

# Testimony Before the House Committee on Natural Resources, Fish and Wildlife Regarding H175, Expansion of the Container Deposit System

Prepared By:

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# DSM Environmental Systems, Inc.

- Located in Windsor, VT
- In business since 1987
- Resource Economists, specializing in solid waste and recycling
  - Have conducted the majority of state-wide waste characterizations in the Northeast over the past ten years:
    - Delaware (2007 and 2016)
    - Vermont (2002, 2012, and 2018)
    - Connecticut (2010 and 2015)
    - Rhode Island (2015)
  - Our clients are primarily state, regional and local governments
  - Conducted the analysis of the cost of implementation of Act 148 for ANR

# DSM's Experience Analyzing Container Deposit Systems

## **Commonwealth of Massachusetts**

- Cost analysis to establish Handling Fees
- Analysis of fraudulent container redemption costs

## **State of Vermont**

- Bottle Bill Redemption/Collection Analysis (2006)
- The Costs of Bottle Bill Redemption in Vt (2007)
  - The basis for establishing the handling fee in VT
- Analysis of impact of expanding deposit system to include non-carbonated beverages (2013)

## **State of Rhode Island**

- Comparison of the costs and benefits of deposit system and expanded single stream recycling

## **National Study for Beverage Packaging Environmental Council**

- Analysis of cost and potential of a national deposit system for beverage containers (Subcontractor)

## **Coca Cola Enterprises**

- Analysis of costs to CCE of the 10 State's deposit systems (Subcontractor)

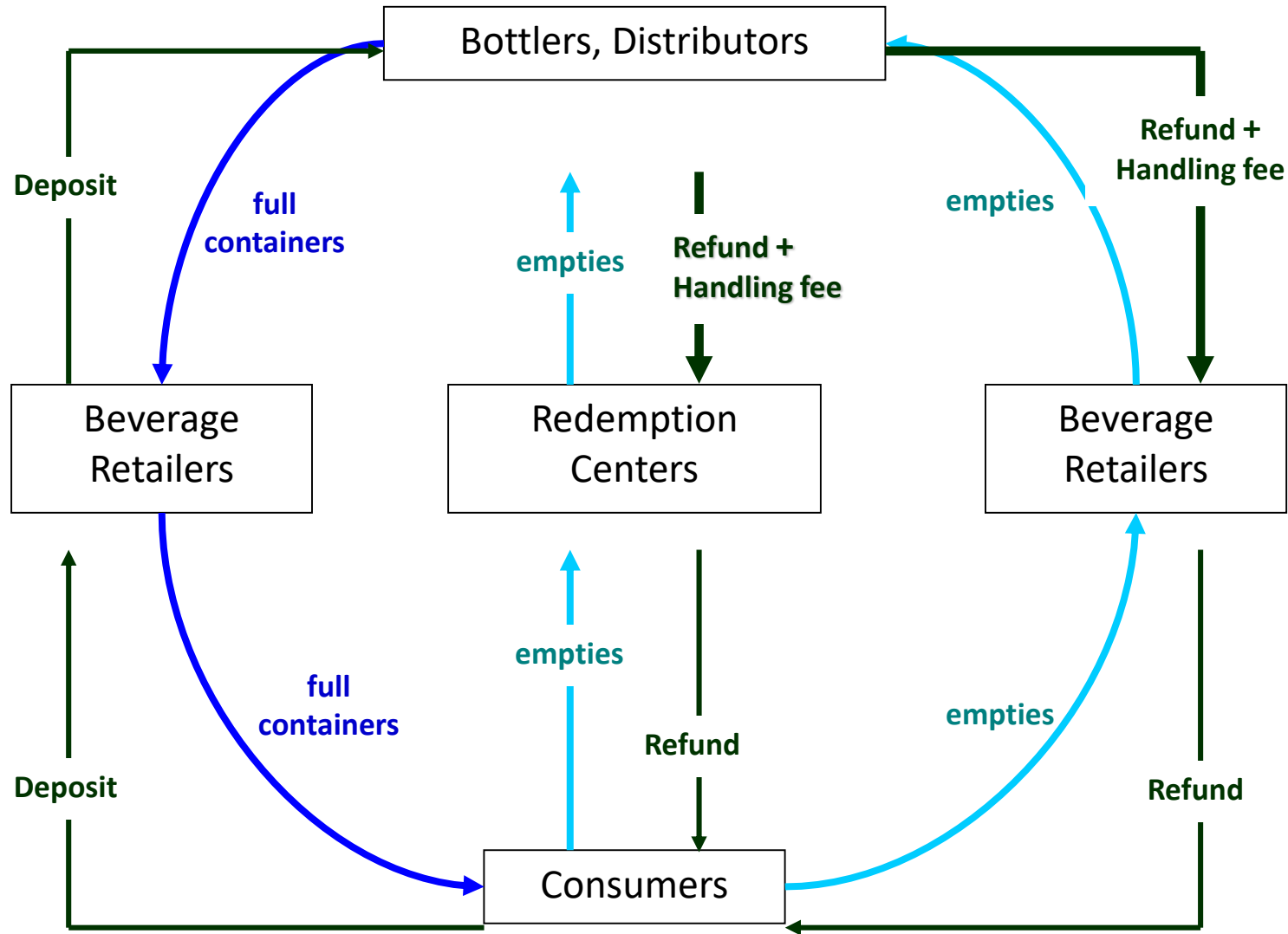
# Background Information on Container Deposits

# Deposit Schemes are Complex

- Deposits result in higher recovery rates but through a more complex return and recycling system
  - Most advocates and users do not recognize the complexities of these systems
- Complexity most evident in three areas:
  - Sorting at redemption location
  - Collection logistics by distributors
  - Clearing of funds
- This complexity leads to significantly higher costs for recycling when compared to Vermont's curbside and drop-off recycling



# "Traditional" System Schematic



# Most Systems Distributor Run

- Requires sorting of containers by distributor to properly account for returns and allocate expenses
- The more products covered by deposits the more complex the system
- Maine's deposit includes the broadest types of beverages and the highest costs
  - 4.5 cent handling fee for all containers, so the real cost per container for those who do not redeem them is almost 10 cents per container – 4.5 cents even if they do
- Increasing the deposit to 10 cents in VT would result in a cost per bottle or can of 14 cents, or 84 cents extra on a six pack



# Fraudulent Returns Are A Significant Issue



- Massachusetts Auditor estimated that \$12 million in potential state revenue was lost to fraud in 1998 (MA keeps the escheats)
  - The year DSM conducted our analysis for Massachusetts of RVM fraud
  - Reverse Vending Machines cannot read the indicia, only the bar code
  - Equivalent to \$26 million in today's dollars
- California's system has been plagued with fraudulent redemption – one recent case alone was valued at \$16 million in lost revenue
  - Primarily by importing containers with the indicia from neighboring states w/o deposit
- Increasing the deposit from 5 cents to 10 cents to spur higher returns significantly increases the potential for fraud
  - This is especially the case when a neighboring state (NH) does not have a deposit system
- Fraud incurred through many methods, not just mail trucks
  - We know that in the past the Keene, NH recycling facility was delivering deposit containers to VT redemption centers
  - We expect, but don't know, that the return rate in VT is artificially inflated by NH containers
  - Increasing the deposit to 10 cents without concomitant increases in NY and MA would certainly result in increased fraudulent redemption in VT
  - In my opinion the only way to achieve a 90 or 95 percent return rate would be through fraudulent redemption from surrounding states



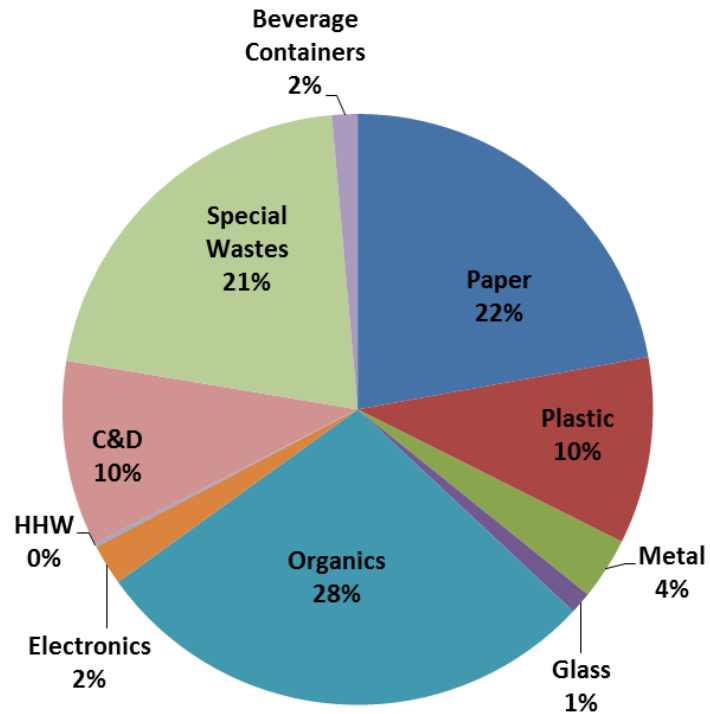


# Vermont Specific Information

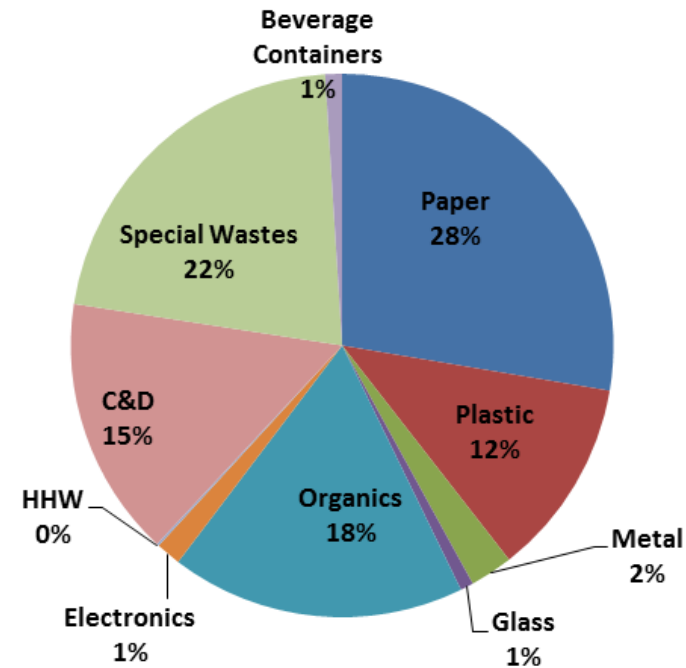
# Waste Composition (2012)

This includes both existing BB material and EBB material

## Residential Waste



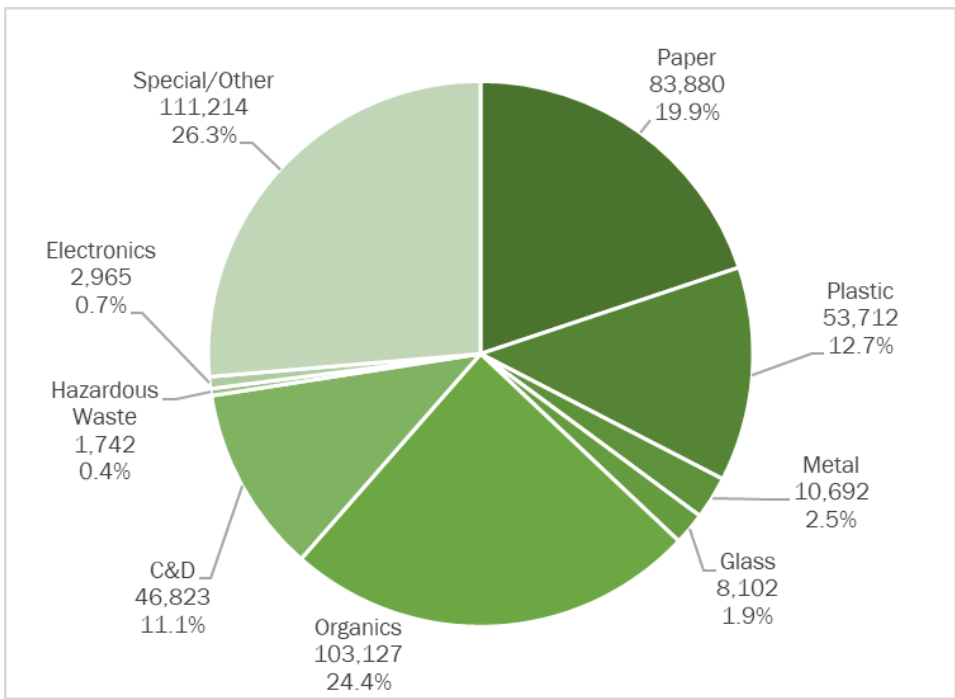
## ICI Waste



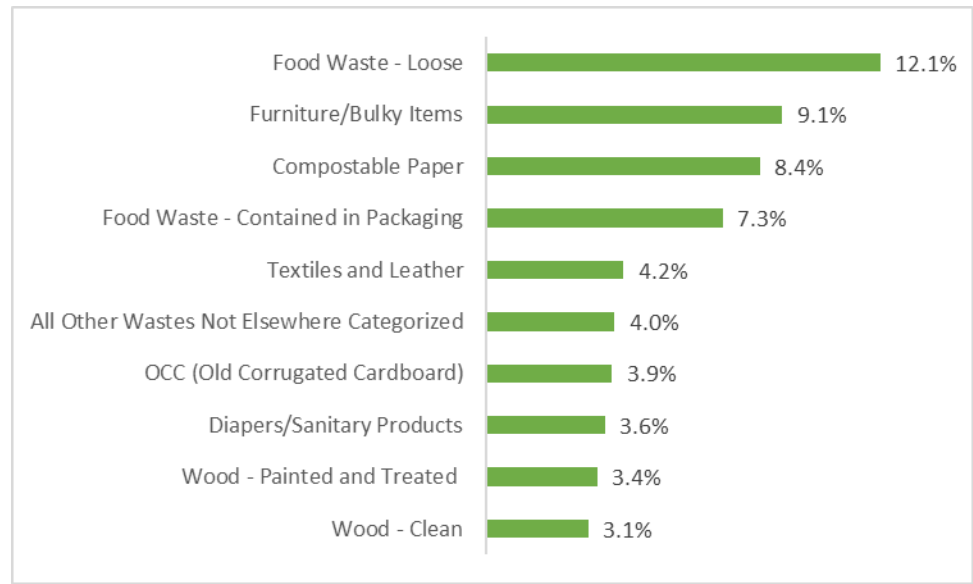
# 2018 Composition of Vermont Waste Stream

Note that in just 5 years the percent plastic has increased by roughly 2 percentage points

## By Major Material Category



## Top Ten Materials by Weight



# Bottle Bill Sub-Sort (2017-2018 Waste Characterization)

Total tons of Expanded Bottle Bill (EBB) material potentially available in the VT waste stream is 4,880 tons at 100 percent recovery – or roughly 3,760 tons at a 77 percent return rate

Testimony that VT could recover an additional 15,000 tons of material are simply impossible based on our waste composition data and are probably based on incorrect conversion of sales units to tons

## Residential

Material Subsorts	Absolute Pct	Relative Pct	Tons
<b>#1 PET Bottles</b>	<b>0.8%</b>	<b>100.0%</b>	<b>1,832</b>
#1 PET Bottles BB	0.2%	18.5%	340
#1 PET Bottles EBB	0.4%	42.4%	777
#1 PET Bottles None	0.1%	8.7%	160
#1 PET Food and Dairy Bottles and Jars	0.3%	30.3%	556
<b>#2 HDPE Bottles</b>	<b>0.5%</b>	<b>100.0%</b>	<b>1,167</b>
#2 HDPE Bottles BB	0.0%	0.0%	-
#2 HDPE Bottles EBB	0.1%	10.9%	127
#2 HDPE Bottles None	0.1%	21.7%	253
#2 HDPE Food and Dairy	0.4%	67.4%	787
<b>#3-#7 Bottles</b>	<b>0.1%</b>	<b>100.0%</b>	<b>238</b>
#3 - #7 Bottles BB	0.0%	3.6%	9
#3 - #7 Bottles EBB	0.0%	5.1%	12
#3 - #7 Bottles None	0.1%	91.2%	217
<b>Glass Beverage Bottles</b>	<b>1.4%</b>	<b>100.0%</b>	<b>3,031</b>
Glass Beverage Bottles BB	0.3%	21.3%	645
Glass Beverage Bottles EBB	0.5%	35.6%	1,080
Glass Beverage Bottles None	0.1%	5.9%	179
Food and Dairy Glass	0.5%	37.2%	1,128
<b>Aluminum Beverage Cans</b>	<b>0.6%</b>	<b>100.0%</b>	<b>1,370</b>
Aluminum Beverage Cans BB	0.1%	24.0%	329
Aluminum Beverage Cans EBB	0.1%	8.9%	123
Aluminum Beverage Cans None	0.0%	0.8%	11
Aluminum Foil, Pans & Food Cans	0.4%	66.2%	907

## ICI

Material Subsorts	Absolute Pct	Relative Pct	Tons
<b>#1 PET Bottles</b>	<b>0.7%</b>	<b>100.0%</b>	<b>1,380</b>
#1 PET Bottles BB	0.1%	15.1%	209
#1 PET Bottles EBB	0.5%	63.0%	870
#1 PET Bottles None	0.0%	5.1%	70
#1 PET Food and Dairy Bottles and Jars	0.1%	16.8%	232
<b>#2 HDPE Bottles</b>	<b>0.3%</b>	<b>100.0%</b>	<b>632</b>
#2 HDPE Bottles BB	0.0%	1.7%	11
#2 HDPE Bottles EBB	0.0%	9.6%	60
#2 HDPE Bottles None	0.1%	26.3%	166
#2 HDPE Food and Dairy	0.2%	62.5%	395
<b>#3-#7 Bottles</b>	<b>0.1%</b>	<b>100.0%</b>	<b>193</b>
#3 - #7 Bottles BB	0.0%	12.0%	23
#3 - #7 Bottles EBB	0.1%	52.0%	101
#3 - #7 Bottles None	0.0%	36.0%	70
<b>Glass Beverage Bottles</b>	<b>1.5%</b>	<b>100.0%</b>	<b>2,710</b>
Glass Beverage Bottles BB	0.4%	30.4%	824
Glass Beverage Bottles EBB	0.8%	51.4%	1,392
Glass Beverage Bottles None	0.0%	2.8%	77
Food and Dairy Glass	0.2%	15.4%	417
<b>Aluminum Beverage Cans</b>	<b>0.6%</b>	<b>100.0%</b>	<b>1,162</b>
Aluminum Beverage Cans BB	0.2%	33.3%	387
Aluminum Beverage Cans EBB	0.2%	29.2%	339
Aluminum Beverage Cans None	0.0%	0.9%	11
Aluminum Foil, Pans & Food Cans	0.2%	36.6%	425

# Key Points of Waste Composition Study

- An expanded bottle bill would result in a maximum reduction in landfill waste in Vermont of 1 percent
- Food waste remains the largest single category on a weight basis
  - We have a long way to go to achieve Act 148 objectives of removing food waste from landfills
- But plastics, at 12.7 percent by weight, represent close to 30 percent by volume of what is being landfilled
  - And the overall recycling rate for all plastics is roughly 10 percent
  - Plastics also are the most littered material
  - Focusing on Extended Producer Responsibility for all plastic packaging would be much more productive in reducing GHG emissions and plastics in the environment

# Glass

- A review of the waste composition data also tells us that the majority of bottle bill material found in the waste stream is glass
  - 56 percent in the residential waste stream
  - 81 percent in the commercial waste stream
- Just as importantly, Glass has a negative value at a recycling plant
  - Abrasive to conveyors
  - Recyclers have to pay a processor to take the resulting glass
- A much better and more targeted approach would be an extended bottle bill on glass only, combined with extended producer responsibility for all other packaging

# Costs

- DSM's estimate for the Act 148 analysis of an expanded bottle bill concluded that an expanded bottle bill would increase bottle bill costs by roughly \$4 million per year
  - While capturing at most another 4,000 tons of material
- Costs include a reduction in recycling revenues by roughly 50 percent because of the loss of valuable aluminum and PET containers that are taken out of the curbside and drop-off programs and diverted to redemption centers
  - This is very important to municipalities which count on revenue sharing to control their recycling costs



# Impact on Consumers

- If 77 percent of beverage containers are recovered under a deposit scheme consumers lose roughly 23% of the deposits they pay (“Escheats” which are captured by the State)
- Just as importantly consumers pay 3.5 to 4 cents per container in handling fees that are never recovered by the consumer
- Consumers also have to return the containers to specific locations in VT
  - DSM’s surveys of consumers redeeming containers in VT in 2006 concluded that consumers made 950,000 special trips for a combined mileage of 7.6 million miles per year, costing them \$3.67 million based on the IRS mileage rate
  - Equivalent to 3,000 metric tons Carbon Dioxide equivalent emissions per year





# Impact on Litter

- It is not clear from US litter studies that deposits reduce beverage container litter
  - That is especially the case for alcohol containers
- Beverage containers are a relatively small component of litter throughout the US – in deposit and non-deposit states
  - National study (2009) estimated beverage containers at 3% of all litter, with the majority beer (30%) and soft drinks (25%) although there has been a growth in the number of water (6%) and sports drinks (3%)
- In Delaware – the most recent statewide litter study conducted by DSM:
  - Beverage containers represented 12% of litter pieces over 4 inches, less than 1% under 4 inches
  - Single-use food service, together with plastic bags and other plastic film represented 56% of litter pieces (4 inches and greater in size)
- DSM's work for the Ocean Conservancy, as recently published in Science Advancement indicates that litter is a significant contributor in the US to marine plastic pollution

# In Conclusion

- I am an environmentalist who has spent almost 50 years working on solid waste recycling and disposal issues throughout the US and in 15 developing countries around the world
- I have been Chair of the West Windsor Conservation Commission for roughly 25 years, Greenup Day Coordinator for 20 years, and served three terms on the Selectboard
- In my opinion expanding the bottle bill will do little to reduce landfill disposal and will significantly increase state-wide costs and consumer costs
- Vermont would be better served to look past our history of bottle bills and look forward to expansion of extended producer responsibility for all packaging in Vermont
  - *Expansion of a bottle bill for glass only when combined with extended producer responsibility for all other packaging would be a more cost effective and environmentally sound strategy*
  - *HR 142 might provide the basis for a comprehensive effort to expand and improve recycling of ALL materials in Vermont – especially plastics which consume roughly 30 percent of our landfill space*
  - *Proctor and Gamble, Kraft, Unilever, etc. are more than happy to have Vermont focus on recovering a few more bottles and cans while they continue to sell large volumes of unrecyclable packaging into Vermont with no financial responsibility*

# Thankyou For Your Time Today

- Questions?

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