



Northeast Flow of Glass Report

2026

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I. Acknowledgments

Thank you to the NERC Board Members and Glass Committee for their contributions to developing this report. We would especially like to recognize the following individuals who served on the review subcommittee: Susan Collins, Container Recycling Institute (CRI); Scott DeFife, Glass Packaging Institute; Christopher Nelson, Connecticut Department of Energy and Environmental Protection (DEEP); and Rick Watson, Delaware Solid Waste Authority. Additionally, NERC would like to acknowledge former Committee Chair Jennifer Heaton-Jones of the Housatonic Resource Recovery Authority (HRRRA), as well as retired NERC staff member Mary Ann Remolador, former Assistant Director, who led the launch of this initiative.

II. Definitions

The following definitions are applicable to this report; additional terms are defined in later sections.

- **Municipal Solid Waste (MSW):** solid phase household, commercial/retail, and/or institutional waste (U.S. Environmental Protection Agency).
- **Industrial, Commercial, and Institutional (ICI):** waste generated by businesses, schools, hospitals, and manufacturing sites.
- **Residential Waste:** daily refuse generated by households, including food scraps, packaging, plastics, glass, paper, and yard debris.
- **Deposit Return System (DRS):** a circular economy policy where consumers pay a small, refundable deposit when purchasing beverages in containers (plastic, glass, or cans). This fee is reimbursed when the empty container is returned to a designated collection point.
- **Drop-Off:** a designated location where residents or businesses can bring specific recyclable or reusable materials. These are typically used when curbside services are unavailable or for materials not accepted curbside.
- **Curbside:** a method of collecting recyclable materials from homes, community districts or businesses. These collection services are provided by public or private haulers. Curbside collection options include auto enrollment, opt-in enrollment, or optional subscription (open market).

III. Introduction

The Northeast Recycling Council, Inc. (NERC) is a multi-state nonprofit organization committed to minimizing waste, conserving natural resources, and advancing a sustainable economy through collaboration and action. NERC works with state, regional, and local agencies, the private sector, trade associations, and other stakeholders to address sustainability challenges and achieve environmental goals across the northeastern United States.

The eleven member states—Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont—along with advisory member organizations, are actively engaged in supporting and promoting glass recycling throughout the region. To better understand regional glass flows, NERC’s Glass Committee developed the Northeast Flow of Glass Report, which examines the tonnage of consumer glass container sales, as well as the quantity of containers recycled and processed into new products by manufacturers.

Unless otherwise specified, references to “glass” in this report pertain specifically to consumer glass containers, including food and beverage bottles and jars, as well as non-food containers.



Image 1: Glass Cullet at Urban Mining, CT



Image 2: Glass Cullet at Sibelco (formerly Strategic Materials Inc.)

IV. Key Findings

The data in this report are based on estimates derived from tools and methodologies that vary by state, including differences in reporting requirements and waste characterization approaches.

Key findings include:

- Vermont (VT) and Connecticut (CT) have the highest proportion of glass containers collected for recycling relative to total glass container waste generated with VT at 79.88% and CT at 77%. Both states have established deposit return systems.
- The greatest total tonnage of glass containers collected for recycling from residential and commercial sources occurred in New York (NY) at 281,065 tons, a figure that aligns with population size. New Jersey (NJ) follows at 197,001 tons.
- Connecticut leads in per capita glass container recycling at 65.81 lbs, followed by Vermont (VT) at 46.25 lbs, with New Jersey (NJ) and Maryland (MD) close behind.
- The highest percentage of glass containers in municipal solid waste (MSW) disposal (including both residential and industrial, commercial, and institutional (ICI) sources) is found in New York (NY) at 4.38%, followed by New Hampshire (NH) at 2.71%. The average across all states is 2.12%.
- Collection program analysis shows:
 - All Northeast states provide at least single-stream curbside and/or drop-off recycling programs.
 - Several states offer some source-separated drop-off options for glass bottles and jars.
 - Five states offer dual-stream curbside programs in select cities/regions.
 - Pennsylvania (PA) is the only state offering source-separated glass collection at the curb in select cities/regions.
 - Five states have bottle bill laws and operate deposit return systems (DRS).
- Reporting methodologies vary significantly across states, which impacts data comparability.

V. Glass Recycling Laws by State

A. Laws and Regulation by State

Table I indicates whether a state possesses a law or regulation that requires glass to be recycled or bans it from disposal. New Hampshire, New Jersey, and Pennsylvania do not mandate glass recycling. Existing applicable laws and/or regulations for all states are included.

Table I.

State	Is Glass Recycling Mandated?	Policy Mechanism Used	Existing Applicable Law(s) and/or Regulation(s)
CT	Yes	<ul style="list-style-type: none"> Mandatory Recycling <i>Product Stewardship: Bottle Bill</i> 	<ul style="list-style-type: none"> Designated Recycling R.C.S.A. §§ 22a-241b-1— 22a-241b-4 specifies that glass food containers are required to be recycled by each municipality. The Beverage Container Deposit and Redemption Regulations include glass beverage containers.
DE	Yes	<ul style="list-style-type: none"> Mandatory Recycling 	<ul style="list-style-type: none"> The 2010 Universal Recycling Law includes glass bottles and jars as part of its mandatory recycling program.
MA	Yes	<ul style="list-style-type: none"> Disposal Ban <i>Product Stewardship: Bottle Bill</i> 	<ul style="list-style-type: none"> Waste Disposal Ban (Regulations 310 CMR 19.017) ban the disposal of container glass in solid waste. Provisions for Recycling of Beverage Containers includes glass beverage containers.
MD	Yes	<ul style="list-style-type: none"> <i>Product Stewardship: Extended Producer Responsibility (EPR)</i> 	<ul style="list-style-type: none"> Maryland Recycling Act requires counties and state agencies to meet specified recycling rates based on population, which can include recycled glass, but is not a requirement. Producer Responsibility for Packaging and Paper Products includes glass containers and beverages.
ME	Yes	<ul style="list-style-type: none"> <i>Product Stewardship: Bottle Bill</i> <i>Product Stewardship: Extended Producer Responsibility (EPR)</i> 	<ul style="list-style-type: none"> The Beverage Redemption Program requires all material collected in the program to be recycled, which includes glass containers. Packaging Stewardship Program includes glass containers.
NH	No	N/A	<ul style="list-style-type: none"> Recycling is not mandated by law in NH.
NJ	No	N/A	<ul style="list-style-type: none"> NJ Statewide Mandatory Source Separation and Recycling Act requires each county to

			designate at least three mandated recycled materials, as well as leaves.
NY	Yes	<ul style="list-style-type: none"> • Mandatory Recycling • <i>Product Stewardship: Bottle Bill</i> 	<ul style="list-style-type: none"> • SECTION 120-AA requires municipalities to adopt a local law or ordinance to require the source separation and segregation of recyclable or reuseable materials from solid waste, which includes glass. • Returnable Container Act (RCA) includes glass containers.
PA	No	N/A	<ul style="list-style-type: none"> • Municipal Waste Planning, Recycling and Waste Reduction Act mandates that municipalities recycle at least three of eight material categories; glass is one of the eight materials listed.
RI	Yes	<ul style="list-style-type: none"> • Mandatory Recycling 	<ul style="list-style-type: none"> • Glass food and beverage containers are listed as recyclable in the Rules and Regulations for Reduction and Recycling of Commercial and Non-Municipal Residential Solid Waste and the Rules and Regulations for Reduction and Recycling of Municipal Solid Waste specify glass food and beverage containers should be recycled.
VT	Yes	<ul style="list-style-type: none"> • Mandatory Recycling • <i>Product Stewardship: Bottle Bill</i> 	<ul style="list-style-type: none"> • The Universal Recycling Law (Act of 148 of 2012) specifies glass bottles and jars as a mandated recyclable material. • The Beverage Container Law (10 V.S.A. Chapter 53) includes glass containers.
















B. Mandated Reporting Methodology

Table II indicates how recycling and waste data is mandated to be reported to the state.

Definitions in the Context of Reporting Mandates

- **Legislative Statute:** legally mandated, formal reporting requirements imposed by passed legislation.
- **Regulation:** mandatory submission of data by entities to ensure compliance, transparency, and risk management.
- **Permit:** defines the mandatory, scheduled submission of data regarding compliance, operations, or environmental impact to a regulatory agency, as mandated by the conditions of an issued permit.

Table II.











































State	Legislative Statute	Regulation	Permit
CT			
DE			
MA			
MD			
ME			
NH			
NJ			
NY			
PA			
RI			
VT			

VI. Recyclable Collection Methods by State

Table III outlines the different collection methods for recyclables made available within each state. **Definitions:**

- **Dual Stream:** a method of collecting recyclable materials that keeps paper and cardboard separate from co-mingled containers.
- **Single Stream:** a system in which all recyclables, including newspaper, cardboard, plastic, aluminum, junk mail, etc., are placed in a single bin or cart for recycling (Container Recycling Institute).
- **Source Separated:** the process by which recyclable materials are segregated and kept apart from the waste stream by the generator thereof for the purpose of collection, disposition, or recycling or resource recovery. This refers to glass-only curbside or drop-off bin for this report.

Table III.

State	Curbside: Single Stream	Curbside: Dual Stream (Fiber Separated)	Curbside: Source Separated (<i>Glass</i>)	Drop-Off: Single Stream	Drop-Off: Source Separated	Deposit Return System
CT						
DE						
MA						
MD						
ME						
NH						
NJ						
NY						
PA						
RI						
VT						

VII. Glass Container Waste by State: Recycling and Disposal

A. Total Tons of Glass Containers Collected for Recycling

Table IV presents estimated data on glass food and beverage (F&B) containers collected for recycling from both residential and Industrial, Commercial, and Institutional (ICI) sources, based on reported figures from each state. Unless otherwise noted, the tonnages include both sectors. Columns 3–5 provide a breakdown of these tonnages by collection pathway.

Table IV. Tonnage of Glass Food and Beverage Containers Collected for Recycling from Residents and Businesses As Reported to State¹

State	Total Tons ²	Curbside Tons	Drop-Off Tons	Deposit Return System	Calendar Year of Data
CT	119,811	56,741 ³		63,070 ⁴	2023
DE	16,282	15,957	325	<i>Not Applicable</i>	2024
MA	136,959	87,325	6,065	43,569 ⁵	2024
MD	129,727	<i>Data Not Available</i>	<i>Data Not Available</i>	<i>Not Applicable</i>	2024
ME	20,203	357 ⁶		19,846 ⁷	2024
NH	4,732 ⁸	<i>Data Not Available</i>	4,732	<i>Not Applicable</i>	2024
NJ	197,001 ⁹	<i>Data Not Available</i>	<i>Data Not Available</i>	<i>Not Applicable</i>	2022
NY	281,065	131,520 ¹⁰		149,545 ¹¹	2020
PA	47,409	37,558	9,851.34	<i>Not Applicable</i>	2023
RI	15,371 ¹²	<i>Data Not Available</i>	<i>Data Not Available</i>	<i>Not Applicable</i>	2024
VT ¹³	14,998	9,360		5,638	2024

¹ Depending on the state, some glass collected for recycling is utilized as alternative daily cover. View the [NERC Recycled Glass Used as Alternative Daily Cover in the Northeast US & Quebec Report](#), 2023 for more information.

² States may see cross border flow in which case some state totals may reflect material originating from other states. View the [NEWMOA Municipal Solid Waste Interstate Flow in 2022](#) study for more information.

³ CT: 56,741 represents the tonnage collected for both curbside and drop-off. Of this total, 471 tons was collected in 2024 through the [Housatonic Resource Recovery Association \(HRRR\) the glass drop off program](#).

⁴ CT: The 63,070 tons is estimated based on a 2013 bottle bill characterization study using 2023 data.

⁵ MA: This tonnage was derived using 2024 redemption data from the MA Department of Revenue and the 23% glass quotient from [CRI's 2013 Beverage Market Data Analysis](#).

⁶ ME: The reported 357 tons of curbside/drop-off represents mixed glass containers.

⁷ ME: This figure came from data collected from entities that manage bottle bill materials.

⁸ NH: The 4,372 tonnage estimate only reflects glass containers collected from communities participating in [NH Recycles' glass recycling programs](#); it does not include glass collected through curbside programs, or drop-off programs not participating with NH Recycles.

⁹ NJ: The reported 197,001 tons includes both residential and institutional, commercial, and industrial (ICI) data.

¹⁰ NY: The 131,520 tonnage estimate includes both curbside and drop-off.

¹¹ NY: DRS tonnage was derived using beverage and material market share data and unit-to-weight conversion factors provided by the Container Recycling Institute (CRI) in the 2018 Beverage Market Data Analysis.

¹² RI: The 15,371 tonnage estimate does not include ICI sources as that information is unavailable to RIRRC.

¹³ VT: The tonnage values for both curbside/drop-off and DRS are derived from the [VT Recycling System Analysis](#).

B. Total Pounds of Glass Containers Collected Per Capita

Table V indicates the total pounds of glass food and beverage containers collected for recycling per capita.

Table V. Total Pounds of Glass Food and Beverage Containers Collected for Recycling Per Capita

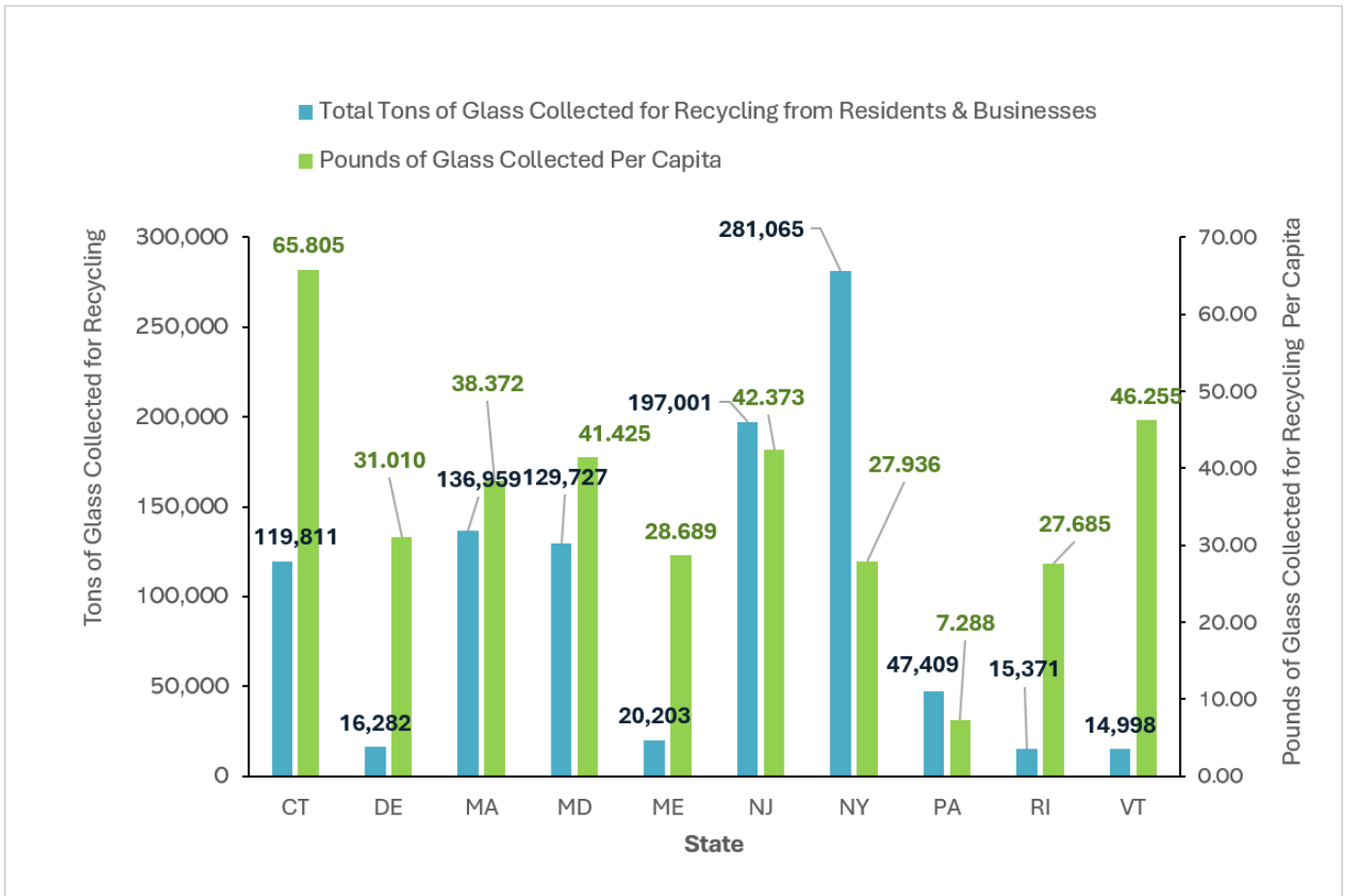
State	Total Tons Collected for Recycling	Total Pounds Collected for Recycling	Population Estimate	Glass Collected Per Capita (lbs)	US Census Year for Population Data
CT	119,811	239,622,000	3,641,369	65.81	2023
DE	16,282	32,564,000	1,050,123	31.01	2024
MA	136,959	273,918,000	7,138,560	38.37	2024
MD	129,727	259,454,000	6,263,220	41.43	2024
ME	20,203	40,406,000	1,408,438	28.69	2024
NH	4,732 ¹⁴	9,464,000	1,408,518	<i>Data Not Available</i>	2024
NJ	197,001	394,002,000	9,298,402	42.37	2022
NY	281,065	562,130,000	20,122,262	27.94	2020
PA	47,409	94,818,000	13,009,406	7.29	2023
RI	15,371	30,742,000	1,110,415	27.69	2024
VT	14,998	29,996,000	648,493	46.26	2024

¹⁴ The 4,732 tonnage estimate is only reflective of glass containers collected from communities participating in NH Recycles' Glass Recycling Programs.

i. Total Pounds of Glass Containers Collected for Recycling Per Capita by State

Chart 1 displays the total pounds of glass collected for recycling per capita, alongside the total tons of glass collected for recycling, by state.

Chart 1. Total Tons of Glass Food and Beverage Containers Collected for Recycling v. Pounds of Glass Collected for Recycling Per Capita¹⁵



¹⁵ Chart 1. does not include per capita data for New Hampshire as complete data was not available.

C. Total Tons of Glass Containers in MSW Disposal

Table VI highlights the percentage of glass containers found in municipal solid waste (MSW) disposal. MSW disposal data encompasses two primary source categories, unless otherwise noted:

- a) Residential, and
- b) Industrial, Commercial, and Institutional (ICI).

The total tons of glass containers in MSW disposal are estimated using percentages determined by state waste characterization studies, largely of which are publicly available. The percentage is applied to MSW disposal data obtained from state annual reports.

Table VI. Tonnage of Glass Food and Beverage Containers in MSW Disposal

State	Total Tons of MSW Disposed ¹⁶	Percent of Glass Containers in MSW Disposed ¹⁷	Total Tons of Glass Containers in MSW Disposed ¹⁸	Year of MSW Data	Year of Waste Characterization Study
CT	2,236,401	1.60%	35,782	2023	2015
DE	868,451	2.10%	18,250	2025	2025
MA	4,500,000	1.95%	87,931	2024	2025
MD	4,594,270	2.23%	102,651	2024	2024
ME ¹⁹	649,818	1.52%	9,862	2024	2024
NH	637,952	2.71%	17,294	2023	2024
NJ					
NY	13,714,437	4.38%	600,692	2021	2022
PA	9,392,700	1.89%	177,332	2024	2015
RI	460,669	1.88%	8,643 ²⁰	2023	2023
VT	378,042	1.00%	3,777	2023	2015
Northeast U.S. Total Excluding NJ	37,432,740		1,062,214		
State Average Excluding NJ	3,743,274	2.13%	106,221		

¹⁶ State calculation methodologies vary.

¹⁷ The percentage of glass containers in MSW disposal is derived from state waste characterization studies.

¹⁸ State calculation methodologies vary.

¹⁹ ME: Data and percentages came from the [Maine Statewide Waste Characterization Study Report, January 2026](#).

²⁰ RI: 8,643 tonnage represents residential only, not ICI. ICI is estimated to be 10,803.52.

ii. Percentage of Tons of Glass Containers in MSW Disposal

Chart 2 displays the percentage of total tons of glass containers in MSW disposal by state.

Chart 2. Percentage of Estimated Total Tons of Glass Food and Beverage Containers in Municipal Solid Waste Disposal²¹

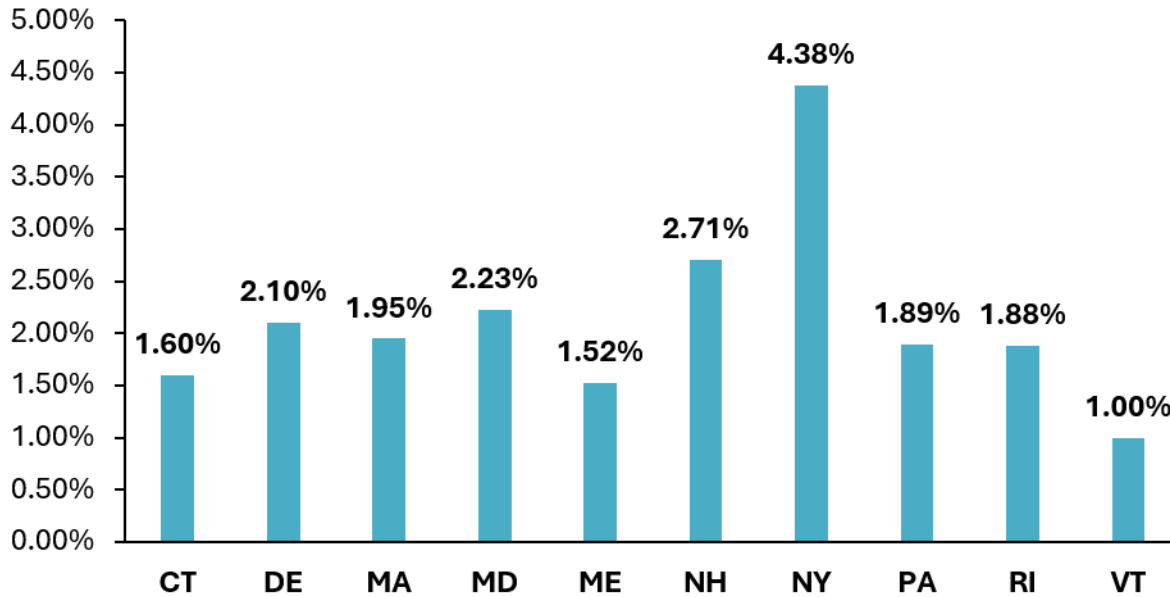


Image 3: Glass Cullet with Contamination

²¹ Chart 2. does not include data for New Jersey as complete data was not available.

D. Total Waste Generation of Glass Containers: Recycling and MSW Disposal

Table VII outlines total tonnage of glass food and beverage (F&B) containers generated within the municipal solid waste (MSW) system, including collected for recycling or disposal (landfill or incineration).

Table VII. Total Tonnage of MSW Glass Food and Beverage Containers Collected for Recycling and Disposal; Percentage of Glass Recycled out of Total Waste Generated²²

State	Total Tons of MSW Glass F&B Containers in Disposal	Total Tons of MSW Glass F&B Containers Collected for Recycling	Total Tons of Glass F&B Containers Collected for Recycling and Disposal	Percent of Glass Containers Collected for Recycling from Total Municipal Waste Generation
CT	35,782	119,811	155,593	77.00%
DE	18,250	16,282	34,532	47.15%
MA	87,931	136,959	224,890	60.90%
MD	102,651	129,727	232,378	55.83%
ME	9,862	20,203	30,065	67.20%
NH	17,294	4,732 ²³	<i>Data Not Available</i>	<i>Data Not Available</i>
NJ ²⁴	<i>Data Not Available</i>	197,001	<i>Data Not Available</i>	<i>Data Not Available</i>
NY	600,692	281,065	881,757	31.88%
PA	177,332	47,409	224,741	21.09%
RI	8,643	15,371	24,014	64.01%
VT	3,777	14,998	18,775	79.88%

²² Glass tonnages include contamination. Additionally, due to breakage loss, glass is estimated to be undercounted in waste characterization studies. Learn more in [CRI's Understanding economic and environmental impacts of single-stream collection systems](#), 2009.

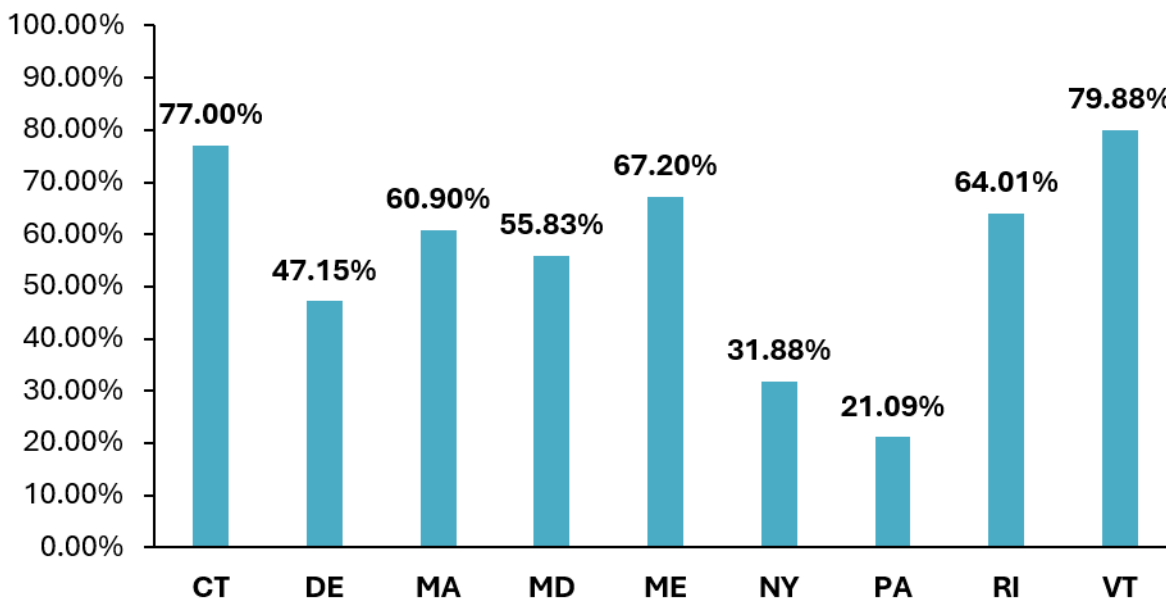
²³ NH: The 4,372 tonnage estimate only reflects glass containers collected from communities participating in [NH Recycles' glass recycling programs](#); it does not include glass collected through curbside programs, or drop-off programs not participating with NH Recycles.

²⁴ NJ: New Jersey DEP does not collect waste data.

iii. Percentage of Glass Containers Collected for Recycling / Total Glass Container Waste Generated

Chart 3 displays the percentage of glass containers collected for recycling out of the total tonnage of glass container waste generated (collected for recycling + disposal)

Chart 3. Percentage of Tons of Glass Containers Collected for Recycling / Tons of Glass Containers Collected for Recycling + Disposal²⁵²⁶



Images 4-6: HRRAs in CT Glass Drop-off Program, Green and Amber Bottle Manufacturing Lines (From Left to Right)

²⁵ Note, 75% of Northeast states and Quebec reported that glass collected for recycling at material recovery facilities (MRFs), if meets specifications, is used as alternative daily cover (ADC). See Table 2 in [Recycled Glass Used as Alternative Daily Cover in the Northeast US & Quebec Report](#), Northeast Recycling Council, July 2023.

²⁶ Massachusetts reporting MRF 2024 Market Outlet Data can be found here: [Massachusetts Landfills, Transfer Stations, Compost Sites & Recycling Facilities | Mass.gov](#).

VIII. End Market Information

Currently, there exist the following end markets for recycled glass:

- Glass containers
- Fiberglass
- Pozzolan
- Foam glass aggregate
- Sandblasting materials
- Processed glass aggregate

Some information on glass processors and end market manufacturers can be found using the Glass Packaging Institute's Glass Manufactures and Recycling Map at gpi.org/glass-recyclers-manufacturers-map.

Note: While consensus exists on its beneficial use, most (76%) Northeast states (and Quebec) do not consider using glass as alternative daily cover (ADC) on landfills as recycling²⁷.

²⁷ [Recycled Glass Used as Alternative Daily Cover in the Northeast US & Quebec Report](#), Northeast Recycling Council, July 2023.

IX. Northeast State Bottle Bill Features

State	Amount of Deposit	Beverages Covered	% of Beverage Units Sold Covered by Deposit	Population with Curbside Access	Estimated % of Deposit Beverage Sales Recycled via Curbside and Drop Off Programs
CT	10¢	<ul style="list-style-type: none"> • All beverages except wine, distilled liquor, spirit-based hard seltzers, dairy milk • and plant-based milk, and infant formula. 	78%	91%	12%
MA	5¢	<ul style="list-style-type: none"> • Beer & malt beverages • Carbonated soft drinks & sparkling water 	41%	82%	13%
ME	<i>Wine & liquor</i> ≥ 50mL: 15¢ <i>All others:</i> 5¢	<ul style="list-style-type: none"> • All beverages except dairy products and • unprocessed cider. 	93%	78%	9%
NY	5¢	<ul style="list-style-type: none"> • Beer & malt beverages • Carbonated soft drinks & sparkling water • Bottled water including flavored water • Wine coolers 	79%	89%	10%
VT	<i>Liquor:</i> 15¢ <i>All others:</i> 5¢	<ul style="list-style-type: none"> • Beer & malt beverages • Carbonated soft drinks & sparkling water • Wine coolers • Liquor 	47%	92%	10%
Source (for citation purposes): " Redemption Rates and Other Features of 10 U.S. State Beverage Container Deposit Programs ," © Container Recycling Institute, 2024. All rights reserved.					

X. Northeast Deposit & Non-Deposit Glass Beverage Data, Container Recycling Institute (CRI)

NORTHEAST DEPOSIT & NON-DEPOSIT GLASS BEVERAGE DATA

	Glass Beverage Container Sales (units)	Glass Beverage Container Sales (tons)	Recycled Glass Beverage Container (units)	Recycled Glass Beverage Container Tonnage
deposit	253,723,717	61,647	146,401,196	35,571
non-deposit	188,634,900	109,773	36,904,114	21,476
Connecticut	442,358,617	171,420	183,305,310	57,047
deposit	153,811,365	57,158	129,586,075	48,155
non-deposit	271,551	212	53,126	42
Maine	154,082,916	57,370	129,639,201	48,197
deposit	469,350,547	113,659	234,835,641	56,868
non-deposit	390,388,657	227,027	76,374,772	44,415
Massachusetts	859,739,204	340,686	311,210,413	101,283
deposit	1,261,336,976	307,938	1,007,675,247	246,010
non-deposit	862,183,262	481,091	168,675,624	94,120
New York	2,123,520,237	789,029	1,176,350,871	340,129
deposit	50,100,331	15,235	43,933,781	13,386
non-deposit	26,970,506	14,153	5,276,450	2,769
Vermont	77,070,837	29,389	49,210,231	16,155
Delaware	136,581,165	55,981	26,720,437	10,952
Maryland	610,589,272	226,299	119,454,333	44,273
New Hampshire	215,754,433	86,946	42,209,719	17,010
New Jersey	1,140,987,911	434,791	223,220,348	85,062
Pennsylvania	1,153,943,078	400,068	225,754,868	78,268
Rhode Island	134,549,358	52,353	26,322,938	10,242

Source: data derived from "2021 Beverage Market Data Analysis." The Container Recycling Institute, 2024

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Data reflects differently here due to the methodology of calculation and its scope. This table does not include non-beverage glass, which some state data may, and estimated contamination levels may not be accurate.



August 6, 2024

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Caveats and Uncertainties in Data Regarding CRI's Glass Beverage Container Sales and Recycling Estimates for NERC Project

CRI creates data sets on beverage container sales and recycling for all fifty states in the U.S. along with Washington D.C. as part of our Beverage Market Data Analysis (BMDA) project. We use this information to allow state agencies, recycling activists, and businesses to better understand beverage container sales and recycling across the United States. There is additional focus on states that have active Deposit Return Systems (DRS). CRI gathers data from more than 20 industry and government sources to populate a database that has insightful information on beverage container sales and recycling across the country by material and beverage type. While we use the most accurate and most complete data available, the data are not perfect, which necessitates that we make certain assumptions in our calculations. One purpose of this memo is to be clear about our confidence with the data, so that you may take this additional information into account as you use the data. Another purpose of this data is to inform you about the data points that are based on some assumptions that were necessary, due to lack of complete data.

Cautionary note about recycling rates used: Our recycling rate estimates are based on the best available data. In states where deposit redemption is tracked and reported to the state, we have used published rates, and we have scaled up those rates to include estimates of deposit containers recycled at curbside. The recycling rates for non-deposit containers are derived averages for the whole United States, because we do not have granular data for non-deposit recycling at the state level, and there is a great deal of uncertainty about the exact recycling conditions in each state.

Assumptions made when calculating each type of data presented in the table for each state:

- 1. Glass Beverage Sales Units** – Beverage sales are calculated in CRI's BMDA project and encompass all beverage sales in the state, both deposit and non-deposit. The data is calculated using information on container sales across the U.S. and features over 20 sources. Some of the beverage sales data use regional and state population estimates to quantify beverage sales at the state level. Therefore, actual beverage sales totals in individual states may vary from the amounts we are able to calculate, based on available data. Stated another way, some state sales estimates may be higher than shown, and some may be lower than shown. (Note that the total for all states is equal to the total for the entire nation, so there is no gross under- or over-estimating of beverage sales.)
- 2. Glass Beverage Tons** – 'all beverage tons' refers to the total beverage containers sold in a particular state, in tons. (Note that these tables exclude aseptic/juice boxes, gabletops and foil pouches.) We calculate these using 2021 U.S. average container weights that CRI has developed, that is, unit-to-weight conversion factors that are specific to both the beverage type and the material type.

However, it should be noted that container weights and sizes can fluctuate heavily from month to

month and state to state, based on marketing decisions made by beverage manufacturers and retailers.

- 3. Deposit and Non-Deposit Beverage Recycling Rate (Units Based)** – The glass beverage recycling rate is the combination of the recycling rate for both deposit containers and non-deposit containers. In states where deposit redemption is tracked and reported to the state, we have used state-published rates, and we have added a few percentage points to those rates to include estimates for deposit containers recycled at curbside & dropoff (we have provided these detailed estimates in a separate fact sheet).

The recycling rates for non-deposit containers are derived averages for the whole United States, because we do not have granular data for non-deposit recycling of beverage containers at the state level. There are no non-deposit states that track the sales and recycling of beverage containers. Furthermore, there is an uneven amount of information about the exact recycling conditions in each state. We do ensure that the sum of the state data adds up to the national generation and recycling totals for each material type; however, each state's totals are inherently less accurate, due to the lack of state reporting mechanisms.

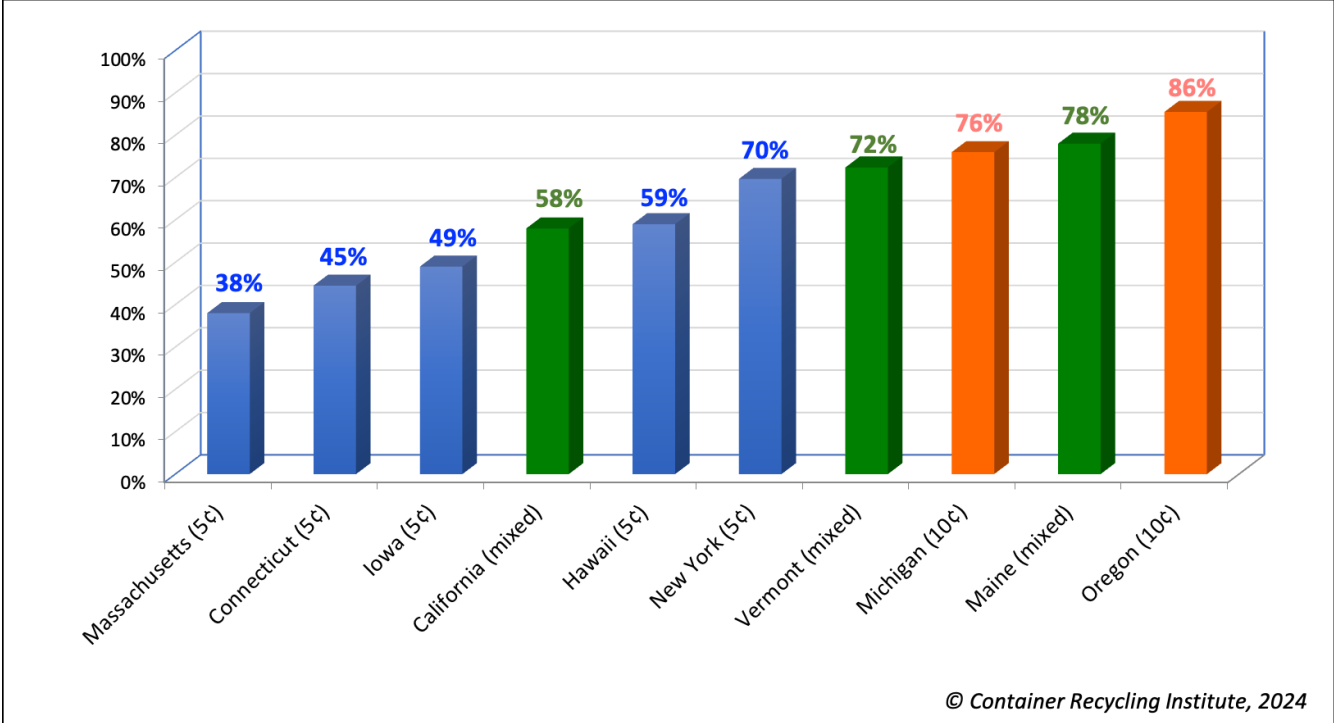
The materials reported through the container deposit systems are reported with more certainty. However, there is widespread underreporting and non-reporting (free riders) in the container deposit law states, and this underreporting creates uncertainty about the true redemption in those states.

All recycling rates are calculated in units. We do this because glass bottles weigh so much more than other material types that it skew all the data points if we used weights for calculating recycling rates. By basing our methodology on units we can make calculations that disregard the weight per container and focus solely on sales and containers recycled.

Deposit Beverages by State

- 1. California** – beer, malt beverages, carbonated soft drinks, sparkling water, all other non-alcoholic beverages, wine coolers, distilled spirits coolers, wine and spirits (as of Jan 1 2023).
- 2. Connecticut** – All beverages except wine, distilled liquor, spirit-based hard seltzers, dairy milk and plant-based milk, and infant formula.
 - a.** On October 1, 2021 the state of Connecticut introduced a multi-year plan to make phase in changes to the container deposit system. On January 1, 2023, the program was expanded to include non-carbonated beverages (beyond water), hard seltzer, and hard cider.
- 3. Hawaii** – Beer, malt beverages, carbonated soft drinks, sparkling water, wine coolers, wine, and liquor.
- 4. Iowa** – Beer, malt beverages, carbonated soft drinks, sparkling water, wine coolers, wine and liquor.
- 5. Maine** – All beverages except dairy products and unprocessed cider.
- 6. Massachusetts** – Beer, malt beverages, carbonated soft drinks, and sparkling water.
- 7. Michigan** – Beer, malt beverages, carbonated soft drinks, sparkling water, kombucha, wine coolers, and distilled spirits coolers.
- 8. New York** – Beer, malt beverages, carbonated soft drinks, and sparkling water, bottled water including flavored water, and wine coolers.
- 9. Oregon** – All beverages except wine, distilled liquor, dairy milk, and plant-based milk, and infant formula.
- 10. Vermont** – Beer, malt beverages, carbonated soft drinks, and sparkling water, wine coolers, and liquor.

Deposit State Recycling Rates



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