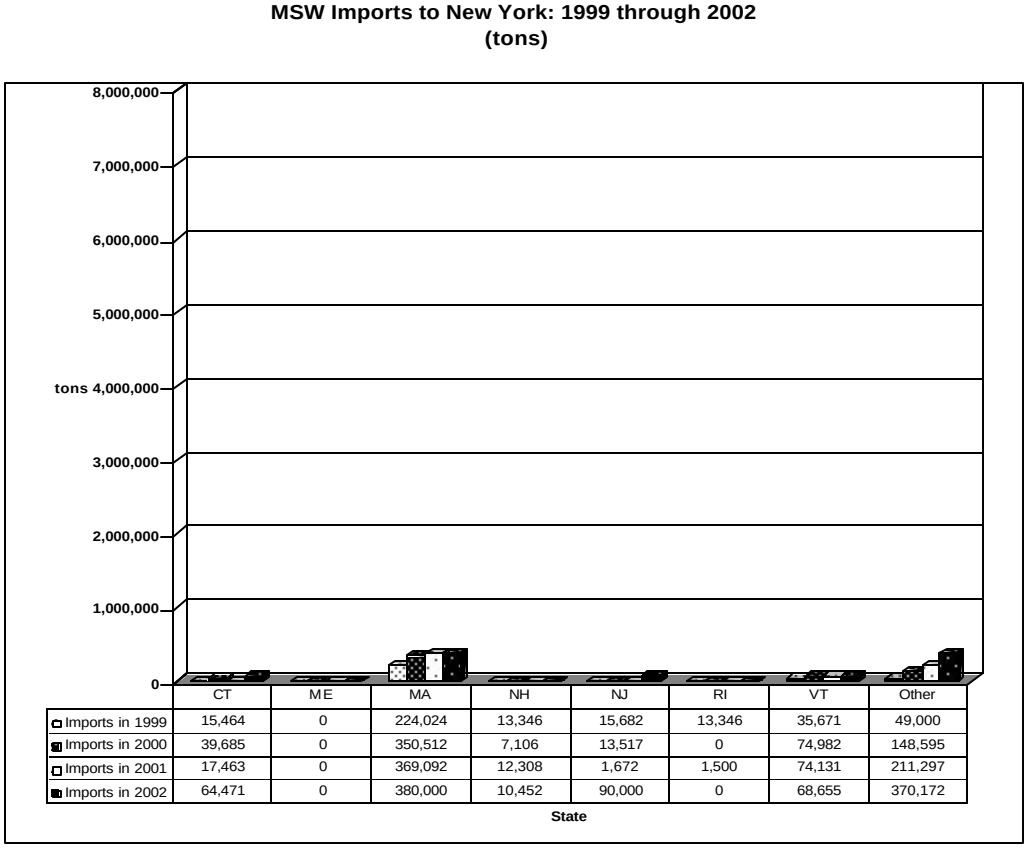


655,000 tons from New York. Transfer stations have little incentive to over-report the quantity of MSW sent out-of-state and therefore, the data from New York is used in this report. New York reports exporting 1 million tons of MSW to Virginia while Virginia reports receiving approximately 1.3 million tons. The Virginia data is not considered reliable and is also not used in this report.

Discussion of Trends - 1999 through 2002

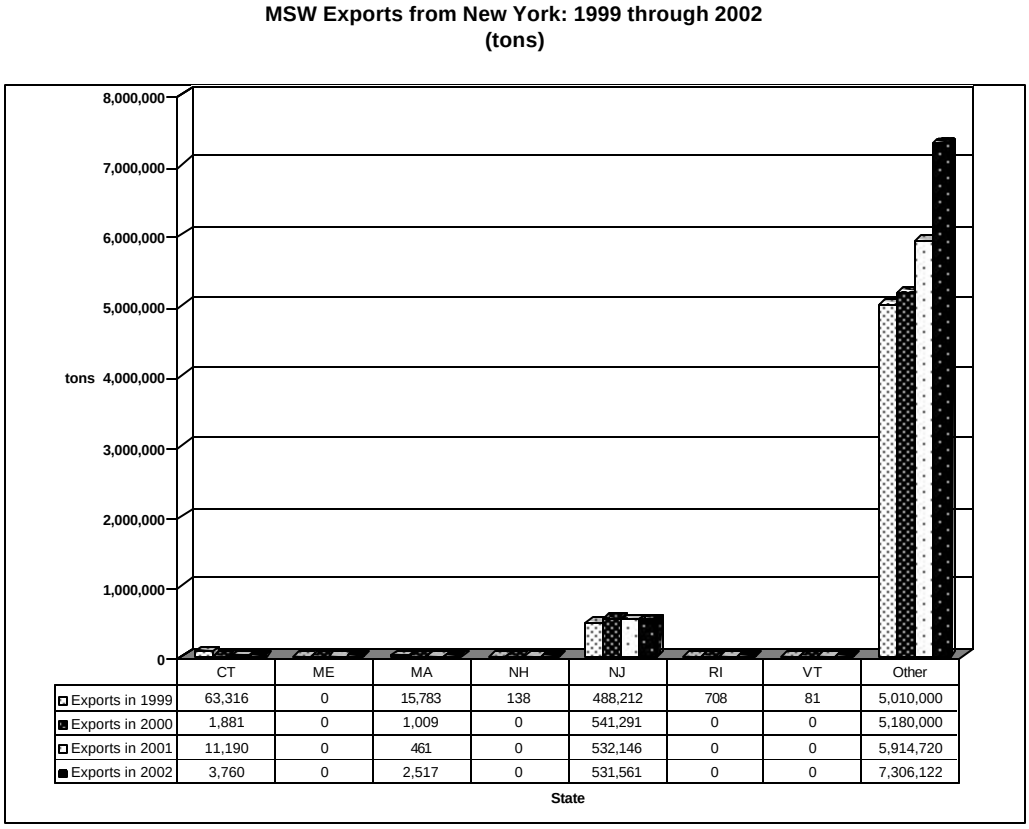
The quantity of MSW generated in New York and was disposed (including exports) increased by 2.8 percent from 1999 to 2002, from 18.05 million to 18.56 million tons. In-state disposal of MSW generated from New York sources decreased by 14% during the period from 1999 through 2002 from 12.5 million tons to 10.7 million tons. Between 1999 and 2000, there was a 7.9% decrease from 12,476,291 tons to 11,495,198 tons and between 2000 and 2001 there was a further 16.9% decrease from 11,495,198 tons to 9,558,740 tons. These decreases were due to steady reductions in the quantity of MSW accepted at the Fresh Kills Landfill in New York City and its eventual closure in early 2001. After that, in-state disposal increased between 2001 and 2002 by 12.1%, from 9,558,740 tons to 10,719,419 tons. It is believed that this increase was due to increases in MSW transported from New York City to disposal facilities in other parts of the state. Import and export trends for the period between 1999 and 2002 are described below as well as presented in the following figures.

Import Data: The total amount of MSW imported to New York increased 216% between 1999 and 2002 from 366,533 tons to 1.16 million tons. Between 1999 and 2000, imports increased by 73% from 366,533 tons to 634,397 tons. A significant portion was due to Massachusetts needing to find other disposal facilities to send the MSW they were previously sending to New Hampshire. Between 2000 and 2001, imports increased by 8.4%, from 634,397 tons to 687,463 tons. Between 2001 and 2002, imports further increased by 69% from 687,463 tons to 1.16 million tons. The increase in imports from 2000 to 2002 is due to increases in imports from Connecticut, New Jersey, and Ontario most likely due to market forces.



	CT	ME	MA	NH	NJ	RI	VT	Other
Imports in 1999	15,464	0	224,024	13,346	15,682	13,346	35,671	49,000
Imports in 2000	39,685	0	350,512	7,106	13,517	0	74,982	148,595
Imports in 2001	17,463	0	369,092	12,308	1,672	1,500	74,131	211,297
Imports in 2002	64,471	0	380,000	10,452	90,000	0	68,655	370,172

Export Data: The total amount of MSW exported by New York increased by 40% during the time period from 1999 and 2002 from 5.58 million tons to 7.84 million tons. Between 1999 and 2000, exports increased by 2.5% from 5.58 million tons to 5.72 million tons. Between 2000 and 2001, exports increased by 13% from 5.72 million tons to 6.46 million tons. The increases between these years were due primarily to the closure of Fresh Kills landfill and the corresponding increase in MSW that was direct-hauled out-of-state. Between 2001 and 2002, exports increased by 21% from 6.46 million tons to 7.84 million tons. This increase is due primarily to the use of disposal data reported from Pennsylvania for the first time. Prior to 2002, Pennsylvania data was not obtained for these reports and export data from New York transfer stations was relied on.



	CT	ME	MA	NH	NJ	RI	VT	Other
Exports in 1999	63,316	0	15,783	138	488,212	708	81	5,010,000
Exports in 2000	1,881	0	1,009	0	541,291	0	0	5,180,000
Exports in 2001	11,190	0	461	0	532,146	0	0	5,914,720
Exports in 2002	3,760	0	2,517	0	531,561	0	0	7,306,122

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, county, state, and tons; and to identify the transfer or disposal destination indicating transfer/disposal facility, county, state, and tons.

Once the DEC obtains the annual reports, DEC Central Office staff scan the reports and upload them onto the DEC's ftp site. DEC Central Office staff then update an inventory database with facility information and a report database with waste quantity information. Current year's numbers are compared to prior year's numbers and any noticeable discrepancies are verified.

There are plans to change the way annual report data is handled for 2003.

Capacity Summary of Facilities that Accepted Out-of-State MSW in 2002

New York reported seven landfills, ten transfer stations, and two WTE facilities that accepted MSW from out-of-state in 2002. The total quantity of MSW accepted at these facilities was

526,246 tons from NEWMOA states, 31,703 tons from non-NEWMOA states and 38,532 tons from Canada. Landfills disposed of 403,122 tons, transfer stations received 123,124 tons, and WTE facilities processed 17,753 tons of MSW from out-of-state.

Recent Changes in New York

The interstate flow data for New York State will continue to be highly dependent on the way New York City waste is managed. The City is moving forward on several fronts, evaluating options and making decisions on waste management for both the near term and long term. They are finalizing their Solid Waste Management Plan, developing plans to construct and operate up to 8 marine transfer stations, and also evaluating several proposals for residential and commercial waste management by private firms.

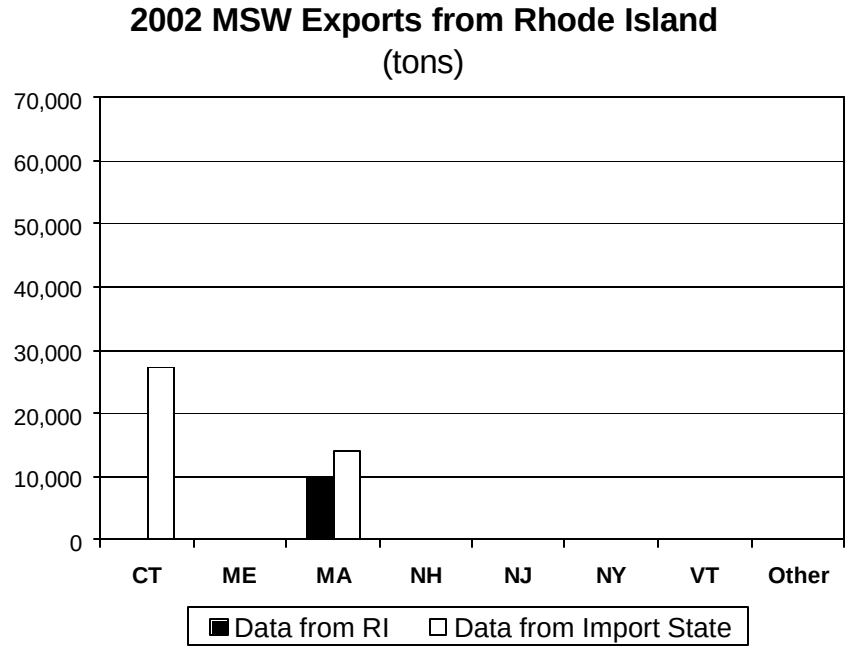
Rhode Island

Facilities in Rhode Island disposed of 1,097,452 tons of municipal solid waste (MSW) generated from in-state sources in 2002, all at landfills. Officially, facilities in Rhode Island do not accept MSW from out-of-state. All MSW that is imported to Rhode Island transfer stations is reported as sent back out-of-state for disposal (referred to as pass-through MSW). According to Department of Environmental Management (DEM) records, in 2002, Rhode Island exported 10,000 tons of MSW generated in Rhode Island to NEWMOA states, mostly to Massachusetts with a small amount being sent to Connecticut. Rhode Island did not export MSW to a non-NEWMOA state in 2002.

Discussion of 2002 Data

The discussion and figure below present Rhode Island's reported exports to NEWMOA and non-NEWMOA states compared to data regarding NEWMOA and non-NEWMOA states' reported imports from Rhode Island. Rhode Island transfer stations report imports to transfer stations from "out-of-state" – the originating state is not reported so the MSW cannot be attributed to the appropriate states and is essentially lost from the accounting.

Exports: Connecticut reports receiving 27,000 tons of MSW from Rhode Island. Rhode Island reports sending 27,078 tons of MSW to Connecticut, but only 167 tons was generated by Rhode Island. Rhode Island reports pass-through MSW that two Rhode Island transfer stations received from out-of-state and then sent to Connecticut. It is not known from which state(s) Rhode Island received this waste, although it is most likely Connecticut and/or Massachusetts. Rhode Island reports sending 4,000 less tons of MSW to Massachusetts than Massachusetts reports receiving from Rhode Island. This discrepancy is also most likely due to pass-through MSW that Rhode Island received from out-of-state and then sent to Massachusetts. The quantity of Rhode Island-generated MSW exported as reported by Rhode Island is most likely to be correct.



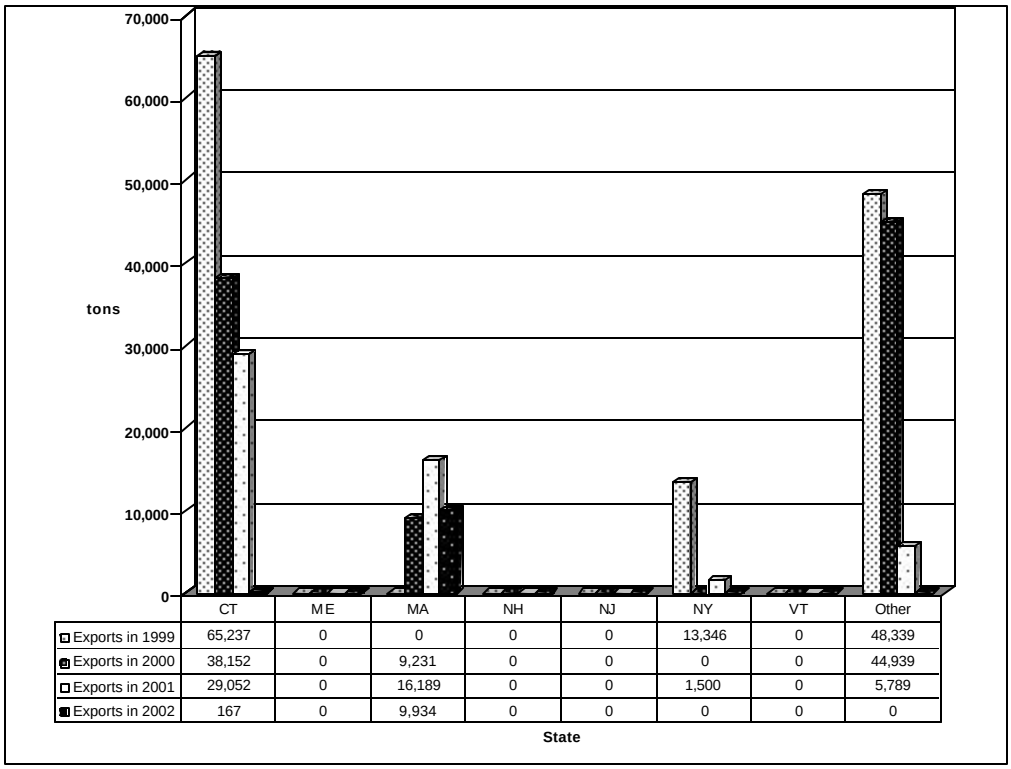
Discussion of Trends - 1999 through 2002

The quantity of MSW generated in Rhode Island that was disposed (including exports) increased by 11% from 1999 to 2002, from 1.0 million to 1.11 million tons. In-state disposal of MSW generated from Rhode

Island sources increased by 9.7% during the period from 1999 through 2002, from 1,000,879 tons to 1,097,452 tons. There was an increase of 5.3% from 1999 to 2000, with more modest increases of 2.6% and 1.5% for the periods 2000 to 2001 and 2001 to 2002, respectively. This increase of in-state disposal is most likely due to increases in population and economic activity. Export trends for the period between 1999 and 2002 are discussed below as well as presented in the following figure.

Export Data: The total amount of MSW exported from Rhode Island (mostly to Connecticut, New York and Pennsylvania) decreased between 1999 and 2002 by 92%. Between 1999 and 2000, exports decreased by 27% from 126,922 tons to 92,322 tons and then by 43% to 52,530 tons between 2000 and 2001. Between 2001 and 2002, exports decreased by another 81% down to 10,101 tons. Until 2002, NEWMOA used disposal data provided by the importing state and did not adjust Rhode Island's export numbers for the pass-through of out-of-state MSW in this section of the report. Therefore, the quantity of MSW generated and exported by Rhode Island is overstated for the years 1999, 2000, and 2001. Starting in 2002, Rhode Island began defining the origin of the MSW exported from transfer stations, differentiated into "in-state" and "out-of-state" generated waste. For 2002, data from Rhode Island transfer stations is assumed to be a more accurate reflection of exports of Rhode Island generated MSW and is used.

MSW Exports from Rhode Island: 1999 through 2002 (tons)



	CT	ME	MA	NH	NJ	NY	VT	Other
Exports in 1999	65,237	0	0	0	0	13,346	0	48,339
Exports in 2000	38,152	0	9,231	0	0	0	0	44,939
Exports in 2001	29,052	0	16,189	0	0	1,500	0	5,789
Exports in 2002	167	0	9,934	0	0	0	0	0

State

Note that "other" means "unknown" and is not necessarily to non-NEWMOA states

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.

Recent Changes in Rhode Island

The NEED facility, a major transfer station, particularly for construction and demolition debris, has been closed.

Vermont

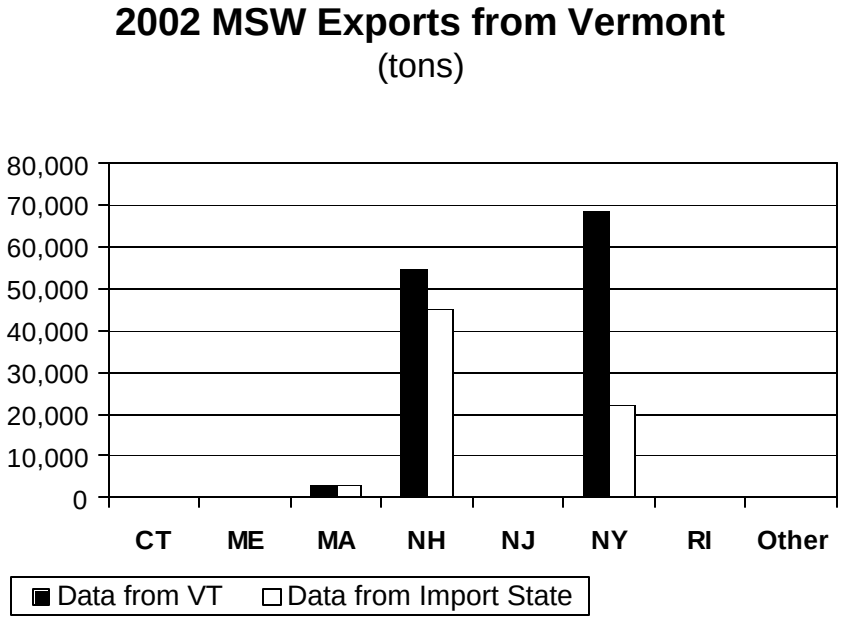
Landfills in Vermont disposed of 301,971 tons of municipal solid waste (MSW) generated from in-state sources in 2002. Vermont does not have any waste-to-energy facilities (WTEs) in operation. Facilities in Vermont do not accept MSW from out-of-state sources. According to Department of Environmental Conservation (DEC) records, in 2002 facilities in Vermont exported 126,256 tons of MSW to facilities located in NEWMOA states, primarily to New Hampshire* and New York, with a smaller amount being sent to Massachusetts, and 97 tons to Connecticut. Vermont did not export MSW to a non-NEWMOA state in 2002.

* Includes verified exports of 9,645 tons to a transfer station in New Hampshire

Discussion of 2002 Data

The discussion and figure below present Vermont's reported exports to NEWMOA and non-NEWMOA states compared to data regarding NEWMOA and non-NEWMOA states' reported imports from Vermont.

Exports: Vermont data correlates well with data from Massachusetts. Data from New Hampshire does not include the 9,645 tons of MSW that Vermont can document was sent to a New Hampshire transfer station. When that MSW was sent to a disposal facility, it was most likely recorded as New Hampshire MSW not Vermont MSW. Vermont reports sending 47,000 more tons of MSW to New York than New York facilities report receiving from Vermont. Vermont's data is likely to be more accurate because DEC staff contact all of the out-of-state facilities to which Vermont transfer stations report sending MSW.

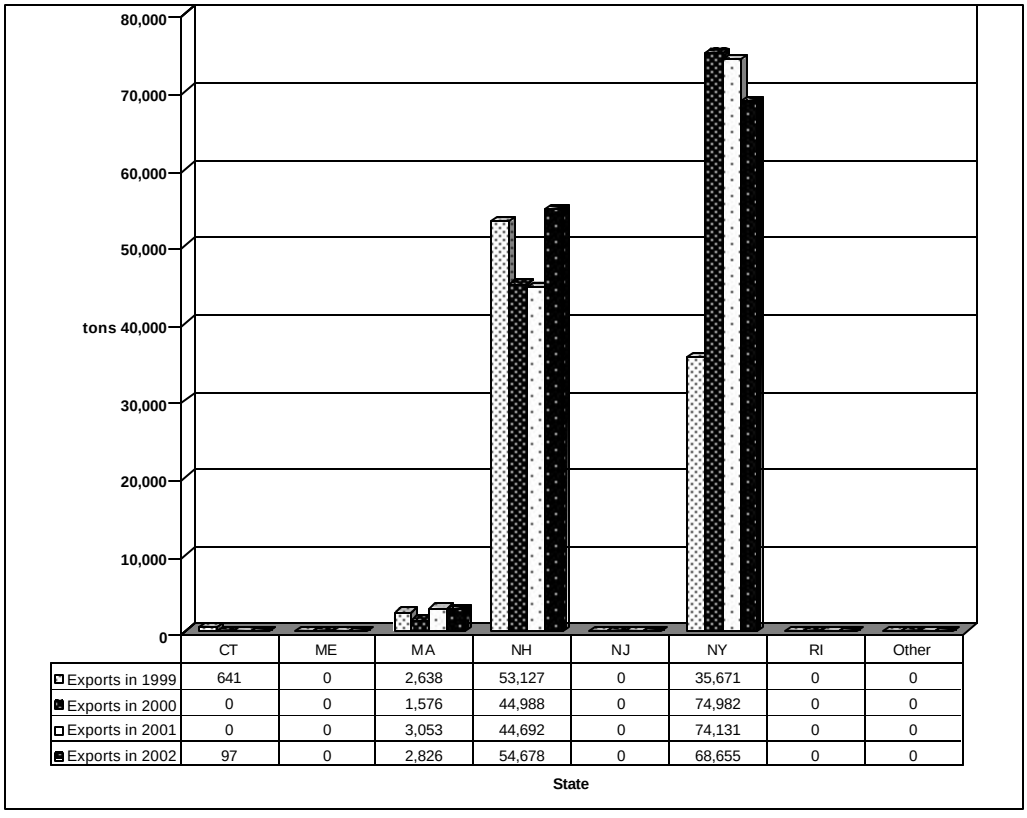


Discussion of Trends - 1999 through 2002

The quantity of MSW generated in Vermont that was disposed (including exports) increased by 16 percent from 1999 to 2002, from 367,977 to 428,227 tons. In-state disposal of MSW generated from Vermont sources increased by 9.5% during the period from 1999 through 2002 from 275,900 tons to 301,971 tons. Between 1999 and 2000, there was a 3.6% decrease from 275,900 tons to 265,850 tons. After that, there was an increase between 2000 and 2001 of 10.4%, from 265,850 tons to 293,373 tons, and between 2001 and 2002 an increase of 2.9% from 293,373 tons to 301,971 tons. This general increase trend was most likely due to population increases and increases in waste disposal due to the strong economy. Export trends for the period between 1999 and 2002 are described below as well as presented in the following figure.

Export Data: The total amount of MSW exported by Vermont increased by 37% between 1999 and 2002 from 92,077 tons to 126,256 tons. Between 1999 and 2000, there was a 32% increase from 92,077 tons to 121,546 tons. This significant increase was due to better reporting and one of the major waste haulers in Vermont sent more MSW to an incinerator in New York in 2000 than in 1999. Between 2000 and 2001 there was a decrease of 0.3% from 121,546 tons to 121,876 tons and then an increase of 3.6% between 2001 and 2002 from 121,876 tons to 126,256 tons.

MSW Exports from Vermont: 1999 through 2002 (tons)



	CT	ME	MA	NH	NJ	NY	RI	Other
Exports in 1999	641	0	2,638	53,127	0	35,671	0	0
Exports in 2000	0	0	1,576	44,988	0	74,982	0	0
Exports in 2001	0	0	3,053	44,692	0	74,131	0	0
Exports in 2002	97	0	2,826	54,678	0	68,655	0	0

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.

Recent Changes in Vermont

There are no recent changes except that one of the in state landfills, Waste USA Landfill in Coventry, has submitted an application for expansion of the landfill which adds in-state capacity and has asked for a significant increase in their yearly tonnage limit.

Conclusions and Recommendations

This report examined MSW disposal and transfer station data for four years, 1999 through 2002 and showed that the interstate flow of solid waste in the region did not remain constant. This report is the first to collect and use disposal data from states outside the NEWMOA region, for the 2002 data only. Due to potential data quality issues, only the data provided by Pennsylvania was used. However, particularly since Pennsylvania directly abuts New Jersey and New York and likely receives a significant quantity of MSW that is direct hauled from those two states, its inclusion impacted the data available for New Jersey and New York, as well as Connecticut, increasing exports from those three states significantly for 2002.

Another factor influencing the interstate flow of MSW is that the overall quantity of MSW requiring disposal increased in every state, ranging from relatively low percent increases of 2.3 percent in Maine and 2.8 percent in New York, up to an increase of 32 percent in New Jersey (primarily due to documenting higher export to Pennsylvania in 2002). Other increases were 6 percent in New Hampshire, 11 percent in both Massachusetts and Rhode Island, 14 percent in Connecticut, and 16 percent in Vermont. Disposing of this additional MSW significantly increased exports, particularly to states outside the NEWMOA region, from the larger states with limited disposal capacity: Connecticut, Massachusetts, New Jersey, and New York.

The significant waste flow changes from 1999 to 2002 for each state are outlined below.

- Connecticut: From 1999 to 2002, imports of MSW to Connecticut decreased by more than a factor of four. Connecticut relies primarily on waste-to-energy plants (WTEs) to manage its MSW and therefore, have a relatively fixed disposal capacity. Beginning in 2000, more Connecticut-generated MSW was disposed of in-state necessitating a reduction in imports of out-of-state waste. Exports of MSW to states outside the NEWMAO region increased significantly from 1999 to 2002.
- Maine: Maine imports a significant quantity of MSW for disposal, primarily from Massachusetts, with some from New Hampshire. Imports of MSW increased by almost 10 percent from 1999 to 2002. Overall, the situation in Maine was fairly stable from 1999 to 2002.
- Massachusetts: In response to the pressures in New Hampshire (discussed under New Hampshire), in 2000 Massachusetts significantly increased exports to New York and South Carolina. As exports to New Hampshire increased again in 2001 and 2002, the quantity exported to New York remained relatively steady, while the quantity exported to South Carolina continued to fluctuate, decreasing in 2001 and then increasing again in 2002.
- New Hampshire: New Hampshire imports a significant quantity of MSW for disposal, mainly from Massachusetts, with some from Maine and Vermont. After the import of MSW from Massachusetts became a political issue in 1999, imports dropped by almost two-thirds in 2000. Imports from Maine and Vermont also decreased significantly between 1999 and 2000. However, as the political eye has moved off the issue, and after efforts by NH DES to improve reporting by facilities, particularly transfer stations that accept out-of-state MSW, imports have increased significantly from their low in 1999.

- New Jersey: The total quantity of MSW disposed in New Jersey (including imports) decreased by 2.8 percent from 1999 to 2002, from 4.46 million to 4.33 million tons. Over the same period, exports of MSW, primarily to states outside of the NEWMOA region, increased by 116 percent from 1.61 million to 3.49 million tons. Much of this increase is due to the use of disposal data from Pennsylvania for the first time in 2002. Pennsylvania data captures the MSW that is direct hauled from New Jersey and is not be available in New Jersey records. Therefore, exports in 1999 through 2001 were likely much higher than the data available to New Jersey, and the percentage increase in exports much lower.
- New York: The landfill located on Staten Island in New York City began reducing the quantity of waste accepted in 2000 and closed altogether in 2001. In response to the loss of this in-state disposal capacity, New York saw a decrease in the quantity of New York-generated MSW disposed of in-state and a significant increase in the quantity of MSW exported out-of-state. However, in 2002, the quantity of New York-generated MSW that was disposed of at in-state facilities began increase after two years of steady decreases.
- New York: From 1999 to 2002, facilities in New York state more than doubled the quantity of MSW imported from other NEWMOA states, particularly from Massachusetts. Connecticut and New Jersey also increased exports to New York, although their overall quantity is lower that from Massachusetts. Facilities in New York increased imports from non-NEWMOA states and provinces, primarily Pennsylvania and Ontario by more than a factor of six from 1999 to 2002.
- Rhode Island: Due to their unique situation, most MSW generated in Rhode Island stays in-state and there are no official imports of MSW to Rhode Island facilities. Exports of MSW from Rhode Island transfer stations decreased significantly from1999 to 2002, but most of the MSW exported by Rhode Island is not generated in Rhode Island. Due to facility reporting changes, starting with the 2002 data, the in-state versus out-of-state origin of the exported MSW could be determined. Therefore, in 2002 NEWMOA could remove the out-of-state generated portion from the transfer station data and this is the primary reason for the decrease in exports. Rhode Island does export a relatively small quantity of Rhode Island-generated MSW, primarily to Massachusetts. Overall the waste disposal situation for Rhode Island was relatively stable over the period 1999 to 2002.
- Vermont: Vermont also has a unique situation in that there are no imports of MSW to facilities in Vermont. However, Vermont does export a significant portion, (30 percent in 2002) of MSW generated in Vermont, primarily to facilities in New Hampshire and New York. Exports of MSW from Vermont increased by 37 percent from 1999 to 2002.

Due to the numerous benefits to the states, 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 sharing of information improves data quality so state agencies can use this report when planning and assessing state and regional MSW disposal capacity. The project also provides states with the opportunity to share information about their experiences with reporting forms and to provide information to support changes, such as enhancing reporting from transfer stations to capture the source by type, state, and tonnage.

APPENDIX A

State Definitions of Municipal Solid Waste

Connecticut: MSW is solid waste from residential, commercial and industrial sources; excluding hazardous, bulky, biomedical, sludge, or scrap metal waste.

Maine: "Municipal solid waste" means solid waste emanating from household and normal commercial sources. Municipal solid waste includes front end process residue from the processing of municipal solid waste. Although some C&D fits in to this generic definition, the data Maine provides for the NEWMOA MSW Interstate Waste Flow Report does not include C&D.

Massachusetts: *Municipal Solid Waste* means any residential or commercial solid waste

Solid Waste or Waste means useless, unwanted or discarded solid, liquid or contained gaseous material resulting from industrial, commercial, mining, agricultural, municipal or household activities that is abandoned by being disposed or incinerated or is stored, treated or transferred pending such disposal, incineration or other treatment, but does not include:

(a) hazardous wastes as defined and regulated pursuant to 310 CMR 30.000;
(b) sludge or septage which is land applied in compliance with 310 CMR 32.00;
(c) waste-water treatment facility residuals and sludge ash from either publicly or privately owned waste-water treatment facilities that treat only sewage, which is treated and/or disposed at a site regulated pursuant to M.G.L. c. 83, §§ 6 & 7 and/or M.G.L. c. 21, §§ 26 through 53 and the regulations promulgated thereunder, unless the waste-water treatment residuals and/or sludge ash are co-disposed with solid waste;
(d) septage and sewage as defined and regulated pursuant to 314 CMR 5.00, as may be amended, and regulated pursuant to either M.G.L. c. 21, §§ 26 through 53 or 310 CMR 15.00, as may be amended, provided that 310 CMR 16.00 does apply to solid waste management facilities which co-dispose septage and sewage with solid waste;
(e) ash produced from the combustion of coal when reused as prescribed pursuant to M.G.L. c. 111, § 150A;
(f) solid or dissolved materials in irrigation return flows;
(g) source, special nuclear or by-product material as defined by the Atomic Energy Act of 1954, as amended;
(h) those materials and by-products generated from and reused within an original manufacturing process; and
(i) compostable or recyclable materials when composted or recycled in an operation not required to be assigned pursuant to 310 CMR 16.05(2) through (6).

New Hampshire: " Municipal solid Waste " (MSW) means solid waste generated at residences, commercial or industrial establishments, and institutions, but excluding construction and demolition debris, automobile scrap and other motor vehicle waste , infectious waste, asbestos

waste, contaminated solid and other absorbent media and ash other than ash from household stoves.

New Jersey: Solid wastes; waste ID number and definitions:

> i. 10 Municipal (household, commercial and institutional): Waste originating in the community consisting of household waste from private residences, commercial waste which originates in wholesale, retail or service establishments, such as, restaurants, stores, markets, theatres, hotels and warehouses, and institutional waste material originated in schools, hospitals, research institutions and public buildings.
>
> v. 23 Vegetative waste: Waste materials from farms, plant nurseries and greenhouses that are produced from the raising of plants. This waste includes such crop residues as plant stalks, hulls, leaves and tree wastes processed through a wood chipper. Also included are non-crop residues such as leaves, grass clippings, tree parts, shrubbery and garden wastes.

New York: (1) Solid waste means, except as described in paragraph (4) of this subdivision, any garbage, refuse, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility and other discarded materials including solid, liquid, semi-solid, or contained gaseous material, resulting from industrial, commercial, mining and agricultural operations, and from community activities, but does not include solid or dissolved materials in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges that are point sources subject to permit under 33 USC 1342, as amended (86 Stat. 880), or source, special nuclear or by-product material as defined by the Atomic Energy Act of 1954, as amended (68 Stat. 923) except as may be provided by existing agreements between the State of New York and the government of the United States (see section 360-1.3 of this Part).

(2) A material is discarded if it is abandoned by being:

(i) disposed of;
(ii) burned or incinerated, including being burned as a fuel for the purpose of recovering usable energy; or
(iii) accumulated, stored or physically, chemically or biologically treated (other than burned or incinerated) instead of or before being disposed of.

(3) A material is disposed of if it is discharged, deposited, injected, dumped, spilled, leaked or placed into or on any land or water so that such material or any constituent thereof may enter the environment or be emitted into the air or discharged into groundwater or surface water.

(4) The following are not solid waste for the purposes of this Part:

(i) domestic sewage;
(ii) any mixture of domestic sewage and other wastes that pass through a sewer system to a publicly owned treatment works for treatment, except for any material that is introduced into such system in order to avoid the provisions of this Part;

(iii) industrial wastewater discharges that are actual point source discharges subject to permits under ECL article 17. Industrial wastewaters, while they are being collected, stored or treated before discharge, and sludges that are generated by industrial wastewater treatment are solid wastes and are regulated by this Part;
(iv) irrigation return flows;
(v) radioactive materials which are source, special nuclear or byproduct material as defined by the Atomic Energy Act of 1954, as amended (see section 360-1.3 of this Part);
(vi) materials subject to in situ mining techniques which are not removed from the ground as part of the extraction process;
(vii) discarded materials that the department has determined are being beneficially used pursuant to section 360-1.15 of this Part;
(viii) materials including source separated recyclables that have been traditionally incorporated as a secondary material in the manufacturing process. In this context, manufacturing processes may include, but not be limited to, the production of: inorganic chemicals; iron, steel and iron and steel products; leather and leather products; nonferrous metals andnonferrous metal products; organic chemicals; plastic products and plastic resins; pulp and paper products; rubber and miscellaneous plastic products; textiles and textile products; household and business products; and, transportation equipment; and
(ix) material dredged or excavated from the waters of the state and placed or disposed in accordance with a permit(s) issued under Articles 15, 24, 25 or 34 of the Environmental Conservation Law or a Water Quality Certification issued under Section 401 of the Federal Water Pollution Control Act to the extent that both the excavation and disposal of the material is regulated by such permit(s) or certification. However, any excavation or disposal not regulated by such permits remains subject to regulation under this Part. Dredge or excavated material generated by manufacturing or industrial processes are industrial waste subject to regulation under this Part.

Rhode Island: "Solid Waste" Shall mean garbage, refuse and other discarded solid materials generated by residential, institutional, commercial, industrial and agricultural sources but does not include solids or dissolved material in domestic sewage sludge, nor does it include hazardous waste as defined in the Rhode Island Hazardous Waste Management Act, Chapter 23-19.1, nor does it include asphalt, concrete, Portland concrete cement, or tree stumps. For the purposes of these Rules and Regulations, solid waste shall also include non-hazardous liquid semi-solid and containerized gaseous wastes, subject to any special conditions contained in these Rules and Regulations.

Vermont: Solid Waste means any discarded garbage, refuse, septage, sludge from a waste treatment plant, water supply plant, or pollution control facility and other discarded material including solid, liquid, semi-solid, or contained gaseous materials resulting from industrial, commercial, mining, or agricultural operations and from community activities but does not include animal manure and absorbent bedding used for soil enrichment or solid or dissolved materials in industrial discharges which are point sources subject to permits under the Water Pollution Control Act, 10 V.S.A., ch. 47. For the purposes of these rules, solid waste that is also hazardous waste is subject to further regulation under the Vermont Hazardous Waste Management Regulations.

MSW is a particular type of solid waste. We don't include C&D (although sometimes inadvertently included cause is mixed with MSW, wood or industrial types of solid waste, sludges, contaminated soils etc.

Non-NEWMOA States:

Ohio: GSW = General solid waste (household garbage, contaminated soil – resulting from underground storage tank removal, household hazardous wastes, municipal waste water treatment sludge (dewatered), scrap tires, MSW incinerator ash)

Pennsylvania: Municipal waste – Garbage, refuse, industrial lunchroom or office waste, and other material, including solid, liquid, semisolid or contained gaseous material resulting from operation of residential, municipal, commercial or institutional establishments and from community activities; and sludge not meeting the definition of residual or hazardous waste under this section from a municipal, commercial or institutional water supply treatment plant, waste water treatment plant or air pollution control facility.

South Carolina: "Solid waste" means any garbage, refuse, or sludge from a waste treatment facility, water supply plant, or air pollution control facility and other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations and from community activities. This term does not include solid or dissolved material in domestic sewage, recovered materials, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to NPDES permits under the Federal Water Pollution Control Act, as amended, or the Pollution Control Act of South Carolina, as amended, or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended. Also excluded from this definition are application of fertilizer and animal manure during normal agricultural operations or refuse as defined and regulated pursuant to the South Carolina Mining Act, including processed mineral waste, which will not have a significant adverse impact on the environment.

Virginia: "Municipal solid waste" means waste which is normally composed of residential, commercial, and institutional solid waste and residues derived from combustion of these wastes. "Residential waste" means household waste. "Commercial waste" means all solid waste generated by establishments engaged in business operations other than manufacturing or construction. The category includes, but is not limited to, solid waste resulting from the operation of stores, markets, office buildings, restaurants and shopping centers. "Institutional waste" means all solid waste emanating from institutions such as, but not limited to, hospitals, nursing homes, orphanages, and public or private schools. It can include regulated medical waste from health care facilities and research facilities that must be managed as a regulated medical waste.