

**WASTE COMPOSITION ANALYSIS REPORT 2015/16**  
**WDA/14/16**

**Recommendation**

That:

1. Members note the key results of the waste composition analysis study in paragraph 3 of this report;
2. The four recommendations contained in the study (at paragraph 4.1 of this report) which are relevant to the Authority should be developed into actions (Appendix 3) which can be implemented through the Authority's Service Delivery Plan; and
3. Members agree to a workshop on the implications and issues emerging from the waste composition study.

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**Waste Composition Analysis Report 2015/16****WDA/14/16****Report of the Chief Executive****1. Purpose of the Report**

- 1.1 To present Members with the results and recommendations of the Merseyside and Halton Waste Composition Study 2015/16.

**2. Background and Methodology**

- 2.1 The Authority agreed a programme of work to refresh the current Joint Recycling and Waste Management Strategy (JRWMS) which was ratified in November 2012. (Authority Report WDA/30/15 September 2015)
- 2.2 The first phase of this review was to undertake a waste composition analysis to identify the main waste materials arising in the Liverpool City Region at the kerbside (residual waste, dry recycling, organic food and green waste) and in the residual waste (non-recyclable) skips at Household Waste Recycling Centres.
- 2.3 The aims of the project were to:
- Identify the composition (% weight) of household waste collected or recycled or composted or delivered for disposal in the Liverpool City Region through physical waste sampling;
  - Estimate general household waste composition through combining composition and arisings data;
  - Identify the proportion of the sample waste which could have been repaired or reused but are currently being sent for recycling or disposal; and
  - Estimate the biodegradable content and net calorific value (CV) of the kerbside and HWRC residual waste streams;
- 2.4 The achievement of these aims will contribute to the following outcomes:
- Provision of essential baseline data to assist in the future review of the JRWMS and the current strategic review of waste management being led by the Liverpool City Region;

- Support the Merseyside and Halton Waste Partnership (MHWP) to improve and optimise existing recycling and composting services;
  - Support MHWP to develop waste prevention, reduction, re-use and recycling action plans to move waste management up the Waste Hierarchy, improve quality and yields and reduce levels of contamination;
  - Assist progress across the City Region to reduce carbon emissions and increase resource efficiency to benefit the developing Circular Economy; and
  - Improve the links between household waste generation and socio-economic characteristics of local communities
- 2.5 Amec Foster Wheeler (formerly Entec) who delivered Merseyside and Halton’s last waste composition analysis in 2010 were appointed to undertake a two seasonal analysis of household waste in 2015/16.
- 2.6 The study used a house by house sampling analysis of the kerbside waste streams. The sampling was representative of more than 90% of households in each participating district through use of a socio-demographic tool “A Classification of Residential Neighbourhoods” (ACORN). (Appendix D of the Final Report provides more information on the ACORN analysis).
- 2.7 An on-site Household Waste Recycling Centre (HWRC) user sampling approach was used for the HWRC residual waste streams. A sample team visited six selected HWRCs (one in each district) to collect small but relatively high numbers of samples. .

### **3. Key results**

- 3.1 The Executive Summary of the waste composition analysis study is attached at Appendix 1. The fully study will be made available on the Authority’s website. The waste sort categories identified for analysis at the kerbside and HWRCs are listed in Appendix 2 of this report. These categories are also highlighted as materials targeted for recycling and re-use.
- 3.2 Section 3 of the study presents the seasonal and study average kerbside waste composition results for the Merseyside and Halton Waste Partnership (MHWP) and each of the six districts. Table E1 on page 4 of

the executive summary presents the kerbside waste composition results for MHWP. The key results include:

- The high proportion of food waste in the residual stream at 39.1% (approx. 140,000 tonnes) of which 63.9% (approx. 90,000 tonnes was avoidable (i.e. edible food prior to disposal).
- Approximately 63% (225,000 tonnes) of residual waste being sent to landfill was potentially recyclable. The majority was food waste followed by recyclable paper (approx. 18,000 tonnes) and textiles (approx. 17,000 tonnes);
- 4.6% (approx. 25,000 tonnes) of the total kerbside waste was potentially reusable i.e. Textiles at 3.4% (approx. 18,000) followed by Waste Electrical or Electronic Equipment (WEEE) at 0.6% (approx. 3,000 tonnes)

3.3 Table E.2 and Figure E.2 on pages 6 and 7 of the Executive Summary present the HWRC residual waste composition results which include:

- 45.3% of the residual stream was furniture (approx. 21,000 tonnes). This proportion of furniture is more than would normally be expected in the HWRC waste stream and could be a result of increased recycling, changing waste composition or a function in the change of sampling methodology used. This result is examined in more detail in Section 4.3 (pages 81-83) of the study;
- The second largest material category in the HWRC residual waste was food waste at 8.5% (approx. 4,000 tonnes) followed by plastic at 8.1% (approx. 4,000 tonnes). (Plastic bottles composed 1% and Pots, Tubs and Trays 0.7% of the HWRC residual waste.
- The proportion of sample material categorised as potentially reusable was 45.5% (approx. 21,000 tonnes).

#### **4. Recommendations**

4.1 Section 5 of the study includes recommendations for the Merseyside and Halton Waste Partnership based on the results of the study. These are:

1. 39.1% of kerbside residual waste going to landfill was food (approx. 130-150,000 tonnes plus an additional 4,000 tonnes at HWRCS). The introduction of separate food waste collections has the potential to significantly reduce the quantity of residual waste

requiring treatment and disposal and to improve recycling performance. The “whole system costs” (i.e. from collection through to treatment/disposal) would need to be considered to fully assess the economic viability of separate food waste collections;

2. 24% of kerbside residual waste going to landfill (approx. 86,000 tonnes) was composed of recyclable materials which are currently collected by at least one of the Districts. Key materials include recyclable paper, textiles, recyclable card including books and telephone directories, glass, metal packaging and plastic bottles. There was also an estimated 7,000 tonnes of garden waste present in the kerbside residual waste stream. The Partnership should target these materials to divert them from the residual waste stream into the dry recycling or garden waste services;
3. 16% of the kerbside dry recycling collected (18,000 tonnes) was composed of materials which are not targeted for recycling. Communication and education initiatives which reduce the level of contamination in the dry recycling bins would improve the quality of recyclable materials collected by the Partnership. This could have benefits in terms of the prices achieved for dry recyclables; and
4. 45% of the HWRC residual waste (approx. 21,000 tonnes) was furniture. This is an unusual result which requires further investigation to confirm the contribution of furniture to this waste stream and identify ways in which furniture can be managed more sustainably. Furniture was also one of the main components contributing to the estimate that 45.5% of the HWRC residual waste could be reusable.

4.2 Members are asked to agree the four study recommendations above where the Authority can develop into an action plan (see Appendix 3). This action plan, which will be reported back to Members, will target the areas which have the greatest potential to support the objectives referenced below from the approved Service Delivery Plan 2016-17 (Report WDA 08/16):

“1.2.1 To manage the services to the District Councils under the Waste Management and Recycling Contract in line with its Service Delivery Plans and the minimum contract standards for 2016/17 which are:

- Diverting from landfill at least 90% of Kerbside Collected Recyclable Materials
- Diverting from landfill at least 95% of Organic Waste (Garden and Kitchen Waste);

- 1.2.2 To manage the Household Waste Recycling Centres under the WMRC in line with Service Delivery Plans and the minimum contract standards for 2016/17 which are:
- Recycling and composting at least 52.91% of HWRC waste
  - Diverting from landfill at least 64.04% of HWRC waste;
- 1.3.1 To contribute to the Strategic Review to be undertaken by the Merseyside Councils and the Combined Authority;
- 2.1.1 To complete a refresh of the Joint Recycling and Waste Management Strategy (JRWMS) following the outcome of the Strategic Review;
- 2.1.2 To implement the actions identified in the Re-Use Strategy for 2016/17.
- 2.1.3 To support the delivery of the JRWMS by working with partners and stakeholders to promote waste management in line with the Waste Hierarchy.
- 2.2.1 To deliver a Behavioural Change Programme which is cost effect and supports the ethos of waste prevention, re-use, recycling and education and awareness”.
- 4.3 There are some minor revisions still to be made to the Study which will not affect the findings presented in this report. These amendments will be made prior to the full Study being made publicly available on the Authority’s website after this meeting.
- 4.4 It will be for the each partner district to accept the findings and recommendations from the study and for the Waste Partnership collectively to consider how best to address the findings and recommendations within the context of the Strategic Review and the refresh of the Joint Recycling and Waste Management Strategy.
- 4.5 It is proposed that a workshop be held with Members on the implications and issues emerging from this report to inform future actions and the refresh of the Joint Recycling and Waste Management Strategy for Merseyside.

## 5. Risk Implications

### 5.1

<b>Identified Risk</b>	<b>Likelihood Rating</b>	<b>Consequence Rating</b>	<b>Risk Value</b>	<b>Mitigation</b>
Failure to divert recyclable and potentially re-usable materials in the residual waste stream at kerbside and at HWRCs	3	4	12	Explore opportunities for further diversion from residual waste streams at HWRCs and to increase re-use
Failure to communicate and educate residents to reduce contamination of recyclable materials collected by the partnership and to increase recycling, re-use and waste prevention.	3	4	12	Through the development of the Behavioural Change Programme and targeting specific socio-economic groups within the City Region. Identify further joint communication opportunities with Districts
Failure to take account of the findings of the study within the Strategic Review of waste management and the refresh of the JRWMS which	2	4	8	The WCA report will be provided to Local Partnerships for the Strategic Review and the findings of the study will inform the next steps in the JRWMS refresh to be ready for adoption so



could result in failure to meet the 50% recycling target by 2020 and other agreed JRWMS targets				changes in delivery and materials benefits meeting the 2020 recycling target.
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## 6. HR Implications

6.1 There are no HR implications associated with this report.

## 7. Environmental Implications

7.1 Addressing the issues raised in the study will provide additional environmental benefits in terms of optimising existing services, preventing waste, resource efficiency, increasing re-use, reducing contamination and increasing yields and quality of target materials for recycling.

## 8. Financial Implications

8.1 There are no direct financial implications associated with this report. Actions taken by the Authority in response to the findings and recommendations of the study will be in line with the approved budget and Service Delivery Plan for 2016-17. Any future proposals will need to be considered as part of future budget setting and within the context of the Strategic Review of Waste Management.

## 9. Legal Implications

9.1 There are no legal implications associated with this report.

## 10. Conclusion

10.1 The Waste Composition Analysis was commissioned as the first phase in a programme of work to refresh the current Joint Recycling and Waste Management Strategy (JRWMS) for Merseyside.

10.2 The Study was to undertake a two seasonal analysis of the main waste streams in the Liverpool City Region for kerbside collected household waste (residual, dry recycling and organic food and green waste) and residual waste at Household Waste Recycling Centres.

- 10.3 The results from the Study will provide baseline data for the review of the JRWMS and the Strategic Review of Waste Management being led by the Merseyside Councils and Combined Authority.
- 10.4 The results will support the Waste Partnership to develop plans to move waste management up the Waste Hierarchy and to improve quality and yields and reduce levels of contamination.
- 10.5 The kerbside waste composition identified food waste as being the highest proportion of waste in the residual bin at 39.1% (approx. 140,000 tonnes) results from the kerbside. 63% of the residual waste stream was potentially recyclable mainly food waste, paper and textiles. 4.6% of residual waste presented was potentially re-usable.
- 10.6 There was a high proportion of furniture in the HWRC residual waste stream at 45.3% (approximately 21,000 tonnes) which was more than anticipated. This may be a result of increased recycling and changing waste composition or the change in methodology used compared to the previous study. Food waste comprised 8.5% and plastics at 8.1%. (approx. 4,000 of each waste stream).
- 10.7 The study makes recommendations on food waste collections as the largest component of kerbside residual waste which is potentially recyclable; targeting materials from the residual waste stream into the dry recycling or garden waste streams; the need for communications and education to promote behavioural change and reduce levels of contamination in the kerbside dry recyclables and to explore the contribution of furniture in the HWRC residual waste to identify ways it can be managed more sustainably.

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The background documents to this report are open to inspection in accordance with Section 100D of The Local Government Act 1972:

1. Merseyside and Halton Waste Composition Analysis Final Report