Forest Heath District Council
St Edmundsbury Borough Council

WEST SUFFOLK WASTE AND STREET SCENE SERVICES JOINT COMMITTEE

28 OCTOBER 2011

REPORT NO

C186

Report of the Strategic Director (Services) (FHDC) and the Corporate Director (Economy & Environment) (SEBC)

RESULTS OF THE RESIDUAL WASTE COMPOSITIONAL ANALYSIS 2011

Synopsis:

The purpose of this report is to update members on the results of the Suffolk Waste Partnership (SWP) Residual Waste Compositional Analysis completed in 2011.

Background

1. At the Suffolk Waste Partnership Directors meeting approval was granted to undertake a Residual Waste Compositional Analysis (RWCA) in Suffolk.

2. The aim of the analysis was to determine the following:-

   (a) the types and quantities of household waste collected in the residual bin and subsequently landfilled;
   (b) the potential for increasing the diversion of household waste to recycling and composting;
   (c) the relationship between household waste and socio-economic profiles, using the ACORN classification (A Classification Of Residential Neighbourhoods); and
   (d) the gross calorific value of the residual waste.

3. The information will also aid the evaluation of future waste management initiatives and inform the development of future schemes to maximise recycling and composting through kerbside collections, bring sites and Household Waste Recycling Centres.

4. The project was commissioned and co-ordinated by Suffolk County Council with Officer support from all District and Borough councils. Following a tendering and selection process, AMEC Environment & Infrastructure UK Limited were commissioned to undertake the analysis in June 2011.

5. All District/Borough Council's in Suffolk took part in the analysis.

Methodology

6. As part of the project, 100 households were sampled in both Forest Heath District Council (FHDC) and St Edmundsbury Borough Council (SEBC) from a variety of ACORN groups (see Table 1 below). These ACORN types were selected to statistically represent the complete socio-economic makeup of each authority.

Table 1: Details of the Target Streets

SEBC	Acorn	ACORN type	FHDC	Acorn	ACORN type
Nothumberland Avenue	47	Low income families , terraced estates	Nightingale Close	41	Skilled workers, semis and terraces
Nothumberland Avenue	40	Young working families	Redwood Lane	23	Student terraces
Everard Close	40	Young working families	Birkdale / St Annes Drive	8	Mature couples, smaller detached homes
Bury Road / Papeley Meadow	11	Well off mangers, detached houses	Blackbird Road	26	Younger white collar couples with mortgages
Ruffles road	25	White collars singles/sharers, terraces	Wingfield Avenue	45	Low income, older people, smaller semis

7. Prior to project commencement, residents were informed of the project and were offered the opportunity to opt out; only 23 households from the entire Suffolk sample opted out.

8. Throughout the audit, waste was collected by the project team on the normal household collection day and transferred to the Haverhill Waste Transfer Station for analysis, including storage, manual sorting, weighing and recording; a process undertaken within one day of collection. After sorting, the waste was disposed of in the normal manner.

9. The waste analysed was categorised into 15 primary and 48 secondary categories, based upon the guidance issued by DEFRA. Appendix 1 details the range of categories used in the analysis.

10. Overall, the analysis process is relatively straightforward, but in terms of the results the following should be recognised:-

    (a) the analysis provides a glimpse into the waste management habits of local households and reflects a moment in time, which in itself is subject to variation; and
    (b) the analysis is unable to reflect seasonality in waste generation such as applicable to garden waste.

Key findings in West Suffolk

11. Chart 1 and 2 below illustrate the breakdown of primary category waste found in the FHDC and SEBC black bin (by % assay).

Chart 1: FHDC residual waste by category (% assay)

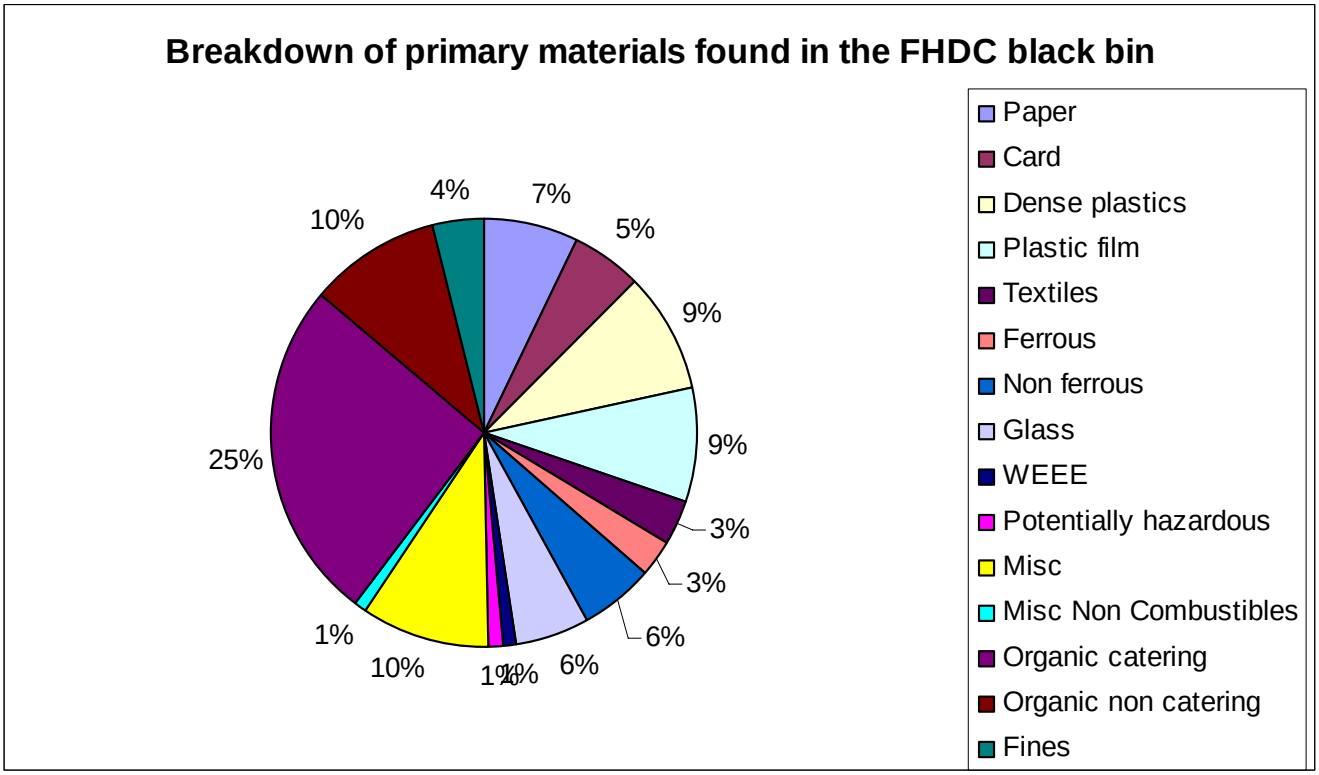
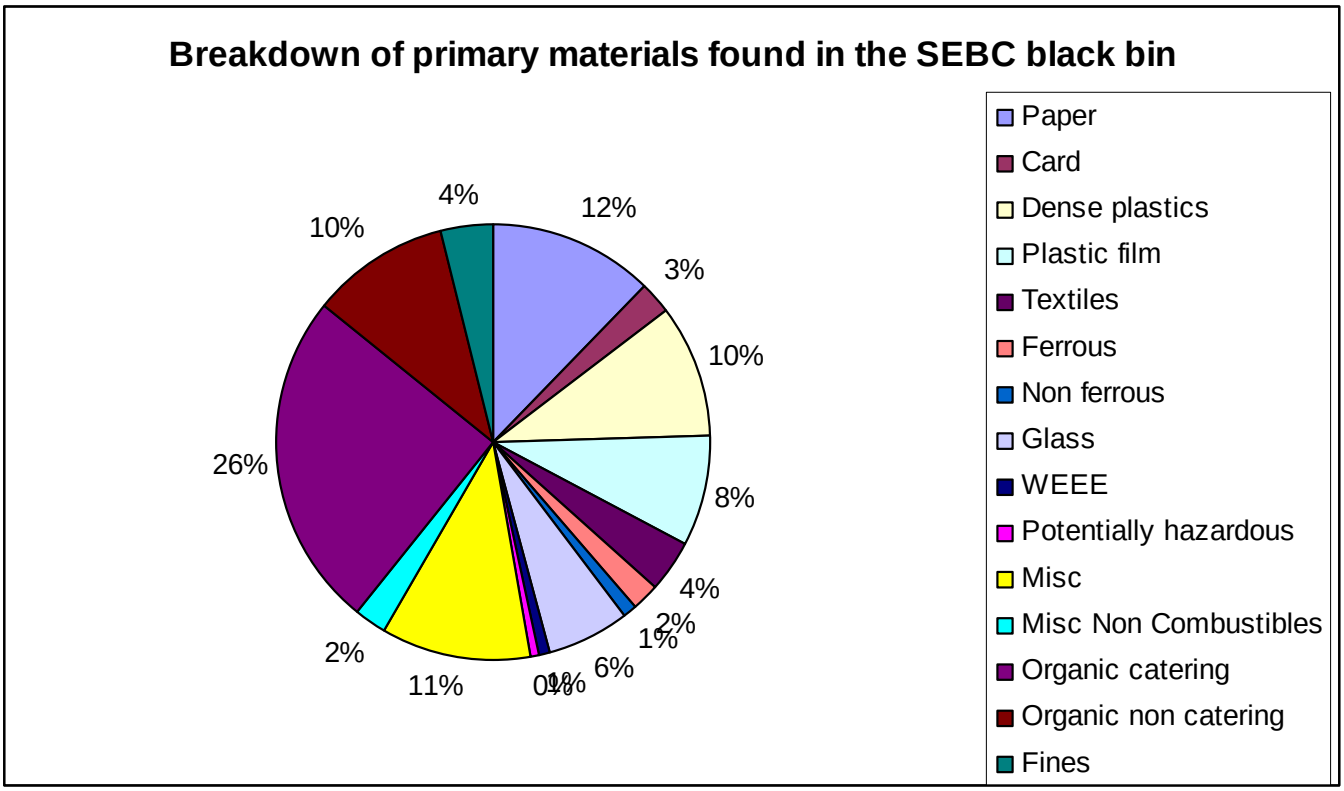


Chart 2: SEBC residual waste by category (% assay)



12. The key points to note are:-

(a) In FHDC, the average household produces 7.86kg of residual waste per week, with the prevalent category being organic catering waste at 26.98%. There is also significant variation in the quantity of waste produced from two of the five different ACORN groups analysed; and

(b) In SEBC, the average household produces 9.64kg of residual waste, with the prevalent category being organic catering waste at 25.10%. There is limited variation in the quantity of waste produced between the different ACORN groups analysed.

Potential Kerbside Recyclables in the Residual Waste Bin

13. In terms of the potential for further recycling, the results show that 28.1% of the residual waste from FHDC would have been suitable for re-use or recycling, with glass representing the largest component at 5.88%. In SEBC, 29.67% of the residual waste would have been suitable for reuse or recycling, with glass representing the largest component at 6.27%.

14. Tables 2 and 3 below outline the top three ranked waste materials that could be potentially recycled through the current kerbside collection scheme in FHDC and SEBC. This represents waste that could have been recycled within the current service but which the resident opted for disposal rather than recycling.

Table 2: FHDC potential recyclables in the black bin

Category	Tonnes per year	% of residual bin
Dense plastic (including plastic bottles)	692	6.00%
Card	479	4.16%
Paper	366	3.18%

Table 3: SEBC potential recyclables in the black bin

Category	Tonnes per year	% of residual bin
Dense plastic (including plastic bottles)	1,563	7.55%
Paper	1,192	5.76%
Card	389	1.88%

15. In FHDC it was identified that 15.29% of the total sampled black bin contents was potentially recyclable through the current blue bin scheme. Applying this to the total quantity of black bin waste collected during 2010/11 (11,525 tonnes), indicates that there are 1,762 tonnes of potential recyclable material disposed of in the black bin.

16. In SEBC it was identified that 17.18% of the total sampled black bin contents was potentially recyclable through the current blue bin scheme. Applying this to the total quantity of black bin waste collected during 2010/11 (20,699 tonnes) indicates that there are 3,556 tonnes of potential recyclable material disposed of in the black bin.

Potential Kerbside Organics in the Residual Waste Bin

17. In FHDC it was identified that 10.8% of the total sampled black bin contents was potentially compostable through the current brown bin scheme. Applying this to the total quantity of black bin waste collected during 2010/11 (11,525 tonnes) indicates that there are 1,249 tonnes of potential compostable material disposed of in the black bin.

18. In SEBC it was identified that 7.93% of the total sampled black bin contents was potentially compostable through the current brown bin scheme. Applying this to the total quantity of black bin waste collected during 2010/11 (20,699 tonnes) indicates that there are 1,641 tonnes of potential compostable material disposed of in the black bin.

19. Tables 4 and 5 below identify the top two materials that could be potentially composted through the current kerbside collection scheme in FHDC and SEBC.

Table 4: FHDC potential organics in the black bin

Category	Tonnes per year	% of residual bin
Home compostable kitchen waste	1,097	9.5%
Garden waste	152	1.32%

Table 5: SEBC potential organics in the black bin

Category	Tonnes per year	% of residual bin
Home compostable kitchen waste	1,490	7.2%
Garden waste	151	0.73%

Potential Recycling Centre Material in the Residual Waste Bin

20. In FHDC it was identified that 10.85% of the total sampled black bin contents was potentially recyclable through the recycling centre network. Applying this to the total quantity of black bin waste collected during 2010/11 (11,525 tonnes) indicates that there are 1,251 tonnes of potential recyclable material disposed of in the black bin.

21. In SEBC it was identified that 10.96% of the total sampled black bin contents was potentially recyclable through the recycling centre network. Applying this to the total quantity of black bin waste collected during 2010/11 (20,699 tonnes) indicates that there are 2,269 tonnes of potential recyclable material disposed of in the black bin.

22. Tables 6 and 7 below indicate the top two materials that could be potentially recycled at local recycling centres.

Table 6: FHDC potential recycling centre recyclables in the black bin

Category	Tonnes per year	% of residual bin
Glass	678	5.88%
Textiles and shoes	408	3.54%
Cartons (Tetra Pak)	165	1.43%

Table 7: SEBC potential recycling centre recyclables in the black bin

Category	Tonnes per year	% of residual bin
Glass	1,296	6.26%
Textiles and shoes	822	3.97%
Cartons (Tetra Pak)	151	0.72%

Key Conclusions of the Analysis

23. Appendix 2 outlines, in ranked order, the quantity of the different waste types disposed of in the black bin for both FHDC and SEBC, including the estimated annual quantity collected based on the residual waste collected in 2010/11. The colour coding identifies the treatment options available for each waste type.

24. Based on the above, the findings illustrate:-

(a) there remains a significant amount of potentially recyclable waste in the black bin. For West Suffolk there are approximately 2,255 tonnes of dense plastic, 1,558 tonnes of paper and 868 tonnes of card being landfilled rather than recycled per year;

(b) there are potentially 2,890 tonnes of compostable brown bin waste being landfilled rather than composted. Of this waste, approximately 90% was "Home compostable Kitchen waste", i.e. capable for inclusion in the current brown bin scheme;

(c) there are approximately 1,974 tonnes of glass, 1,230 tonnes of textiles and 316 tonnes of tetrapak cartons being landfilled rather than recycled through the network of recycling centres; and

(d) the most prevalent material category within the black bin was organic catering waste at approximately 26% for FHDC and 25% for SEBC.

(i) for FHDC this was followed by, in rank order: miscellaneous waste and organic non catering waste at approx. 10%; dense plastics and plastic film at approx. 9%; and

(ii) for SEBC this was followed by, in rank order: paper at approx. 12%; miscellaneous waste at approx. 11%; organic non-catering and dense plastics at approx. 10%.

25. The results from the Analysis suggest that there are considerable opportunities to increase the diversion of residual waste to recycling and composting using the current waste collection infrastructure. The reasons for the inability to currently capture this waste is probably linked to residents' perception of the barriers to recycling, whether conscious or unconscious, such as:-

    (a) situational barriers e.g. container size and storage room;
    (b) behaviour barriers e.g. clarity about what can be recycled, bin things rather than cleaning them for recycling and bin things because they are not sure if they can be recycled;
    (c) knowledge and understanding e.g. understanding the real benefits of recycling; and
    (d) attitudes and motivators e.g. feeling more appreciated by the Council and receiving an incentive for recycling.

26. Moving forward, Officers across Suffolk will be using the information provided to support activities to promote further recycling and composting.

Finance/Budget/Resource Implications

27. The future budget implications are unknown until specific actions are identified. There are likely to be resource implications for the Suffolk Waste Partnership depending on the focus of the future waste campaigns.

Environmental Impact and Sustainability

28. The results of the analysis will help inform the Suffolk Waste Partnership about future waste management decisions.

Policy Compliance/Power

29. The analysis was undertaken in line with DEFRA expectations and guidance. All residents were given the opportunity to opt out of the analysis.

30. Decisions from the analysis will help direct the future actions of the Joint Municipal Waste Management Strategy for Suffolk.

Performance Management Implications

31. The analysis will assist the identification of future actions to increase the diversion of waste to recycling and composting.

Legal Implications

32. There are no legal implications.

Human Rights Act and Diversity Implications

33. There are no human rights and diversity implications. The use of the ACORN classification allowed for a statistically representative sample of the socio-economic makeup of each authority.

Crosscutting Implications

34. In terms of the results, it is anticipated that there will be effective dialogue across Suffolk into the opportunities to effect greater recycling. This will include resource efficiency and carbon management.

Risk Assessment

35. There are no specific risks associated with the analysis.

Council Priorities

36. The effective management of waste supports the following council priorities:

Forest Heath District Council:

- Community safety; and
- Street scene and environment.

St Edmundsbury Borough Council:

- Raise standards and corporate efficiency;
- Improve the safety and well being of the community; and
- Secure a sustainable and attractive environment.

Recommendation:

It is recommended that Members note the key findings of the Residual Waste Compositional study.

Nigel McCurdy, Strategic Director (Services)
Sandra Pell, Corporate Director (Economy & Environment)

Documents Attached

Appendix 1: Waste category list.
Appendix 2: Summary of residual waste.

CONTACT OFFICERS
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Lee Williams, Waste Awareness Officer

Waste Composition Categories

Primary Category	Secondary Category	Examples
Paper	Newspapers	Newspapers, non-glossy magazines
	Magazines	Glossy magazines & glossy paper
	Advertising Flyers and Junk Mail	All flyers and advertising material including clearly identifiable junk mail
	Other recyclable	Office paper, books, envelopes, directories, gift wrapping paper
	Shredded paper	All shredded paper
	Other non-recyclable	Tissue paper, laminated or coated paper, carbon paper
Card	Liquid cartons	Tetra packs, juice cartons, milk cartons, soup cartons
	Card	Corrugated card, flat card, all other card inc. cereal boxes and greetings cards
Dense Plastic	Plastic bottles	All plastic bottles
	Recyclable dense plastic	Yoghurt pots, margarine and spread containers, other food containers, flower pots
	Other dense plastic	Expanded Polystyrene, tablet blister packs, toys, non-packaging dense plastic items
Plastic Film	Carrier bags	All carrier bags
	All other films	Refuse sacks, food wrapping film, metallised plastic film
Textiles	Textiles	Clothing, rags, sheets, curtains, towels, fabric off cuts, balls of wool, wash cloths
	Shoes	All footwear
Ferrous Metal	Cans	Attracted to magnets (Note: look for DULL / RUSTED / LIPPED base)
	Aerosols	Attracted to magnets
	Other	Coat hangers, nails, screws, steel pots and pans, cutlery, door furniture, car parts
Non-Ferrous Metal	Cans	NOT attracted to magnets (Note: look for SHINY / SMOOTH base)
	Aerosols	NOT attracted to magnets
	Aluminium foil	All aluminium foil
	Other	Copper pipe, aluminium pots and pans, decorative furnishings, jewellery
Glass	Glass bottles and jars	All glass bottles and jars
	Other glass	All other glass – windows glass, decorative ornaments
WEEE	Fridges and Freezers	Fridges and Freezers
	Large electrical goods	Cookers, dishwashers, microwave ovens, heaters, TVs
	Small electrical goods	Tools, radios, DVD players, entertainment systems, toys
	Mobile phones	All mobile phones
	Light bulbs	All light bulbs and fluorescent tubes
Potentially Hazardous	Household batteries	Non-lead acid batteries
	Car batteries	Lead-acid batteries
	Identifiable clinical waste	Drugs, tablets & packaging, dressings, syringes, medical items, blood soiled waste

Primary Category	Secondary Category	Examples
	Engine oil	Engine Oil
	Other	White spirit, thinners, paint, insecticides, bleach, chemicals, asbestos
Misc. Combustibles	Wood	All wood
	Furniture	Complete (reusable) items of furniture made of plastic, wood, fabric & foam
	Disposable nappies / sanitary	Disposable nappies and sanitary products
	Carpet and underlay	Carpet, rugs, carpet samples, bath mats, underlay
	Other	Fluff, hair, vacuum bags, sponges, soap, fake leather items, foam, tyres, cotton wool
Misc. Non-	Construction and demolition	Floor tiles, plasterboard, plaster, rubble, sawdust, gravel, sand, cement
Combustibles	Other	Stones, crockery, porcelain ornaments, flower pots, cinder, silica cat litter
Organic Catering	Home compostable kitchen waste	Fruit & vegetable peelings, tea bags, liquids
	Non-Home compostable kitchen waste	Meat, bone, processed food, bread, egg shells, chocolate, biscuits, cheese
Organic Non-	Garden Waste	Twigs, leaves, grass cuttings, hedges trimmings, cut flowers, soil
Catering	Soil	Soil, soil laden plant roots
	Potentially compostable other organic	Horse, rabbit and other vegetarian animal excrement
	Non-compostable other organic	Dead animals, cat, dog and other carnivorous animal excrement
Fines	Fines	Fine material less than 10 mm

Categorisation of residual waste ranked by quantity

Blue bin		Glass banks	
Brown bin		HWRC	
Black bin		Other	
Recycling bank			

SEBC		
Category	**Modelled average percentage**	**Tonnes per annum**
Non-Home compostable kitchen waste	17.90%	3705
Home compostable kitchen waste	7.20%	1490
Disposable nappies / sanitary	7.09%	1468
Non-compostable other organic	6.17%	1277
Recyclable dense plastic	5.99%	1240
Other non-recyclable	5.76%	1192
All other films	4.95%	1025
Other recyclable	4.41%	913
Fines	3.86%	799
Textiles	3.42%	708
Potentially compostable other organic	3.37%	698
Clear glass bottles	3.22%	667
Carrier bags	3.00%	621
Other (Misc Combustibles)	2.92%	604
Other dense plastic	2.08%	431
Card	1.88%	389
Plastic bottles	1.56%	323
Green glass bottles	1.36%	282
Construction and demolition	1.23%	255
Other (Combustibles)	1.15%	237
Glass jars	1.10%	228
Cans	0.97%	201
Liquid cartons	0.73%	151
Garden Waste	0.73%	151
Aluminium foil	0.72%	149
Wood	0.71%	147
Shredded paper	0.70%	145
Other (ferrous metal)	0.69%	143
Newspapers	0.68%	141
Magazines	0.67%	139
Brown glass bottles	0.57%	118
Shoes	0.55%	114
Small electrical goods	0.51%	106
Carpet and underlay	0.51%	106
Other (hazardous)	0.36%	75
Cans	0.30%	62
Large electrical goods	0.29%	60
Refuse sacks	0.28%	58
Aerosols	0.15%	31
Aerosols	0.14%	29
Household batteries	0.05%	10
Other (non ferrous)	0.03%	6
Books	0.01%	2

FHDC		
Category	**Modelled average percentage**	**Tonnes per annum**
Non-Home compostable kitchen waste	17.46%	2012
Home compostable kitchen waste	9.52%	1097
Non-compostable other organic	8.92%	1028
All other films	5.31%	612
Other (misc combustibles)	4.94%	569
Card	4.16%	479
Fines	3.99%	460
Other non-recyclable	3.82%	440
Disposable nappies / sanitary	3.69%	425
Other dense plastic	3.54%	408
Textiles	3.11%	358
Recyclable dense plastic	3.01%	347
Plastic bottles	2.99%	345
Clear glass bottles	2.41%	278
Carrier bags	2.39%	275
Glass jars	2.04%	235
Liquid cartons	1.43%	165
Garden Waste	1.32%	152
Refuse sacks	1.23%	142
Wood	1.20%	138
Other (Ferrous)	1.16%	134
Other recyclable	1.07%	123
Cans	1.05%	121
Other (Harzardous)	1.05%	121
Small electrical goods	1.00%	115
Newspapers	0.95%	109
Magazines	0.95%	109
Brown glass bottles	0.80%	92
Aluminium foil	0.76%	88
Gypsum based waste	0.72%	83
Green glass bottles	0.63%	73
Shoes	0.43%	50
Aerosols	0.43%	50
Aerosols	0.42%	48
Shredded paper	0.36%	41
Advertising Flyers and Junk Mail	0.20%	23
Other (misc non combustibles)	0.19%	22
Cans	0.15%	17
Carpet and underlay	0.14%	16
Car batteries	0.06%	7
Household batteries	0.05%	6
Books	0.01%	1
Identifiable clinical waste	0.01%	1

Light bulbs	0.01%	2
Advertising Flyers and Junk Mail	0.00%	0
Other glass	0.00%	0
Fridges and Freezers	0.00%	0
CRTs	0.00%	0
Mobile phones	0.00%	0
Car batteries	0.00%	0
Identifiable clinical waste	0.00%	0
Engine oil	0.00%	0
Furniture	0.00%	0
Gypsum based waste	0.00%	0
Liquids	0.00%	0
Soil	0.00%	0
Total (tonnes)		**20,694**

Construction and demolition	0.01%	1
Other (non ferrous)	0.00%	0
Other glass	0.00%	0
Fridges and Freezers	0.00%	0
Large electrical goods	0.00%	0
CRTs	0.00%	0
Mobile phones	0.00%	0
Light bulbs	0.00%	0
Engine oil	0.00%	0
Furniture	0.00%	0
Liquids	0.00%	0
Soil	0.00%	0
Potentially compostable other organic	0.00%	0
Total		**11,419**