

**Stockport Kerbside Waste**

**Composition Analysis**

**Survey 1 (Combined)**

**Greater Manchester**

**Combined Authority**

Final Report

May 2019

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Project details and acknowledgements

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Background

GMCA’s overarching aim is to increase household recycling across Greater Manchester to 60% by 2020 and reduce household residual waste to 400 kilogrammes/household/year (kg/hh/yr) by 2025. There is therefore a need to establish the composition of the household waste stream, across kerbside and Household Waste Recycling Centre (HWRC) services, to understand how best GMCA can achieve these targets.

The compositional analysis of kerbside collected household waste and recycling covered four waste streams – residual waste, co-mingled (mixed) recycling, pulpables (paper and card) recycling and organics (food and garden) recycling.

The fieldwork was carried out over a twelve-month period covering two seasons; spring/summer and autumn/winter. The results provide an annual representation of kerbside collected waste and recycling for each individual district and GMCA as a whole.

With a greater understanding of the composition of each waste stream, specifically the waste destined for the residual waste container, GMCA will be in a stronger position to identify types and quantities of materials that are not being recycled correctly. This information can then be used to assess the feasibility of GMCA realising their targets.

This report provides the results for the kerbside collection service for Stockport only. The results for the remaining eight Districts and the HWRC service are provided in separate reports.

Executive Summary

The current results based on averages for the spring/summer and autumn/winter surveys. All tables are calculated from the fieldwork exercise and apply to households with individual kerbside collected containers and not multiple occupancy dwellings or flats with the use of communal bins. Results show:

* Households in Stockport are producing 222.7kg/hh/yr of residual waste; this is within the current target rate of 400kg/hh/yr.
* Against the 2020 GMCA target of 60% recycling, figures from this survey show an average recycling rate of 51.3% for Stockport households. This rate excludes contamination placed within recycling containers.
* The pulpables recycling scheme is currently achieving a diversion rate of 11.4% with 88.7% of all acceptable materials captured. Figures suggest that 91.6% of recyclable paper and 84.5% of recyclable card and cardboard are captured by this collection. Contamination within this recycling stream is 18.3% which equates to 15.1kg/hh/yr, with 8.2kg/hh/yr of this recycling remaining in the residual waste stream.
* The co-mingled recycling scheme is currently achieving a diversion rate of 8.9% with 78.6% of all acceptable materials captured. Figures suggest that 76.9% of plastic bottles, 84% of glass bottles and jars and 64% of recyclable metals are captured by this collection. Contamination within this recycling stream is 27% which equates to 19.5kg/hh/yr, with 13.8kg/hh/yr remaining in the residual waste stream.
* The organics recycling scheme is currently achieving a diversion rate of 31.1% with 75% of all acceptable materials captured. Figures suggest that 61.5% of food waste and 99.4% of garden vegetation are captured by this collection. There is also 24.8% of organic pet bedding collected within Stockport. Contamination within this recycling stream is 14.8% which equates to 31.9kg/hh/yr.
* Food waste forms 25% of waste in residual bins, equating to 54.7kg/hh/yr. The majority of the food in the residual bins is avoidable (84%). If households did not dispose of any edible food waste, then the total amount of residual waste would fall to around 168kg/hh/yr and increase diversion to 56.5%.
* 35.8% of residual waste consists of materials that can be recycled at the kerbside, this equates to 79.8kg/hh/yr of unrecycled materials. Around 4% of residual waste should be pulpable recycling bins, 6% should be in co-mingled recycling bins and 26% should be in organic recycling bins.
* If all of these materials were correctly recycled, then the current maximum achievable diversion is 65.5%.
* Textiles are not currently an option for residents to recycle at the kerbside, however they are readily accepted at bring banks, charity shops or local recycling centres. Potentially collectable clothing and fabrics accounted for 10kg/hh/yr or 4.5% of the residual waste. By not placing these materials into residual bins then diversion would increase from 51.3% to 52.2%.
* Disposable nappies and AHP waste are a major component of the residual waste forming 15.2% or 33.9kg/hh/yr of the total. If schemes were in place to collect this waste separately or householders’ chose to use washable nappies, then diversion would increase from 51.3% to 54.4%.
* GMCA may choose to expand its mixed recycling collections to include liquid cartons (Tetrapaks) and plastic pots, tubs and trays. The items are present both in the residual waste and also are regularly incorrectly recycled via the current scheme. Stockport households are generating around 20kg/hh/yr of these materials. If these items became recyclable at the kerbside and all were correctly recycled, then potentially the achieved diversion would increase from 51.3% to 54.2%

Residual (General) waste – 79% of households set out their residual waste bin for collection

Stockport households dispose of 222.7/hh/yr of residual waste. Collections take place every two weeks. The survey shows that 36% of the waste found in the residual bin is recyclable which equates to 79.8kg/hh/yr. The bulk of the recyclable material is food waste which accounts for 54.7kg/hh/yr or 24.6% of the total material that is present.

|  |  |  |
| --- | --- | --- |
| Recyclable materials | KG/HH/YR | % |
| Recyclable paper | 3.7 | 1.7% |
| Recyclable card & cardboard | 4.5 | 2.0% |
| Plastic bottles | 3.1 | 1.4% |
| Recyclable glass | 6.2 | 2.8% |
| Recyclable metals | 4.5 | 2.0% |
| Recyclable food waste | 54.7 | 24.6% |
| Recyclable garden waste | 0.4 | 0.2% |
| Recyclable pet bedding | 2.6 | 1.1% |
| Total | 79.8 | 35.8% |

Pulpables (Paper and card) recycling – 70% of households set out these bins for collection

Stockport households place 82.5kg/hh/yr of material in their pulpable recycling bins. Collections take place every two weeks. Of the materials households are recycling in this bin, around 18.3% or 15.1kg/hh/yr is formed from contaminants which are unacceptable to the scheme. Around 51% (9% of recycling) of the contamination was due to non-recyclable paper and card along with liquids cartons. General residual waste (including materials such as plastic and plastic film, liquids, textiles and bagged household waste) made up 6.8% of the recycling or 37% of the contamination. Food waste made up 10% of the contamination present with food waste forming 2% of recycling. A small amount of material in the paper and card recycling bin was due to co-mingled recyclables. These contributed just under 1% of recycling and 3% of contamination.

|  |  |  |  |
| --- | --- | --- | --- |
| Recyclable materials | KG/HH/YR | % | Capture rate |
| Recyclable paper | 41.9 | 50.7% | 91.6% |
| Recyclable card & cardboard | 25.6 | 31.0% | 84.5% |
| Contamination | 15.1 | 18.3% | - |
| Total | 82.5 | 100.0% | 88.7% |
|  |  |  |  |

Of all the recyclable paper generated by households, 92% is correctly captured in the pulpable recycling bin. A slightly smaller proportion of card and cardboard is successfully captured, at around 85%.

Co-mingled (Mixed) recycling – 72% of households set out these bins for collection

Stockport households place 72.1kg/hh/yr of material in their co-mingled recycling bins. Collections take place every four weeks. Of the materials households are recycling in this bin, 27% or 19.5kg/hh/yr is formed from contaminants which are unacceptable to the scheme. Non-recyclable plastics made up 9% of the recycling or 32% of the contamination. Over half (54%) of this was due to pots, tubs and trays which formed 5% of the collected recycling. Food waste made up 3% of the collected recycling (11% of contamination), non-recyclable glass made up an additional 3% (10% of contamination), while 2% of the collected recycling (7% of contamination) were non-recyclable metals. Just 0.4% of the collected co-mingled recycling (1% of contamination) was due to recyclable paper and card.

|  |  |  |  |
| --- | --- | --- | --- |
| Recyclable materials | KG/HH/YR | % | Capture rate |
| Plastic bottles | 11.2 | 15.5% | 76.9% |
| Glass bottles and jars | 33.2 | 46.1% | 84.0% |
| Tins, cans, aerosols & foil | 8.2 | 11.4% | 64.0% |
| Contamination | 19.5 | 27.0% | - |
| Total | 72.1 | 100.0% | 78.6% |

Of all the recyclable metal set out at the kerbside for collection, 64% is correctly captured in the co-mingled recycling bin, which means 36% of potentially recyclable material (tins, cans, aerosols and foil) is not being recycled. The proportion of plastic bottles successfully recycled is 77% with 84% of all glass bottles and jars also captured by the co-mingled recycling bin.

Organics (Food and garden) recycling – 42% of households set out these bins for collection

Stockport households place 216.3kg/hh/yr of material in their organics recycling bins. Collections take place every week. Of the materials households are recycling in this bin, 14.8% or 31.9kg/hh/yr is formed from contaminants which are unacceptable to the scheme. Around 85% of contamination is due to soil and turf with 2% due to scrap wood.

|  |  |  |  |
| --- | --- | --- | --- |
| Recyclable materials | KG/HH/YR | % | Capture rate |
| Food waste | 93.1 | 43.1% | 61.5% |
| Garden vegetation | 90.1 | 41.6% | 99.4% |
| Organic pet bedding | 0.8 | 0.4% | 24.8% |
| Contamination | 31.9 | 14.8% | - |
| Total | 216.3 | 100.0% | 75.0% |
|  |  |  |  |

Of all the recyclable food waste generated by households, 62% is correctly captured in the organic recycling bin, which means 38% (58.4kg/hh/yr) of potentially recyclable food is not being recycled. Of the food waste being recycled, 53% is classified as avoidable. Almost all (99%) of garden vegetation is correctly recycled.

Separation of waste

Figures from this analysis suggest Stockport households currently generate around 593.7kg/hh/yr of waste and recycling for kerbside collection. A total of 304.4kg/hh/yr of this is correctly recycled giving a recycling rate of 51.3%. An additional 13.4% (79.8kg/hh/yr) is formed from recyclable material placed into the residual bins. Finally, there is 4.6kg/hh/yr or 1% of kerbside waste that is due to recyclable material placed into the incorrect recycling bin. If all of the recyclable material that is disposed of at the kerbside were placed into the correct recycling container then the potential rate for diversion would be 65.5%.

Levels of contamination in the recycling bins were relatively high. In total, of the 593.7kg/hh/yr of total kerbside waste and recycling around 66.5kg/hh/yr is contamination found in the recycling bins (either residual materials or recyclables in the wrong container). This represents 11% of the total weight set out by householders at the kerbside, levels of contamination in the pulpable and co-mingled recycling appear high.

|  |  |  |
| --- | --- | --- |
| Kerbside waste separation | KG/HH/YR | % By weight |
| Residual waste in residual bin | 143.0 | 24.1% |
| Recycling in residual bin | 79.8 | 13.4% |
| Correctly recycled materials | 304.4 | 51.3% |
| Incorrectly recycled material | 4.6 | 0.8% |
| Residual material in recycling | 61.9 | 10.4% |
| Total kerbside waste | 593.7 | 100.0% |

Introduction

The Greater Manchester Combined Authority (GMCA) disposes of the waste collected by its nine member Districts - Bolton MBC, Bury MBC, Manchester CC, Oldham Council, Rochdale MBC, Salford CC, Stockport MBC, Tameside MBC and Trafford MBC. A four-stream kerbside collection service is operated across all Districts covering co-mingled recycling, pulpable recycling (paper and card), organics recycling (combined food waste and garden waste) and residual waste. Districts also offer recycling services for flats and householders using communal bins, in some cases this is a reduced service.

Co-mingled (Mixed) recycling

* Plastic bottles
* Food tins
* Tin foil
* Drinks cans
* Aerosols
* Glass jars and bottles

Pulpables (Paper and card) recycling

* Egg boxes
* Cardboard
* Card packaging
* Newspapers, magazines, brochures, envelopes and junk mail

Organics (Food and garden) recycling

* Tea bags and coffee grounds
* Fruit and vegetables
* Meat and bones (cooked and uncooked)
* Breads and pastries
* Dairy (e.g. cheese) and egg shells
* All cooked and uncooked food, grass, flowers, hedge and plant cuttings
* Hay and straw

In addition to these regular kerbside collections there is the provision of twenty Household Waste Recycling Centres (HWRCs) for the use of Greater Manchester residents.

Materials accepted (varies between sites):

* Batteries
* Car batteries
* Co-mingled recycling (glass bottles and jars, plastic bottles, aerosols, foil, food and drink cans)
* Cooking oil
* Engine oil
* Fluorescent tubes
* Fridges and freezers
* Garden waste
* Gas bottles
* General waste
* Hardcore and rubble
* Household chemicals
* Large and small electrical appliances
* Media
* Paper and card
* Print cartridges
* Scrap metal
* Textiles
* Timber and wood
* TV and monitors
* Tyres

As part of a continuing drive to reduce the levels of waste being generated, and to identify possibilities for increasing the efficiency with which recyclables are separated, GMCA commissioned M·E·L Research to undertake a series of waste surveys that would determine:

1. Survey 1 - The composition of all kerbside collected waste and recycling streams;
2. Survey 2 - The composition of materials taken by householders to the HWRCs; and
3. Survey 3 - Why residents are bringing waste to the HWRCs, what materials they are disposing of, site satisfaction and catchment areas.

The findings for each of the surveys listed above are contained in separate reports. This report covers the results of the composition of household waste and recycling collected directly from the kerbside (Survey 1) and relates specifically to households within the Stockport MBC area.

Since 2011 there have been a number of changes to kerbside collection services. These include changing the frequency of residual waste collections to three weekly from two weekly or reducing residual bin capacity from 240L to 140L. The frequency of some recycling collections has also been changed. GMCA has set clear targets to increase household recycling across Greater Manchester to 60% by 2020 and reduce household residual waste to 400kg/hh/yr by 2025. Findings from the surveys being undertaken will help to gauge progression towards these targets. The results will show whether the targets are achievable and, if that is the case, where attention should be focused in order to achieve or surpass them.

Sampling

The aim of Survey 1 was to sample representative households from within Stockport to gain the best overall picture of the waste and recycling being disposed of by its residents at the kerbside. In order to obtain this objective, all households within Stockport were classified using socio-demographic profiling. M·E·L Research uses licenced software, supplied by CACI ltd, which segments postcodes into various subsets called Acorns (A Classification Of Residential Neighbourhoods)[[1]](#footnote-2). Acorn segments postcodes into 6 Categories, 18 Groups and 62 types, three of which are not private households. By analysing significant social factors and population behaviour, it provides detailed information and in-depth understanding of the different types of people within an area.

Eight dominant Acorn groups were selected to represent the dominant types of householders in Stockport. These were spread throughout the main five private household Acorn categories and represented 79.5% of the householder types present throughout the District (minimum target 75%). These selected groups are highlighted in yellow in Table 1. A selection of households from the selected Acorn groups were sent a letter to make them aware of the waste survey and to give them an opportunity to opt out.

Table 1: Acorn household profile for Stockport

|  |  |  |
| --- | --- | --- |
| **Acorn 1 - Affluent Achievers** | | |
| 1.A | Lavish Lifestyles | 2.8% |
| 1.B | Executive Wealth | 17.6% |
| 1.C | Mature money | 20.1% |
| **Acorn 2 - Rising Prosperity** | | |
| 2.D | City Sophisticates | 0.3% |
| 2.E | Career Climbers | 2.1% |
| **Acorn 3 - Comfortable Communities** | | |
| 3.F | Countryside Communities | 0.2% |
| 3.G | Successful Suburbs | 3.9% |
| 3.H | Steady Neighbourhoods | 9.8% |
| 3.I | Comfortable Seniors | 2.5% |
| 3.J | Starting Out | 7.6% |
| **Acorn 4 - Financially Stretched** | | |
| 4.K | Student Life | 0.3% |
| 4.L | Modest means | 5.6% |
| 4.M | Striving Families | 5.1% |
| 4.N | Poorer Pensioners | 5.2% |
| **Acorn 5 - Urban Adversity** | | |
| 5.O | Young Hardship | 6.6% |
| 5.P | Struggling Estates | 3.3% |
| 5.Q | Difficult Circumstances | 6.9% |
| **Acorn 6 - Not Private Households** | | |
| 6.R | Not Private Households | 0.1% |

Highlighted Acorn groups were selected for analysis throughout Stockport.

The analysis provides the following outputs:

* An understanding (using socio-demographic profiling) of which types of householders are producing which types of waste and which types of householders are using the recycling provision most effectively
* Total amounts of presented material for each of the four kerbside collection schemes
* Information on the levels of recyclable materials found in the residual waste container
* Amount and types of contamination found in the recycling containers
* Capture rates for individual materials included in each recycling stream
* The amount of overall waste diverted by each recycling scheme and overall

Table 2 shows the kerbside collection system currently available for Stockport households.

Table 2: Kerbside waste and recycling collections for Stockport householders

|  |  |  |
| --- | --- | --- |
| Waste stream | Containers | Collection frequency |
| Co-mingled  (Mixed) recycling | 180 litre Bin | Every 4 weeks |
| Pulpable  (Paper and card) recycling | 180 litre Bin | Every 2 weeks |
| General waste  (Residual) | 140 litre Bin |
| Organics  (Combined food and garden) recycling | 240L / 23L Street caddy / 7L Kitchen caddy | Every week (food waste caddy) |

Table 3 provides reference for the total recorded annual tonnages for the main waste and recycling streams collected throughout Stockport. The appendix section applies these tonnage figures to the percentage composition data from this survey.

Table 3: 2017/18 waste tonnages

|  |  |
| --- | --- |
| Waste stream | Tonnes per annum (TPA) |
| Dry recyclables (excl. pulpables) | 13,177.78 |
| In-Vessel Composting (IVC) | 34,840.06 |
| Pulpables | 12,720.38 |
| Residual | 40,723.00 |
| Trade Waste | 1,500.00 |
| Grand Total | 102,961.22 |

Methodology and Analysis

Households were selected for inclusion in the survey on the basis that they had not opted out and were part of one of the eight nominated Acorn groups shown in Table 1. These selected households were initially sampled during the spring and summer of 2018.

The same range of households was then re-visited during survey 2 (autumn/winter) with the same waste containers again surveyed.

The number of households setting out each waste/recycling was recorded, with the aim of collecting all presented waste and recycling. In some instances, it was not possible to collect all presented waste/recycling (resident refuses, bins too heavy to manhandle or contain hazardous materials or total weight of waste exceeds vehicle capacity). The collected residual waste from each household was bulked together for sorting as a single sample as were the samples of recycling from each household.

The manual hand sorting of the collected waste/recycling gave concentration by weight figures for each of the main categories of waste, as well as the more detailed sub-categories. This gives an indication as to the proportion of each waste category and is expressed as a percentage (by weight). This percentage can be translated into a figure relating to the average waste generation expected for each waste category. This is calculated in kilograms per household per week (kg/hh/wk) and then converted to kilograms per household per year (kg/hh/yr). As this is the unit the GMCA has used to for waste targets.

The amount of waste kg/hh/yr is calculated from the total number of households surveyed and not just those that are participating. This is most representative of the amount of waste that will be collected by regular crews.

For example; where 50 bins of waste are collected from 75 households the set-out rate is 67%.

The total amount of collected waste from the presented bins is 1,250kg.

Bins are collected on a two-weekly basis.

Waste generation = 1,250kg / 75 households = 16.7kg

16.7kg / 2 weeks = 8.4kg/hh/wk or 436kg/hh/yr

By knowing the composition of waste from the various Acorn samples it is possible to gain an insight into the make-up and volumes of the residual waste that can be expected across Stockport as a whole. Figures expressed as an average for Stockport are weighted from the results for each sample. This accounts for their relative prominence across the District as per their proportion in Table 1.

Statistical Accuracy

In the compositional analysis data tables contained within this report, we have presented figures for the average kg/hh/yr and percentage of waste that falls into each of the compositional categories. To get an indication of the reliability of these figures (given that they are based on analysing just a sample of all the waste being generated) we use a standard statistical technique to generate a ‘confidence interval’, which is a way of representing the possible range of error resulting from using a sample rather than analysing it all.

To do this we have applied validated error tests, which have been standardised for the sampling and analysis technique we use at M·E·L Research, based on controlled testing of both sampling error (caused by taking a sample of the waste and not all of it), and also what is termed instrument (observational) error, which reflects the accuracy of the hand sorting technique used by our analysts. These can be combined statistically to produce an estimate of the accuracy of compositional statistics for this phase.

Based on this standard method, the percentages quoted from the standard M·E·L sampling protocol for compositional analysis can be taken as accurate for each material category to within error bands of +/-10% at the 95% confidence level (note that these accuracies are based on assuming a ‘normal statistical distribution’ in the way waste is being disposed of by the households in the selected samples). This means that, for any of the main compositional category headings, we are 95% confident that the figure we quote based on analysing the sample, is within +/- 10% of the true figure you would get if you analysed all the waste that arrives during a typical collection week.

Results – Residual Waste

Set out rates

Households throughout Stockport have access to a fortnightly collection of residual waste. An average of 79% of households presented residual bins for collections. Ranges were from 57% for Acorn 5O households (young hardship) up to 87% for Acorn 1C households (mature money).

Figure 1: Set out rates for residual waste (%)

**Waste generation levels**

On average, 222.7kg/hh/yr of residual waste was generated by Stockport households. Only 181.8kg/hh/yr of residual waste was generated by Acorn 1B (executive wealth) households, compared with Acorn 3H (steady neighbourhoods) households who generated 285.3kg/hh/yr. Solely considering presented bins; the average amount of waste generated is 283.8kg/hh/yr.

Table 4: Kerbside residual waste

|  |  |  |  |
| --- | --- | --- | --- |
| Sample | % Set out rate | Overall KG/HH/YR\* | KG/HH/YR per presented bin\*\* |
| 1B | 82.9% | 181.8 | 219.2 |
| 1C | 87.0% | 226.8 | 260.9 |
| 3H | 85.7% | 285.3 | 332.9 |
| 3J | 65.9% | 202.6 | 307.4 |
| 4L | 79.6% | 253.9 | 319.1 |
| 4N | 77.4% | 188.4 | 243.3 |
| 5O | 56.6% | 192.4 | 340.1 |
| 5Q | 66.8% | 278.2 | 416.7 |
| Weighted | 78.5% | 222.7 | 283.8 |

\* The overall kg/hh/yr refers to the total amount of waste generated by all of the households surveyed at the time waste was collected. This includes households that did not present a bin for collection. This figure is the most realistic estimate for the waste generation for a given area as there are always a proportion of households that will not present a bin for every collection.

\*\*Kg/hh/yr for presented bins is used for comparative purposes and is always higher as it only apples to the collected bins and does not account for households not setting out waste. In effect this is the level of waste that would be generated were there a 100% set out rate.

Figure 2: Kg/hh/yr for residual waste

**Compositional analysis of residual waste**

This section looks at the composition of the household residual waste collected across Stockport. It provides information on the main materials present and highlights any differences between the various Acorn group samples and the proportion of recyclable material that each contains. Detailed data sheets are displayed in a separate data appendix.

Figure 3 shows that by far the greatest concentration of material (by weight) was putrescible material, accounting for over a quarter of the residual waste (28% or 62.2kg/hh/yr). This category includes food waste, garden waste, consumable liquids and biodegradable pet bedding. Food waste was the most prevalent material forming 88% of the putrescibles present in residual waste bins. 22% (49.5kg/hh/yr) of the material in the residual waste was miscellaneous combustibles. This category includes a broad range of items such as nappies, wood, animal waste and general bric-a-brac. Almost two thirds of this type of waste was due to disposable nappies, which alone, accounted for 15% (33.9kg/hh/yr) of residual waste.

Figure 3: Main materials in the residual waste (Kg/hh/yr and % by weight)

\*all unsortable fragments <10mm in size

**Pulpables (Paper and card)**

Overall, 11.4% or 25.4kg/hh/yr of the total weight of residual waste surveyed across Stockport was due to paper and card. Of this, 33% was suitable for recycling at the kerbside in the form of recyclable paper (newspapers, magazines, envelopes, brochures, junk mail and copy paper etc.) and recyclable card and cardboard (corrugated cardboard, packaging card and greetings cards). Householders are therefore estimated to be placing 8.2kg/hh/yr of recyclable pulpables (paper and card) in their residual bins.

The majority (67%) of paper and card in the residual waste is, however, classed as non-recyclable for the pulpable recycling collections and includes items such as used wallpaper, tissue paper, waxed or greaseproof paper, laminated or mixed material card.

Figure 4: Average paper and card content of the residual waste (kg/hh/yr)

From individual samples it was seen that Acorn 1C (mature money) households disposed of just 4.8kg/hh/yr of recyclable paper and card in their residual bins compared with 11.3kg/hh/yr for Acorn 3H (steady neighbourhoods) households.

Whereas just 18% of the paper and card in the residual bins from Acorn 1C (mature money) was of a recyclable type, this ratio was 44% for Acorn 4L (modest means) households.

**Co-mingled** **(Plastic, metal and glass)**

Overall, 24.4% or 54.4kg/hh/yr of the total weight of residual waste surveyed across Stockport was due to plastic, metal and glass waste. Of this, 25.4% was suitable for recycling at the kerbside via co-mingled recycling bins (plastic bottles, glass bottles and jars, tins, cans foil and aerosols). Householders are therefore estimated to be placing 13.8kg/hh/yr of recyclable co-mingled items (recyclable plastic, metal and glass) in their residual bins.

The majority (74.6%) of plastic, metal and glass in the residual waste is, however, classed as non-recyclable for the co-mingled recycling collections and includes items such as plastic film, plastic pots, tubs and trays, polystyrene, non-packaging glass and scrap metal.

Figure 5: Average plastic, metal and glass content of the residual waste (kg/hh/yr)

From individual samples it was seen that Acorn 4L (modest means) households disposed of just 8.4kg/hh/yr of recyclable plastic, metal and glass in their residual bins compared with 24kg/hh/yr for Acorn 5Q (difficult circumstances) households.

Additionally, whereas just 17% of the plastic, metal and glass in the residual bins from Acorn 4L (modest means) households was of a recyclable type, this ratio was 41% for Acorn 5Q (difficult circumstances) households.**Organics (Food and garden)**

Figure 3 shows that by far the greatest concentration of material in the residual waste for all samples was putrescible waste. This category is made up of food waste, consumable liquids, garden waste and organic pet bedding. Overall, 27.9% or 62.2kg/hh/yr of residual waste surveyed across Stockport was deemed to be putrescible in nature. 88% of the putrescible material was due to recyclable food waste and this accounted for 25% or 54.7kg/hh/yr of all residual waste. Combined, garden waste and organic pet bedding amounted to just 3kg/hh/yr in the residual waste. Therefore, a total of 57.7kg/hh/yr or 26% of all residual waste is of a type that could have been recycled via the organic collection bins. Almost 93% of the organic material within residual bins is deemed to be recyclable with just 7.2% formed from soil, turf and contained consumable fats and liquids.

Figure 6: Putrescible content of the residual waste (kg/hh/yr)

Food waste in this report is shown using WRAPs food and drink categorisations:

1. **Avoidable** – food thrown away that was, at some point prior to disposal, edible (e.g. slice of bread, apples, meat). This includes unused fully packaged food waste; part used food waste in packaging and loose food waste;
2. **Possibly avoidable** – food that some people eat, and others do not (e.g. bread crusts), or that can be eaten when a food is prepared in one way but not in another (e.g. potato skins and vegetable peelings); and
3. **Unavoidable** – waste arising from food preparation that is not, and has not been, edible under normal circumstances (e.g. meat bones, egg shells, pineapple skin, tea bags).

Figure 7: Recyclable food content of the residual waste

On average, 25% of all residual waste consisted of food waste, equating to 55kg/hh/yr. Of all the food waste being placed into residual bins, 84% was avoidable with a further 3% potentially avoidable. Therefore, each household places an average of 46kg/hh/yr of avoidable food in their residual bins.

From individual samples it was seen that Acorn 1C (mature money) households disposed the least food waste in their residual bins at around 43.6kg/hh/yr. This compares with levels of 80.8kg/hh/yr for Acorn 5Q (difficult circumstances).

Across the samples the proportion of all food waste that was avoidable ranged between 72% for Acorn 5O (young hardship) households up to 92% for Acorn 5Q (difficult circumstances); an average of 84%. Of all the food in the residual bins, between 45% for Acorn 5O (young hardship) and 72% for Acorn 1C (mature money) was packaged – 61% for Stockport.

Of the avoidable food, almost three quarters (73%) was disposed of packaged. This is food waste either totally unopened or part used and still within its original packaging.

**Potential recyclability of the residual waste**

Overall, 35.8% or 79.8kg/hh/yr of residual waste is deemed to be acceptable to either the pulpable, co-mingled or organic recycling collections.

Figure 8: Proportion of waste placed in residual bins that is accepted in current schemes (%)

Figure 9: Recyclable waste placed in residual bins that is accepted in current schemes (kg/hh/yr)

**Results - Pulpable recycling (Paper and card)**

**Set out rates and amount of recycling**

Households throughout Stockport have access to a fortnightly collection of Pulpables (paper and card) recycling. At the time of survey, it was seen that an average of 70% of households set out their paper and card recycling bins for collection. Set out rates ranged from 39.4% for Acorn 3J (starting out) households up to 84.5% for Acorn 1C (mature money) households. Households generate an average of 82.5kg/hh/yr of pulpable recycling. This equates to around 118.7kg/hh/yr when solely considering presented bins.

Acorn 5O (young hardship) and 3J (starting out) had low set out rates (50.3% and 39.4%) and also generated the least recycling at 35.2kg/hh/yr and 40.2kg/hh/yr. This suggests that they are not using the service effectively. In comparison Acorn 1C (mature money) had a set out rate of 84.5%, also generating the greatest levels of recycling (on average).

Table 5: Pulpable recycling

|  |  |  |  |
| --- | --- | --- | --- |
| Sample | % Set out rate | Overall KG/HH/YR | KG/HH/YR per presented bin |
| 1B | 79.8% | 84.4 | 105.7 |
| 1C | 84.5% | 118.8 | 140.6 |
| 3H | 62.7% | 56.9 | 90.8 |
| 3J | 39.4% | 40.2 | 102.2 |
| 4L | 75.9% | 77.1 | 101.6 |
| 4N | 62.6% | 77.4 | 123.7 |
| 5O | 50.3% | 35.2 | 70.0 |
| 5Q | 60.6% | 108.8 | 179.5 |
| Average | 69.5% | 82.5 | 118.7 |

The overall kg/hh/yr refers to the total amount of recycling generated by all of the households surveyed. This includes households that did not present a container for collection. This figure is the most accurate estimate for the recycling generation for a given area as there are always a proportion of households that will not present a container for every collection.

The Kg/hh/yr for presented containers is used for comparative purposes and is always higher as it only applies to the containers collected and does not account for households not setting out waste. In effect this is the level of recycling that would be generated were there a 100% set out rate.

Figure 10: Set out rates for pulpable recycling (%)

**Figure 11: Kg/hh/yr for pulpable recycling**

**Compositional analysis**

This section looks at average amounts and composition of the paper and card recycling presented by households sampled throughout Stockport. Results are again expressed in terms of percentage concentration and kg/hh/yr for individual areas surveyed. Table 6 and Figure 12 show recycling data in terms of percentage composition with Table 7 and Figure 13 showing generation rates for major materials in kg/hh/yr across all households in each sample area.

In previous sections it has been shown that a proportion of the material disposed of in residual bins is classified as recyclable. Collected recycling will also contain a certain amount of material that is deemed to be contamination. That is to say, material that is not compatible with the specific recycling container it is placed into.

On average 50.7% (41.9kg/hh/yr) of recycling is recyclable paper and 31% (25.6kg/hh/yr) is recyclable card and cardboard. Therefore 81.7% (67.5kg/hh/yr) of the pulpable recycling bin consists of the correct materials and 18.3% is contamination.

Around 9% (7.6kg/hh/yr) of the presented recycling is non-recyclable paper and card. 2% is organic waste (mainly food) and 1% co-mingled recyclables – these materials should have been placed into the other recycling bins that are available. The remaining contamination is made up of residual bin materials such as wood waste, rubble, plastic film and contained liquids.

Table 6: Pulpable recycling (% composition)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sample | 1B | 1C | 3H | 3J | 4L | 4N | 5O | 5Q | Average |
| Recyclable paper | 48.0% | 64.9% | 30.5% | 45.0% | 39.9% | 52.5% | 42.0% | 36.0% | 50.7% |
| Recyclable card & cardboard | 31.6% | 23.7% | 44.6% | 31.3% | 47.4% | 37.2% | 32.3% | 29.9% | 31.0% |
| Non-recyclable paper & card | 9.7% | 9.4% | 10.4% | 9.3% | 6.9% | 7.4% | 16.4% | 6.3% | 9.2% |
| Co-mingled recyclables | 0.8% | 0.1% | 1.0% | 0.1% | 0.6% | 0.1% | 0.8% | 1.5% | 0.6% |
| Food & garden waste | 1.3% | 1.0% | 5.3% | 3.4% | 0.9% | 0.6% | 3.1% | 3.6% | 1.9% |
| Residual waste | 8.6% | 0.9% | 8.2% | 10.9% | 4.4% | 2.1% | 5.2% | 22.7% | 6.7% |
| Total recyclable | 79.7% | 88.6% | 75.1% | 76.3% | 87.3% | 89.7% | 74.3% | 65.9% | 81.7% |
| Total contamination | 20.3% | 11.4% | 24.9% | 23.7% | 12.7% | 10.3% | 25.7% | 34.1% | 18.3% |

**Figure 12: Pulpable recycling (% composition)**

Table 7: Pulpable recycling (kg/hh/yr)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sample | 1B | 1C | 3H | 3J | 4L | 4N | 5O | 5Q | Average |
| Recyclable paper | 40.5 | 77.1 | 17.4 | 18.1 | 30.8 | 40.6 | 14.8 | 39.2 | 41.9 |
| Recyclable card & cardboard | 26.7 | 28.1 | 25.4 | 12.6 | 36.6 | 28.8 | 11.4 | 32.5 | 25.6 |
| Non-recyclable paper & card | 8.2 | 11.2 | 5.9 | 3.7 | 5.3 | 5.7 | 5.8 | 6.9 | 7.6 |
| Co-mingled recyclables | 0.7 | 0.1 | 0.6 | 0.0 | 0.4 | 0.1 | 0.3 | 1.6 | 0.5 |
| Food & garden waste | 1.1 | 1.2 | 3.0 | 1.4 | 0.7 | 0.5 | 1.1 | 3.9 | 1.6 |
| Residual waste | 7.2 | 1.1 | 4.7 | 4.4 | 3.4 | 1.7 | 1.8 | 24.7 | 5.5 |
| Total recyclable | 67.2 | 105.2 | 42.8 | 30.7 | 67.3 | 69.5 | 26.2 | 71.7 | 67.5 |
| Total contamination | 17.2 | 13.6 | 14.2 | 9.5 | 9.8 | 7.9 | 9.0 | 37.1 | 15.1 |

Figure 13: Pulpable recycling (kg/hh/yr)

Figure 14 below summarises the average composition of material disposed of in the pulpable recycling. An average of 18.3% of the paper and card recycling bin contents are due to items not acceptable to the collection and therefore deemed to be contamination. Annually this equates to 15.1kg/hh/yr of waste.

Figure 14: Materials in pulpable recycling bins.

**Pulpable recycling contamination**

This section looks to breakdown the 15.1kg/hh/yr of contamination being placed into the recycling across Stockport.

Some forms of contamination may be due to residents’ lack of knowledge in relation to the recycling scheme. For example, a householder may believe napkins and tissue are acceptable forms of paper. Other contamination will be formed from waste that is totally unrelated to the materials collected (i.e. disposable nappies, wood or food waste).

Table 8: Contamination in pulpable recycling bins (%)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sample | 1B | 1C | 3H | 3J | 4L | 4N | 5O | 5Q | Average |
| Liquid cartons\* | 2.2% | 0.8% | 1.1% | 0.4% | 2.6% | 1.5% | 1.4% | 1.5% | 1.4% |
| Other non-recyclable paper & card | 7.5% | 8.6% | 9.3% | 8.9% | 4.3% | 5.8% | 15.0% | 4.8% | 7.8% |
| Food waste | 1.3% | 1.0% | 5.3% | 1.8% | 0.9% | 0.6% | 3.1% | 3.6% | 1.8% |
| Co-mingled recyclables | 0.8% | 0.1% | 1.0% | 0.1% | 0.6% | 0.1% | 0.8% | 1.5% | 0.6% |
| Other residual waste | 8.6% | 0.9% | 8.2% | 12.5% | 4.4% | 2.1% | 5.2% | 22.7% | 6.8% |
| Total contamination | 20.3% | 11.4% | 24.9% | 23.7% | 12.7% | 10.3% | 25.7% | 34.1% | 18.3% |

Table 9: Contamination in pulpable recycling bins (kg/hh/yr)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sample | 1B | 1C | 3H | 3J | 4L | 4N | 5O | 5Q | Average |
| Liquid cartons\* | 1.8 | 1.0 | 0.6 | 0.2 | 2.0 | 1.2 | 0.5 | 1.6 | 1.1 |
| Other non-recyclable paper & card | 6.3 | 10.2 | 5.3 | 3.6 | 3.3 | 4.5 | 5.3 | 5.3 | 6.4 |
| Food waste | 1.1 | 1.2 | 3.0 | 0.7 | 0.7 | 0.5 | 1.1 | 3.9 | 1.5 |
| Co-mingled recyclables | 0.7 | 0.1 | 0.6 | 0.0 | 0.4 | 0.1 | 0.3 | 1.6 | 0.5 |
| Other residual waste | 7.2 | 1.1 | 4.7 | 5.0 | 3.4 | 1.7 | 1.8 | 24.7 | 5.6 |
| Total contamination | 17.2 | 13.6 | 14.2 | 9.5 | 9.8 | 7.9 | 9.0 | 37.1 | 15.1 |

\*Residents are told to place liquid cartons in their residual bins, however recent changes to the cardboard market now means this material has become acceptable to the pulpable collection scheme.

On average 18.3% or 15.1kg/hh/yr of paper and card recycling collected throughout Stockport was deemed to be contamination.

Acorn 4N (poorer pensioners) recycling was the least contaminated at 10.3%. In comparison, over a third (34.1%) of Acorn 5Q (difficult circumstances) recycling was due to contamination. Annually, Acorn 5Q (difficult circumstances) also placed the greatest amount of contamination in their recycling bins at 37.1kg/hh/yr.

Around 51% (9% of recycling) of the contamination was due to non-recyclable paper and card along with liquids cartons. General residual waste (including materials such as plastic, plastic film and bagged household waste) made up 6.8% of the recycling or 37% of the contamination. Food waste made up 10% of the contamination present with food waste forming around 2% of recycling. A small amount of material in the paper and card recycling bin was due to co-mingled recyclables. These contributed just under 1% of recycling and 3% of contamination.

**Recyclable paper and card within residual bins**

Figures show that an average of 35.8% or 79.8kg/hh/yr of the residual waste collected throughout Stockport could have been recycled at the kerbside. Recyclable paper and card accounts for 3.7% (8.2kg/hh/yr) of the residual waste. Therefore, it can be said that 10% of the recyclable content of the residual waste is due to paper and card.

The residual waste from Acorn 5O (young hardship) contained just 5kg/hh/yr of recyclable paper and card or less than 3% of the total. Acorn 3H (steady neighbourhoods) disposed of 7.8kg/hh/yr of recyclable paper or card in their residual bin, while 5.5% of Acorn 1B (executive wealth) residual waste came from recyclable pulpables.

Table 10: Recyclable pulpables placed in residual bins (kg/hh/yr)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sample | 1B | 1C | 3H | 3J | 4L | 4N | 5O | 5Q | Average |
| Recyclable paper (KG/HH/YR) | 4.2 | 2.7 | 3.6 | 6.2 | 5.2 | 2.5 | 2.1 | 4.5 | 3.7 |
| Recyclable card & cardboard (KG/HH/YR) | 5.7 | 2.1 | 7.8 | 4.1 | 4.1 | 4.5 | 2.9 | 6.0 | 4.5 |
| Total recyclable pulpables (KG/HH/YR) | 9.9 | 4.8 | 11.3 | 10.2 | 9.3 | 6.9 | 5.0 | 10.4 | 8.2 |
| Total recyclable pulpables (% of residual) | 5.5% | 2.1% | 4.0% | 5.0% | 3.6% | 3.7% | 2.6% | 3.8% | 3.7% |

**Capture rates for pulpable recycling**

This section looks in more detail at the pulpable recycling collections and highlights the effectiveness with they are capturing these items. Capture rates determine how much of a material that should be recycled actually is being recycled. Looking at the relationship between the residual and recycling waste streams presented will additionally give indications as to the overall diversion being achieved via the pulpable recycling bin.

Across Stockport it is estimated that 76kg/hh/yr of recyclable paper and card is disposed of at the kerbside with around 88.7% or 67.5kg/hh/yr being correctly recycled (captured). Acorn 5O (young hardship) generated just 31.6kg/hh/yr of these pulpable recyclables. In contrast residents from Acorn 1C (mature money) generated 110.1kg/hh/yr of recyclable paper and card.

Acorn 1C (mature money) also captured most of their recyclable paper and card (95.6%), with Acorn 4N (poorer pensioners) also capturing more than 90%. All other samples captured lower proportions of their recyclable paper and card at between 74.8% (Acorn 3J – starting out) and 87.2% (Acorn 4L – modest means).

Table 11: Distribution of recyclable pulpables in kerbside containers (kg/hh/yr)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Recyclable pulpables | 1B | 1C | 3H | 3J | 4L | 4N | 5O | 5Q | Average |
| Recyclable paper & card in residual bins (KG/HH/YR) | 9.9 | 4.8 | 11.3 | 10.2 | 9.3 | 6.9 | 5.0 | 10.4 | 8.2 |
| Recyclable paper & card recycled (KG/HH/YR) | 67.2 | 105.2 | 42.8 | 30.7 | 67.3 | 69.5 | 26.2 | 71.7 | 67.5 |
| Recyclable paper & card in co-mingled bins (KG/HH/YR) | 0.5 | 0.1 | 0.0 | 0.1 | 0.5 | 0.1 | 0.1 | 0.8 | 0.3 |
| Recyclable paper & card in organics bins (KG/HH/YR) | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.3 | 0.1 | 0.1 |
| Total recyclable paper & card disposed of (KG/HH/YR) | 77.7 | 110.1 | 54.1 | 41.1 | 77.2 | 76.5 | 31.6 | 83.0 | 76.0 |
| % Capture of recyclable paper & card | 86.5% | 95.6% | 79.0% | 74.8% | 87.2% | 90.8% | 82.9% | 86.3% | 88.7% |

Figure 15: Distribution of recyclable pulpables in kerbside containers (kg/hh/yr) by Acorn group and overall

There are many different forms of paper and card and therefore decisions have to be made by residents as to whether a particular piece is to go into the recycling or residual waste. There is, however, 8.6kg/hh/yr of potentially recyclable paper and card not disposed of in recycling bins. Almost all of this (8.2kg/hh/yr) is in the residual bins.

Capture rates for card and cardboard (85%) and recyclable paper (92%) were high. However, it was the case that bulkier corrugated cardboard was very effectively recycled with 93% placed into pulpable recycling bins. In contrast around 76% of thinner card was similarly captured.

**Diversion via pulpable recycling collections**

The pulpable recycling bin service is responsible for diverting 11.4% of all the kerbside waste presented. This proportion excludes all of the contamination materials that are present within these bins. Acorns 1C (mature money) and 4N (poorer pensioners) households are estimated to be diverting around 14% of their kerbside waste via pulpable recycling bins. The rate for households in the Acorn 3H (steady neighbourhoods) area is 5.5%.

Table 12: Diversion via pulpable recycling bins (%)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diversion rates | 1B | 1C | 3H | 3J | 4L | 4N | 5O | 5Q | Average |
| Pulpables recycling bin | 12.1% | 13.8% | 5.5% | 9.9% | 13.2% | 13.8% | 7.2% | 11.8% | 11.4% |

**Results - Co-mingled Recycling (Glass, metal and plastic)**

**Set out rates and amount of recycling**

Households throughout Stockport have access to a four weekly collection of co-mingled recycling consisting of plastic bottles, glass bottles and jars, tins, cans and foil. At the time of survey, it was seen that an average of 72% of households presented co-mingled recycling bins for collection. Ranges seen were 40.9% for Acorn 3J households (starting out) up to 87.2% for Acorn 1C households (mature money). It was seen that an average of 72.1kg/hh/yr of co-mingled recycling was being generated. This equates to around 99.6kg/hh/yr when solely considering presented bins.

Acorn 3J (starting out) households had the lowest set out rate yet presented the second heaviest bin – 130.9kg/hh/yr. This suggests they are building up the recycling and only putting it out for collection when it is full. Acorn 1C (mature money) had the highest set out rate (87%) but generated some of the lowest levels of recycling. This suggests that these households are using the service more regularly.

Table 13: Co-mingled recycling

|  |  |  |  |
| --- | --- | --- | --- |
| Sample | % Set out rate | Overall KG/HH/YR | KG/HH/YR per presented bin |
| 1B | 81.3% | 81.3 | 100.0 |
| 1C | 87.2% | 59.7 | 68.5 |
| 3H | 66.4% | 72.8 | 109.7 |
| 3J | 40.9% | 53.5 | 130.9 |
| 4L | 73.1% | 93.1 | 127.3 |
| 4N | 69.5% | 83.3 | 119.9 |
| 5O | 54.4% | 31.2 | 57.3 |
| 5Q | 68.4% | 117.9 | 172.4 |
| Average | 72.4% | 72.1 | 99.6 |

Figure 16: Set out rates for co-mingled recycling (%)

Figure 17: Kg/hh/yr for co-mingled recycling

**Compositional analysis of co-mingled recycling**

This section looks at average amounts and composition of the co-mingled recycling presented by households sampled throughout Stockport. Results can again be expressed in terms of percentage concentration and kg/hh/yr for individual samples surveyed. Table 14 and Figure 18 show recycling data in terms of percentage composition with Table 15 and Figure 19 showing generation rates for major materials in kg/hh/yr across all households in each sample area.

As residual waste will contain a proportion that is classified as recyclable; then recycling waste will contain a faction that is deemed to contamination. That is to say, that it is not compatible with the materials currently acceptable to the recycling container it is placed into.

On average 46% (33.2kg/hh/yr) of recycling is due to recyclable glass bottles and jars with 16% (11.2kg/hh/yr) being plastic bottles and 11% (8.2kg/hh/yr) recyclable metals. Therefore 73% (5.8kg/hh/yr) of recycling bin content consists of the correct materials.

Around 24% (17kg/hh/yr) of material in the co-mingled recycling bins is due to waste not recyclable in any of the kerbside collection containers with items such as plastic pots, tubs and trays, plastic film, scrap metal, bagged waste and contained liquids commonly present. An average of 3% (2.2kg/hh/yr) is organic waste (mainly food) and just 0.4% paper and card – these materials should have been placed into the other recycling bin that are available.

Table 14: Co-mingled recycling (% composition)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sample | 1B | 1C | 3H | 3J | 4L | 4N | 5O | 5Q | Average |
| Plastic bottles | 18.5% | 21.7% | 11.9% | 9.4% | 10.9% | 16.5% | 10.4% | 11.0% | 15.5% |
| Glass bottles and jars | 37.4% | 41.6% | 56.7% | 59.5% | 60.1% | 53.1% | 59.4% | 35.8% | 46.1% |
| Tins, cans & foil | 10.4% | 19.4% | 9.2% | 7.5% | 9.0% | 13.6% | 6.4% | 6.9% | 11.4% |
| Paper & card recyclables | 0.7% | 0.2% | 0.0% | 0.2% | 0.5% | 0.1% | 0.5% | 0.7% | 0.4% |
| Food & garden waste | 5.3% | 1.5% | 4.1% | 0.5% | 2.3% | 1.8% | 2.6% | 3.0% | 3.1% |
| Residual waste | 27.7% | 15.6% | 18.0% | 23.0% | 17.2% | 15.0% | 20.6% | 42.6% | 23.6% |
| Total recyclable | 66.3% | 82.8% | 77.8% | 76.3% | 80.0% | 83.1% | 76.3% | 53.7% | 73.0% |
| Total contamination | 33.7% | 17.2% | 22.2% | 23.7% | 20.0% | 16.9% | 23.7% | 46.3% | 27.0% |

Figure 18: Co-mingled recycling (% composition)

Table 15: Co-mingled recycling (kg/hh/yr)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sample | 1B | 1C | 3H | 3J | 4L | 4N | 5O | 5Q | Average |
| Plastic bottles | 15.0 | 13.0 | 8.7 | 5.0 | 10.2 | 13.7 | 3.3 | 13.0 | 11.2 |
| Glass bottles and jars | 30.4 | 24.8 | 41.3 | 31.8 | 55.9 | 44.2 | 18.5 | 42.2 | 33.2 |
| Tins, cans & foil | 8.5 | 11.6 | 6.7 | 4.0 | 8.4 | 11.3 | 2.0 | 8.1 | 8.2 |
| Paper & card recyclables | 0.5 | 0.1 | 0.0 | 0.1 | 0.5 | 0.1 | 0.1 | 0.8 | 0.3 |
| Food & garden waste | 4.3 | 0.9 | 3.0 | 0.2 | 2.1 | 1.5 | 0.8 | 3.6 | 2.2 |
| Residual waste | 22.6 | 9.3 | 13.1 | 12.3 | 16.0 | 12.5 | 6.4 | 50.2 | 17.0 |
| Total recyclable | 53.9 | 49.4 | 56.6 | 40.8 | 74.5 | 69.3 | 23.8 | 63.4 | 52.6 |
| Total contamination | 27.4 | 10.3 | 16.2 | 12.7 | 18.6 | 14.1 | 7.4 | 54.6 | 19.5 |

Figure 19: Co-mingled recycling (kg/hh/yr)

Figure 20 summarises the average composition of material disposed of in the co-mingled recycling. Glass bottles and jars form 46% of the collected co-mingled recycling resulting in an annual collection of 33.2kg/hh/yr. Plastic bottles form 16% of bin contents resulting in 11.2kg/hh/yr being recycled. Tins, cans and foils form 11% of bin contents resulting in 8.2kg/hh/yr being recycled.

An average of 27% or 19.5kg/hh/yr of the co-mingled recycling bin contents are due to items not acceptable to the collection and therefore deemed to be contamination.

Figure 20: Materials in co-mingled recycling bins (kg/hh/yr)

**Recycling contamination**

This section looks to breakdown the amounts and concentrations of various contaminants being placed into the co-mingled recycling across Stockport.

Some forms of contamination may be due to residents’ lack of knowledge in relation to the recycling scheme. For example, a householder may believe plastic pots, tubs and trays are acceptable forms of plastic. Other contamination will be formed from waste that is totally unrelated to the materials collected (i.e. disposable nappies, wood or food waste).

Table 16: Contamination in co-mingled recycling bins (%)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Co-mingled recycling | 1B | 1C | 3H | 3J | 4L | 4N | 5O | 5Q | Average |
| Plastic pots, tubs & trays | 11.6% | 1.5% | 1.3% | 2.4% | 6.0% | 2.7% | 2.9% | 2.3% | 4.7% |
| Other non-recyclable plastics | 6.7% | 3.1% | 1.4% | 0.8% | 2.6% | 2.9% | 3.8% | 6.9% | 4.1% |
| Non-recyclable glass | 1.6% | 4.3% | 5.5% | 0.3% | 2.5% | 2.7% | 0.6% | 1.0% | 2.6% |
| Non-recyclable metals | 2.6% | 4.0% | 0.2% | 0.0% | 1.6% | 0.4% | 0.3% | 1.9% | 2.0% |
| Paper & card recyclables | 0.7% | 0.2% | 0.0% | 0.2% | 0.5% | 0.1% | 0.5% | 0.7% | 0.4% |
| Food waste | 5.3% | 1.4% | 4.1% | 0.5% | 2.3% | 1.8% | 2.6% | 3.0% | 3.0% |
| Contained liquids | 1.0% | 1.2% | 7.2% | 0.4% | 2.1% | 2.7% | 6.5% | 3.5% | 2.5% |
| Other residual waste | 4.3% | 1.7% | 2.4% | 19.1% | 2.4% | 3.6% | 6.5% | 27.0% | 7.6% |
| Total contamination | 33.7% | 17.2% | 22.2% | 23.7% | 20.0% | 16.9% | 23.7% | 46.3% | 27.0% |

Table 17: Contamination in co-mingled recycling bins (kg/hh/yr)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Co-mingled recycling | 1B | 1C | 3H | 3J | 4L | 4N | 5O | 5Q | Average |
| Plastic pots, tubs & trays | 9.4 | 0.9 | 1.0 | 1.3 | 5.6 | 2.2 | 0.9 | 2.8 | 3.4 |
| Other non-recyclable plastics | 5.4 | 1.8 | 1.0 | 0.4 | 2.4 | 2.4 | 1.2 | 8.1 | 3.0 |
| Non-recyclable glass | 1.3 | 2.5 | 4.0 | 0.2 | 2.3 | 2.3 | 0.2 | 1.2 | 1.9 |
| Non-recyclable metals | 2.1 | 2.4 | 0.1 | 0.0 | 1.5 | 0.3 | 0.1 | 2.2 | 1.4 |
| Paper & card recyclables | 0.5 | 0.1 | 0.0 | 0.1 | 0.5 | 0.1 | 0.1 | 0.8 | 0.3 |
| Food waste | 4.3 | 0.8 | 3.0 | 0.2 | 2.1 | 1.5 | 0.8 | 3.6 | 2.2 |
| Contained liquids | 0.8 | 0.7 | 5.3 | 0.2 | 1.9 | 2.2 | 2.0 | 4.1 | 1.8 |
| Other residual waste | 3.5 | 1.0 | 1.8 | 10.2 | 2.3 | 3.0 | 2.0 | 31.9 | 5.5 |
| Total contamination | 27.4 | 10.3 | 16.2 | 12.7 | 18.6 | 14.1 | 7.4 | 54.6 | 19.5 |

On average 27% or 19.5kg/hh/yr of co-mingled recycling collected throughout Stockport was deemed to be contamination. Acorn 4N (poorer pensioners) recycling was proportionately the least contaminated at 16.9%. In comparison 46.3% of Acorn 5Q (difficult circumstances) recycling was due to contamination. Weight wise, Acorn 5O (young hardship) recycling was the least contaminated at 7.4kg/hh/yr. In comparison, Acorn 5Q (difficult circumstances) was the most contaminated at 54.6kg/hh/yr.

Around 28% (8% of recycling) of the contamination was due to general mixed residual waste (including materials such as liquids, ceramics and bagged waste). Non-recyclable plastics made up 9% of the recycling or 32% of the contamination. Over half (54%) of this was due to pots, tubs and trays which formed 5% of the collected recycling. Food waste made up 3% of the collected recycling (11% of contamination), non-recyclable glass made up an additional 3% (10% of contamination), while 2% of the collected recycling (7% of contamination) were non-recyclable metals. Just 0.4% of the collected co-mingled recycling (1% of contamination) was due to recyclable paper and card.

**Co-mingled recyclables within residual bins**

Figures show that an average of 35.8% or 79.8kg/hh/yr of the residual waste collected throughout Stockport could have been recycled at the kerbside. Recyclable plastics, metals and glass account for 6.2% (13.8kg/hh/yr) of the residual waste. Therefore, it can be said that 17% of the recyclable content of the residual waste is due to co-mingled recyclables.

The residual waste from Acorn 4L (modest means) and 4N (poorer pensioners) households contained less than 9kg/hh/yr of co-mingled recyclables or 3.3% and 4.5% of the total respectively. In comparison, the residual waste from Acorn 5Q (difficult circumstances) households contained 24kg/hh/yr of recyclable plastic, metal and glass in their residual bins where it accounted for almost 9% of the total.

Table 18: Co-mingled recyclables placed in residual bins (kg/hh/yr)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sample | 1B | 1C | 3H | 3J | 4L | 4N | 5O | 5Q | Average |
| Plastic bottles (KG/HH/YR) | 3.7 | 2.6 | 3.0 | 2.6 | 1.5 | 2.2 | 1.5 | 7.5 | 3.1 |
| Glass bottles & jars (KG/HH/YR) | 4.8 | 5.7 | 5.1 | 11.8 | 1.9 | 4.0 | 7.5 | 10.5 | 6.2 |
| Tins, cans & aerosols (KG/HH/YR) | 3.9 | 5.1 | 5.5 | 4.1 | 5.0 | 2.3 | 2.8 | 5.9 | 4.5 |
| Total co-mingled recyclables (KG/HH/YR) | 12.5 | 13.4 | 13.6 | 18.4 | 8.4 | 8.5 | 11.8 | 24.0 | 13.8 |
| Total co-mingled recyclables (% of residual) | 6.9% | 5.9% | 4.8% | 9.1% | 3.3% | 4.5% | 6.1% | 8.6% | 6.2% |

**Capture rates for co-mingled (mixed) recycling**

Stockport households are disposing of around 66.9kg/hh/yr of recyclable plastic bottles, tins, cans, aerosols, foil and glass bottles and jars at the kerbside. Of these, 78.6% or 52.6kg/hh/yr are correctly captured in the co-mingled recycling bins. Acorn 5O (young hardship) households disposed of the smallest amount of co-mingled recyclables at 35.9kg/hh/yr with Acorn 5Q (difficult circumstances) disposing 88.9kg/hh/yr.

With the exception of Acorn 3J (starting out) and Acorn 5O (young hardship) who captured 68.8% and 66.3% of their co-mingled recyclables respectively, all other samples captured over 70%. Acorn 4L (modest means) captured the greatest proportion of their co-mingled recycling at 89.9%.

Table 19: Distribution of co-mingled recyclables in kerbside containers (kg/hh/yr)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Co-mingled recyclables | 1B | 1C | 3H | 3J | 4L | 4N | 5O | 5Q | Average |
| Co-mingled recyclables in residual bins (KG/HH/YR) | 12.5 | 13.4 | 13.6 | 18.4 | 8.4 | 8.5 | 11.8 | 24.0 | 13.8 |
| Co-mingled recyclables in co-mingled bins (KG/HH/YR) | 53.9 | 49.4 | 56.6 | 40.8 | 74.5 | 69.3 | 23.8 | 63.4 | 52.6 |
| Co-mingled recyclables in pulpable recycling bins (KG/HH/YR) | 0.7 | 0.1 | 0.6 | 0.0 | 0.4 | 0.1 | 0.3 | 1.6 | 0.5 |
| Co-mingled recyclables in organics bins (KG/HH/YR) | 0.0 | 0.1 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 |
| Total co-mingled recyclables disposed of (KG/HH/YR) | 67.0 | 63.0 | 70.8 | 59.3 | 83.4 | 77.9 | 35.9 | 88.9 | 66.9 |
| % Capture of all co-mingled recyclables | 80.4% | 78.4% | 80.0% | 68.8% | 89.3% | 88.9% | 66.3% | 71.3% | 78.6% |

Figure 21: Distribution of co-mingled recyclables in kerbside containers (kg/hh/yr) by Acorn group

Plastic Bottles

In all sample areas, the majority (over 60%) of all recyclable plastic bottles are being correctly diverted. There is, however, around 3.3kg/hh/yr of potentially recyclable bottles not disposed of in recycling bins. Acorn 4N (poorer pensioners) residents captured the highest proportion of their recyclable plastic bottles with 86.2% correctly being recycled. Acorn 5Q (difficult circumstances) residents captured the lowest proportion of their recyclable plastic bottles with only 61.1% correctly being recycled. Acorn 5Q (difficult circumstances) residents also disposed of the most recyclable plastic bottles at 21.3kg/hh/yr, while Acorn 5O (young hardship) disposed of just 4.9kg/hh/yr. Across Stockport it is estimated that 15.8kg/hh/yr of recyclable plastic bottles are disposed of at the kerbside with around 72.4% or 11.4kg/hh/yr being correctly recycled.

Plastic pots, tubs and trays are currently not part of the recycling collections available in Stockport. Despite this little over a fifth (22%) of all the plastic pots, tubs and trays disposed of at the kerbside are placed into the co-mingled recycling bins. Acorn 1B (executive wealth) were most likely to contaminate their recycling with these plastics placing 47% in their co-mingled bins.

Table 20: Distribution of recyclable plastic bottles in kerbside containers (kg/hh/yr)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Plastic bottles | 1B | 1C | 3H | 3J | 4L | 4N | 5O | 5Q | Average |
| Plastic bottles disposed of(KG/HH/YR) | 18.9 | 15.7 | 12.1 | 7.6 | 12.0 | 15.9 | 4.9 | 21.3 | 14.5 |
| Plastic bottles recycled (KG/HH/YR) | 15.0 | 13.0 | 8.7 | 5.0 | 10.2 | 13.7 | 3.3 | 13.0 | 11.2 |
| % Capture of plastic bottles | 79.3% | 82.7% | 71.9% | 65.9% | 84.4% | 86.2% | 66.8% | 61.1% | 76.9% |

Glass bottles and jars

Across Stockport it is estimated that 39.5kg/hh/yr of recyclable bottles and jars are disposed of at the kerbside with around 84% or 33.2kg/hh/yr being correctly recycled.

Around 6.3kg/hh/yr of potentially recyclable glass is not disposed of in recycling bins. Acorn 4L (modest means) residents captured the highest proportion of their recyclable glass bottles and jars with 96.8% correctly being recycled and generated the most recyclable glass at 57.8kg/hh/yr. All samples were seen to capture 71% or more of the glass bottles and jars they disposed of with Acorn 5O (young hardship) generating the least of this waste at 26.1kg/hh/yr.

Table 21 shows the distribution of recyclable bottles and jars throughout the residual and recycling waste by Acorn group and overall.

Table 21: Distribution of recyclable glass in kerbside containers (kg/hh/yr)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Glass bottles & jars | 1B | 1C | 3H | 3J | 4L | 4N | 5O | 5Q | Average |
| Glass bottles & jars disposed of (KG/HH/YR) | 35.5 | 30.6 | 46.4 | 43.6 | 57.8 | 48.2 | 26.1 | 53.2 | 39.5 |
| Glass bottles & jars recycled (KG/HH/YR) | 30.4 | 24.8 | 41.3 | 31.8 | 55.9 | 44.2 | 18.5 | 42.2 | 33.2 |
| % Capture of glass bottles & jars (KG/HH/YR) | 85.5% | 81.2% | 89.0% | 73.0% | 96.8% | 91.7% | 71.1% | 79.4% | 84.0% |

Metals

Across Stockport it is estimated that 12.8kg/hh/yr of recyclable metals compatible are disposed of at the kerbside with 64% or 8.2kg/hh/yr being correctly recycled. Acorn 4N (poorer pensioners) residents captured the highest proportion of their recyclable tins, cans and foils with 82.3% correctly being recycled, while Acorn 1C (mature money) generated the most recyclable metal at 16.8kg/hh/yr. The lowest proportion of recyclable tins, cans and foils captured was for Acorn 5O (young hardship) who correctly recycled only 40.2%. They have also generated the least recyclable metal at 5kg/hh/yr. Around 4.6kg/hh/yr of potentially recyclable metal is not disposed of in recycling bins.

Table 22: Distribution of recyclable metal in kerbside containers (kg/hh/yr)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tins, cans, aerosols & foil | 1B | 1C | 3H | 3J | 4L | 4N | 5O | 5Q | Average |
| Recyclable metals generated (KG/HH/YR) | 12.6 | 16.8 | 12.3 | 8.1 | 13.6 | 13.7 | 5.0 | 14.4 | 12.8 |
| Recyclable metals recycled (KG/HH/YR) | 8.5 | 11.6 | 6.7 | 4.0 | 8.4 | 11.3 | 2.0 | 8.1 | 8.2 |
| % Capture of recyclable metals (KG/HH/YR) | 67.4% | 69.2% | 54.1% | 49.3% | 61.8% | 82.3% | 40.2% | 56.3% | 64.0% |

**Diversion via co-mingled recycling collections**

The co-mingled recycling bin service is responsible for diverting 8.9% of all the kerbside waste presented. This proportion excludes all of the contamination materials that are present within these bins. Acorns 1C (mature money) and 5O (young hardship) are estimated to be diverting only 6.5% of their kerbside waste via co-mingled recycling bins, while the rate for households in the Acorn 4L (modest means) area is 14.6%.

Table 23: Diversion via co-mingled recycling bins (%)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diversion rates | 1B | 1C | 3H | 3J | 4L | 4N | 5O | 5Q | Average |
| Co-mingled recycling bin | 9.7% | 6.5% | 7.3% | 13.1% | 14.6% | 13.8% | 6.5% | 10.4% | 8.9% |

Results – Organic Recycling (Food and garden)

**Set out rates and waste generation levels**

Households throughout Stockport have access to a collection of organic recycling consisting of food waste, garden vegetation and organic pet bedding. An average of 42% of households presented organic recycling bins for collection. Ranges seen were 7.2% for Acorn 3J (starting out) up to 61.2% for Acorn 1B (executive wealth). It was seen that an average of 216.3kg/hh/yr of organic recycling was being generated. Just 14.7kg/hh/yr of this recycling was generated by Acorn 3J (starting out) households compared with Acorn 3H (steady neighbourhoods) households generating 360kg/hh/yr. Solely considering presented bins; the average amount of organic recycling generated is 516.1kg/hh/yr.

Low set out rates for organic recycling in association with high individual bin weights (Acorns 5O and 5Q) suggests households are not using the service regularly. Some households may have little or no garden space and therefore use their bins solely for the disposal of food waste. Other households may wait until bins are full before placing out for collection or only recycle food waste when there is garden waste it can be mixed with. Residents should be encouraged to use this service more frequently even if volumes of waste are low or made up purely of food waste. This is especially the case during seasons where garden waste levels are likely to be lower.

Table 24: Organic recycling

|  |  |  |  |
| --- | --- | --- | --- |
| Sample | % Set out rate | Overall KG/HH/YR | KG/HH/YR per presented bin |
| 1B | 61.2% | 206.0 | 336.5 |
| 1C | 52.3% | 359.4 | 686.8 |
| 3H | 46.6% | 360.0 | 772.4 |
| 3J | 7.2% | 14.7 | 203.9 |
| 4L | 31.7% | 85.0 | 268.2 |
| 4N | 39.8% | 152.7 | 383.7 |
| 5O | 22.5% | 105.7 | 470.6 |
| 5Q | 22.1% | 102.0 | 461.7 |
| Average | 41.9% | 216.3 | 516.1 |

Figure 22: Set out rates for organic recycling (%)

Figure 23: Kg/hh/yr for organic recycling

**Compositional analysis of organic recycling**

This section looks at average amounts and composition of the organic recycling presented by households sampled throughout Stockport. Results can again be expressed in terms of percentage concentration and kg/hh/yr for individual samples surveyed. Table 25 and Figure 24 show recycling data in terms of percentage composition with Table 26 and Figure 25 showing generation rates for major materials in kg/hh/yr across all households in each sample area.

As residual waste will contain a proportion that is classified as recyclable; then recycling waste will contain a faction that is deemed to contamination. That is to say, that it is not compatible with the materials currently acceptable to the recycling container it is placed into.

On average around 43% (93.1kg/hh/yr) of organic recycling is due to food waste with 42% (90.1kg/hh/yr) being garden vegetation. There are trace levels of pet bedding and compostable liners. Therefore 85% (184.4kg/hh/yr) of organic recycling bin content consists of the correct materials. Around 12.5% (27kg/hh/yr) of material in the organic recycling bins is soil and turf while 2.3% is other waste materials.

Table 25: Organic recycling (% composition)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sample | 1B | 1C | 3H | 3J | 4L | 4N | 5O | 5Q | Average |
| All food waste | 52.4% | 55.1% | 12.6% | 92.4% | 22.8% | 44.2% | 41.9% | 29.3% | 43.1% |
| Garden vegetation | 27.0% | 44.1% | 44.5% | 3.4% | 67.6% | 40.1% | 44.4% | 64.8% | 41.6% |
| Pet bedding | 0.5% | 0.0% | 0.0% | 0.0% | 5.5% | 2.0% | 0.8% | 0.2% | 0.4% |
| Compostable liners | 0.2% | 0.0% | 0.3% | 0.0% | 0.3% | 0.4% | 0.3% | 0.5% | 0.2% |
| Soil & turf | 14.5% | 0.0% | 41.9% | 0.0% | 1.7% | 5.7% | 11.4% | 0.0% | 12.5% |
| All other waste | 5.4% | 0.7% | 0.7% | 4.2% | 2.1% | 7.5% | 1.2% | 5.1% | 2.3% |
| Total recyclable | 80.1% | 99.3% | 57.3% | 95.8% | 96.2% | 86.8% | 87.4% | 94.9% | 85.2% |
| Total contamination | 19.9% | 0.7% | 42.7% | 4.2% | 3.8% | 13.2% | 12.6% | 5.1% | 14.8% |

Figure 24: Organic recycling (% composition)

Table 26: Organic recycling (kg/hh/yr)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Organic recycling bins | 1B | 1C | 3H | 3J | 4L | 4N | 5O | 5Q | Average |
| All food waste | 107.9 | 198.1 | 45.5 | 13.5 | 19.4 | 67.5 | 44.3 | 29.9 | 93.1 |
| Garden vegetation | 55.6 | 158.6 | 160.1 | 0.5 | 57.4 | 61.3 | 47.0 | 66.2 | 90.1 |
| Pet bedding | 1.0 | 0.0 | 0.0 | 0.0 | 4.7 | 3.1 | 0.8 | 0.3 | 0.8 |
| Compostable liners | 0.5 | 0.0 | 0.9 | 0.0 | 0.2 | 0.6 | 0.3 | 0.5 | 0.3 |
| Soil & turf | 29.9 | 0.0 | 151.0 | 0.0 | 1.4 | 8.7 | 12.1 | 0.0 | 27.0 |
| All other waste | 11.1 | 2.6 | 2.6 | 0.6 | 1.8 | 11.5 | 1.2 | 5.2 | 4.9 |
| Total recyclable | 165.0 | 356.8 | 206.5 | 14.1 | 81.8 | 132.5 | 92.4 | 96.8 | 184.4 |
| Total contamination | 41.0 | 2.6 | 153.5 | 0.6 | 3.2 | 20.2 | 13.3 | 5.2 | 31.9 |

Figure 25: Organic recycling (kg/hh/yr)

Figure 26 below summarises the average composition of material disposed of in the organic recycling. Garden vegetation formed 42% of the collected organic recycling resulting in an annual collection of 90.1kg/hh/yr. Food formed 43% of bin contents resulting in 93.1kg/hh/yr being recycled.

An average of 14.8% or 31.9kg/hh/yr of recycling bin contents are due to items not acceptable to the collection and therefore deemed to be contamination.

Figure 26: Materials in organic recycling bins.

***\*Levels of garden waste fluctuate greatly depending on the season. Figures represent an annual average of data obtained during spring/summer and autumn/winter seasons.***

**Food content of the organic recycling**

In the organic recycling 43% of material is due to food waste. Of this food waste, 53% is avoidable with 2% of the avoidable food waste in the organics recycling still contained within its packaging.

Acorn 1C (mature money) had the lowest proportion of avoidable food waste (43.8%). In comparison 75.8% of food recycled in Acorn 5O (young hardship) was avoidable. For the majority of samples - with the exception of Acorn 1C (mature money), avoidable food waste made up the greatest proportion.

On average 2% of all recycled food waste was still packaged (3.9% of all avoidable food). Only one sample recycled food with a significant proportion being packaged – Acorn 4L (modest means) at 41.8%.

Table 27: Food waste placed into organic recycling bins (kg/hh/yr).

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sample | 1B | 1C | 3H | 3J | 4L | 4N | 5O | 5Q | Average |
| Avoidable food waste - unused fully packaged | 0.0 | 0.3 | 0.0 | 0.0 | 2.1 | 0.2 | 0.1 | 0.0 | 0.2 |
| Avoidable food waste - part used in packaging | 1.3 | 1.3 | 0.0 | 0.1 | 6.1 | 2.8 | 1.7 | 3.6 | 1.7 |
| Avoidable food waste loose | 54.4 | 95.1 | 26.7 | 7.6 | 4.8 | 40.8 | 31.8 | 18.7 | 47.5 |
| Potentially avoidable food waste | 4.9 | 3.5 | 2.7 | 0.8 | 2.2 | 7.8 | 3.7 | 3.3 | 3.6 |
| Unavoidable food waste | 47.3 | 98.0 | 16.0 | 5.0 | 4.3 | 15.9 | 7.0 | 4.4 | 40.1 |
| Total food waste | 107.9 | 198.1 | 45.5 | 13.5 | 19.4 | 67.5 | 44.3 | 29.9 | 93.1 |
| % Avoidable | 51.7% | 48.8% | 58.8% | 56.8% | 66.5% | 64.9% | 75.8% | 74.3% | 53.0% |
| % Possibly avoidable | 4.5% | 1.8% | 6.0% | 6.0% | 11.4% | 11.5% | 8.4% | 11.0% | 3.9% |
| % Of avoidable packaged | 2.4% | 1.6% | 0.0% | 1.0% | 62.9% | 6.9% | 5.2% | 16.1% | 3.9% |

**Organic recycling contamination**

On average 31.9kg/hh/yr or 14.8% of organic recycling consists of contamination. This section looks to breakdown the amounts and concentrations of various contaminants present.

Some forms of contamination may be due to residents’ lack of knowledge in relation to the recycling scheme. For example, a householder may believe soil and turf, or wood are acceptable. Other contamination will be formed from waste that is totally unrelated to the materials collected (i.e. plastics).

Table 28: Contamination in organic recycling bins (%)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sample | 1B | 1C | 3H | 3J | 4L | 4N | 5O | 5Q | Average |
| Soil & turf | 14.5% | 0.0% | 41.9% | 0.0% | 1.7% | 5.7% | 11.4% | 0.0% | 12.5% |
| Scrap wood | 0.0% | 0.0% | 0.5% | 0.0% | 0.0% | 4.3% | 0.0% | 0.7% | 0.3% |
| Other residual waste | 5.4% | 0.7% | 0.2% | 4.2% | 2.1% | 3.2% | 1.2% | 4.4% | 2.0% |
| Total contamination | 19.9% | 0.7% | 42.7% | 4.2% | 3.8% | 13.2% | 12.6% | 5.1% | 14.8% |

Table 29: Contamination in organic recycling bins (kg/hh/yr)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sample | 1B | 1C | 3H | 3J | 4L | 4N | 5O | 5Q | Average |
| Soil & turf | 29.9 | 0.0 | 151.0 | 0.0 | 1.4 | 8.7 | 12.1 | 0.0 | 27.0 |
| Scrap wood | 0.0 | 0.0 | 1.8 | 0.0 | 0.0 | 6.5 | 0.0 | 0.7 | 0.7 |
| All other contamination | 11.1 | 2.6 | 0.8 | 0.6 | 1.8 | 4.9 | 1.2 | 4.5 | 4.2 |
| Total contamination | 41.0 | 2.6 | 153.5 | 0.6 | 3.2 | 20.2 | 13.3 | 5.2 | 31.9 |

Three of the eight samples of organic recycling had contamination proportions lower than 5%. In another five samples contamination levels of 5.1%-42.7% were observed. Households in Acorn 3H (steady neighbourhoods) had a contamination level of 153.5kg/hh/yr. Generally, levels of contamination were related to the amount of soil and turf that was present within the collected bins. On average soil and turf formed 12.5% of the organic recycling and was responsible for 85% of the contamination.

**Capture rates for organic recyclables**

This section looks in more detail at the individual materials placed out for organic recycling collections and highlights the effectiveness with which recycling collections throughout Stockport are capturing these items. Capture rates determine how much of a material that should be recycled actually is being recycled. Looking at the relationship between the residual and recycling waste streams presented will additionally give indications as to the overall diversion being achieved via this service.

Around 245.9kg/hh/yr of recyclable organic material is generated by households across Stockport. Of this, 75% or 184.4kg/hh/yr is captured by the organics recycling bins. Acorn 1C (mature money) households disposed of, by far, the most organic material at 409.6kg/hh/yr. This compares with levels of just 87.2kg/hh/yr for Acorn 3J (starting out) and 143.5kg/hh/yr for Acorn 4L (modest means). Acorn 3J (starting out) also captured the lowest proportion at 16.1%, while Acorn 1C (mature money) (mature money) households managed to capture up to 87.1%.

Table 30: Distribution of organic recyclables in kerbside containers (kg/hh/yr)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Organic recyclables | 1B | 1C | 3H | 3J | 4L | 4N | 5O | 5Q | Average |
| Organic recyclables in residual bins (KG/HH/YR) | 43.7 | 50.8 | 68.9 | 71.5 | 59.0 | 46.0 | 68.0 | 80.8 | 57.7 |
| Organic recyclables in organics bins (KG/HH/YR) | 165.0 | 356.8 | 206.5 | 14.1 | 81.8 | 132.5 | 92.4 | 96.8 | 184.4 |
| Co-mingled recyclables in pulpable recycling bins (KG/HH/YR) | 1.1 | 1.2 | 3.0 | 1.4 | 0.7 | 0.5 | 1.1 | 3.9 | 1.6 |
| Co-mingled recyclables in co-mingleds bins (KG/HH/YR) | 4.3 | 0.9 | 3.0 | 0.2 | 2.1 | 1.5 | 0.8 | 3.6 | 2.2 |
| Total organic recyclables disposed of (KG/HH/YR) | 214.1 | 409.6 | 281.4 | 87.2 | 143.5 | 180.5 | 162.3 | 185.1 | 245.9 |
| % Capture of all organic recyclables | 77.1% | 87.1% | 73.4% | 16.1% | 57.0% | 73.4% | 56.9% | 52.3% | 75.0% |

Levels of organic waste tend to fluctuate over the course of a year largely due to the levels of garden waste being disposed of. During a spring / summer survey, levels of garden waste will be higher than one performed during winter months. Figures in this report provide the best annual estimates as they represent an average of the results from both seasons. Variations in the levels of food waste being disposed of are less pronounced, however it is generally the case that households recycle garden waste far more effectively than food waste. Residents will also have the option to remove garden waste and fruit / vegetable matter from their kerbside waste by using home composters.

Food waste

Across Stockport it is estimated that 151.6kg/hh/yr of recyclable food is disposed of at the kerbside with around 61.5% or 93.1kg/hh/yr being correctly recycled (Table 31). A total of 58.4kg/hh/yr of potentially recyclable food is not disposed of in organic recycling bins. Acorn 1C (mature money) residents were the sample to capture the greatest proportion of the food waste they disposed of with 81% being correctly recycled. Acorn 1C (mature money) households also disposed of the most recyclable food waste at 244.8kg/hh/yr. Acorn 3J (starting out) households recycled the lowest proportion of the food they were disposing of at just 16.7%.

Table 31: Distribution of recyclable food waste in kerbside containers (kg/hh/yr)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Food waste | 1B | 1C | 3H | 3J | 4L | 4N | 5O | 5Q | Average |
| Recyclable food disposed of (KG/HH/YR) | 156.9 | 244.8 | 120.4 | 81.0 | 76.3 | 114.8 | 107.8 | 118.2 | 151.6 |
| Recyclable food recycled (KG/HH/YR) | 107.9 | 198.1 | 45.5 | 13.5 | 19.4 | 67.5 | 44.3 | 29.9 | 93.1 |
| % Capture of recyclable food (KG/HH/YR) | 68.8% | 81.0% | 37.8% | 16.7% | 25.4% | 58.8% | 41.1% | 25.3% | 61.5% |

Figure 27 shows the distribution of recyclable food throughout the residual and recycling waste by Acorn group and overall.

Figure 27: Distribution of food waste in kerbside containers (kg/hh/yr) by Acorn group and overall

Garden waste

Almost all samples disposed of their garden waste in the organics recycling stream although there were large differences in the amount generated. The only exception was the Acorn 3J (starting out) sample who correctly disposed only 15.1% of their garden waste. On average Stockport households disposed of 90.6kg/hh/yr of garden waste with 99.4% correctly recycled. Whereas Acorn 3J (starting out) households generated just 3.3kg/hh/yr of garden vegetation, this amount was 160.1kg/hh/yr in Acorn 3H (steady neighbourhoods) – with a capture rate of 100%.

Table 32: Distribution of recyclable garden waste in kerbside containers (kg/hh/yr)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Garden waste | 1B | 1C | 3H | 3J | 4L | 4N | 5O | 5Q | Average |
| Recyclable garden waste disposed of (KG/HH/YR) | 55.7 | 159.1 | 160.1 | 3.3 | 57.8 | 62.0 | 47.3 | 66.2 | 90.6 |
| Recyclable garden waste recycled (KG/HH/YR) | 55.6 | 158.6 | 160.1 | 0.5 | 57.4 | 61.3 | 47.0 | 66.2 | 90.1 |
| % Capture of recyclable garden waste (KG/HH/YR) | 99.8% | 99.7% | 100.0% | 15.1% | 99.3% | 98.9% | 99.2% | 99.9% | 99.4% |

Figure 28: Distribution of recyclable garden waste in kerbside containers (kg/hh/yr)

**Diversion via organic recycling collections**

The organic recycling bin service is responsible for diverting 31.1% of all the kerbside waste presented. This proportion excludes all of the contamination materials that are present within these bins. Acorn 1C (mature money) divert 46.7% of their kerbside waste via their organic recycling bins, whilst only 4.5% of kerbside waste in the Acorn 3J (starting out) areas is diverted via organic recycling bins.

Table 33: Diversion via organic recycling bins (%)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diversion rates | 1B | 1C | 3H | 3J | 4L | 4N | 5O | 5Q | Average |
| Organic recycling bin | 29.8% | 46.7% | 26.6% | 4.5% | 16.1% | 26.4% | 25.3% | 15.9% | 31.1% |

**Results – Total amount of kerbside waste and recycling generated**

This section looks as the total amount of waste and recycling that is generated by each of the samples and as an average for Stockport. Diversion rates show the percentage of total generated waste produced from an area that is being ‘diverted’ via the available recycling stream(s).

On average Stockport households are disposing of 593.7kg/hh/yr of total kerbside waste at the kerbside. Acorn 3H (steady neighbourhoods) households created the highest levels of total waste at 775kg/hh/yr compared with 311kg/hh/yr for Acorn 3J (starting out).

Table 34: Total amount of kerbside waste and recycling (kg/hh/yr)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Kerbside waste stream | 1B | 1C | 3H | 3J | 4L | 4N | 5O | 5Q | Average |
| Residual | 181.8 | 226.8 | 285.3 | 202.6 | 253.9 | 188.4 | 192.4 | 278.2 | 222.7 |
| Paper & card | 84.4 | 118.8 | 56.9 | 40.2 | 77.1 | 77.4 | 35.2 | 108.8 | 82.5 |
| Co-mingled | 81.3 | 59.7 | 72.8 | 53.5 | 93.1 | 83.3 | 31.2 | 117.9 | 72.1 |
| Organics | 206.0 | 359.4 | 360.0 | 14.7 | 85.0 | 152.7 | 105.7 | 102.0 | 216.3 |
| Total kerbside | 553.5 | 764.7 | 775.0 | 311.0 | 509.1 | 501.8 | 364.5 | 607.0 | 593.7 |

Figure 29: Total amount of kerbside waste and recycling (kg/hh/yr)

On average it has been seen that Stockport households generate around 593.7kg/hh/yr of kerbside waste. Of this a total of 51.3% or 304.4kg/hh/yr is diverted via the available recycling containers. Organics recycling bins are diverting the majority of kerbside waste at 31.1% (184.6kg/hh/yr) compared with 11.4% (67.7kg/hh/yr) for pulpable recycling bins and 8.9% (52.8kg/hh/yr) for co-mingled recycling bins.

Different household samples varied as to how effectively they diverted their kerbside waste. Three out of the eight samples - Acorns 1B (executive wealth), 1C (mature money) and 4N (poorer pensioners) diverted over half of their kerbside waste through the supplied recycling bins. In contrast, Acorns 3J (starting out) were only diverting 28% of their kerbside waste.

Figure 30: Total diversion rates for Stockport samples (%)

**Maximum achievable diversion**

GMCA has an ambition to reach a 60% recycling rate across Greater Manchester by 2020. The current estimated diversion rate for Stockport from this survey is 51.3%. Table 36 illustrates the maximum amount of diversion that could be obtained if all of the recyclable material that is not placed into the correct recycling container is captured.

Figures from this survey show that Stockport households are diverting 304.4kg/hh/yr of their 593.7kg/hh/yr of total kerbside waste. This is a diversion rate of 51.3%, which is 8.7% below the target of 60%. In order to achieve 60% diversion an additional 51.8kg/hh/yr of recyclable material would need to be diverted bringing the total to 356.2kg/hh/yr (this assumes no changes in the amount of overall kerbside waste generated.

Were all recyclables placed into the correct recycling container, then the maximum achievable diversion would be 65.5% across Stockport. Across the samples the maximum diversion ranged between 52.4% for Acorn 3H (steady neighbourhoods) and 76.2% for Acorn 1C (mature money).

Overall a total of 84.4kg/hh/yr of recyclable material is not being placed into the correct recycling bin. By far the greatest potential for increasing diversion lies with food waste. This food waste forms 69% (58.4kg/hh/yr) of the material that is not recycled. Co-mingled plastic, metal and glass account for 17% (14.3kg/hh/yr) of the unrecycled items, with recyclable paper and card accounting for 10% (8.6kg/hh/yr).

Table 35: Recyclables currently diverted

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Current diversion | 1B | 1C | 3H | 3J | 4L | 4N | 5O | 5Q | Average |
| Recyclables currently diverted (KG/HH/YR) | 286.1 | 511.4 | 305.8 | 85.5 | 223.6 | 271.3 | 142.4 | 231.8 | 304.4 |
| Current diversion | 51.7% | 66.9% | 39.5% | 27.5% | 43.9% | 54.1% | 39.1% | 38.2% | 51.3% |

Table 36: Maximum potential diversion by capturing all recyclables

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diversion potential KG/HH/YR and % | 1B | 1C | 3H | 3J | 4L | 4N | 5O | 5Q | Average |
| Unrecycled paper | 4.3 | 2.7 | 3.6 | 6.2 | 5.7 | 2.5 | 2.2 | 4.8 | 3.8 |
| 0.8% | 0.4% | 0.5% | 2.0% | 1.1% | 0.5% | 0.6% | 0.8% | 0.6% |
| Unrecycled card & cardboard | 6.2 | 2.2 | 7.8 | 4.2 | 4.2 | 4.6 | 3.2 | 6.5 | 4.7 |
| 1.1% | 0.3% | 1.0% | 1.4% | 0.8% | 0.9% | 0.9% | 1.1% | 0.8% |
| Unrecycled plastic bottles | 3.9 | 2.7 | 3.4 | 2.6 | 1.9 | 2.2 | 1.6 | 8.3 | 3.4 |
| 0.7% | 0.4% | 0.4% | 0.8% | 0.4% | 0.4% | 0.4% | 1.4% | 0.6% |
| Unrecycled glass | 5.2 | 5.7 | 5.1 | 11.8 | 1.9 | 4.0 | 7.5 | 11.0 | 6.3 |
| 0.9% | 0.8% | 0.7% | 3.8% | 0.4% | 0.8% | 2.1% | 1.8% | 1.1% |
| Unrecycled metals | 4.1 | 5.2 | 5.7 | 4.1 | 5.2 | 2.4 | 3.0 | 6.3 | 4.6 |
| 0.7% | 0.7% | 0.7% | 1.3% | 1.0% | 0.5% | 0.8% | 1.0% | 0.8% |
| Unrecycled food | 49.0 | 46.6 | 74.9 | 67.5 | 56.9 | 47.3 | 63.5 | 88.3 | 58.4 |
| 8.9% | 6.1% | 9.7% | 21.7% | 11.2% | 9.4% | 17.4% | 14.5% | 9.8% |
| Unrecycled garden waste | 0.1 | 0.4 | 0.0 | 2.8 | 0.4 | 0.7 | 0.4 | 0.0 | 0.5 |
| 0.0% | 0.1% | 0.0% | 0.9% | 0.1% | 0.1% | 0.1% | 0.0% | 0.1% |
| Unrecycled pet bedding | 0.0 | 5.8 | 0.0 | 2.8 | 4.4 | 0.0 | 6.1 | 0.0 | 2.6 |
| 0.0% | 0.8% | 0.0% | 0.9% | 0.9% | 0.0% | 1.7% | 0.0% | 0.4% |
| Total unrecycled | 72.8 | 71.4 | 100.4 | 102.0 | 80.5 | 63.6 | 87.5 | 125.2 | 84.4 |
| 13.2% | 9.3% | 13.0% | 32.8% | 15.8% | 12.7% | 24.0% | 20.6% | 14.2% |
| Recyclables potentially divertible | 358.9 | 582.8 | 406.2 | 187.5 | 304.1 | 334.9 | 229.9 | 357.1 | 388.8 |
| Potential maximum diversion | 64.8% | 76.2% | 52.4% | 60.3% | 59.7% | 66.7% | 63.1% | 58.8% | 65.5% |

**Figure 31: Recyclable material available for diversion (kg/hh/yr)**

**Figure 32: Maximum diversion potential (%)**

**Potential for increasing pulpables recycling**

Were recyclable pulpables (paper and card) targeted then potentially an additional 8.6 kg/hh/yr or 1.4% of waste could be diverted. This would raise overall diversion to 52.7%. Acorns 3J (starting out) holds the greatest potential for raising diversion by capturing all of their recyclable paper. They could increase total diversion by 3.3%.

**Table 37: Targeting pulpables (paper and card) recyclables**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pulpable recyclables | 1B | 1C | 3H | 3J | 4L | 4N | 5O | 5Q | Average |
| KG/HH/YR Available | 10.5 | 4.9 | 11.4 | 10.4 | 9.9 | 7.0 | 5.4 | 11.3 | 8.6 |
| % Increase in diversion | 1.9% | 0.6% | 1.5% | 3.3% | 1.9% | 1.4% | 1.5% | 1.9% | 1.4% |
| Achieved diversion | 53.6% | 67.5% | 40.9% | 30.8% | 45.9% | 55.5% | 40.5% | 40.1% | 52.7% |

**Potential for increasing co-mingled recycling**

Were materials suitable for co-mingled recycling targeted then potentially 14.3 kg/hh/yr or 2.4% of waste could be diverted. This would raise overall diversion to 53.7%. Acorn 3J (starting out) holds the greatest potential for raising diversion by capturing all of their recyclable paper, where total diversion could increase by 5.9%. Expanding the mixed recycling collections to include either Tetrapak cartons and/or plastic pots, tubs and trays would also act to increase the amount recycled. The potential increase in diversion achieved by introducing these materials is shown in Table 43 at the end of this document.

**Table 38: Targeting co-mingled recyclables**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Co-mingled recycling | 1B | 1C | 3H | 3J | 4L | 4N | 5O | 5Q | Average |
| KG/HH/YR Available | 13.2 | 13.6 | 14.1 | 18.5 | 8.9 | 8.6 | 12.1 | 25.6 | 14.3 |
| % Increase in diversion | 2.4% | 1.8% | 1.8% | 5.9% | 1.8% | 1.7% | 3.3% | 4.2% | 2.4% |
| Achieved diversion | 54.1% | 68.7% | 41.3% | 33.4% | 45.7% | 55.8% | 42.4% | 42.4% | 53.7% |

The targeting of pulpables (paper and card) as well as co-mingled recycling has the potential to divert an additional 22.9 kg/hh/yr of material. This would boost the overall diversion rate by 3.8% up to 55.1%. Only Acorn 1C (mature money) would be above the 60% target, but this is already happening at current recycling rates. Four Acorn samples would show above average potential increases for diversion for the successful capture of their dry recyclables; Acorn 1B (executive wealth – 4.3%), Acorn 3J (starting out - 9.3%), Acorn 5O (young hardship – 4.8%) and Acorn 5Q (difficult circumstances - 6.1%).

**Potential for increasing organics recycling**

**Table 39: Targeting organics (food and garden) recycling**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Food & garden recycling | 1B | 1C | 3H | 3J | 4L | 4N | 5O | 5Q | Average |
| KG/HH/YR Available | 49.1 | 52.9 | 74.9 | 73.1 | 61.8 | 48.0 | 70.0 | 88.3 | 61.5 |
| % Increase in diversion | 8.9% | 6.9% | 9.7% | 23.5% | 12.1% | 9.6% | 19.2% | 14.6% | 10.4% |
| Achieved diversion | 60.6% | 73.8% | 49.1% | 51.0% | 56.0% | 63.6% | 58.3% | 52.7% | 61.6% |

Were materials suitable for food and garden recycling targeted then potentially 61.5kg/hh/yr or 10.4% of waste could be diverted. This would raise overall diversion to 61.6%, effectively hitting the required target. Three of the eight demographic samples would exceed the 60% target. Four Acorn samples would show above average potential increases for diversion for the successful capture of their organic recyclables: Acorn 3J (starting out – 23.5%), Acorn 4L (modest means - 12.1%), Acorn 5O (young hardship - 19.2%), and Acorn 5Q (difficult circumstances – 14.6%).

Almost all of this diversion potential is in the form of food waste rather than garden waste and biodegradable pet bedding. Table 36 shows that of the 61.5kg/hh/yr of potentially divertible organics, the vast majority (95%) are due to food waste. If all food waste was diverted, then an additional 5.6% diversion could be achieved.

An average of 84.4kg/hh/yr or 14.2% of kerbside waste is not being diverted. The maximum achievable diversion is therefore around 65.5%. Of the eight sample areas, six would hit 60% diversion if all of their recyclable materials were correctly recycled - Acorns 1B (executive wealth), 1C (mature money), 3J (starting out), 4L (modest means), 4N (poorer pensioners) and 5O (young hardship).

Acorns 3J (starting out) (+32.8%), 5O (young hardship) (+24.0%) and 5Q (difficult circumstances) (+20.6%) would show the greatest increase in diversion by successfully recycling accepted materials at the kerbside.

**Waste minimisation**

Around 222.7kg/hh/yr of residual bins waste is of a type that cannot be diverted into a kerbside recycling scheme. This includes materials such as textiles, and WEEE that could have been taken to one of the HWRC’s and also disposable nappies that are possible to collect separately from the kerbside. Diversion can be increased if these items were removed from the residual waste.

**Textiles**

On average, 5.3% or 11.8kg/hh/yr of residual waste consisted of different types of textiles. Almost 85% of the weight of items in this category were classified as linen, clothing and shoes. These items account for 4.5% or 10kg/hh/yr of residual waste and depending on the condition of these items much of this could potentially be diverted to HWRCs, bring banks or charity shops. Over 6% (17kg/hh/yr) of Acorn 5Q (difficult circumstances) and almost 5% (12.5kg/hh/yr) of Acorn 4L (modest means) residual waste was due to linen, clothing and shoes.

If all of the potentially recyclable textiles were removed from residual bins and diverted to HWRCs or elsewhere then 10kg/hh/yr of residual waste reduction would be possible. This in turn would raise diversion by 0.9% to 52.2%.

**Table 40: Textile content of the residual waste**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sample | 1B | 1C | 3H | 3J | 4L | 4N | 5O | 5Q | Average |
| Total textiles (%) | 4.7% | 5.2% | 5.3% | 4.4% | 5.7% | 3.6% | 5.4% | 7.5% | 5.3% |
| Total textiles (KG/HH/YR) | 8.6 | 11.8 | 15.0 | 8.9 | 14.5 | 6.7 | 10.3 | 21.0 | 11.8 |
| Linen, clothing & shoes (%) | 4.5% | 4.5% | 4.6% | 2.8% | 4.9% | 3.3% | 4.1% | 6.1% | 4.5% |
| Linen, clothing & shoes (KG/HH/YR) | 8.2 | 10.2 | 13.3 | 5.6 | 12.5 | 6.2 | 7.9 | 17.0 | 10.0 |
| % Of linen, clothing & shoes from textiles | 94.8% | 86.1% | 88.1% | 62.9% | 86.3% | 92.6% | 76.6% | 81.0% | 84.9% |

**Disposable nappies**

Disposable nappy levels within the residual waste of households with babies can be extremely high. In this survey, the concentrations of disposable nappies and AHP (absorbent hygiene products) waste ranged between 4.3% (8.8kg/hh/yr) in Acorn 3J (starting out) up to 24.7% (70.5kg/hh/yr) in Acorn 3H (steady neighbourhoods). The average Stockport householders’ residual waste bin contained 15.2% or 33.9kg/hh/yr of disposable nappies and AHP waste.

Were a separate collection of these products made available or households switched to reusable nappies then this would represent a sizeable reduction in residual waste. As a result, diversion could potentially rise from 51.3% to 54.4%.

**Table 41: Disposable nappy & AHP content of the residual waste**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sample | 1B | 1C | 3H | 3J | 4L | 4N | 5O | 5Q | Average |
| Total disposable nappies & AHP (%) | 14.9% | 11.8% | 24.7% | 4.3% | 18.0% | 14.9% | 14.9% | 16.9% | 15.2% |
| Total disposable nappies & AHP (KG/HH/YR) | 27.1 | 26.7 | 70.5 | 8.8 | 45.6 | 28.0 | 28.7 | 47.0 | 33.9 |

**WEEE**

Waste electrical and electronic equipment (WEEE) formed an average of 1% or 1.9kg/hh/yr of collected residual waste. These items should not be in residual bins and should be disposed of at recycling centres. Common items include small kitchen appliances, cables, plugs and leads, adaptors, hairdryers, lamps etc. The Acorn 3H (steady neighbourhoods) sample had the highest amount of this type of waste at 5.9kg/hh/yr of the total, as well as the highest percentage of this type of waste (2.1%). Removal of these items from the residual waste would have only a small effect on diversion by increasing it from 51.3% to 51.4%

**Table 42: WEEE content of the residual waste**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sample | 1B | 1C | 3H | 3J | 4L | 4N | 5O | 5Q | Average |
| Total WEEE (%) | 1.2% | 0.1% | 2.1% | 0.8% | 0.3% | 1.2% | 0.7% | 0.7% | 0.8% |
| Total WEEE (KG/HH/YR) | 2.1 | 0.2 | 5.9 | 1.7 | 0.7 | 2.2 | 1.3 | 1.8 | 1.9 |

Were it possible for households to remove the recyclable textile, disposable nappy and WEEE items from their residual waste, then this would represent a minimisation of around 45.7kg/hh/yr or 20.5% of the total residual waste. As a result, diversion could increase from 51.3% to 55.6% with no additional changes in the amount of recycling collected.

**Tetrapak and plastic pots, tubs, trays (PTTs)**

Tetrapak cartons and plastic pots, tubs and trays (PTT) form around 17.3kg/hh/yr of kerbside waste from Stockport households. These items are not currently part of the recycling scheme operated by GMCA. Should they be introduced the effect on diversion would be an increase from 51.3% to 54.2%. More potential is available for PTT which could increase diversion by 2.6% as opposed to 0.3% for Tetrapaks.

**Table 43: Tetrapak and PTT disposed of at the kerbside**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sample | 1B | 1C | 3H | 3J | 4L | 4N | 5O | 5Q | Average |
| Total tetrapak & PTT (%) | 4.1% | 2.6% | 2.0% | 3.8% | 3.6% | 3.0% | 2.6% | 2.1% | 2.9% |
| Total tetrapak & PTT (KG/HH/YR) | 22.8 | 19.7 | 15.6 | 11.7 | 18.5 | 15.1 | 9.4 | 13.0 | 17.3 |

Were it possible for households to remove the recyclable textile, disposable nappy and WEEE items from their residual waste, then this would represent a minimisation of around 45.7kg/hh/yr or 20.5% of the total residual waste. As a result, diversion could increase from 51.3% to 55.6% with no additional changes in the amount of recycling collected. Additionally, diverting Tetrapaks and PTT away from the residual waste and into the recycling scheme could raise this amount further to 58.5%.

**Appendix**

Annual collected tonnage data for the kerbside waste and recycling collections is shown in Table 3. These tonnages can be applied to the percentage composition of hand sorted waste obtained from this survey. Caution needs to be taken when applying these waste proportions to annual tonnages as the composition relates to the waste collected at the time of the survey only – and this may differ seasonally. For example, garden waste volumes will be drastically higher during certain months, therefore applying the percentage by weight figure for this (or any other) single phase survey to Stockport annual tonnages will not accurately model what would be expected over a twelve month period.

**Tonnage composition – residual waste**

|  |  |  |
| --- | --- | --- |
| Recyclable materials | % Composition | Projected annual tonnage |
| Recyclable paper | 1.7% | 682 |
| Recyclable card & cardboard | 2.0% | 820 |
| Plastic bottles | 1.4% | 573 |
| Recyclable glass | 2.8% | 1,134 |
| Recyclable metals | 2.0% | 817 |
| Recyclable food waste | 24.6% | 10,010 |
| Recyclable garden waste | 0.2% | 81 |
| Recyclable pet bedding | 1.1% | 467 |
| Non kerbside recyclable | 64.2% | 26,139 |
| Total | 100.0% | 40,723 |
| Recyclables by bin | % Composition | Projected annual tonnage |
| Pulpable recyclables | 3.7% | 1,502 |
| Co-mingled recyclables | 6.2% | 2,524 |
| Organic recyclables | 25.9% | 10,558 |
| Total recyclable | 35.8% | 14,584 |

**Tonnage composition – pulpable recycling**

|  |  |  |
| --- | --- | --- |
| Recyclable materials | % Composition | Projected annual tonnage |
| Recyclable paper | 50.7% | 6,451 |
| Recyclable card & cardboard | 31.0% | 3,944 |
| Plastic bottles | 0.2% | 32 |
| Recyclable glass | 0.1% | 18 |
| Recyclable metals | 0.2% | 21 |
| Recyclable food waste | 1.8% | 230 |
| Recyclable garden waste | 0.1% | 10 |
| Recyclable pet bedding | 0.0% | 0 |
| All other waste | 15.8% | 2,015 |
| Total | 100.0% | 12,720 |
| Recyclables by bin | % Composition | Projected annual tonnage |
| Pulpable recyclables | 81.7% | 10,395 |
| Co-mingled recyclables | 0.6% | 71 |
| Organic recyclables | 1.9% | 240 |
| Total contamination | 15.8% | 2,015 |
| Total | 100.0% | 12,720 |

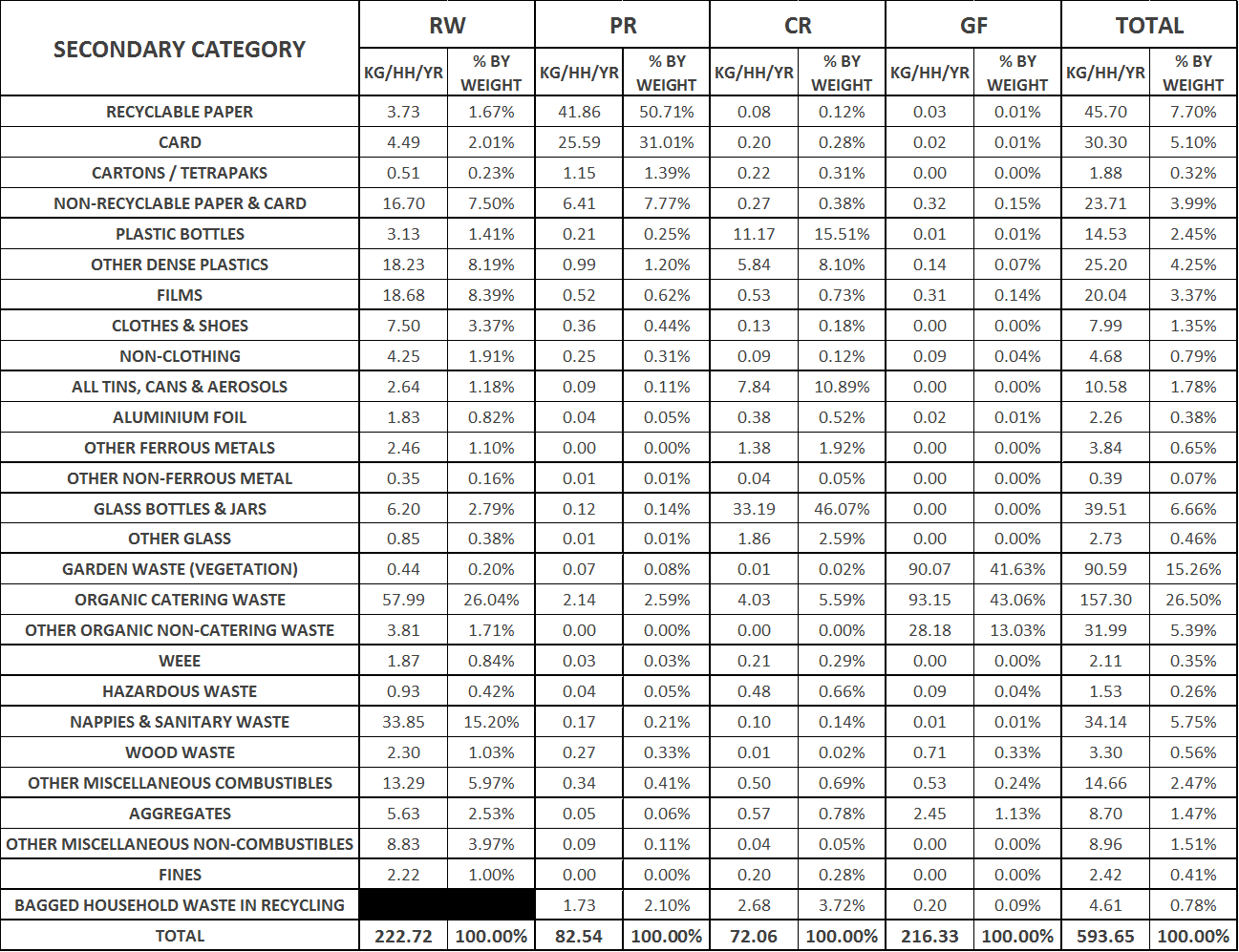
**Tonnage composition – co-mingled recycling**

|  |  |  |
| --- | --- | --- |
| Recyclable materials | % Composition | Projected annual tonnage |
| Recyclable paper | 0.12% | 16 |
| Recyclable card & cardboard | 0.28% | 37 |
| Plastic bottles | 15.51% | 2,044 |
| Recyclable glass | 46.07% | 6,070 |
| Recyclable metals | 11.41% | 1,503 |
| Recyclable food waste | 3.04% | 401 |
| Recyclable garden waste | 0.02% | 3 |
| Recyclable pet bedding | 0.00% | 0 |
| All other waste | 23.56% | 3,105 |
| Total | 100.00% | 13,178 |
| Recyclables by bin | % Composition | Projected annual tonnage |
| Pulpable recyclables | 0.40% | 52 |
| Co-mingled recyclables | 72.98% | 9,617 |
| Organic recyclables | 3.06% | 404 |
| Total contamination | 23.56% | 3,105 |
| Total | 100.00% | 13,178 |

**Tonnage composition – organic recycling**

|  |  |  |
| --- | --- | --- |
| Recyclable materials | % Composition | Projected annual tonnage |
| Recyclable paper | 0.11% | 40 |
| Recyclable card & cardboard | 0.00% | 1 |
| Plastic bottles | 0.00% | 0 |
| Recyclable glass | 0.00% | 0 |
| Recyclable metals | 0.00% | 1 |
| Recyclable food waste | 29.34% | 10,221 |
| Recyclable garden waste | 64.85% | 22,593 |
| Recyclable pet bedding | 0.25% | 87 |
| Liners | 0.45% | 157 |
| All other waste | 5.00% | 1,740 |
| Total | 100.00% | 34,840 |
| Recyclables by bin | % Composition | Projected annual tonnage |
| Pulpable recyclables | 0.12% | 41 |
| Co-mingled recyclables | 0.00% | 1 |
| Organic recyclables | 94.88% | 33,058 |
| Total contamination | 5.00% | 1,740 |
| Total | 100.00% | 34,840 |

**Kerbside collected Waste Arisings (kg/hh/yr) and Assays (% by wt)**





1. *https://acorn.caci.co.uk/what-is-acorn* [↑](#footnote-ref-2)