

Warwickshire Waste Partnership

15th June 2016

Waste Composition Analysis

Recommendations

- (1) The Waste Partnership is asked to note the overview of the recent kerbside and HWRC waste composition analysis.

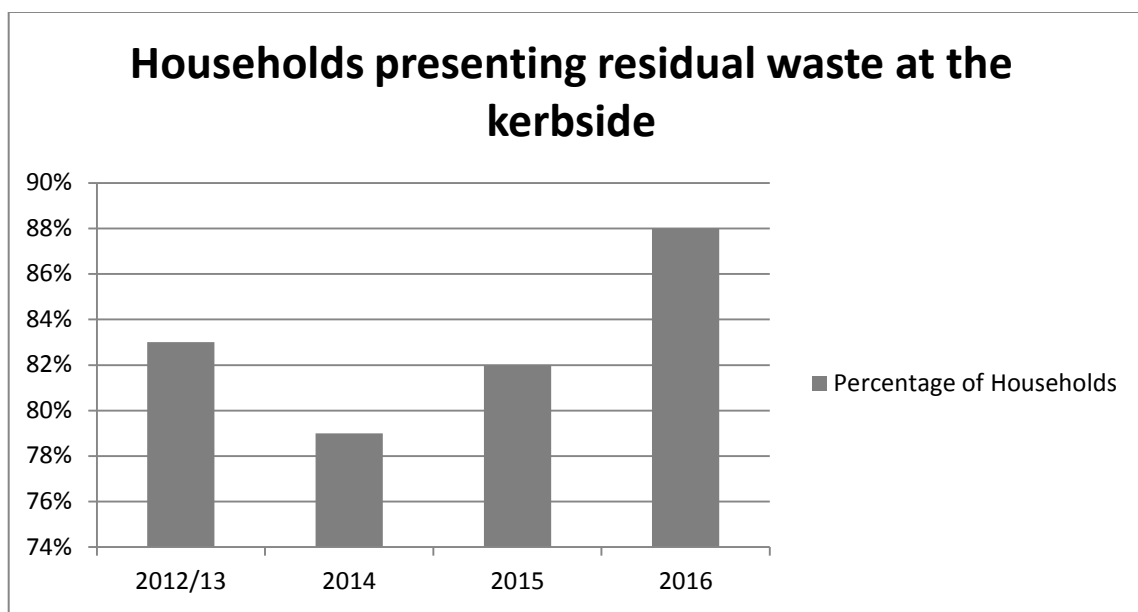
1.0 Background

- 1.1 Warwickshire County Council commissioned a waste composition analysis to take place during a three week period in February/March 2016 (spring 2016) on behalf of the Partnership.
- 1.2 The analysis replicated the waste composition surveys previously undertaken in order to provide comparable results.
- 1.3 The same households were surveyed during each waste analysis where possible. The households were selected using Mosaic demographic profiles; so that results from each survey could be weighted to provide an annual picture of the residual waste being collected within individual Waste Collection Authority's (WCAs), as well as across the County.
- 1.4 The latest survey, focused on the weight and composition of
- kerbside residual waste containers
 - kerbside organic/green recycling containers
 - HWRC residual waste containers
- 1.5 The data was split into primary categories and sub categories which are shown in Appendix 1.
- 1.6 The key aim of the waste composition analysis is to understand the waste composition in Warwickshire and to provide information which could be used by the Partnership when planning future services and campaigns etc.

2.0 Residual Kerbside Analysis

- 2.1 Where recorded, an average of 88% of households presented residual waste bins at the kerbside for collection in 2016. Graph 1 shows the percentage of households presenting their residual waste at the kerbside for each year of the waste composition.

Graph 1 Percentage of household presenting residual waste at the kerbside



- 2.2 In terms of kerbside residual waste generation, the waste composition data showed that households were setting out an average of 7.61 KG/HH/WK for direct collection in 2016, this is an increase on the average KG/HH/WK estimated in the previous survey.

When looking at KG/HH/WK of kerbside residual waste in Warwickshire it is best to use actual tonnage data, since the composition data is only a snapshot of a particular month/sample of households.

The data in table 1 below shows the estimated average of kerbside residual waste data (KG/HH/WK) for each year using the waste composition results, alongside the actual kerbside residual waste tonnages (KG/HH/WK) worked out using WCC tonnage data. When looking at the actual KG/HH/WK it shows an increase in kerbside residual waste of only 0.86% since 2012/13.

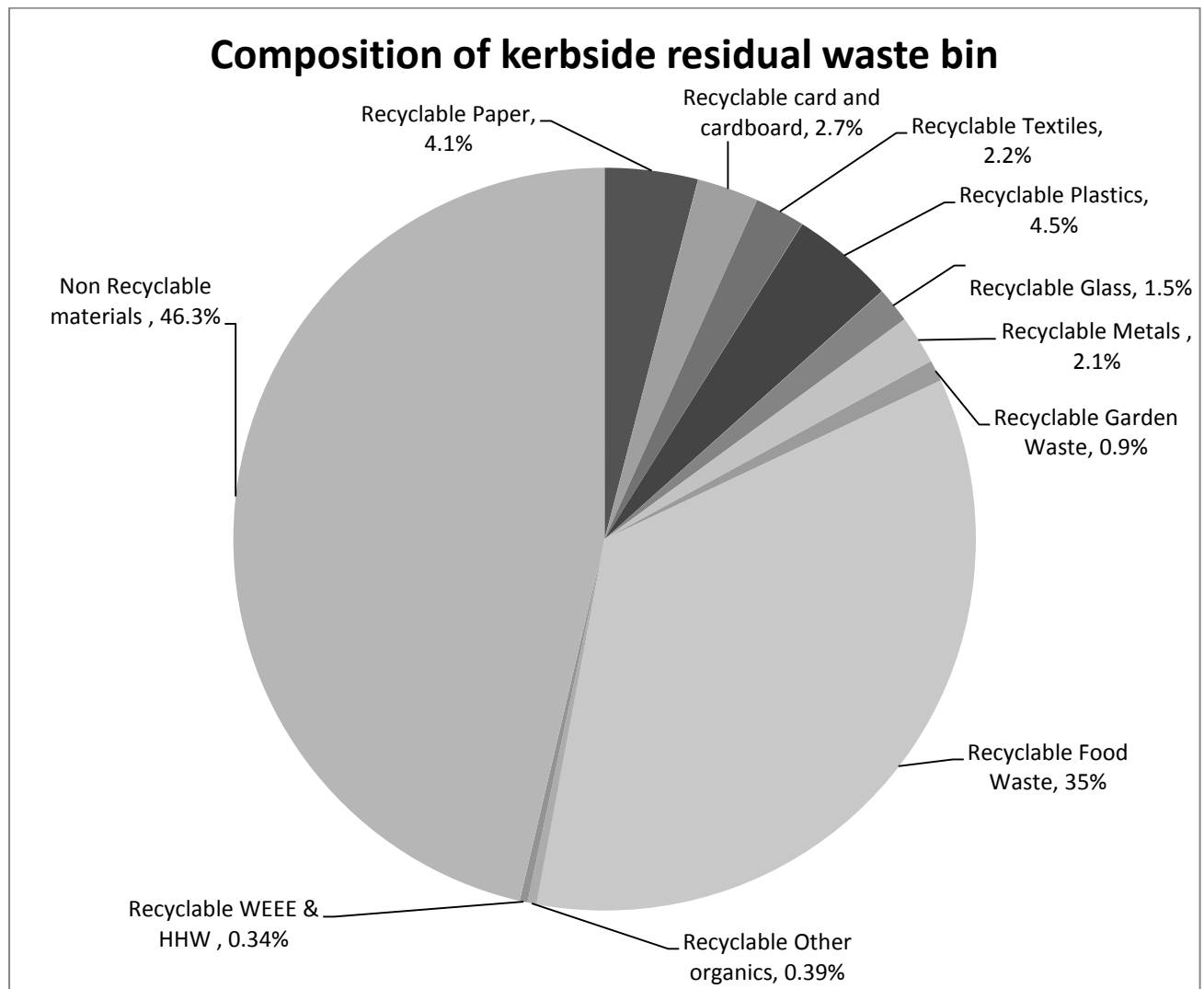
Table 1 Kerbside residual waste data (KG/HH/WK)

	2012/13	2013/14	2014/15	2015/16
Waste composition data KG/HH/WK	7.68	7.51	5.94	7.61
Actual data KG/HH/WK	8.07	8.13	8.15	8.14

2.3 Waste composition of the kerbside residual waste bin

Graph 2 below shows the composition of Warwickshire's kerbside residual waste bin showing the percentage of waste that could be recycled using the current kerbside system. This shows that 53.68% of the residual bin is recyclable while 46.32% is non-recyclable¹. If all of the waste collection authorities collected the full range of materials (currently recycled by at least one authority) this figure would increase to 57.78% that could be recycled.

Graph 2 Composition of the kerbside residual waste bin



2.4 Organics and Food within Residual Waste

The waste composition data shows that food waste continues to be the major recyclable component of the kerbside residual waste in Warwickshire.

¹ This assumes that all households have access to all of the recycling infrastructure and services provided within each waste collection authority area.

Table 2 and Graph 3 show the KG/HH/WK of food waste in the kerbside residual bin for each year of the waste composition. This shows that overall since 2012/13 the total amount has reduced by 7.8% since 2012/13, with a slight rise over the last year in comparison with 2014/15.

Table 2 Recyclable food waste in the kerbside residual bin

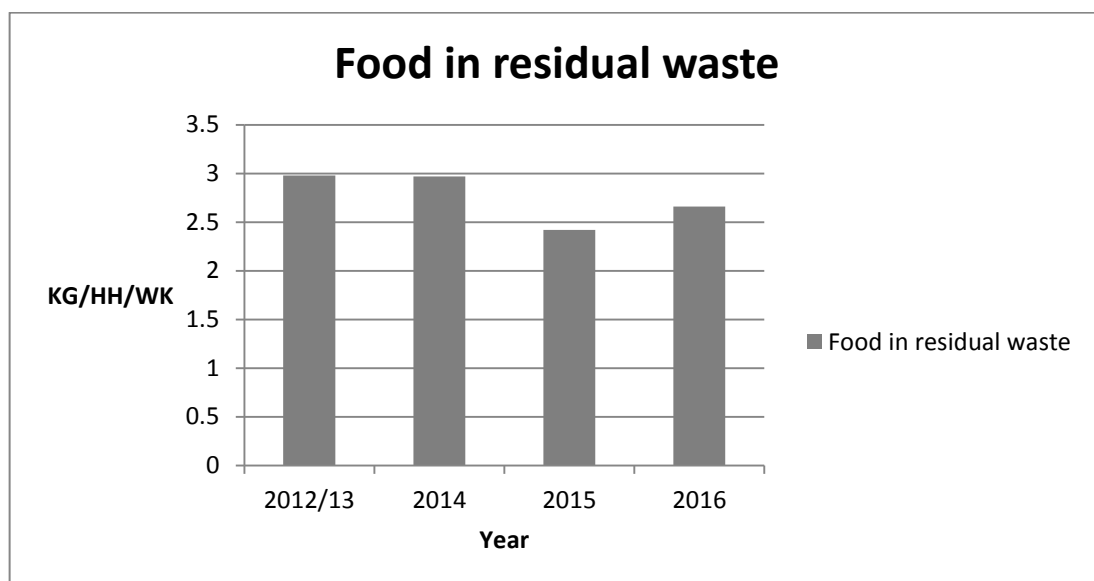
	2012/13	2013/14	2014/15	2015/16
Food waste KG/HH/WK	2.98	2.97	2.42	2.66

The lower volume of food waste KG/HH/WK in 2014/15 mirrors the overall tonnage decreases seen during that year's composition analysis (see Table 1) and thus forms part of the slightly erroneous results seen in 2015 (when compared with actual data).

The reduction in the 2014/15 year could also be partly due to the hugely successful on-line food waste competition which was carried out by the Partnership the month the waste composition took place, the competition had over 11,000 unique householder entries and 4,143 free packs of compostable caddy liners were posted out to Warwickshire residents. The competition was advertised in a number of ways including radio, but the most successful way was bin hangers/tags which were used in all but one waste collection authority area.

A second food waste competition was carried out this year during the month of March, this time the competition was not quite as popular (although there were still 5,329 entries).

Graph 3 KG/HH/WK of food waste in the kerbside residual waste bin



Up to 47% of the food waste in the residual waste is potentially home compostable in 2016. This equates to 16.4% of the total residual waste in 2016.

11.7% of all food waste in residual bins was still packaged in 2016; this is significantly higher than the previous year (when it was just 6.5%). The reason for this increase could be due to the fact that more non-packaged food is being correctly diverted to the organic bin, leaving a higher percentage of packaged food behind in the residual bin. Warwickshire County Council is carrying out market testing on potential campaigns, which could assist residents to shop smarter and reduce food waste.

1% of residual waste was found to be garden waste in 2016.

2.5 Paper

44% or 0.31 KG/HH/WK of all the paper in the kerbside residual bin was recyclable at the kerbside in 2016. This equates to 4.1% of the total residual waste in 2016.

Table 3 Recyclable paper in the kerbside residual bin

	2012/13	2013/14	2014/15	2015/16
Recyclable paper KG/HH/WK	0.39	0.33	0.23	0.31

2.6 Card / Cardboard

72.1% or 0.20 KG/HH/WK of the card/cardboard in the kerbside residual bin was recyclable at the kerbside. This equates to 2.7% of the total residual waste.

Table 4 Recyclable card / cardboard in the kerbside residual bin

	2012/13	2013/14	2014/15	2015/16
Recyclable card KG/HH/WK	0.22	0.22	0.19	0.20

2.7 Plastic

60% or 0.34 KG/HH/WK of plastics in the kerbside residual bin was recyclable at the kerbside. This equates to 4.5% of the residual waste.

Table 5 Plastics in the kerbside residual bin

	2012/13	2013/14	2014/15	2015/16
Recyclable plastic KG/HH/WK	0.33	0.25	0.26	0.34

2.8 Metal

69% or 0.16 KG/HH/WK of metallic waste in the kerbside residual bin was recyclable. This equates to 2.1% of the total residual waste.

There were slightly more recyclable food tins compared to drinks cans in the residual waste, this may be because they tend to require a degree of washing/rinsing before being placed into recycling containers and as such are often less well diverted than cleaner drinks cans.

Table 6 Recyclable metals in the kerbside residual bin

	2012/13	2013/14	2014/15	2015/16
Recyclable metal KG/HH/WK	0.14	0.11	0.11	0.16

2.8 Glass

78% or 0.12 KG/HH/WK of glass in the kerbside was recyclable. This equates to 1.5% of the total residual waste.

In all areas of the County the majority of the recyclable glass found within the residual waste was higher grade clear glass. Around 65% of the clear glass was due to jars as opposed to bottles. In the same way that food tins are often recycled less effectively than drink cans; jars often contain food or sauce and residents may choose not to rinse them for recycling.

Table 7 Recyclable glass in the kerbside residual bin

	2012/13	2013/14	2014/15	2015/16
Recyclable glass KG/HH/WK	0.15	0.13	0.13	0.12

2.9 Textiles

Textiles are able to be recycled at the kerbside within the following waste collection authority areas: NBBC, SDC and WDC.

If we include textiles (e.g. clothing and shoes) that are able to be reused at charity shops and bring banks, as well as those able to be recycled at the kerbside (and assume that textiles are able to be recycled in all five areas), it shows that 56% or 0.28 KG/HH/WK of the textiles within the residual bin could have been reused or recycled. This equates to 3.7% of the total residual waste in 2016 or 2.19% for textiles that can be recycled only.

Table 8 Recyclable textiles in the kerbside residual bin

	2012/13	2013/14	2014/15	2015/16
Reusable & Recyclable textiles KG/HH/WK	0.25	0.34	0.10	0.28

2.10 Hazardous Waste and Waste Electrical and Electronic Equipment (WEEE)

2.7% or 0.20 KG/HH/WK of the residual waste was deemed to be either Hazardous or WEEE in 2016. This equates to 0.34% of the total residual waste.

The hazardous waste included items such as phone batteries, paint, ink cartridges, lightbulbs and batteries.

The WEEE waste included items such as small appliances (toasters, hair dryer etc.), cables and leads, clocks, solar lights, plug in air fresheners, controllers).

Table 9 Recyclable Hazardous and WEEE in the kerbside residual bin

	2012/13	2013/14	2014/15	2015/16
HHW & WEEE KG/HH/WK	Not available	0.01	0.01	0.03

2.11 Disposable nappies and Absorbent Hygiene Products (AHP)

8.27% of the kerbside residual waste bin consisted of disposable nappies (6.65%) and AHP waste (1.62%) in 2016 – equivalent to 0.63 kg/hh/wk.

There were an additional 400 births for Warwickshire families in 2015/16 compared to the previous year and thus would explain the increase seen in nappies.

The increase in AHPs may be due to the work that the districts have been undertaking to remove this type of waste from the clinical waste stream.

Table 10 Disposable nappies and AHP in the kerbside residual bin

	2012/13	2013/14	2014/15	2015/16
Nappies KG/HH/WK	0.56	0.40	0.30	0.51
AHP KG/HH/WK	N/A	0.06	0.09	0.12

2.12 Summary for kerbside residual waste

Overall 53.7% of collected residual waste could have been recycled at the kerbside in 2016 – the equivalent of 4.08 kg/hh/wk.

Table 11 Recyclable kerbside residual waste (KG/HH/WK)

	2012/13	2013/14	2014/15	2015/16
Recyclable kerbside residual waste KG/HH/WK	3.62	4.34	3.48	4.08
Non-recyclable kerbside residual waste KG/HH/WK	4.06	3.17	2.46	3.53
Total residual waste KG/HH/WK	7.68	7.51	5.94	7.61

Table 12 Recyclable kerbside residual waste (%)

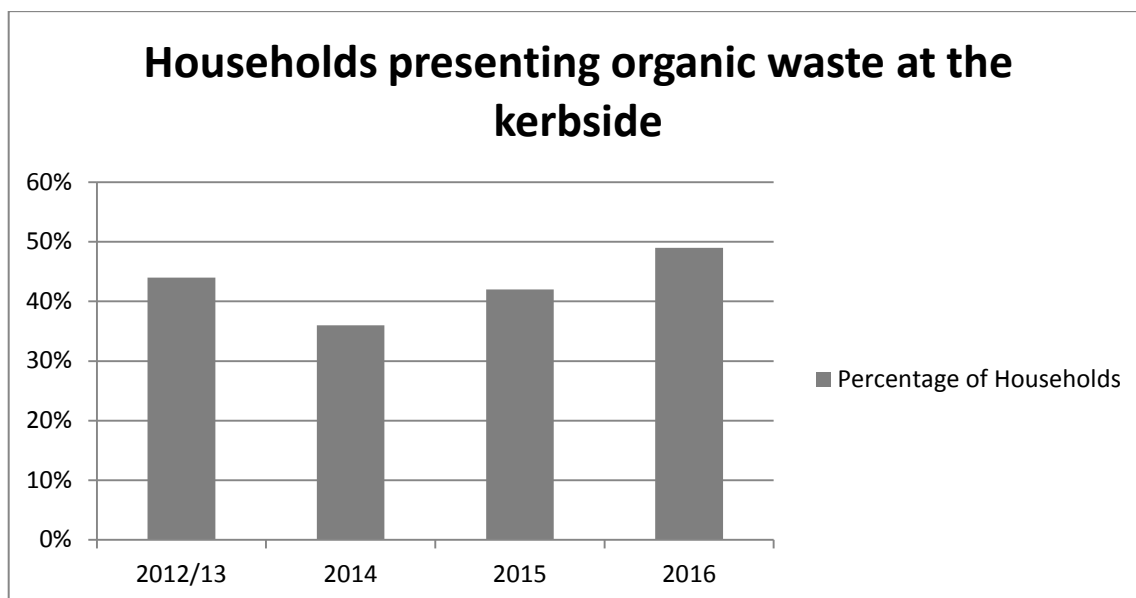
	2012/13	2013/14	2014/15	2015/16
Recyclable kerbside residual waste %	47.10%	57.86%	58.57%	53.68%
Non-recyclable kerbside residual waste %	52.90%	42.14%	41.43%	46.32%

86% of the waste within the residual bin that could have been recycled at the kerbside is made up of four main material types; food waste 65.1%, plastic 8.4%, paper 7.6%, and card/cardboard 5%.

3.0 Organic Kerbside Analysis

3.1 Where recorded, an average of 49% of households presented organic waste bins at the kerbside for collection in 2016. Graph 4 shows the percentage of household presenting their organic waste at the kerbside for each year of the waste composition.

Graph 4 Percentage of household presenting organic waste at the kerbside



3.2 In terms of kerbside organic waste generation only, the waste composition data showed that households were setting out an average of 4.60 KG/HH/WK for direct collection in 2016, this is an increase on the average KG/HH/WK estimated in the previous survey.

When looking at KG/HH/WK of kerbside residual waste in Warwickshire it is best to use actual tonnage data, since the composition data is only a snapshot of a particular month/sample of households.

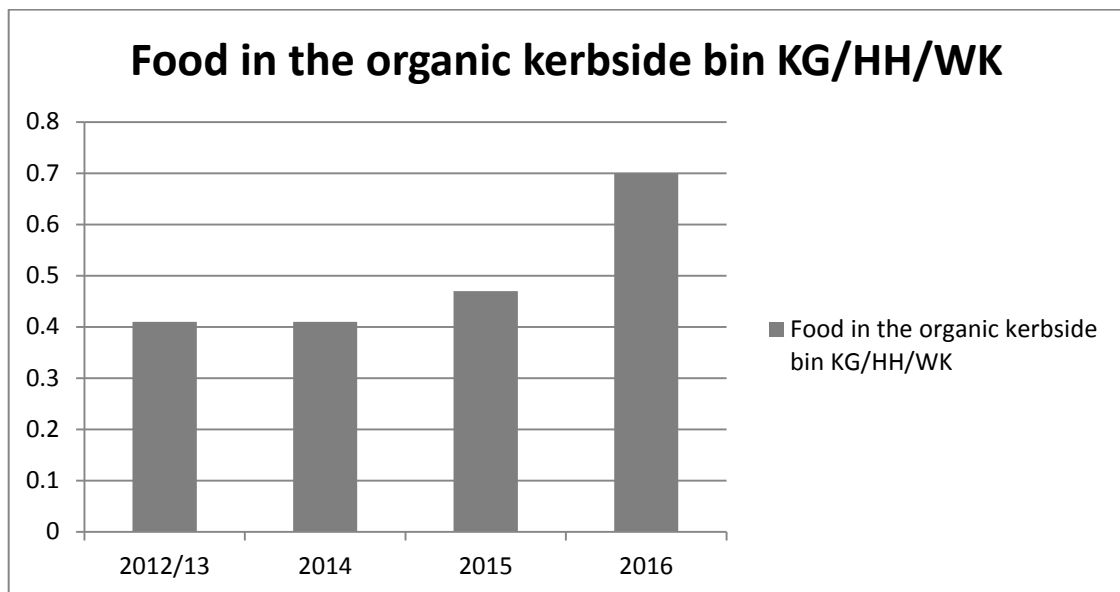
The data in table 11 below shows the estimated average of kerbside organic waste data (KG/HH/WK) for each year of the waste composition, along with the actual kerbside organic waste (KG/HH/WK) worked out using WCC tonnages. When looking at the actual KG/HH/WK it shows an increase in kerbside residual waste of 5.2% since 2012/13.

Table 13 Kerbside organic waste data (KG/HH/WK)

	2012/13	2013/14	2014/15	2015/16
Waste composition data KG/HH/WK	5.65	5.23	2.84	4.60
Actual data KG/HH/WK	4.66	4.70	5.05	4.90

- 3.3 The amount of food waste in the organic bin is 15.15% or 0.70 KG/HH/WK in 2016, this is an increase of 0.23 KG/HH/WK since 2015 or 0.29 KG/HH/WK since 2012/13 (an increase of 70%).

Graph 5 Food in the organic kerbside bin



0.44 KG/HH/WK of the food waste was home compostable in 2016; this is an increase on the amount within the bin in 2015.

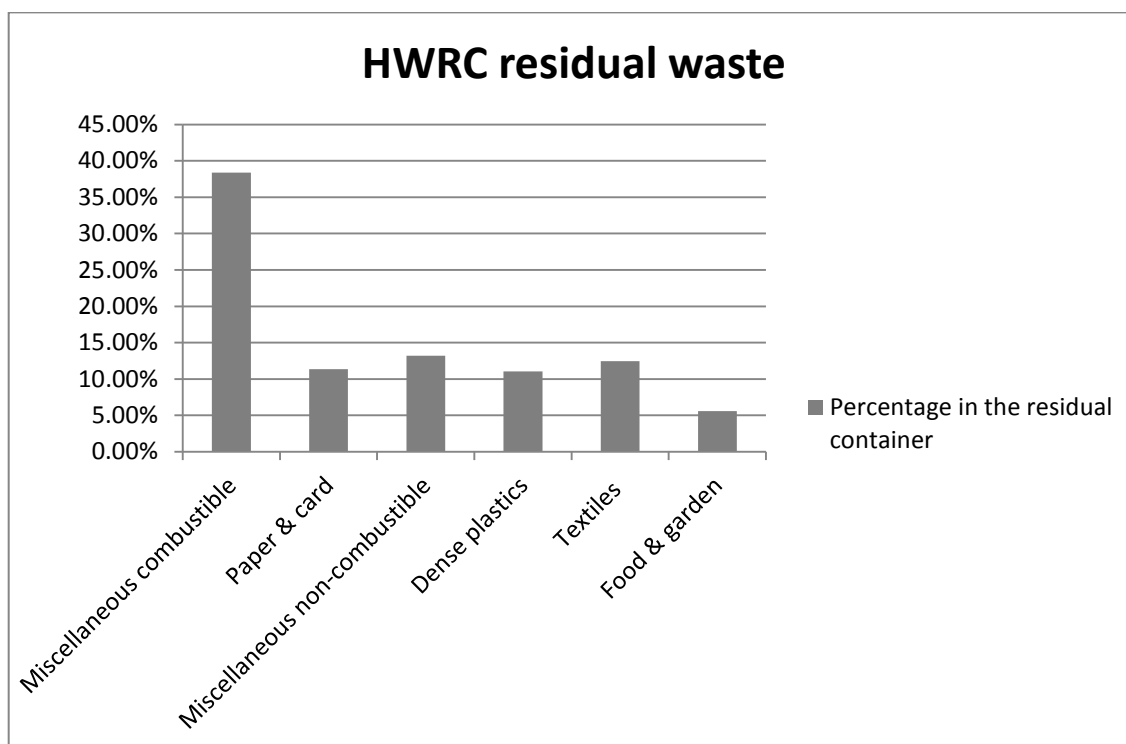
0.21 KG/HH/WK of the food waste was non-home compostable; this is an increase on the amount within the bin in 2015.

- 3.3 Overall 14% of organic recycling waste collected from all properties was classified as contamination in 2016 – the equivalent of 0.65 kg/hh/wk. The majority of organic waste contamination was due to soil and turf; forming 73% of that presented.
- 3.4 21% of food waste and 98% of garden waste was correctly captured (recycled) by households in 2016. The amount of food waste correctly captured has increased every year since the waste composition started.
- 3.5 Warwickshire households diverted an average of 32% of their waste through the organic collections in 2016. Warwickshire households are therefore diverting around 3.96 KG/HH/WK of their total waste through their kerbside organic recycling collections.
- 3.6 If all the organics available to current recycling schemes were captured and recycled then a diversion of 55% could be achieved based on 2016 data.

4.0 HWRC Residual Analysis

- 4.1 Residual waste from the HWRCs was sampled at both weekends and during the week; this was done to give a good overall impression of the residual waste collected at each HWRC.
- 4.2 Black sacks that were thought to be for the disposal of general household waste were removed from the overall pile. The total amount of this bagged material was weighed and the contents sorted separately. The waste was then combined to give an overall composition of residual waste being disposed of at the HWRCs.
- 4.3 Results from the survey showed that a large proportion of residual waste being disposed of at the HWRCs is bagged household waste. This material formed 6.5% of waste collected across the sites at weekends; it was far more prevalent during weekdays where it made up 10.14% of general waste across the sites surveyed. Taking an average of both figures bagged household waste contributes 8.3% towards the total amount of general waste collected.
- 4.4 Compositionally black sacks were seen to be different to that of the rest of the residual waste, around 27.57% of black bag contents consisted of food and garden waste, with 25.08% being paper and card and garden waste and 11.67% being textiles. Waste plastics (not including plastic film) contributed over 9.21% of this bagged residual waste.
- 4.5 The main materials making up HWRC residual waste are:

Graph 6 Main materials making up HWRC residual waste



- 4.6 On average 49% of weekday and 65% of weekend residual waste is potentially recyclable (utilising current HWRC recycling services) – an average of 57.5%.
- 4.7 Considering all of the material (including the contents of household sacks) 57.5% of the general waste is of a recyclable type. Up to 31.1% is compatible with kerbside recycling with 26.4% collectable at the HWRC.
- 4.8 It was generally the case that there was a higher level of material compatible with kerbside recycling disposed of during weekdays whilst more items compatible with HWRC recycling were brought at weekends.

5.0 Next steps

- 5.1 The current waste composition contract comes to an end at the end of the year and WCC has been considering the possible options for future composition surveys, including review of sampling methodology and possible collection of waste by the contractor to improve the accuracy of the data.
- 5.2 It is proposed that future communication campaigns and projects target the recyclable materials that are currently being disposed of in the residual waste at the kerbside and the HWRCs.

Background Papers

- 1. None.

	Name	Contact Information
Report Author	Tamalyn Goodwin	tamalyngoodwin@warwickshire.gov.uk
Head of Service	Phil Evans	philevans@warwickshire.gov.uk
Strategic Director	Monica Fogarty	monicafogarty@warwickshire.gov.uk
Portfolio Holder	Jeff Clarke	jeffclarke@warwickshire.gov.uk