

# Best practices in container deposit recycling systems

–  
Ways & Means Committee

**Mike Noel**  
Governmental Affairs Manager  
TOMRA

# Introduction to TOMRA



Pioneering  
advanced technology  
in collection and  
sorting for  
recycling



Collection & Sorting Solutions  
4,500+ employees globally

# We are active in every link of the deposit value chain

Offer redemption technology to ~44 redemption locations across VT

Pick-up from 130 locations across VT for most distributors

Processing facility in Essex, VT

## REVERSE VENDING

## MATERIAL RECOVERY



RVM Technology



Service Support



Data Admin/  
Clearing



Material Pick-Up



Material Processing



Material Brokerage



Material Recycling

# TOMRA has four decades of experience in deposit systems

**ACTIVE IN EVERY MAJOR  
GLOBAL DEPOSIT MARKET**



NORWAY



GERMANY



MICHIGAN



QUEBEC



AUSTRALIA



OREGON

+ 34 more markets

## 40 BILLION

cans and bottles collected annually

## 84,000

reverse vending installations globally

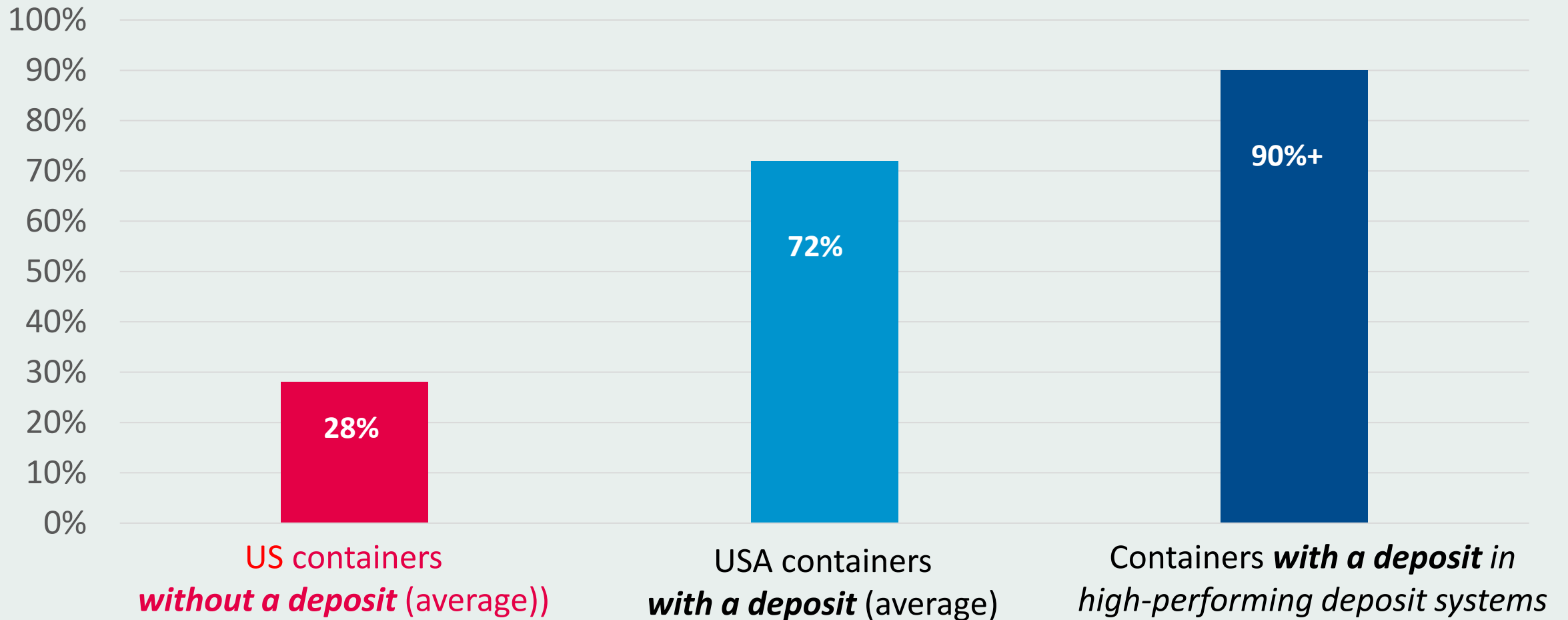
## \$6.8 BILLION

in deposits exchanged annually

# Overview of the key functions of deposit systems

# Deposit systems are extremely effective at collecting items for recycling, diverting from waste stream

## Beverage Container Collection Rates for Recycling



Deposit systems achieve higher quality recycling – avoiding downcycling



**SINGLE – STREAM GLASS**



**DEPOSIT GLASS**

**Containers collected in the deposit stream can generate more economic value, because the material is kept clean.**



# Material collected in deposit systems is kept clean, enabling true recycling and generating more value



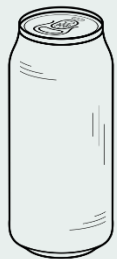
## Glass

- Can cost curbside operations \$20 a ton vs *gaining* \$20/ton in revenue in a deposit systems <sup>1</sup>



## PET Plastic

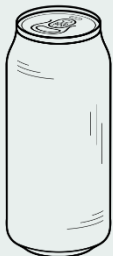
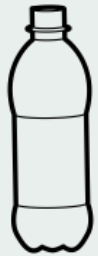
- Generally deposit PET bales are 40% more valuable than curbside bales <sup>2</sup>
- (However when RecyclingMarkets.net listed deposit vs. curbside values in Jan – Jul 2020, deposit values were 58-93% much higher).<sup>3</sup>



## Aluminum

- Value depends on the MRF (as with all material).
- Novelis says *“I don’t have any specific data, but we do focus our contracts (and typically higher prices) towards deposit material. Reasons being: Consistent flow, level of cleanliness, and level of quality.”*<sup>4</sup>
- 25% cans missorted at the MRF (Can Manufacturers Institute)

# What happens to all the deposit containers collected for redemption in VT today?



Material	Destination	End market	Recycling amount
<b>Plastic</b>	Sent to PET recycler in NY.	Recycled into mostly new bottles and food containers	✓ Virtually all is recycled
<b>Glass</b>	Sent to glass processor in Montreal	Recycled into new containers and fiberglass	✓ Virtually all is recycled
<b>Aluminum</b>	Sent to a recycler in Kentucky	Recycled into new cans, auto-parts, industrial applications, etc.	✓ Virtually all is recycled

# Following COVID-19 redemption closures, food + beverage packaging associations expressed alarm at the drop-off in manufacturing feedstock



April 2, 2020

Mr. Ronald Owens  
Office of the Governor  
The Honorable Gretchen Whitmer  
P.O. Box 30013  
Lansing, Michigan 48909

Re: Request for Michigan's Beverage Container Deposit Program to Resume Operations

Dear Mr. Owens,

On behalf of our trade associations and member companies, we are expressing our desire for you to issue immediate clarifications to stakeholders and consumers regarding recent and temporary changes made to your beverage container deposit program, to reconsider action taken to suspend program operations, and to highlight the critical role Michigan's beverage container deposit program plays in supporting essential manufacturing business operations.

Beverage container redemption programs, including Michigan's, provide critical manufacturing inputs and feedstock for essential manufacturing businesses and their customers (food and beverage companies), as detailed in the CISA directive, issued by the Department of Homeland Security on November 19<sup>th</sup>.

The DHS CISA Memorandum explicitly states:

*"If you work in a critical infrastructure industry, as defined by the Department of Homeland Security, such as healthcare services and pharmaceutical and food supply, you have a special responsibility to maintain your normal work schedule."*

The importance of the CISA Memorandum is also highlighted in Michigan's Executive Order 2020-33.

While the nine other states with beverage container redemption programs have allowed flexibility with respect to retail redemption requirements and hours of operations, only the state of Michigan has completely shut down beverage container redemption program operations, and its connected critical supply chain.

1

***"Beverage container deposit systems generally account for 20-60% of our collective materials input batch.."***

***.... Simply put, as our industries have ramped up production to meet unprecedented demand for packaged food and beverages, a strong, dependable supply chain of recycled material is essential."***

***Letter sent to Governors  
of deposit states***



# Key Principles of High-Performing Deposit Return Systems

# Not all deposit systems are performing to their potential

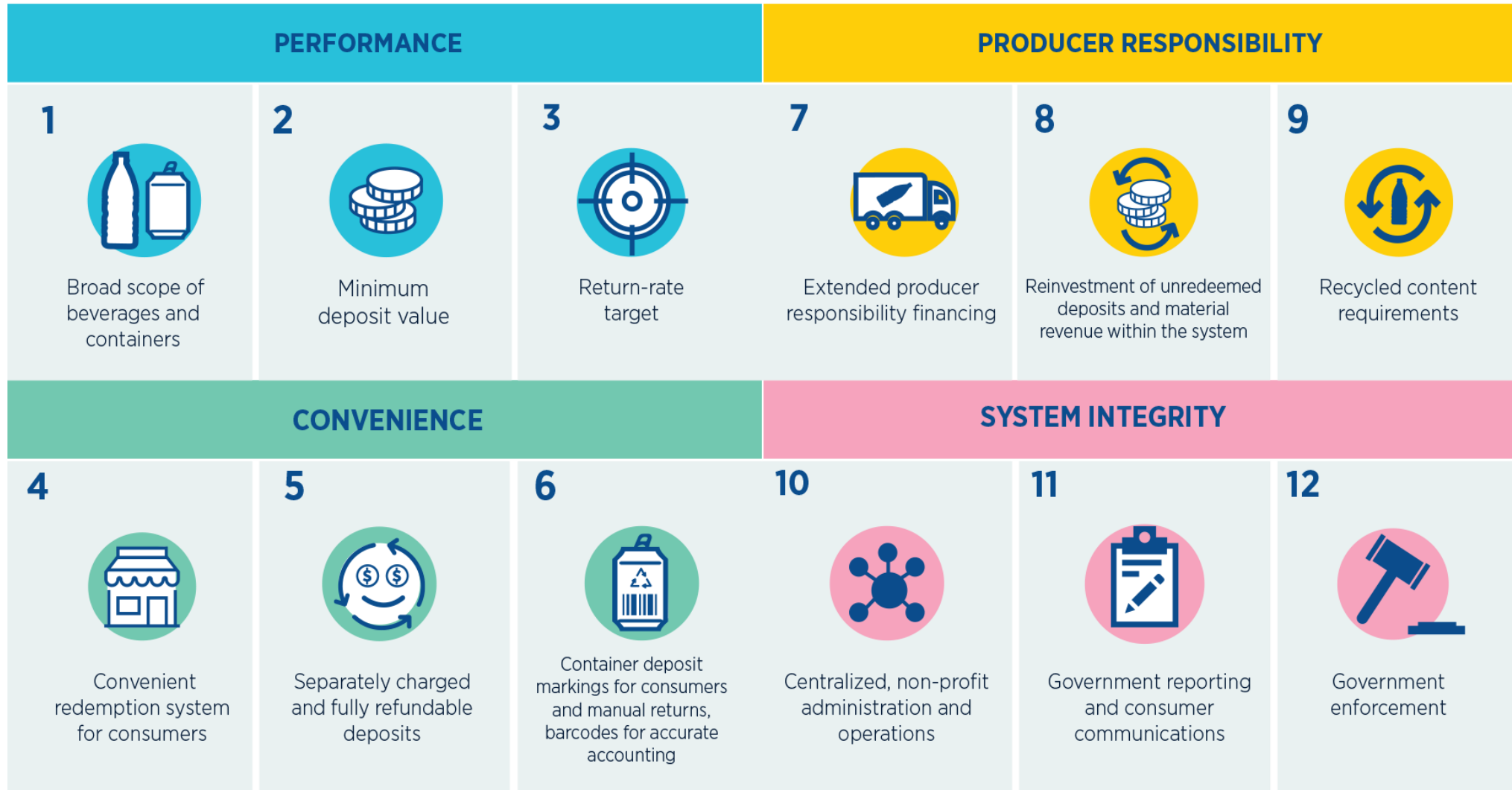
Return rates of every deposit return system in the world (2019)



Why are some container deposit return systems succeeding while others are failing?

# Key elements of high-performing DRS

All of the elements – when applied together – will address global waste challenges and advance a circular economy.

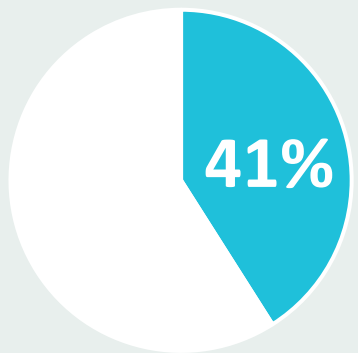




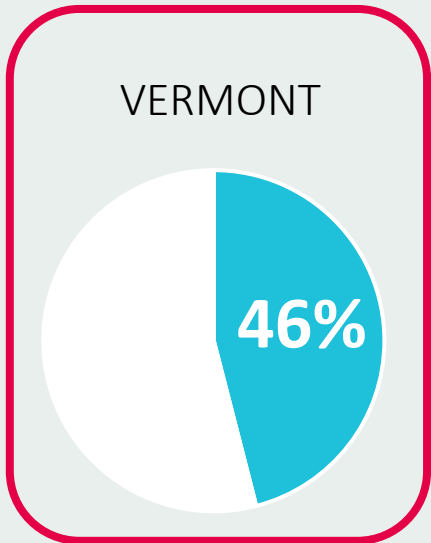
# Broad scope of beverages and containers

Percent of beverage containers sold covered by deposit program

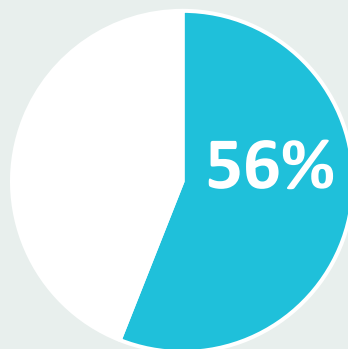
MASSACHUSETTS



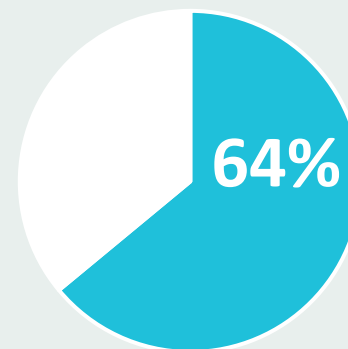
VERMONT



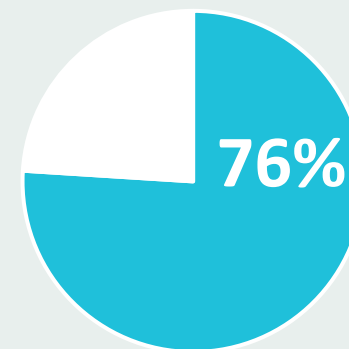
MICHIGAN



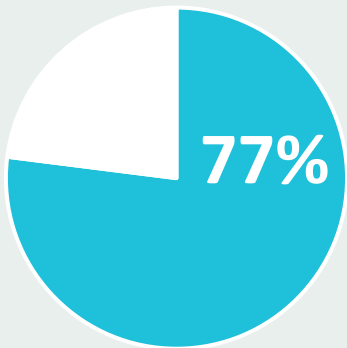
IOWA



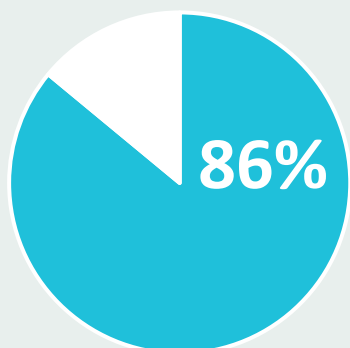
CONNECTICUT



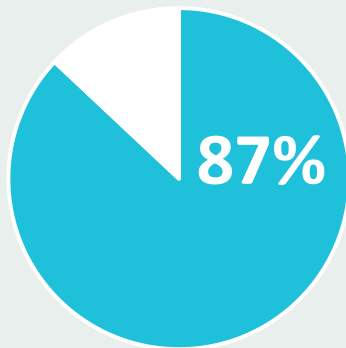
NEW YORK



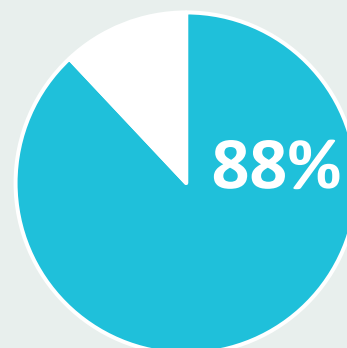
CALIFORNIA



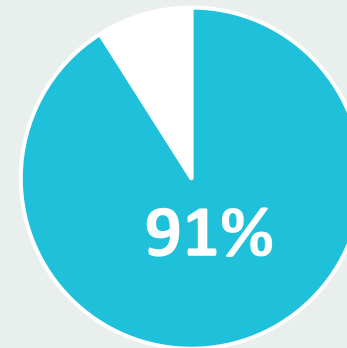
HAWAII



OREGON



MAINE



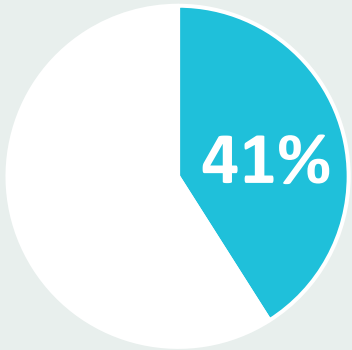




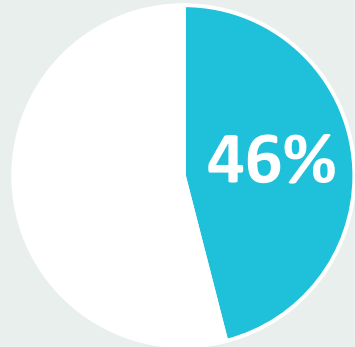
# Keeping up with the times

Percent of beverage containers sold covered by deposit program

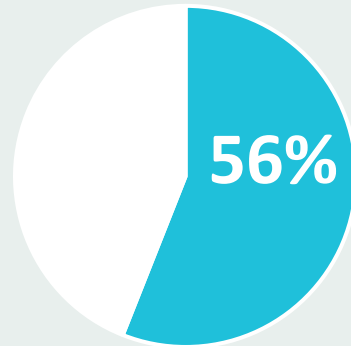
MASSACHUSETTS



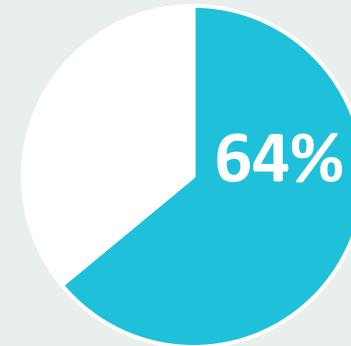
VERMONT



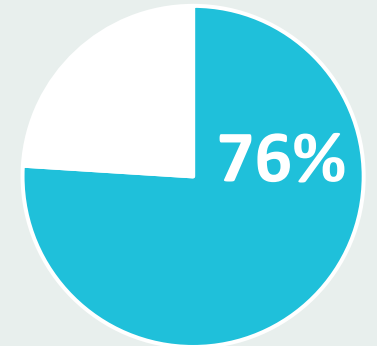
MICHIGAN



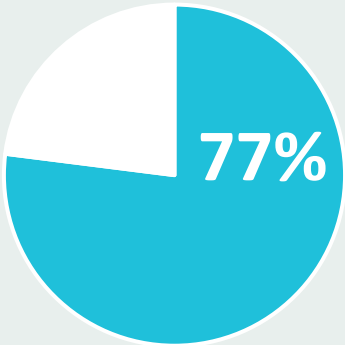
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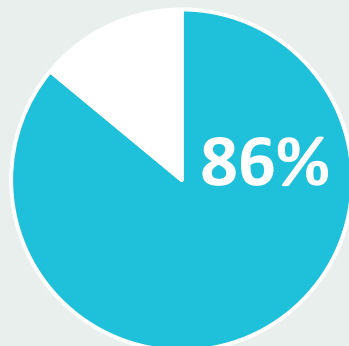
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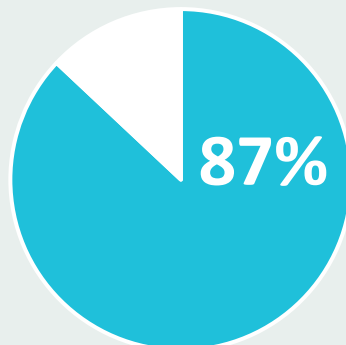
NEW YORK



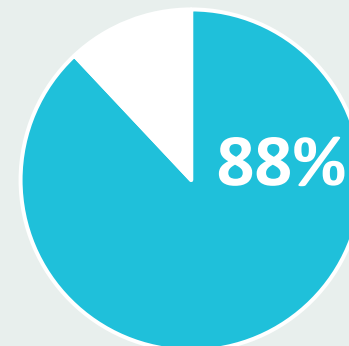
CALIFORNIA



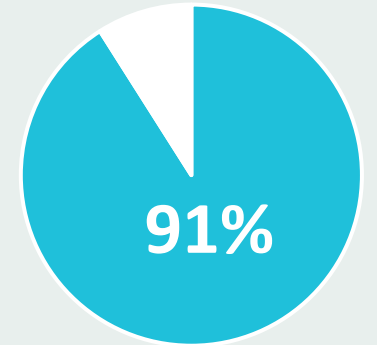
HAWAII





OREGON



MAINE



 Includes wine

 Includes water

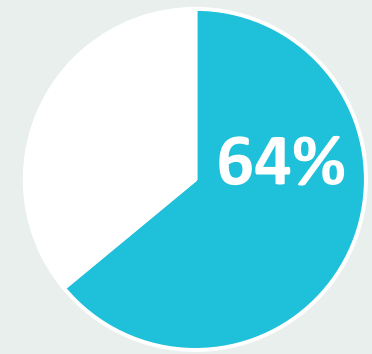


# Keeping up with the times

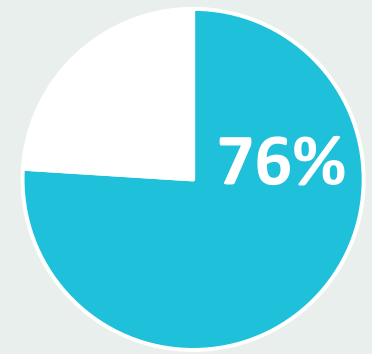
## Percent of beverage containers sold covered by deposit program

Adding bottled water alone *doubled* the amount of plastic bottles captured by New York's DRS.

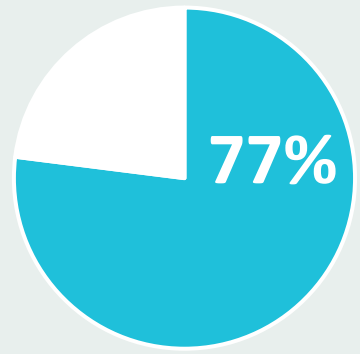
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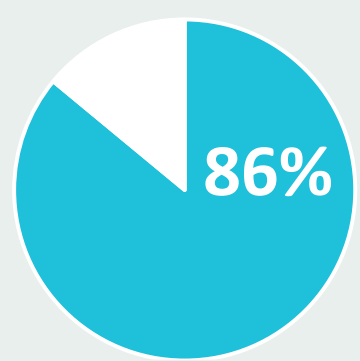
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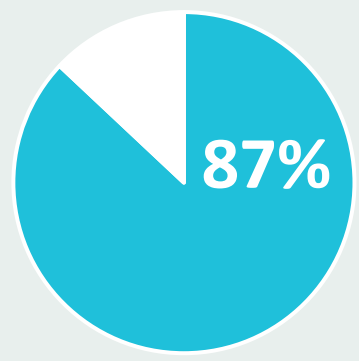
NEW YORK



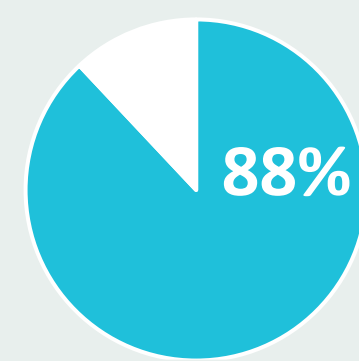
CALIFORNIA



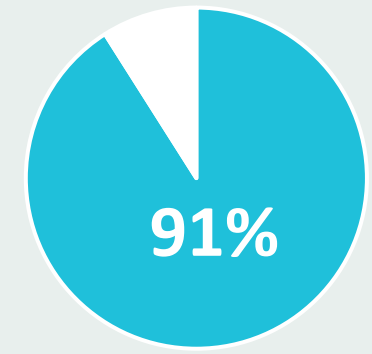
HAWAII



OREGON



MAINE



● Includes wine

● Includes water

# 17 Deposit systems around the world already include wine

## DEPOSITS SYSTEMS THAT ALREADY INCLUDE WINE

Maine	Iowa	England & Wales*	Scotland*
Quebec*	British Columbia	Ontario	Iceland
Norway	Finland	Croatia	Nova Scotia
Prince Edward Island	Saskatchewan	Yukon	Newfoundland & Labrador
New Brunswick		Northwest Territories	

\*Proposed by government. Still to be confirmed.



# A meaningful deposit value is the strongest driver of results

Beverage Container Redemption for Recycling Rates (Latest data available)

High-performing systems are achieving good results with a deposit of 10¢



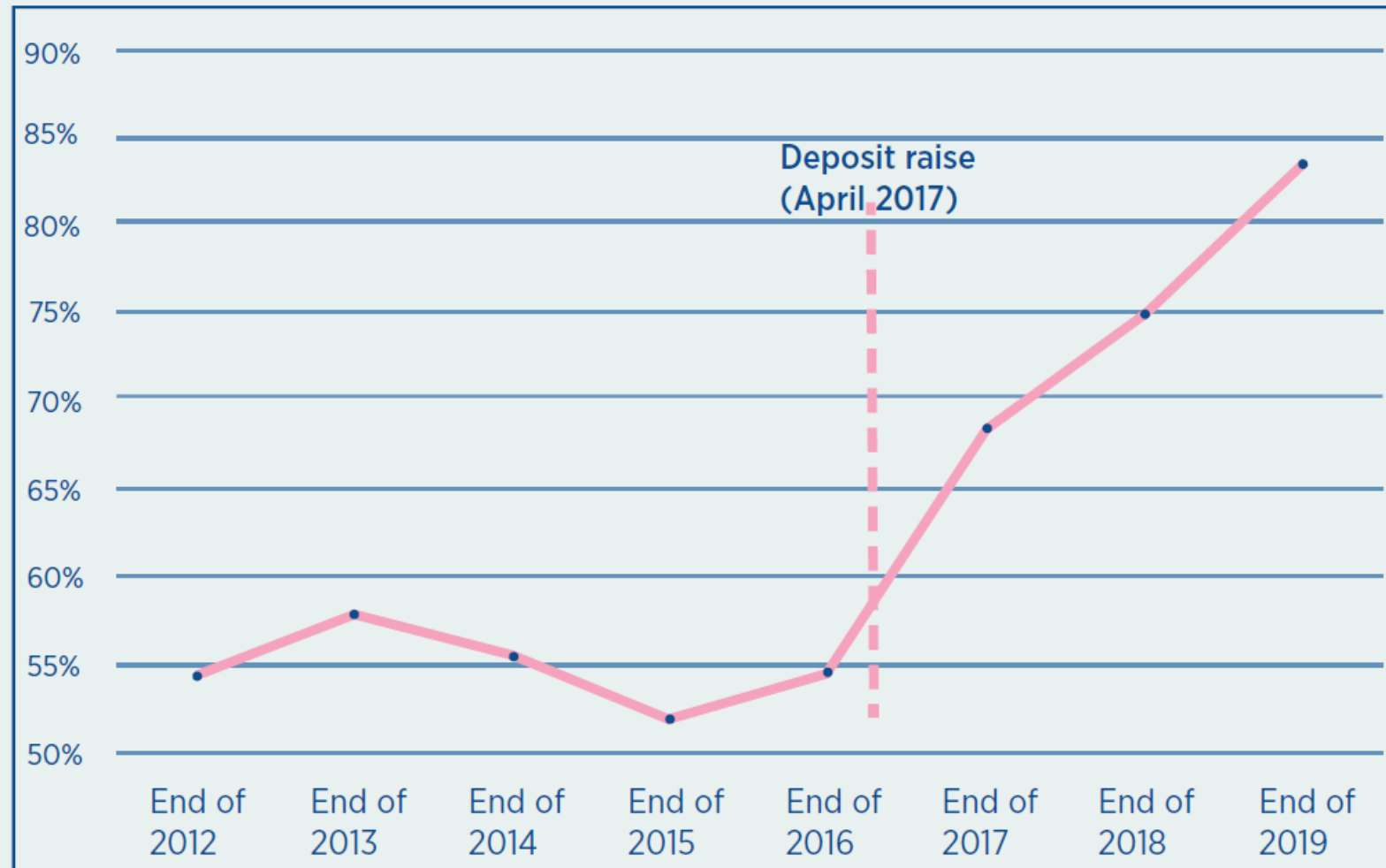
Flat 10¢ ●

Mixed ●

Flat 5¢ ●

# Raising the deposit made an immediate difference in the number of containers captured for recycling in Oregon

Return rate of plastic bottles in Oregon



# What can and cannot fit in an RVM?



- Wine bottles are accepted in RVMs
- However we do recommend a 2.5 liter max limit on non-carbonated beverage categories.
- Nips cannot be accepted in RVMs (however they can be accepted manually)

Questions?

# Thank you

GovAffairs@TOMRA.com



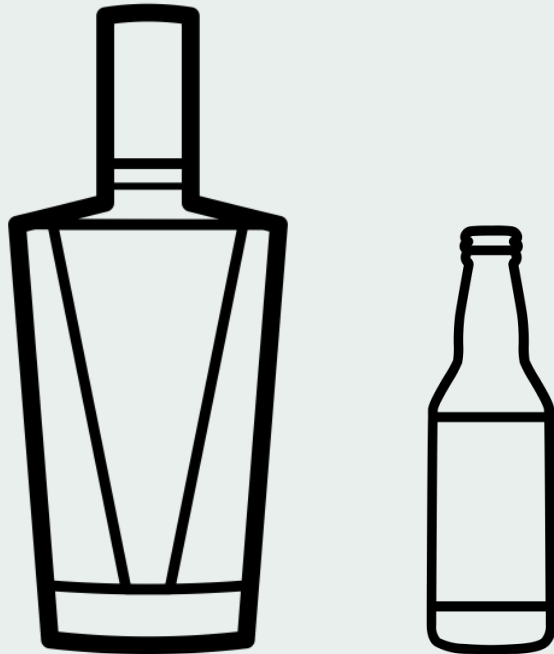
Mike Noel, Manager, Governmental Affairs @MrMikeNoel

**[TOMRA.com/DepositReturn](https://www.tomra.com/DepositReturn)**



# Appendix

# Commingling challenges



- Including liquor in one large commingling group with other beverage categories will cause reimbursement challenges for distributors.
- We recommend excluding liquor from this commingling group (keeping the HF at 4 cents).
- Since liquor is distributed by one distributor in VT this would not affect the number of sorts significantly for redemption centers/retailers.

# We are active in every link of the deposit value chain



## REVERSE VENDING



## MATERIAL RECOVERY



RVM  
Technology



Service  
Support



Data Admin/  
Clearing



Material  
Pick-Up



Material  
Processing



Material  
Brokerage



Material  
Recycling

There are multiple solutions to address unauthorized redemption, *some don't even require legislation*

### State-specific Markings and Barcodes

Unique “Add-on Barcodes” or deposit markings enable the rejection of non-deposit containers.



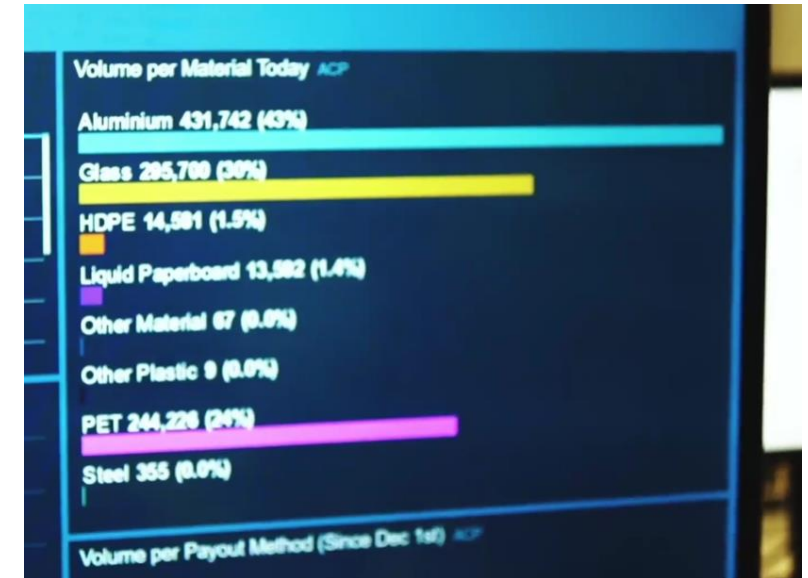
### Manual redemption protocols

Brand owners to establish procedures for containers redeemed manually, which would validate the count and expedite payments (e.g. incorporating a second count of containers through automated equipment)



### Online RVM network

A network of internet-enabled RVMs enable remote monitoring of potential fraudulent behavior.



There are multiple solutions to address unauthorized redemption, *some don't even require legislation*

### State-specific Markings and Barcodes

Unique "Add-on Barcodes" or deposit markings enable tracking of potential deposit

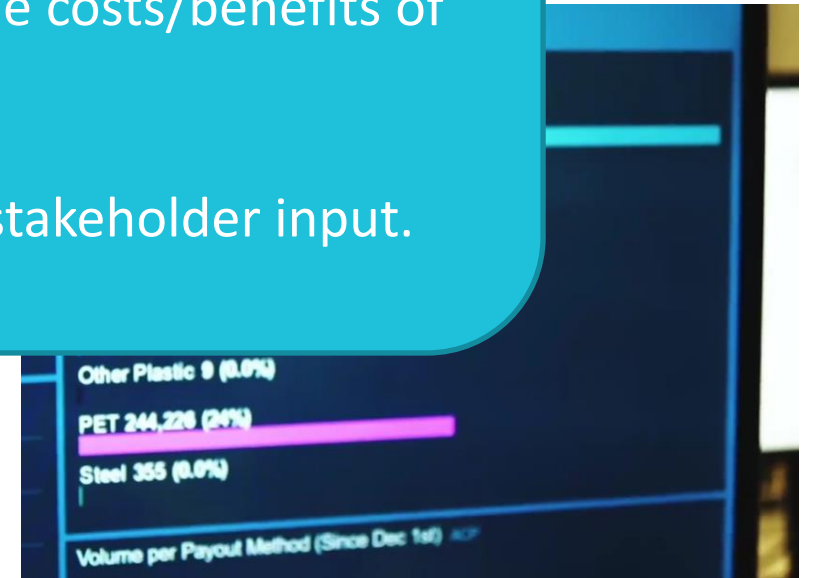
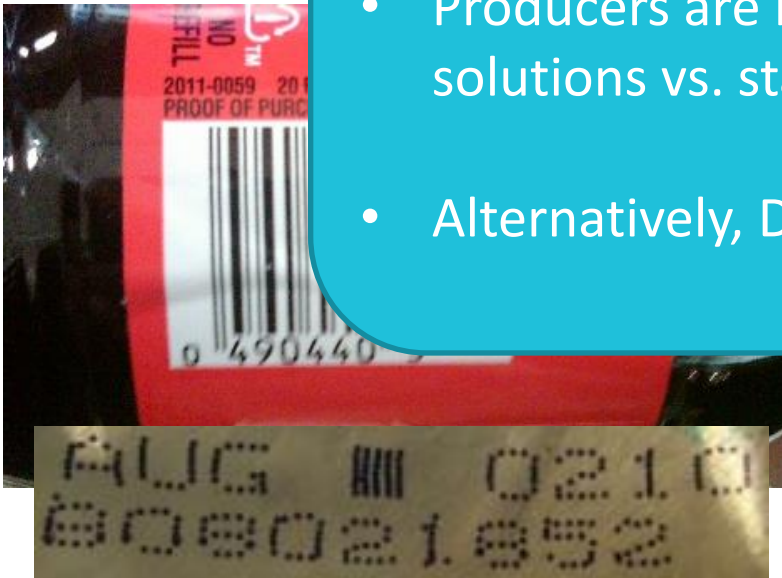
### Manual redemption protocols

Brand owners to establish procedures

### Online RVM network

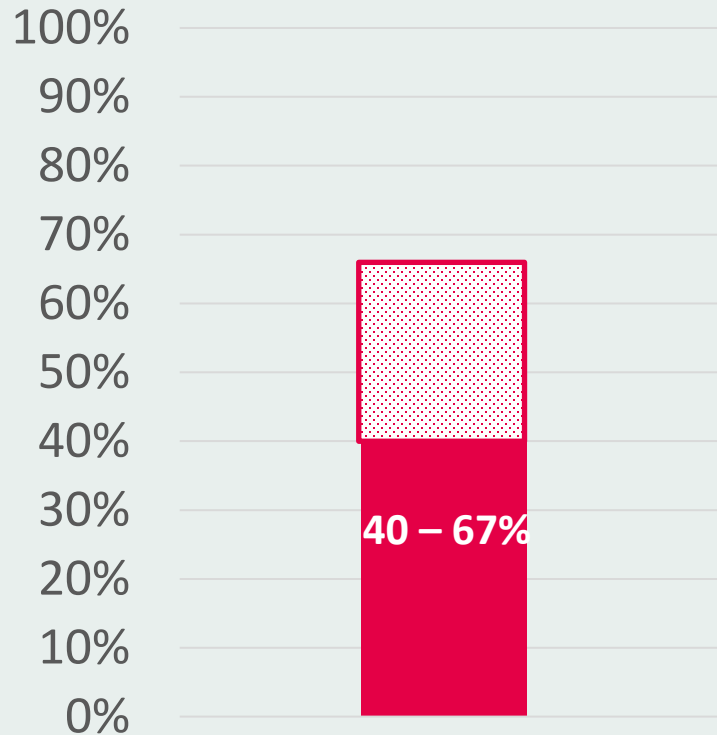
A network of internet-enabled RVMs

- Or the legislature can task Producers to come up with their own plan, subject to the legislature's review.
- Producers are best positioned to comment on the costs/benefits of solutions vs. status quo.
- Alternatively, DEC can develop such a plan with stakeholder input.



# Deposit systems generate higher collection rates for recycling

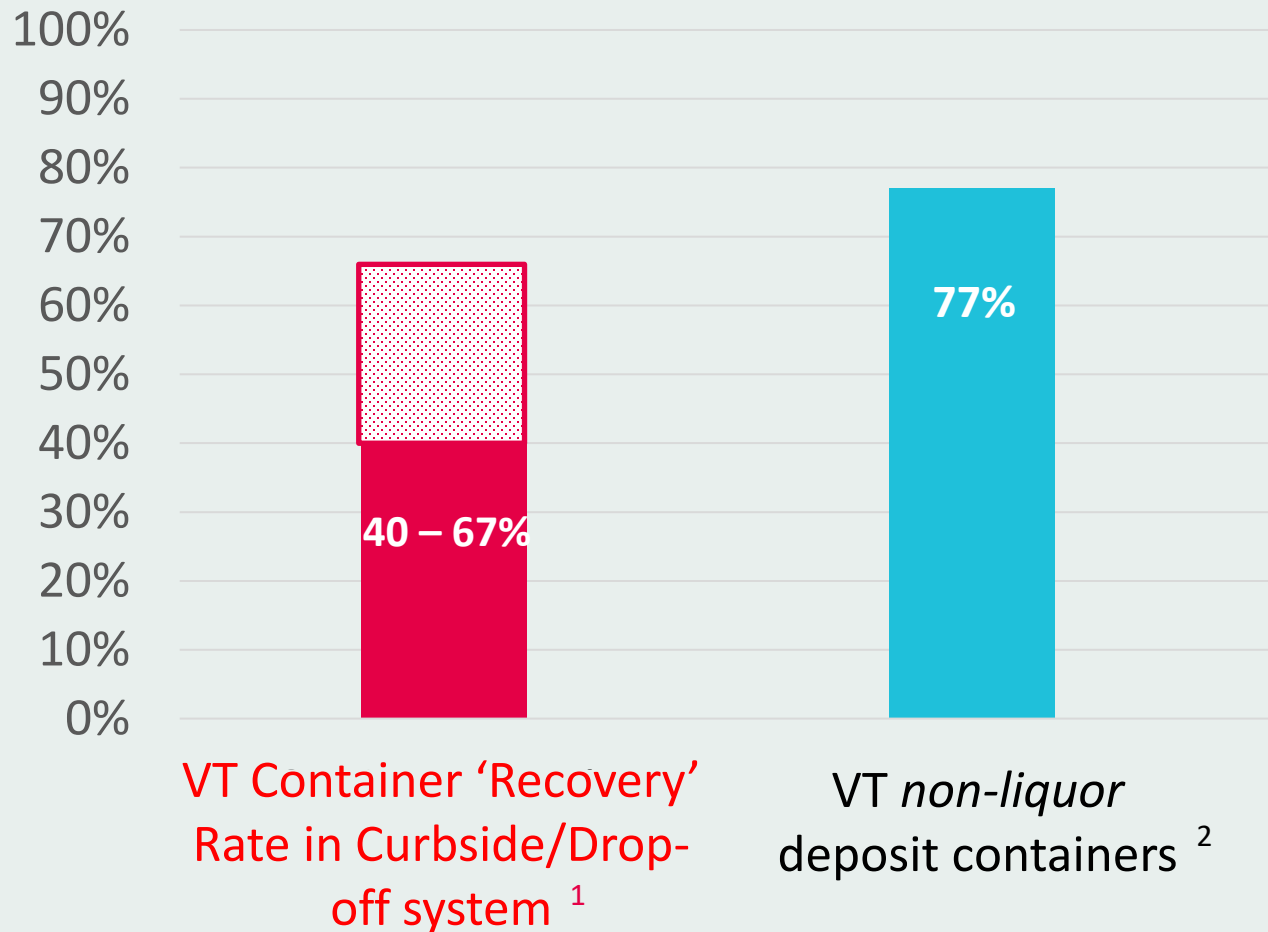
**Beverage Container Collection Rates for Recycling**



VT Container 'Recovery'  
Rate in Curbside/Drop-  
off system <sup>1</sup>

# Deposit systems generate higher collection rates for recycling

## Beverage Container Collection Rates for Recycling

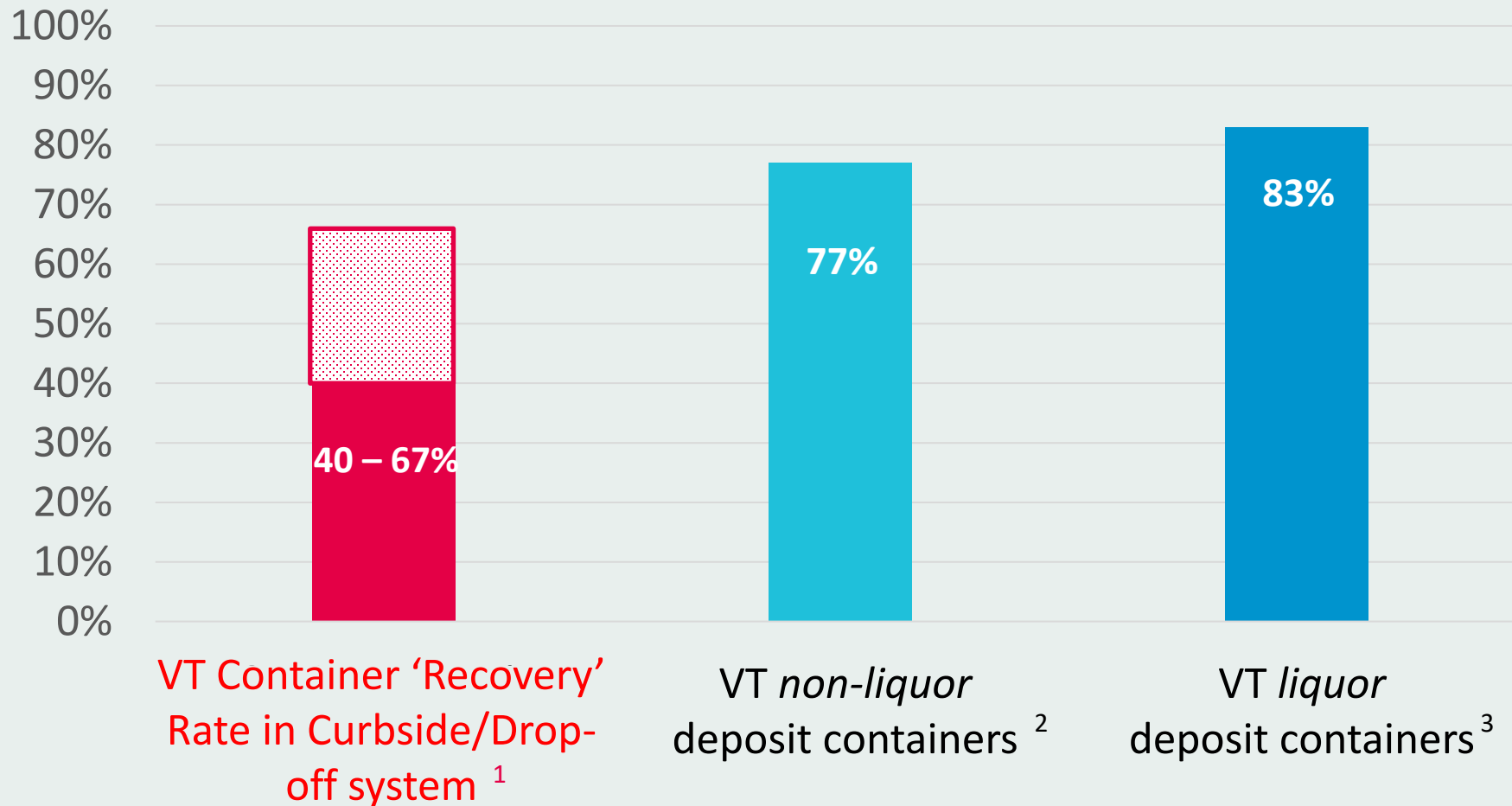


<sup>1</sup> Casella Testimony. 2021. And '2018 Waste Characterization' Prepared for DEC. 2018. BY WEIGHT..

<sup>2</sup> Oct 2019 - Oct 2020 Sales/Redemption Data, DEC. BY UNIT.. 2021.3 Container Recycling Institute. 2021.BY UNIT. 4 Bottlebill.org 2019. BY UNIT.

# Deposit systems generate higher collection rates for recycling

## Beverage Container Collection Rates for Recycling



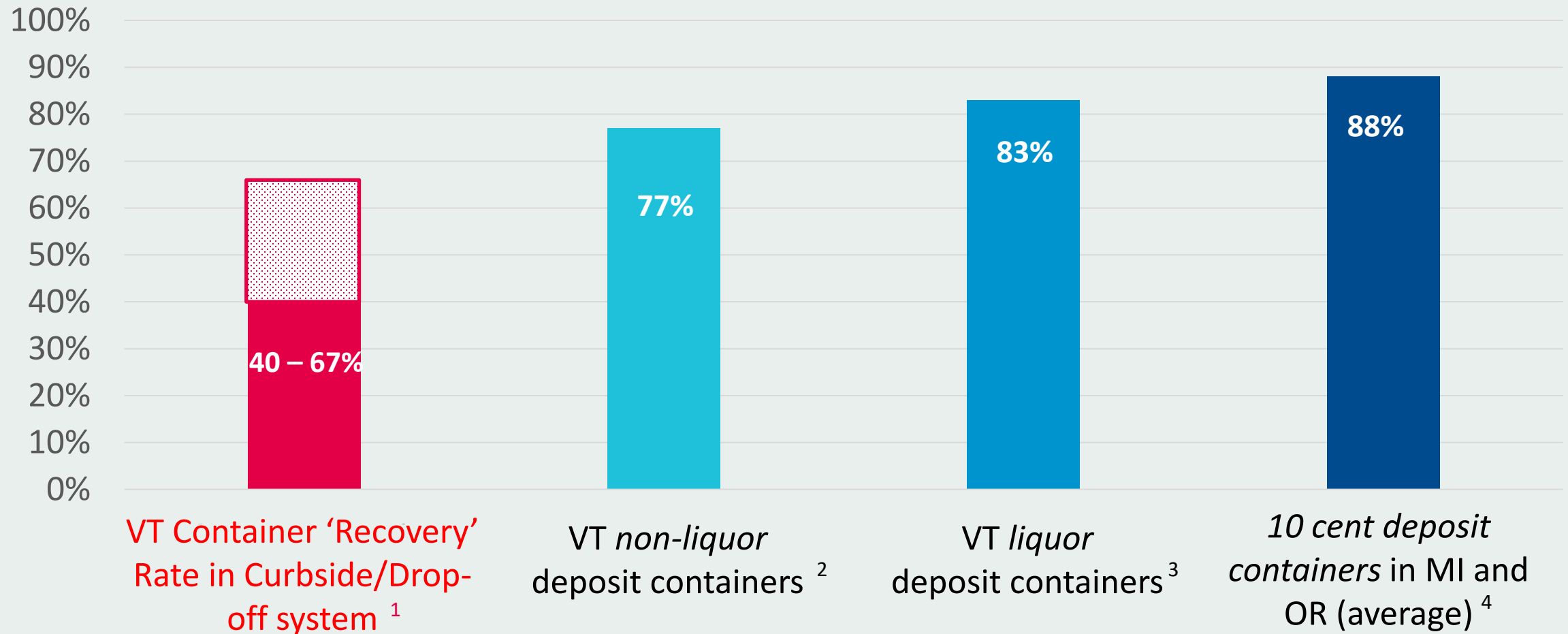
<sup>1</sup> Casella Testimony. 2021. And '2018 Waste Characterization' Prepared for DEC. 2018. BY WEIGHT..

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# Deposit systems generate higher collection rates for recycling

## Beverage Container Collection Rates for Recycling



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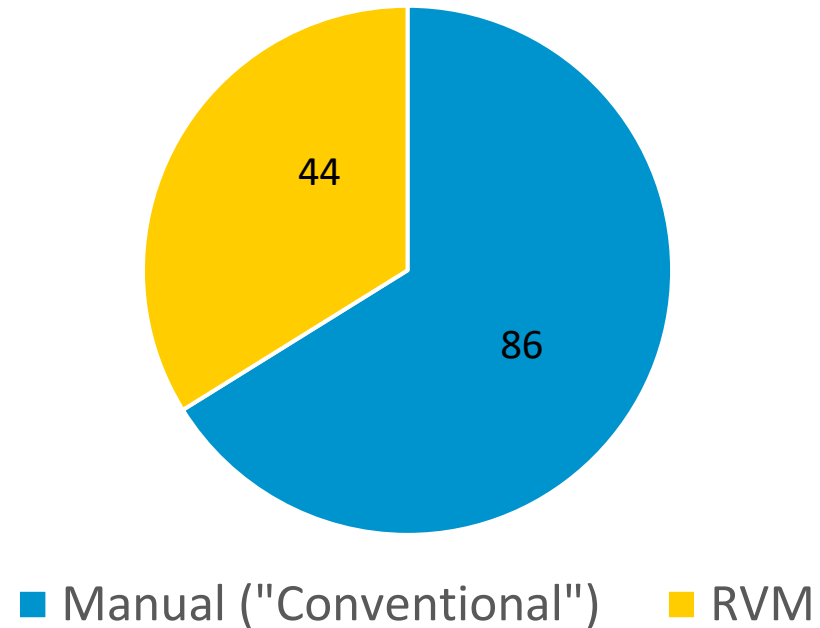
# Overview of VT Pick-up Customer Portfolio

TOMRA picks up from 130 locations all across Vermont.  
Most are retailers that also choose to operate full redemption centers.

Most frequent pick-up towns/cities



Redemption type by location



**1**  
commingling  
group

# What We've Learned: High-performing deposit return systems prioritize four principles to frame their program

## PERFORMANCE



A collection target for a broad scope of beverage packaging plus a meaningful deposit **delivers strong results.**

## CONVENIENCE



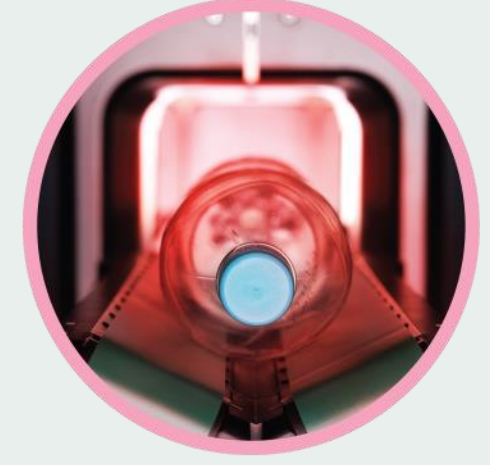
The redemption system is **easy, accessible and fair** for everyone.

## PRODUCER RESPONSIBILITY



**Producers manage, finance and invest in the system** with use of unredeemed deposits and commodity revenues.

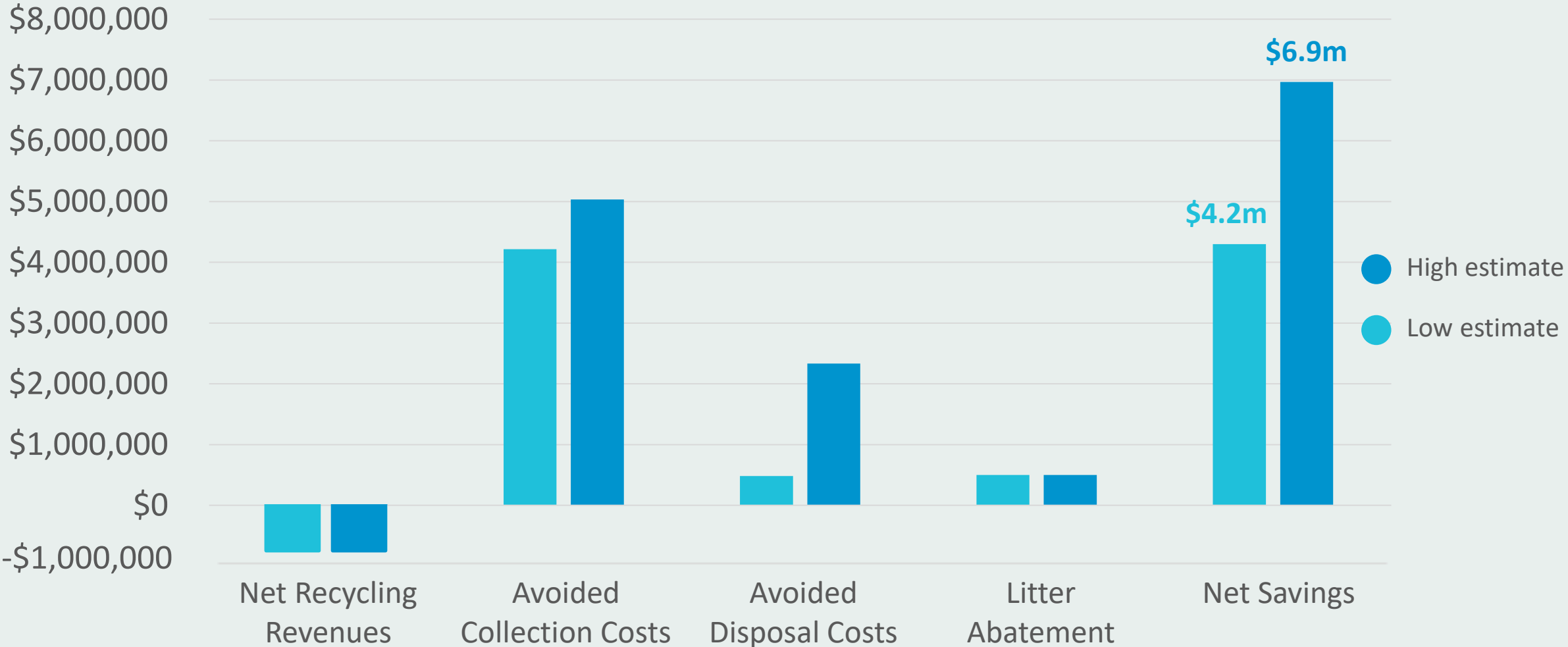
## SYSTEM INTEGRITY



**Trust is built into the system's processes** through transparent management, a data-driven clearinghouse, and reliable redemption technology.

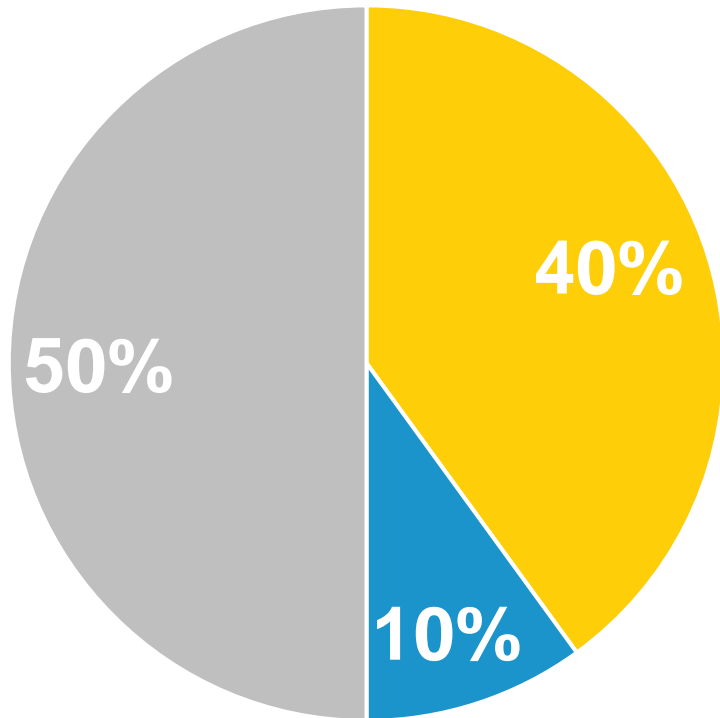
# Municipal impacts related to deposit systems

“Municipal Benefits of an Expanded Bottle Bill” (MassDEP 2009)



Wine typically makes up 40-50% of the glass in a curbside or drop-off bin

**Curbside Glass (Outside NYC)**

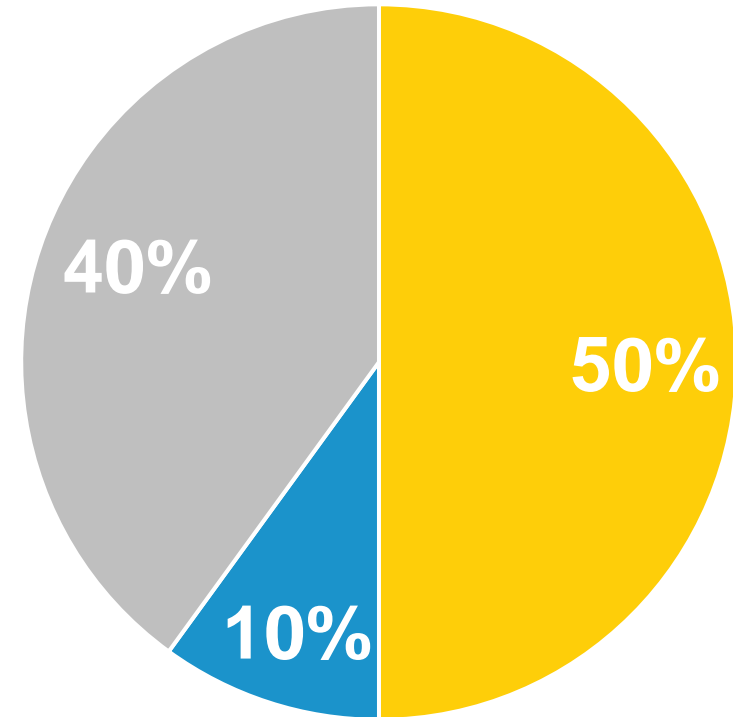


● **Other**

● **Wine**

● **Liquor**

**Drop-off Glass (CT - HRRA)**



Source: Onondaga County Testimony. Oct 21, 2019.

Source: Housatonic Resource Recovery Authority Glass Waste Audit. 2021.

# Further reading

Last updated: July 12, 2019



**Deposit Return Systems**  
**Factsheet: Economic Savings for Municipalities**



In recent years, there has been renewed interest in deposit-return systems (DRSs) for the recovery of beverage containers. These systems place a small deposit on beverage purchases, which is refunded to the consumer when the empty container is returned for recycling.

As more countries consider DRS as a means to reduce litter and encourage recycling, many are questioning the impacts that such a system would have on municipalities, particularly those that have an existing source separation program in place. The main argument put forward by opponents is that DRSs harm municipalities by diverting recyclables with the most value from the municipal recycling stream, resulting in a reduction of the cost-effectiveness of municipal curbside programs. To support this argument, evidence is provided to show loss of material revenues as well as the industry contributions from extended producer responsibility schemes for packaging where they exist. However, one of the key elements missing in the majority of these analyses is the savings resulting from the reduced or avoided costs of collection, treatment, and disposal by the municipal waste management system.

We wanted to learn more about how municipalities are impacted by the implementation of a DRS, and so we set off on a task to compile all of the research done on the subject over the years. What we found was compelling, and sufficiently closes the case that container deposit systems are good—not bad—for municipalities. The following table presents a compilation of **32 studies** that examined the costs and benefits to municipalities of implementing (or expanding) a DRS for beverage containers. It is noteworthy that, although different in scope,

## “Factsheet: Economic Savings for Municipalities”

- Compiles 30+ studies on the impact of deposit systems on municipalities
- <https://www.reloopplatform.org/resources/factsheets/>

# Studies on job impacts of a modernized deposit system

Jobs Created by NY's  
Current Deposit System



Total Jobs Forecasted for a *Modernized*  
NY Deposit System



# Off-setting material revenue

- Avoidance of waste tip fees, collection, processing costs and litter clean up costs can offset material revenue losses (e.g. VT Eunomia report).
- Precedent for reimbursement in California, Calgary, and New South Wales, Australia.