

**APPENDIX A. IC&I WASTE SURVEY**

The survey was sent to over 600 businesses in Oxford County in later March 2017 with a deadline of 7<sup>th</sup> April 2017 to respond. A total of 92 responses were received.



**Oxford County Industrial, Commercial, & Institutional Waste Survey**

Welcome to our survey

1. Business Name

2. Type of Business (e.g. manufacturing, retail, warehousing, restaurant, etc.)

3. NAICS Code (if available)

4. Number of Employees

Full Time

Part Time

5. Business Location

Street Address

Line 2

PO Box #

Postal Code

6. Contact Person

Name

Title

Phone

Email

\* 7. Do you manage your own garbage?

Yes

No

Comment

\* 8. Does the local municipality pick up your garbage?

Yes

No

\* 9. Does your landlord or building manage your garbage?

Y

e

s

Name

Email

Phone

N  
o

10. If you manage your own garbage, what company do you use to haul your garbage for disposal?

Company 1

Company 2

Company 3

11. Who is responsible for managing garbage from your building (if not you)?

\* 12. Do you share garbage bins with other businesses?

Yes

No

\* 13. Do you add residential waste to your garbage bins?

Yes, mostly

Yes, occasionally

No

\* 14. Do you have a RECYCLING program?

Yes

No

15. If you have answered 'Yes' to the previous question, do you use the Curbside Blue Box Program or a private hauler?

Curbside Blue Box Program

Private hauler

Both

16. If you use private hauler(s) for RECYCLING, what hauler(s) do you use?

Company 1

Company 2

Company 3

17. Please fill in the number of GARBAGE bins you have at your business

	Number of bins
35 gal cart	<input type="text"/>
65 gal cart	<input type="text"/>
95 gal cart	<input type="text"/>
2 cubic yards	<input type="text"/>
3 cubic yards	<input type="text"/>
4 cubic yards	<input type="text"/>
6 cubic yards	<input type="text"/>
8 cubic yards	<input type="text"/>
10 cubic yards	<input type="text"/>
20 cu yd. roll-off	<input type="text"/>
30 cu yd. roll-off	<input type="text"/>
40 cu yd. roll-off	<input type="text"/>
Other bin size (1)	<input type="text"/>
Other bin size (2)	<input type="text"/>

18. If you use other bin sizes, please indicate below

Bin size (1)

Bin size (2)

19. Do you use garbage bags instead of bins?

20. We would like to know how much GARBAGE you produce per week. If your hauler provides totals in your bills, can you check a bill and fill in the amount. (It may be listed as containers per week or per month, or kg per week or per month. Fill in whatever information you have available.)

If you don't have weights available, we can estimate those amounts if you fill in what you can in Question 21, even if approximate.

Kg/week	<input type="text"/>
Tonnes/week	<input type="text"/>
Containers per/week	<input type="text"/>
Kg/month	<input type="text"/>
Tonnes/month	<input type="text"/>
Containers/month	<input type="text"/>
Other (please state amount and the period it covers)	<input type="text"/>

\* 21. How often are the GARBAGE bins or bags picked up (e.g. weekly, twice weekly, daily, every two weeks, only when you call in)

	Frequency
Garbage bags	<input type="text"/>
35 gal cart	<input type="text"/>
65 gal cart	<input type="text"/>
95 gal cart	<input type="text"/>
2 cubic yards	<input type="text"/>
3 cubic yards	<input type="text"/>
4 cubic yards	<input type="text"/>
6 cubic yards	<input type="text"/>
8 cubic yards	<input type="text"/>
10 cubic yards	<input type="text"/>
20 cu yd. roll-off	<input type="text"/>
30 cu yd. roll-off	<input type="text"/>
40 cu yd. roll-off	<input type="text"/>
Other bin size (1)	<input type="text"/>
Other bin size (2)	<input type="text"/>

Please specify if you answered, "Other Frequency"

\* 22. How full is each GARBAGE bin or bag when picked up?

How full

Garbage bags	<input type="text"/>
35 gal cart	<input type="text"/>
65 gal cart	<input type="text"/>
95 gal cart	<input type="text"/>
2 cubic yards	<input type="text"/>
3 cubic yards	<input type="text"/>
4 cubic yards	<input type="text"/>
6 cubic yards	<input type="text"/>
8 cubic yards	<input type="text"/>
10 cubic yards	<input type="text"/>
20 cu yd. roll-off	<input type="text"/>
30 cu yd. roll-off	<input type="text"/>
40 cu yd. roll-off	<input type="text"/>
Other bin size (1)	<input type="text"/>
Other bin size (2)	<input type="text"/>

Please specify if not covered above

23. What materials do you RECYCLE?

	Size of Bins	Number of Bins	Frequency of Pickup
Ferrous Metal (iron, steel, etc.)	<input type="text"/>	<input type="text"/>	<input type="text"/>
Non-Ferrous Metal (aluminum, copper etc. )	<input type="text"/>	<input type="text"/>	<input type="text"/>
HDPE (High-Density Polyethylene)	<input type="text"/>	<input type="text"/>	<input type="text"/>



	Size of Bins	Number of Bins	Frequency of Pickup
LDPE (Low-Density Polyethylene)	<input type="text"/>	<input type="text"/>	<input type="text"/>
Shrink wrap	<input type="text"/>	<input type="text"/>	<input type="text"/>
PET (Polyethylene Terephthalate)	<input type="text"/>	<input type="text"/>	<input type="text"/>
PP (Polypropylene)	<input type="text"/>	<input type="text"/>	<input type="text"/>
PS (Polystyrene)	<input type="text"/>	<input type="text"/>	<input type="text"/>
PVC (Polyvinyl Chloride)	<input type="text"/>	<input type="text"/>	<input type="text"/>
Mixed Plastics	<input type="text"/>	<input type="text"/>	<input type="text"/>
Cardboard	<input type="text"/>	<input type="text"/>	<input type="text"/>
Boxboard	<input type="text"/>	<input type="text"/>	<input type="text"/>
Other Paper	<input type="text"/>	<input type="text"/>	<input type="text"/>
Wooden Pallets	<input type="text"/>	<input type="text"/>	<input type="text"/>
Clean Wood	<input type="text"/>	<input type="text"/>	<input type="text"/>
Food Waste (to compost)	<input type="text"/>	<input type="text"/>	<input type="text"/>
Other Organic Materials	<input type="text"/>	<input type="text"/>	<input type="text"/>
Glass	<input type="text"/>	<input type="text"/>	<input type="text"/>
Curbside Blue Box Materials	<input type="text"/>	<input type="text"/>	<input type="text"/>
Other	<input type="text"/>	<input type="text"/>	<input type="text"/>

If you answered "Other", please state what the material is.

\* 24. Do you put Blue Box materials at the curbside for pick-up by the municipality?  
If yes, how many bins or carts do you set out for each pick-up?

	Number
Bin	<input type="text"/>
Carts	<input type="text"/>
Clear bags	<input type="text"/>
Other	<input type="text"/>

Please specify if you stated "Other"

\* 25. Do you send waste materials from your business directly to another business to reuse or recycle?

Yes

No

26. If yes, which materials, and where are they sent?

Ferrous Metal (iron, steel, etc.)	<input type="text"/>
Non-Ferrous Metal (aluminum, copper etc. )	<input type="text"/>
HDPE (High-Density Polyethylene)	<input type="text"/>
LDPE (Low-Density Polyethylene)	<input type="text"/>
Shrink wrap	<input type="text"/>
PET (Polyethylene Terephthalate)	<input type="text"/>
PP (Polypropylene)	<input type="text"/>
PS (Polystyrene)	<input type="text"/>
PVC (Polyvinyl Chloride)	<input type="text"/>
Mixed Plastics	<input type="text"/>
Cardboard	<input type="text"/>
Boxboard	<input type="text"/>
Other Paper	<input type="text"/>

Food Waste	<input type="text"/>
Wooden Pallets	<input type="text"/>
Clean Wood	<input type="text"/>
Other organic materials	<input type="text"/>
Glass	<input type="text"/>
Other 1 -- Please specify material	<input type="text"/>
Other 2 -- Please specify material	<input type="text"/>
Other 3 -- Please specify material	<input type="text"/>
Other 4 -- Please specify material	<input type="text"/>
Other 5 -- Please specify material	<input type="text"/>
Other 6 -- Please specify material	<input type="text"/>

27. Once again, thank you for taking time out of your busy day to complete the survey. You are helping Oxford County develop a comprehensive picture of how business waste is managed in the County. Please feel free to add your comments on anything we did not think to ask you below.

## APPENDIX B: DETAILED BUSINESS INFORMATION FOR OXFORD COUNTY

The table below shows more detail on the number of businesses within specific sectors in Oxford County at the 3-digit NAICS code level.

### NAICS Sectors (in IC&I category) with Largest Numbers of Businesses in Oxford County<sup>16</sup>

Industry - North American Industry Classification System (NAICS) 2007 (425)	Without employees	With employees
111 - Crop production	834	208
112 - Animal production and aquaculture	766	330
115 - Support activities for agriculture and forestry	124	24
236 - Construction of buildings	177	129
237 - Heavy and civil engineering construction	39	19
238 - Specialty trade contractors	402	321
332 - Fabricated metal product manufacturing	31	49
333 - Machinery manufacturing	18	38
417 - Machinery, equipment and supplies merchant wholesalers	50	57
418 - Miscellaneous merchant wholesalers	31	37
441 - Motor vehicle and parts dealers	47	59
444 - Building material and garden equipment and supplies dealers	16	46
445 - Food and beverage stores	54	81
446 - Health and personal care stores	23	42
447 - Gasoline stations	31	29
448 - Clothing and clothing accessories stores	19	36
452 - General merchandise stores	28	29
453 - Miscellaneous store retailers	51	43
484 - Truck transportation	335	180
488 - Support activities for transportation	27	25
522 - Credit intermediation and related activities	24	34

<sup>16</sup> December 2016 Location Counts by CD (3532) Oxford County Census District, NAICS and Employment Size Ranges, purchased from Statistics Canada

<b>523 - Securities, commodity contracts, and other financial investment and related activities</b>	393	26
<b>524 - Insurance carriers and related activities</b>	44	38
<b>531 - Real estate</b>	1,544	88
<b>5311 - Lessors of real estate</b>	1,269	64
<b>532 - Rental and leasing services</b>	32	15
<b>541 - Professional, scientific and technical services</b>	425	196
<b>551 - Management of companies and enterprises</b>	51	9
<b>561 - Administrative and support services</b>	193	113
<b>611 - Educational services</b>	41	24
<b>621 - Ambulatory health care services</b>	167	163
<b>624 - Social assistance</b>	58	36
<b>713 - Amusement, gambling and recreation industries</b>	27	39
<b>722 - Food services and drinking places</b>	56	184
<b>811 - Repair and maintenance</b>	155	145
<b>812 - Personal and laundry services</b>	107	58
<b>813 - Religious, grant-making, civic, and professional and similar organizations</b>	106	120

## APPENDIX C: IC&I AND C&D LOADS GREATER THAN 10 TONNES PER YEAR AT OCWMF LANDFILL (2016)

The table below shows IC&I and C&D loads at the Oxford County landfill in 2016 which were greater than 10 tonnes per year. Loads which went to composting are excluded.

### Summary of Loads Considered IC&I and C&D Waste at OCWMF Landfill (2016)

Customer at OCWMF Landfill	Total Recorded by OCWMF Landfill Customer (tonnes, 2016)	Amount Recorded as Demolition (tonnes, 2016)	Amount Recorded as Mixed C&D (tonnes, 2016)	Amount Recorded as Mixed MSW (tonnes, 2016)	Amount Recorded as Non Haz Solid Industrial (including brake linings) (tonnes, 2016)
Cash Account	6,647	1,690	2,182	2,460	
Dryza-Bone Roofing	18	7	3	8	
C.L.Routenburg and Sons	19	18			
R&S Roofing	11	3	8		
Charge Accounts	4,654	8	25	625	
ART Crushing and Recycling	568	510	57	0	
Belco Contracting	74	11	64		
BFI/Progressive	6,946	649	389	1,425	4,255
WMI	3,646	142	99	2,101	1,303
Cascades	239				239
Handy Bins	484	132	108	231	
LaFleche Roofing	123	123			
MCQ	2,674	141	49	768	1,715
Norfolk Disposal	3,507	59	167	3,141	139
C.L Routenburg and Sons	241	54	20	39	
Thomas Roofing London Ltd	11	11			
Thames Valley School Board	11	5	4	3	
Pre-paid cash	219	88	109	22	
Been There Dump That	1,031	470	37	515	
Braunz Construction	53	31	19	4	
Byrns Roofing	47		47		
Camboia Contracting	13	8	5		
Capital Homes	30	30			
DKP Realty Holdings	26	23		3	

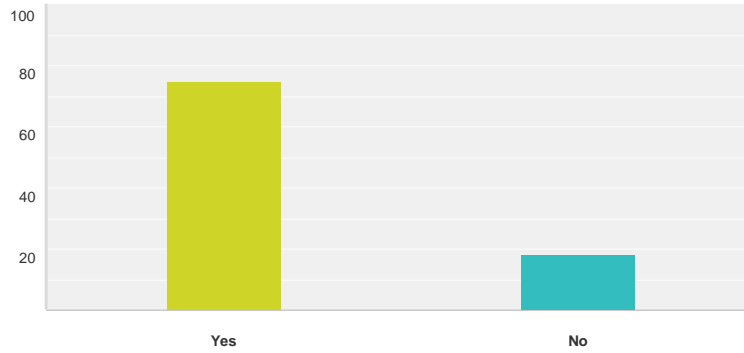
<b>Dryza Bone Roofing</b>	22	5	1	15	
<b>East Elgin Concrete Forming</b>	12		4	2	4
<b>Forshire Group</b>	40	37			
<b>GFL Environmental Inc</b>	18			18	
<b>Guenther Homes</b>	25	21	1	3	
<b>Henrys Excavating</b>	52	29	23		
<b>Heavy Haul Ontario</b>	118	79	32	9	
<b>Oxford Civil Group Inc</b>	27	5	3	19	
<b>Jonkers Lawn Care</b>	567	133	53	374	
<b>Jeffery Roofing</b>	136	136			
<b>Junk Chasers</b>	759	189	2	573	3
<b>Joe Webb Home Improvements</b>	13	7	6		
<b>Klingenberg Roofing</b>	76	65	11		
<b>Keiswetter Demolition Inc</b>	67	35	32		
<b>Keller Roofing</b>	71	71			
<b>Kirman and Oatman Excavating Ltd</b>	34		32	2	
<b>Leyser Disposal Bin Service</b>	72	46	20	6	
<b>Malcolm Holdings</b>				35	
<b>Mattress Brands International</b>	11			11	
<b>Oakwood Services</b>	101	32	23	45	
<b>Rent A Bin Disposal</b>	259	213		45	
<b>RH Drywall</b>	48		47	1	
<b>R.L. Lancaster Construction Ltd</b>	38	38			
<b>R&amp;S Roofing</b>	442	11	423	7	
<b>Salvation Army</b>	34			34	
<b>Smith Peat Roofing</b>	16	15	1		
<b>Spring Lake RV Park</b>	57	3	3	50	
<b>Supersave Disposal</b>	465	7		457	1
<b>STS Roofing</b>	105	58	29	18	
<b>thames River Melons</b>	151			151	
<b>Haines Group</b>	216	8	207	1	
<b>The Stoneplace</b>	319	232	2	86	
<b>warren Sinclair Construction</b>	40	32		8	
<b>Totals</b>	35,703	5,720	4,347	13,315	7,659



## APPENDIX D    SELECTED IC&I WASTE SURVEY RESPONSES PRESENTED GRAPHICALLY

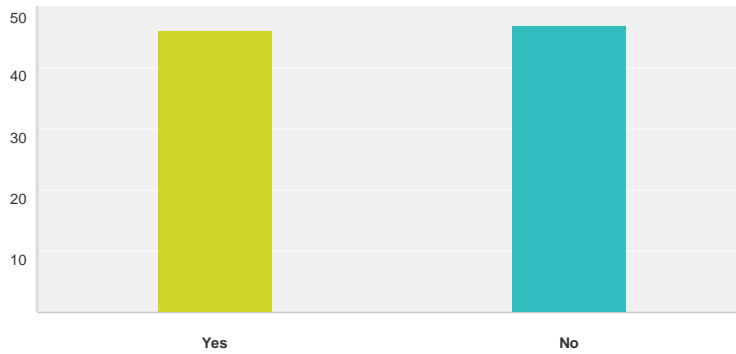
### Q7 Do you manage your own garbage?

Answered: 93    Skipped: 0



### Q8 Does the local municipality pick up your garbage?

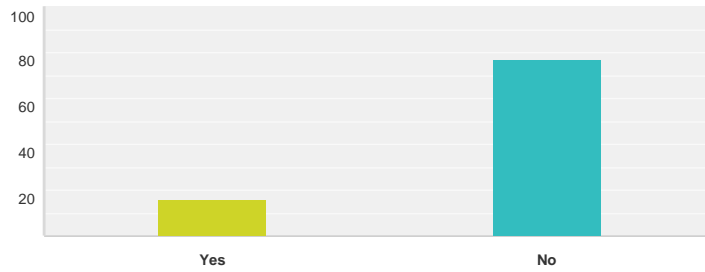
Answered: 93    Skipped: 0



Q9

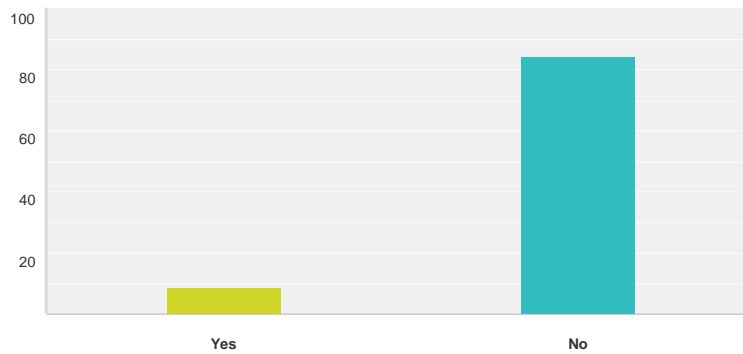
### Does your landlord or building manage your garbage?

Answered: 93 Skipped: 0



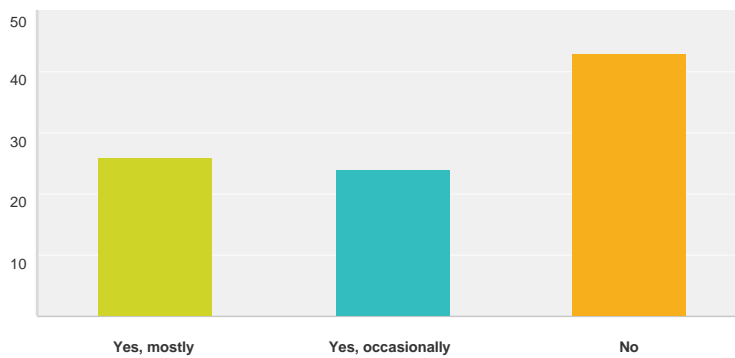
### Q12 Do you share garbage bins with other businesses?

Answered: 93 Skipped: 0



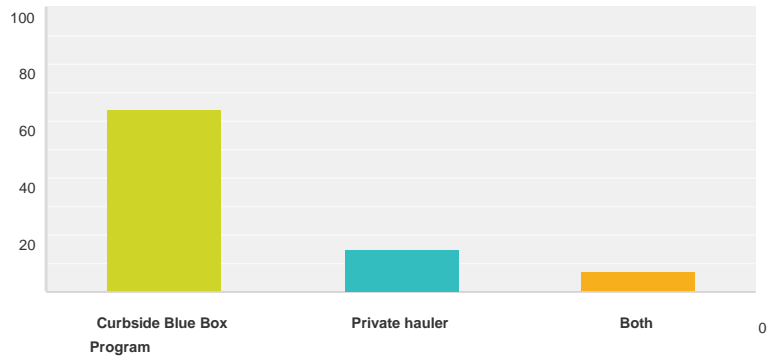
### Q13 Do you add residential waste to your garbage bins?

Answered: 93 Skipped: 0



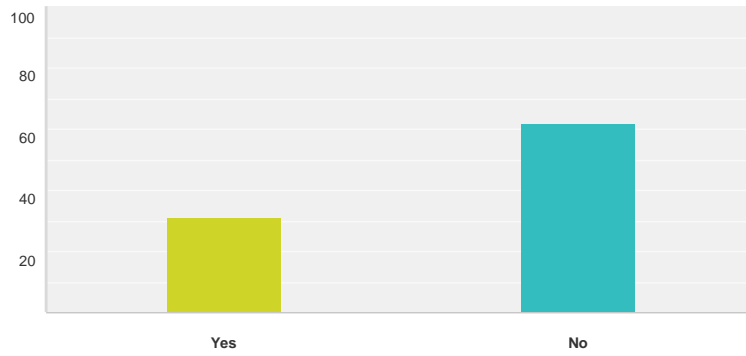
### Q15 If you [have a recycling program], do you use the Curbside Blue Box Program or a private hauler?

Answered: 86 Skipped: 7



**Q25 Do you send waste materials from your business directly to another business to reuse or recycle?**

Answered: 93 Skipped: 0





## APPENDIX E: HAULER SURVEY QUESTIONS

Oxford County has commissioned AET Group (with Kelleher Environmental as a sub-consultant) to estimate the amount of IC&I (industrial, commercial and institutional) waste produced in the County, to estimate the amount of IC&I waste that is disposed outside the County, and to identify the reasons why the IC&I waste is not disposed at the County Landfill.

We have surveyed over 600 businesses in the County (identified through business directories and other sources) to find out how much waste they produce and how the waste is managed. Several the survey respondents indicated that you are their garbage or recycling hauler.

I hope you can take a few minutes to answer the survey questions below, either by responding to this email or calling.

Any information you provide in the survey will be treated confidentially. The survey responses will be consolidated into one report.

**1. What waste stream(s) do you collect in Oxford County?**

- Garbage only
- Recycling only
- Garbage and recycling

**2. Do you dispose of all waste collected from IC&I accounts within Oxford County at the Oxford County landfill?**

- Yes
- No

**3. If no, what % of the waste you collect in the County do you dispose outside the County?**

- < 10%
- 10-25%
- 25 – 50%
- >50%
- Don't know

**4. What are the reasons that you dispose of IC&I waste from the County outside the County?**

- Hours of operation at landfill are not convenient
- Location of landfill is not convenient for some of my collection routes
- It is more convenient to dispose of IC&I waste at another facility at the beginning or end of the day
- Cost – it is cheaper to dispose of the IC&I waste somewhere else
- Company policy
- Other reasons (please list)

**5. Can you list locations where you dispose of IC&I waste picked up from Oxford County businesses?**

**6. Do you pick up from many farms in Oxford County?**

- Yes
- No

**7. If yes, how often do you typically collect from farms that you service?**

- Weekly
- Every 2 weeks
- Monthly
- Only when they call in (when bin is full)

**8. Do farm locations set out very much garbage, and if so, what activities create the garbage?**

**9. Can you share the tonnage of IC&I waste you manage from accounts located in Oxford County?**

## APPENDIX F: REFERENCES

### References on Waste Composition and IC&I Waste Generation from Other Jurisdictions

2cg Waste Management Consulting Services. Results of the Kelleher Environmental Waste Allocation Model and Waste Audits of Industrial, Commercial and Institutional (ICI) Generators, Report to City of Calgary, July, 2014.

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<https://www2.calrecycle.ca.gov/WasteCharacterization>

CWCGS Report MSW Characterization, Illinois, CDM May 2009

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Genivar, in association with Kelleher Environmental and Jacques Whitford, IC&I Waste Characterization Report – IC&I 3Rs Strategy Project, Report Submitted to City of Ottawa, June, 2007

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Mecklenburg County, NC Waste Composition Study Summary of Results, SCS Engineers, Feb. 2012

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NYC Dept Sanitation. Commercial Waste Management Study Volume II. Commercial Waste Generation and Projections. Prep by Henningson Durham & Richardson Arch & Engineer PC. March 2004.

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Waste Audit and Waste Composition Study. Municipality of Jasper, Prepared for: The Municipality of Jasper Environmental Services Prepared by: AET Consultants Inc. Waterloo, Ontario, October 2007

### **References on Material Densities Used to Convert Bin Volumes to Tonnes**

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<http://www.federalinternational.com/blog/recy>

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<http://www.calrecycle.ca.gov/Publications/Documents/1543/20151543.pdf>

Keep America Beautiful. Volume-to-Weight Recycling and Trash Conversion Factors Report. December 2013.



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<http://www.mass.gov/eea/docs/dep/recycle/approvals/dsconv.pdf>

Volume-to-Weight Conversion Factors. US Environmental Protection Agency, Office of Resource Conservation and Recovery. April 2016. [https://www.epa.gov/sites/production/files/2016-04/documents/volume\\_to\\_weight\\_conversion\\_factors\\_memorandum\\_04192016\\_508fml.pdf](https://www.epa.gov/sites/production/files/2016-04/documents/volume_to_weight_conversion_factors_memorandum_04192016_508fml.pdf)