



2018 VERMONT WASTE CHARACTERIZATION

Prepared for:

VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION,
SOLID WASTE PROGRAM

Prepared by:

DSM ENVIRONMENTAL SERVICES, INC.
Resource Economists
Environmental Scientists

With support from:

MSW CONSULTANTS

Castleton Polling Institute

It is also interesting to note that C&D materials make up a significant percent of both Residential and ICI MSW at 9.9 and 14.7 percent of the total MSW respectively. And that Special Wastes represent 19.7 and 17.1 percent, respectively of Residential and ICI MSW even though bulky wastes are not included in these totals.¹¹ While carpet and padding is the largest category of Special Waste for ICI MSW, diapers and textiles are the two largest categories for Residential MSW. Diapers, especially, are a growing and significant component of Residential MSW, especially with the aging population.

Finally, electronics and HHW are a relatively small component of both the Residential and ICI MSW stream, indicating the success of EPR legislation for electronics and paint, and of HHW drop-off programs¹².

ICI Sub-Sort

Table 10 presents the results of the sub-sort of bottle bill and potential bottle bill materials from the ICI MSW. Interestingly, the results are very similar to those for the Residential MSW. However, bottles that would be part of the EBB are found to have a slightly higher incidence in the ICI stream, mainly glass.

Table 10. ICI Sub-Sort of Potential Bottle Bill Containers

Material Subsorts	Absolute Pct	Relative Pct	Tons
#1 PET Bottles	0.7%	100.0%	1,380
#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
#2 HDPE Bottles	0.3%	100.0%	632
#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
#3-#7 Bottles	0.1%	100.0%	193
#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
Glass Beverage Bottles	1.5%	100.0%	2,710
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
Aluminum Beverage Cans	0.6%	100.0%	1,162
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

¹¹ While bulky items and furniture picked up with residential waste and ICI waste are included, separate roll-offs of bulky wastes were not hand sorted and not included in this composition breakdown.

¹² As stated in Footnote 8, above, primary batteries were included in the Hazardous Waste category even though they are not hazardous waste, slightly inflating the total Hazardous Waste category.

Table 11. Aggregate Composition of MSW Disposed¹³¹⁴

Material	Estimated Percent	+ / -	Estimated Tons	Material	Estimated Percent	+ / -	Estimated Tons
Paper	19.9%	1.6%	83,880	Organics	24.4%	1.9%	103,127
Newsprint	0.9%	0.3%	3,759	Food Waste - Contained in Packaging	7.3%	1.0%	30,653
High Grade Office Paper	0.4%	0.2%	1,579	Food Waste - Loose	12.1%	1.5%	50,974
OCC (Old Corrugated Cardboard)	3.9%	0.8%	16,319	Leaves/Grass/Brush >1"	0.1%	0.4%	300
Magazines/Catalogs	0.8%	0.3%	3,201	Leaves/Grass/Brush <1"	0.7%	0.8%	3,082
Mixed Recyclable Paper	1.5%	0.6%	6,528	Pet Waste	2.9%	0.7%	12,089
Boxboard (chipboard)	1.1%	0.2%	4,537	Other Organics	1.4%	0.6%	6,028
Books	0.3%	0.2%	1,272				
Polycoated / Aseptic Containers	0.3%	0.1%	1,162	Metal	2.5%	0.4%	10,692
Compostable Paper	8.4%	0.7%	35,403	Aluminum Beverage Cans	0.3%	0.1%	1,200
Non-Recyclable Paper	2.4%	0.9%	10,121	Aluminum Foil, Pans & Food Cans	0.3%	0.1%	1,332
				Ferrous Containers	0.6%	0.2%	2,582
Plastic	12.7%	1.5%	53,712	Other Ferrous	0.9%	0.3%	3,790
#1 PET Bottles	0.6%	0.1%	2,424	Other Non-Ferrous	0.4%	0.2%	1,788
#1 PET Food and Dairy Bottles and Jars	0.2%	0.0%	788				
#2 HDPE Bottles	0.1%	0.1%	618	Electronics	0.7%	0.6%	2,965
#2 HDPE Food and Dairy	0.3%	0.1%	1,182	CED CRT's	0.1%	1.0%	579
#3 - #7 Bottles	0.1%	0.1%	431	CED Televisions & Monitors, non-CRT	0.2%	1.9%	972
Plastic Cups, Tubs and Lids	0.9%	0.1%	3,840	CED Desktop & Laptop Computers	0.0%	0.1%	57
Bulky Rigid Plastics > 1 Gallon	1.5%	1.2%	6,487	CED Computer Peripherals/Printers	0.0%	0.0%	23
Plastic Thermoforms	0.3%	0.0%	1,308	Banned, Non-CED electronics	0.1%	0.1%	438
Plastic Film Pouches	0.0%	0.0%	178	Small Appliances	0.2%	0.3%	896
Film - Retail Bags	0.5%	0.1%	2,168				
Film - ICI Wrap	1.5%	1.4%	6,270	C&D	11.1%	2.0%	46,823
Film - Garbage Bags	1.7%	0.2%	7,270	Drywall/Gypsum Board	0.4%	0.7%	1,674
Film - Other	2.2%	0.2%	9,375	C & D Metal	0.2%	0.8%	895
Other Plastic	2.7%	1.0%	11,374	Asphalt Shingles	0.5%	1.2%	1,985
				Plywood	0.5%	0.7%	2,079
Glass	1.9%	0.4%	8,102	Oriented Strand Board	0.0%	0.1%	46
Glass Beverage Bottles	1.0%	0.3%	4,197	Asphalt, Brick and Concrete	0.0%	0.0%	140
Food and Dairy Glass	0.4%	0.1%	1,545	Wood - Painted and Treated	3.4%	0.8%	14,393
Plate Glass	0.1%	0.6%	545	Wood - Clean	3.1%	1.4%	13,255
Other Glass	0.4%	0.2%	1,815	Other C & D	2.9%	1.1%	12,357
Special/Other	26.3%	2.0%	111,214	Hazardous Waste	0.4%	0.2%	1,742
Textiles and Leather	4.2%	1.0%	17,830	Paint	0.1%	0.5%	389
Rubber	0.6%	0.2%	2,594	Batteries (Primary)	0.1%	0.0%	246
Carpet and Carpet Padding	3.1%	2.1%	12,918	Batteries (Rechargeable)	0.0%	0.0%	6
Diapers/Sanitary Products	3.6%	0.9%	15,403	Mercury Thermostats/Thermometers	0.0%	0.0%	0
Furniture/Bulky Items	9.1%	2.2%	38,298	Mercury Lamps	0.0%	0.0%	21
Tires	0.2%	2.4%	986	Mercury - Other	0.1%	0.9%	225
Fines/Dirt/Mixed Residue	1.5%	0.4%	6,494	Other HHW	0.2%	0.1%	855
All Other Wastes Not Elsewhere Categorized	4.0%	0.5%	16,691				
				Grand Total	100%		422,258
				Sample Count	181		

Confidence intervals calculated at the 90% confidence level. Percentages for material types may not total 100% due to rounding.

¹³ Bulky wastes (29,924 tons) were added to the Furniture/Bulky Items subcategory and Other Wastes (10,973 tons) were added to Special/Other subcategory to better characterize waste disposal in Vermont. However not all bulky waste is furniture, but in the absence of characterization waste, this was a logical category to use as a placeholder.

¹⁴ Note that while primary batteries were included under Hazardous Waste, they are in fact not classified as hazardous waste.

Table 12. Aggregated Sub-Sort of Bottle Bill Containers

Material Subsorts	Absolute Pct	Relative Pct	Tons
#1 PET Bottles	0.8%	100.0%	3,565
#1 PET Bottles BB	0.1%	17.1%	610
#1 PET Bottles EBB	0.4%	51.0%	1,819
#1 PET Bottles None	0.1%	7.2%	256
#1 PET Food and Dairy Bottles and Jars	0.2%	24.7%	880
#2 HDPE Bottles	0.5%	100.0%	2,004
#2 HDPE Bottles BB	0.0%	0.6%	12
#2 HDPE Bottles EBB	0.0%	10.5%	209
#2 HDPE Bottles None	0.1%	23.2%	466
#2 HDPE Food and Dairy	0.3%	65.7%	1,317
#3-#7 Bottles	0.1%	100.0%	478
#3 - #7 Bottles BB	0.0%	7.3%	35
#3 - #7 Bottles EBB	0.0%	25.7%	123
#3 - #7 Bottles None	0.1%	67.1%	321
Glass Beverage Bottles	1.5%	100.0%	6,361
Glass Beverage Bottles BB	0.4%	25.5%	1,621
Glass Beverage Bottles EBB	0.6%	42.9%	2,729
Glass Beverage Bottles None	0.1%	4.5%	286
Food and Dairy Glass	0.4%	27.1%	1,726
Aluminum Beverage Cans	0.7%	100.0%	2,807
Aluminum Beverage Cans BB	0.2%	28.2%	791
Aluminum Beverage Cans EBB	0.1%	18.0%	506
Aluminum Beverage Cans None	0.0%	0.9%	24
Aluminum Foil, Pans & Food Cans	0.4%	52.9%	1,486