



Presentation on Municipal Solid Waste (MSW) Interstate Flow in the Northeast in 2014

November 13, 2017

Prepared by the [NEWMOA Solid Waste Metrics Workgroup](#)

State environmental agencies in the Northeast have a responsibility to monitor and manage municipal solid waste (MSW) disposal capacity. To fulfill this responsibility, they gather data from the MSW facilities that they regulate on their waste imports, and most collect data on waste shipped out-of-state (exports). This information helps them assess disposal capacity and measure recycling and other waste diversion activities. Starting in 2000, NEWMOA's members began to share data and prepare reports to characterize the flow of MSW for disposal to validate their information and inform state MSW policy and program development. For the purposes of this analysis, MSW includes non-hazardous waste generated by residential and commercial sources and does not include construction and demolition debris or non-hazardous industrial by-products. This data presentation covers MSW that is disposed of in landfills or waste-to-energy facilities, and does not include MSW that is diverted from disposal for composting, reuse, or recycling.

Most MSW collection and disposal facilities in the northeast are owned and/or operated by private haulers and waste management companies. A small number are owned by municipal or county level government. When a disposal facility is publicly-owned, it can limit the geographic area from which it accepts MSW, and in certain situations can mandate that the MSW generated within that area be managed at that facility (these restrictions are known as "flow control"). With the exception of MSW generated in flow control areas, MSW functions as a commodity with disposal markets that can vary year-to-year depending on tipping fees, transportation costs, and contract arrangements. State government agencies do not direct where disposal of MSW occurs.¹

The figures displayed below present available state and northeast MSW disposal information for calendar year 2014 along with comparisons to [previous years](#). NEWMOA performed this analysis annually from 1999 to 2006. In 2006, NEWMOA decided to collect and analyze the data every other year. The figures below compare 2014 data with 2000, 2002, 2004, 2006, 2008, 2010, and 2012 data.

Solid Waste Metrics Workgroup

State solid waste program directors appoint representatives to serve on NEWMOA's [Solid Waste Metrics Workgroup](#). The purpose of this Workgroup is to oversee NEWMOA's MSW data collection and analysis and the development of this presentation. By working together since 2000, the Workgroup members have improved the accuracy of their state data.

¹ Except in Rhode Island (RI) where the Rhode Island Resource Recovery Corporation is enabled by law to control MSW generated in RI. (Reference: RI Law, TITLE 23, Health and Safety, CHAPTER 23-19, Rhode Island Resource Recovery Corporation, SECTION 23-19-13, § 23-19-13 Municipal participation in state program. (a)(1) Any person or municipality which intends to transfer, treat, or dispose of solid waste originating or collected within the state, or which intends to make arrangements to do so, shall utilize, exclusively, a system or facility designated by the corporation as provided under this chapter.)

Data Analysis Methodology

NEWMOA followed the data quality assurance procedures in its EPA-approved Quality Management Plan (www.newmoa.org/about/2011QMP.pdf) to prepare this presentation. NEWMOA's Workgroup members start developing this presentation by sharing summaries of the MSW data they collect from facilities. Prior to sending NEWMOA their state's data, the Workgroup members conduct their own quality assurance review of it. The NEWMOA staff reviews the data and prepares draft figures using Microsoft Excel. If the staff has a question or concern about the data, they contact the appropriate Workgroup member to address the issue. The Workgroup members review a draft of the data, figures, and text and provide comments and corrections. After the NEWMOA staff makes recommended corrections, a revised draft is shared with the NEWMOA Board of Directors and the Solid Waste and Sustainable Materials Management Steering Committee for their review and approval prior to publication online.

Data Caveats & Notes

This presentation focuses on the flow of MSW in the Northeast U.S., including Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont. These are the states that are members of NEWMOA. Waste imports from and exports to non-NEWMOA states and/or Canadian provinces are aggregated into the "non-NEWMOA" or "Other" category in the figures.

Workgroup members resolve discrepancies that arise once NEWMOA staff have compiled the MSW data. A typical discrepancy involves a situation where the waste data from transfer facilities in one state disagree with the data from disposal facilities in another state. Unless otherwise noted below², the graphs are based on information from the disposal facilities, since the Workgroup considers their data to be more accurate. Therefore, the numbers might vary from those published by individual states for two primary reasons:

- If MSW is hauled directly from the pick-up route to an out-of-state disposal facility or transfer station, the MSW does not pass through a regulated facility in the state of origin (called the generating state) and, therefore, that state does not receive a report on it. (The exception to this is New Jersey, which collects data from haulers on where waste is transported.)
- If waste is transported to an out-of-state transfer station and then to a disposal facility in a third state (referred to as "pass through" in the footnote below); the disposal facility records the MSW as imported from the transfer station state rather than the generating state.

By examining the MSW data, the Workgroup adjusts for these situations, and the figures reflect these and other corrections.

² Data Notes:

- a) 2014 disposal facility data was supplemented by data provided by RI DEM for CT imports from MA, by CT DEEP for MA imports from CT and for CT exports to NY, and by VT DEC for NH imports from VT.
- b) MA imports from RI were reduced to account for 48,540 tons pass-through (MA to RI back to MA).
- c) For exports to states and provinces outside the northeast: 2014 data reported by the exporting state was used for MSW disposal in KY and OH because the Workgroup determined it to be more reliable. Imports to KY, OH, PA, and VA from NJ were reduced to account for pass-through from NY (at total of 399,501 tons); imports to those states from NY were increased by the pass-through quantities.
- d) New York: for some or all years prior to 2006, DEC has reported that there might be data quality issues for in-state disposal of in-state generated MSW that might overstate disposal.
- e) New Hampshire: for some or all years prior to 2010, NEWMOA staff determined that the import data might not have been limited to MSW and therefore, might overstate quantities.

Observations

Since NEWMOA began publishing these presentations in 2000, the Workgroup has found that all of the Northeast states export MSW to facilities in other NEWMOA states for disposal, and with the exception of Rhode Island and Vermont, disposal facilities in all of the NEWMOA states import MSW from other northeast states. Historically, Connecticut, Massachusetts, New Jersey, New York, Rhode Island, and Vermont all exported more MSW than they imported, by a wide margin for some of these states. In the past, Maine and New Hampshire have imported significantly more MSW than they exported. However, in 2014, the quantity of MSW imports to Maine decreased significantly compared to prior years due to the closure of a waste-to-energy facility, and the quantity imported to Maine was similar to the quantity exported from Maine.

Other key observations about 2014 MSW flow in the Northeast include:

- Approximately 29.7 million tons of MSW was generated in the region and disposed of in 2014, the same amount as in 2012, and a reduction of 19 percent from the high of 36.6 million tons in 2002. The amount of MSW requiring disposal is affected by economic activity and trends and the availability of reuse, recycling, and organics diversion (including composting and anaerobic digestion) markets and infrastructure:
 - Region-wide, 70 percent remained in the state of origin for disposal, ranging from a high of 91 percent for Connecticut and 93 percent for Maine, Massachusetts, and New Hampshire, to a low of 60 percent for New York and 59 percent for New Jersey;
 - Region-wide, 5 percent was exported from the state of origin to another state within the region for disposal, ranging from a high of 16 percent for Rhode Island and 18 percent for Vermont, to a low of 1 percent for New Jersey; and
 - Region-wide, 25 percent was exported to disposal facilities outside of the region, ranging from a high of 40 percent for New Jersey and 35 percent for New York to a low of nearly zero for Massachusetts, New Hampshire, Rhode Island, and Vermont.
- Region-wide, 0.7 tons per person of MSW was generated and disposed of in 2014; with the rate ranging from 0.53 tons per person for New Hampshire to 1.0 tons per person for Rhode Island.³
- Figure 4 shows a relatively steady state or general decline since 2000 in the amount of MSW generated and disposed of within the same state.
- Figure 5 reveals the large year-to-year changes in waste shipment patterns that can occur. Imports from other NEWMOA states to Connecticut and New York in 2014 were similar to quantities in 2012. Imports to Maine and Massachusetts decreased significantly from 2012, with reductions of 182,000 tons (76 percent) and 136,000 tons (32 percent), respectively. Imports to New Jersey were also lower in 2014 compared to 2012. New Hampshire was the only state that experienced a significant increase in imports from other NEWMOA states in 2014 compared to 2012, with an increase of 108,000 tons (54 percent).
- Figure 6 also shows large year-to-year changes in exports to other NEWMOA states. In 2014, waste facilities in Connecticut, Massachusetts, New Hampshire, New Jersey, and Rhode Island exported less MSW for disposal to facilities in other NEWMOA states than they did in 2012; while Maine, New York, and Vermont exported more MSW to other NEWMOA states in 2014 than in 2012.
- Figure 7 shows a general decline in the quantity of MSW exported for disposal from each of the Northeast states to states and provinces outside of the region since 2004. New Jersey was the only state that exported significantly more to states outside the region in 2014 than in 2012. Exports from Connecticut and Massachusetts to non-NEWMOA states have decreased by 90 percent and 98 percent, respectively since their highs in 2002 and 2004,

³ Per capita estimates were calculated using 2010 U.S. Census population data.

respectively. An overall region-wide decline has occurred from a high of approximately 10.6 million tons in 2002 to approximately 7.3 million tons in 2014 – a 31 percent reduction.

About NEWMOA

The Northeast Waste Management Officials' Association ([NEWMOA](http://www.newmoa.org)) is a non-profit, non-partisan, interstate association whose membership is composed of the state environment agency programs that address pollution prevention, toxics use reduction, sustainability, materials management, hazardous waste, solid waste, emergency response, waste site cleanup, underground storage tanks, and related environmental challenges in Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont.

NEWMOA' mission is to provide a strategic forum for effectively solving environmental problems through collaborative regional initiatives that:

- Advance pollution prevention and sustainability
- Promote safer alternatives to toxic materials in products
- Identify and assess emerging contaminants
- Facilitate adaption to climate change and mitigate greenhouse gas sources
- Promote reuse and recycling of wastes and diversion of organics
- Support proper management of hazardous and solid wastes
- Facilitate clean-up of contaminant releases to the environment

NEWMOA's long term goals are to:

- Support and strengthen state efforts to implement policies, regulations, and programs
- Promote interstate coordination and develop innovative strategies to solve critical and emerging environmental problems
- Develop and enhance the capabilities and knowledge of state officials so that they are well trained, able to adjust to rapid changes in technology, and respond effectively to emerging environmental challenges
- Articulate state program views on federal policy developments, programs, and rulemakings
- Cultivate and enhance relationships among member states, federal agencies, colleges and universities, and stakeholders
- Engage with and educate the regulated community and the public

For more information, visit www.newmoa.org.

Acknowledgements

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- Thomas Adamczyk, Tayo Akinbola, and Richard Blanchet, Massachusetts Department of Environmental Protection
- Laura Filiau and Pamela Hoyt-Denison, New Hampshire Department of Environmental Services
- Carlton Dudley, New Jersey Department of Environmental Protection

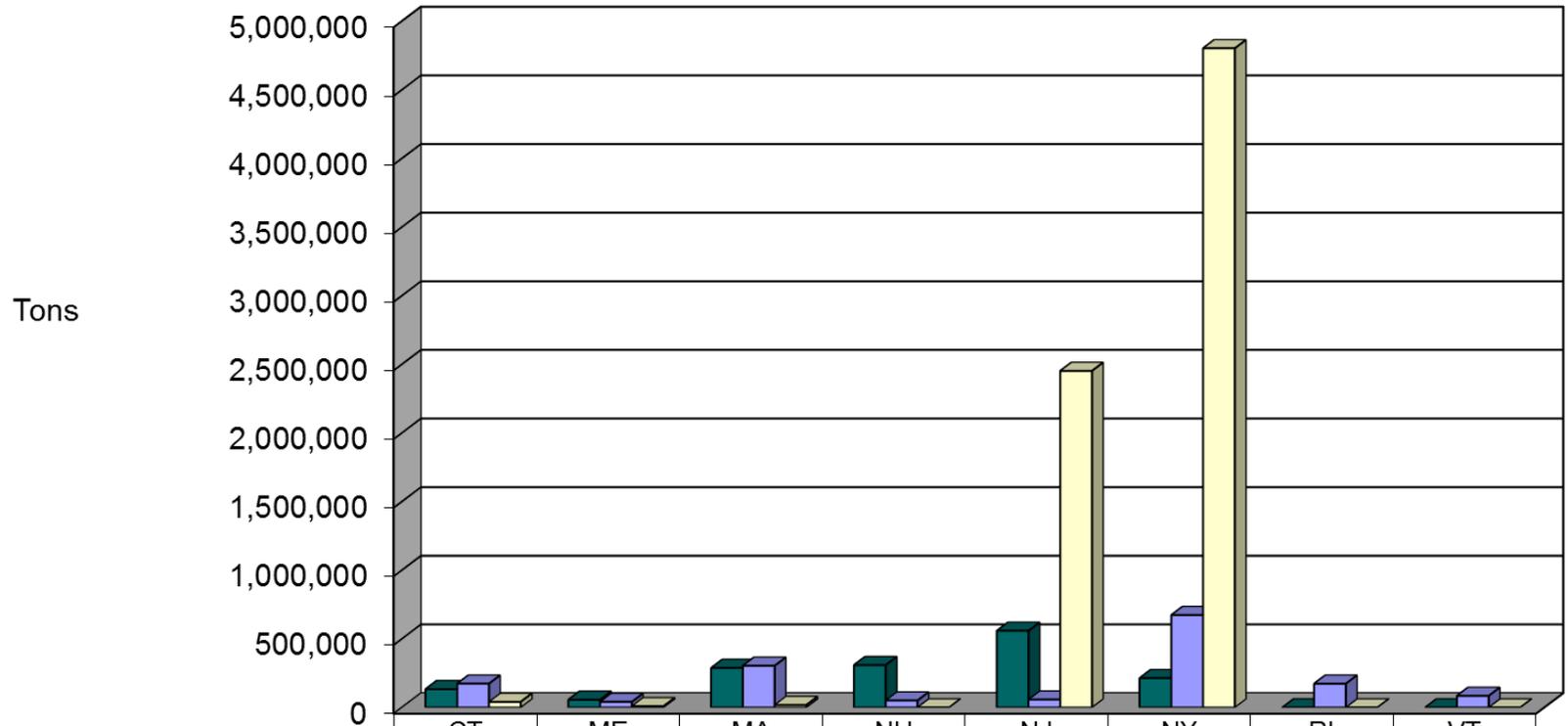
- Richard Clarkson, Jaime Lang, Vimal Minocha, and Gerard Wagner, New York State Department of Environmental Conservation
- Bob Schmidt, Rhode Island Department of Environmental Management
- Cathy Jamieson, Kasey Kathan, and Rebecca Webber, Vermont Department of Environmental Conservation

Jennifer Griffith, NEWMOA Project Manager led this project and compiled the spreadsheet and prepared the presentation. Terri Goldberg, NEWMOA Executive Director supervised the project.

Disclaimer

The views expressed in this presentation do not necessarily reflect those of each of the NEWMOA-member states or the U.S. Environmental Protection Agency (U.S. EPA). Mention of any company, process, or product name should not be considered an endorsement by NEWMOA, NEWMOA-member states, or the U.S. EPA.

Figure 1: 2014 MSW Imports & Exports for Disposal (Tons)



| | CT | ME | MA | NH | NJ | NY | RI | VT |
|--|---------|--------|---------|---------|-----------|-----------|---------|--------|
| ■ Imports from NEWMOA States | 133,439 | 56,416 | 288,344 | 308,699 | 558,902 | 213,768 | 0 | 0 |
| ■ Exports to NEWMOA States | 173,740 | 41,194 | 304,211 | 50,752 | 57,738 | 673,718 | 173,420 | 84,668 |
| ■ Exports to Non-NEWMOA States & Provinces | 40,882 | 9,086 | 18,268 | 0 | 2,452,315 | 4,802,879 | 123 | 0 |

Figure 2: 2014 MSW Generated by State & Disposed (Tons)

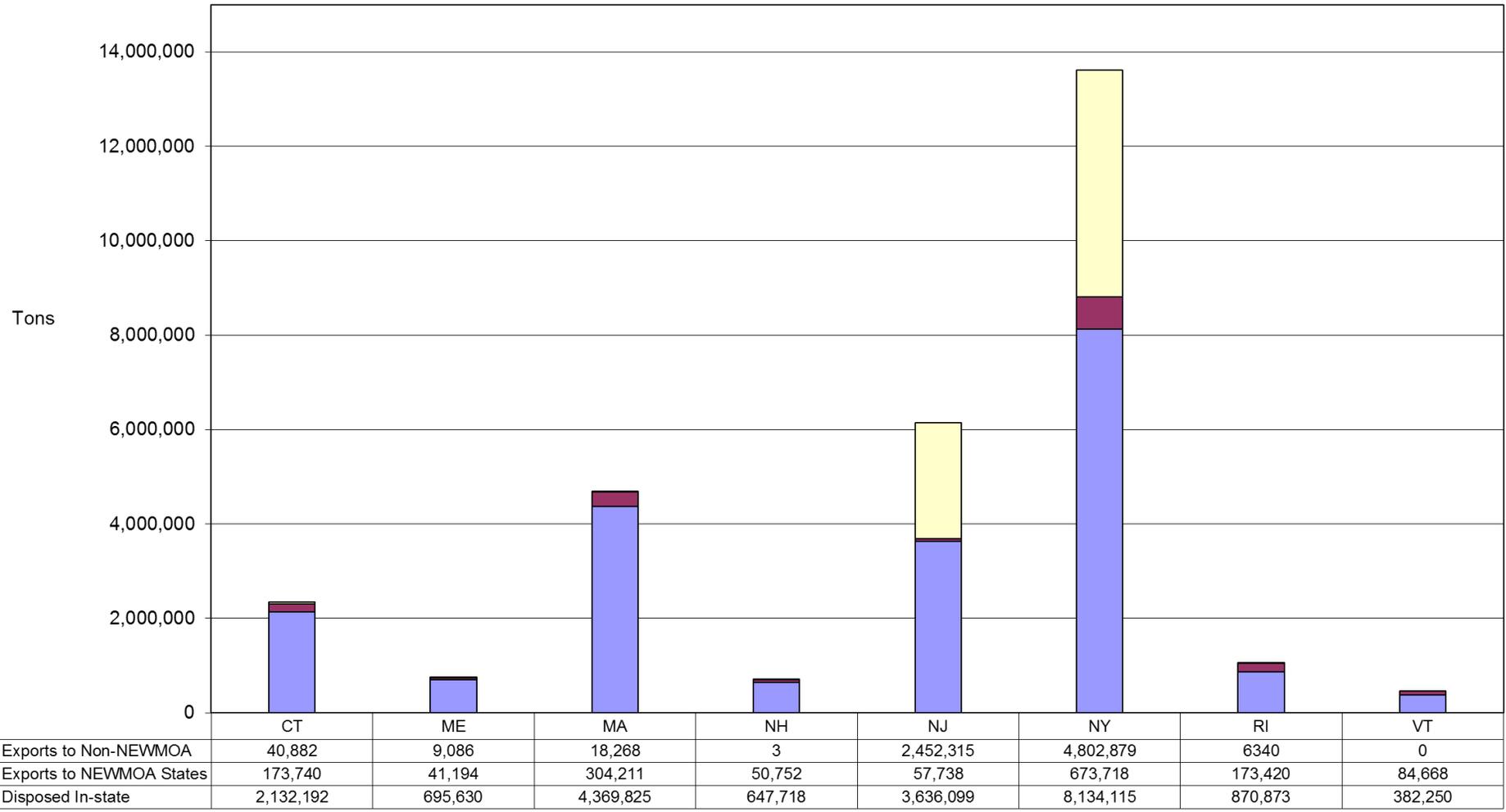


Figure 3: 2014 Total Quantity of MSW Disposed of In-State (Tons)

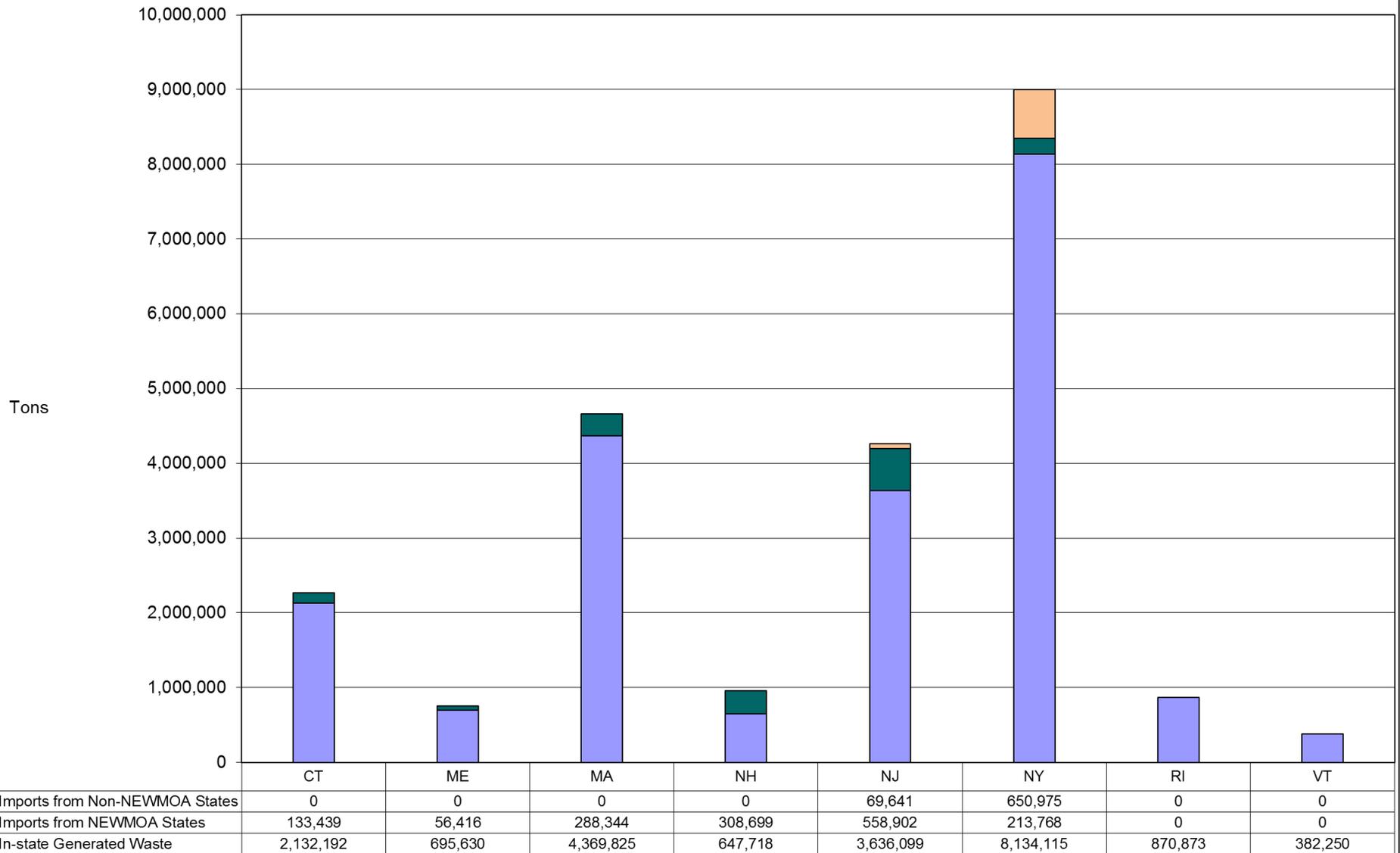
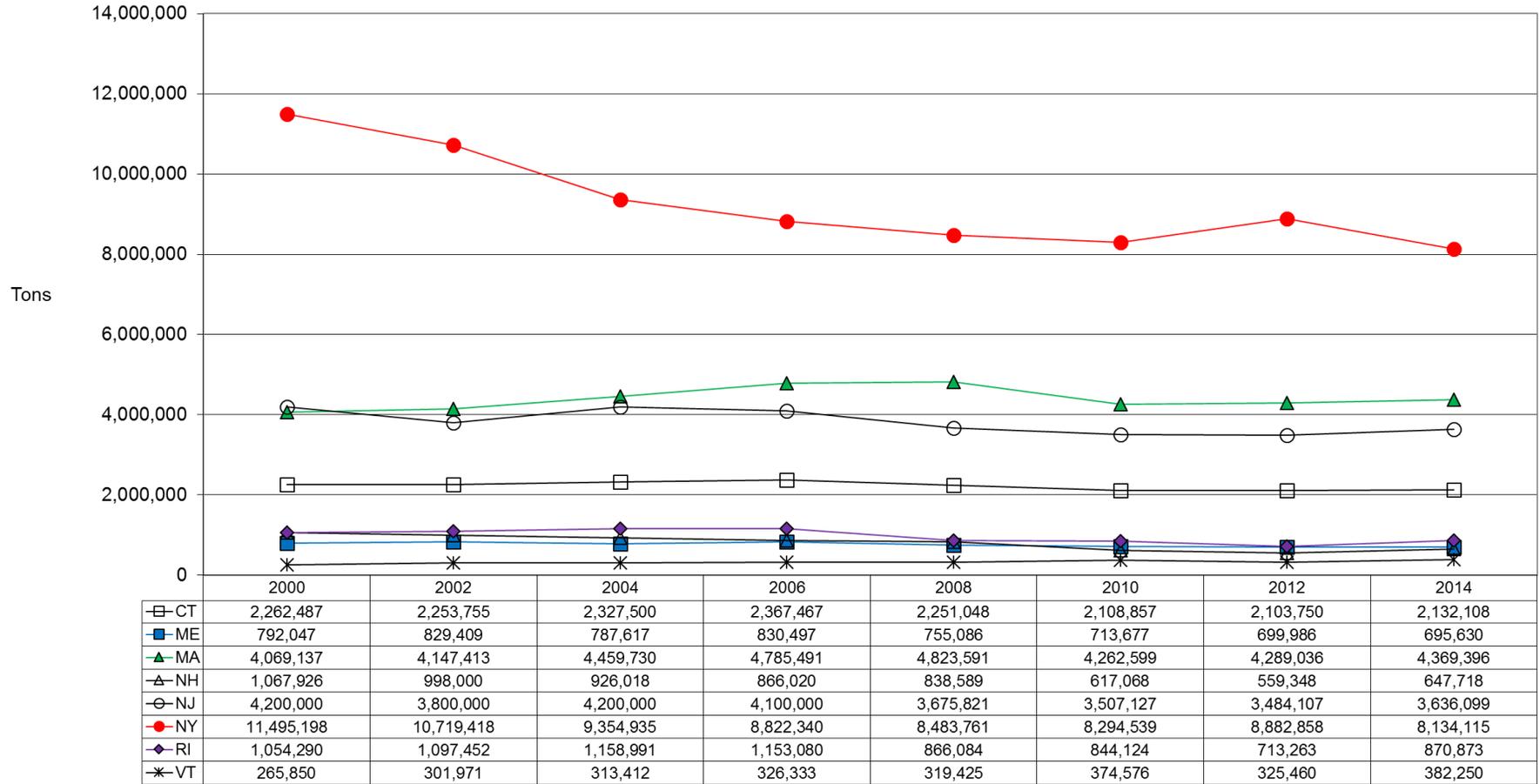
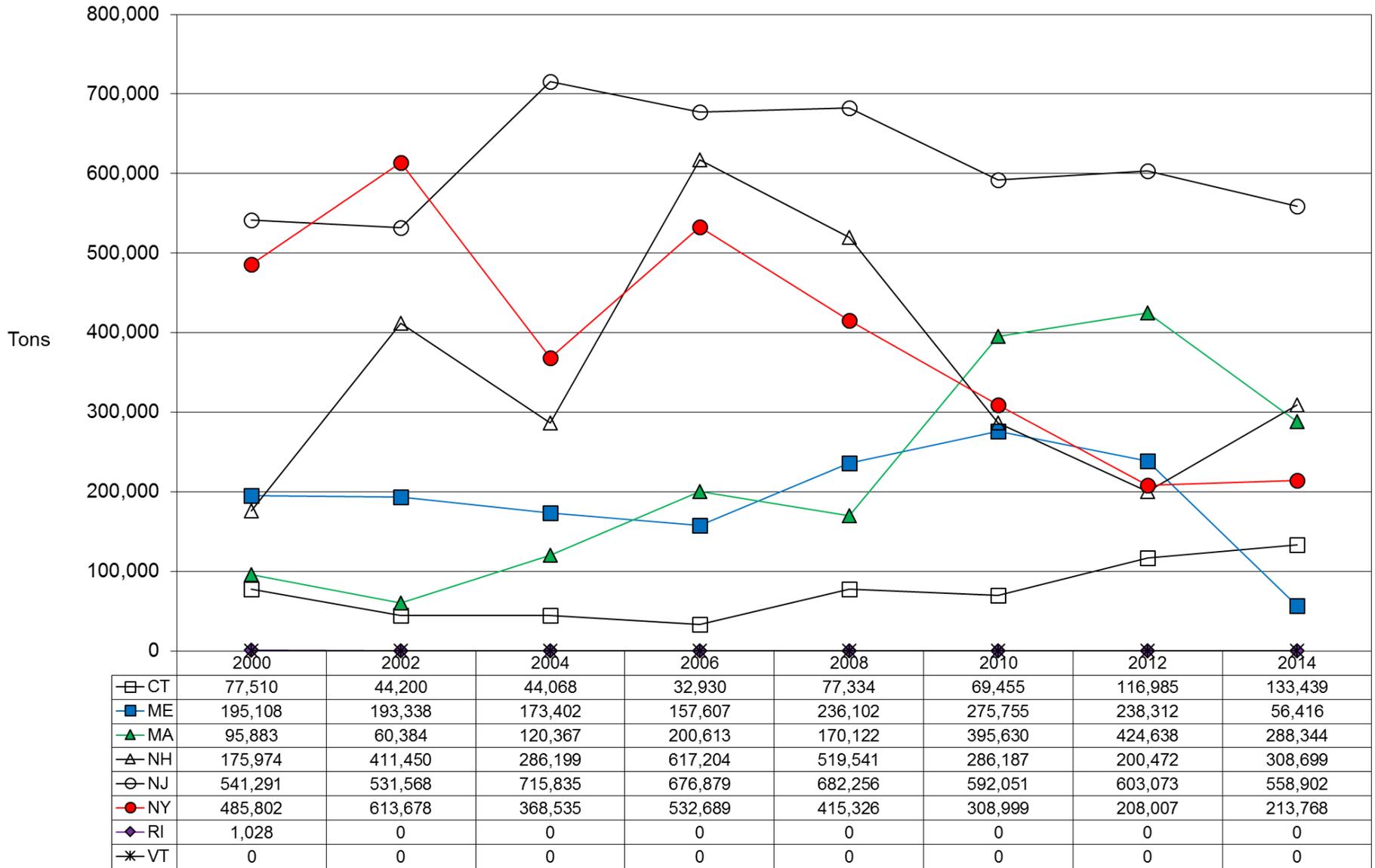


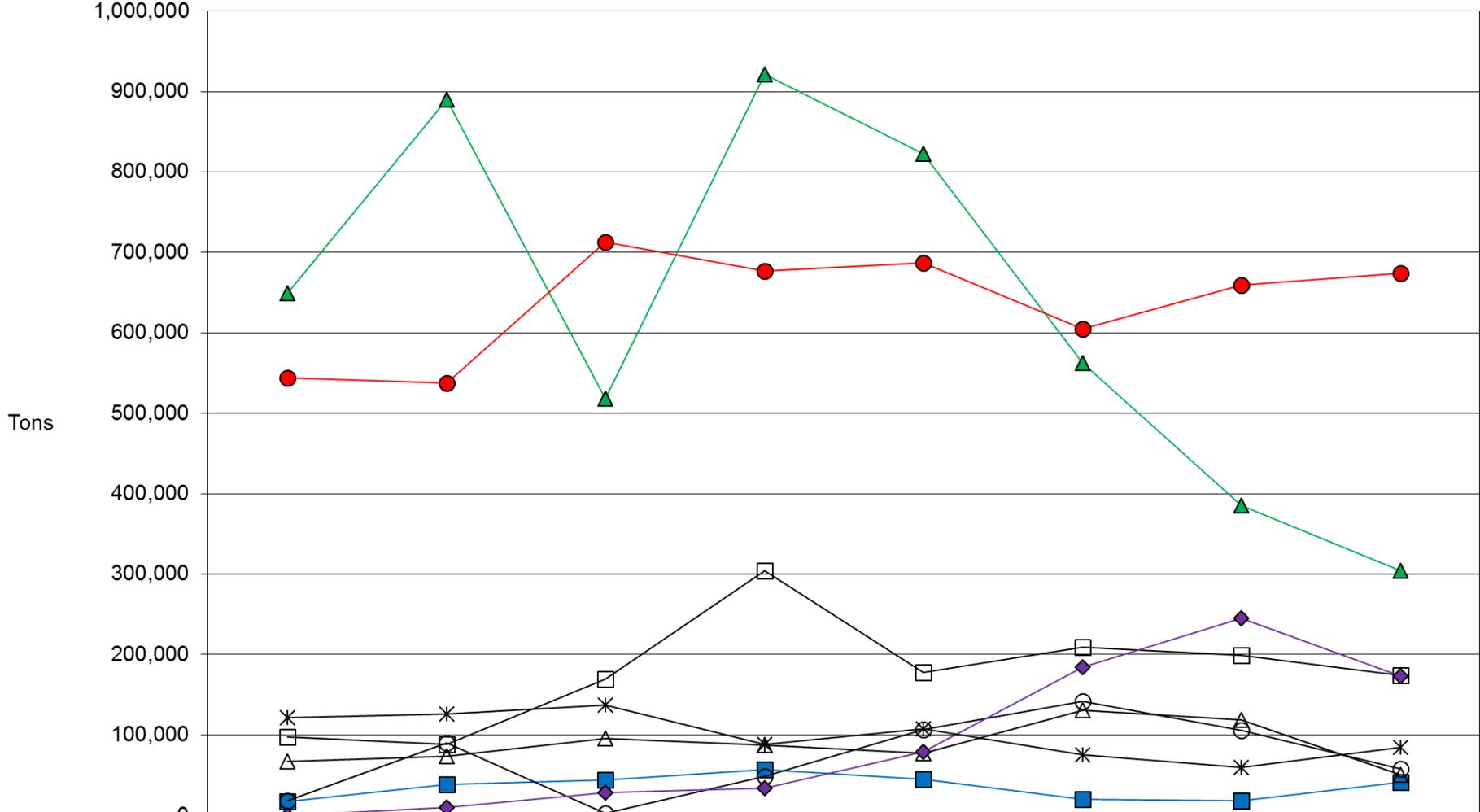
Figure 4: In-State Disposal of MSW Generated In-State: 2000 through 2014 (Tons)



**Figure 5: MSW Imports from NEWMOA States: 2000 through 2014
(Tons)**

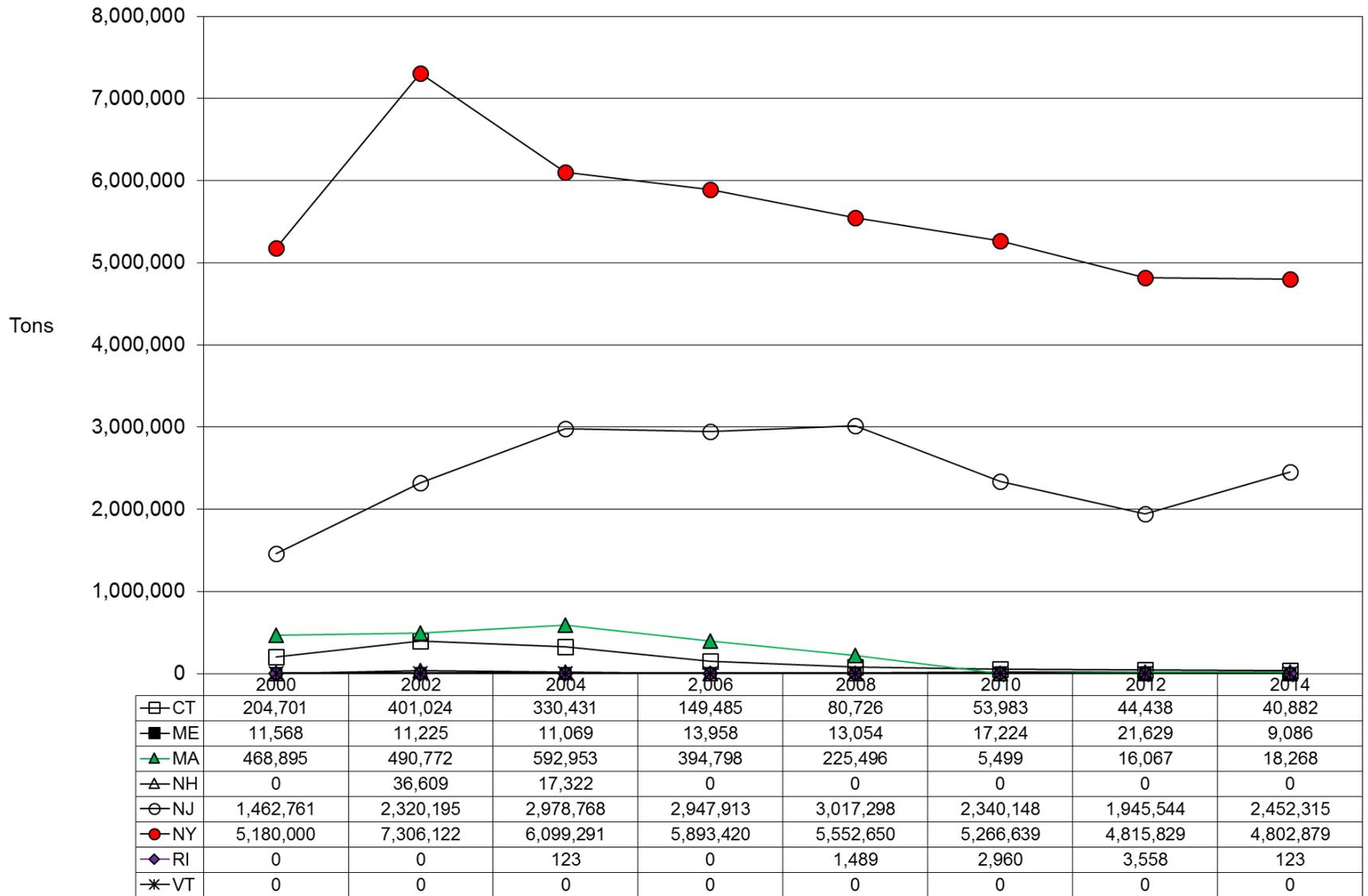


**Figure 6: MSW Exports to NEWMOA States: 2000 through 2014
(Tons)**

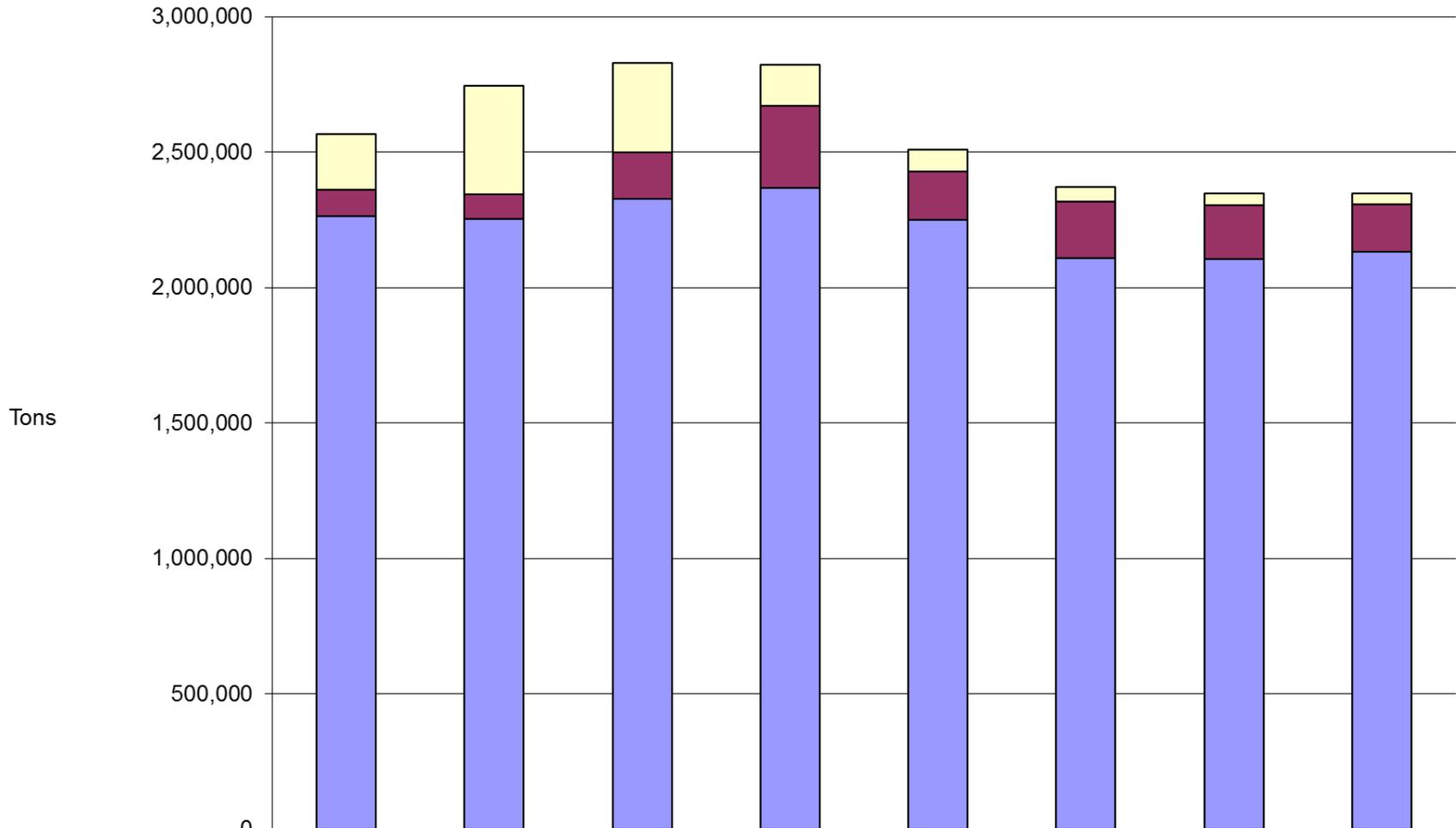


| | 2000 | 2002 | 2004 | 2,006 | 2008 | 2010 | 2012 | 2014 |
|------|---------|---------|---------|---------|---------|---------|---------|---------|
| □ CT | 97,788 | 88,633 | 169,963 | 303,970 | 177,752 | 208,927 | 199,399 | 173,740 |
| ■ ME | 17,057 | 38,643 | 44,346 | 57,142 | 45,025 | 20,375 | 18,220 | 41,194 |
| ▲ MA | 649,476 | 889,635 | 517,812 | 921,115 | 822,837 | 562,658 | 385,512 | 304,211 |
| △ NH | 66,688 | 73,404 | 95,756 | 87,344 | 77,125 | 130,960 | 118,989 | 50,752 |
| ○ NJ | 18,312 | 90,008 | 2,414 | 48,866 | 106,930 | 141,413 | 106,086 | 57,738 |
| ● NY | 544,181 | 537,838 | 712,979 | 677,051 | 686,707 | 604,663 | 659,073 | 673,718 |
| ◆ RI | 0 | 10,101 | 28,266 | 34,061 | 79,562 | 183,996 | 245,250 | 173,420 |
| * VT | 121,546 | 126,256 | 136,870 | 88,373 | 107,337 | 75,085 | 60,161 | 84,668 |

**Figure 7: MSW Exports to Non-NEWMOA States & Provinces
2000 through 2014
(Tons)**

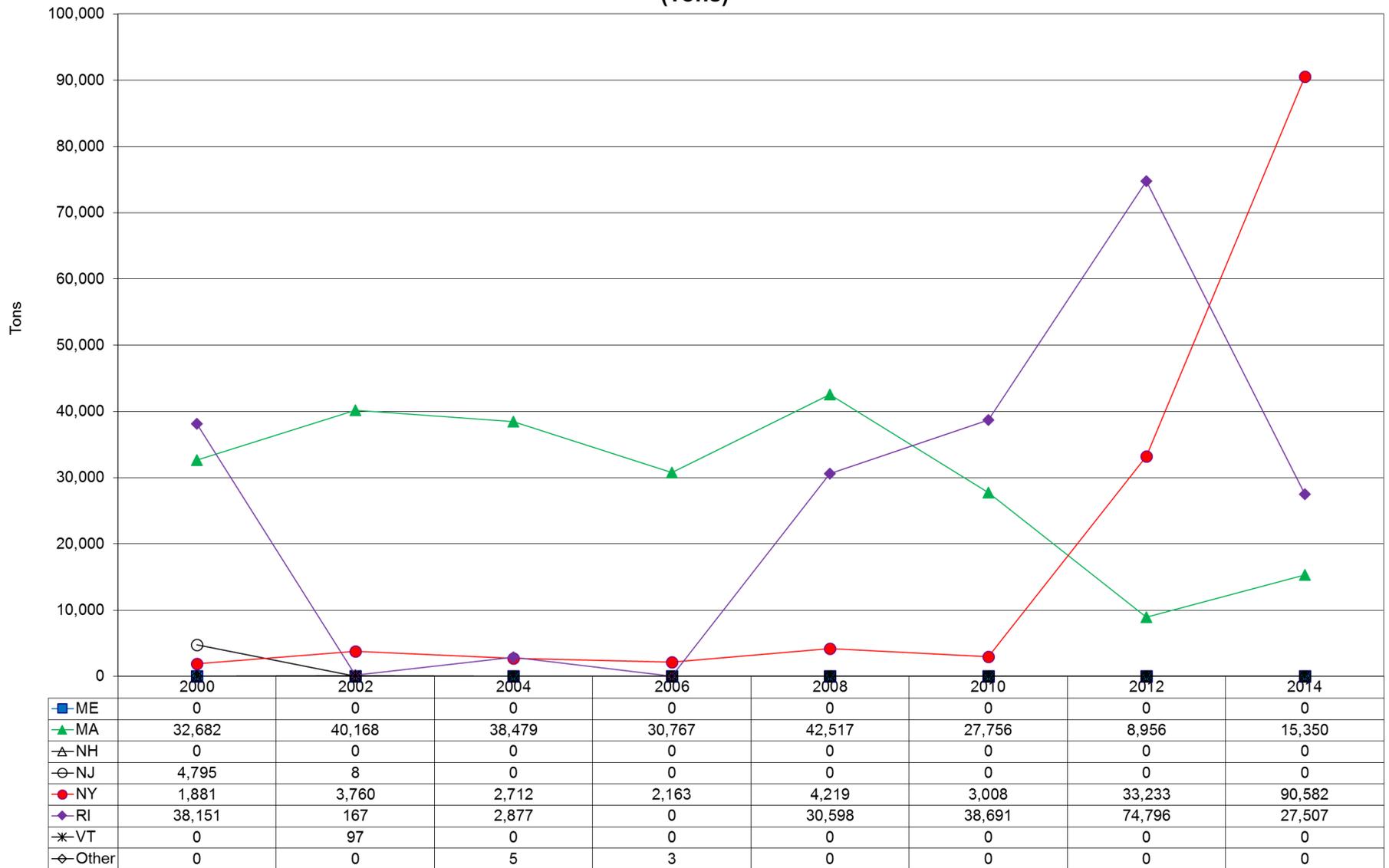


**Figure 8: MSW Generated in Connecticut & Disposed of: 2000 through 2014
(Tons)**

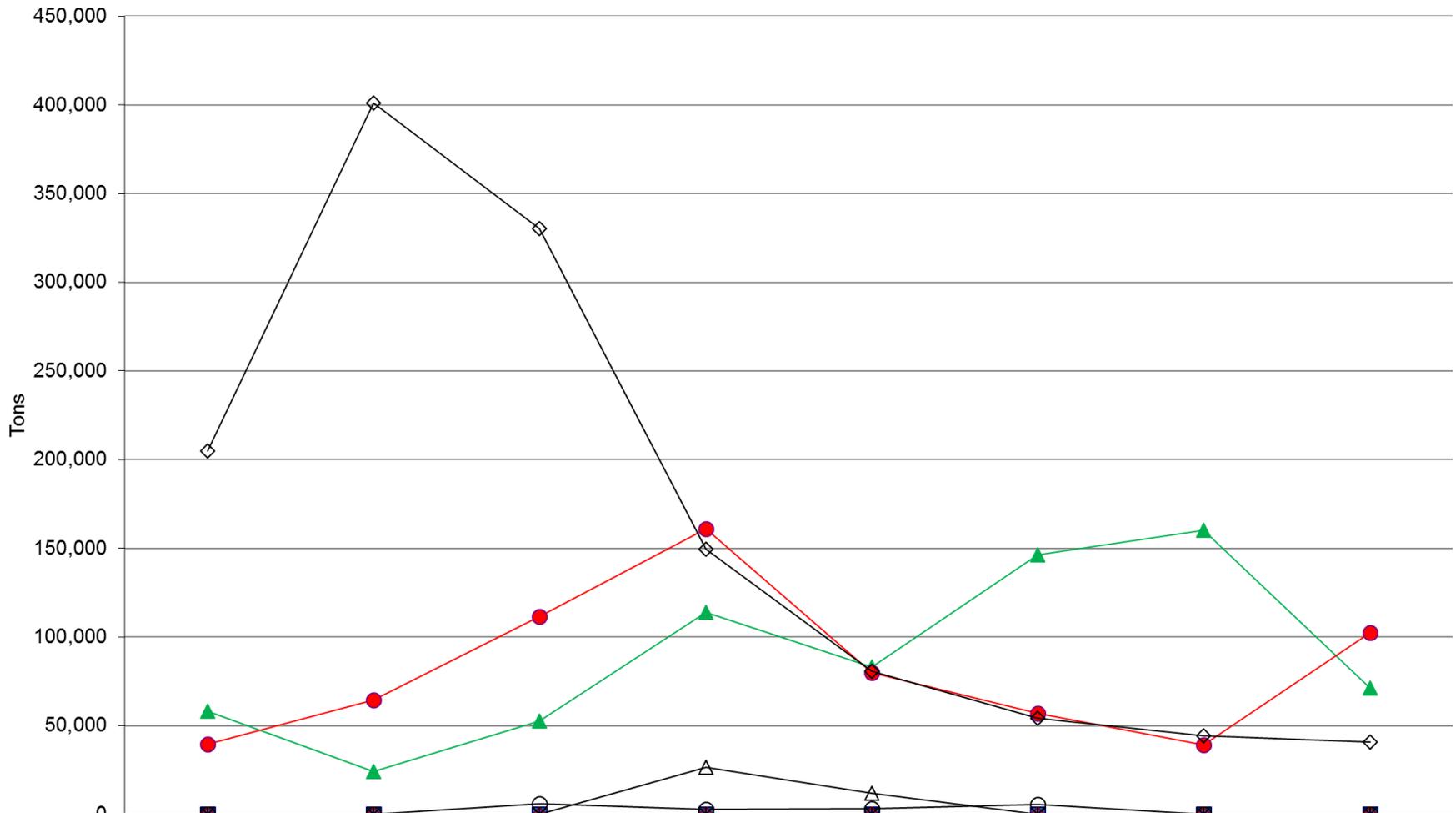


| | 2000 | 2002 | 2004 | 2006 | 2008 | 2010 | 2012 | 2014 |
|------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Exported to Non-NEWMOA | 204,701 | 401,024 | 330,431 | 149,485 | 80,726 | 53,983 | 44,438 | 40,882 |
| Exported to NEWMOA | 97,788 | 88,633 | 169,963 | 303,970 | 177,752 | 208,927 | 199,399 | 173,740 |
| Disposed In State | 2,262,487 | 2,253,756 | 2,327,500 | 2,367,467 | 2,251,048 | 2,108,857 | 2,103,750 | 2,132,108 |

**Figure 9: MSW Imports to Connecticut: 2000 through 2014
(Tons)**

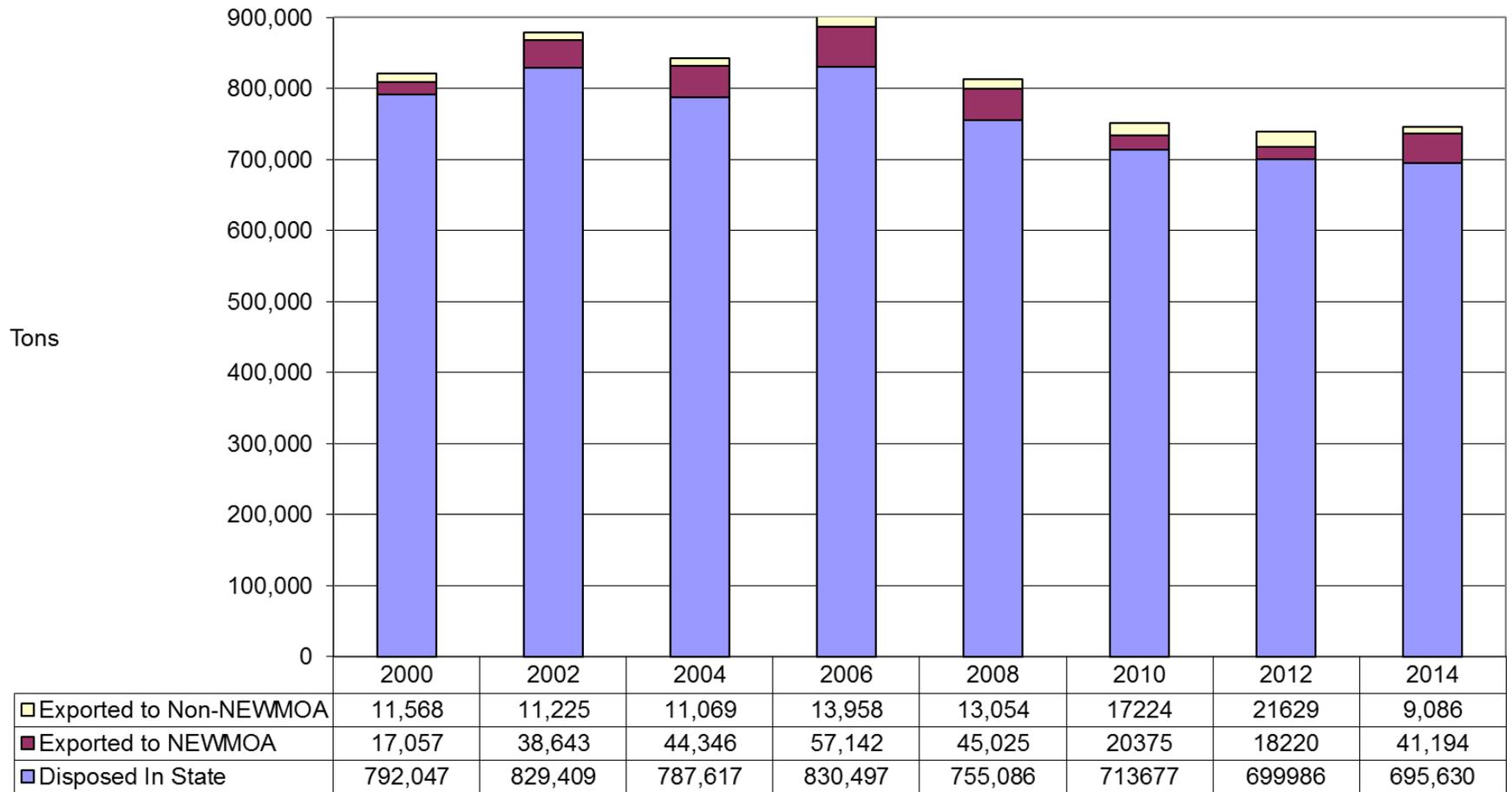


**Figure 10: MSW Exports from Connecticut: 2000 through 2014
(Tons)**

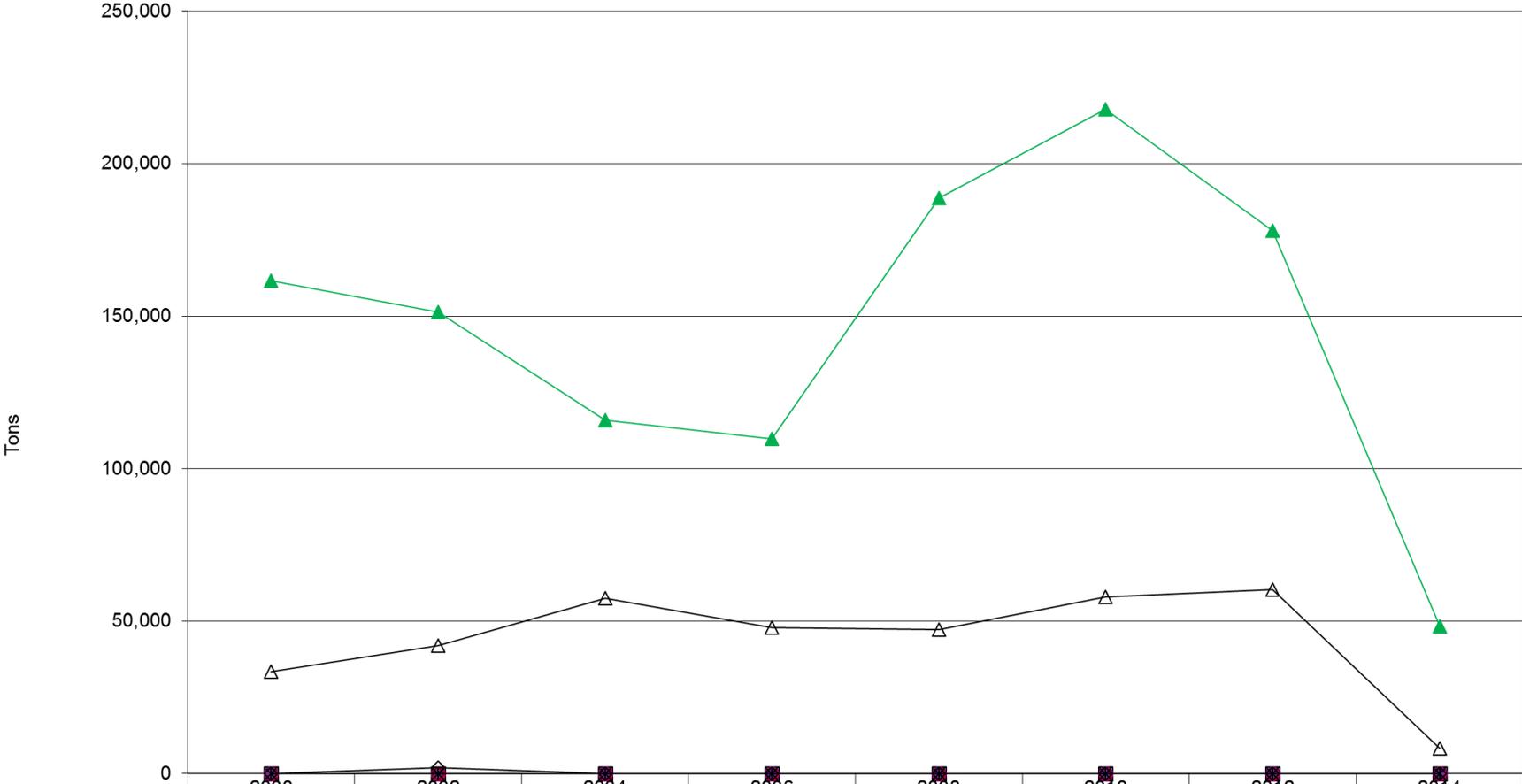


| | 2000 | 2002 | 2004 | 2006 | 2008 | 2010 | 2012 | 2014 |
|---------|---------|---------|---------|---------|--------|---------|---------|---------|
| ■ ME | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ▲ MA | 58,019 | 24,155 | 52,680 | 113,980 | 82,861 | 146,190 | 160,299 | 71,344 |
| ▲ NH | 77 | 0 | 0 | 26,474 | 11,845 | 0 | 0 | 0 |
| ○ NJ | 0 | 7 | 5,804 | 2,571 | 3,213 | 5,671 | 87 | 4 |
| ● NY | 39,685 | 64,471 | 111,479 | 160,945 | 79,833 | 57,066 | 39,013 | 102,392 |
| ◆ RI | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * VT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ◇ Other | 204,701 | 401,024 | 330,431 | 149,485 | 80,726 | 53,983 | 44,438 | 40,882 |

**Figure 11: MSW Generated in Maine & Disposed of: 2000 through 2014
(Tons)**

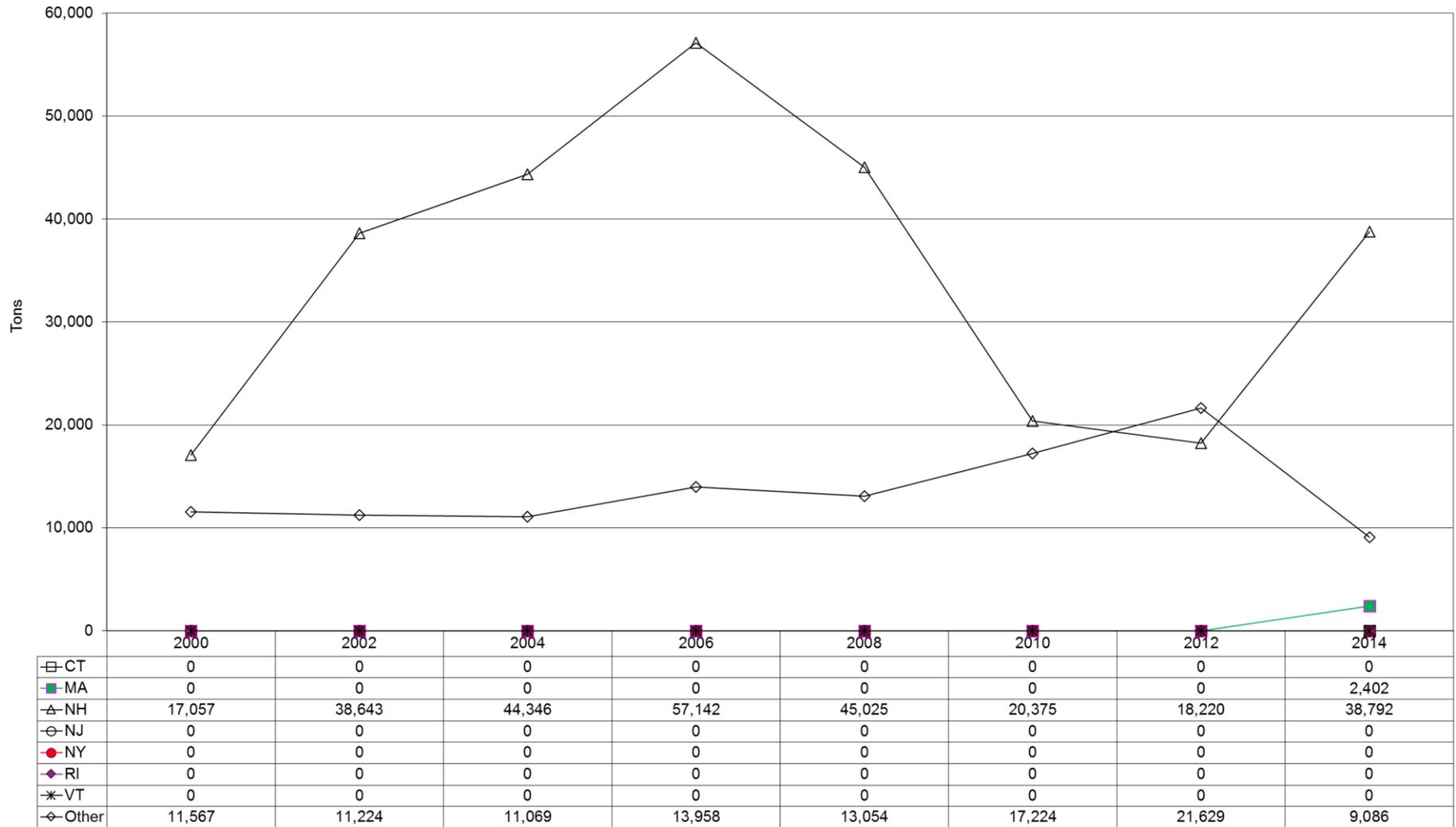


**Figure 12: MSW Imports to Maine: 2000 through 2014
(Tons)**

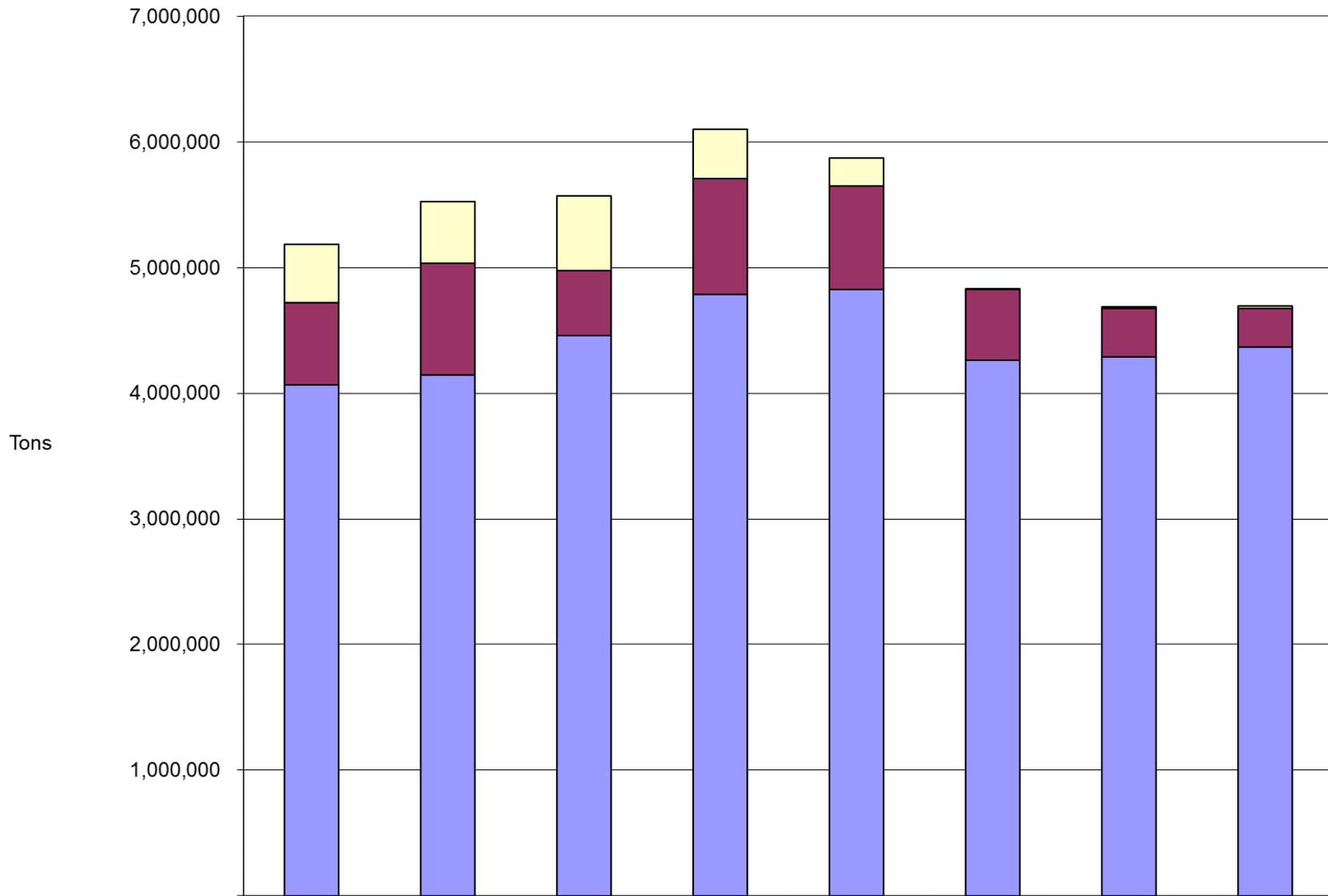


| | 2000 | 2002 | 2004 | 2006 | 2008 | 2010 | 2012 | 2014 |
|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| □ CT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ▲ MA | 161,573 | 151,338 | 115,857 | 109,831 | 188,828 | 217,731 | 178,028 | 48,242 |
| △ NH | 33,535 | 42,000 | 57,545 | 47,776 | 47,274 | 58,024 | 60,284 | 8,174 |
| ○ NJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ● NY | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ◆ RI | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * VT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ◇ Other | 0 | 1,918 | 0 | 0 | 0 | 0 | 0 | 0 |

**Figure 13: MSW Exports from Maine: 2000 through 2014
(Tons)**

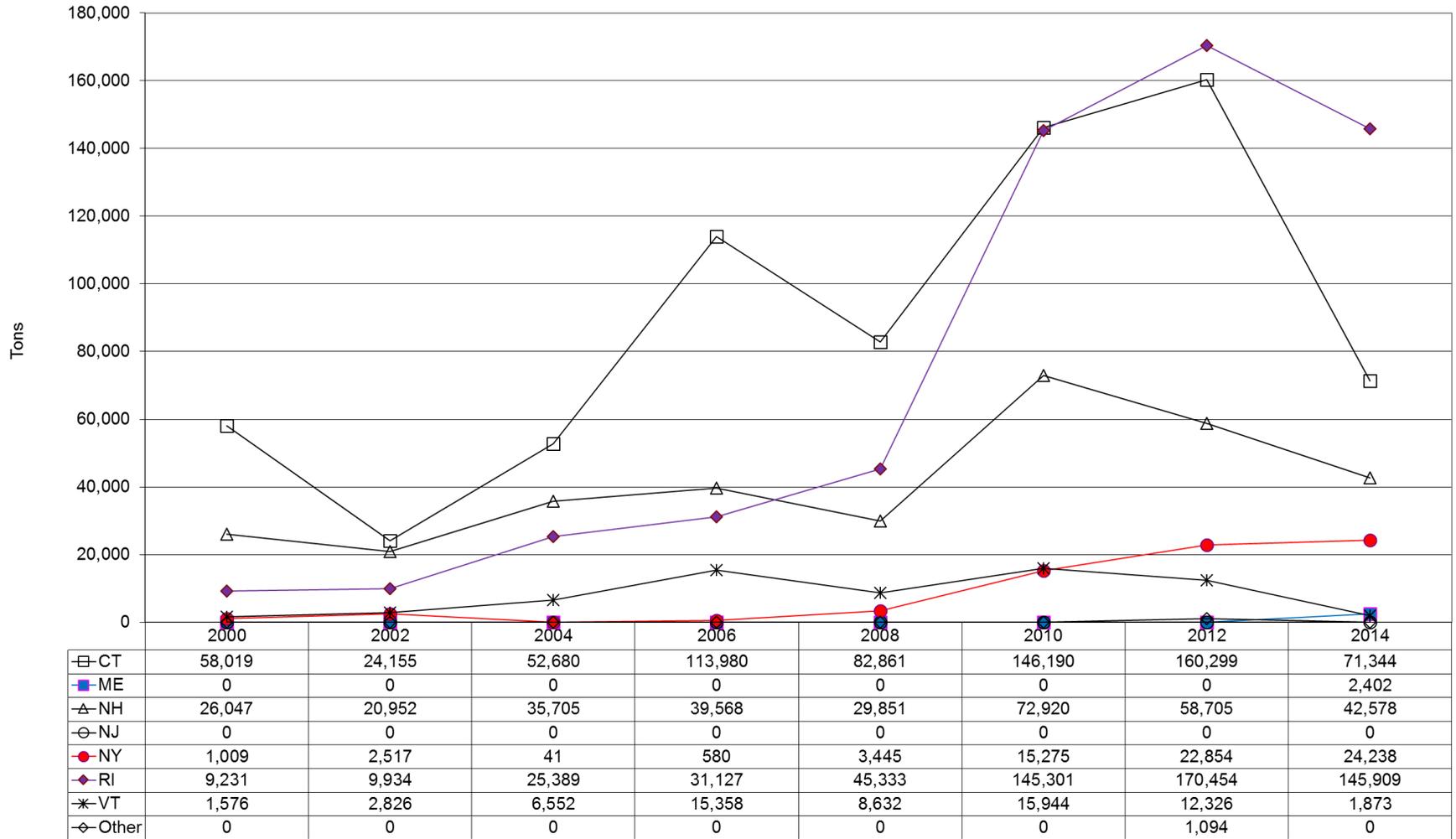


**Figure 14: MSW Generated in Massachusetts & Disposed of: 2000 through 2014
(Tons)**

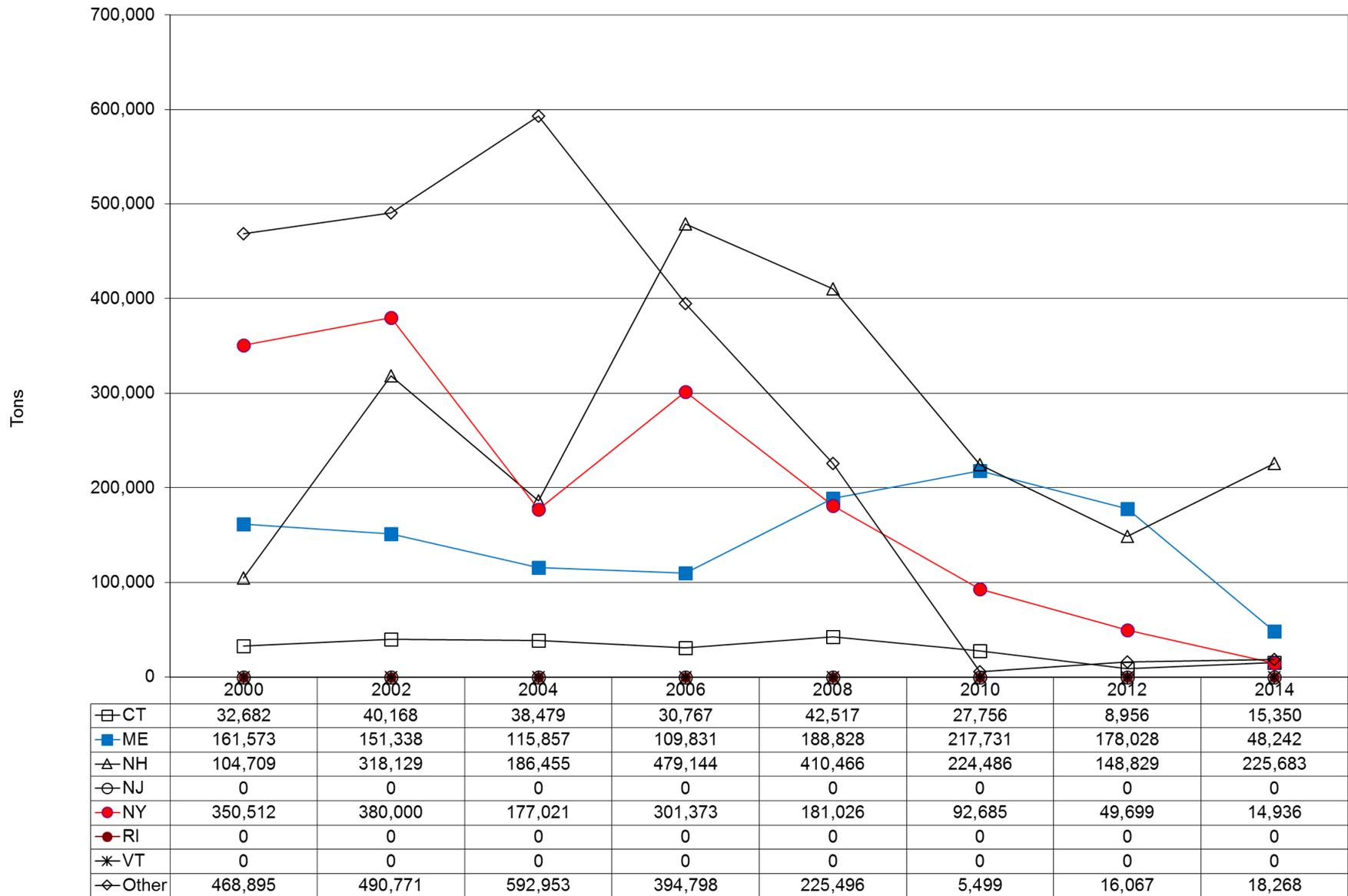


| | 2000 | 2002 | 2004 | 2006 | 2008 | 2010 | 2012 | 2014 |
|------------------------|-----------|-----------|-----------|-----------|-----------|---------|---------|-----------|
| Exported to Non-NEWMOA | 468,895 | 490,772 | 592,953 | 394,798 | 225,496 | 5499 | 16067 | 18,268 |
| Exported to NEWMOA | 649,476 | 889,635 | 517,812 | 921,115 | 822,837 | 562658 | 385512 | 304,211 |
| Disposed In State | 4,069,137 | 4,147,413 | 4,459,730 | 4,785,491 | 4,823,591 | 4262599 | 4289036 | 4,369,396 |

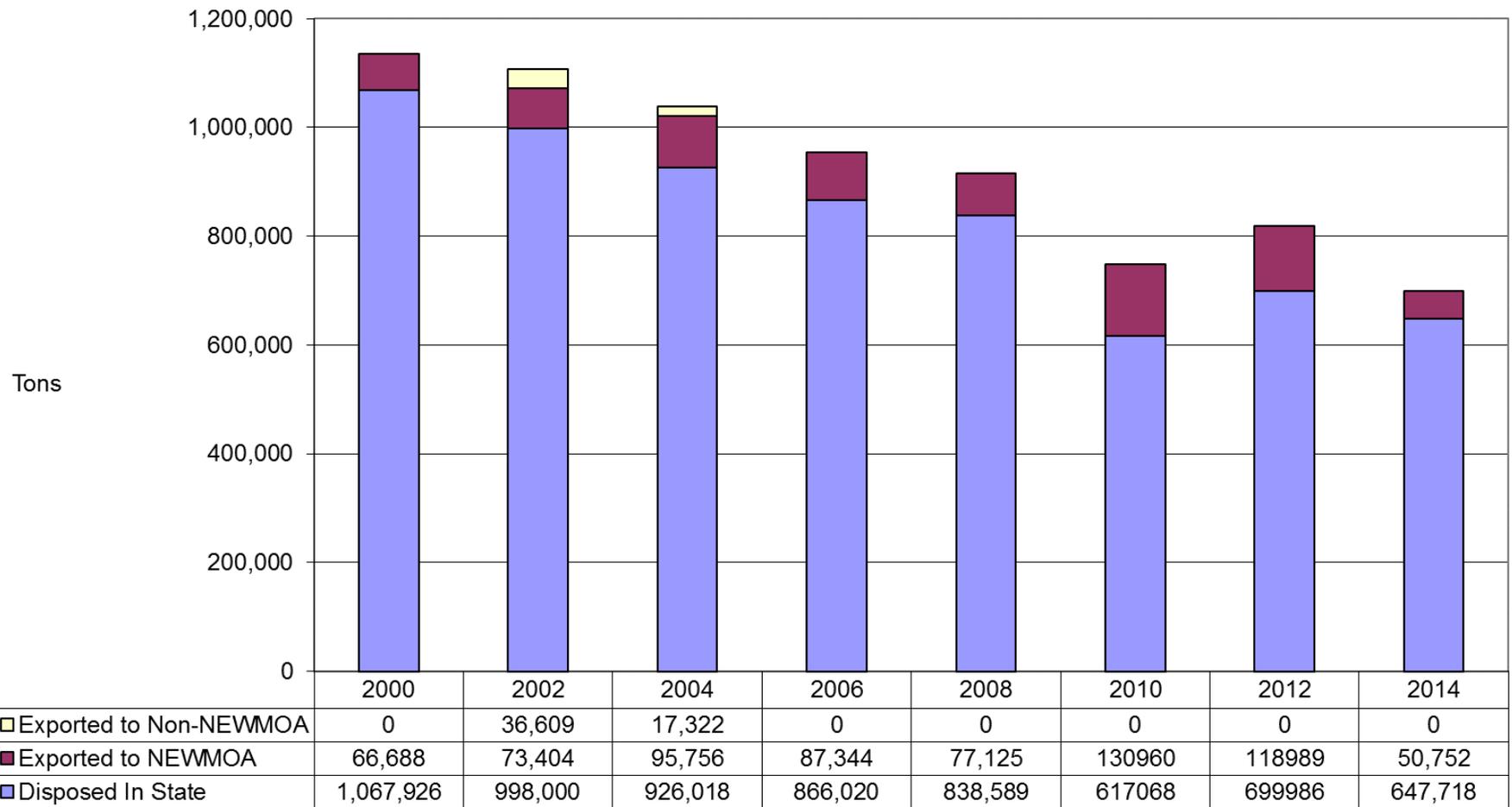
**Figure 15: MSW Imports to Massachusetts: 2000 through 2014
(Tons)**



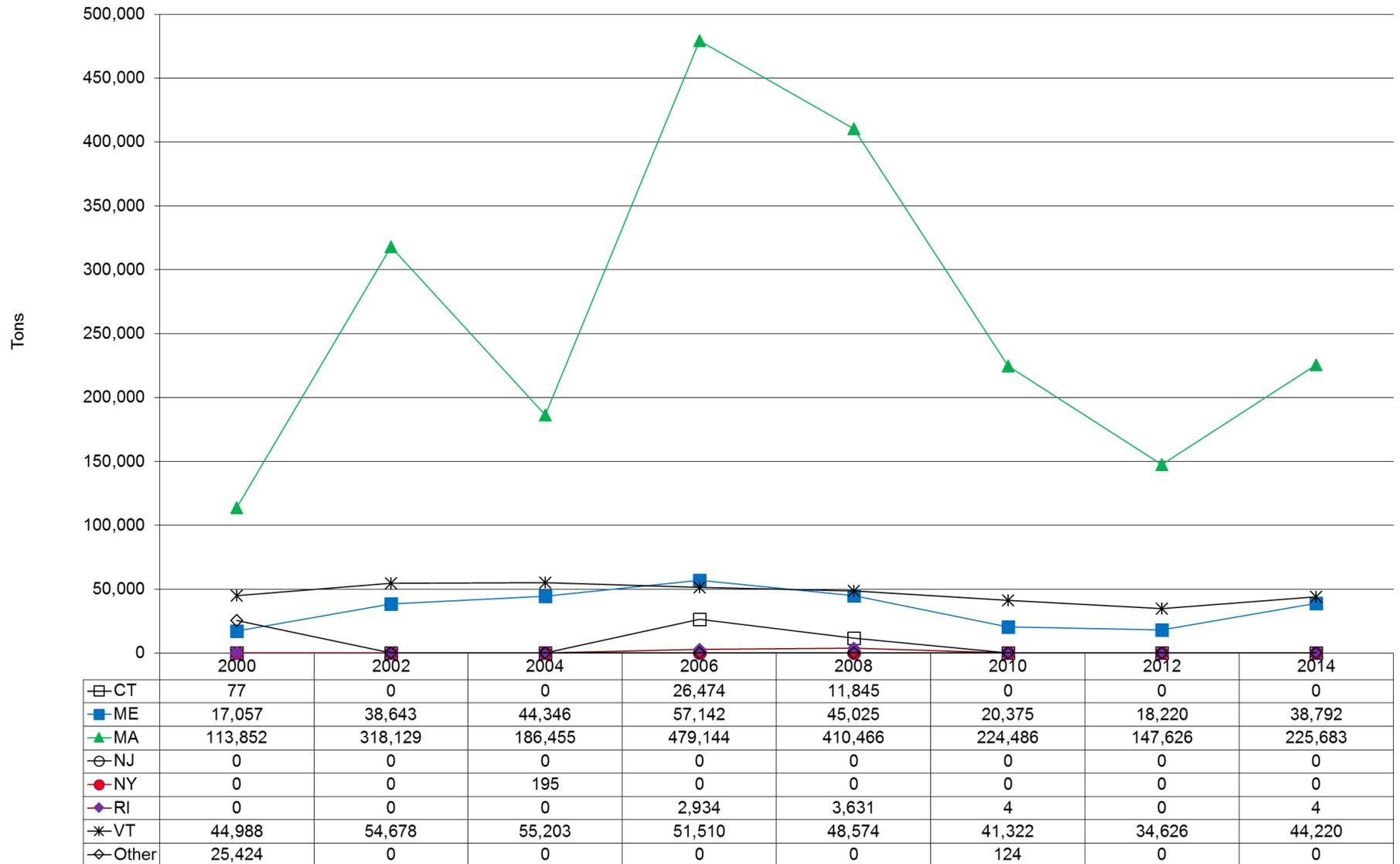
**Figure 16: MSW Exports from Massachusetts: 2000 through 2014
(Tons)**



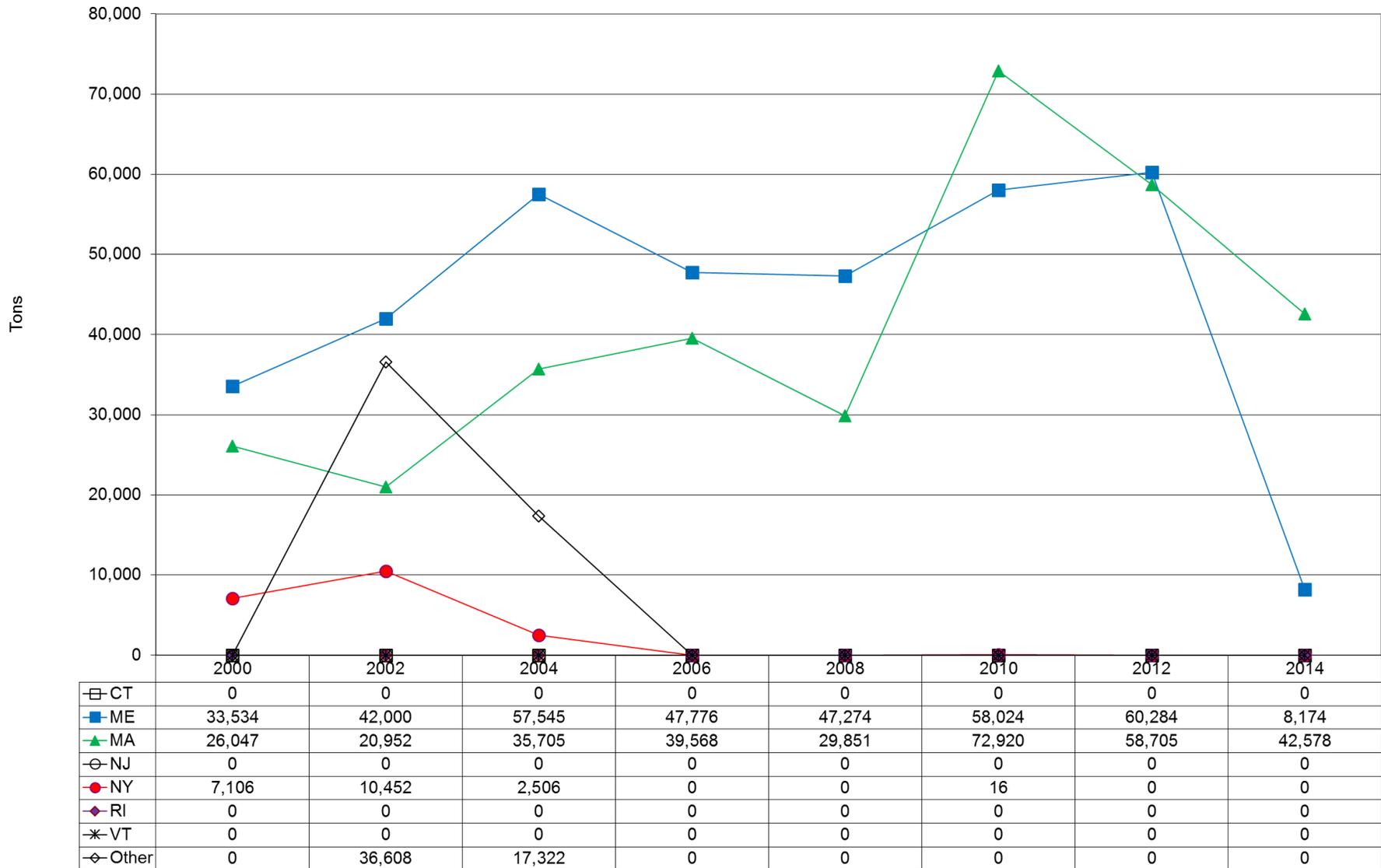
**Figure 17: MSW Generated in New Hampshire & Disposed of: 2000 through 2014
(Tons)**



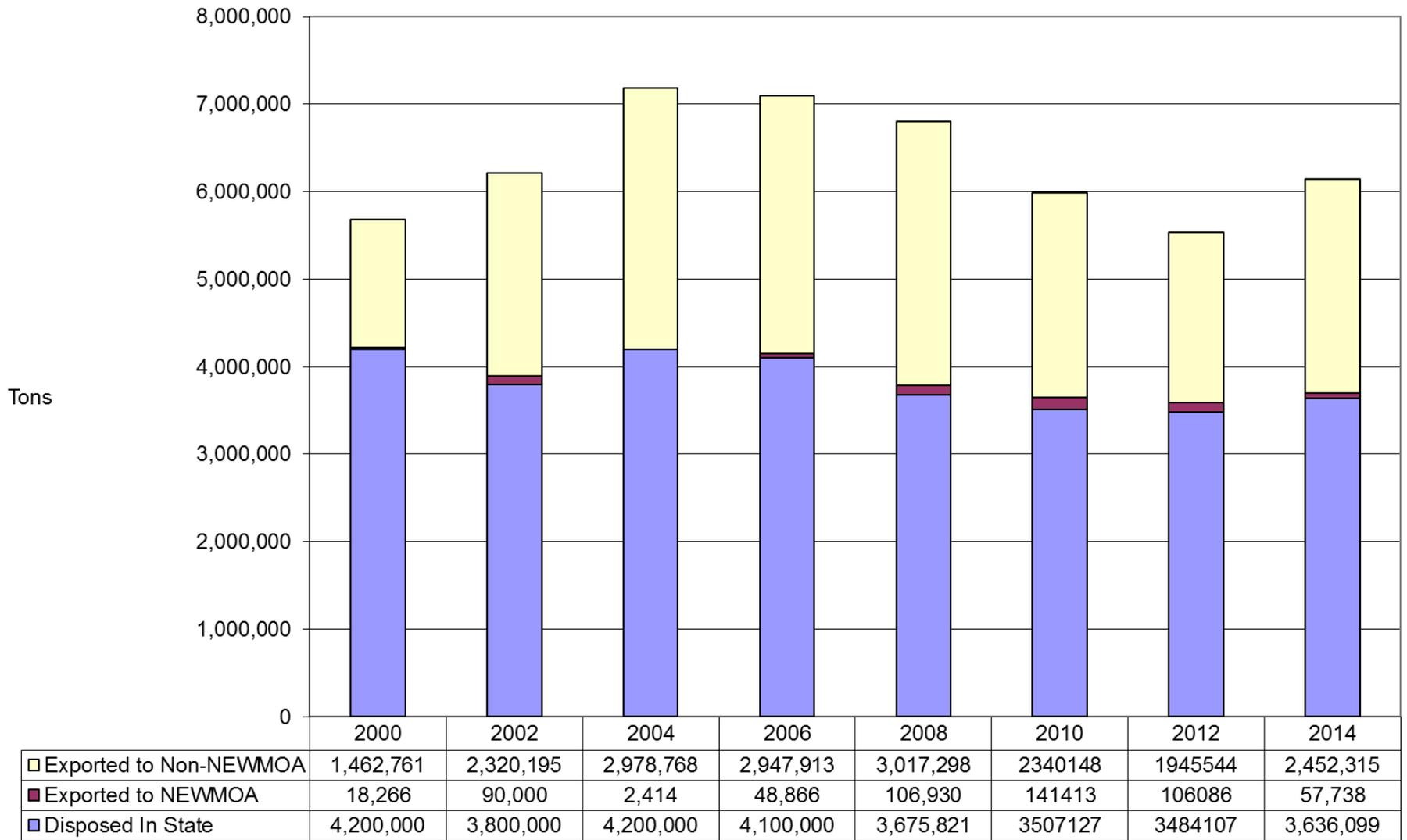
**Figure 18: MSW Imports to New Hampshire: 2000 through 2014
(Tons)**



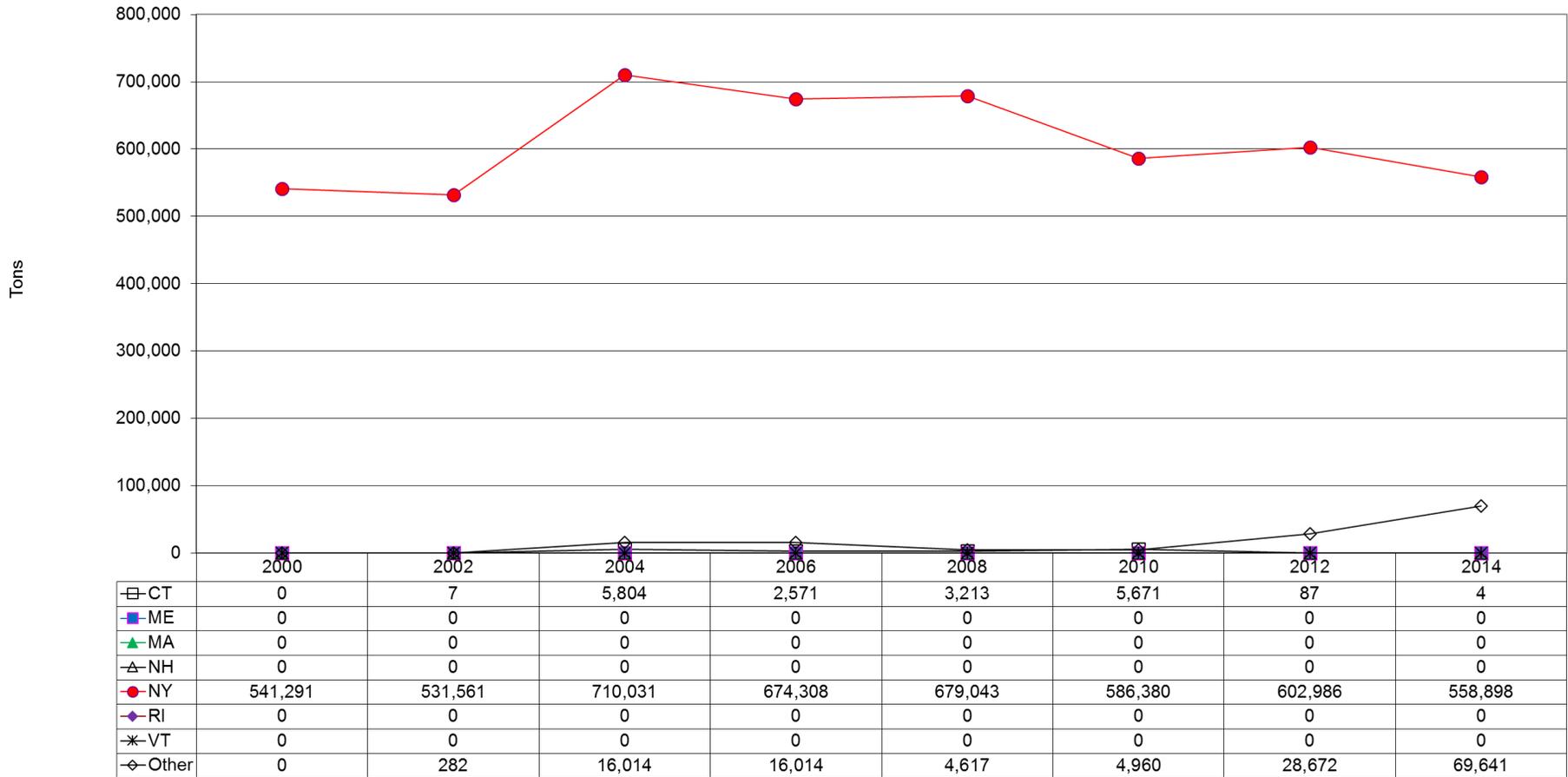
**Figure 19: MSW Exports from New Hampshire: 2000 through 2014
(Tons)**



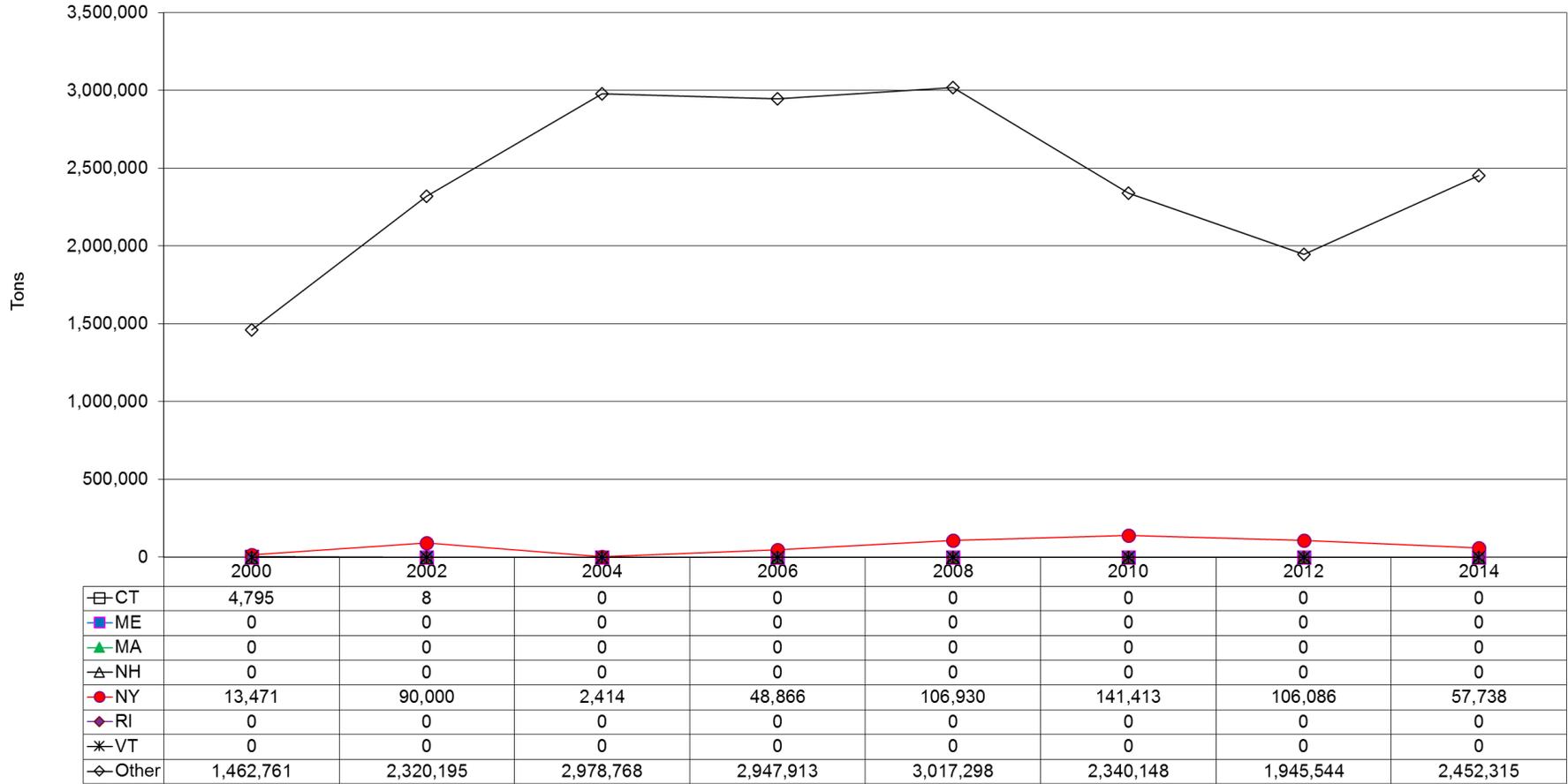
**Figure 20: MSW Generated in New Jersey & Disposed of: 2000 through 2014
(Tons)**



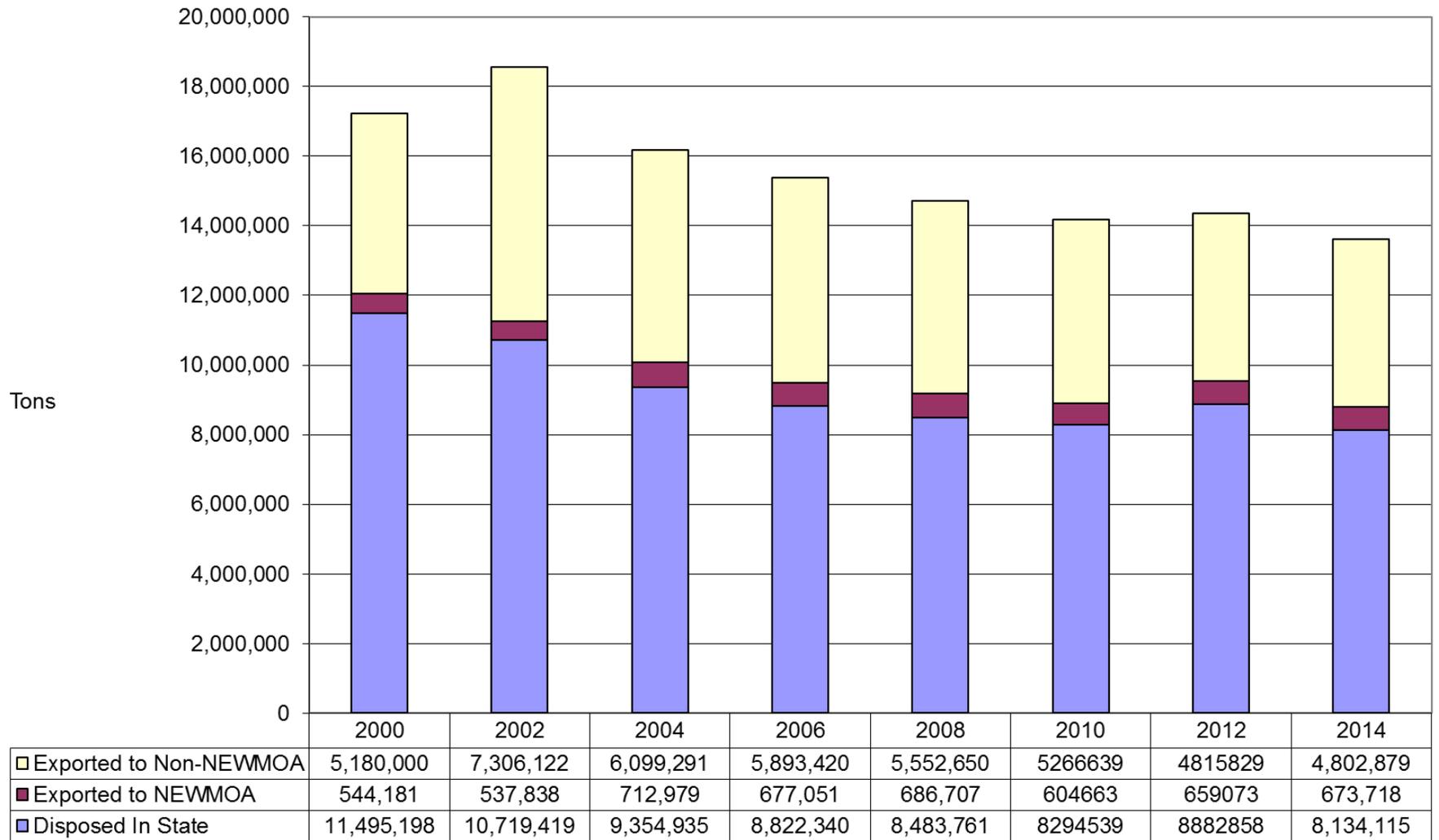
**Figure 21: MSW Imports to New Jersey: 2000 through 2014
(Tons)**



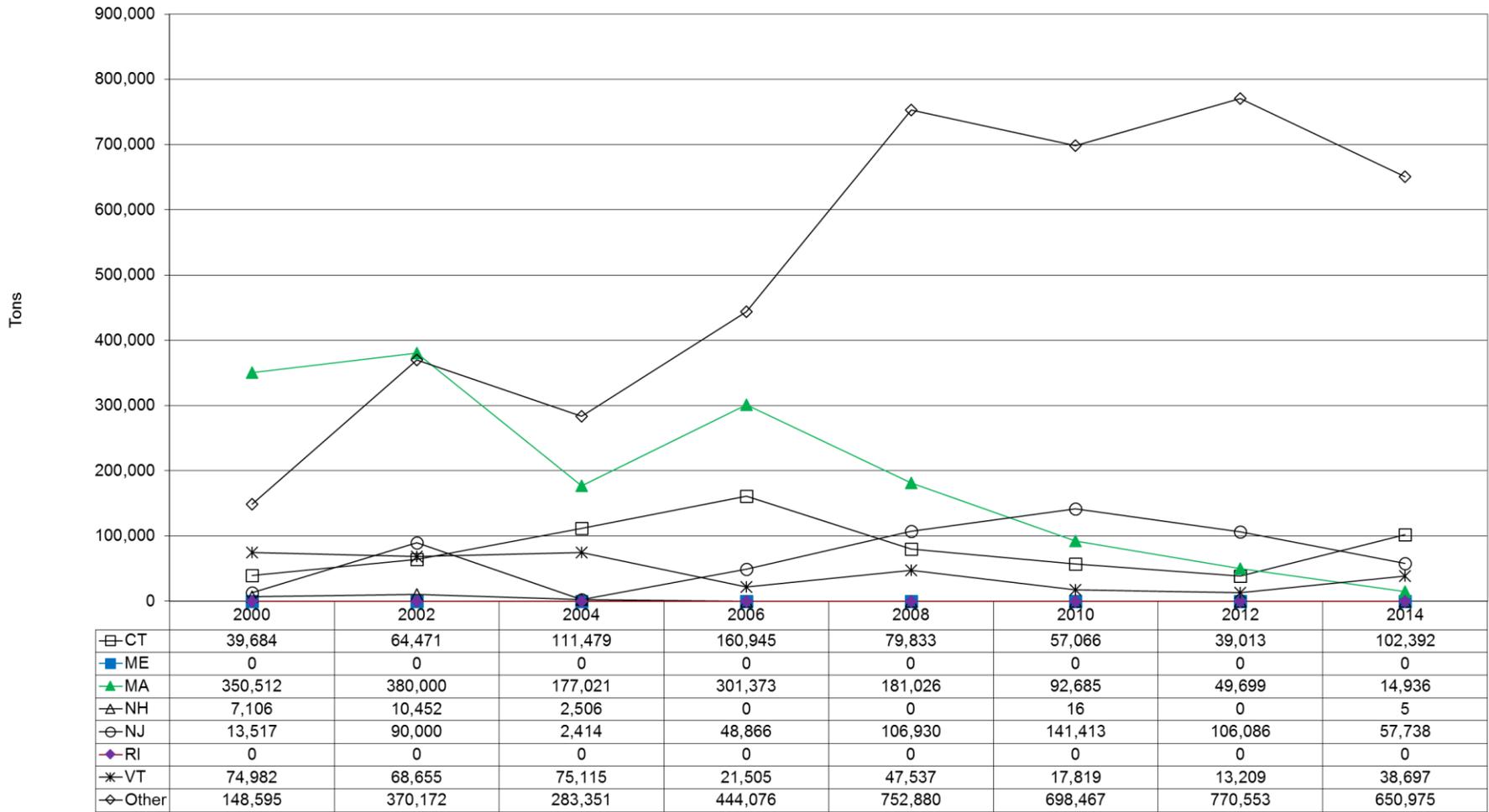
**Figure 22: MSW Exports from New Jersey: 2000 through 2014
(Tons)**



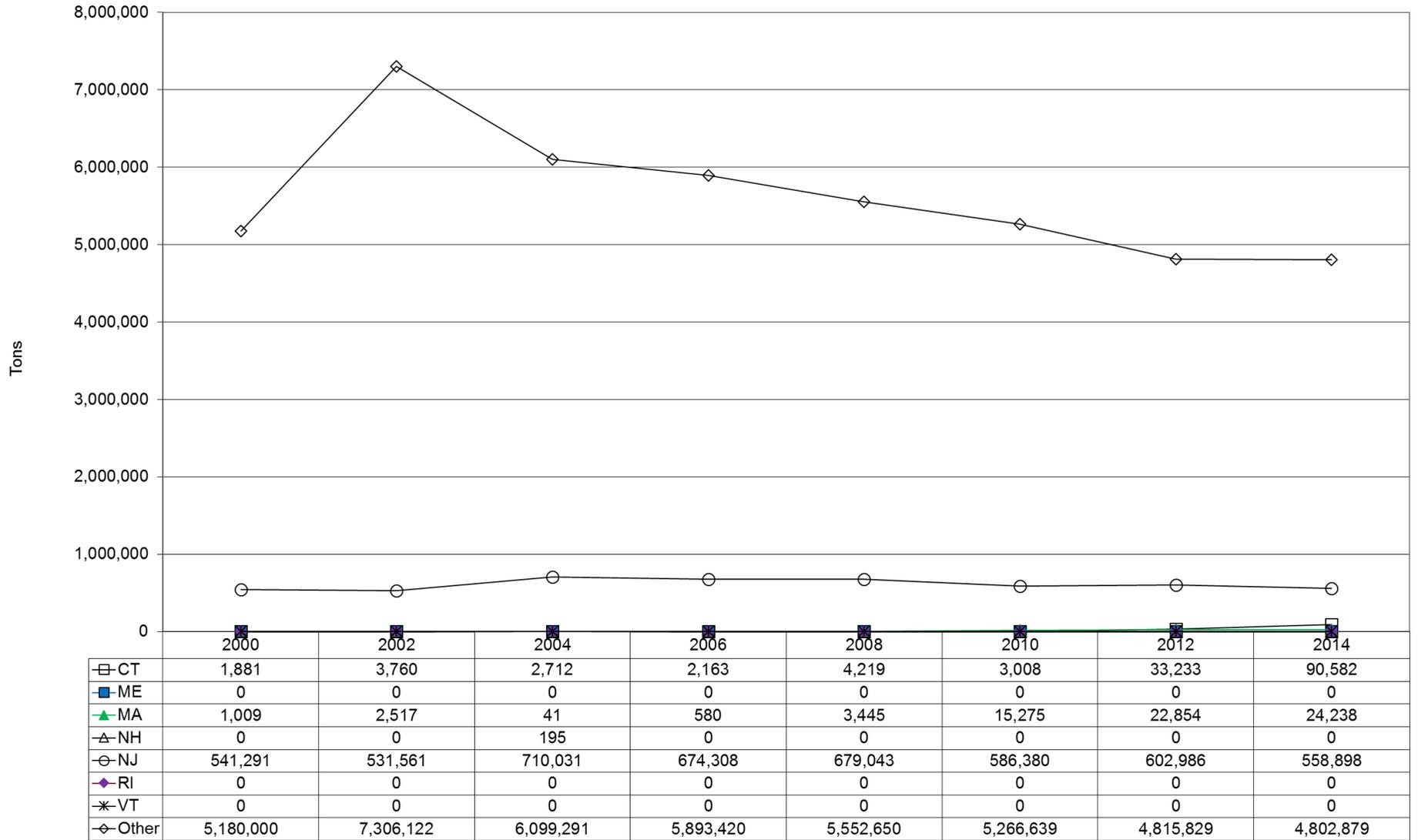
**Figure 23: MSW Generated in New York & Disposed of: 2000 through 2014
(Tons)**



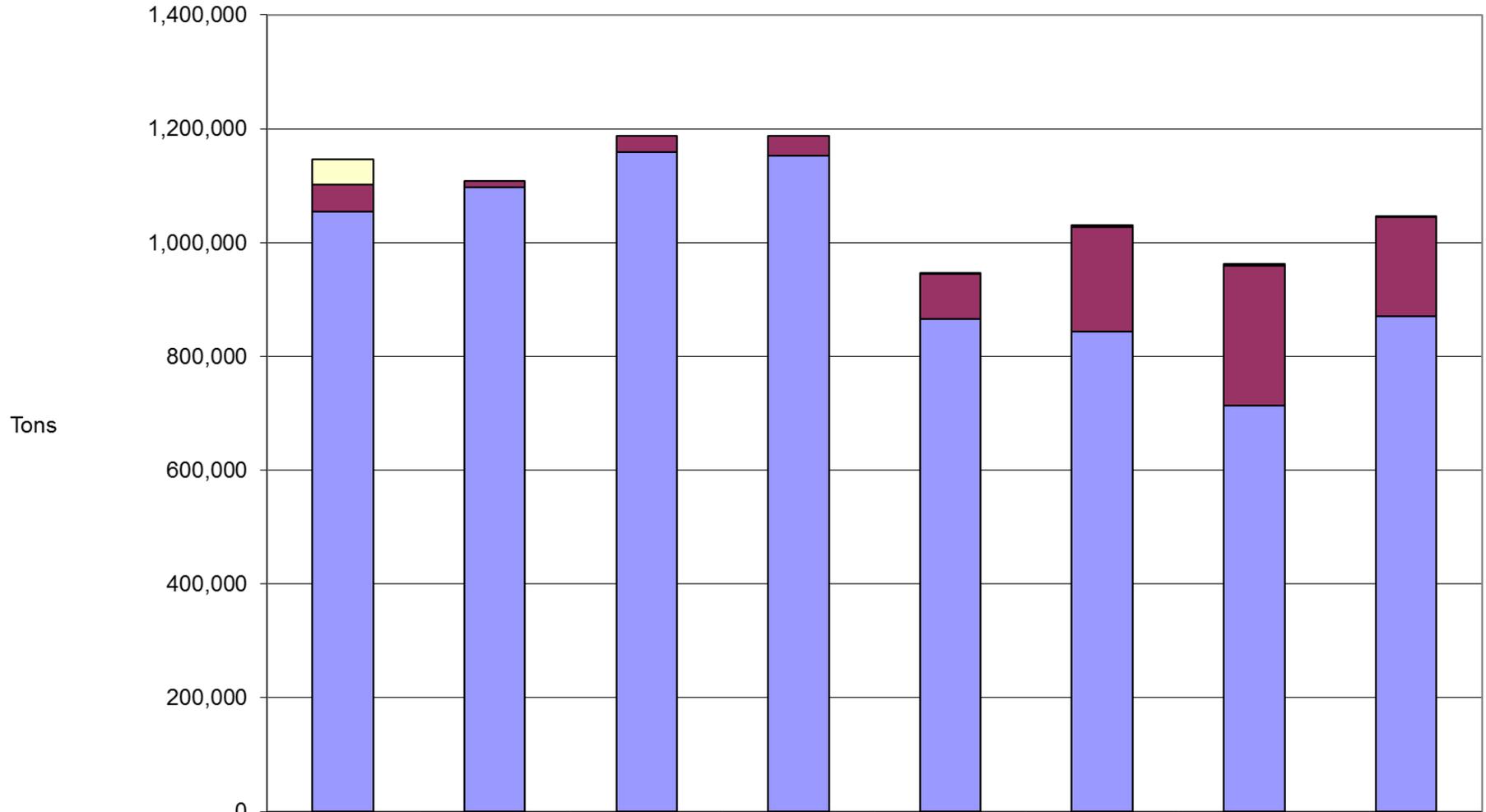
**Figure 24: MSW Imports to New York: 2000 through 2014
(Tons)**



**Figure 25: MSW Exports from New York: 2000 through 2014
(Tons)**

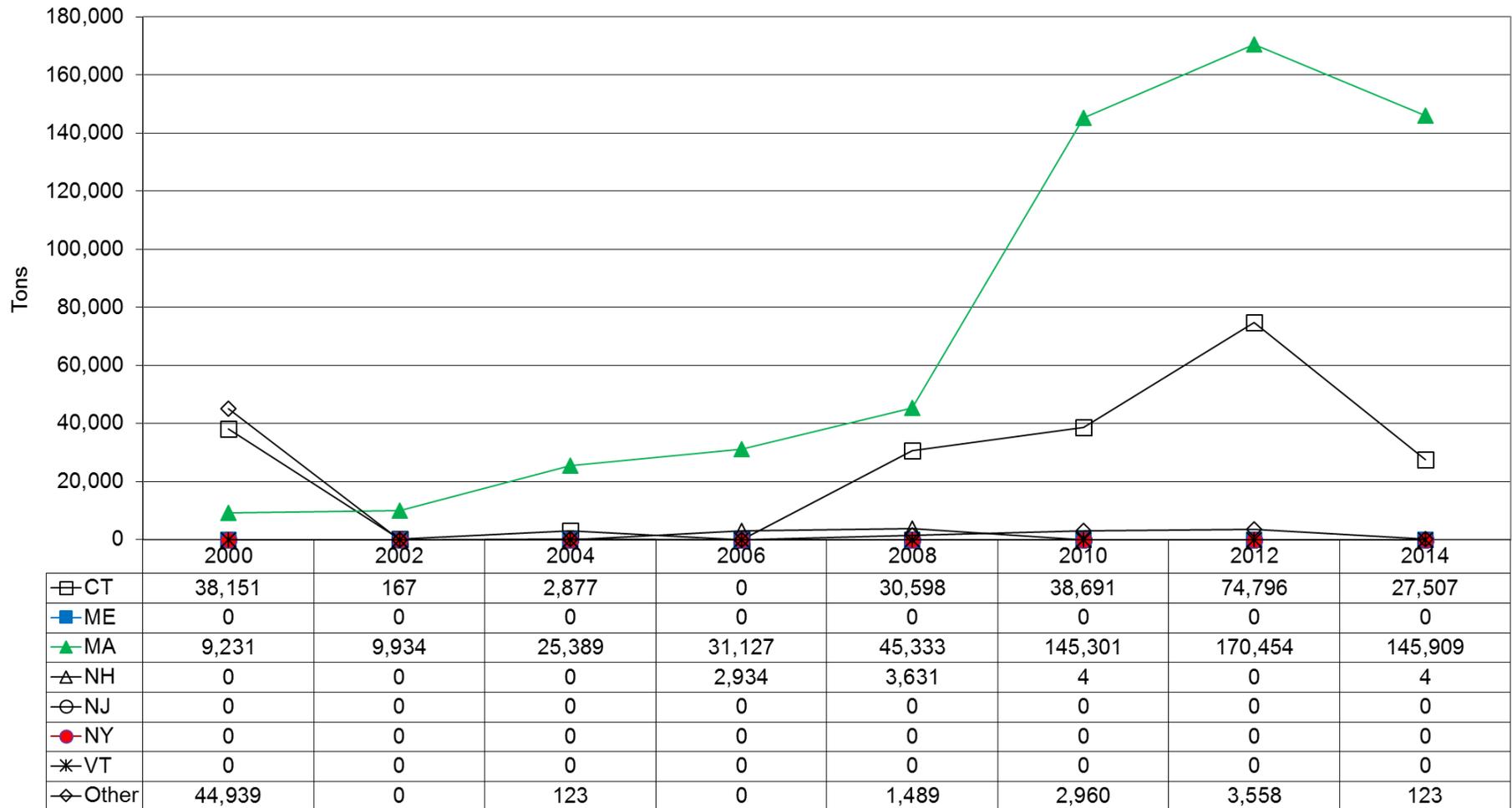


**Figure 26: MSW Generated in Rhode Island & Disposed of: 2000 through 2014
(Tons)**

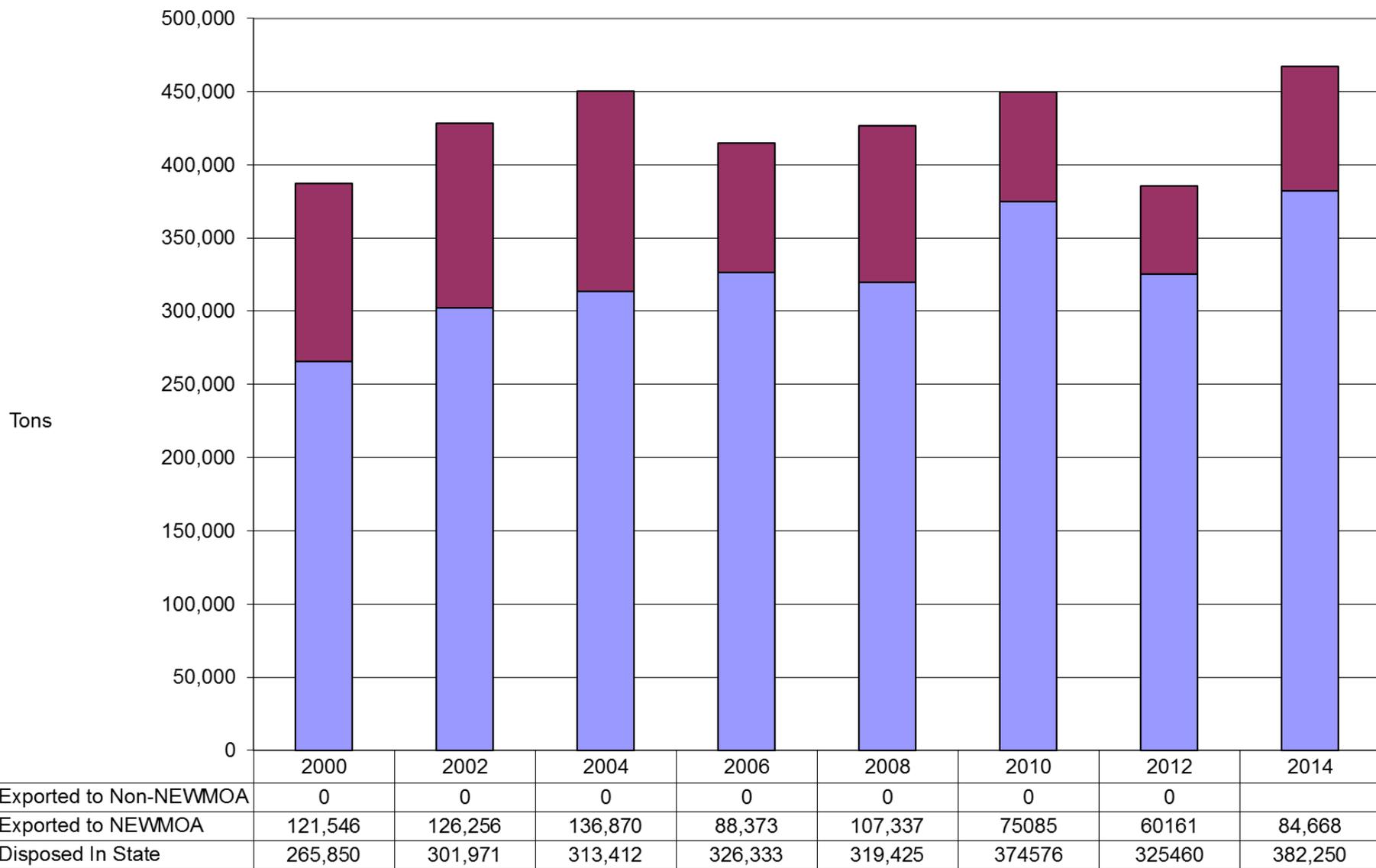


| | 2000 | 2002 | 2004 | 2006 | 2008 | 2010 | 2012 | 2014 |
|--------------------------|-----------|-----------|-----------|-----------|---------|--------|--------|---------|
| □ Exported to Non-NEWMOA | 44,939 | 0 | 0 | 0 | 1,489 | 2960 | 3558 | 123 |
| ■ Exported to NEWMOA | 47,383 | 10,101 | 28,266 | 34,061 | 79,562 | 183996 | 245250 | 173,420 |
| ■ Disposed In State | 1,054,290 | 1,097,452 | 1,158,991 | 1,153,080 | 866,084 | 844124 | 713263 | 870,873 |

**Figure 27: MSW Exports from Rhode Island: 2000 through 2014
(Tons)**



**Figure 28: MSW Generated in Vermont & Disposed of: 2000 through 2014
(Tons)**



**Figure 29: MSW Exports from Vermont: 2000 through 2014
(Tons)**

