

Table 1 –Bracknell Forest’s Waste Composition (based on 2013/14 waste)

Materials	Tonnes	% of total waste
Residual *	29915	59.65%
Garden waste (k/s)	4777	9.53%
Garden waste (HWRC)	2850	5.68%
Card (kerbside)	1912	3.81%
Card (HWRC)	392	0.78%
schools paper	230	0.46%
Paper	3210	6.40%
Plastic bottles	230	0.46%
Tins, cans and aerosols	220	0.44%
Small WEEE (k/s)	13	0.03%
Small WEEE (HWRC)	333	0.66%
Glass	2481	4.95%
Textiles and shoes	318	0.63%
Books and Media	88	0.18%
Cartons	18	0.04%
Reusable household items (furniture and small items)	5	0.01%
Mobile phones	0.15	0.00%
Printer cartridges	0.15	0.00%
Water filters	0.15	0.00%
Scrap metal	459	0.92%
Wood	1892	3.77%
Large WEEE	96	0.19%
Monitors (WEEE)	141	0.28%
Fridges/freezers	95	0.19%
Oil	14	0.03%
Fluorescent tubes	1	0.00%
Paint/chemicals	35	0.07%
Tyres	14	0.03%
Car batteries	20	0.04%
HH batteries	2	0.00%
Gas bottles	4	0.01%
soil	357	0.71%
Clinical waste	15	0.03%
asbestos	14	0.03%
<b>TOTAL</b>	<b>50151.45</b>	<b>100.00%</b>

\*Kerbside residual waste composition in Table 2, kerbside residual accounts for 21209 tonnes of the total residual

Table 2 – Kerbside residual waste composition (2014)

Materials		% concentration		tonnes
PAPER	NEWSPAPERS, MAGAZINES, BROCHURES & CATALOGUES.	1.04%	5.79%	221.0
	JUNK MAIL, OFFICE PAPER, ENVELOPES	0.87%		184.2
	YELLOW & WHITE DIRECTORIES	0.25%		52.9
	SHREDDED PAPER	0.08%		16.3
	NON RECYCLABLE PAPER – TISSUE, WALLPAPER, GREASEPROOF, SHINY WRAPPING	3.56%		754.2
CARD & CARDBOARD	TETRAPAK CARTONS	0.35%	2.81%	74.5
	CORRUGATED CARDBOARD	0.32%		68.0
	THIN PACKAGING CARD	1.03%		219.2
	GREETINGS CARDS, EGG BOXES & TOILET TUBES	0.08%		17.6
	BOOKS	0.13%		28.2
	NON RECYCLABLE CARD	0.89%		188.1
PLASTIC FILM	PACKAGING FILM	3.86%	6.32%	819.1
	SUPERMARKET CARRIER BAGS	0.93%		196.6
	OTHER CARRIER BAGS	0.50%		106.4
	PLASTIC FLOW WRAP ENVELOPES	0.01%		2.2
	OTHER FORMS OF NON PACKAGING WRAP AND FILM	0.06%		12.0
	REFUSE / RECYCLING SACKS	0.96%		203.4
DENSE PLASTIC	PET BOTTLES - TYPE 1	0.58%	7.39%	122.6
	HDPE BOTTLES - TYPE 2	0.23%		49.3
	VINYL BOTTLES - TYPE 3	0.03%		6.8
	OTHER PLASTIC BOTTLE TYPES	0.03%		6.6
	POLYSTYRENE / PACKING FOAM	0.15%		30.9
	PLASTIC FOOD TUBS, POTS	0.85%		180.4
	PLASTIC FOOD TRAYS	2.63%		558.7
	OTHER PLASTIC PACKAGING	1.19%		252.3
TEXTILES	OTHER DENSE PLASTIC	1.69%	3.82%	358.7
	REUSABLE CLOTHING	1.50%		318.4
	SHEETS, LINEN, CURTAINS & MATERIAL	0.10%		21.1
	HANDBAGS, BELTS & ACCESSORIES	0.48%		100.8
	PAIRS OF SHOES	0.78%		165.4
	SOFT TOYS, PILLOWS, DUVETS, CUSHIONS	0.12%		25.6
MISC COMBUSTIBLES	RAGS, BLANKETS & TOWELS	0.85%	16.39%	179.9
	UNCLASSIFIED	4.00%		848.2
	DISPOSABLE NAPPIES	6.31%		1339.1
	TREATED WOOD	0.70%		148.9
	UNTREATED WOOD	0.01%		1.3
	CARPET, UNDERLAY & FLOORING	0.64%		135.5

Materials		% concentration		tonnes
	DIY WASTE (ROOF FELT, LAGGING ETC)	0.55%		116.8
	ANIMAL WASTE / PET LITTER	4.18%		886.2
MISC NON-COMBUSTIBLES	DIY RUBBLE & CERAMICS	2.74%	3.29%	581.8
	CEMENT / GRAVEL / PLASTERBOARD	0.55%		116.5
	UNCLASSIFIED	0.00%		0.0
GLASS	GREEN GLASS	0.77%	5.78%	162.9
	BROWN, BLUE, RED GLASS	1.37%		291.1
	CLEAR BOTTLES	1.80%		380.8
	CLEAR JARS	1.21%		257.2
	OTHER NON PACKAGING GLASS	0.63%		133.7
FERROUS METAL	FOOD TINS & CANS	0.42%	1.14%	90.0
	DRINK CANS	0.03%		5.5
	AEROSOLS	0.09%		18.4
	OTHER FERROUS PACKAGING	0.10%		22.2
	OTHER FERROUS	0.50%		105.0
NON-FERROUS METAL	FOOD TINS & CANS	0.05%	0.78%	11.3
	DRINK CANS	0.14%		28.7
	AEROSOLS	0.08%		17.2
	ALUMINIUM FOIL AND FOOD TRAYS	0.47%		100.5
	OTHER NON- FERROUS	0.03%		7.1
GARDEN WASTE	GARDEN CLIPPINGS & PRUNINGS	4.30%	4.81%	912.5
	SOIL & TURF	0.50%		106.8
PUTRESCIBLES	HOME COMPOSTABLE FOOD WASTE	15.83%	39.61%	3358.1
	NON HOME COMPOSTABLE FOOD WASTE	20.23%		4290.9
	CONSUMABLE LIQUIDS	0.90%		189.8
	INSEPARABLE INC STRAW / SAWDUST PET BEDDING	2.65%		562.5
FINES	SWEEPINGS < 10mm	0.85%	0.85%	180.0
HHW	LIST ALL	0.12%	0.12%	26.4
WEEE	LIST ALL	1.11%	0.97%	234.9
TOTAL		100%	100%	21209.0

Table 3 – Review of how materials are collected and the costs

collection method	materials	total tonnes	Total cost of collection per annum £	Total cost of disposal per annum £	Income for recycle per annum £
Kerbside residual	Residual kerbside	21209	850,000	5.95 million (total disposal contract cost, includes all waste disposal, processing and recovery costs, HWRC running costs, bring bank collection costs)	0
Kerbside co-mingled recycling	Card (kerbside)	5802	850,000 - split body vehicle for recycling and garden waste		0
	Paper				
	Plastic bottles				
	Tins, cans and aerosols				
Kerbside garden waste	Garden waste (k/s)	4777	0		
Kerbside clinical	Clinical waste	15	26,239		0
Kerbside bulky	Residual and WEEE	138	9,111		0
Litter and street sweepings	Residual	2117	1.2 million (whole cleansing contract cost))		0
Bring banks	Glass	2493	included in disposal contract cost		0
	Textiles and shoes				
	Books and Media				
	Cartons				
HWRC	Garden waste, card, small WEEE, glass, textiles and shoes, books and media, cartons, reusable household items, mobile phones, printer cartridges, water filters, scrap metal, wood, large WEEE, monitors, fridge/freezers, oil, flourescent tubes, paint/chemicals, tyres, car batteries, household batteries, gas bottles, soil, asbestos, residual (HWRC)	13600	included in disposal contract cost	0	

Table 4 – Materials collected separately or co-mingled

Materials	Collection method	Tonnes	Collected separate from residual	Collected separate from other recycling	Collected in sub streams
Residual *	Kerbside/HWRC	29915	NA	Y	N
Garden waste (k/s)	Kerbside	4777	Y	Y	N
Garden waste (HWRC)	HWRC	2850	Y	Y	N
Card (kerbside)	Kerbside	1912	Y	N	N
Card (HWRC)	HWRC	392	Y	Y	N
Paper	Kerbside	3440	Y	N	N
Plastic bottles	Kerbside	230	Y	N	N
Tins, cans and aerosols	Kerbside	220	Y	N	N
Small WEEE (k/s)	Kerbside	13	Y	Y	N
Small WEEE (HWRC)	HWRC	333	Y	Y	N
Glass	Bring/HWRC	2481	Y	Y	Y colour separated
Textiles and shoes	Bring/HWRC	318	Y	Y	N
Books and Media	Bring/HWRC	88	Y	Y	N
Cartons	Bring/HWRC	18	Y	Y	N
Reusable household items (furniture and small items)	HWRC	5	Y	Y	N
Mobile phones	HWRC	0.15	Y	Y	N
Printer cartridges	HWRC	0.15	Y	Y	N
Water filters	HWRC	0.15	Y	Y	N
Scrap metal	HWRC	459	Y	Y	N
Wood	HWRC	1892	Y	Y	N
Large WEEE	HWRC	96	Y	Y	N
Monitors (WEEE)	HWRC	141	Y	Y	N
Fridges/freezers	HWRC	95	Y	Y	N
Oil	HWRC	14	Y	Y	N
Fluorescent tubes	HWRC	1	Y	Y	N
Paint/chemicals	HWRC	35	Y	Y	Y paint/chemical
Tyres	HWRC	14	Y	Y	N
Car batteries	HWRC	20	Y	Y	N
HH batteries	HWRC	2	Y	Y	N
Gas bottles	HWRC	4	Y	Y	N
soil	HWRC	357	Y	Y	N
Clinical waste	Kerbside	15	Y	Y	Y hazardous/ non hazardous
asbestos	HWRC	14	Y	Y	N

Table 5 – Application of Waste Hierarchy

Materials Collected	Recycling, treatment or disposal route	Where on the hierarchy is this?	Is there a better option?	Any measures being used to improve level of hierarchy
Residual *	16,000 tonnes to Energy from waste, rest landfill	Recovery and Disposal	Increase recycling, reuse and minimisation	<p>We have an ongoing aim to improve the way the waste is managed, the ultimate aim to minimise and prevent waste as much as possible, measures in place to help this are:</p> <ul style="list-style-type: none"> <li>• School talks and activities</li> <li>• Regulars communications with residents; leaflets, bin hangers, stickers, website, press releases, roadshows.</li> <li>• Contract clauses for improvements in collection methods for waste collection and street cleansing contracts.</li> <li>• Incentive scheme for kerbside recycling that includes flats.</li> <li>• Recycling on the go bins around the borough.</li> <li>• Home composting promoted and composters available for reduced price.</li> <li>• Small electrical recycling days – these are carried out twice a year at 2 local sports centres and we invite residents to bring small electricals to us for recycling.</li> <li>• Contamination education and action from waste collectors to improve quality of kerbside collected recycling.</li> <li>• Through the waste disposal contract there is a community repaint scheme that reuses paint taken to the HWRC.</li> <li>• Furniture reuse is promoted both by the website, by customer services when residents call up for a bulky collection and furniture is put to one side for reuse from the HWRC.</li> <li>• Someone from the waste team is consulted on new</li> </ul>
Garden waste (k/s)	Composting	Recycling	Home composting	
Garden waste (HWRC)	Composting	Recycling	Home composting	
Card (kerbside)	MRF	Recycling	prevention	
Card (HWRC)	Reprocessing	Recycling	prevention	
Paper	MRF	Recycling	prevention	
Plastic bottles	MRF	Recycling	prevention	
Tins, cans and aerosols	MRF	Recycling	prevention	
Small WEEE (k/s)	Reprocessing	Recycling	Reuse and prevention	
Small WEEE (HWRC)	Reprocessing	Recycling	Reuse and prevention	
Glass	Reprocessing	Recycling	prevention	
Textiles and shoes	Reprocessing	Recycling	Reuse and prevention	
Books and Media	Reprocessing	Recycling	Reuse and prevention	
Cartons	Reprocessing	Recycling	prevention	
Reusable household items (furniture and small items)	Taken by charity	Reuse	prevention	
Mobile phones	Reprocessing	Recycling	prevention	
Printer cartridges	Reprocessing	Recycling	prevention	
Water filters	Reprocessing	Recycling	prevention	
Scrap metal	Reprocessing	Recycling	prevention	

Materials Collected	Recycling, treatment or disposal route	Where on the hierarchy is this?	Is there a better option?	Any measures being used to improve level of hierarchy
Wood	EfW	Recovery	Recycling	<p>planning applications to ensure that adequate waste management facilities are provided at new developments.</p> <ul style="list-style-type: none"> <li>• When new residents move in they receive information about the waste and recycling service in Bracknell Forest.</li> <li>• We accept excess recycling from the kerbside but operate a strict lid closed policy for refuse.</li> </ul>
Large WEEE	Reprocessing	Recycling	Reuse and prevention	
Monitors (WEEE)	Reprocessing	Recycling	Reuse and prevention	
Fridges/freezers	Reprocessing	Recycling	Reuse and prevention	
Oil	Reprocessing	Recycling	prevention	
Fluorescent tubes	Reprocessing	Recycling	prevention	
Paint/chemicals	Reprocessing and Reuse by local community interest company	Recycling and reuse	prevention	
Tyres	Reprocessing	Recycling	prevention	
Car batteries	Reprocessing	Recycling	prevention	
HH batteries	Reprocessing	Recycling	prevention	
Gas bottles	Reprocessing	Recycling	Reuse and prevention	
soil	Beneficial use	Reuse	prevention	
Clinical waste	EfW	Recovery	NA	
asbestos	Hazardous landfill	Disposal	NA	

Table 6 – MRF output assessment

<b>Composition of MRF Inputs</b>	<b>%</b>
MRF Rejects	23.07%
Card	7.17%
Paper	58.37%
Steel Cans	4.07%
Aluminium Cans	1.13%
Plastic Bottles	6.02%
Scrap Metal	0.16%
<b>TOTALS</b>	<b>100.00%</b>

<b>Composition of MRF Outputs (Product)</b>	<b>%</b>
Card	9.32%
Paper	75.88%
Steel Cans	5.30%
Aluminium Cans	1.47%
Plastic Bottles	7.83%
Scrap Metal	0.21%
<b>TOTALS</b>	<b>100.00%</b>

<b>Reprocessor Process Losses</b>	<b>% of sent</b>
Card	0.60%
Paper	1.00%
Steel Cans	15.00%
Aluminium Cans	2.22%
Plastic Bottles	2.00%
Scrap Metal	0.00%
<b>TOTALS</b>	<b>1.80%</b>



Table 7 – Is separate collection required?

Materials Collected	Separately collected	Result
Glass	Yes at local recycling sites and the HWRC	Likely to be compliant - In collected residual waste only 5% is glass so this shows many residents are using the bring sites provided and there is a good capture rate. Quality of glass collected is very high as it is colour separated and not mixed with any other waste.
Scrap Metal	Yes at HWRC	Likely to be compliant - Scrap metal is collected separately at the HWRC. Less than 1% of collected residual waste is scrap metal.
Mixed plastics	No – mixed with residual	Apply Necessity and Practicability tests
Plastic bottles	No – comingled dry recycling collection	
Paper and card	No – comingled dry recycling collection	
Tins, cans and aerosols	No – comingled dry recycling collection	

Table 8 – The Necessity Test

Materials Collected	Will separate collection increase quality or quantity of material collected?
Mixed plastics	Yes – currently the mixed plastics are not collected for recycling so they are in the kerbside residual waste.
Plastic bottles	No - separate collection wouldn't cause an increase or quality or quantity. <ul style="list-style-type: none"> <li>The MRF output assessment proves quality is good.</li> <li>Quantity is likely to increase through the communications described in table 5 however a separate collection is not required to do this.</li> </ul>
Paper and Card	No - separate collection wouldn't cause an increase or quality or quantity. <ul style="list-style-type: none"> <li>The MRF output assessment proves quality is good.</li> <li>Quantity is likely to increase through the communications described in table 5 however a separate collection is not required to do this.</li> </ul>
Tins, cans and aerosols	No - separate collection wouldn't cause an increase or quality or quantity. <ul style="list-style-type: none"> <li>The MRF output assessment proves quality is good.</li> <li>Quantity is likely to increase through the communications described in table 5 however a separate collection is not required to do this.</li> </ul>

Table 9 – The Practicability Test (TEEP Test)

**Mixed Plastics**Technically Practicable

<b>positive</b>	<b>negative</b>
<ul style="list-style-type: none"> <li>There are other local authorities that collect mixed plastics for recycling.</li> </ul>	<ul style="list-style-type: none"> <li>Not always a reliable market for the product found, so often ends up going to Energy from Waste which is where majority of our kerbside refuse goes anyway.</li> <li>Around half of the borough is large estates built as part of the Bracknell new town; the terrace properties typical of these areas have no rear garden access and very little storage space at the front of the property so another container for a new recycling material would cause storage issues for large areas of the borough.</li> <li>Along with the storage issue there are also issues with bin collection points on bin day, there are many areas of the borough where up to 20 properties bring their wheeled bins to a central location on collection day, as it is this causes an obstruction on bin day.</li> </ul>

Environmentally Practicable

<b>positive</b>	<b>negative</b>
<ul style="list-style-type: none"> <li>Could take a step up the waste hierarchy by recycling mixed plastics.</li> </ul>	<ul style="list-style-type: none"> <li>75% of residual waste collected at kerbside goes to EfW, the plastic element of this gives the waste a high energy value.</li> <li>Would need more vehicles; which in turn means more fuel use, more emissions, more vehicles passing each property so more noise impact.</li> <li>More container provision has a negative environmental effect; the impact of manufacturing, container delivery and replacements and repairs.</li> </ul>

Economically Practicable

<b>positive</b>	<b>negative</b>
<ul style="list-style-type: none"> <li>Recycling could be cheaper than EfW for mixed plastics.</li> </ul>	<ul style="list-style-type: none"> <li>Disposal contractor has already investigated finding an outlet and couldn't find a stable one so there would be a lack of financial stability.</li> <li>New containers required for residents.</li> <li>New vehicles required for collection.</li> <li>Variations to both the collection and disposal contracts.</li> <li>Joint contract for disposal so any changes have to be agreed with Wokingham and Reading Borough Councils.</li> </ul>

**Plastic bottles****Technically Practicable**

<b>positive</b>	<b>negative</b>
<ul style="list-style-type: none"> <li>Used to have a 2 stream recycling collection, plastic bottles collected with tins, cans and aerosols so that was more separation than current comingled in wheeled bin.</li> </ul>	<ul style="list-style-type: none"> <li>Around half of the borough is large estates built as part of the Bracknell new town; the terrace properties typical of these areas have no rear garden access and very little storage space at the front of the property so another container for a new recycling material would cause storage issues for large areas of the borough.</li> <li>Along with the storage issue there are also issues with bin collection points on bin day, there are many areas of the borough where up to 20 properties bring their wheeled bins to a central location on collection day, as it is this causes an obstruction on bin day.</li> </ul>

**Environmentally Practicable**

<b>positive</b>	<b>negative</b>
<ul style="list-style-type: none"> <li>No need for MRF sorting so less energy use.</li> </ul>	<ul style="list-style-type: none"> <li>Would need more vehicles; more emissions, more vehicles passing each property so more noise impact.</li> <li>Already got good capture rate that has improved since comingled collections begun, so removal of the wheeled bins could see the capture rate decrease.</li> <li>Good quality plastic bottle product from MRF with a very low reject from the reprocessor</li> <li>The MRF sorts the bottles out into different types – if wanted to keep this degree of separation up then the MRF would be needed still so if a kerbside sort scheme was used the bottles would be handled twice, once by crews and again at the MRF.</li> <li>To do kerbside sort would need to replace wheeled bins and so collect and dispose of them.</li> <li>In the place of the wheeled bins new containers would need to be provided so this has a negative environmental effect; the impact of manufacturing and container delivery.</li> </ul>

**Economically Practicable**

<b>positive</b>	<b>negative</b>
	<ul style="list-style-type: none"> <li>New containers required for residents</li> <li>New vehicles required for collection</li> <li>Variations to both the collection and disposal contracts</li> <li>Joint contract for disposal so any changes have to be agreed with Wokingham and Reading Borough Councils.</li> </ul>

**Paper and card****Technically Practicable**

<b>positive</b>	<b>negative</b>
<ul style="list-style-type: none"> <li>Used to have a 2 stream recycling collection, at this time card and paper was collected in a kerbside box.</li> </ul>	<ul style="list-style-type: none"> <li>Around half of the borough is large estates built as part of the Bracknell new town; the terrace properties typical of these areas have no rear garden access and very little storage space at the front of the property so another container for a new recycling material would cause storage issues for large areas of the borough.</li> <li>Along with the storage issue there are also issues with bin collection points on bin day, there are many areas of the borough where up to 20 properties bring their wheeled bins to a central location on collection day, as it is this causes an obstruction on bin day.</li> </ul>

**Environmentally Practicable**

<b>positive</b>	<b>negative</b>
<ul style="list-style-type: none"> <li>No need for MRF sorting so less energy use</li> </ul>	<ul style="list-style-type: none"> <li>Would need more vehicles; more emissions, more vehicles passing each property so more noise impact.</li> <li>To do kerbside sort would need to replace wheeled bins and so collect and dispose of them all.</li> <li>Got a better capture rate with current comingled system compared to previously used 2 stream – some of this down to capacity of the bin compared to using a bag or box.</li> <li>Good quality products from MRF with a very low reject from the reprocessor so nothing to be gained in product quality.</li> <li>The MRF sorts the paper and card out into different types – if wanted to keep this degree of separation up then the MRF would be needed still so if a kerbside sort scheme was used the paper/card would be sorted twice, once by crews and again at the MRF.</li> </ul>

**Economically Practicable**

<b>positive</b>	<b>negative</b>
	<ul style="list-style-type: none"> <li>New containers required for residents</li> <li>New vehicles required for collection</li> <li>Variations to both the collection and disposal contracts</li> <li>Joint contract for disposal so any changes have to be agreed with Wokingham and Reading Borough Councils.</li> </ul>

**Tins, cans and aerosols****Technically Practicable**

<b>positive</b>	<b>negative</b>
<ul style="list-style-type: none"> <li>Used to have a 2 stream recycling collection, plastic bottles collected with tins, cans and aerosols</li> </ul>	<ul style="list-style-type: none"> <li>Around half of the borough is large estates built as part of the Bracknell new town, the terrace properties typical of these areas have no rear garden access and very little storage space at the front of the property so another container for a new recycling material would cause storage issues for large areas of the borough.</li> <li>Along with the storage issue there are also issues with bin collection points on bin day, there are many areas of the borough where up to 20 properties bring their wheeled bins to a central location on collection day, as it is this causes an obstruction on bin day.</li> </ul>

**Environmentally Practicable**

<b>positive</b>	<b>negative</b>
<ul style="list-style-type: none"> <li>No need for MRF sorting so less energy use</li> </ul>	<ul style="list-style-type: none"> <li>Would need more vehicles; more emissions, more vehicles passing each property so more noise impact.</li> <li>To do kerbside sort would need to replace wheeled bins and so collect and dispose of them all.</li> <li>Got a better capture rate with current comingled system compared to previously used 2 stream – some of this down to capacity of the bin compared to using a bag or box.</li> <li>Good quality products from MRF with a very low reject from the reprocessor so nothing to be gained in product quality.</li> <li>The MRF sorts the tins, cans and aerosols out into steel and aluminium, so the MRF would be needed even if a kerbside sort scheme was used so the recycling would be sorted twice, once by crews and again at the MRF.</li> </ul>

**Economically Practicable**

<b>positive</b>	<b>negative</b>
	<ul style="list-style-type: none"> <li>New containers required for residents</li> <li>New vehicles required for collection</li> <li>Variations to both the collection and disposal contracts</li> <li>Joint contract for disposal so any changes have to be agreed with Wokingham and Reading Borough Councils.</li> </ul>

Table 10: TEEP test summary of findings

<b>Materials Collected</b>	<b>Separate Collection Technically practicable</b>	<b>Separate Collection Environmentally practicable?</b>	<b>Separate Collection Economically practicable?</b>
Mixed plastics	No	No	No
Plastic bottles	No	No	No
Paper and Card	No	No	No
Tins, cans and aerosols	No	No	No