

**Cabinet
2 February 2016**

**Head of Community & Environmental Services
Report No. COMM1602**

Waste Regulations 2012 – Recycling System Assessment for Rushmoor

1.0 Introduction

- This paper seeks endorsement of the recycling assessment carried out under the Waste (England and Wales) Regulations 2012 (as amended in 2014).

2.0 Background to the Assessment

- Under the above legislation, which enacts the Revised Waste Framework Directive (2008/98/EC), all Local Authorities are required to maximise high quality recycling and apply the waste hierarchy as a priority order for the management of waste materials.
- The legislation also requires authorities to collect a range of materials; paper, metal, plastic and glass and to ensure that these are collected separately. However, the requirement to collect the materials separately only applies where it is necessary to ensure the waste undergoes recovery operations and is “Technically, Environmentally and Economically Practicable” (TEEP) to do so.
- In order to fulfil this requirement, the Council must demonstrate whether the current system is appropriate or whether separate collections are required to ensure high quality recycling.

3.0 The Assessment

- The assessment has been carried out in conjunction with our partners in Project Integra and consultants White Young Green. It follows the format suggested by the Waste Regulations Route Map produced by the Waste and Resources Action Programme (WRAP) in December last year. A copy of the final assessment is attached.
- The assessment follows a number of steps that are summarised below:
- **Step 1** describes the current waste collection system in operation and shows that Rushmoor does indeed collect paper, metal, plastic and glass, but does

not collect each of these separately. Glass is collected separately, but the others are co-mingled at the point of collection.

- **Step 2** outlines how each material is treated and recycled and explains that blue bin material is processed by Veolia as part of the Hampshire County Council disposal contract.
- **Step 3** seeks application of the waste hierarchy which has been applied to waste management decisions both locally and Hampshire-wide through the Project Integra partnership for many years. Indeed, Project Integra (PI) has been very successful in diverting waste from landfill, and is top performing in that regard.
- **Step 4** is to undertake two tests, one asks whether separate collections for paper, metal, plastic and glass are necessary to ensure the materials are recycled. The second is to determine whether separate collections are practicable technically, environmentally and economically.
- **The Necessity Test** compares the yield of materials through the Rushmoor system with other similar authorities, some of which have similar collection systems and others are significantly different. This test demonstrates that whilst the yield of recyclate in Rushmoor is relatively low, the co-mingled approach yields more than would be obtained by a separate collection service for each material. Additionally, the focus on high-quality materials in the Hampshire system and keeping glass separate ensures high quality, local recycling and the income received is reflective of this. Therefore, separate collections are not necessary to ensure the materials are recycled.
- **The Practicality Test** addresses whether the separate collection of each material is economically, environmentally or technically impracticable. The report shows the likely additional costs of operating a separate collection service when compared with the market rate for the current service at £150,000 per year. Therefore a separate collection service proves to be impracticable on economic grounds.

4.0 Financial Implications

- There are no financial implications to this report.

5.0 Conclusions

- The collection service in Hampshire is intrinsically linked with the infrastructure that is provided under the County Council waste disposal contract with Veolia. This system has been carefully developed with the aim of minimising reliance on landfill, maximising material quality, sustainability and income. The system has been very successful in that regard.

- The separate collection of glass ensures that there is no degrading of material quality associated with including glass in the co-mingled mix and is a key factor in the suitability of the Rushmoor system.
- Whilst the yield of materials through the system is quite low in Rushmoor, importantly, it could not be increased by switching to separate collections and such a change would be rendered impracticable in financial terms.

6.0 Recommendation

- Cabinet is recommended to endorse the TEEP assessment as outlined and determine that the current collection system is fit for purpose.
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Background papers: WYG – Note for Rushmoor Borough Council: TEEP Assessment

NOTE FOR RUSHMOOR BOROUGH COUNCIL: TEEP ASSESSMENT



INTRODUCTION

Rushmoor Borough Council (RBC) collects its waste, including co-mingled dry recyclables, through a contract with Veolia Environmental Services (VES), which provides these services through an integrated contract, which includes services such as street cleansing, grounds maintenance and toilet cleaning. The collected dry recyclables, which are co-mingled but with glass as a separate stream, are delivered to a conveniently located transfer station at Eelmoor Road, Farnborough, which facility is provided by Hampshire CC (HCC). As part of the Project Integra arrangements, these co-mingled materials then become the property of VES in their role as HCC's contractor; and are subsequently sorted and treated for recycling at the Alton MRF through the contract between HCC and VES, under the terms of which VES markets the recycled materials with RBC then receiving half of the income from the sale.

The glass is collected as a separate stream at the kerbside (i.e. is not part of the co-mingled mix); but it is still subject to the delivery and transfer arrangements described above and subsequently it is delivered for colour-sorting and recycling. By separating the glass into separate colours as part of the treatment process, the amount going to re-melt is optimised; and again RBC receives income as well as, for this material, recycling credits.

RBC is fully cognisant of the requirements of the EU Waste Framework Directive (WFD) 2008 and the Waste England and Wales Regulations 2011 which flow from it. The Regulations (which were the subject of a judicial review) include Regulation 13 regarding the collection of glass, metal, paper and plastic for recycling. It is worth noting at this point that the Project Integra arrangements were well established before the WFD was published: and that the Project Integra arrangements are designed to divert as much waste from landfill as possible, in which it is extremely successful.

RBC is aware that the requirement of Regulation 13 is that these materials (i.e. glass, metal, paper and plastic for recycling) should be collected separately: but may be collected on a different basis in certain circumstances where it can be shown that it is not technically, economically or environmentally practicable (TEEP).

In late April 2014 WRAP published the Waste Regulations Route Map. WYG was asked by RBC to assess its chosen methodology on the basis of this Route Map.

USING THE ROUTE MAP PUBLISHED BY WRAP

With the benefit of the Route Map published by WRAP to hand, the following commentary works its way through the various stages.

NOTE FOR RUSHMOOR BOROUGH COUNCIL: TEEP ASSESSMENT



Step 1

Here RBC should consider the waste collections covered; and the current waste collection system.

The waste collections being covered are household waste. The current waste collection system does collect the four materials (glass, metal, paper and plastic) for recycling; but these are not collected as separate waste streams, except for glass.

The published guidance also refers to the collection of food and garden waste: the system collects garden waste as a separate chargeable stream; but not food waste. There is recovery from food waste (collected as part of the residual waste stream) and residual waste through the Energy from Waste plants.

The published guidance also refers to the collection of bulky waste and the RBC system collects this and applies a waste hierarchy promoting reuse and recycling.

Step 2

Here RBC should consider how each waste stream is managed and what waste is recycled.

Residual household waste is not currently recycled; but there is recovery through the Energy from Waste plants.

Dry recyclate collected is all recycled, except for fines and contaminants. The contract between HCC and VES sets out detailed processes that are followed to determine the make-up of the recyclate and managing contamination; and the level of contamination is measured for each Waste Collection Authority.

Garden waste is treated through composting and 1,751 tonnes were composted in 2013/14. Bulky waste is also recycled where it can be.

Step 3

Step 3 relates to the waste hierarchy: which has been applied throughout the decision-making process regarding the selection of recycling methodology and to the waste collection methodology generally. Indeed, in terms of avoidance from landfill and in terms of overall, recovery, Project Integra has applied this hierarchy better and earlier than others.

Step 4

At this stage a number of questions are asked in relation to the four dry streams of glass, metal, paper and plastic. Working through these questions:

NOTE FOR RUSHMOOR BOROUGH COUNCIL: TEEP ASSESSMENT



- Does RBC collect glass, metal, paper and plastic for recycling? Yes
- Are separate collections in place? For glass yes; for other streams, no (so necessity and practicability questions to be answered)
- Are separate collections necessary to ensure that waste is recycled? No – waste collected for recycling is (apart from contaminants etc.) recycled
- Is there an approach to separate collection that is technically, environmentally and economically practicable? No – as the following tests show

Necessity Test:

Here the quality and quantity of recycling is considered. As far as the quality of recycling is concerned, all of the material that is collected and delivered to the MRF (or indeed collected at bring sites) is recycled, with the exception of contaminants. Contamination is reported regularly through Project Integra to RBC and the other Hampshire Waste Collection Authorities, with a good deal of detail as to how contamination is made up. All contaminants are sent to the Energy from Waste plants. By concentrating on high quality recyclables (plastic bottles, colour-separated glass) and by keeping glass and paper apart the materials are very marketable and attract good prices: as well as being recycled within the UK wherever possible.

In terms of quantity, there is a good deal of evidence which shows that the chosen methodology recycles much more than could be achieved with separate collections.

According to WasteDataFlow, in 2012/13 RBC collected 153 kg per household of dry recyclables at the kerbside and in 2013/14 it collected 144 kg per household.

Table 1 and Figure 1 overleaf show the kerbside dry recycling yields in kg/household for Rushmoor and its CIPFA Nearest Neighbours (NN), listed in order of collection system then decreasing yields. Yields are based on tonnages derived from WasteDataFlow data for 2013/14 (the latest year for which audited figures were available on a national basis at the time of analysis). The Nearest Neighbour number is shown in the first column; the lower the number, the more similar it is to Rushmoor. Table 1 also shows the container and frequency of collections for both recycling and residual waste.

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Table 1: Kerbside Recycling Yields of Nearest Neighbours in 2013/14

NN	Authority	Yield kg/hh	Collection system for dry recyclables	Recycling frequency and container	Residual frequency and container
	Rushmoor	144	Co-mingled + sep. glass	Fortnightly w/bin + box/basket/bin	Weekly w/bin
1	Worcester	207	Co-mingled inc. glass	Fortnightly w/bin	Fortnightly 190l w/bin
2	Rugby	199			Fortnightly w/bin
5	Wellingborough	158			Fortnightly w/bin
9	Cherwell	170	Co-mingled exc. glass	Fortnightly w/bin	Fortnightly w/bin
6	Gravesham	125		Weekly sack	Weekly sack
13	High Peak	192	Co-mingled + sep. glass	Fortnightly w/bin, box, sack	Fortnightly w/bin
12	Dartford	186		Fortnightly w/bin, box	Weekly 180l w/bin
11	Eastleigh	185			Fortnightly 140 or 180l w/bin
8	East Staffordshire	214	Co-mingled + sep. paper/card	Fortnightly w/bin, sack	Fortnightly 180l w/bin
15	North Hertfordshire	208		Fortnightly w/bin, box	
14	South Ribble	202			Fortnightly w/bin
4	Kettering	191			
10	Colchester	167	Separate streams inc. glass	Weekly box, sack	Weekly sacks
3	Gloucester	120		Weekly box	Fortnightly w/bin
7	Broxbourne	110		Fortnightly box	Weekly sacks

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Figure 1: Kerbside Recycling Yields in Nearest Neighbours in 2013/14

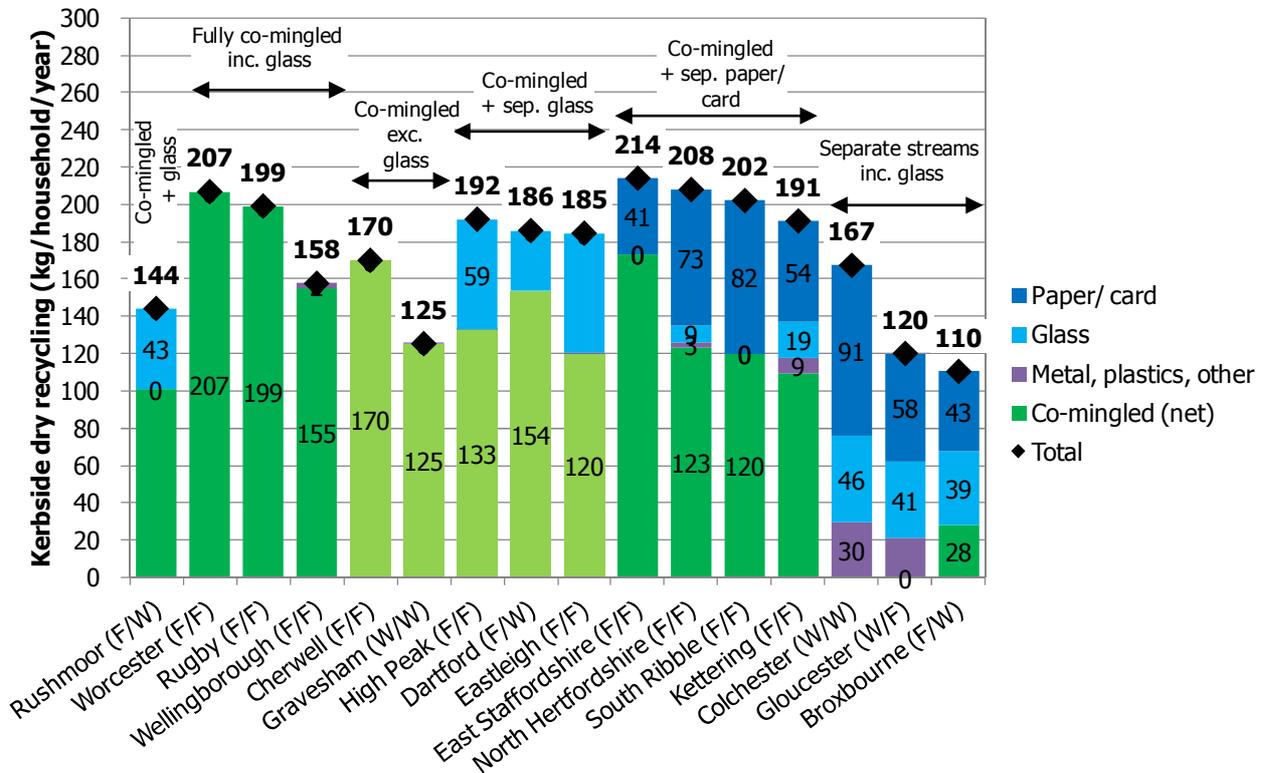


Table 2 and Figure 2 overleaf show the kerbside dry recycling yield in kg/household for Rushmoor in 2013/14 and the estimated yields if it changed to the following recycling collection systems:

- Fully co-mingled including glass;
- Two stream: co-mingled with separate glass;
- Two stream: co-mingled with separate paper/card;
- Separate streams including glass.

The benchmark yields are the average of yields in 2013/14 for authorities in the ONS Supergroup 'Prospering UK' with indices of multiple deprivation (IMD) within +/-5 of that for Rushmoor (12.32), with fortnightly recycling and either fortnightly or weekly collections of residual waste. Additional benchmarks are provided for weekly collections of separate materials, as these tend to require weekly collections to obtain optimum yields. Authorities collecting mainly separate materials may collect some materials co-mingled, e.g. plastics and cans and for each system, textiles and/or batteries may also be collected as additional streams. The number of authorities included in each benchmark group, based on these criteria, is shown in square brackets in the x-axis labels in Figure 2 and in the last column in Table 2.

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The tonnes per year shown in Table 2 for Rushmoor and the benchmarks were obtained by multiplying the number of households in Rushmoor, 38,750 in 2013/14, by the benchmark yields in kg/household, and dividing by 1,000. These benchmark amounts are the estimates of what Rushmoor would have collected if it had each of these systems.

It can be seen that:

- Fully co-mingled systems including glass tend to collect the most;
- Two-stream systems with either glass or paper/card separate tend to collect similar amounts;
- Separate collection systems tend to collect less than either fully co-mingled or two-stream collections with the same collection frequencies;
- Authorities with fortnightly residual waste collections tend to collect more than those with weekly residual waste collections;
- Authorities with separate collections of recycling tend to collect more if those collections are made weekly rather than fortnightly.

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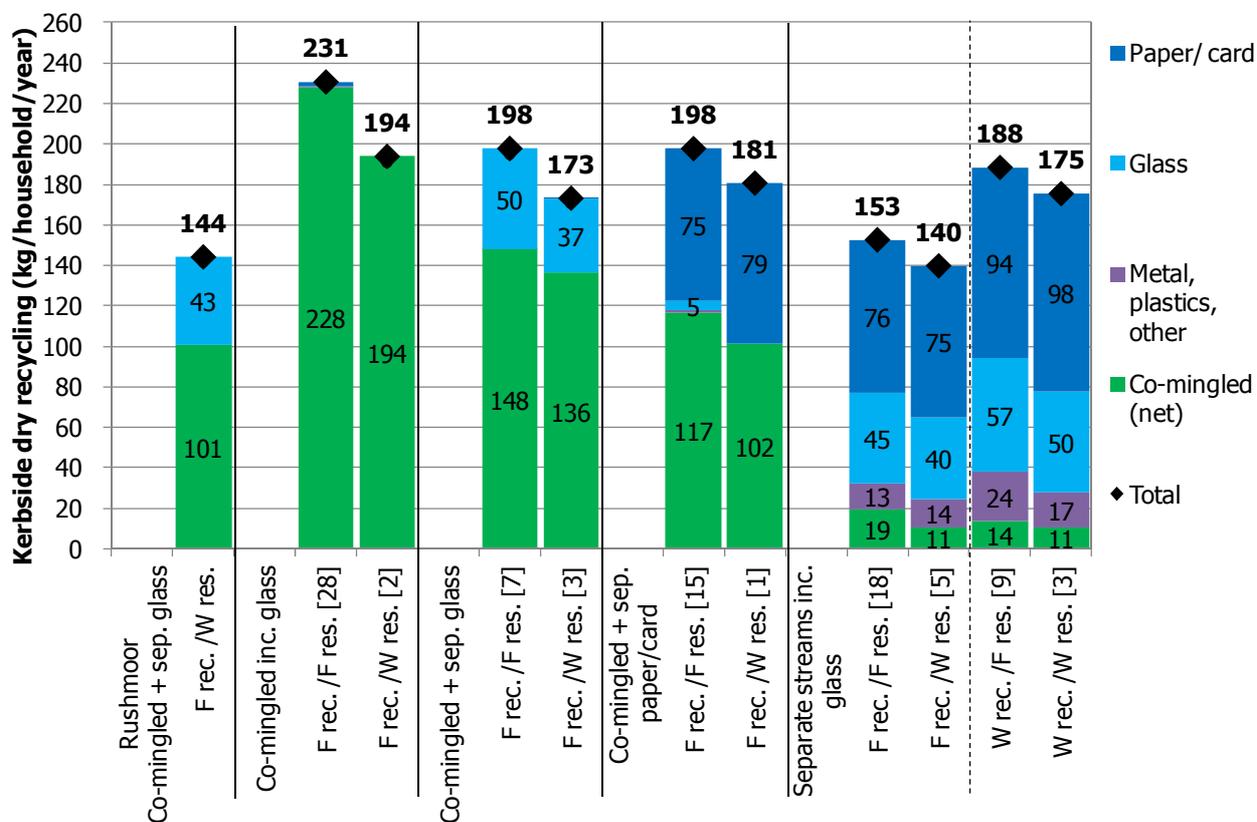
Table 2: Kerbside Recycling Benchmarks 2013/14

Benchmark	Recycling frequency	Recycling containers	Residual frequency	Residual containers	Benchmark yield kg/hh	Change from Rushmoor	Benchmark yield tonnes	Change from Rushmoor	Number of authorities in benchmark
Rushmoor* (Co-mingled + sep. glass)	Fortnightly	W/bin, box	Weekly	W/bin	144*	-	5,586*	-	-
Co-mingled inc. glass	Fortnightly	W/bin	Fortnightly	W/bin	231	86	8,936	3,333	28
			Weekly		194	49	7,511	1,908	2
Co-mingled + sep. glass	Fortnightly	W/bin, box	Fortnightly	W/bin	198	53	7,663	2,059	7
			Weekly		173	29	6,711	1,108	3
Co-mingled + sep. paper/card	Fortnightly	W/bin, box/sack	Fortnightly	W/bin	198	53	7,660	2,056	15
			Weekly		181	36	7,001	1,398	1
Separate streams inc. glass	Fortnightly	Box, sack	Fortnightly	W/bin	153	8	5,915	311	18
			Weekly	W/bin/ sack	140	-5	5,418	-185	5
	Weekly	Box, sack	Fortnightly	W/bin	188	44	7,300	1,696	9
			Weekly	Sack	175	31	6,799	1,195	3

* Actuals for Rushmoor



Figure 2: Kerbside Recycling Benchmarks



In terms of environmental performance, RBC's level is below that of any of the benchmark averages, except, crucially, for separate collections with the same frequencies of collection as currently operate at Rushmoor, i.e. fortnightly recycling and weekly residual waste. Separate collections only collect more if the residual waste is collected fortnightly (but other systems would collect more) or recycling is collected weekly (which would be more expensive to collect).

Rushmoor is currently collecting less than its benchmark group, i.e. two-stream recycling with separate glass, with recycling fortnightly and residual waste weekly. This group has an average of 173 kg/household/year without Rushmoor included, which is 29/household/year higher than the amount collected by Rushmoor. The difference is probably due to Rushmoor only accepting plastic bottles rather than containers such as pots, tubs and trays. When plastic containers and drinks cartons are accepted, the items remaining in the residual stream are much more visible so are more likely to be recycled: for example, residents will be more likely to rinse and recycle jars and cans that have contained food. A recent study has examined the possibility of introducing these materials into the co-mingled mix in Hampshire.

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The benchmarking shows, therefore, that Rushmoor is currently underachieving in terms of the amount of recycling collected; but, critically in terms of this assessment, it would not collect more if recycling were collected separately at the kerbside, compared with other systems with the same frequencies of collection.

It is worth emphasising here that the decision not to include glass in the co-mingled mix was an early decision for Project Integra: and was done to improve the quality of the dry recyclables. In making this decision, the partners pre-empted the comments of Lord de Mauley in relation to Waste Regulation 13:

"It is clear that the intention is that these requirements should represent a high hurdle. I am aware that co-mingled metal and plastic are relatively easy to separate at a MRF. However, at present many of our existing MRFs struggle to keep glass shards out of the paper stream. In addition many MRFs produce low quality mixed glass which needs further sorting and can be uneconomic to resmelt."

It should be clear that RBC has considered the quality and quantity of recycled material arising carefully.

Practicability Test:

Here the three areas to be addressed are: is the separate collection of each material stream economically, environmentally or technically impracticable?

In terms of economy, RBC's dry recyclate is collected by Veolia, who deliver RBC's integrated contract for waste collections, street cleansing and grounds maintenance. Procurement has just started (Contract Notice published early July 2015) to replace this contract: and the new arrangement may be on the basis of a fully integrated contract or a contract where grounds maintenance is delivered separately.

As part of the decision-making in relation to the new arrangement RBC's Cabinet re-affirmed their preference for a weekly residual waste service, with dry recycling collected fortnightly as present.

We believe that tenderers would deploy split-bodied vehicles to collect the dry recyclate (i.e. collecting glass and dry mixed recyclate in one pass); and with ca. 38,750 households currently (and therefore weekly collections from 19,375 households, or 3,875 households per day, three collection rounds would be required.

Using current market rates we believe a cost for collection of dry recyclables would be ca. £570,000 (assuming all rounds had three loaders and including all overheads). This cost is, of course, offset by the income received from Project Integra, which in 2013/14 was £319,366: thus giving net collection costs of ca. £250,000 per annum.

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If RBC were to collect using kerbside-sort methodology, and continued to collect fortnightly, then WYG calculates that at least six recycling rounds would be required, increasing the costs of collection to ca. £720,000 at current market rates (and including overheads): and the income from sale of materials / recycling credits would not reduce this to below the current net collection of costs, a compelling economic argument.

In terms of detail, in 2013/14 the dry recyclables after treatment totalled:

- Paper & Card: 3,368.72 tonnes
- Metals: 216.68 tonnes
- Plastic bottles: 324.69 tonnes
- Sub-total for DMR: 3,910.09 tonnes
- Glass: 1,687.02 (kerbside) + 303.70 tonnes (bring) = 1,990.72 tonnes
- Bring sites: Paper/card: 67.65 tonnes; Textiles: 162.16 tonnes; Books: 14.89 tonnes

The income for these was calculated as:

- Income from DMR: £177,831
- Income from glass: £59,751
- Recycling credits for glass: £79,281
- Recycling credits for bring site materials: £2,503
- Total income: **£319,366**

Further, there are solid technical grounds for not changing the collection methodology given the requirements of the contract between HCC and VES, which pre-date the Waste Regulation; and which have been extended so that they do not expire until after the new RBC contract does.

It should also be noted that RBC collects glass separately from the co-mingled mix: thus fulfilling the requirements of Lord de Mauley's letter of October 2013 as well as addressing the major concerns regarding the quality of material that is recycled.

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Step 5

At this stage sign-off is required.

We recommend that this assessment should be formally approved by the appropriate Council Committee, Cabinet or other authority; and retained as a formal record.

In terms of a review (Step 6 in the Route Map), we believe that the results of this TEEP assessment are very clear; and as such are suitable for the current procurement for a replacement contract for collection.

LA/WYG/8.15