HOUSEHOLD WASTE RECYCLING CENTRE (HWRC) GUIDE

A guide for local authorities on managing efficient and effective household waste and recycling centre (HWRC) services, including examples of good practice, an overview of relevant legislation and evidence-based approaches to assessing and improving HWRC performance.

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WRAP’s vision is a world without waste, where resources are used sustainably.

We work with businesses, individuals and communities to help them reap the benefits of reducing waste, developing sustainable products and using resources in an efficient way.

Find out more at [www.wrap.org.uk](http://www.wrap.org.uk)

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1. INTRODUCTION

This guide offers ideas and opportunities for all those involved in the management of household waste and recycling centres (HWRCs). It presents an evidence-based framework for effective and efficient operation of HWRCs, including advice on:

- maximising recycling rates and reducing costs;
- ensuring that staff are fully supported, trained and motivated; and
- delivering high levels of satisfaction for site users.

The guide is not prescriptive, and it is intended to enable you to implement changes that will work for your own circumstances.
1.1 AIMS AND OBJECTIVES OF THIS GUIDE

This guide highlights current HWRC good practice, taking account of the legislative background and the latest research into HWRC provision. It has been developed with input from local authority representatives, and aims to provide:

- advice and supporting evidence on efficient and cost-effective HWRC management;
- up-to-date information on all aspects of HWRC operation, including case studies, good-practice examples and projected future developments; and
- advice on planning and infrastructure to assist local authorities taking decisions relating to their HWRC network, including the improvement, expansion and creation of sites.

1.2 WHO THIS GUIDE IS FOR

This guide is aimed at all those involved in the management of HWRCs, including local authority officers, waste-management companies and third-sector re-use partners. It is particularly relevant to senior officers in waste teams and key decision makers from local authorities who have responsibility for HWRC provision.

1.3 CONTEXT

HWRCs continue to have a significant role in enhancing the recycling and waste-management services that local authorities provide for the public. They accept significant tonnages of waste and can achieve high recycling rates, providing a valuable service to local residents. These sites also provide residents with an alternative to kerbside collections for the responsible disposal, recycling or re-use of their household waste, particularly for items that are not collected or are costly to collect at the kerbside.

However, financial pressures and the resources required to achieve ever-higher recycling rates are stretching local-authority budgets. Pressures on recycling services can lead to HWRCs being targeted for financial savings. At the same time, the public expects even more: a wider range of materials recycled, friendly and efficient staff, and a clean, modern, pleasant site.

In 2004 the National Assessment of Civic Amenity Sites (NACAS) report was published, reporting on and reviewing all aspects of HRWC management. Since 2004 there have been a number of separate pieces of legislation, reports, guidance documents, British Standards, health and safety guidelines and changes in management practice which have had an impact on the operation and management of HWRCs.

This guide aims to build on and update existing sources of information to provide an overview of current HWRC provision. It has been produced to help local authorities maximise performance and run operations efficiently and cost-effectively, while providing the public with the best possible service.

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1.4 TERMINOLOGY

A number of names exist for the sites this guide relates to, including:

- civic amenity (CA) sites
- household-waste and recycling centres (HWRCs)
- household-waste sorting sites (HWSSs)
- household recycling centres (HRCs)
- household re-use and recycling centres (HRRCs);
- household-waste recovery centres (HWRCs); and
- re-use and recycling centres (RRCs).

For the purposes of this guide, these sites will be referred to as HWRCs – household-waste and recycling centres.

1.5 USING THE GUIDE

This guide provides useful information for authorities, whether they have high- or low-performing HWRCs – it is unlikely that any one authority uses good practice in all areas of HWRC management. The guide is set out as follows:

Section 2: Background research and evidence Current HWRC throughput and recycling rates and appropriate HWRC provision. Composition of waste that arises at HWRCs.

Section 3: How to measure HWRC performance Methods available to measure site performance, including site-specific assessments of HWRC waste composition.

Section 4: Site operation and infrastructure Getting more from HWRCs – site layout, containerisation of materials, how to prioritise and manage segregation of material. Training and motivating staff and raising public awareness.

Section 5: Legislation How relevant definitions and legislation apply to HWRCs specifically and what legal options are available when considering any changes to the HWRC network. Note that local authorities are advised to seek legal advice regarding their own circumstances as, for some relevant legislation, there is no case law to identify whether certain courses of action are acceptable or not.

Section 6: Contracts and materials markets Contract management of HWRCs and marketing materials separated at HWRCs.

Section 7: Managing commercial waste Preventing commercial waste abuse and enabling the acceptance of commercial waste through legitimate means.

Section 8: Working with others Working with other local authorities, private and third sector organisations.

Section 9: Cost effective network management Including a discussion on the rationalisation of sites and alternative options.

Section 10: Future developments Trends and developments which may influence HWRC design and operation.

Section 11: Case studies New case studies highlighting recent activities in six local-authority areas.

Look out for other examples and key information in the text, identified by:

- Pink Boxes highlighting relevant examples of HWRC practice;
- Green Boxes presenting evidence and recommendations relating to HWRC performance; and
- Blue Boxes focusing on legislation and policy issues.
2. BACKGROUND RESEARCH AND EVIDENCE

This section provides an overview of current household waste and recycling centre (HWRC) performance. It outlines commonly applied standards for provision in terms of the number of sites, as well as studies into waste composition. Factors which are known to be statistically significant in affecting HWRC recycling rates are also explained.

Data from Wales is not included in this study; all indicators for national performance relate to England, Scotland and Northern Ireland. Reliable data on national HWRC tonnages for Scotland and Northern Ireland was not available prior to the introduction of WasteDataFlow, a web-based system for municipal waste data reporting by UK local authorities which went live on 30 April 2004.
2.1 CURRENT HWRC PERFORMANCE

Nationally, HWRC recycling performance has increased significantly in recent years as local authorities and contractors have made strenuous efforts to increase recycling rates at their sites. Householders have also played a major part in these efforts by being ever more willing to sort the materials they deliver to HWRCs and deposit them in the correct containers.

2.1.1 Increases in national HWRC recycling rates

The National Assessment of Civic Amenity Sites (NACAS) report, published in 2004, provided the first data on national HWRC recycling performance. The report calculated that the recycling rate across all English HWRCs in 2002/03 was 31% excluding rubble recycling, and 40% including rubble recycling, with the devolved administrations achieving somewhat lower recycling rates. The corresponding 2013/14 figures for England, Wales and Northern Ireland are shown in Figure 2.1, with 2012 figures for Scotland (as 2013/14 data is not available for Scotland), along with HWRC tonnages for each nation.

![Figure 2.1: HWRC recycling rates and tonnages for the UK, 2013/14](image)
Figure 2.2 shows total HWRC tonnages for England since 2000/01, illustrating a dramatic increase in the recycling rate up to 2011/12 and a decrease since then. The tonnages for England are broken down into:

- residual waste for disposal;
- garden waste collected for composting;
- ‘dry recycling’ (effectively all recycling except garden waste, rubble and soil); and
- ‘wet recycling’ (mainly garden waste).

The recycling rate is represented by the blue line. The rate shown excludes separated rubble and soil, as this is generally accepted as the most reliable measure for comparing different HWRC sites (see Section 3.1).

As Figure 2.2 shows, up to 2011/12 HWRC disposal tonnages have significantly increased, while recycling tonnages have increased. Garden waste increased significantly in the first part of the last decade as HWRCs became more successful in diverting it from residual waste. However, garden-waste tonnages have started to drop slightly in recent years. This may be partly due to garden waste being diverted from HWRCs following the roll-out of kerbside collections. In general, HWRC recycling levels continued to increase up to 2009/10 despite the loss of some garden waste, as other materials have been more effectively targeted. However since 2009/10, HWRC recycling tonnages have started to decrease gradually, and since 2011/12 HWRC residual tonnages have started to increase.
HWRC recycling tonnages for England, Wales and Northern Ireland are shown in Table 2.1, which demonstrates significant tonnages collected for recycling for some key materials, including wood and waste electrical and electronic equipment (WEEE). Tonnages for these materials have increased significantly in recent years. Scotland has been excluded due to lack of data for 2013/14.

Table 2.1: HWRC recycling in England, Wales and Northern Ireland, 2011/12 – 2013/14

<table>
<thead>
<tr>
<th>Material</th>
<th>2011/12</th>
<th>2012/13</th>
<th>2013/14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Garden waste</td>
<td>1,051,885</td>
<td>1,001,455</td>
<td>983,807</td>
</tr>
<tr>
<td>Wood</td>
<td>705,856</td>
<td>678,064</td>
<td>717,827</td>
</tr>
<tr>
<td>WEEE</td>
<td>276,893</td>
<td>266,022</td>
<td>252,969</td>
</tr>
<tr>
<td>Scrap metal</td>
<td>240,321</td>
<td>221,114</td>
<td>235,808</td>
</tr>
<tr>
<td>Paper &amp; cardboard</td>
<td>215,146</td>
<td>208,293</td>
<td>202,748</td>
</tr>
<tr>
<td>Glass</td>
<td>53,175</td>
<td>47,570</td>
<td>41,518</td>
</tr>
<tr>
<td>Textiles &amp; footwear</td>
<td>47,700</td>
<td>39,500</td>
<td>39,437</td>
</tr>
<tr>
<td>Plastics</td>
<td>34,183</td>
<td>37,425</td>
<td>37,444</td>
</tr>
<tr>
<td>Furniture</td>
<td>11,070</td>
<td>6,780</td>
<td>6,925</td>
</tr>
<tr>
<td>Batteries</td>
<td>8,197</td>
<td>7,721</td>
<td>7,865</td>
</tr>
<tr>
<td>Metal cans</td>
<td>6,228</td>
<td>6,050</td>
<td>3,844</td>
</tr>
<tr>
<td>Mineral Oil</td>
<td>6,370</td>
<td>5,463</td>
<td>5,104</td>
</tr>
<tr>
<td>Other recycling</td>
<td>100,145</td>
<td>143,730</td>
<td>154,211</td>
</tr>
<tr>
<td><strong>Subtotal excl rubble and soil recycling</strong></td>
<td><strong>2,757,170</strong></td>
<td><strong>2,669,187</strong></td>
<td><strong>2,689,507</strong></td>
</tr>
<tr>
<td>Rubble recycling</td>
<td>769,282</td>
<td>708,757</td>
<td>758,869</td>
</tr>
<tr>
<td><strong>TOTAL incl rubble</strong></td>
<td><strong>3,526,452</strong></td>
<td><strong>3,377,944</strong></td>
<td><strong>3,448,377</strong></td>
</tr>
</tbody>
</table>

The ‘Other recycling’ category includes a wide range of materials including plasterboard, bric-a-brac, tyres, paint, mattresses, carpets and gas bottles. However, a significant amount of unspecified material is included in this category in WasteDataFlow, and it is likely that there is some inconsistency. This may explain the significant differences across the years for tonnages of materials included in this category. Figure 2.3 shows recycling tonnages for selected materials across the same period as a bar chart.
2.1.2 Reductions in national HWRC throughputs

Since the decrease in overall HWRC arisings up to 2012/13 has taken place while household numbers have increased nationally, HWRC arisings per household have reduced significantly in recent years. Figure 2.4 shows a 23% decrease between 2006/07 and 2012/13. This compares with a decrease in overall tonnage of 21%, from 5,650,500 tonnes in 2006/07 to 4,488,700 tonnes in 2012/13. However, as overall household waste arisings have also been decreasing in recent years, this decrease in HWRC tonnages is part of a broader trend. In contrast to this trend, HWRC arisings increased in 2013/14.

This reduction up to 2012/13 may be due to several factors, including:

- the economic recession, in particular the fact that fewer home improvement projects were being carried out;
- diversion of some materials to newly rolled-out kerbside recycling services, and the likelihood that much garden waste in particular is being diverted to kerbside collections; and
- improved control of commercial waste at HWRCs, with a reduced quantity of material being disposed of by traders under the guise of household waste.

The reduction of HWRC tonnages overall is a key feature of their recent performance and fits well with the increasingly important waste prevention and reduction agenda. The factors causing this decrease at a national level are not known for certain, and research into this area could be strategically important in the future. However, one study that has thrown some light on these issues is Defra’s Understanding Waste Growth at Local Authority Level, which shows that improved commercial-waste controls could be a very significant factor in reducing HWRC tonnages. However the longer term trend in reductions has recently reversed, with arisings increasing in 2013/14. This may in part be due to economy recently have come out of recession.
Although HWRC tonnages have reducing up to 2012/13, they still make a significant contribution to household waste management and recycling. Figure 2.5, which illustrates HWRC recycling tonnages in comparison to other household recycling in England from 2000/01 onwards, demonstrates the overall increase. However while kerbside recycling has increased throughout, HWRC recycling tonnages have been decreasing since 2009/10.

Figure 2.5: HWRC recycling and other household recycling in England, 2001/02–2013/14

Although HWRC tonnages overall have tended to decrease in recent years, not all local authorities have experienced reductions. In particular, those authorities that have significantly expanded or upgraded their HWRC networks have generally experienced increases, often down to more enthusiastic use by householders (see example below). Authorities where commercial abuse is not being effectively controlled at HWRCs may also see ongoing increases in HWRC throughputs.

Example

The Hull network of HWRCs has seen an increase in waste throughputs since new sites opened in 2005, 2007 and 2008. Total HWRC throughputs increased by nearly 12,000 tonnes between 2001/02 and 2008/09 – up 51%, or 7.4% per annum. This increase may not entirely be a result of new sites opening, as there is suspected cross-border usage which the council aims to reduce following the introduction of a permit system in 2011. There were also significant increases in 2007/08 as a result of floods which affected 10,000 homes.

The council does not believe additional waste has been diverted from the kerbside or from bulky-waste collections, as there have been no significant changes in the overall tonnages collected by these services. However, there have been increases in the diversion of materials from kerbside refuse to kerbside dry recycling and organics collections, following major changes in 2.1.3 Variations in HWRC recycling between local authorities.
Although HWRC recycling performance has generally been improving up to 2012/13, there is still a wide variation in performance between different sites. Figure 2.6 shows the number of local authorities in the United Kingdom achieving various ranges of HWRC recycling rates. Data is aggregated at local-authority level for a total of 215 authorities. For authorities with more than one HWRC, there will also often be significant variations in recycling rates between individual sites.

Figure 2.6: Number of local authorities in the United Kingdom achieving particular HWRC recycling rates (excluding separated rubble and soil), 2013/14 (2012 for Scotland)

Although HWRC recycling performance has generally been improving up to 2012/13, there is still a wide variation in performance between different sites. Figure 2.6 shows the number of local authorities in the United Kingdom achieving various ranges of HWRC recycling rates. Data is aggregated at local-authority level for a total of 215 authorities. For authorities with more than one HWRC, there will also often be significant variations in recycling rates between individual sites.

Figure 2.6 shows that most local authorities are achieving average recycling rates of greater than 50% across their HWRC network, excluding separated rubble and soil. However, 53 authorities are achieving rates of less than 50%. There are clearly opportunities to improve performance at the HWRCs in these areas.

37 local authorities are achieving HWRC recycling rates of greater than 70%. Bearing in mind that these are not the highest recycling rates achieved at individual sites, but across a network of HWRCs in a local authority, this indicates that in principle, a recycling rate over 70% (excluding rubble and soil) is a realistic target. As long as there are no confounding factors, such as lack of financial resources or poorly designed contracts which hinder implementing site improvements, this should be achievable at nearly all HWRCs in the UK.

2.2 CURRENT HWRC PROVISION AND NETWORK DENSITY

Levels of HWRC provision are currently under the spotlight, and a number of local authorities are considering closing some sites due to budget pressures. There is no nationally recognised steer on the acceptable level of HWRC provision. The NACAS study of 2004 distilled and presented common practice at the time, drawing on national evidence to assess suitable levels of provision, as outlined below. Its recommendations on HWRC provision have been referred to in different contexts (for example, a 2011 review of HWRC provision by Durham County Council) and taken generally as a guide for standard practice. However, the recommendations were highly provisional and tentative, and were explicitly presented as such.
Evidence and recommendations

The NACAS recommendations for minimum levels of HWRC provision:

- Maximum catchment radii of three miles in urban areas and seven miles in rural areas covering the great majority of residents.
- Maximum driving times to a site for the great majority of residents of 20 minutes in urban areas, and 30 minutes in rural areas; though preferably less than this by the order of 10 minutes in each case.
- At least one site per 143,750 residents, with a maximum throughput for any site of 17,250 tonnes per annum.

In practice individual local authorities should reach their own conclusions in terms of minimum acceptable levels of HWRC provision. The NACAS recommendations on catchment radii and driving times appear to be broadly in line with levels of provision that are commonly cited by local authorities.

Example

Some examples of current standards used by local authorities for HWRC provision:

- Greater Manchester Waste Disposal Authority uses 5 mile radii to determine minimum acceptable levels of HWRC provision.
- Suffolk County Council sets a maximum of 20 minutes’ drive time for 90% of residents.
- Leeds City Council also uses 20 minutes’ drive time for the great majority of residents as a minimum standard.

Table 2.2 shows that current average provision in terms of catchment radii is broadly in line with the NACAS recommendations. The suggested minimum of one site per 143,750 residents appears to indicate that quite low levels of provision are acceptable, although this figure was based on the requirements for dense urban areas.

Average levels of current provision are shown in Table 2.2, using national data.

Table 2.2: HWRC provision in the United Kingdom, 2013/14 (2012 for Scotland)

<table>
<thead>
<tr>
<th></th>
<th>Number of sites</th>
<th>Average no. households per site</th>
<th>Average no. inhabitants per site</th>
<th>Average catchment radius per site (miles)</th>
</tr>
</thead>
<tbody>
<tr>
<td>England</td>
<td>697</td>
<td>32,281</td>
<td>77,401</td>
<td>4.8</td>
</tr>
<tr>
<td>Wales</td>
<td>83</td>
<td>16,034</td>
<td>37,137</td>
<td>5.5</td>
</tr>
<tr>
<td>Scotland</td>
<td>175</td>
<td>13,857</td>
<td>30,444</td>
<td>7.4</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>97</td>
<td>7,414</td>
<td>18,863</td>
<td>4.1</td>
</tr>
</tbody>
</table>

Table 2.2 shows that current average provision in terms of catchment radii is broadly in line with the NACAS recommendations. The suggested minimum of one site per 143,750 residents appears to indicate that quite low levels of provision are acceptable, although this figure was based on the requirements for dense urban areas.
Figure 2.7 shows that most authorities have quite high levels of provision, though a few, mostly in dense urban or very rural areas, have much lower levels of provision. The data has been analysed from 214 authorities in the United Kingdom. The higher the line is above the x-axis, the lower the level of provision. The blue dots on the lines indicate suggested minimum levels of provision, though there may be arguments for applying more relaxed minimum levels for authorities located in very rural areas, since low population density may make it uneconomical to meet minimum provision levels in terms of site catchment radii. Less stringent minimum levels of provision may also be appropriate in dense urban areas, particularly major conurbations. In such areas, there may be a lack of suitable land for additional sites, and local authorities often provide fewer sites with larger tonnages. Section 9 discusses the options for providing HWRC services in a range of circumstances.

Figure 2.7: Range of levels of HWRC provision in the United Kingdom, 2013/14 (2012 for Scotland)

Note: the x-axis represents the array of all local authorities providing HWRCs in the United Kingdom.

In light of the above data, the following points suggest reasonable minimum levels of HWRC provision, with some exceptions for very rural or very urban areas:

- Maximum catchment radii for a large proportion of the population: 3 to 5 miles (very rural areas: 7 miles).
- Maximum driving times for the great majority of residents in good traffic conditions: 20 minutes (very rural areas: 30 minutes).
- Maximum number of inhabitants per HWRC (in all but the most urbanised areas): 120,000.
- Maximum number of households per HWRC (in all but the most urbanised areas): 50,000.

Areas with fewer sites tend to achieve lower HWRC recycling rates, all other factors being equal. This is illustrated in Figure 2.8, which plots HWRC recycling (kilogrammes per household per year) against levels of provision (number of sites in relation to the population in a local authority). This shows that HWRC provision and recycling yields are closely linked, with an $R^2$ value of 0.440 indicating a high degree of correlation.

This finding is also reflected in the statistical modelling of factors affecting HWRC recycling rates discussed in Section 2.4. Modelling shows that high HWRC tonnage throughputs, as found in areas with lower HWRC provision, are associated with lower HWRC recycling rates.

Local authorities that are considering closing some of their sites and reducing levels of HWRC provision need to consider these issues. In some circumstances, HWRC services can be rationalised without compromising recycling performance, but you should consider the data presented here fully in order to avoid negative effects on HWRC recycling rates. See Section 9 for a more detailed discussion.
2.3 HWRC WASTE COMPOSITION

Assessing the composition of HWRC wastes is a complex matter, not least as such a huge range of material is delivered to HWRCs. The main focus of compositional studies of HWRC waste is usually on residual waste, as this is the HWRC stream about which least is known. Available compositional studies on residual waste in UK HWRCs show wide variations, and it would be unwise to apply national averages on a local level. When trying to improve HWRC performance, you should carry out your own residual waste compositional study. Combined with HWRC recycling tonnages, this is the only reliable means of assessing your ability to improve performance. See Section 3 for further details.

Evidence and recommendations

National compositional studies that have produced estimates for HWRC composition:

- England – Defra EV0801, Updated compositional estimates for local authority collected waste and recycling in England, 2010/11
The HWRC composition estimates for England 2010/11 are illustrated in Figure 2.9, which includes HWRC residual waste and recycling, but excludes separated rubble and soil. These estimates were arrived at through combining waste compositional data for HWRC residual waste with WasteDataFlow HWRC recycling tonnages.

These represent by far the most reliable estimates to date, being based on data from a wide range of local authorities and a large number of sites. Other studies carried out in the devolved nations provide useful data, but are based on fewer samples.

The estimates in Figure 2.9 are at a primary category level (so all types of paper are included in one primary category, and so on). More detailed compositional estimates (residual plus recycling) for English HWRCs are shown in Table 2.3. We have not estimated the current proportion of materials in residual and recycling, as HWRC recycling has changed since 2010/11, and the current split between residual and recycling for each material type is likely to be significantly different.

Updated national HWRC waste compositional estimates would be required in order to estimate current capture rates for different key materials. Readers interested in the split between residual and recycling for various materials should refer to the Defra report EV0801: Updated compositional estimates for local authority collected waste and recycling in England, 2010/11.
### Table 2.3: Secondary-level compositional estimates for HWRC residual waste and recycling (excluding recycled rubble/soil), England, 2010/11

<table>
<thead>
<tr>
<th>Primary-level categories</th>
<th>Percentage arising</th>
<th>Secondary-level categories (tertiary level categories in italics)</th>
<th>Percentage arising</th>
</tr>
</thead>
<tbody>
<tr>
<td>Garden waste</td>
<td>23.90%</td>
<td>Garden waste</td>
<td>23.90%</td>
</tr>
<tr>
<td>Food waste</td>
<td>1.37%</td>
<td>Food waste</td>
<td>1.37%</td>
</tr>
<tr>
<td>Other organic</td>
<td>0.77%</td>
<td>Organic pet bedding/litter</td>
<td>0.61%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other organics</td>
<td>0.15%</td>
</tr>
<tr>
<td>Paper</td>
<td>3.04%</td>
<td>Newspapers</td>
<td>0.86%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Magazines</td>
<td>0.53%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Recyclable paper (excluding newspapers and magazines)</td>
<td>0.77%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other paper</td>
<td>0.88%</td>
</tr>
<tr>
<td>Card</td>
<td>4.75%</td>
<td>Card packaging</td>
<td>4.27%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other card</td>
<td>0.48%</td>
</tr>
<tr>
<td>Glass</td>
<td>2.20%</td>
<td>Packaging glass</td>
<td>1.44%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Green bottles</td>
<td>0.70%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clear bottles</td>
<td>0.43%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Brown bottles</td>
<td>0.16%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Jars</td>
<td>0.16%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Non-packaging glass</td>
<td>0.76%</td>
</tr>
<tr>
<td>Metals</td>
<td>6.91%</td>
<td>Ferrous food and drink cans</td>
<td>0.27%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other ferrous metal</td>
<td>3.87%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Non-ferrous drinks cans (excluding non-ferrous food tins)</td>
<td>0.09%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Foil</td>
<td>0.04%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other non-ferrous metal</td>
<td>2.64%</td>
</tr>
<tr>
<td>Soil</td>
<td>0.12%</td>
<td>Soil</td>
<td>1.12%</td>
</tr>
<tr>
<td>Other wastes</td>
<td>0.55%</td>
<td>Other wastes</td>
<td>0.55%</td>
</tr>
<tr>
<td>Finishes</td>
<td>0.31%</td>
<td>Unspecified fine material &lt;10mm</td>
<td>0.31%</td>
</tr>
<tr>
<td>Furniture</td>
<td>3.53%</td>
<td>Furniture</td>
<td>3.53%</td>
</tr>
<tr>
<td>Mattresses</td>
<td>1.93%</td>
<td>Mattresses</td>
<td>1.93%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Primary-level categories</th>
<th>Percentage arising</th>
<th>Secondary-level categories (tertiary level categories in italics)</th>
<th>Percentage arising</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plastic film</td>
<td>1.64%</td>
<td>Plastic film</td>
<td>1.64%</td>
</tr>
<tr>
<td>Plastic bags</td>
<td>0.44%</td>
<td>Plastic bags</td>
<td>0.44%</td>
</tr>
<tr>
<td>Plastic-film packaging</td>
<td>0.80%</td>
<td>Other plastic film (non-packaging)</td>
<td>0.80%</td>
</tr>
<tr>
<td>Dense plastic</td>
<td>6.14%</td>
<td>Dense plastic</td>
<td>6.14%</td>
</tr>
<tr>
<td>Dense-plastic drinks bottles</td>
<td>0.34%</td>
<td>Dense-plastic non-drinks bottles</td>
<td>0.34%</td>
</tr>
<tr>
<td>Other dense-plastic packaging</td>
<td>0.17%</td>
<td>Other dense-plastic non-packaging</td>
<td>0.17%</td>
</tr>
<tr>
<td>Other dense plastic (non-packaging)</td>
<td>4.86%</td>
<td>Other dense plastic (non-packaging)</td>
<td>4.86%</td>
</tr>
<tr>
<td>Textiles</td>
<td>3.95%</td>
<td>Natural textiles, excluding shoes</td>
<td>1.31%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Shoes</td>
<td>0.38%</td>
</tr>
<tr>
<td>Wood</td>
<td>17.22%</td>
<td>Treated and composite wood</td>
<td>13.55%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Untreated wood</td>
<td>3.67%</td>
</tr>
<tr>
<td>WEEE</td>
<td>6.78%</td>
<td>White goods</td>
<td>1.47%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Large electronic goods (excluding CRT TVs and monitors)</td>
<td>0.68%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CRT TVs and monitors</td>
<td>2.01%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other WEEE</td>
<td>2.62%</td>
</tr>
<tr>
<td>Hazardous</td>
<td>1.51%</td>
<td>Batteries</td>
<td>0.23%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clinical waste</td>
<td>0.04%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Paint/varnish</td>
<td>0.98%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Oil</td>
<td>0.16%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Garden herbicides and pesticides</td>
<td>0.10%</td>
</tr>
<tr>
<td>Sanitary</td>
<td>0.22%</td>
<td>Disposable nappies</td>
<td>0.21%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other (sanpro and dressings)</td>
<td>0.01%</td>
</tr>
<tr>
<td>Miscellaneous combustible</td>
<td>7.27%</td>
<td>Carpet/underlay</td>
<td>5.32%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other combustibles</td>
<td>1.95%</td>
</tr>
<tr>
<td>Miscellaneous non-combustible</td>
<td>4.89%</td>
<td>Bricks, blocks, plaster</td>
<td>2.88%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other non-combustibles</td>
<td>2.00%</td>
</tr>
</tbody>
</table>

| TOTAL                    | 100.00%            |                                                                 | 100.00%           |

---

**Table 2.3: Table 2.3**

**Introduction**

- How to measure performance
- Site operation and infrastructure
- Legislation
- Contracts & materials markets
- Managing commercial waste
- Working with others
- Cost-effective network management
- Future developments
- Case Studies

**Guide page 17**

**WRAP – Household Waste Recycling Centre (HWRC) Guidance – November 2018**
2.4 FACTORS AFFECTING RECYCLING RATES

The factors that affect HWRC recycling rates are some of the best-understood aspects of any municipal waste collection system. A significant amount of evidence has been gathered from detailed site assessments carried out over the last decade across a wide range of UK sites.

The key findings from this evidence are reported here, drawing on four statistical models to help understand the evidence:

- The NACAS study, with data from 130 site assessments carried out in 2002 and 2003.
- The Factors that Affect Civic Amenity Sites Recycling study, with data from 216 site assessments (the 130 NACAS sites plus data from a further 86 site assessments carried out between 2002 and 2005).
- The WRAP HWRC Guide model (this study), which includes data from 54 site assessments carried out between 2006 and 2011.
- The All Site Assessments model (this study), which includes data from the 270 site assessments in the above-mentioned studies (130 from NACAS, with a further 140 from consultancy work carried out by Resource Futures between 2002 and 2011).

The models have identified three main groups of factors which have a statistically significant effect on HWRC recycling rates:

- infrastructure factors, including range of materials collected, site layout and signage;
- site-management factors, including contractor incentives and staffing levels; and
- off-site factors, including levels of deprivation and kerbside recycling systems in the HWRC’s catchment.

The effects of these factors are briefly described in the following tables.

<table>
<thead>
<tr>
<th>Factor affecting HWRC recycling rates</th>
<th>Description of effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range of materials separated for recycling.</td>
<td>The wider the range of materials that are targeted for recycling, the higher the recycling rate. The statistical models identified some materials in particular, but in fact the whole range of materials is important. Bulk materials with high tonnage, such as garden waste, metal, wood, cardboard and rubble, all contribute the most to higher recycling rates as they arise in greater quantities. However, even materials that only arise in small quantities make an important contribution. They often have a positive influence on recycling behaviour by reinforcing the impression with site users and staff that the prime function of HWRCs is recycling. See Section 4.4 for more details.</td>
</tr>
<tr>
<td>Split-level architecture</td>
<td>Split-level architecture can have a positive effect on recycling rates, particularly for higher-tonnage-throughput sites. Split-level architecture can help sites with higher throughputs to manage materials more efficiently. This makes it easier for the public and site staff to focus on recycling, through easier access to recycling containers and more efficient container servicing (see Section 4.1).</td>
</tr>
<tr>
<td>Container signage</td>
<td>Good container signage is associated with higher recycling rates. The statistical models indicate that the most important aspect of container signage is its clarity. Signage that is easily readable and readily understood encourages site users to recycle with confidence (see Section 4.11.3).</td>
</tr>
<tr>
<td>Tonnage throughputs</td>
<td>Higher tonnage throughputs are associated with lower recycling rates. If HWRC tonnages increase, sites are likely to find it harder to maintain the same recycling rates, not least due to the requirement to deal with extra materials being delivered. Busier sites are more challenging to manage, although action can be taken to this, for example by ensuring that sites are efficiently laid out and well organised, and that staff are proactive in helping and directing site users to the correct recycling containers. This factor could also have important implications for site rationalisation (see Section 9.2).</td>
</tr>
</tbody>
</table>
### Table 2.5: Site-management factors affecting HWRC recycling rates

<table>
<thead>
<tr>
<th>Factor affecting HWRC recycling rates</th>
<th>Description of effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formal re-use systems</td>
<td>The presence of a formal or well-organised re-use system can have a significant positive effect on recycling rates. A well-run and prominent re-use system on site raises public awareness, which helps to reinforce the impression that the site’s primary focus is the recovery of materials, whether for re-use or recycling (see Section 4.9).</td>
</tr>
<tr>
<td>Number of site staff</td>
<td>The more staff on site, the higher the recycling rate. The presence of more site staff can increase opportunities to direct site users and help them to increase their recycling efforts (see Section 4.10).</td>
</tr>
<tr>
<td>Site-staff incentives</td>
<td>Financial incentives to site staff are associated with higher recycling rates. This shows that it is important for site staff to be well-motivated and involved in increasing recycling efforts on site (see Section 4.10).</td>
</tr>
<tr>
<td>Public-awareness-raising measures</td>
<td>Significant public-awareness-raising measures are associated with higher recycling rates. This measure is probably best understood as effectively rebranding sites as recycling facilities. The aim should be for the majority of site users to be successfully persuaded to stop thinking of the site as a ‘tip’ or ‘dump’, but as a facility at which the main focus is recycling (see Section 4.11).</td>
</tr>
<tr>
<td>Contractor incentives</td>
<td>Financial incentives to contractors are associated with higher recycling rates. The incentives should be linked to recycling-rate targets, or continual improvements in recycling (see Section 6).</td>
</tr>
<tr>
<td>Height barriers at site entrance</td>
<td>The use of height barriers to control unauthorised commercial waste is ineffective and has a negative impact on recycling rates. This issue has been researched in detail in the 2002 Resource Futures study, Trade Waste Input to Civic Amenity Sites, which is still relevant despite being carried out some time ago. Traders will find ways to circumvent height barriers and, in the absence of other commercial waste controls, will take their waste on site. This makes the sites more difficult to manage and can create a tense atmosphere, which has a detrimental effect on other site users and staff, and hinders recycling efforts. This factor can reasonably be extended to assume that any commercial waste controls that are ineffective will have a negative effect on recycling. Of course, commercial waste can be allowed into HWRCs in a controlled manner, and this should not have a negative impact on recycling (see Section 7).</td>
</tr>
<tr>
<td>Factor affecting HWRC recycling rates</td>
<td>Description of effect</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>Level of deprivation</td>
<td>HWRCs located in areas with higher levels of deprivation experience lower recycling rates, all other factors being equal. This factor is also important for kerbside recycling schemes. Residents in more deprived areas experience more pressure in their lives and are perhaps less able to prioritise recycling. However, this does not mean that it is not possible to achieve high recycling rates in more deprived areas, just that greater efforts are required to change public behaviour.</td>
</tr>
<tr>
<td>Kerbside dry-recycling collections</td>
<td>HWRCs located in areas with good kerbside dry-recycling coverage experience higher recycling rates. This is probably due to improved public behaviour, as residents with good kerbside recycling services are more likely to be in the habit of recycling generally. This factor has become less significant in recent years as kerbside dry recycling has become more widespread, and there is some evidence that a proportion of dry recyclate has been diverted from HWRCs to kerbside dry-recycling services (see Section 2.1.1).</td>
</tr>
<tr>
<td>Kerbside garden-waste collections</td>
<td>HWRCs located in areas with kerbside garden-waste collections experience lower recycling rates. This is due to the diversion of garden-waste material, which is easy to target for composting at HWRCs, to kerbside garden-waste services (see Section 2.1.1).</td>
</tr>
</tbody>
</table>
3. HOW TO MEASURE HWRC PERFORMANCE

If you understand recycling rates, waste composition and other measures of performance, it’s easier to manage household waste and recycling centre (HWRC) waste streams and prioritise new activities. Local authorities can develop evidence-based strategies to improve performance and increase efficiency by assessing and understanding measures such as waste arisings, number of site users and busy periods. This section looks at a range of approaches to measuring HWRC performance.

| 3.1 Recycling rates and diversion from landfill |
| 3.2 Throughput and waste minimisation |
| 3.3 Site-user surveys |
| 3.4 Carbon savings |
| 3.5 Re-use |
| 3.6 Composition |
3.1  RECYCLING RATES AND DIVERSION FROM LANDFILL

The most important measure of HWRC performance is the amount of recycling carried out at the site. The most commonly cited measure in the past has been the recycling rate excluding separated rubble and soil. It represents a more representative measure for HWRC performance than recycling rate including separated rubble and soil, as some sites can benefit from relatively high rubble and soil inputs. As these are very dense materials, they have a disproportionate effect on recycling rates.

We therefore suggest that it is good practice to record two sets of recycling rates for each HWRC:
- excluding separated rubble and soil; and
- including separated rubble and soil.

Any DIY-type waste that is disposed of with rubble should be excluded or included depending on which of these calculations is being undertaken. All other DIY wastes should be included in both calculations.

Changes in the definition of waste (addressed in Section 5.1) mean that the previously clear distinction between household and other local-authority-collected waste no longer applies in England. However, the online municipal waste-reporting system WasteDataFlow still requires the separate reporting of household collection tonnages, including at HWRCs. Therefore, it is important for HWRCs to be able to report recycling rates for household collected waste.

WasteDataFlow Guidance Note 59: Post-April 2011 Reporting includes an update from Defra on reporting requirements following the removal of annual targets for waste reduction, recycling and landfill diversion under the National Indicators dataset in March 2011. Other guidance notes and factsheets, including those for each nation within the UK, are available on the WasteDataFlow website. Local authorities should take the definition of municipal waste, as discussed in Section 5.1, into account to ensure the correct data is reported.

Furthermore, the revised Waste Framework Directive includes a target for 50% of UK household waste to be recycled by 2020. In order to monitor progress towards this target, local authorities will need to be able to report household tonnages and recycling at their HWRCs.

For sites that target both household and commercial waste, it is important to be able to distinguish between these two waste flows and provide separate recycling data for each. Householders and traders deliver different types and quantities of materials to sites, and present different challenges in terms of HWRC management. You should use similar calculations for each, such as the recycling rates excluding and including separated rubble and soil, so that you can assess the efficiency of the household and commercial aspects of HWRC operations independently. Further advice is included in the WRAP Commercial and Industrial Waste and Recycling Bring Centre Guide.
3.2 THROUGHPUT AND WASTE MINIMISATION

Calculating recycling rates for HWRCs goes hand in hand with reporting tonnages. This can help to identify the contributions made by different recycling streams to overall performance at each HWRC and highlight which materials can be more actively targeted at certain sites.

Tonnage throughputs are a basic parameter for HWRC operations, and local authorities need to consider whether their facilities are sufficiently equipped to manage their tonnage throughputs now and in future.

Accurate monitoring of throughput tonnages is also important for:
- assessing the effectiveness of commercial-waste controls, using separate data for household and commercial inputs (see Section 7);
- considering the rationalisation of an HWRC network (refer to Section 9.6); and
- producing local-authority and national waste statistics through WasteDataFlow.

You can also analyse recycling and residual waste tonnage data alongside compositional studies carried out at HWRCs, to assess overall compositions and capture rates for various materials. This type of data analysis is vital for understanding which materials need to be targeted to improve HWRC recycling performance.

3.3 SITE-USER SURVEYS

HWRC performance can also be measured in terms of site user numbers and satisfaction levels. Many local authorities have carried out user-satisfaction surveys at their HWRCs. These have tended to show very high levels of satisfaction, which in many cases was probably a reflection of the fact that site users were happy to have an HWRC facility in the first place, though it does provide some encouragement that site users are generally pleased with HWRC facilities. Some local authorities report on HWRC user-satisfaction levels as part of their annual monitoring regime, and some set specific requirements for contractors to do so.

When conducting user-satisfaction surveys it is worth conducting postcode surveys. This data will be useful if new sites are to be opened or existing ones closed.

Local authorities should also gauge user attitudes to facilities that have been affected by rationalisation, for example where neighbouring sites have closed, or a site has been re-launched with entrance or disposal charges. In these cases, carefully designed surveys should reveal the degree to which the public have adapted to changes in HWRC service provision. If surveys are completed at all HWRCs it will be possible to understand whether the views of users are the same across the network of sites. See Section 9.1 for further discussion.

3.4 CARBON SAVINGS

Measuring performance in terms of carbon emissions avoided is becoming increasingly widespread in waste management. For example, the Scottish Government has introduced a carbon metric that all Scottish local authorities will be required to measure and report on. However, this carbon metric does not directly measure the tonnes of CO2 equivalent emissions avoided, and all household waste and recycling must be considered to calculate the carbon metric for a particular local authority.

The use of lifecycle analysis tools could, in principle, identify greenhouse-gas emissions avoided through HWRC improvements, but this could be a complex and time-consuming undertaking.

One method of estimating greenhouse-gas emissions avoided from HWRC recycling and re-use would be to apply average avoided emissions by different material types across a range of existing lifecycle analysis studies. WRAP has carried out such an assessment and the data from it could in principle provide a reasonably easy method of calculating carbon savings from HWRC recycling and re-use.

However, for the time being there is no readily available and generally agreed method for calculating carbon savings specifically for HWRCs.
3.5 RE-USE

Although levels of re-use at HWRCs are relatively small compared to overall site throughputs and recycling tonnages, re-use is an important part of HWRC operations (see Section 4.9). If a formal re-use system is operated on a site, it is vital to obtain details on the weights and types of items diverted for re-use. This enables site operators to understand the quantities of specific items being re-used at an HWRC, so that they can effectively monitor and develop the re-use system. It is also worth recording which items have been considered but rejected for re-use, either because of the poor state of the item or system-capacity issues. Data can be used to plan for potentially reusable items that are not currently dealt with by the re-use system but could be targeted in the future.

3.6 COMPOSITION

The single most important type of data for understanding how to improve HWRC performance relates to the composition of residual waste. It is therefore a good idea to monitor the composition of residual waste at HWRCs on a regular basis. As this tends to vary greatly between sites, local authorities operating a network of sites should monitor composition at most or all of the sites.

Combining data on residual waste composition with recycling tonnage data can give you an understanding of the overall composition of HWRC throughputs, as well as capture rates for materials currently targeted. This can highlight which materials need a greater focus for recycling. It can also help to build a business case for targeting other materials which arise in significant quantities in HWRC residual waste.

For the purposes of waste analysis it is important to split some bags and analyse the contents to ensure there is an accurate understanding of all waste arisings. This data can be extrapolated and may provide the evidence that there are large amounts of recyclable waste that could be segregated.
### 4. SITE OPERATION AND INFRASTRUCTURE

This section discusses how site operation and infrastructure can affect household waste and recycling centre (HWRC) performance. It covers:

- site design and layout;
- the range of materials targeted for separation;
- containerisation and segregation of bulk materials;
- measures to increase the efficient use of space on site, including compaction;
- re-use infrastructure and management;
- staffing policies, including motivating and training staff; and
- communications issues, including on-site signage.

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1</td>
<td>Layout and design</td>
</tr>
<tr>
<td>4.2</td>
<td>Security</td>
</tr>
<tr>
<td>4.3</td>
<td>Using bulk containers</td>
</tr>
<tr>
<td>4.4</td>
<td>Segregation of residual waste</td>
</tr>
<tr>
<td>4.5</td>
<td>Small recyclables</td>
</tr>
<tr>
<td>4.6</td>
<td>Niche materials</td>
</tr>
<tr>
<td>4.7</td>
<td>Compaction</td>
</tr>
<tr>
<td>4.8</td>
<td>Maximising space and identifying priorities on small and crowded sites</td>
</tr>
<tr>
<td>4.9</td>
<td>Black-bag policies</td>
</tr>
<tr>
<td>4.10</td>
<td>Re-use systems</td>
</tr>
<tr>
<td>4.11</td>
<td>Staffing</td>
</tr>
<tr>
<td>4.12</td>
<td>Communications</td>
</tr>
</tbody>
</table>
4.1 LAYOUT AND DESIGN

Whether you are redeveloping an existing site or planning new ones, you should understand how site architecture affects HWRC performance and the experience of site users.

For higher-tonnage sites (greater than 10,000 tonnes per annum throughput), there is evidence that a split-level design can have a positive effect on recycling rates. Although site architecture seems to have less of an attributable influence on smaller sites, user-friendly split-level designs have other benefits for both staff and the public. Providing ground-level access to deposit materials into containers or bays makes it easier for the public to focus on recycling, while site vehicle movements take place away from customers, resulting in less disruption and more efficient container servicing. There are fewer manual-handling issues, as people no longer need to carry bulky loads up steps to load skips, or attempt to throw materials from ground level.

Evidence and recommendations

Split-level sites can improve the efficiency of high-tonnage HWRCs and help increase recycling rates. This type of design can also enhance the experience of the public on sites of all sizes, making it easier for both users and staff to focus on recycling.

Although the financial resources required for designing and constructing or upgrading a site can be a limiting factor, some improvements to site layouts are possible without large capital expenditure. These include measures such as:

- reviewing and improving traffic management on site;
- introducing a one-way system for public traffic;
- constructing a feeder road to reduce congestion on the public highway leading up to the site;
- separating public and service traffic, if necessary by closing the site during container servicing (this is also important from a health and safety perspective);
- ensuring that road markings, parking bays and traffic signage are clear;
- positioning bins in locations that promote safe use, easy access for site users and efficient servicing;
- meeting the needs of disabled visitors;
- reviewing the order in which bins are positioned so that recycling containers are easier to access than containers for residual waste;
- providing clear bin signage (see Section 4.11.3); and
- introducing measures to maximise the efficient use of space on site (see Sections 4.6 and 4.7).

Efficient traffic management is particularly important, as this will help both site users and staff to focus on recycling efforts. Directing traffic on sites with poor traffic flows can be time consuming for staff and can have a serious impact on the site’s efficiency.

The issues around designing HWRCs are often complex and each site will have its own challenges, depending on its location, the land available, the anticipated tonnage throughputs and numerous other factors. A detailed discussion of these issues is beyond the scope of this guide. However, some interesting examples of innovative site design, or features to incorporate into a new or upgraded site, are addressed in Section 10 and Case Study 5.
Figure 4.1: Good site layout, with clear road markings and painted parking bays, Greater Manchester

Example

Monmouthshire County Council considered the needs of disabled visitors whilst developing their site at Llanfoist HWRC site. To ensure disabled drivers could contact the staff, a specific parking bay was allocated with an intercom system to attract site staff attention. Site staff training and appropriate provision for householders using the site with disabilities ensures the Authority is compliant with the 1995 Disability Discrimination Act (DDA).
4.2 SECURITY

As well as securing sites against unwanted commercial waste inputs, security may be required to deter usage of the site and vandalism, out-of-hours fly-tipping, arson attacks and theft. Repairing broken fences, dealing with damaged containers and cleaning up sites all cost money. If not dealt with, such damage can have an impact on the appearance of the site, and consequently on staff morale. The risk of material theft will increase when material prices are high. More severe security issues could result in threats or injury to site staff. Violence at work is discussed in Section 5.11.5.

Several measures are available, and decisions about their use should depend on the severity of the threat to site security, as well as the frequency with which incidents occur. Some may only be needed at specific times, such as employing security staff when a van ban or permit system is first introduced. The following points summarise the options.

4.2.1 Perimeter fencing

Most sites will have some perimeter fencing. The type of fencing needed will depend on site specific issues, but it should be robust enough to ensure persistent offenders cannot gain access. Some fencing also has barbed wire on top to ensure access cannot be gained from above.

Site managers need to take planning and safety regulations into account depending on the type of fencing to be installed. For example, warning signs should be displayed if barbed or razor wire is used.

4.2.2 Cameras, floodlighting and alarms

If CCTV is used, there should be sufficient lighting to ensure that the cameras can detect individuals and vehicles.

In areas where break-ins are common, real-time monitoring of CCTV resulting in a rapid response should deter offenders. This can be linked to a loudhailer system so that offenders can be addressed and scared off.

Floodlighting may deter casual offenders. However, if sites are in industrial or rural areas where they are not overlooked, floodlighting may make it easier for offenders to instead of acting as a deterrent.

Intruder alarms with automatic sensors on site perimeters can alert security staff or the police.

4.2.3 Staff

Security staff during opening hours or at night can be a useful deterrent but if they cannot respond to incidents and backup is not forthcoming, offenders soon learn that staff will not challenge them, and they will continue to offend. Security staff can be threatened, as can site staff, and therefore their safety needs to be considered.

When new systems or charges are introduced, security staff during the day may be sufficient to help prevent any aggressive responses received from site users.

4.2.4 Security for valuable items

Removal of valuable materials at the end of each day is not always possible or viable if transportation is required. If smaller items such as car batteries are targeted, it may be possible to store the container on a pallet which can be moved into a lockable container overnight.

If there are cash transactions on site (for example, re-use shop sales, payments for commercial waste, the selling of compost), any cash should be removed at the end of the day.

If the HWRC is next to a waste transfer station or council depot, there may be secure storage for valuable equipment and vehicles off site. In the absence of an off-site facility a container large enough to house valuable equipment could be a useful investment.
4.3 USING BULK CONTAINERS

Cardboard, wood, garden waste and metal still remain the most common materials to segregate in bulk containers.

Evidence and recommendations

Providing recycling facilities for a range of bulk materials is the single most important factor affecting HWRC recycling rates.

However, sites with multiple bulk residual waste containers could improve their recycling rates by introducing new material streams or collecting existing wastes in larger containers. For example, as highlighted in the WRAP guidance on WEEE good practice collection and treatment, HWRCs that segregate small mixed waste electrical and electronic equipment (WEEE) within bulk containers rather than cages, bins or other small containers collect more WEEE for recycling, as the profile of WEEE recycling is raised. Also, as discussed below, there are now opportunities for segregating materials for which there was previously no market. Site managers should also consider whether seasonal changes to waste arisings can be accommodated to maximise recycling, such as increasing the provision of garden waste skips depending on the seasons.

Using lockable isolation cages to segregate hazardous or high-value materials such as WEEE, tyres and gas bottles can also allow for the collection of a wider range of material streams in restricted spaces.
4.4 SEGREGATION OF RESIDUAL WASTE

Some HWRCs have systems to segregate residual waste for use in technologies such as mechanical biological treatment (MBT) and energy from waste (EfW). However, if such systems are not well managed, lower recycling rates can result. For example, Zero Waste Scotland's Scottish Recyclate Recovery Survey 2008/09 found that the presence of EfW capacity for residual waste was associated with lower HWRC recycling rates, with this result being statistically significant.

4.5 SMALL RECYCLABLES

Dry recyclables continue to be taken to HWRCs despite the increase in kerbside recycling and the improvements made to these services. Residents may continue to use the HWRC out of preference or simply because they have missed their collection and do not want the material at home for another two weeks. However, overall site recycling rates could be improved if the HWRC matches changes made at the kerbside, such as co-mingling small dry recyclables, while taking account of reprocessing routes.

A wide range of other small recyclables, such as CDs and DVDs, video tapes, spectacles, printer cartridges, foil and books, can be collected at HWRCs in small wheeled bins. Often these items will be collected by a charity to generate income.

4.6 NICHE MATERIALS

Niche materials such as carpets and mattresses are being segregated at an increasing number of HWRCs and this is likely to become more common as new outlets are developed and recyclers enter the market.

Other material streams which have previously been difficult to segregate include hard plastics and polystyrene.

**Example**

Wigan Council now segregates plastic for recycling at two HWRCs.

The types of plastic items that can be accepted are:
- Children's garden toys
- Storage boxes
- Plastic pallets
- Empty buckets (contamination-free)
- Food trays
- Baths
- Plant pots (soil-free)
- 5–200 litre drums (empty and contamination-free)
- Water butts
- Garden furniture (plastic)
- Drainpiping and guttering

**Evidence and recommendations**

Targeting a wide range of small recyclables is known to have a significant positive effect on HWRC recycling rates.
Flat glass trials have taken place at some HWRCs, but it can be difficult to identify suitable outlets, so separation of this material is still not widespread. Some flat glass could be re-used (see Section 10.8), but again the market is likely to be limited and it is a difficult waste stream to handle.

Shredded paper has been collected separately at some sites. However, depending on the end market it may be unnecessary to keep shredded paper separate from other paper, provided that the other paper is of a suitable grade. These issues should be discussed with the relevant paper reprocessor.

Plasterboard can still be disposed of to landfill, but as the Environment Agency’s Waste acceptance at landfills guidance points out, there are some issues around managing gypsum wastes. Gypsum or plasterboard cannot be sent to landfill with biodegradable waste and therefore requires segregation. Gypsum and plasterboard are sulphur-rich, and can produce toxic, odorous hydrogen sulphide gas when mixed with biodegradable waste. There is no acceptable limit below which gypsum can be deposited with biodegradable waste without creating this gas, so it must be segregated from biodegradable waste. This includes mixed HWRC waste. However, landfill is not the best option for plasterboard, and recycling of this material is now more widespread. The Environment Agency issued an update in its position statement, ‘Landfilling of gypsum waste including plasterboard’, in January 2011.

Evidence and recommendations

A number of independent plasterboard recyclers process waste plasterboard into recycled gypsum. The Plasterboard Recycler Directory on the WRAP website lists companies that recycle plasterboard. Uncontaminated plasterboard waste such as offcuts can be returned to the manufacturers and recycled into new product via take-back schemes.

It is possible to segregate wood wastes into different grades. If there are local outlets and space available on site, this is a good solution. However, because it can be difficult to segregate (and police separation of) wood grades, wood is often mixed. The Wood Recyclers Association can provide further details of wood recyclers throughout the UK.

4.6.1 Carpet

Carpets account for an estimated 5.32% of HWRC throughputs. According to Carpet Recycling UK, 400,000 tonnes of carpet waste arises each year. Carpet Recycling UK is a not-for-profit membership organisation founded to develop market-based solutions for diversion of carpet from landfill. It has members from across the carpet supply chain, including manufacturers, retailers, recyclers and waste companies.

In 2014, 113,000 tonnes were diverted from landfill, which is a 28% diversion rate, up from only 1.5% in 2008. Of this, 73,000 tonnes (65% of total diversion) was sent to energy recovery with the remaining 40,000 tonnes (35% of that diverted) being sent for re-use or recycling.

There are 21 carpet recyclers and re-use companies in the UK. Each reprocessor has different acceptance criteria – for example, some accept underlay and others do not. Steps you can take at HWRCs to divert more carpet from landfill include:

- providing a separate container;
- preventing carpets from becoming contaminated by other materials;
- keeping carpets dry, using a tarpaulin over a container if necessary; and
- bulking carpets up wherever possible, perhaps at a centrally located HWRC or a transfer station for a network of HWRCs.

If you are interested in segregating carpet for recycling, visit the Carpet Recycling UK website for an up-to-date list of specialist recyclers Carpet Recycling UK also provides advice and can help facilitate relationships with reprocessors. See ‘Carpet and Mattress Recycling at HWRC Sites: A Summary’ which provides a checklist to facilitate the decision making process to enable authorities to decide whether it is feasible given their specific circumstances.
4.6.2 Mattresses

Collecting mattresses at HWRCs for recycling is becoming more widespread with the increase in number of companies who reprocess them. Steps which should be taken are similar to those for carpets, such as provision of separate containers and maintaining quality by keeping under cover and ensuring handling by staff does not compromise quality and therefore reduce its potential outlets. Several companies collect mattresses from locations throughout the country, including Divert More, The Furniture Recycling Group, Mattress Recycling UK and WOWContract Recycling in England, CAD Recycling and Envik Recycling in Wales, Springback Mattress Recycling in Scotland (which also operates in Northern Ireland) and Envirogreen Recycling in Northern Ireland. See ‘Carpet and Mattress Recycling at HWRC Sites: A Summary’ for more outlets in England and Wales, as well as a checklist to facilitate the decision making process to enable authorities to decide whether it is feasible given their specific circumstances. If an appropriate reprocessor is not found, on-site stripping of the mattresses could be considered as is carried out at Durham County Council’s HWRCs (See case study 6), to allow for the recovery of materials without the need for additional skips and costly transport to the reprocessors.

Mattresses which are collected for recycling tend to be deconstructed by hand. This is partially due to quantities collected, but also due to the wide variety of types of mattresses and that a higher value can be extracted if separated into constituent materials. Mattresses divide into numerous material streams, including needle felt, foam, polyester and metals. There are multiple outlets for these materials, which can be used for animal bedding and textiles, and the metal can be recycled, although due to fluctuating markets, the textiles and foam elements are often used to produce a refused derived fuel which goes for energy recovery, rather than recycling. There is currently no overarching trade body for mattress recycling, although as the industry grows it is likely that an organisation will develop to promote and support an increase in mattress recycling.

Example

Wiltshire Council uses compactors mounted on rails for many of its HWRCs, which means that the compaction unit can be moved between different containers. The result is high compaction ratios for garden and residual waste. The council also uses roller packers for open cardboard ro-ro containers and compactors for enclosed plastic bottle skips.

4.7 COMPACTION

HWRC operations can be made significantly more efficient through compaction of bulk materials. Compaction can reduce the number of bulk containers on site, particularly for residual waste, freeing up space for collecting other materials (see Section 4.6). It can also improve servicing efficiency by reducing the frequency with which containers need to be hauled and replaced. Moreover, compaction can make haulage much more efficient by producing heavier and fewer loads of residual waste and recyclate.

Compaction can be applied to a range of bulk materials, including residual waste, garden waste, timber, cardboard and plastics.

The degree to which compaction can increase the density of bulk materials in HWRC skips will vary according to the type of compactor and the nature of the material, but it can reduce frequency of container service by roughly half to two-thirds. This can result in very significant reductions in haulage requirements. Financial savings from reduced haulage can be used to offset the investment costs of compactors. The payback period for investing in compactors can be fairly short, though if you are considering introducing compaction, you will need to produce a specific business case.

Static compactors produce the highest compaction ratios (the degree to which material is compacted). However, as they cannot be used for all materials without fitting a static compactor for every bulk material container, they are probably best suited for use with residual waste. Mobile compactors (or roller-packers) have lower compaction ratios than static compactors but can be used for all bulk material containers. Excavators are also often used at HWRCs to carry out compaction, though they can generally only achieve fairly poor compaction ratios in relation to static or mobile compactors.

Compactors are powerful pieces of machinery and need to be operated with care. For comments on compaction in relation to health and safety issues, refer to Section 5.11.3.
4.8 MAXIMISING SPACE AND IDENTIFYING PRIORITIES ON SMALL AND CROWDED SITES

Identifying the most appropriate size and number of containers on site, and understanding site throughput will help you identify what to prioritise on small and crowded HWRCs sites. You should therefore consider:

- **The size and number of containers.** Waste analysis and monitoring of the uplift produced by different containers will illustrate the significance of different waste streams. Some local authorities now collect all colours of glass in enclosed 40cyd skips, while others continue to use colour separating glass banks. In terms of income and environmental good practice, it is better to collect colour-separated glass. You can identify the most appropriate method of containment by talking with local reprocessors and taking account of the throughput of this material.

- **Co-mingling of recyclables.** In areas with co-mingled kerbside collections, residents are likely to appreciate the same collection system at HWRCs. Co-mingled dry recyclables can be taken to the materials-recovery facility (MRF) in the same manner as co-mingled kerbside collections. However, this will affect the income received from the materials, and there may be outlets for separate dry recyclate from which higher income can be obtained.

- **Baling materials on site.** This is another method which can increase space for recyclables, particularly for materials that are high in volume and low in weight, such as cardboard and plastics.

- **Stripping mattresses on site:** this allows the materials which make up mattresses to be separated and put into the various skips for these materials e.g. metals and textiles (see case study 6). This reduces the need for an additional skip for mattresses, and reduces the bulkiness of mattresses for easy transport to the subsequent reprocessors. Some of the fabrics and foams may be able to go into a carpet waste skip if they are already segregated on site, although this should be discussed with your carpet waste reprocessor.

**Example**

Bradford Council co-mingles glass containers and cans, which has allowed it to free up space for containers to trial collections of carpets and mattresses.

4.9 BLACK-BAG POLICIES

At many of the highest-performing HWRCs, site staff manage the disposal of a large proportion of the waste. Some sites have a policy of segregating waste brought in black bags. This is sometimes done by providing a table where residents place their black-bag waste, which staff then open and extract recyclables from. On other sites, once a resident has left, staff will remove unsorted black bags from residual waste skips, extracting any small recyclables and disposing of them in the correct containers. Some residents may be sensitive to the idea of their waste being segregated by site staff, so there should be appropriate signage informing site users about any policies regarding black bag waste.

For health and safety reasons, staff should not enter skips to remove black bags, and during busy times they are unlikely to be able to sort black bag contents, as they will be required to prioritise other on-site duties. Segregating waste from black bags is potentially a policy that not all council members will be comfortable with because of fears over monitoring residents and privacy. However, officers are generally supportive of black-bag policies, as long as staff follow appropriate confidentiality and health and safety procedures.

Black-bag waste has been neglected in many HWRC compositional studies. This is problematic, as it is precisely the type of hard-to-recycle waste stream about which knowledge is required so that measures to maximise HWRC recycling rates can be introduced (see Section 3.6).
4.10 RE-USE SYSTEMS

Although re-use activity does not divert a significant tonnage of waste from landfill, a formal re-use system can have a positive effect on recycling rates by reinforcing the impression that the site’s primary focus is the recovery of materials. A re-use facility can influence behaviour and is therefore a good activity to undertake (whether resale is on or off site) provided sufficient space is available. Prioritising re-use on site can increase staff motivation for recycling as a whole. It is also good PR, as council members are usually supportive of re-use systems, and they are often popular with residents. Any site considering undertaking direct reuse or preparation for reuse should consult with the relevant regulatory to ascertain the regulatory requirement applicable to their sites and activities.

Evidence and recommendations

Well-managed re-use systems are known to have a positive effect on HWRC recycling rates.

Re-use facilities that are untidy give a negative impression to site visitors, suggesting that the material is rubbish rather than desirable items for re-use. A well-organised and well-presented re-use operation is likely to achieve a higher level of sales. More and more authorities are developing sophisticated re-use facilities, particularly on sites with a repair workshop or retail facility. For example, Case Study 3 describes a re-use shop that opened alongside a new HWRC in August 2011. Even a storage container with signage to indicate that items can be donated for re-use can be well received by site staff and users alike. Of course, site operators will need to inform the relevant Regulator to ensure it is satisfied with the re-use plans proposed, and all health and safety and environmental regulations need to be taken into account.

Other examples of re-use activities on HWRCs can be found in the WRAP Bulky Waste Guidance.
4.10.1 Types of re-use system

The main variable for re-use systems at HWRCs is whether the items are segregated for sale off site or on site. If items are segregated for sale off site, this can be solely managed by a third party, or the site staff can be involved in identifying reusable items for a re-use organisation to subsequently collect. Alternatively, if the items are to stay on site for sale, options include selling by the site operator or a third party. In addition, the third party may have a workshop to refurbish and repair bulky items. Two examples are provided below, and re-use is also addressed in a number of the Case Studies. Further advice and guidance is available in the WRAP Bulky Waste Guidance.

Example

The London Borough of Camden has an on-site container where visitors can leave reusable items and anyone can take them away. No electrical items are allowed because there is no way of testing them. All items are donated rather than being sold. The site staff keep an eye on the container to ensure it is not too full or untidy. Usually the container is not too full because site visitors are now aware of this facility, and so there is a regular turnover of items.

Example

The Western Riverside Waste Authority in London is working with the London Re-use Network and a number of local re-use organisations to increase re-use activity in the area. Groundwork will manage a workshop on the Smugglers Way HWRC, where items can be tested and repaired and then taken by different re-use organisations for sale off site. If successful, this model of partnership working between re-use organisations and other stakeholders, allowing storage and movement of items between networks, could be replicated elsewhere in the country. While current re-use schemes which focus on selling items to low-income families are extremely beneficial, turnover needs to be maximised if all of the reusable items entering HWRCs are to be diverted from landfill.

4.10.2 Managing re-use

For a re-use system to work it needs to be easy to use and be managed by well-informed site staff. There should be a suitable, clean and dry facility for donation with clear information for site users. There should also be enough staff on site for re-use activity to be appropriately managed, while not interfering with the site operatives’ other tasks. Larger re-use facilities will benefit from dedicated site staff who are trained to handle the items carefully, are aware of the market and can identify items that will sell. Any system needs to be well managed and monitored, particularly where the third sector is involved. This is considered further in Section 8.4. Any on-site shop will need to comply with trading standards. Further advice is available on the Trading Standards Institute website.

4.10.2.1 Staffing

Adding re-use to a site can be a concern for contractors and local authorities because if it is poorly managed it can distract site staff from recycling activities. However, re-use systems can increase staff motivation for recycling as a whole. If responsibility for activities such as segregating items, looking after a re-use sale area and salvaging items from the public is shared among site staff, interest and motivation can remain high.

4.10.2.2 Money

If selling of re-use items takes place on site it is usually the site manager that is designated to handle the cash transactions. Cash should not be kept on site overnight, as this can pose a security risk. However, sites that handle cash have generally not reported an increased security risk as a result. There are ways of recording on-site cash sales that completely satisfy HMRC. The system is potentially open to abuse by site staff but contractors usually take a very strict approach in dealing with any wrongdoing and this tends to stamp out any unacceptable behaviour quickly.

Alternatively, items can be given away for free, though sites still need to comply with trading standards. The authority will save money on landfill costs, and reduce the amount of material disposed.
4.10.2.3 Third-sector involvement

Section 8.4 provides more detail about working with the third sector, but re-use is one area where the sector has a great deal of expertise to offer. However, re-use organisations may require support to ensure that they meet all the requirements of the site operator. If your authority is serious about maximising re-use, you (or your contractor acting on your behalf) should do all you can to be supportive of the re-use organisation. To ensure that all parties understand service requirements, a service level agreement or similar arrangement should be put into place.

Evidence and recommendations

If you are looking to partner with a third-sector organisation, its sustainability will be an important factor. Many third-sector groups are social enterprises, and as such are managed in a similar way to a private business, with a business plan, policies and procedures in place. You should be careful to work with organisations that will not affect the credibility of the local authority and to minimise the possibility of needing to withdraw a service because the third party is unable to continue.

4.10.3 Waste Electrical and Electronic Equipment

All HWRCs in the UK are currently Designated Collection Facilities (DCFs) for WEEE. The BIS Government Guidance Notes on WEEE state that a DCF operator is responsible for making all separately collected household WEEE deposited at a DCF available without charge to the Producer Compliance Scheme (PCS) linked to that site. There must be no diversion of WEEE from the site to channels outside of those agreed by the PCS. This includes items taken offsite for reuse not agreed with the PCS. Further details of the treatment of WEEE are included in the WRAP guidance on WEEE good practice collection and treatment.

Within the BIS Code of Practice for the Collection of Waste Electrical and Electronic Equipment (WEEE) from Designated Collection Facilities, PCSs are encouraged to develop relationships and agreements with organisations specialising in the refurbishment and re-use of electrical and electronic equipment, either on a commercial or charitable basis. Additionally, DCF site operators in conjunction with a PCS are also encouraged to develop a system where WEEE suitable for reuse could be diverted from recycling. Further information is available in Chapter 10 of the BIS Government Guidance Notes on WEEE. DCF operators must not carry out any form of treatment of WEEE on a DCF site unless the site has the relevant permit. Such activity includes any form of dismantling. It is also worth bearing in mind that if a local authority sells second-hand electrical goods which are unsafe or incorrectly labelled, and it has not taken reasonable precautions, it may be prosecuted. The Trading Standards website provides further advice on selling second-hand electrical items.

In July 2012 The Environment Agency issued new guidance on the storage and treatment of flat panel displays (FPDS) (i.e. TVs, computer monitors and laptops), specifically Liquid Crystal Display (LCDs) which contain mercury backlights using Best Available Treatment Recovery and Recycling Techniques (BATRRT) as required by the WEEE Directive. The guidance includes a useful site inspection checklist which summaries the key issues.
4.10.4 Furniture

Any furniture segregated for re-use must meet the same standards as new furniture. In the case of soft furnishings, the item must have fire-regulation tags (i.e. a permanent label stating ‘carelessness causes fire’). Of course, bulky items such as furniture will take up considerable space. If the container provided is small, the local authority will need to ensure that the relevant party, generally the re-use organisation, empties the container regularly or on demand to ensure that it does not overflow. Depending on the system in place, the following types of furniture can be segregated, with some items likely to be more in demand than others depending on the local market:

**Soft furnishings:**
- armchairs;
- beds and mattresses; and
- sofas.

**Hard furnishings:**
- bookcases;
- cabinets;
- chairs;
- chests of drawers;
- cupboards;
- tables;
- TV and hi-fi units; and
- wardrobes.

4.10.5 Bric-a-brac

While not a large contributor to performance figures in terms of tonnage, bric-a-brac re-use can be popular with both site visitors and charities. Re-use shops on site tend to turn over large numbers of small items for only a small income, although it all contributes to the service and diverts the items from landfill. All sorts of items can sell well, including books, crockery, DVDs, CDs, records, ceramics and glassware.

4.10.6 Paint

**Community RePaint** is a UK-wide network of over 60 community-run paint re-use projects collecting leftover, reusable domestic paint. Individual projects collect ‘half tins’ of paint from HWRCs and unsold and damaged tins from local DIY outlets (such as B&Q and Homebase) and trade centres (such as Dulux Decorator Centres). Painters and decorators also donate leftover paint from decorating jobs. This paint is sorted and stored at the local project’s premises and then redistributed for redecoration and art projects to charities, community groups and voluntary groups, as well as individuals and families in social need.

Each Community RePaint project is autonomous, and they all work to the same basic operational model, but with individual variations between projects according to the type and ethos of the host organisation. Community RePaint projects are run by a range of organisations, including furniture re-use organisations, scrapstores, community recyclers and local authorities. This ultimately affects the size of the individual project and how it is operated. There are two main models of operation when working with a local authority or waste management company, as detailed in figure 4.4.
**Example**

Reusable paint from all six of Bradford Metropolitan District Council’s HWRCs is collected twice weekly by a paint re-use scheme operated by a third-sector organisation. Community RePaint Bradford takes the paint back to its premises to be sorted and processed by colour and type, before being placed on the shelves for community groups and local charities, as well as local families and individuals on a low income, to come and choose from. Last year Community RePaint Bradford collected 30,176 litres (equivalent of 36.23 tonnes), and redistributed 25,321 litres of reusable paint. The scheme also provides volunteering and back-to-work placements to over 75 people annually.

**4.10.6.1 Involving a community group**

In this type of scheme, a community group visits the HWRC(s) and collects paint from a designated storage area. This type of project is usually operated by a well-established community group that has premises to store and redistribute the paint. Like other re-use organisations, they often provide training and volunteer placements. Schemes will charge to remove the paint, but the charges made are generally significantly cheaper than disposal costs. These schemes cannot accept hazardous paints.
4.10.6.2 Managing paint re-use in house

The public dispose of unwanted reusable paint into a container at the HWRC(s), while the local authority or waste management company operates the project in-house, managed by either the recycling officer or a site operative/manager. The paint is then sorted using a standard procedure to check that it is fit for re-use. It is then stored and displayed in the same container but is separated from paint that has been donated and not sorted. The paint ready for redistribution is stored on shelving by type and colour. The scheme is advertised locally to organisations such as charities and voluntary groups, and redistribution is by appointment.

Example

Based at two HWRCs, Community RePaint Nottinghamshire was launched in August 2010 by Nottinghamshire County Council, in partnership with Veolia. Local householders can take paint to either site, where the site operatives ensure that reusable paint is placed on shelves in the designated shipping container. This paint is then redistributed to the local community groups and charitable organisations that have registered with the scheme, via an appointment system. Together the council and Veolia also held the first of what are likely to become regular open days, during which anyone can come to the site to select paint. The result has not only been a reduction in the quantity of reusable paint being disposed, but also positive publicity for the council, who are seen helping the local community and the environment.

4.10.7 Bicycles

Large numbers of children's and adult bikes are taken to HWRCs and therefore there is scope for more re-use. At present, although bike re-use schemes are popular, they often take only small volumes of bikes.

A map and list of bicycle re-use projects in England and Scotland can be found on the re-cycle.org website.

The London Re-use Network (LRN) is working to expand bike re-use in the capital by developing a network linking existing bike re-use schemes and helping new schemes to start. The network aims to share resources across London and improve each project by supporting those that are over or under capacity. A hub or network is one way of ensuring that the bikes are removed for re-use when required by the HWRC, but that each scheme has a manageable quantity of bikes to repair and sell. The LRN's efforts are potentially replicable elsewhere in the country.

4.10.8 Textiles

While there are many textiles bring banks and kerbside collections, the WRAP Sustainable Clothing Action Plan (SCAP) found that 50% of the two million tonnes of textiles consumed each year in the UK are still destined for landfill. Maximising re-use and recycling of textiles will therefore continue to be important.

The Re-use and Recycling Working Group within SCAP is focusing on diverting textiles from landfill by improving collection and separation systems and developing the market for re-use and recycling. The group will also produce guidance for local authorities to support the collection of textiles. Textile re-use at HWRCs can complement the use of textiles banks in diverting readily reusable textiles from landfill.

It may be possible for some carpet tiles and, especially, rugs to be re-used. Any clean and dry rugs or lengths of carpet could be segregated for re-use alongside furniture and similar items.
4.11 STAFFING

The importance of HWRC staff should not be underestimated. They are the first point of contact with site users and will ultimately define how the site is run. For many residents, HWRC staff might be their only face-to-face contact with staff providing a council-run service. Similarly, it will matter little if the management of HWRCs has been contracted to a private waste-management company. As far as residents are concerned, HWRCs are a service provided by the council, and site staff therefore represent the public face of the council.

Added to this is the vital role of staff in ensuring that all the systems on the site are well run and efficiently managed, as well as safeguarding the public and supervising their recycling efforts. Helpful and enthusiastic site staff can make all the difference to the atmosphere on site, and this can result in tangible benefits in terms of improved public behaviour and higher recycling rates.

Figure 4.5: Site operative meeting and greeting a resident

4.11.1 Staffing levels

HWRC staff are integral to a successful operation. The areas in which HWRC staff contribute or have a key responsibility are numerous and will be specified in their contracts. They include:

- managing segregation of recyclables;
- policing commercial waste;
- servicing containers;
- keeping the site tidy;
- answering queries from the public; and
- alerting managers to problems or areas for improvement.

Adequate staffing levels are clearly vital to running a successful HWRC. Additional staff may be required to cope with significant changes in policy, such as commercial-waste controls or residential permits. More staff may also be needed where an HWRC’s service is being significantly expanded, such as by introducing the acceptance of commercial waste. Staffing levels also need to be sufficient so that staff can cope with any ongoing security issues.

Last but not least, suitable staffing levels are needed to free up staff time for assisting the public in segregating materials for recycling, and more generally directing site users to help them to increase their recycling efforts.

Evidence and recommendations

Higher staffing levels are known to have a positive effect on HWRC recycling rates.
4.11.2 Staffing policies and practices

Various staffing policies and practices can help to improve the efficiency of HWRCs. A ‘meet-and-greet’ service can improve operational efficiency and gives site staff the opportunity to inform the public where different recyclables should be deposited. This does not necessarily need to occur at the site gate, but some interaction with the public near the site entrance will encourage improved material segregation and traffic management.

Site operatives are crucial for maximising capture rates. At many high-performing sites staff will proactively remove items from incorrect skips using hooks, though they do need to adhere to appropriate health and safety procedures (see Section 5.11.2). Site staff can be encouraged to interact with site users during their site visits to inform them of the correct place to dispose of items or waste. Staff can also target black-bag waste in order to maximise recycling (see Section 4.8).

4.11.3 Staff motivation and training

Motivating and training staff can make a significant contribution to improving HWRC efficiency. Incentives linked to recycling rates are a useful way to encourage staff to interact with the public in order to maximise recycling, although they can be used to address other areas of performance too. Incentive payments cannot be made to site staff where HWRCs are managed in house by a local authority.

Evidence and recommendations

Target-linked financial incentives offered to site staff are known to have a positive effect on HWRC recycling rates.

Example

Staff at HWRCs in Suffolk receive incentive payments quarterly based on achievements that have been made against key performance indicators (KPIs), including customer satisfaction, recycling-rates and site cleanliness.

A league table based on landfill diversion or recycling rates in authorities with a number of sites can be a healthy way to encourage competition between staff within HWRC networks, and can also help contract managers to focus on low performers.

Various other factors can be important in improving staff motivation, including:

- good communication channels from management;
- tangible backup from management when problems arise (for example, abuse from traders);
- ensuring that staff feel some ownership of the site, for example their opinions on how site operations can be improved are sought and are taken seriously;
- competitive salaries and permanent contracts (with sick pay, holidays, pensions, etc.), with agency staff not used as a regular measure;
- sites that are not understaffed and have an efficient layout, so that staff have the ability to keep the site under control;
- description of staff as ‘recycling operatives’, rather than ‘site attendants’;
- designated roles for particular staff;
- reasonable shift lengths;
- rotation of jobs on site to increase experience, competence and interest. Staff could be moved between sites, although there may be contractual issues regarding their ‘usual place of work’. (you should discuss this with the HR department before it is implemented); and
- training which includes information about the recycling process, perhaps including visits to reprocessors, or on-site presentations about the context and importance of recycling.

Training staff on the wider context of the recycling process can be particularly valuable, as it helps them explain to the public why it is important to recycle, and what happens to the various materials separated for recycling at the site.
4.12 COMMUNICATIONS

Communications activity is an integral part of any waste and recycling service. It can provide residents with instruction, motivation or feedback, all with the aim of increasing recycling and re-use and encouraging residents to behave in a way that enables this. WRAP has developed a practical guide to Improving Recycling Through Effective Communications. In addition WRAP has produced downloadable template communications for re-use.

4.12.1 Publicity

It is obviously vital for residents to know where sites are located, opening times, what wastes can be recycled and whether there are any restrictions, particularly if changes have been made to the network. Some generic information should be available on the authority’s website, as outlined below. Other communication will be more ad hoc, such as running a mini-campaign to promote a site in a particular area, or a targeted leaflet drop to alert residents to a new or redeveloped site. While budgets for such activity may be hard to find, investing in effective communications can have a direct impact on increasing recycling at HWRCs. Leeds City Council and Revive Leeds ran a communications campaign to promote their re-use shop situated at the HWRC. They did this by distributing a leaflet to over 129,000 households in Leeds as well as running other campaign activities.

If local authorities succeed in raising awareness and increasing usage, HWRCs will need to be able to deal with the increased throughput of both tonnage and site users.

A very basic publicity measure is to place appropriate directional signage on public highways; surprisingly this type of signage is poor or lacking in some areas. Some sites will benefit from additional road signage to alert passing traffic to the presence of, and directions to, the site. If HWRCs are difficult to find, residents will use sites that they are familiar with even if they are further away. Clear signage can encourage them to use sites that have capacity. It can also ensure drivers are aware that there is a site nearby, and that service and public vehicles will be in the area.
It is worthwhile liaising with the local-authority communications team and issuing press releases at appropriate times – whether seasonal (for example, to encourage residents to recycle their unwanted electrical goods after Christmas) or to mark significant events or achievements (such as reaching a recycling rate target). Promoting new material segregation capacity can also be worthwhile, particularly for materials that site users have indicated they would like to be able to recycle. Such a press release can highlight that the council has listened to residents and acted.

4.12.1.1 Online publicity

You can address a range of issues via the council website and it is important to keep this information up to date. Particular consideration should be given to providing information on:

- site locations;
- opening times;
- which materials can and cannot be accepted;
- any restrictions or policies regarding types and quantities of waste accepted;
- vehicle restrictions or residents' permits;
- segregating materials at home prior to transport to the HWRC;
- alternative recycling, re-use or disposal options, such as kerbside schemes, bulky-waste collections, recycling and re-use websites like Freecycle, and charity services;
- any access restrictions, including van bans or permit systems;
- site policies in place, including re-use, conduct expected of site users and the splitting of black sacks;
- whether commercial waste is accepted, and links to other resources for disposing of or recycling commercial waste; and
- the life cycles of materials that are segregated at the sites, including details of reprocessing methods and examples of products that are subsequently manufactured.

Provision of information about the destination of the recyclables, including what the material is recycled into and how it is recycled, can dispel any myths that items separated for recycling at the sites are actually landfilled. Example messages include: 'Cardboard is pulped and made into new cardboard', and 'Soil and rubble is screened, crushed and re-used for landscaping and building'.

Example

Incentives can be an extra enticement for site users to involve themselves in recycling, and can focus on increasing recycling at HWRCs (as well as the kerbside). Leicestershire County Council did this with a prize draw to increase recycling of small WEEE items.

The county ran a series of roadshows and published press releases in April 2009, which saw the HWRCs collect nearly 200 tonnes of small WEEE, 50% more than April 2008. The WEEE communications were followed up with a scratchcard competition in July 2009 which prompted a similar increase in the amount of small WEEE collected compared with July 2008.
4.12.2 Integrating HWRC communications with wider local-authority waste communications

The HWRC service is just one of the waste and recycling services provided by the local authority, and you should include the service in a wider waste-communications strategy. Within a unitary authority it should be relatively straightforward to ensure that HWRCs are included, and the local authority will have its own brand guidelines to follow. It may be more complicated in two-tier authorities, but WDAs and waste collection authorities (WCAs) should work together to develop a consistent message and branding. For example, it may be worth issuing revised information leaflets promoting HWRCs, combining this with kerbside services where possible. If communication activity around different aspects of waste and recycling services complement one another, this results in continuity and consistency which can have a real impact on public perception. There may even be financial savings if communication activity is integrated and there are clear lines of responsibility to avoid duplication of effort.

Example

HWRCs can be an excellent location for educating the public about what happens to their waste once it is collected, and this can be tied into promotional campaigns.

The London Borough of Richmond ran a compost giveaway at its HWRC in summer 2011. This is a great way of telling people what happens to the garden waste they bring to the site, as well as showing the quality of the product that is bagged and sold on site throughout the rest of the year.

4.12.3 On-site signage

On-site HWRC signage, for example featuring the WRAP Recycle Now iconography, has an important part to play in communications and can:

- increase willingness to participate in recycling;
- provide instruction at point of disposal to reduce contamination;
- increase the public's knowledge and awareness of recycling both at the site and in general;
- direct traffic flow and reduce the need for intervention of site operatives; and
- provide details of site licence information, opening hours and emergency contact numbers.

Evidence and recommendations

Good container signage is known to have a positive effect on HWRC recycling rates.

Clear signage is one of the most effective methods for maximising the efficient segregation of recyclables, through improving capture rates and reducing contamination levels. However, because signage can be used to convey a variety of instructions and messages, you can end up with a large number of signs. In designing signage you need to strike the correct balance between providing enough information to site users, without providing too much and putting people off reading the signs at all. A site can be ‘over-signed’, as well as ‘under-signed’. Consistency in iconography and clarity can help minimise any confusion that could result from the volume of signs needed. Further advice is provided in the WRAP guidance Improving Recycling through Effective Communications.
Although site staff direct site users very effectively through direct interaction, on busy sites where operatives cannot approach all users, signage is particularly important. You should consider these factors when installing or replacing signs:

- **Visibility Signs** should be large in size with large lettering, so that they can be easily read from a reasonable distance in all weather conditions.

- **Elevation Signs** should be elevated to a height where they can be clearly seen by all site users. If signs are placed at ground level, they can be easily obscured by vehicles using the site. Elevating signs can minimise confusion to site users, who can then see in advance which recycling and disposal points they need to use. There are several ways of elevating signs and the chosen method should be site-specific.

- **Direction of signage.** Some signs need to face the direction of traffic flow to ensure that users know which bay to park in for the material they wish to dispose of. Signs that are flat against railings or containers may be difficult for drivers of passing vehicles to read. Other signs will not need to be seen by users in their cars.

- **Colour coding.** WRAP Recycle Now iconography uses colour coding according to the material the sign is referring to. This is a highly visible way of differentiating material collection points, complementing the information on the sign.

- **Use of symbols or pictures.** An easy way to overcome communication issues with site users can be to use pictures or symbols relating to the corresponding material for recycling or disposal. The Recycle Now iconography is a good example of this. This also caters for site users whose first language is not English.

- **Instructions.** Clear instructions can maximise operational efficiency. Examples are: 'Please do not put plastic sacks in this container'; 'Please flatten cardboard boxes before putting them in this container'. These signs can reduce contamination and increase the efficiency with which containers are filled, saving staff time.

- **Robustness.** Signs should be sufficiently durable that they can withstand the weather and the regular knocks and scrapes that one might expect at a waste-management facility.

- **Flexibility.** The infrastructure at containers or bays should allow for signs to be changed. This means they can be removed if the skip is full and site users need to be redirected elsewhere, or if the skip is to be used for another waste.
It is good practice to display a recycling-rate sign, usually near the exit of the site, so site users can see that they are making a contribution to recycling performance. Positive feedback will confirm that recycling is actually taking place and the material isn’t simply destined for landfill. This sign will need regular updating, and the responsibility for updating signs will need to be agreed between the local authority and the contractor.

Any additional information that can be added to signs to raise public awareness can be valuable as long as it does not interfere with the key message. For instance, if a recyclable material is destined for processing, this may be reinforced in the minds of site users by adding this information to the relevant sign. Suitable messages include: ‘Green waste is composted and used as a soil conditioner’, or simply: ‘Garden waste for composting’, or: ‘Waste for landfill’. There may be opportunities for messages to be the same or similar to those used on refuse collection trucks, particularly in unitary authorities.

### Evidence and recommendations

Public-awareness-raising measures are known to have a positive effect on HWRC recycling rates.

There may be specific signs that are only needed at some sites, such as:
- a fly-tipping notice at the entrance;
- van ban or permit information at the site entrance; or
- signage to minimise risk from threatening situations by declaring that ‘Abuse of site staff will not be tolerated and will be reported to the police’.

#### 4.12.3.1 Responsibility for maintenance of signs

You should clarify responsibility for the maintenance of signs with the site operator. The frequency with which signs are updated, in particular those that require regular updating such as feedback signs, should be stipulated. Replacement of damaged or outdated signs needs to be included in any programme of site maintenance.

#### 4.12.3.2 Multilingual signs

If a local authority or a specific area has a high percentage of site users from different cultures or is predominantly multilingual, it may be worth considering using multilingual signs. However, care needs to be taken to avoid making the signs look more confusing. It may be more appropriate for this information to be communicated online, in a leaflet or by employing a site operative with specific language skills. The use of symbols for different materials can also help.

#### 4.12.4 Site staff and awareness raising

Staffing is discussed in Section 4.10, though it is worth highlighting that trained, enthusiastic and motivated staff can make an excellent contribution to promoting recycling. Good staff are often the most effective way to pass on recycling information to site users, as they are the people most involved in the recycling process on site.
4.12.5 On-site public awareness-raising features

By providing an artistic feature, you can show site users that time and effort are being devoted to improving the site. This is not only an effective way of making the site aesthetically pleasing, but also a chance to involve the local community in the activities of the site while reminding site users of the recycling message. Additional publicity is likely to be created as a result of this activity.

Figure 4.8: Mosaics outside the education centre at Hornsey High Street HWRC, London

4.12.6 On-site education centres

HWRCs provide an excellent visual understanding of the collection part of the recycling process, and a co-located education centre with views over the site can be an ideal place to conduct talks, presentations and activities for school pupils, students and community groups. Many waste and recycling facilities now have viewing platforms which allow visitors to observe the facility without requiring access to potentially dangerous parts of the site, and this type of facility could be included in new HWRCs.

The best way to leave a permanent impression, especially with school children, is by direct involvement in the recycling process. New, clean, state-of-the-art facilities can be a real attraction. On-site education, whether this is in a purpose-built education centre or a mobile classroom, can result in a highly successful and thoroughly enjoyable site visit. Involving recycling officers as well as education officers in these visits will reinforce the recycling message. Of course, the safety of the public and especially children will be paramount, and therefore this activity will not be appropriate at all sites. Children should be allowed to wander on their own, and any educational facility should have an appropriate entrance to ensure children are not crossing traffic on site or near the disposal area.

Other groups including community groups, students, postgraduates and councillors are likely to be interested in undertaking site visits. An on-site education centre can be used to communicate wider messages such as the waste strategy for an area and to show how the different facilities and sites contribute towards the achievement of strategic goals. With this in mind, an on-site education centre is not just about educating people about what goes on at the HWRC.
Figure 4.9: Balloo Recycling Centre, North Down

environmental-education information centre overlooking the HWRC
5. LEGISLATION

Civic amenity sites, now more commonly known as household waste and recycling centres (HWRCs), were originally set up under the Civic Amenities Act 1967. This stated in Part III(18) that the duty of a local authority was:
‘to provide places where refuse, other than refuse falling to be disposed in the course of a business, may be deposited at all reasonable times free of charge by persons resident in the area of the authority and, on payment of such charges (if any) as the authority think fit, by other persons’. Since the 1967 Act there have been numerous legislative changes, such as the Waste Electrical and Electronic Equipment Regulations 2013 (WEEE), to define the responsibilities of local authorities and influence the management and recycling requirements at HWRCs.

The overarching legislation is discussed in this section, starting with a focus on the legal definitions of waste, including different types of waste. Health and safety issues and responsibilities are also discussed in detail.

5.1 Definition of waste
5.2 The Environmental Protection Act 1990
5.3 The Controlled Waste Regulations
5.4 The Waste Framework Directive
5.5 The Waste Shipment Regulation
5.6 Waste Management Licencing and Environmental Permitting
5.7 The Waste Electrical and Electronic Equipment (WEEE) Regulations
5.8 The Localism Act, England
5.9 Scotland: The Waste (Scotland) Regulations 2012 and Making Things Last
5.10 Facilitating access for small businesses
5.11 Health and safety
5.1 DEFINITION OF WASTE

Understanding and applying the definition of waste, and those of different types of waste, is a vital aspect of managing HWRCs. These definitions can fundamentally affect the operation of sites, including requirements to charge for disposal of certain wastes. Waste is defined in the Waste Framework Directive (2008/98/EC) as:

‘any substance or object which the holder discards or intends or is required to discard.’

Waste managed at HWRCs should be household, industrial or commercial waste. All these wastes are classed as ‘controlled waste’, which is defined in section 75 of the Environmental Protection Act 1990 (EPA 1990) and through the Controlled Waste (England and Wales) Regulations 2012. Although generally HWRCs could take in all controlled waste it depends on their permit in England and Wales or Licence in Scotland as to whether they can actually take them in on a site specific basis.

In Northern Ireland, the legislation that governs HWRCs is the Waste and Contaminated Land (NI) Order 1997, Article 25 (4), which allows councils to determine the types of waste accepted. The Controlled Waste and Duty of Care Regulations (Northern Ireland) 2013 classifies household waste, commercial waste and industrial waste in Northern Ireland. Local authorities must apply for a Waste Management Licence or an exemption from the Northern Ireland Environment Agency (NIEA).

5.1.1 Household waste

‘Household waste’ is defined in the EPA 1990, and comprises:

- all waste collected by waste collection authorities (WCAs) under section 45(1) of the EPA 1990;
- all waste arisings from HWRCs established under section 51(1)(b) of the EPA 1990, as explained in Section 5.2; and
- waste collected by third parties for which collection or disposal re-use or recycling credits are paid under section 52 of the EPA 1990.

Schedule 1 to the Controlled Waste (England and Wales) Regulations 2012 provides a definition of what is considered Industrial, Commercial and Household Waste.

5.1.2 Municipal waste

The definition of municipal waste as described in the Landfill Directive includes both household waste and waste from other sources which is similar in nature and composition. This is likely to include a significant amount of waste generated by businesses and not collected by local authorities. Before the directive was implemented in the UK, ‘municipal waste’ referred to waste collected by local authorities. In 2010, following a consultation and negotiations with the EU Commission, national targets were redefined and now references to ‘municipal waste’ will refer to the new definitions, as set out in the Defra note ‘Local authority collected waste – Definition of Terms’:

- Local authority collected municipal waste (LACMW) refers to the previous ‘municipal’ element of the waste collected by local authorities. It includes household waste and business waste, as well as other waste which is similar in nature and composition, as required by the Landfill Directive.
- Local authority collected waste (LACW) refers to all waste collected by the local authority. This is a slightly broader concept than LACMW, as it would include both municipal waste and non-municipal fractions, including construction and demolition waste.

5.1.3 Construction and demolition waste

Construction and demolition waste from households is not defined as household waste for the purposes of section 51 of the EPA 1990, which sets out the duty for waste disposal authorities (WDAs) to provide HWRCs to residents to dispose of their household waste.
Examples of construction and demolition waste from households could include:
- construction wastes (including improvement, repair or alteration);
- doors and windows;
- fitted kitchens;
- fitted wardrobes;
- inert material such as rubble, concrete, bricks and roof tiles;
- plasterboard;
- soil from landscaping activities; and
- any other building materials.

Local authorities understand that such waste can be generated by householders, and that householders need to dispose of it. Several authorities have limited the quantities that can be disposed of for free within their HWRC network, which minimises abuse from traders while providing a service to householders.

The Local Government (Prohibition of Charges at Household Waste Recycling Centres) (England) Order 2015 and The Local Authorities (Prohibition of Charging Residents to Deposit Household Waste) Order 2015 prevents local authorities in England from charging residents to enter HWRCs and to deposit household waste at HWRCs. Both Orders were effective from April 2015, or 2020 where charges were already in place before April 2015. Both Orders state that “household waste” has the same meaning as in section 75 of the Environmental Protection Act 1990 as read with regulation 3 of, and Schedule 1 to, the Controlled Waste (England and Wales) Regulations 2012.

### 5.1.4 Hazardous waste

In England and Wales certain wastes are classified as hazardous. In Scotland the term Special Waste is used. Waste is considered ‘hazardous’ when it contains substances or has properties that might make it harmful to human health or the environment. The Environment Agency’s interpretation of the definition and classification of hazardous waste can be found in their technical guidance WM2. WM2 is used by the nations to determine whether waste is considered hazardous/special or not for classification and regulatory purposes.

Wastes brought to an HWRC will fall into one of three categories:
- always hazardous, such as lead acid batteries and fluorescent tubes;
- never hazardous, such as edible oil; or
- may be hazardous and needs to be assessed, such as paint.

While some of these wastes are not legally hazardous, they can be difficult to dispose of, causing mess and nuisance if they are disposed of incorrectly, or if spillages or breakages occur. Whilst no longer an active forum, The National Household Hazardous Waste Forum (NHHWF) defined household hazardous waste as:

‘any material discarded by a household which is difficult to dispose of or which puts human health or the environment at risk because of its chemical or biological nature.’

While this is not a legal definition, it clearly indicates that HWRC site staff need to manage some wastes with more care and attention than others.

The Waste Framework Directive 2008/98 (WFD), as amended, aims to provide a Europe-wide definition of hazardous waste and to ensure its correct management and regulation. The WFD defines hazardous waste as waste which displays one or more of the properties listed in Annex III of that Directive. A comprehensive list of all wastes, including hazardous waste, is available in the European Waste Catalogue.
The hazardous waste elements of the WFD are implemented in the UK through the following legislation:


- **Scotland**: Rather than implement a new set of regulations to take account of the HWD, Scotland amended the Special Waste Regulations so that the Special Waste Amendment (Scotland) Regulations 2004 and the Waste (Scotland) Regulations 2011 include provisions for enforcing the HWD.

- **Northern Ireland**: The Northern Ireland Environment Agency is responsible for enforcing the Hazardous Waste Regulations (Northern Ireland) 2005. These were amended by regulations 45 to 63 of the Waste Regulations (Northern Ireland) 2011 and the Environmental Protection (Disposal of Polychlorinated Biphenyls and other Dangerous Substances) Regulations (Northern Ireland) 2000. Again, these contain provisions which implement the HWD.

### 5.1.5 Bulky waste

The Controlled Waste (England and Wales) Regulations 2012 and the Controlled Waste Regulations (Northern Ireland) set out the types of household “bulky” wastes for which a collection and/or disposal charge may be made. Controlled Waste Regulations 1992 and Controlled Waste Regulations (Northern Ireland) 2002 is:

- any article of waste which exceeds 25 kilograms in weight; and/or
- any article of waste which does not fit, or cannot be fitted into:
  - a receptacle for household waste provided in accordance with section 46 of the Environmental Protection Act 1990;
  - b) where no such receptacle is provided, a cylindrical container 750 millimetres in diameter and 1 metre in length.

The WRAP Bulky Waste Guidance describes common practice in defining what constitutes bulky waste.
5.1.6 Commercial waste

Commercial waste is waste generated from premises used wholly or mainly for the purposes of a trade or business. The Controlled Waste (England and Wales) Regulations 2012 list wastes that should be treated as commercial waste. Commercial waste does not include household, agricultural or industrial waste.

If waste is generated within a residential home or garden, but as a result of a business activity (for example garden waste generated by a landscape gardener or building waste as a result of removing a fitted kitchen), it is defined as, and is, therefore, subject to, regulation as, commercial waste.

5.1.7 Re-use

In the revised Waste Framework Directive, the definition of ‘re-use’ is split into two categories, as is currently the case in England and Wales. Some re-use is categorised as ‘waste prevention’, which means that measures have been taken before a substance, material or product is allowed to become waste. The other category includes items that have become waste, and therefore the items are categorised under ‘preparing for re-use’. This type of activity can and does occur at HWRCs. ‘Preparing for re-use’ refers to checking, cleaning, repairing or recovery operations, which enable products or components of products that have become waste to be re-used without any other pre-processing. Any site considering undertaking direct re-use or preparation for re-use should consult with the relevant regulatory to ascertain the regulatory requirement applicable to their sites and activities.

Clothes, bric-a-brac, electrical and electronic equipment and furniture can be repaired or refurbished and then sold on. Re-usable items at HWRCs can be segregated for off-site or on-site sale; further details are included in Section 4.9.

HWRCs that are designated collection facilities (DCFs) for WEEE should consider the Code of Practice for the collection of WEEE from DCFs, which states that there should be systems in place to identify WEEE suitable for refurbishment and re-use.

In Northern Ireland, the government has published its own guidance on applying the waste hierarchy.

In Scotland, the Scottish Environmental Protection Agency (SEPA) has published guidance on re-use activities and waste regulation. This guidance says that the key question is whether there is certainty that the item will actually be re-used. European case law has ruled that re-use must be a certainty, not a mere possibility, for an item to be classed as non-waste. If there is no certainty, then SEPA will regard the item as waste, until it has been fully prepared for re-use, and made available for sale.

Items discarded at HWRCs by members of the public are therefore considered to be waste, unless checks have been carried out which give certainty that the item will in fact go on to be re-used. Certainty of re-use checks should cover the condition of the item; functionality; whether the item meets technical requirements for ongoing sale/use; and the marketability of the item. Once an item passes these checks it is no longer considered to be waste.
5.1.7.1 End of Waste

The WFD contains criteria which can be used to determine when certain materials recovered from waste cease to be waste and become products that are outside of waste controls. The WFD contains generic criteria for end of waste, stating that waste ceases to be waste when it has undergone a recovery operation (including recycling) and:

- the substance or object is commonly used for specific purposes;
- a market or demand exists for such a substance or object;
- the substance or object fulfils the technical requirements for the specific purposes and meets the existing legislation and standards applicable to products; and
- the use of the substance or object will not lead to overall adverse environmental or human health impacts.

The Environment Agency has worked with WRAP, the Northern Ireland Environment Agency and the Welsh Government on the **Waste Protocol Project**. The project looked at the recovery of what is currently defined as waste, and how it can lose the associated stigma and regulatory burden. Examples of wastes that may be received at an HWRC and for which final quality protocols have been published include:

- cooking oil;
- source-segregated biodegradable material for compost;
- flat glass;
- plasterboard; and
- tyres.

Segregation of these types of wastes will therefore be encouraged, as the quality protocol will help to open up markets for their recycling into new products. While many of these waste streams are already segregated at HWRCs, the demand for segregating these and other materials may increase as new markets are found.

The definitions on the previous page illustrate that not only the type of waste but also its source defines how it should be classified. Because it can be difficult to interpret the sources of waste, many local authorities take a pragmatic view regarding what is and isn't acceptable at their sites.

Note that HWRCs can also charge for household waste from non-residents (see **Section 8.2** for discussion of cross-border waste management); and that additional discretionary facilities that are not HWRCs under the EPA 1990 may also be able to charge to receive household waste (see **Section 9**).
5.2 THE ENVIRONMENTAL PROTECTION ACT 1990

HWRCs are provided under the EPA 1990. The relevant part of the act, section 51, states that:

(1) It shall be the duty of each waste disposal authority to arrange—
   a) for the disposal of the controlled waste collected in its area by the waste collection authorities; and
   b) for places to be provided at which persons resident in its area may deposit their household waste and for the disposal of waste so deposited;

(2) The arrangements made by a waste disposal authority under subsection (1) (b) above shall be such as to secure that—
   a) each place is situated either within the area of the authority or so as to be reasonably accessible to persons resident in its area;
   b) each place is available for the deposit of waste at all reasonable times (including at least one period on the Saturday or following day of each week except a week in which the Saturday is 25th December or 1st January);
   c) each place is available for the deposit of waste free of charge by persons resident in the area; but the arrangements may restrict the availability of specified places to specified descriptions of waste.

(3) A waste disposal authority may include in arrangements made under subsection (1) (b) above arrangements for the places provided for its area for the deposit of household waste free of charge by residents in its area to be available for the deposit of household or other controlled waste by other persons on such terms as to payment (if any) as the authority determines.’

Legislation and policy

What does the EPA 1990 section 51 mean?

The waste disposal authority has a duty to provide HWRC facilities. However, there is no mention of the number of facilities needed save the requirement for them to be ‘reasonably accessible to persons resident in the area’. Therefore, an authority may decide that one facility satisfies that duty, whereas other authorities may consider that they require more sites (see Section 2.2 which discusses standard levels of HWRC provision). It also means that not all wastes have to be accepted at all sites; for example, asbestos may be excluded at a particular HWRC.

Local authorities are obliged to provide HWRCs for residents to dispose of their household waste free of charge. The sites must be reasonably accessible and available at all reasonable times. Other wastes can be also accepted (household waste from non-residents or non-householders, or non-household waste) and charges may be levied for the disposal of these wastes.

Section 34 of the EPA 1990 and the Waste (England and Wales) Regulations 2011 places a duty to manage and transfer waste in a way that enables its safe recovery or disposal on:

- all producers, carriers and importers of controlled waste;
- anyone who keeps, treats or disposes of controlled waste; or
- anyone who has control of such waste as a broker.

This is known as the ‘duty of care’, and it is particularly pertinent when local authorities are using third parties to treat or dispose of waste from their HWRCs. Failure to comply with this duty could result in wastes being handled or disposed of by illegal traders or exported illegally. This can obviously lead to environmental concerns, but may also cause reputational damage to the local authority. A local authority could be prosecuted for failing to comply with its duty of care under section 34 if it does not take all such measures in its capacity as are reasonable in the circumstances.
5.3 THE CONTROLLED WASTE REGULATIONS

The definition of household waste in section 75(5) in the EPA 1990 was further clarified in the Controlled Waste Regulations 1992. Schedule 1 of the regulations defined such waste according to its source rather than its content. This was problematic for HWRC operators because it was sometimes difficult to establish the source of waste once it has been brought to an HWRC for disposal. For example, traders may try to dispose of wastes arising from commercial activities under the guise of their own household waste.

Section 5.1 of this guide discusses the definition of different types of waste including household, commercial and hazardous waste.

The Controlled Waste Regulations 1992 have been replaced by the Controlled Waste (England and Wales) Regulations 2012. These Regulations came into force in April 2012. The new Schedule 1 still defines household waste by reference to its origin, but also introduces some exceptions. The changes relevant to the management of HWRCs include:

- some waste previously designated as household waste, such as waste from camp sites and halls used for public meetings, being classified as ‘commercial waste’ for which charges can be made; and
- waste from a ‘charity shop selling donated goods originating from domestic property’ being classed as household waste, but waste from ‘premises occupied by a charity and wholly or mainly used for charitable purposes’ being classed as commercial waste, except if the waste is from a place of worship in which case it will be treated as household waste.

5.3.1 Charging householders

Section 51 of the Environmental Protection Act 1990 requires local authorities to make arrangements that allow local residents to dispose of their household waste free of charge. Schedule 1 to the Controlled Waste (England and Wales) Regulations 2012 determines whether waste is household, industrial waste or commercial waste. The waste is classified according to the place where it is produced or, notwithstanding the place where it was produced, by its nature or the activity producing the waste. Under paragraph 3 of Schedule 1, waste from construction or demolition works, including preparatory works is classified as industrial waste except that construction and demolition waste is treated as household waste for the purposes of the duty of care on householders to pass waste produced at their property to an authorised person.

Local authorities may charge for the deposit of industrial waste, including construction and demolition type waste, at HWRCs. Where a local authority is contemplating such charges, it should first consult and ensure the charge is reasonable, have a transparent pricing mechanism and not exceed the cost of providing the service.

In its Litter Strategy the Government highlights the difficulties caused by local authorities charging for the disposal of construction and demolition type waste arising from works residents have carried out themselves (small-scale DIY-type tasks). Such charges can be counterproductive and may simply transfer costs to dealing with additional fly-tipping and littering. To promote responsible behaviour by local residents, local authorities should not charge residents for depositing waste arising from such activities – i.e. waste from works that are of a type and extent that an ordinary householder with no specialist building skills would normally be able to undertake.
Materials which must be accepted free of charge

All household waste delivered by residents in the area to the site, including but not limited to:

**Small recyclables:**
- Cardboard;
- Paper;
- Cans;
- Glass;
- Plastic bottles;
- Food and drinks cartons;
- Textiles and shoes;
- Textiles and shoes;
- Books;

**Green (garden) waste:**
- Timber (high and low grade);
- Metal;
- Large and small domestic appliances;

**Hazardous household wastes:**
- Chemicals;
- Paint;
- Fridges and freezers;
- Televisions and monitors (CRT);
- Fluorescent tubes;
- Batteries (domestic and vehicle);
- Dense plastics;
- Carpet;

**Mattresses:**
- Free Standing Furniture;
- Black-bag waste.

Materials which must be accepted free of charge

All household waste delivered by residents in the area to the site, including but not limited to:

<table>
<thead>
<tr>
<th>Small recyclables:</th>
<th>Hazardous household wastes:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardboard;</td>
<td>Chemicals;</td>
</tr>
<tr>
<td>Paper;</td>
<td>Paint;</td>
</tr>
<tr>
<td>Cans;</td>
<td>Fridges and freezers;</td>
</tr>
<tr>
<td>Glass;</td>
<td>Televisions and monitors (CRT);</td>
</tr>
<tr>
<td>Plastic bottles;</td>
<td>Fluorescent tubes;</td>
</tr>
<tr>
<td>Food and drinks cartons;</td>
<td>Batteries (domestic and vehicle);</td>
</tr>
<tr>
<td>Textiles and shoes</td>
<td>Dense plastics;</td>
</tr>
<tr>
<td>Books;</td>
<td>Carpet;</td>
</tr>
</tbody>
</table>

**Green (garden) waste:**
- Timber (high and low grade);
- Metal;
- Large and small domestic appliances;

**Mattresses:**
- Free Standing Furniture;

Construction and demolition waste may attract charges, however to promote responsible behaviour by local residents, local authorities should not charge residents for depositing waste arising from small scale DIY activities or works of a type and extent that an ordinary householder with no specialist building skills would normally be able to undertake. These might include for example small amounts of rubble and concrete or small amounts of bricks, tiles, plasterboard or other building materials.

Commercial wastes, [other] industrial wastes and tyres may attract charges.

**Table 5.1: A non-exhaustive list of examples of the types of materials which must be accepted free of charge at HWRCs.**

**HWRC Survey (Summer 2017)**

WRAP undertook a survey with NAWDO to gather evidence from local authorities as to what their policies are regarding charging householders and small businesses. A summary of key points is highlighted below:

- 62% response rate;
- Charging for certain types of waste has been in place for some authorities dating back to 2001, but it’s become more common to charge in recent years, with the majority charging from 2014;
- Common reasons for introducing charging has been to deliver savings and to avoid restricting certain material types and / or closure of sites;
- The majority of authorities are only charging for soil, stones, bricks, tiles, hardcore and rubble;
- Charges per standard rubble sacks were minimal, and even free for a small amount, offering an affordable alternative for householders to dispose of non-household waste when compared to the alternatives such as skip hire;
- In recent years of applying charging local authorities are consulting their residents and if charging has been introduced satisfaction levels haven't been negatively impacted;
- Local authorities not facilitating access for small businesses were due to practical issues such as site layout and site congestion rather than not wanting to provide a service.
5.4 THE WASTE FRAMEWORK DIRECTIVE

The WFD has been partially implemented through the *Waste (England and Wales) Regulations 2011*. In addition the European Commission has also issued guidance on the interpretation and key provisions of the WFD. The WFD has amended and strengthened the waste hierarchy; indicating that it should be viewed as a priority order. The amended hierarchy is:

- prevention, including re-use;
- preparing for re-use;
- recycling;
- other recovery, including energy recovery; and
- disposal.

The hierarchy is subject to a proviso that member states shall take measures to encourage options that deliver the best overall outcome. This may require specific waste streams to depart from the hierarchy where this is justified in terms of overall waste-management priorities. Additionally, there may be factors that influence how the hierarchy is applied to HWRC wastes, particularly where an option is not economically viable or technically feasible. Such decisions will be for each local authority to determine, but if decisions do not follow the priorities of the waste hierarchy, the decision must be justifiable.

**Legislation and policy**

**How does the WFD apply to local authorities?**

Local authorities should ask themselves what they do with their waste now and in particular:

- could waste at HWRCs be prepared for re-use (for example, by sorting or cleaning)?
- could more or different waste streams be recycled? and
- is there anything else that could be extracted from the waste, such as energy or products?

Defra has published *Guidance on Applying the Waste Hierarchy*. The Scottish Government has also produced *guidance* on applying the waste hierarchy.

A declaration is needed on Waste Transfer Notes and Hazardous Waste Consignment Notes confirming that the duty to apply the waste hierarchy has been adhered to. Suggested wording is as follows:

‘I confirm that I have fulfilled my duty to apply the waste hierarchy as required by regulation 12 of the Waste (England and Wales) Regulations 2011.’
5.4.1 Re-use and the waste hierarchy

The definition of re-use, as discussed in Section 5.1.7, includes waste-prevention activities for re-usable items that have not yet entered the waste stream, and preparing items that have entered the waste stream for re-use. Article 11 of the rWFD discusses re-use and recycling in detail, and includes a target to recycle or prepare for re-use 50% of household waste by 2020.

The rWFD also mentions measures that can affect the consumption and use of a product as an example of waste-prevention activities. One measure could apply to re-usable items segregated at HWRCs:

‘The promotion of the re-use and/or repair of appropriate discarded products or of their components, notably through the use of educational, economic, logistic or other measures such as support to or establishment of accredited repair and re-use-centres and networks especially in densely populated regions.’

Legislation and policy

What does the WFD mean for local authorities?

Local authorities will be required to demonstrate that they are implementing the waste hierarchy in priority order. This means that waste prevention and re-use activities will become more important.
5.5 THE WASTE SHIPMENT REGULATION

The export of waste is regulated predominantly by the Waste Shipment Regulation. This sets out what can and cannot be exported, and for what purpose it can be exported, to countries within and outside Europe. The types of waste and where they are being exported to are the most important factors. Most waste cannot be exported for disposal, regardless of where it is being exported to. Certain waste types can be exported for recovery depending on the country of destination. Waste controls will fall into one of three categories:

- Prohibited (for example, WEEE cannot be exported to African countries);
- Notification (for example, refuse-derived fuel or treated wood waste); or
- Green List (for example, single-stream paper or plastic).

Notification and Green List means that waste export can proceed under the relevant controls. Further advice can be found in the Environment Agency publication Moving Waste Between Countries: Determining the Controls on Waste Exports. Of course, there will also be specific regulations in the countries through which the waste will travel and the country of destination. Definition of waste/ non waste and level of control applied must comply the standards of the highest level or regulatory control.

Local authorities will be aware of the importance of knowing the onward destinations of waste and recyclable materials from their HWRCs throughout the recovery and disposal chain and of obtaining evidence from contractors, brokers or other third parties that only legitimate treatment facilities will be used. Officers can request proof during contractor duty-of-care audits to ensure that they are being given reliable information about onward destinations of materials.

The PAS 141 specification (detailed in section 5.7.2) is used to differentiate ‘bona fide’ exports from illegal exports of WEEE under the guise of being sent abroad for re-use.

5.6 WASTE MANAGEMENT LICENCING AND ENVIRONMENTAL PERMITTING

The law relating to waste management licences and environmental permitting varies between the nations of the UK.

5.6.1 England and Wales

In England and Wales, the Environmental Permitting Core Guidance, updated in March 2013, describes the requirements for operator competence and the role of management systems. The competence of an operator is considered by the regulator when issuing an environmental permit. Operators are encouraged to demonstrate good practice by implementing an environmental-management system (EMS) such as ISO14001 or the EU’s Eco-Management and Audit Scheme (EMAS).

Under the Environmental Permitting (England and Wales) Regulations 2016, operators of certain waste activities, including HWRC managers, are required to prove the competence of their staff to operate the facility and to hold an environmental permit. The wider management system of the operator should contain mechanisms for assessing and maintaining staff technical competence.

There are two Defra-approved schemes for demonstrating technical competence within the waste-management industry:

- The CIWM/WAMITAB scheme is NVQ-based and leads to the award of a Certificate of Technical Competence (COTC) relevant to a particular type of facility. Holders of a COTC are required to take a Continuing Competence assessment every two years in order to keep the certification.
- The ESA/EU Skills scheme takes into account vocational and academic qualifications as well as internal and external training.

Environmental Permitting is covered by the Waste (England and Wales) Regulations 2011, which superseded the Waste Management Licensing Regulations 1994. The Environmental Permitting (England and Wales) Regulations...
2016 and section 9 of the Government’s core permitting guidance (‘core guidance’) set out requirements for the competence of operators holding environmental permits. The Environment Agency has produced guidance on operator competence under these regulations.

5.6.2 Northern Ireland

In Northern Ireland, a waste management license is required to authorise the deposit, treating, storage or disposal of controlled waste on any land, or by means of mobile plant, under the Waste Management Licensing Amendment Regulations NI 2003. The Northern Ireland Environment Agency is responsible for granting licences, exemptions, setting conditions on licensing activities and monitoring sites to ensure compliance. Information on waste management licensing can be found on the Department of Agriculture, Environment & Rural Affairs website.

5.6.3 Scotland


All Household Waste Recycling Centres are required to be authorised by SEPA. The regulatory framework requires the following:

- Waste management activities are carried out in a manner which prevents harm to the environmental and human health.
- Sites are operated by ‘fit and proper’ persons, including supervision by technically competent management.
- The waste hierarchy is applied to the management of waste on the site.
- Waste is handled according to the Duty of Care, in particular ensuring waste is only passed on to those who are authorised to receive it.

For further information about Waste Management Licensing, please see SEPA’s guide.

Scottish Government is currently developing an Integrated Authorisation Framework which will bring together a number of environmental permitting regimes, including Waste Management Licensing, into a single, proportionate and flexible framework.
5.7 THE WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE) REGULATIONS

The WEEE Regulations 2013 transpose the EC WEEE Directive 2012 into UK law, and are in force throughout the UK. The WEEE Directive is designed to minimise the environmental impact of WEEE by increasing its collection, re-use, recycling and recovery. It also aims to reduce the amount of WEEE going to landfill. The Directive makes producers responsible for financing the collection, treatment and recovery of WEEE and obliges retailers to take back WEEE from consumers free of charge. This is effectively implementing the principle of ‘polluter pays’. The WEEE (Amendment) Regulations 2015 clarified the position with regards to the Producer Compliance Scheme (PCS) Designated Collection Facility (DCF) obligations, and a new DCF Code of Practice was published in 2016.

Waste-management companies that intend to undertake treatment, recycling and recovery of WEEE must be authorised by the relevant Environment Agency to do so. More information can be found on the Department for Business, Energy and Industrial Strategy website and further detail is available in the WEEE Good Practice Guidance published by WRAP.

Legislation and policy

What the WEEE Regulations mean for local authorities managing HWRCs

Although the WEEE Regulations do not place obligations on local authorities to collect and dispose of WEEE, a large proportion of WEEE is likely to end up at HWRCs. Most local authorities have therefore signed up their HWRCs as designated collection facilities (DCFs). As DCFs they will need to comply with the BEIS Code of Practice (see below). The WEEE collected from sites registered as DCFs will be removed and recycled free of charge by a producer compliance scheme (PCS) partner.

5.7.1 The BEIS Code of Practice

The BEIS Code of Practice for the Collection of Waste Electrical and Electronic Equipment (WEEE) from Designated Collection Facilities sets out guidance and principles which should be used by anyone who is running a DCF, as well as PCSs that are removing WEEE items from DCFs. The Code of Practice was updated in January 2016. It should be viewed as the minimum standard that a DCF operator should be achieving in order to comply with legislation.
The Code gives details on:

- 1. WEEE code of practice: who it applies to
- 2. WEEE code of practice: when it doesn't apply
- 3. Why you must meet the code
- 4. DCF operator responsibilities
- 5. Contract between the DCF and PCS
- 6. Third party arrangements
- 7. DCF: site practice
- 8. PCS responsibilities
- 9. Failure to meet the code

5.7.2 PAS 141

The PAS 141 specification was developed to improve overall standards for the treatment of discarded electrical and electronic equipment in the UK. The PAS 141 specification aims to increase confidence in the standard of processing for re-used EEE. It is hoped that it will address demand from consumers for reassurance that used equipment is electrically safe to use and functionally fit for purpose. Treatment facilities looking to achieve PAS 141 status will be independently assessed by United Kingdom Accreditation Service (UKAS) accredited certification bodies to ensure they meet the standard.

Re-used equipment from PAS 141 approved organisations will carry labels to identify that they have been processed in compliance with the standard, which it is hoped will reassure customers and regulators. The specification is also used to differentiate ‘bona fide’ exports from illegal exports of WEEE under the guise of being sent abroad for re-use.

5.8 THE LOCALISM ACT, ENGLAND

The Localism Act was given Royal Assent in November 2011. The Act includes new rights and powers for communities because the Government believes that social enterprises and community groups can provide high-quality and good-value services. The Localism Act gives these groups, and other organisations such as parish councils, the right to express an interest in taking over the running of a local-authority service. The local authority must then consider and respond accordingly. However if it chooses to accept the challenge it is required to conduct a procurement exercise. This means the challenging organisation can bid but cannot manage the service automatically. This is intended to make it easier for local groups to drive improvement in local services.

The Localism Act gives people the power to initiate local referendums on issues that are important to them. Local authorities and other public bodies are required to take the outcome of referendums into account and consider what steps, if any, they will take to enact the result. Therefore the Localism Act could, in principle, allow local people and organisations representing them to challenge and bid for the management of HWRCs, or to conduct referendums on HWRC-management issues.

5.9 SCOTLAND: THE WASTE (SCOTLAND) REGULATIONS 2012 AND MAKING THINGS LAST

Scotland’s Circular Economy Strategy, Making Things Last, takes the targets and ambitions set out in the Scottish Government’s Zero Waste Plan and in Safeguarding Scotland’s Resources, and places them firmly in the context of an action for a more circular economy. The strategy was developed, and will be delivered, in partnership with Zero Waste Scotland, the enterprise agencies and SEPA.
The strategy sets out the Scottish Government's priorities for moving towards a more circular economy – where products and materials are kept in high value use for as long as possible. It builds on Scotland's progress in the zero waste and resource efficiency agendas. A more circular economy will benefit:

- the environment – cutting waste and carbon emissions and reducing reliance on scarce resources;
- the economy – improving productivity, opening up new markets and improving resilience; and
- communities – more, lower cost options to access the goods we need with opportunities for social enterprise.

This approach and the strategy encourages Local Authorities to establish good practice commitments to enable better recycling and re-use at HWRCs.

### Legislation and policy

#### What do the Zero Waste Regulations mean?

The Regulations aim to drive the segregation of metal, paper & card, plastic and glass for high quality recycling. HWRCs should provide services such that householders and business customers can effectively segregate these materials. Once segregated, these materials cannot go directly to incineration or landfill. Finally, from January 2021, Biodegradable Municipal Waste (e.g. mixed municipal or residual waste) will be banned from landfill and will require alternative treatment.

### 5.10 FACILITATING ACCESS FOR SMALL BUSINESSES

Charging for household waste is clearly discouraged, but the Government acknowledges that revenue from businesses could help to supplement the costs of HWRCs. In reality there will be practical issues regarding the segregation of commercial and household waste and the data that is reported within waste returns, including WasteDataFlow. There are likely to be enforcement issues regarding illegal disposal of commercial waste and WDAs should check that their HWRC permit allows for receipt of commercial waste. They should also check their planning permission because this may impose limitations on tonnages and vehicle numbers. The latter can be an issue due to the additional tonnages and vehicle movements if business waste is accepted. For further information on allowing access for businesses at your HWRC, please see the WRAP Commercial & Industrial waste and recycling drop off centres guide.

### 5.11 HEALTH AND SAFETY

Responsibility for ensuring the health and safety of operatives lies with both the local authority and any organisation with which they contract. The organisation managing the HWRC must ensure that its operatives are correctly trained and risk assessments have been carried out. The local authority also has a duty of care to ensure that its contractors are competent to carry out the service that they have been contracted to do, and so should see copies of risk assessments, method statements, liability insurance and health and safety policies to ensure that this is the case.
Risks on site can be controlled by:

- selecting and maintaining suitable vehicles and equipment;
- adopting traffic-control measures and a safe site layout;
- developing and maintaining safe operating procedures;
- providing competence training for employees as outlined on the HSE website; and
- adequate supervision, information and instruction for site users.

HWRCs do present risks to children and animals and therefore it is recommended that there is signage at the site to ask drivers to keep children and animals within the vehicle when visiting the site.

5.11.1 Traffic movements

There are risks to site staff, site users and service-vehicle drivers from traffic movement at HWRCs.

Managing congestion is important, and site operatives should ensure that users are not tempted to park outside the designated areas and walk to disposal areas, rather than waiting. Site layout and parking should aim to minimise pedestrian interaction with traffic. Modern sites generally direct traffic flow one way and include a passing lane. There should be access to the disposal areas for pedestrians without crossing traffic lanes. Where any servicing of containers is required within public areas of the site, risks can be minimised by ensuring that this takes place outside peak hours.

The Workplace (Health, Safety and Welfare) Regulations 1992 require traffic on sites such as HWRCs to be safely managed.

The HSE and Waste Industry Safety & Health Forum (WISH) have developed a wide range of guidance regarding workplace transport which applies for HWRCs. Further information can be found in the safety topic transport movement on the HSE website along with a number of guides from the WISH Forum detailed below:

- Operating Civic Amenity Sites Safely (WASTE 26)
- Skip and Container Safety in Waste Management and Recycling (WASTE 06)
- Safe Transport in Waste Management and Recycling Facilities (WASTE 09)
- Safety at ‘Bring Sites’ in the Waste Management and Recycling Industries (WASTE 11)
- Hand Sorting of Recyclables (‘Totting’) with Vehicle Assistance (WASTE 18)
- Sheetling and Unsheeting
- Safe Use of Skip Loaders (INDG378)

The HSE also has an area dedicated to workplace transport on its website.

5.11.2 Slips, trips, falls and manual handling

The Manual Handling Operations Regulations 1992 state that the need to undertake any manual-handling operation which is likely to involve a risk of injury should be avoided so far as is reasonably practicable. Where manual handling is unavoidable, employers have a duty under the regulations to carry out a suitable risk assessment and take steps to reduce the risk of injury to employees to the lowest level possible. Employees have a duty to make use of any system provided by their employer to abide by these regulations.

Operatives responsible for using lifting equipment to move large and/or heavy items must abide by the Lifting Operations and Lifting Equipment Regulations 1998 which impose requirements on any employer providing lifting equipment for use by an employee at their place of work. The Provision and Use of Work Equipment Regulations 1998 are also relevant.
5.11.3 Safe use of machinery

Compactors are the type of machinery most likely to be found at an HWRC, though balers and lifting equipment may also be used. Accidents can occur if the machinery is poorly guarded or not used properly. Only staff who are properly trained to use and maintain machinery should use such equipment. There should be appropriate safety measures for all equipment, including warnings and protective devices. Any guards should be secure, with no access to moving parts when the compactor is being used.

The Provision and Use of Work Equipment Regulations 1998 require that the equipment provided for use at work is suitable for the intended use, safe for use, maintained in a safe condition and (in certain circumstances) inspected to ensure this remains the case. It also states that equipment should only be used by people who have received adequate information, instruction and training. The HSE has produced a simple guide to the regulations.

Other relevant guidance includes the HSE’s Guidance for the Recovered Paper Industry, which provides information on safe working with balers and compactors. The principles outlined are relevant elsewhere in the recycling and waste industry.

5.11.4 Management of hazardous wastes

HWRCs accept numerous different types of hazardous wastes, including gas cylinders, automotive and household batteries, cathode ray tubes and fluorescent tubes. In 2009 the HSE developed guidance on Storing Hazardous Waste at Household Waste and Recycling Centres, focusing on the health and safety implications of handling these hazardous materials.

HWRC operators should have procedures in place for accepting each type of hazardous waste, and if they do not, the waste should not be accepted. Sites must be able to receive, identify, segregate, handle and store wastes safely. Sites should have emergency and security plans and only appropriately trained site operatives should handle the hazardous wastes. Site operators should also be aware of their duty under the Dangerous Substances and Explosive Atmospheres Regulations 2002 to protect people from the risks of fires and explosions.

The public should also be made aware of their responsibility to dispose of wastes safely. The importance of public awareness was highlighted following a gas cylinder explosion in a scrap metal skip at an HWRC in Warwickshire in March 2011. The council suspects that this item was hidden among other waste.

5.11.5 Abuse at work

Abuse, threats and even assaults do occur at some sites, and it is important that the danger of work-related violence is managed. Employers are responsible for identifying and managing the risk of any violence or harassment in the workplace. This means that there should be policies in place detailing the responsibility of individual staff and the employer to:

- raise awareness of potentially dangerous situations;
- identify acceptable standards of behaviour; and
- understand the appropriate action to be taken should an incident occur.

Many sites have clear signage stating that abusive behaviour towards staff will not be tolerated. Staff should be made aware of what constitutes unacceptable behaviour and trained to mitigate risk should an incident occur. Some sites have sent their staff on training courses designed for doormen of licensed premises. Where site staff experience abuse from site users, it is important that formal procedures are in place to take action against the offending party, be that a site ban or prosecution. If site staff feel that they have the support of their managers and local authority in these circumstances, this will help to boost their morale and give them greater confidence in dealing with difficult site users.

However, failure to offer adequate support can be very damaging for staff morale. Indeed, under health and safety law, responsibility for a work environment where risks to health and safety are properly controlled rests with employers. Risks
associated with abuse at work must therefore be controlled on site. Workers have
a duty to take care for their own health and safety and that of others who may be
affected by their actions at work. Workers must co-operate with employers and
colleagues to help everyone meet their legal requirements.

Relevant guidance from the HSE is available on Preventing Workplace
Harassment and Violence.
6. CONTRACTS AND MATERIALS MARKETS

Contracts form the basis of the agreements upon which household waste and recycling centres (HWRCs) are managed. They provide an essential legal framework within which a local authority can organise and manage workload. Whilst some local authorities will operate their own sites, this section mainly focuses on HWRCs where contracts are in place for site management, with an emphasis on the contracts held between local authorities and the primary contractor. It outlines the elements that make up an effective contract, and highlights areas where efficiency savings could be made.

The legal framework for local authorities’ commissioning and procuring services is included in the WRAP Bulky Waste Guidance. This includes example social-benefit clauses, as well as a sample contract specification. Any readers interested in further information and advice on HWRC procurement are encouraged to approach WRAP / ZWS directly for tailored advisory services.

6.1 Market testing
6.2 Contract length and size
6.3 Contract incentives
6.4 Contract management
6.5 Materials markets
6.1 MARKET TESTING

While market testing is strictly speaking part of the procurement process, it is relevant here as it can affect the type and content of any contract. Local authorities can discuss forthcoming needs with potential suppliers before undertaking a new contract. This can lead to a better-structured contract. However, local authorities need to ensure that they continue to develop a contract that meets their aims and objectives, and not to let the opinions of potential contractors to override their policies and strategies.

6.2 CONTRACT LENGTH AND SIZE

HWRC contracts vary greatly in size, length and contract packaging (contract packaging refers to whether an HWRC contract is a standalone, separate contract or part of a larger contract covering a range of services, for example included with a contract for other waste-disposal services). Improved recycling or waste-diversion performance is not a factor in determining the contract size and period. HWRC contract length is often linked to the expected lifespan of the vehicles used, which is approximately seven years, or based on other waste disposal elements packaged with the HWRC contract. Alternatively, decisions on length and size of contract may be based on the need to develop infrastructure or upgrade existing infrastructure.

The factors that will influence contract size and length include:

- whether other waste and recycling services are included within the same contract;
- the number of sites within the network and whether they are to be managed as one contract or several;
- investment requirements;
- the local authority’s attitude to risk;
- the strategy for contracting with local businesses and third-sector organisations; and
- the level of flexibility required.

Flexibility is required where budget cuts could potentially lead to site closures or to varying the opening hours of specific sites. Contracts may also need to be flexible to accommodate new working practices and operations resulting from changes in legislation and political direction, either from central or local government.

Although the financial benefits of joint contracts between WDAs and other authorities are limited, there may be other reasons to enter into such arrangements, as discussed in Section 8.1.

There may be situations where a larger and longer contract allows for economies of scale to be achieved that ensure the best value for money. However, a smaller contract or a range of smaller contracts can be preferable in some circumstances, especially where specialist skills are needed. This should be considered when determining the appropriate contract size and length.
6.2.1 Contract length

Where local authorities let separate HWRC contracts, they should give consideration to operational aspects such as the lifespan of plant and machinery. Contracts of between seven and 11 years are in operation based on the expected life of equipment used on site, such as loading shovels and the vehicles used to transport waste to disposal facilities. Where HWRC operations are procured alongside other waste-management contracts, these contracts tend to be for longer periods. As well as joint contracts, this includes contracts that are awarded separately but at the same time as other waste-disposal contracts.

There is no ideal contract length, but longer contracts will allow for investment to be made. As long as there is inbuilt flexibility, longer contracts can allow for a consistent service for a longer time period.

Example

The South London Waste Partnership awarded a separate HWRC contract in 2008, which has a 14-year maximum lifespan and was procured alongside two other contracts for residual-waste disposal and recycling. Longer contract periods allow investment in upgrading existing facilities to be made. By awarding the three contracts concurrently for the same length of time, the Partnership was able to focus its procurement resources more efficiently and will reduce future contracting costs by avoiding fragmentation in contract termination dates. The partnership's approach benefitted from economies of scale, by including four unitary authorities that are each responsible for HWRC provision and had previously contracted individually.

6.2.2 Contract size and content

Contracts to manage an HWRC network can vary, with models including:

- one contractor managing all sites;
- different sites being managed by different contractors; and
- different services, such as haulage, being managed by a separate contractor (or in house).

Even if a contract covers an entire network, operations and / or improvements to each HWRC should be priced separately. This enables transparency and a better understanding of costs.

Responsibility for disposal of residual waste will usually remain with the authority and may be managed as part of its residual waste disposal contract, while recycling, site management and haulage are normally contracted out as part of the HWRC contract or as separate contracts. The local authority's level of exposure to risk will vary depending on the content of the contract, and this will be reflected in the overall contract price.

Many operators like all sites to accept the same materials, as this simplifies communication with residents and may have operational benefits. However, there may be an argument for having one or two sites that specialise by accepting certain materials, such as asbestos, that the others do not. Not all sites will have the space for additional containers for materials which are less often collected, such as carpets and mattresses. There is no preferred view on this and it should be agreed between the local authority and the contractor.

Example

The Suffolk County Council HWRC contract has options for adding or closing sites in the network. The contract charge can vary if the number of sites changes. The design of this contract required desktop analysis of how different levels of site provision would affect the quantity of material managed.
6.2.3 Integrated contracts and co-location

Where HWRC contracts are part of a larger contract package for waste-disposal services, their length is likely to be affected by the development of new or improved infrastructure, such as new waste processing facilities. This presents opportunities to optimise land use by co-locating HWRCs with other waste-management functions such as waste transfer, sorting and processing facilities. This may present opportunities to bulk specific material streams for onward transport to reprocessors, which otherwise may be uneconomic to send for recycling e.g. carpet and mattresses. Other benefits can also stem from the allocation of staff and resources across multiple work areas. The management of traffic flows for the HWRC element in such facilities needs to be carefully considered to provide a safe and welcoming environment for members of the public.

6.3 CONTRACT INCENTIVES

Contract incentives provide a useful tool for local authorities to achieve levels of service and performance that can be measured and monitored against specified targets. They can be used to focus on specific areas for improvement and are widely used to increase levels of recycling and re-use at HWRCs, and to divert materials from residual waste streams, saving authorities money on disposal costs. However, with any contract where savings in disposal costs are retained by the contractor, it will be the contractor that will benefit from landfill-diversion, not the local authority.

Incentives vary widely in their emphasis, with some focusing on cumulative performance, while others focus on the diversion of specific waste streams such as wood waste, garden waste or soil and hardcore. Incentive payments are often funded through avoided waste-disposal costs. The key consideration is to ensure that incentives are reviewed and take account of changes to internal/external targets and developments in re-use and recycling.

Evidence and recommendations

Contractor incentives are known to have a positive effect on HWRC recycling rates. Authorities that are operating and managing their own sites are unable to operate bonus payment schemes, following the 1997 Single Status Agreement. Therefore, local authorities need to encourage site staff to improve waste separation and increase recycling rates by providing clarity in job descriptions and through objectives.

Example

Somerset Waste Partnership provides 18 HWRCs through a 25-year (16 plus 9 years) contract with Viridor. The contract allows for two sets of performance-based payments:

- **Waste-minimisation bonus.** The partnership pays a set fee for every tonne of waste reduced, using total tonnage from 2002 as a base. The partnership makes payments to the contractor, not as direct bonuses to site staff.
- **Recycling incentive.** The partnership pays a monthly contract-management fee for each HWRC. The fee is enhanced on an annual basis by 1% for every 1% of additional recycling that is achieved over the 2002 baseline performance of 56%. Current recycling levels are at 79% and therefore the partnership pays 100% of the management fee plus an additional 23%. These payments are passed on as bonus payments to site staff by the contractor. Levels of re-use are included in this incentive, by using average weights for different items to calculate the tonnage of items re-used.

The partnership is reviewing the baseline year on which incentives are calculated to reflect the contribution the partnership as a whole has made, and will continue to make, to improved performance.

Penalties are in place to take account of performance below the 56% baseline recycling level. These are banded to further incentivise the contractor to maintain performance. For example, at a recycling level of between 53% and 55%, the contractor would receive only 90% of the management fee.

Rather than a fixed fee and related incentives, there may be opportunities for income sharing between the local authority and the waste-management company. The inclusion of income sharing within a contract reflects the local authority's attitude to risk.
6.3.1 Reviewing incentives

Properly designed contract incentives are likely to have a strong effect on the ‘three Rs’: reduce, re-use and recycle. They often lead to improved recycling rates and landfill savings over time. The key consideration is to match contracts to the new conditions and targets. Sites need to be ever more proactive in capturing materials for re-use and recycling, managing difficult waste streams and reducing quantities sent to landfill. A number of measures can contribute to achieving these goals and a holistic approach is required. The challenges involved may go further than simple tonnage targets, and include aspects such as site protocols and fraud avoidance.

Additional recycling schemes or diversion from disposal can be initiated by the local authority itself, or enabled by technical developments within the waste industry. In such cases the contract terms reward the contractor regardless of their involvement in improved performance. Regular reviews of incentive payments can allow contracts to remain efficient and encourage operators to keep abreast of developments within the re-use and recycling sectors, as well as new policy initiatives introduced by the contracting authority.

6.4 CONTRACT MANAGEMENT

Contract management involves the day-to-day monitoring of HWRC operational practices to ensure they are compliant with the conditions of the contract. Effective monitoring and contract management can save time and money by allowing issues to be dealt with as soon as they arise. Some authorities allocate a dedicated staff member to contract management, while others operate ‘self-monitoring’ contracts. Buckinghamshire County Council awarded a new HWRC contract in October 2011 to manage its 10 sites under a self-monitoring arrangement, although monthly meetings and ad-hoc inspections are still carried out by council staff. Hence, either approach requires staff resources, coupled with detailed knowledge of the contract specification.
6.4.2 Management of equality of access to HWRCs

Local authorities have a duty to provide equal access to services, and contractors operating services on their behalf should be obliged to adhere to equality duties as part of their conditions of contract. Areas most susceptible to complaints by members of the public include:

- **Opening hours** Sites are sometimes open for longer during the weekend, when there is the maximum throughput of traffic. However, some sites close earlier on Sundays than on weekdays, when many people are unable to visit. Many authorities now open late for one evening during the week to improve access.

- **Access for people with disabilities** Site visitors who are unable to handle their own waste can ask staff for assistance, and signs should emphasise this by reminding people to ask for help. This highlights the importance of customer-friendly frontline staff who are proactive in assisting members of the public, as discussed in Section 4.10. Staff are often instructed to lift and segregate waste into appropriate skips for residents who are unable to do this themselves.

- **Use of vans or large vehicles** It is important to note that in areas of low car ownership, many residents may hire vans or share use of vehicles to dispose of waste. The use of vans is discussed in Section 7.4.3.

Local authorities should conduct an equality impact assessment (EqIA) to assess the implications of opening or closing a site. Such assessments should be carried out when there is a plan to change or remove a service, policy or function. The EqIA is not a statutory requirement, but it will be helpful to ensure any decisions are transparent and accountable. Therefore, an EqIA should be an integral part of service planning and policy development. Guidance is available on the Local Government Improvement and Development website.

6.5 MATERIALS MARKETS

6.5.1 Risks and responsibilities

Local authorities need to be assured of the legal and ethical probity of the disposal routes or outlets for materials received at their HWRCs, as well as fulfilling their responsibilities to have the correct permits and licences for sites and the materials they handle. They also need to take particular care over the reception and handling of hazardous goods such as asbestos and batteries.

Having established that all legal requirements have been satisfied via the Environment Agency and any other relevant statutory body, materials that have been separated on site become available for disposal down identifiable outlet routes. At this point the authority should decide whether it wants to become involved in the transportation of the materials to a recovery point itself, or whether to employ a contractor to do this. In any event, a waste carrier's licence will be required, and copies kept by the authority. If a contractor is selected, that contractor's premises are often the chosen recovery point. For example, a scrap metal merchant will have its own transport / collection system and containers suitable for the task.

The choice of outlets will depend on the amount of time and energy the authority wishes to spend on this task, as well as cost factors. The easiest option is to put out a tender for one contractor to cover all materials but it may be preferable to have material-specific contracts. The authority will also need to decide on its attitude to market stability, and whether it has views about the international trading of recyclable materials.

Checks for financial and ethical probity will need to be made on all outlets, whether materials are being delivered by the local authority or a contractor. At a minimum, the authority should visit the chosen contractor's premises to check all facilities including the weighbridge. All permits and licences should be copied, together with bank references and copies of three years of audited accounts. Contractors should also have health and safety and environmental policies in place, and possibly...
accreditations for quality, environment and safety. However, this is less likely with small operators and should not be a reason for disqualification assuming that the other criteria have been satisfied.

References regarding service record and payments should also be obtained, as appropriate. Another important consideration is the application of guarantees in terms of pricing and security of long-term markets. Spot pricing can be attractive in the short term when markets are strong, but may lay the authority open to difficulty in the event of a downturn in materials markets or indeed, prevent it from benefitting if material prices increase.

6.5.2 Quality and presentation

Picking up, transporting and offloading materials can be a costly business. The management of an HWRC should decide which materials, if any, can be stored to achieve full 25-tonne loads. Glass might be a suitable product for such storage, since it is dense and of lower net value when transported in small quantities. Bunkers can be constructed to contain the material in loose form, and so long as a loading shovel is available on site or nearby, maximum value can be achieved by making up full loads of clear or green/amber cullet. (Most glass reprocessors do not require separation of green and amber cullet so long as the quantities of amber are below 7% of the overall glass tonnage received.) If this degree of colour separation cannot be achieved it will have a negative effect on price, although there are still useful outlets. Mixed glass can be sent to a colour-sorting plant and sorted to a level suitable for re-melt applications.

Other materials likely to benefit from full-load collection because of their density are newspapers and magazines, wood and ferrous metals. The decision on whether full loads of these materials can be achieved will be down to incoming volume, proximity to a reprocessor or materials-recovery facility (MRF), and space available for storage. Hazardous products require special handling, so they need to be removed frequently and securely.

Bulky goods, although expensive to transport, will probably not benefit from longer storage, as some items of furniture or white goods can be re-used as well as recycled. Therefore, a contractor or outlet would wish to receive them in as good condition as possible, and probably dry.

Cardboard and plastics can be baled, but many HWRCs do not have the necessary volume or power supply available to make this worthwhile. In these circumstances joint working with neighbouring authorities could be beneficial, as the difference in price between plastic packaging delivered loose or baled is significant.

6.5.3 Niche supplies and new materials

Since the advent of waste electrical and electronic equipment (WEEE) regulations an increasing number of small to medium-sized household electrical goods are being presented at HWRCs, and care needs to be taken to ensure that the best value can be extracted. Many items being disposed of will be in reasonable condition, and decisions need to be taken as to whether it is viable to have a selection system to identify reusable items. While many items are delivered while still being perfectly fit for use, others are broken beyond easy repair. Any decision will depend on the attitude of the authority towards the importance of making products available to those on low incomes and the wider benefits from removing these items from the waste stream versus the cost of supervision and space on site to accommodate separation.

Other products with recycling markets opening up are carpets and mattresses. The price of landfill tax at £80/tonne now means that the costs of sending these materials for reprocessing are comparable to landfill. However, the overall costs, including the transport costs, can be prohibitive for some authorities, depending on the location of the nearest reprocessor. The ‘Carpet and Mattress Recycling at HWRC Sites: A Summary’ provides guidance for authorities wishing to consider sending these materials for reprocessing rather than to disposal, and provides details of some reprocessing outlets.

New techniques in reprocessing mean that more materials can now be recycled. For some time plastic bottles have been recycled, as the sorting facilities were available to differentiate between the different polymers used in their manufacture. Other types of plastic packaging were harder to cope with, but there are now more reproprocessors who are able to deal with all forms of rigid plastic packaging. Plastic
films and black plastics are theoretically recyclable but can cause problems in some sorting processes, so further advice should be sought on these materials if required.

6.5.4 Local suppliers and the third sector

The decision to use local collectors and processors rather than national or large operators depends on two main considerations:

- Are the volumes of material being presented at the HWRC sufficient to interest a larger concern?
- Does the authority have a particular view about supporting local businesses?

It is often the case that a locally based business can deliver a good service, but they might not be able to offer the important guarantees of long-term price and outlets for materials that can be obtained from a larger business. However, it is lawful for authorities to require main contractors to release a given percentage of the contract sum to subcontractors, and to package it in such a way that small businesses and third-sector organisations can compete for it. The WRAP/REalliance Investment for Growth report (2009) cited the following as key issues in successful third-sector subcontracting:

- clarity of local-authority objectives;
- obliging contractors to deliver services, and additional social and environmental benefits, in ways that recognise the impact on the relationship of the crucial contribution smaller partners make to achieving contract requirements;
- using the legitimate opportunity to subcontract as regeneration not procurement, which can offer significant benefits if linked to outcome-based commissioning focused on local priorities;
- the need to address ‘risk perceptions’ around third-sector service delivery through quality assurance, including waste-services-specific health and safety accreditation; and
- recognising the need to establish a strong, clear three-way relationship between the local authority, private contractor and third-sector organisation.
More contracts now include clauses to encourage the involvement of the third sector. Potential contractors like to manage any arrangement with the third sector so they can be certain all relevant licences and policies are in place. However, if the local authority feel strongly about including re-use and third-sector organisations in their waste-management activities they should work together with the contractor to enable this. In reality the quantities involved, and therefore financial implications for wider waste-management activities, will be small. This should not affect the contract price, although the management of any sub-contractor will need to be included for in the contract-management fee. For WEEE re-use, the producer compliance scheme (PCS) must be involved in any agreement. See Section 4.10.3 for more detail.

6.5.5 Obtaining the best deal

Requirements and expectations around the price obtained for materials depend largely on the attitude of the authority. Most would prefer the best price possible from available outlets, but security of outlet is a prime consideration. This usually leads authorities to opt for a UK reprocessor where they are handling the material sales directly, as export prices are much more subject to the impact of changing supply and demand. UK reprocers, particularly in paper and glass markets, are used to the requirements of local authorities and are prepared to take a long-term view. Not only does this support the authority’s need for a stable market, but it also secures the reprocessor’s own raw-material needs. Metal markets work to a monthly cycle at best, while plastics companies can now be persuaded to offer guaranteed offtake with quarterly price reviews.

6.5.6 Sources of market information

There are several well-known and easily available industry price indices, including:
- the Materials Recycling Weekly (MRW)/WRAP fortnightly price index (online for subscribers, or via MRW magazine);
- the letsrecycle.com monthly price index (online); and
- the EUWID European market index.

The drawback of these indices is that they rely on a variety of industry sources for their information, however, they are a good guide as to what is happening in the market. If a price can be agreed at the beginning of a contract which is fair to both parties, then that price can be set against the quoted prices in the indices. This should give a fair indication of any movements that should be taken into account when the next price review comes along. The WRAP Materials Pricing Report is another useful tool for buyers and sellers of recyclable material.
7. MANAGING COMMERCIAL WASTE

In recent years the management of commercial waste at household waste and recycling centres (HWRCs) has revolved around methods to prevent it from entering sites. More recently in response to the needs of their business communities and encouragement from governments to accept waste from small businesses, councils are considering how they can accept commercial waste at HWRCs. Improving services for their local business communities can bring opportunities for councils to generate revenue and help protect the provision of services to residents. This section looks at how commercial waste inputs can be managed at HWRCs. WRAP’s Commercial and Industrial Waste and Recycling Bring Centre Guide provides more detailed guidance.

7.1 Why control commercial-waste input?
7.2 Recommendations from the review of waste policy, England.
7.3 Accepting commercial waste
7.4 Managing illegal deposit of commercial-waste
Commercial and industrial bring centres are most likely to be used by small businesses and micro-businesses, as they are less likely to have a contract in place to collect their waste. The sectors that those businesses are working in will vary from area to area. It is important to understand which sectors your customer base covers as this will have implications for:

- the types of materials that you might offer for separation;
- space required;
- opening hours and peak flow times;
- seasonal peaks and troughs in production of commercial waste;
- the frequency with which commercial customers might use the centre; and
- your marketing strategy for commercial customers.

HWRCs accepting commercial waste have found that users are often from retail, building, glazing, gardening and landscaping, small manufacturing, hotels and restaurants, and the professional and service sectors.

7.1 WHY CONTROL COMMERCIAL-WASTE INPUT?

HWRCs are facilities for householders resident in the area to dispose of household waste. If commercial waste enters the site unchecked the problems that can arise include:

- congestion on site, which may deter householders;
- the practicalities of segregating commercial and household waste, and associated reporting;
- additional service vehicles being required on site;
- the costs of additional disposal;
- effects on the morale of site staff if they know abuse is taking place and they are not supported in taking preventative action; and
- commercial waste not being segregated into different recyclable streams, thereby affecting the recycling rate of the site.

All of these factors mean that commercial waste should be controlled. If commercial waste remains unchecked, other measures to improve the efficiency of the site are likely to be less effective.

Evidence and recommendations

The ineffective control of commercial waste, and particularly the reliance on height barriers alone to attempt to control it, is known to have a negative effect on HWRC recycling rates.

7.2 RECOMMENDATIONS FROM THE REVIEW OF WASTE POLICY, ENGLAND.

As mentioned in Section 5.10, the Review of Waste Policy in England was published in June 2011. In it, the Government encourages local authorities to consider allowing small businesses to dispose of waste at HWRCs, with the aim of making it easier and more cost-effective for SMEs to recycle. The review stated that the Government is ending the Landfill Allowance Trading Scheme (LATS) in England, which removes a barrier to local-authority service provision in this area.

However, the review does acknowledge that SMEs are not always aware of available recycling services and of their legal responsibilities. Therefore, any local authority accepting commercial waste at an HWRC will need to ensure that commercial customers are compliant with the relevant waste legislation (see Section 7.4 below).
7.3 ACCEPTING COMMERCIAL WASTE

WRAP's [Commercial and Industrial Waste and Recycling Bring Centre Guide](https://www.wrap.org.uk) shows that the estimated cost of clearing fly-tipping in England was £45.8 million in 2009/10, with 947,000 incidents recorded. Of course, not all fly-tipped waste will be from commercial or industrial sources, but providing an effective facility for commercial waste and recycling may help to reduce the overall number of incidents. Provision of a commercial-waste and recycling centre (CWRC) using existing HWRC infrastructure can result in savings for local authorities, because the cost of acceptance at HWRCs is likely to be less than that of clearing up an incident. Indeed, charges to traders will generate income, as will the sale of some of the recyclable materials delivered by traders.

The issue of commercial-waste acceptance needs to be addressed on a site-by-site basis: some sites are simply not appropriate for accepting commercial waste, often through being too small or too vulnerable to illegal use by traders not wishing to pay for disposal.

Local authorities looking to introduce commercial-waste services at HWRCs should consider the impact this may have on any commercial-waste and recycling collection service they provide. It is probable that some collection service customers would decide to use CWRC facilities at an HWRC, reducing the number of customers and the tonnage collected on commercial waste and recycling rounds. You should try to assess demand, and conduct market and competitor analyses, before introducing a CWRC. The commercial collection team at the local authority should be well-placed to help with such as assessment.

### 7.3.1 Space and containment

A major consideration when accepting commercial waste is whether to integrate the commercial-waste service with the household collections or whether to segregate all commercial waste. Table 7.1, summarised from the WRAP [Commercial and Industrial Waste and Recycling Bring Centre Guide](https://www.wrap.org.uk) provides useful advice on the containment of commercial and industrial (C&I) waste.

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Benefits</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fully integrated e.g. Fife Council</td>
<td>Service is fully integrated into the HWRC so residents and businesses use exactly the same facilities and containers. Commercial and household waste are mixed together.</td>
<td>Easy to understand No additional infrastructure required Good for small sites</td>
<td>How to identify commercial users and residents More staff may be required to cope with the increase in use How to calculate how much waste is from a commercial source entering the household waste stream</td>
</tr>
<tr>
<td>Separate areas e.g. Newport Pagnell HWRC, Milton Keynes</td>
<td>There are two distinct areas within the site so that commercial and household waste/recycling containers are separate. The centre may have two entrances, or just one entrance but two distinct drop-off areas.</td>
<td>Having two areas provides a clear distinction between household and commercial waste Waste deposited can be recorded separately Instructions for using the centre can be tailored to each user group</td>
<td>How to identify commercial users and residents More space required More staff will be needed to operate two areas Cost of infrastructure, e.g. skips</td>
</tr>
<tr>
<td>Hybrid model e.g. some Somerset HWRCs</td>
<td>Some materials or items (e.g. waste electrical and electronic equipment, or WEEE) are collected together with household waste and some are collected separately.</td>
<td>Flexibility depending upon the size of the site</td>
<td>Can complicate reporting systems Calculations may be required to determine the split of mixed materials</td>
</tr>
</tbody>
</table>
7.3.2 Varying opening hours

HWRCs which offer a commercial-waste service tend to have the same opening times for their residential and business customers, unless dedicated staff are used as part of the operation.

For local authorities looking to reduce HWRC services, either by reducing opening hours or closing sites, it could be an option for HWRCs with a well-established commercial customer base to open to these customers during the week and to residents at weekends. This may enable staff levels to be reduced overall, while continuing to generate income (see Section 9.3) and provide a service to both residents and local businesses.

7.3.3 Costs and charging

Any authority looking to introduce commercial waste to HWRCs run by private waste-management companies will need to examine and adjust their contracts as appropriate. Set-up costs could include:

- signage and marketing;
- equipment purchase or leasing;
- development of site layout plans;
- IT requirements for monitoring;
- installing a weighbridge;
- installing an ANPR system;
- permits; and
- operating costs such as staffing and haulage.

The WRAP Commercial and Industrial Waste and Recycling Bring Centre Guide provides more detail, but Table 7.2 summarises the income that can be generated, and the different charging and payment mechanisms that can be used.

Table 7.2: Income and charging options for commercial waste

<table>
<thead>
<tr>
<th>Income</th>
<th>Charging options - site users</th>
<th>Taking payment and registering customers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer charges (subscription fees or charge by volume or weight)</td>
<td>Free recycling for some materials</td>
<td>Cash or account systems</td>
</tr>
<tr>
<td>Material sales</td>
<td>Pay by weight</td>
<td>Pre-registration</td>
</tr>
<tr>
<td>Income-share between the local authority and contractor</td>
<td>Pay by container, item or volume</td>
<td>Registration at the CWRC</td>
</tr>
<tr>
<td></td>
<td>Pre-payment of sacks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Subscription</td>
<td></td>
</tr>
</tbody>
</table>

7.3.4 Compliance

It will be important for commercial-waste customers to be compliant with all relevant regulations including:

- waste carrier's registration;
- waste transfer notes; and
- hazardous waste consignment notes.

More information on waste carriers and waste transfer notes can be found on the Business Link website. Information relating to hazardous-waste management in England and Northern Ireland is available from the Environment Agency. Advice in Scotland can be found via the Business Gateway.
7.3.5 Monitoring

Section 7.3.1 discusses the different containment methods that can be used if commercial waste is accepted at an HWRC. When deciding whether to introduce provision for commercial waste on site, local authorities will need to consider whether the waste and recycling from household and commercial sources will be mixed, and if so, how to monitor the input. If there is a weighbridge and all commercial waste is recorded from weighbridge tickets, it will be relatively straightforward to report separate tonnages for inputs from household or commercial sources. Equally, even if the input of waste is not accurately weighed (for example, if a pre-pay voucher system is in place) but the waste and recyclables are disposed of in separate skips, the weight of each container leaving site can be recorded as being of commercial or household origin.

The Environment Agency has advised WRAP that there is no particular need for tonnages to be monitored separately, as long as waste transfer notes are recorded. However, local authorities will still need to report data on the WasteDataFlow system, which requires household and commercial tonnages to be reported separately. If the wastes are to be mixed and there is no weighbridge on site it may be possible to estimate the relative proportions of commercial waste and household waste.

Estimating the proportions of commercial and household waste requires regular monitoring and an understanding of the site's customer base. If old data or assumptions are used, the information could be misleading. This was apparent in the 2009 Defra research, Understanding Waste Growth at a Local Authority Level, particularly where household and commercial waste is co-collected at the kerbside. WRAP in conjunction with NAWDO is producing a protocol for local authorities to use in assessing the quantities of household and commercial wastes when co-collected.

7.3.6 New sites

Local authorities may not want to accept commercial waste at HWRCs, regardless of whether separate containment is available and other potential barriers, such as potential congestion, can be overcome. However, depending on the availability of services for businesses, particularly SMEs, a local authority may want to convert a closing HWRC into a new CWRC. In this instance it will be important that the site is in an appropriate location.

For new facilities, selecting the right location is an important factor in attracting customers. For existing sites such as HWRCs, the decision about location may be based on whether one or all existing HWRCs are suitable for accepting commercial waste, and appropriately located to attract business customers. Considerations include:

- Convenience and customer density. Are there enough potential business users in the catchment area for the site?
- Access. Is there good road access, including at peak times?
- Competition. Are there non-local-authority sites and services nearby?
- Planning issues. Is the site in an appropriately designated area? Does an existing site need to be expanded? Do existing planning and licensing agreements need to be reviewed?
- Site infrastructure and space. What are the infrastructure requirements and is there enough space for containers and traffic?
- Impact on existing services. Will opening a new site on a former HWRC result in changed opening hours or reduce the number of customers on commercial collection rounds?

Once the site is constructed, significant marketing activities will be required to raise awareness and encourage prepared businesses to use it.
7.4 MANAGING ILLEGAL DEPOSIT OF COMMERCIAL-WASTE

At sites not suited, or permitted, to accept commercial waste, measures may need to be taken to prevent commercial waste being deposited at these sites.

7.4.1 Meet-and-greet staff

On-site staffing is discussed in more detail in Section 4.10. Any staff who are meeting and greeting site users should be able to challenge suspected traders. Obviously staff should ensure that they do not put themselves in any danger, but if safe to do so and commercial waste is suspected, they can ask the driver where the waste has come from. If the suspected trader does not cooperate and there is a threat of violence, staff should refer to the site operator’s health and safety policies (see Section 5.11 for further detail on health and safety).

If safe to do so, the meet-and-greet staff can refuse to allow the vehicle to dispose of waste and instruct them to use alternative disposal routes. Staff should be made aware of location details for alternative facilities. In other cases the staff may deem it safer to allow the waste to be disposed of, after getting the suspected trader to sign a disclaimer form to state the waste is household waste, as outlined in Section 7.3.5.

Site staff often know who is misusing sites and may be eager to prevent them from doing so. Officers will need to provide support when staff are challenging suspected traders but they may need to ensure site staff are not overzealous. Regular discussion and feedback on suspected illegal use between site staff and officers or contract managers will be useful.

7.4.2 Barriers

Previous research (Trade Waste Inputs to Civic Amenity Sites and the National Assessment of Civic Amenity Sites or NACAS) has found that where height barriers are introduced as the only commercial-waste control method, they are generally found not to work. This is because traders tend to find ways to get around them. If there is a height barrier or a van ban, traders may use estate cars or trailers, or park outside the site. Therefore, this type of commercial-waste control needs to be used in conjunction with other control methods (such as disclaimer forms or automatic number plate recognition).

Some sites have manual barriers that the site operative performing the meet-and-greet function must raise, after discussing with the driver the type of waste they are disposing of. This type of barrier may be useful on relatively quiet sites. However, this system is not practicable if it results in long traffic queues, particularly if this affects non-site traffic.

Figure 7.1: Example of a height barrier
If a raised barrier is to be used at the front of the site, it needs to be high enough to let large domestic vehicles in. If the height barrier is too low, site staff may end up leaving the barrier open, which could then allow vans driven by traders to enter the site unchecked.

The popularity of people carriers and 4x4 vehicles means that any height barrier needs to be high enough to allow these domestic vehicles to enter the site. Generally, a height barrier of 2m (approximately 6ft 6in) should be adequate. However if the vehicle has any roof or rear attachments, such as a roof rack or bike rack, it may be too high for the barrier. Local authorities should make it clear on their website and on the barrier itself what the clearance height is.

**Example**

At GMWDA sites, where users who could not get their vehicle under the barrier, parked on the street and walked on to the site with their waste. Some of these were suspected traders. The authority launched a multi-agency event, initially at one site, with the local authority's environmental-management and environmental-health teams, the Department of Employment, the Vehicle and Operator Services Agency (VOSA), parking enforcement, and the police, including police community-support officers. The event aimed to question suspected traders, but who may also have been committing additional offences that the other agencies would be interested in preventing, such as driving and vehicle offences. Although one site was targeted initially at Stretford in Manchester, the success of the first event has lead to a second event in Droylesden, Tameside. GMWDA are planning a third event in Heywood, Rochdale.

The outcome of the events has been significant reductions in traders using HWRCs, with fewer drivers parking vehicles outside the targeted HWRCs and attempting to walk commercial waste under the height barriers. Partner agencies were also given the opportunity to deal with other offences being committed by site users.

**Example**

Van users in Leeds can use their vans to dispose of household waste on a Wednesday or a Saturday. This is to help ensure that commercial waste is not being disposed of illegally by businesses at HWRCs. Restricting van use to these times helps improve the overall management of the sites.

### 7.4.3 Van bans

Whether there is a barrier in place or not, local authorities may want to introduce a van ban, based on the assumption that vans are predominantly commercial vehicles. If a van ban is in place, site managers should be encouraged to take responsibility for seeing all vans and requesting photo ID and proof of residency. The site manager can then use their discretion as to whether to allow the vehicle to dispose of its waste and decide if a disclaimer form should be completed. If a resident has hired the van, they should be requested to provide proof of hire.

Introducing a van ban is likely to cause inconvenience for some site users and there may be some aggression towards staff when the system is introduced. If a local authority considers staff safety may be compromised during the roll-out of such a ban, they may want to put additional measures in place to support the roll out.
7.4.4 Automatic number-plate recognition

Automatic number-plate recognition (ANPR) systems can be very effective if they are used to their full potential. For example, the system can be set up so as to trigger an email to a staff member at the local authority, who can then follow up suspected traders who are depositing commercial waste (for example when a vehicle has breached a set number of visits over a given period). Alternatively, if the system does not provide alerts, a member of staff will need to be responsible for monitoring the ANPR data and highlighting any vehicles that are frequently entering the site.

It is worth bearing in mind that some council members may not be comfortable with the use of ANPR for fear of ‘monitoring’ residents. This and data protection issues should be considered when deciding whether to introduce it on site.

7.4.5 Disclaimer forms

Any site users suspected of bringing commercial waste to the site should be approached by staff and requested to fill in a disclaimer form to confirm that the waste is from their household and not of commercial origin. However, in any potentially threatening situation, staff should withdraw and take licence plate details. Staff should then pass these details on to the appropriate contact at the council who will attempt to identify the home address of the site user to obtain further information and advise on alternative options for disposing of waste as appropriate. The council can then send the site user a letter, or conduct a home visit. If the trader is depositing waste illegally, the details of the vehicle should be passed on to staff at all HWRCs in the authority area, with a view to banning the vehicle from using HWRCs in the future.

All ANPR or disclaimer systems require enforcement and follow-up activities to ensure that site users are aware that it is not acceptable to abuse the site.

Example

In Cambridgeshire, a visit will be made within 48 hours to any suspected trader depositing waste, if possible by both the AmeyCespa monitoring officer and the relevant HWRC site manager. Taking the site manager allows confirmation that the resident is the same person who was on site. It also ensures the suspected trader is aware that action has been taken and there is management support. Communication between sites ensures that such traders cannot simply try to gain access to another site if they are refused at a first. This approach has proved to be an effective deterrent, particularly as word quickly spreads that suspected illegal use will almost certainly trigger a home visit.

It is essential that staff record completed disclaimers in a database and these are monitored frequently. These can be followed up in the first instance by a phone call or letter to the property in question. Should it be deemed necessary, a home visit can also be undertaken and, in a worst-case scenario, recurrent problems could result in court proceedings. Any such successful prosecutions should be widely publicised in the local media.

Effectively enforcing the disclaimer mechanism in this way will send out a message to traders that illegal use of HWRCs is not acceptable. It will also demonstrate to the site staff that they have the backing of managers at the council in their enforcement of the policy.
Section 1: Legal position regarding acceptance of commercial waste at household waste and recycling centres

It is illegal to dispose of waste from any form of commercial activity at a household waste and recycling centre (HWRC). The HWRC staff are required to prohibit the deposit of any commercial waste at this facility (except where it is in accordance with proper council charging procedures). The facility is for reasonable amounts of waste from domestic premises located within the parish/town/city/county of [ ]. Should the person delivering the waste maintain that the waste is of household origin then the waste will be accepted provided that the declarations in Section 2 and Section 3 are fully completed.

Section 2: Driver, vehicle and waste details

Name of HWRC where deposit took place …………………………………………………………………

Driver

Name ……………………………………………………………………………………………...

Address ……………………………………………………………………………………………

Vehicle

Owner’s name ……………………………………………………………………………………………

Owner’s address ……………………………………………………………………………………………

Owner’s business ……………………………………………………………………………………………

Vehicle registration ……………………………………………………………………………………………

Make / model …………………………….. Colour ……………………………..

Waste

Full description of waste ……………………………………………………………………………………………

Estimated quantity of waste ……………………………………………………………………………………………

Form completed by site user?  Yes / No Recycling Advisor’s signature ………………………………………

Section 3: Declaration

I have read the information contained in Section 1 and can confirm that all of the details contained in Section 2 are correct and that the waste (described above) that I am depositing is from my household.

Name ………… ……………………………………….. Signature…………………………………………….

Date waste deposited ……………………………. Time waste deposited ……………………………….
8. WORKING WITH OTHERS

There are many benefits of partnership working, although challenges can arise as well. This section considers the issues faced when working with other local authorities, either in two-tier settings or with neighbouring authorities, as well as with third-sector and private-sector contractors.

8.1 Partnering with neighbouring authorities
8.2 Cross-border use
8.3 Working in a two-tier system to maximise recycling
8.4 Third-sector involvement
8.5 Working with contractors
Working collaboratively with others may result in services being better managed by saving costs, improving the experience of residents, and improving communications and understanding. However, any partnership depends on agreeing some shared goals and a commitment to common objectives.

The points you should consider when entering into a contract, partnership or service level agreement with a third party are summarised in Table 8.1.

Table 8.1: Key strategies for successful partnership working

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have a named person to co-ordinate activities</td>
<td>Having one person to co-ordinate the activities of the partnership ensures actions are completed, plans are in place and activities are synchronised and shared between partners.</td>
</tr>
<tr>
<td>Develop a communications strategy that is clearly linked to the municipal waste management strategy</td>
<td>Communications are likely to be important, particularly if operational changes are planned, such as the introduction of a resident-permit system. Having a communications strategy with SMART (specific, measurable, achievable, realistic and time-bound) targets will set the vision and longer-term aims of the partnership.</td>
</tr>
<tr>
<td>Develop an action plan that is reviewed and adjusted annually</td>
<td>Develop a plan based on the waste strategy, detailing specific actions. It could be developed to cover a three-year period, reviewed annually and adjusted according to any new developments.</td>
</tr>
<tr>
<td>Ensure that individual partner communications and actions complement the overall strategy and plan</td>
<td>Integrating the strategies and plans of individual partners with those of the partnership will ensure they are consistent and complementary. This will allow partners to align their activities and enable those responsible for communications to spot where there may be gaps or conflicting messages being given to the public. Clarifying roles and responsibilities among all those delivering the plan will help avoid duplication of effort, improving the efficacy of the partnership’s work.</td>
</tr>
<tr>
<td>Consider harnessing economies of scale</td>
<td>Partnerships can benefit from economies of scale, particularly for joint procurement. This does not necessarily mean a joint waste-management contract, but there may be opportunities to procure capital equipment, vehicles or communications materials to deliver financial benefits.</td>
</tr>
<tr>
<td>Have a sound rationale and make use of benefits</td>
<td>It is important that partnerships are based on a sound rationale, with stated aims and objectives, and that they make the best use of the resources and expertise available. Partnerships are excellent for sharing knowledge as well as saving costs and time. Building relationships can ensure that project delivery is more straightforward, as there is buy-in and understanding from the start.</td>
</tr>
<tr>
<td>Establish that there is a genuine interest in working together</td>
<td>A genuine desire to work together is integral to the success of the partnership. This needs to be coupled with a trusting and supportive environment where partnership members feel they can communicate with each other, share problems and good practice, and seek advice.</td>
</tr>
<tr>
<td>Develop effective communications and decision-making channels and structures</td>
<td>Most partnerships have defined structures in place to aid the flow of information and decision making. Appropriate decision makers need to attend the relevant working groups. Meetings should be sequenced and planned to ensure information is swiftly cascaded between the decision-making groups. Often, not all members of a partnership group need to be involved in all decisions. Sub-groups suitable for dealing with specific sets of issues offer efficiencies to all.</td>
</tr>
<tr>
<td>Monitoring requirements and feedback</td>
<td>Monitoring and reporting of activities will enable the partnership to assess its success against targets, while providing information to accurately review the action plan and justify future funding requirements. It is vital to collect reliable monitoring data. The WRAP Monitoring and Evaluation guidance provides further information.</td>
</tr>
</tbody>
</table>
8.1 PARTNERING WITH NEIGHBOURING AUTHORITIES

The costs of managing household waste and recycling centres (HWRCs) are generally closely related to site-specific factors such as waste arisings and infrastructure, so there are limited opportunities for financial efficiencies to be made by entering into a joint HWRC contract with neighbouring authorities. Unless there is already a formal partnership arrangement, local authorities may prefer to have their own contract for HWRC services, with communications that use their own brand identity.

Example

re3 is a partnership which began in 1999 between the unitary authorities of Reading, Bracknell Forest and Wokingham Borough. In 2006, the contractor WRG joined the partnership. There are two HWRCs within the partnership area; in Reading and Bracknell Forest, meaning that Wokingham Borough Council residents use these facilities. Because HWRC services are included in the re3 contract with WRG in addition to kerbside collection, Wokingham contributes financially to the management of the two HWRCs.

One area in which savings can be made through economies of scale is haulage and gate fees to local reprocessors. If neighbouring authorities choose to use the same services, any partnering will require political will and agreement on policies, as well as a management resource for which the authorities agree payment.

Even without joint contracts, there is still scope for joint working through sharing good practice and intelligence regarding commercial abuse, security issues, local reprocessors and outlets for recyclate. Local authorities may benefit from benchmarking themselves with their neighbours, especially if there are similarities in demography and geography.

8.2 CROSS-BORDER USE

In general, local authorities recognise that the public will tend to use the HWRC that is closest to them. Where this occurs there is often a tacit understanding between the authorities involved that allows this to continue as it makes the service more convenient and accessible to residents and avoids unnecessary journeys. Furthermore, it may be one of a number of council services that are subject to cross-local authority border use. Some authorities want to understand the level of cross-border use and may for example, ask site users to present evidence of residency. This in turn can inform financial arrangements between authorities, if it has been agreed between them that some form of cross charging will occur. Visitor surveys can be a useful method of gathering data regarding site users, including where they have travelled from. There are also examples of authorities charging non-residents to use sites, but this does tend to be more common in London.

There are generally three approaches to this:

- Allow free usage, accepting that the waste and recycling service is only one of a number of council services that may be subject to cross-border use.
- Intervene to understand the level of cross-border use (for example, by requiring site users to present proof of residency).
- Find a compromise that allows cross-border use but attempts to recover the costs. This can be done by either charging non-residents (as adopted by Kent County Council and London Borough of Bexley), or through a financial agreement between authorities. Visitor surveys can be a useful method of gathering data regarding site users, including where they have travelled from.

Example
Leeds City Council has recently agreed joint-working arrangements with neighbouring Wakefield Council to allow shared use of two border sites, one located in Leeds and one in Wakefield, by their respective residents. Site-user surveys will be undertaken to apportion disposal costs and recycling rates.

Example

Warwickshire and Staffordshire County Councils plan to open an HWRC at Lower House Farm on the Warwickshire side of their shared boundary, although it has not yet been designed and built. The current plan is for the operating costs to be split 50:50 for the first year, and in subsequent years the costs will be apportioned based on postcode surveys conducted every two years. This is typical of a recent trend for some local authorities to base agreements on the division of cost rather than performance, following the shift in focus towards financial efficiency savings and away from recycling performance targets.

Currently, Tamworth Borough in Staffordshire does not have an HWRC within its boundary. According to Warwickshire County Council, many of its residents use the existing Grendon HWRC in Warwickshire, for which no financial contribution is received from Staffordshire County Council.

Warwickshire County Council does have a long-standing arrangement with Gloucestershire County Council regarding the operation of the Shipston-on-Stour HWRC. Based on annual postcode surveys, approximately 25% of users are from Cotswold District. Therefore, Gloucestershire County Council contributes 25% of running costs. This is because the north of this district is not served by a Gloucestershire HWRC and the nearest site within Gloucestershire is very distant. There is no reciprocal arrangement because it is understood that use of Gloucestershire sites by Warwickshire residents is minimal.

8.3 WORKING IN A TWO-TIER SYSTEM TO MAXIMISE RECYCLING

There are opportunities for partnership working in two-tier authorities, resulting in market advantages through increased volumes of waste and recycling. Other advantages include cheaper disposal rates, lower recycling gate fees and higher income from recyclables for which charges can be made. Two-tier authorities working in strategic partnership can also make savings and improve performance through shared communication, and joint promotion of recycling and re-use measures can result in improved diversion from landfill and recycling rates.

It will be particularly important for the waste disposal authority (WDA) to engage with their collection authorities if there are going to be any significant changes regarding the number or location of sites. Waste collection authorities may collect more waste and recycling from the kerbside, clean up more fly-tipping incidents and conduct more bulky-waste collections. Therefore, they will need to understand the rationale and impact of any changes. This is considered further in Section 9.
8.4 THIRD-SECTOR INVOLVEMENT

The value of engaging with third-sector organisations stems from their ability to increase re-use of items deposited at HWRCs, which in turn provides social and economic benefits by creating jobs, training opportunities and volunteer placements. There are many excellent re-use organisations taking items off site for resale, as well as on site re-use shops managed by charities or furniture re-use organisations. However, these groups may need support to deliver the standard of service required by the local authority. All Governments are keen for the third sector to be more involved in public-sector contracts but in reality it can sometimes be difficult to ensure that the requirements of all parties are satisfied. See Section 4.9.2 for further discussion on maximising re-use at HWRCs.

Other benefits of working with third-sector organisations include:
- the approval of council members;
- their ability to supply niche solutions, and their access to markets, in particular for re-use;
- access to funding streams that may not be available to other organisations; and
- the associated benefits of increasing re-use in the local area.

However, there can be difficulties associated with the sector, including:
- the lack of a standard offering, because each re-use organisation and charity is different, with significant variation in structures and constitutions;
- only items that are suitable for resale being wanted, so they may not take all items site staff segregate for re-use, leading to a reputation of being ‘fussy’ or ‘choosy’ when leaving unsuitable items;
- the capacity and reliability of individual groups to service one or all HWRC sites in an area, as resources may be limited; and
- demands on officer time resulting from support requirements.

Example

When Greater Manchester Waste Disposal Authority (GMWDA) introduces re-use to its sites, it enters into formal arrangements with the third-party operators, to ensure service levels are maintained to the overall PFI contract standards. In the past re-use organisations have approached the authority without adequate documentation to take the items off site, such as a waste carriers licence. The authority has also previously engaged with groups that struggled to cope as they were overwhelmed by the volume of items generated. Engaging with established groups that understand the sector helps to ensure that they have all necessary licences, as well as the outlets needed to sell the volume of items collected.

In order to ensure quality of service and appropriate operational and environmental standards, the authority enters into a memorandum of understanding (on the condition of a six-month pilot scheme) with not-for-profit organisations that satisfy two criteria:
- they are full members of the North West Community Waste Network; and
- their operations and facilities are fully compliant with all relevant legal and Environment Agency requirements.

The memorandum also contains strict health and safety working practice agreements.
8.5 WORKING WITH CONTRACTORS

Working with a contractor, whether large or small, can provide benefits to the local authority because of the in-house expertise they have gained from managing sites elsewhere and developing good practice. Clear accountability under the terms of the contract is another advantage. Contractors are often able to develop cost-effective solutions, as they understand the market and may have better selling power to maximise recycling income than a local authority working alone. Contractors are segregating more and more waste streams for recycling and they can often be flexible, responsive and forward looking. Some contractors may also be well placed and disposed towards engaging a third-sector sub-contractor on behalf of the local authority for services such as re-use systems.

However, local authorities need to ensure that they maintain some control over the way HWRCs are managed. An internal contract manager with a monitoring regime is the best way of achieving this. The local authority contract manager will need to ensure that the local authority’s priorities are taken into account. There are likely to be different drivers for each party and therefore the local authority needs to ensure their requirements are met. In part, this will depend on the contract specification and financial arrangements between the parties. Section 6 discusses contractual issues in more detail.
9. COST-EFFECTIVE NETWORK MANAGEMENT

While other sections of this guide look at how to manage individual sites effectively, this section focuses on the household waste and recycling centre (HWRC) network, with advice on how to develop a service throughout an area that is fit for purpose, meets statutory requirements and delivers budget savings. Inevitably, there is some overlap with issues covered elsewhere, such as site opening times, their effect on staff costs, and the consequent impact on the resource requirements of the network.

Regardless of budget considerations, it is likely that some HWRCs may need to close at some stage, because they are outdated and no longer fit for purpose, or their planning permission and permit have expired. In these cases the same rationalisation process will need to be undertaken.

9.1 Taking public opinion into account
9.2 Issues to consider when rationalising services
9.3 Opening hours
9.4 Costs and benefits of redevelopment
9.5 Alternatives to HWRCs
9.6 Operational considerations when rationalising services
9.1 TAKING PUBLIC OPINION INTO ACCOUNT

When delivering value-for-money services it is vital to manage the expectations of the public and council members. The improvements made in recent years, and the increasing range of materials that can be recycled at HWRCs, mean that residents' expectations continue to be raised and residents will tend to react negatively to site closures.

Without any definitive answer as to how many HWRCs legally are required in an area, or appropriate availability (i.e. opening times), making any significant changes to the HWRC network is likely to be complex and challenging for many local authorities.

Closing sites should be considered a last resort, particularly if the aim is solely to provide financial savings. Despite a general understanding of the budget constraints on councils, closures do inevitably affect public satisfaction, as well as potentially increasing fly-tipping and reducing recycling performance.

Many local authorities have introduced significant changes in response to their local circumstances and requirements to make financial savings. The circumstances for each local authority are different and if they do need to consider closing sites they will need to be confident that they continue to provide HWRC services in line with their statutory duty. The legal position, as it currently stands, is outlined in Section 5.

9.2 ISSUES TO CONSIDER WHEN RATIONALISING SERVICES

Closure of sites should not be considered as either the first or the easy option when trying to save costs. There are many other opportunities for improving HWRC efficiency that can be explored, and these are discussed throughout this guide. Measures such as addressing illegal deposit of commercial-waste (see Section 7.3), tackling cross-boundary issues (see Section 8.2), training staff (see Section 4.11.3) and improving site infrastructure (see Section 4) can all make a difference.

However, once these other factors have been considered, if a local authority is considering opening or closing sites, it should consider:

- waste flow and capacity within the network;
- the business case, including:
  - the appropriate number and location of sites for the population;
  - the tonnage throughput of sites;
  - the displacement of waste;
  - opening hours;
  - planning, health and safety, and environmental requirements, and expectations of the HWRCs; and
  - the views of stakeholders regarding the available options.
- legal requirements;
- staff-resource requirements and labour relations;
- contract flexibility (does the contract allow the desired changes be implemented?);
- obtaining support from council members early in the process, though after the key facts have been gathered;
- communication with stakeholders such as the residents, parish councils and council members, which is vital; and
- communication with and consideration for neighbouring authorities which could be affected.
There may be some circumstances where an HWRC is not the most appropriate service to provide. Some local authorities may want to consider alternatives such as mobile or temporary facilities, or enhancing the bring-site, kerbside or bulky-waste-collection services.

Example

Warwickshire has nine HWRCs, of which eight have been operated and managed by the county council since December 2011. The council’s sites achieved a 69% recycling rate in 2010/11. Through changes in management structure and a number of other measures the council has made £900,000 of savings and avoided site closures. These other measures include:

- a reduction in site opening hours to 9.30am to 3.30pm Monday to Friday, with weekends remaining as they were (9am to 4pm on Saturdays and Sundays);
- standardising site opening hours across all sites;
- running two sites under licence by third-sector organisations; and
- upgrading the existing re-use ‘shops’ on all sites and allowing third-sector organisations to keep the income from the sale of reusable items, in addition to the income from the sale of recyclables, on the sites they operate.

However, to address both public expectation and develop a service that is fit for purpose, it may be necessary to open new sites as well as close others. Several local authorities have invested in new sites for redevelopment and this mitigates the impact of closing small, low-performing sites. When residents are made aware of new ‘super-sites’ that are purpose-built to maximise recycling, improve traffic flow and facilitate a more enjoyable experience, they will usually be happy to use the alternative facility. If this is the case, the closure of an HWRC (particularly an older site with less adequate facilities) should result in the displacement of all material to the alternative HWRC, as long as it is still the closest, rather than displacing material to another waste stream. Of course, the alternative HWRC also has to be easily accessible, well-designed and reasonably equipped.

Factors that can affect the cost efficiency of the network are considered below.

### 9.3 OPENING HOURS

Reducing opening hours is one way to deliver savings, as this will lower staffing costs, which is an area the local authority can control. If a contractor manages the site, the structure of the contract will determine whether any savings made in staff costs will be passed on to the local authority. Amended opening hours can minimise or remove the need for agency staff while protecting the jobs of the permanent employees. Local authorities should discuss any proposed change in working hours with staff, the contractor and their HR department to reach an agreement.

A particular issue may be the number of hours staff are expected to work at weekends, as this may need to increase to ensure there is coverage at peak times. If previous contracts have stated that staff have one day per weekend or every other weekend off, asking them to do more weekend work as standard hours rather than overtime, will have to be considered. The authority should consider how any change to staff hours will affect staff morale and therefore performance.

Before changing a site’s opening hours, local authorities should undertake traffic monitoring to identify which days of the week and which times of day are most...
popular. For example, if very few cars enter the site before 9am, it is unlikely that changing opening hours from 8am to 9am will have a significant impact on site usage. Similarly, it may be unnecessary to remain open late for just a few residents to make use of the site.

Options for site opening times which have been implemented across the country include:

- reducing the opening hours across the whole week;
- extending winter opening hours so there are fewer weeks operating long summer hours, though lighting may become an issue;
- reducing the opening hours for all days, except one or two days when the site is open longer;
- closing the site on the quietest one, two or three days each week;
- closing the site during weekdays and only opening for residents at the weekend (peak times); and
- opening six days a week for residents, with one day for commercial waste.

Local authorities should consider the communication requirements if changing site opening hours, particularly if the change is significant, such as a two-day closure. Dissatisfaction may show itself in fly-tipping or reduced recycling performance. If the changes to site opening times are too complicated, residents will be confused as to which sites are open when.

### 9.4 COSTS AND BENEFITS OF REDEVELOPMENT

Not all sites will be suitable for redevelopment. For example, there may be insufficient space to expand, or the site may require very costly works to become fully compliant with new, more stringent health and safety or environmental requirements. In these cases, it is likely that closure will be the preferred option, provided that there is adequate local HWRC provision for residents overall. Other sites may be ripe for redevelopment, where there is potential to improve customer experience, accessibility and performance through investment. This is likely to be worthwhile on such sites, though local authorities should conduct a cost–benefit exercise before any redevelopment work. Some improvements may also be needed on health and safety, planning, licensing, site-access, congestion or environmental grounds. Case Study 2 includes discussion of a site that requires some redevelopment.

### 9.5 ALTERNATIVES TO HWRCs

Alternatives to fixed, permanent HWRCs centre around temporary provision to target specific material streams, or in locations that are poorly served, either because they are very rural or because there are low levels of car ownership.

#### 9.5.1 Temporary HWRCs

Temporary services can reduce the burden on sites that may already be very busy at peak times, typically weekends during the summer. Providing additional temporary services for specific waste streams will reduce the number of residents using the permanent sites specifically to dispose of that waste stream.

Temporary collections for students at the end of the summer term are popular in university towns and cities. Although any one-off or temporary collections can stray into the responsibilities of the waste collection authority (WCA), they are worth considering if they provide a more efficient service to residents and reduce the burden on the HWRC network.

**Example**

The London Borough of Bromley operates temporary garden-waste sites during the summer months. Five garden-waste collection sites open every weekend from April to November and all waste is sent for composting. The temporary sites are open from 11am to 4pm on Saturdays, and from 8am to noon on Sundays. Sites are located at schools, parks or car parks in densely populated areas.

No garden waste is accepted at these sites outside of the operating times. The sites are monitored, and fly-tippers are prosecuted. The service is free to Bromley residents who identify themselves by taking their waste permit or a recent utility bill.
9.5.2 Mobile HWRCs

The main purpose of mobile HWRCs is to provide recycling and waste disposal facilities in areas where the population is not adequately covered by existing permanent HWRCs. This service is more likely to be provided in rural counties, although mobile sites are also useful for serving estates and hard-to-reach properties such as multiple occupancy buildings.

**Example**

North Yorkshire County Council provides mobile HWRCs to five rural towns and villages in the county. The provision varies, with the residents of Boroughbridge and Pateley Bridge being served once per month (except January) between 9am and 1pm on Saturdays. Other villages are served either once every two, three or six months. The council website carries a calendar showing service times. Residents are able to dispose of a wide range of materials, including dry recyclables, garden waste, furniture and bric-a-brac, electrical appliances, textiles and tyres. Residual waste and small quantities of rubble and wood are also accepted.

9.5.3 Non-WDA-managed HWRCs

Although closing HWRCs should be avoided if at all possible, if it is simply not affordable to keep a site open, sites threatened with closure could be managed and funded by a third party. However, they may require site users to pay for the service. This decision can only be taken when the authority is satisfied that they are providing an adequate service to meet their statutory duty.

**Example**

In West Sussex, when sites are closed for redevelopment the local authority considers where the redirected waste will go and undertakes extensive communications. It also subsidises bulky-waste collections and allows temporary weekend access for some wastes on the redeveloping site. Extended opening hours before the site closes and additional staff on site when it reopens also help to manage the throughput (although the alternative sites are not always as busy as expected).

No challenge has been raised against the existing non-WDA-operated sites and therefore there is no case law on which to identify the definitive legal position.

**Case Study 1** provides details of the process involved in developing HWRCs operated by a community organisation.

9.6 OPERATIONAL CONSIDERATIONS WHEN RATIONALISING SERVICES

There is likely to be an impact on the nearby sites if any HWRC closes, whether temporarily for redevelopment or permanently. Local authorities will need to ensure that the other HWRCs can cope with:

- an increase in site visitors;
- residents who are not familiar with the site and may require more support from staff, or take longer to dispose of material than regular users;
- increased tonnage throughputs; and
- increased service requirements.

Some factors, such as the additional traffic flows for site users and service vehicles, may have an impact on neighbouring businesses. Any relevant information on operational changes will need to be communicated to these businesses.
9.6.1 Poorly performing and low-throughput sites

When identifying lower performing sites it is important to evaluate metrics such as the cost per tonne and per site visit and to assess whether sites will be able to achieve high recycling rates. It is possible that some sites could not be developed to a standard expected of a modern HWRC due to land or space constraints. These issues, as well as the financial data and equitable accessibility of remaining sites, will be useful when identifying which sites should remain open, and whether any sites should close.

Low throughputs and recycling rates were factors that contributed to the decision by the Somerset Waste Partnership to close four HWRCs.

Any decision to close a site based on low throughput or poor performance should be taken in the context of the network as a whole. Some sites are likely to be underutilised, with a design capacity that is higher than current annual throughputs. If this is the case, there may be a stronger argument for closing low-throughput and poorly performing sites, which are expensive to manage, if there is sufficient capacity elsewhere in the HWRC network. Alternatively, local authorities can launch a targeted communications campaign to encourage residents to use a site that is underutilised.

Example

In Devon, the county council plans to close two HWRCs that are currently weekend-only sites. The sites are expensive to operate, costing between £158 and £189 per tonne of waste handled. This compares to £79 per tonne at other recycling centres across the county that are open seven days a week. The sites are both small and each receives less than 1% of the waste handled across the HWRC network as a whole. The sites cannot provide the recycling facilities necessary to deliver high recycling rates, with one site achieving a 54% recycling rate in 2009/10, compared to an average of 75% at other sites. The area is adequately covered by other larger sites located within a 10-mile radius of the sites due for closure, and these sites would be able to cope with the diverted waste. Therefore, Devon County Council believes that users of the weekend-only HWRCs will switch to alternative sites nearby once the weekend-only sites are closed.

9.6.2 Location of alternative facilities

The location of alternative facilities is an important factor when reviewing site provision. Section 2.2 discusses the appropriate number of sites per head of population and generally acceptable driving times. By conducting a mapping exercise, a local authority will be able to identify whether or not there is appropriate capacity across a particular area. When such a review was carried out in Durham (see pp. 43–80), the local authority identified that 98.8% of the county’s population can drive to an HWRC within 20 minutes and that 86% can access more than one site within 20 minutes. In some areas residents can access up to five sites.

9.6.3 Displacement of waste

Opening or closing HWRCs often results in the displacement of waste between individual sites, and across other waste streams. This is an important issue, yet its implications have not been systematically scrutinised until now.

Assessing where waste will be displaced to and from when sites are opened or closed can be challenging. With this in mind, the Somerset Waste Partnership assessed potential displacement by making a series of assumptions based on their knowledge of the network, as described below.
Example

When the Somerset Waste Partnership evaluated their network and proposed to close four HWRCs, they made an assessment of what would happen to waste from the closed sites, based on their knowledge of their HWRC network and waste collection authority services, since empirical evidence was lacking. They made the following assumptions:

Residual waste:
- 50% will transfer to an alternative site – cost neutral;
- 40% will transfer to the kerbside bin – potential cost to collection contract; and
- 10% will be lost to the system – could include fly-tipping.

Garden waste:
- 60% will transfer to alternative site – cost neutral; and
- 40% will go via home composting, kerbside collection or be lost to the system.

Hardcore:
- 90% will transfer to an alternative outlet, such as other sites or private skips;
- 5% will be lost to system, including fly-tipping; and
- 5% will go into kerbside bins, incurring higher landfill rates and a potential cost to collection contract.

Dry recycling (packaging, newspapers, etc.):
- 60% will transfer to ‘Sort It Plus’ kerbside collections – potential benefit to district councils through recycling credits, and to contractor income, with an indirect benefit to Somerset County Council as this helps to hold down contract costs; and
- 40% to alternative sites – cost neutral.

Bulk material recycling (wood waste, metals, etc.):
- 75% to alternative sites; and
- 25% to kerbside bins, incurring landfill fees and reducing recycling performance.

The Somerset Waste Partnership expected significant displacement of materials from closed HWRCs to other HWRCs and other waste streams. However, after further analysis and consideration, these sites did not actually close; rather they reopened as community recycling sites.

An analysis of WasteDataFlow returns for all waste disposal and unitary authorities in England for 2008/09 and 2009/10 identified authorities that reported a different number of HWRCs in each period. Tonnage data for the authorities reporting a change in the numbers of HWRCs provided was analysed, and changes to total HWRC tonnages over the same period were assessed. The findings of the analysis are summarised in table 9.1.
changes in HWRC throughputs. Increases or decreases in materials could relate to genuine increases or decreases in household arisings, or be related to cross-border movements of materials. The economic downturn might also be affecting HWRC throughputs, as might other factors such as commercial-waste controls or changes to other parts of the collection system, particularly at the kerbside.

Example

In Leeds, the council does not believe site closure is having a significant impact on the bulky-waste service. The bulky-waste collection crews have recently reduced the number of rounds from six to three, while one HWRC has closed and another opened. However, it is extremely difficult to isolate factors when considering waste arisings and displacement, and other factors such as the recession and metal prices are likely to be having an impact.

9.6.4 Dealing with contractual constraints

Not all contracts will have the built-in flexibility to enable sites to be closed. It is therefore important for any new contracts to take into account the fact that the HWRC network may expand or contract, depending on the requirements and budget of the local authority. For example, there may be cost reductions for a local authority if a contractor manages all sites in the area, and these would be lost if any sites closed. In such cases, any savings would need to offset the loss.

Further consideration is given to contracts in Section 6.

Table 9.1: Summary of changes in number of HWRCs and HWRC throughputs for selected authorities in England

<table>
<thead>
<tr>
<th>Authority</th>
<th>Periods compared</th>
<th>Change in number of HWRCs</th>
<th>Change in total HWRC throughput</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Derbyshire</td>
<td>2008/09 and 2009/10</td>
<td>+1</td>
<td>+6.8%</td>
<td>Buxton HWRC opened August 2009</td>
</tr>
<tr>
<td>Hertfordshire</td>
<td>2008/09 and 2009/10</td>
<td>-1</td>
<td>-3.5%</td>
<td>Tring HWRC closed October 2009</td>
</tr>
<tr>
<td>Hillingdon</td>
<td>2008/09 and 2009/10</td>
<td>-1</td>
<td>-9.3%</td>
<td>Rigby Lane RRC site closed November 2008</td>
</tr>
<tr>
<td>Kingston-upon-Hull</td>
<td>2007/08 and 2008/09</td>
<td>+1</td>
<td>+5.8%</td>
<td>Sutton Fields HWRC opened in July 2008</td>
</tr>
<tr>
<td>Nottinghamshire</td>
<td>2008/09 and 2009/10</td>
<td>-1</td>
<td>-7.3%</td>
<td>Danes Hill HWRC closed in April 2009</td>
</tr>
</tbody>
</table>

Data source: WasteDataFlow

Note: Kingston-upon-Hull reported an additional site in 2009/10, but in fact the new site opened in 2008/09; therefore the periods 2007/08 and 2008/09 were compared for Kingston-upon-Hull.

The analysis appears to show a consistent pattern, with the opening of new sites being associated with the generation of additional HWRC throughputs and the closing of sites being associated with decreases in HWRC throughputs. Analysis of bulky-waste tonnages does not indicate that material is displaced between bulky-waste collections and HWRCs.

It appears that opening a new site generally results in a 5–10% increase in total HWRC throughput, with a 5–10% reduction following closure of a site. However, this conclusion should be treated with great caution as many factors could be related to
9.6.5 Restricting certain waste types

Not all sites are required to accept all types of waste. Local authorities can choose to accept certain wastes, such as asbestos or paint, at specific sites only, or through alternative provision outside the HWRC network. This will be more cost-effective, concentrating the quantities of hazardous loads. However, as with many other measures discussed in this section, it does raise the challenge of making the public aware of which sites accept which materials.

Many authorities are now implementing restriction policies, mostly related to large quantities of rubble, soil and DIY-type waste. Such restrictions limit the amount of specific wastes that a householder can bring to a site. If any site users need to dispose of more than this allocation within the specified time period, this may be classed as commercial waste. Such policies can be implemented through charges (see Section 9.6.5.1 opposite), or free disposal may be allowed for low quantities. For example:

- In North Yorkshire residents can dispose of up to two car bootloads per month of soil and rubble. Higher quantities are charged at commercial rates.
- In Leicestershire each householder can dispose of six bags of DIY waste every six months. Bulky fitted items such as radiators are limited to four every six months, with one bathroom suite or kitchen allowed every six months.
- London Borough of Hounslow residents can dispose of two mattresses for free, and then are charged for additional mattresses.
- Approximately 25kg rubble can be disposed of for free at the Villiers Road HWRC in the London Borough of Kingston. Any additional rubble will be refused, and the householder is expected to use the transfer station adjacent to the site. Commercial charges will apply at the transfer station.
- A minimum charge of £20 for soil, rubble and DIY wastes is levied in the London Borough of Bromley.
- In Suffolk, most sites accept dry recyclables for free, and some accept wood and green waste for free, while other sites charge for these materials. See Case Study 1 for more details.

- Devon Council applies the following charges: Soil and rubble (including bricks, blocks, tiles, paving slabs, concrete posts, sanitary ware, etc.): £2 per bag; Plasterboard (including plaster and gypsum-related products): £7 per sheet or bag; Asbestos (bonded type only and by pre-booking): £20 per sheet or bag; and Tyres: £2 each (commercial vehicle tyres are not accepted, and there is no charge for bicycle tyres).

However, any policy that places a restriction on the quantity of waste that can be disposed of within a particular time period can be difficult to manage without the use of automatic number plate recognition (ANPR), or very vigilant site staff.

As indicated earlier, charges to use HWRCs or HWRC-type services can be levied in some circumstances.

Furthermore, many of these restrictions have not been in place for long, and because there are many other factors that influence waste arisings it is difficult to determine the overall effect that such policies and charges will have. Somerset County Council has noticed a reduction in waste across the county since the introduction of charges at discretionary sites and the waste is not appearing elsewhere in the system.
10. FUTURE DEVELOPMENTS

Householders now recycle more and have a greater understanding of the benefits of recycling. Household waste and recycling centres (HWRCs) are recognised as a location where more recycling is taking place and they have changed significantly over the years. HWRCs are likely to continue to be an important part of waste management, accepting significant tonnages of waste and achieving high recycling rates. They are becoming increasingly sophisticated and complex, to meet both regulatory requirements and customer expectations. This section looks at how HWRCs may evolve in future.

10.1 Covered sites
10.2 Making recycling an enjoyable experience
10.3 Acceptance of other wastes
10.4 Innovative construction
10.5 Householder reward schemes
10.6 Resource-recovery hubs and workshops
10.7 Diversification of activities
10.1 COVERED SITES

Several new sites are fully or partly covered. This offers site users a more pleasant environment in which to recycle. The Balloo HWRC in North Down and East Cambridgeshire’s Witchford HWRC, which opened in November 2011, both have covered disposal areas. Another HWRC in Reading is indoors. This marks a shift in the recycling experience for HWRC users, with the emphasis on offering a comfortable and weather-proof experience.

Covered sites also mean that materials are kept dry, which for some materials such as carpets and mattresses, will help maintain the quality, opening up greater reprocessing opportunities and potentially meaning a lower gate fee being charged than for lower quality materials. This may also open up potential re-use markets.

10.2 MAKING RECYCLING AN ENJOYABLE EXPERIENCE

There is an aesthetic aspect to some of the new indoor facilities, with significant efforts being made to construct facilities that are functionally and visually pleasing. Some HWRCs are even attempting to pioneer the path for recycling to be seen as ‘beautiful’. While this may seem a rather alien concept in relation to some of the older (though often very efficient) facilities currently operating, this approach can really strike a chord with the public. If it helps to increase public awareness and willingness to recycle, creating aesthetically pleasing HWRCs can have a tangible benefit for local authorities, as well as the contractors involved in designing, constructing and managing them. Indeed, the new facility at Witchford, not far from Ely Cathedral, has been described as a ‘cathedral of recycling’.

Figure 10.1: Newline HWRC, Craigavon

Figure 10.2: Covered recycling areas at Witchford HWRC, Cambridgeshire
New HWRC facilities are still being opened, even at a time when many authorities are looking to rationalise their networks. However, large capital projects such as new sites will not in themselves guarantee high recycling rates, and you should address all HWRC management issues to get the best out of facilities. See Section 2.4 on factors that affect recycling rates for further details.

### 10.3 ACCEPTANCE OF OTHER WASTES

As local authorities embark on residual-waste treatment technologies such as mechanical biological treatment (MBT) and energy from waste (EfW), it is likely there will be a move towards separating out residual waste that is suitable for these different technologies, with a smaller proportion being disposed of in landfill-only skips. This already happens at some sites – in the London Borough of Bexley and Greater Manchester, for example – where burnable materials which have not been separated for recycling are disposed of in a separate container for delivery to EfW facilities. However, care must be taken to adhere to the waste hierarchy by prioritising recycling and re-use over other types of landfill diversion (see Section 5.4).

There may be a wider acceptance of larger volumes of DIY waste, particularly if they are recovered through a DIY-materials recovery facility. It is possible the UK will move to a resource-recovery park style of HWRC (see Section 10.6 below), allowing the value of DIY wastes such as window frames, doors and ceramic to be realised.

Further voluntary or mandatory agreements may lead to requirements to segregate more material for re-use or recycling. The same is true of increased responsibilities for producers, including changes to the Waste Electrical and Electronic Equipment (WEEE) Regulations, further packaging responsibility, or agreements by producers of new items such as mattresses to manage the waste stream. Any changes to additional producer responsibility or product stewardship are likely to involve local authority HWRCs, because the network allows for efficient collection of wastes.

However, as recycling and re-use become even more mainstream, it is possible that more waste management players will be interested in playing a bigger part in promoting recycling and re-use. Local authorities could develop partnerships with private companies, such as supermarkets, that are already involved in managing bring banks. It is possible that supermarkets may expand their bring sites to accept more materials, with or without the support of a local authority, resulting in these sites becoming much larger community recycling facilities along the lines of ‘mini-HWRCs’.

### 10.4 INNOVATIVE CONSTRUCTION

Modular, pre-cast concrete units are an innovative method for constructing HWRCs. They are popular in continental Europe and could provide a cost-effective and quick solution to any local authority that is hesitating over investing in their HWRC network due to budget constraints.

*Figure 10.3: Modulo Beton waste-management facility, France*
10.5 HOUSEHOLDER REWARD SCHEMES

One-off schemes to reward people for recycling at HWRCs have been launched in the past, such as Leicestershire County Council's scratchcard competition to encourage site users to recycle their small WEEE. Every time a visitor recycled an item, they received a scratchcard which gave them the opportunity to win one of three major prizes of £200 worth of holiday vouchers each. Other winners received either a wind-up torch or a reusable shopping bag.

It is possible that more WDAs will consider schemes that reward people for recycling, including joint schemes with collection authorities. This would be in line with the 2011 Waste Review for England, which highlights rewards as playing an important role in improving public recycling behaviour.

10.6 RESOURCE-RECOVERY HUBS AND WORKSHOPS

As re-use becomes more widespread, activities can become more ambitious. Private sector or larger third-sector organisations are developing re-use hubs that accept a wide range of reusable items, and new HWRCs can be designed to focus on re-use as well as recycling.

An HWRC constructed as a re-use hub on the assumption that all items brought to site are reusable or recyclable until identified as not being suitable would be a very different site to a traditional HWRC. Such a re-use-orientated HWRC could accept household and commercial items as well as items from bulky-waste collections. Figure 10.4 shows how re-use can be maximised, followed by recycling, recovery and finally disposal.

If there are too many items to stock in an HWRC re-use shop, or too many requiring specialist attention, other organisations listed on the right-hand side of Figure 10.4 can become involved. There will be employment opportunities as with any HWRC, but the model can support volunteer and training opportunities for drivers and operatives in warehousing, administration, refurbishment. re-use and dealing with WEEE.

An additional income strand could be generated through the provision of adult-education activities, such as:
- sewing courses using textiles that are donated;
- a woodwork shop;
- creative art workshops; and
- metalworking courses.

As well as the more creative suggestions above, it is likely that there are types of waste or items that could be of use that do not fall into the traditional re-use categories of furniture, electrical items, bric-a-brac or textiles. For example, residents with allotments often salvage flat glass or windows to repair their greenhouses, and there may be other wastes that residents could make use of in their allotments or gardens. A waste exchange for these types of items can be a great way to encourage re-use.

The prospect of such a joined-up, comprehensive and innovative project is an exciting one. While third sector organisations and charities can be well placed to make integral contributions to such a project, success will require strong leadership and management from the local authority, because the benefits of such a scheme will apply to so many different local authority departments.
10.7 DIVERSIFICATION OF ACTIVITIES

Finally, HWRCs in the future could offer a much wider range of environmental activities beyond waste management. For example, they could be hubs for sustainable facilities where cooking oils collected on site are returned to the site as biodiesel, which cars with suitable engines can fill up. Alternatively, they could provide charging stations for electric cars. Not only could neighboring industries benefit from a local supply centre – a local hub of artists adjacent to a site may be able to benefit from the materials available. For example, small businesses can use recycled glass or textiles for artworks or up-cycling projects.
11. CASE STUDIES

CASE STUDY 1: Greater Manchester Waste Disposal Authority: Investing in HWRCs to maximise diversion from landfill

CASE STUDY 2: Suffolk County Council: Community- and contractor-managed sites

CASE STUDY 3: Leeds City Council: Including a re-use shop in site redevelopment

CASE STUDY 4: Cambridgeshire County Council: Integrating a new HWRC into the local community network efficiency

CASE STUDY 5: South London Waste Partnership: Maximising diversion from landfill through a combined HWRC partnership network efficiency

CASE STUDY 6: Durham and Norfolk County Councils: Introduction of mattress recycling at HWRCs

CASE STUDY 7: Warwickshire County Council: Introduction of carpet recycling at HWRCs
CASE STUDY 1: Greater Manchester Waste Disposal Authority: Investing in HWRCs to maximise diversion from landfill

Introduction

Greater Manchester Waste Disposal Authority (GMWDA) was formed in 1986 to serve the nine Greater Manchester districts of Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Stockport, Tameside and Trafford.

With private-finance initiative (PFI) support from the Treasury’s Infrastructure Fund, GMWDA signed a 25-year recycling and waste-management contract with Viridor Laing (Greater Manchester) Limited (VLGM) in 2009.

The original contract committed Viridor to a range of strategic initiatives, including upgrading the 16-site HWRC network and building nine new HWRCs.

Facts and figures

- GMWDA handles 5% of the UK’s local-authority-collected waste – making it the biggest waste disposal authority (WDA) in the country.
- Its HWRC network now stands at 21 sites, after four sites were closed in September 2011.
- The staff requirements of such a large network meant that no compulsory redundancies were needed when the sites closed.
- GMWDA has built new super-sites, each processing more than 20 waste streams.
- Nine existing sites have also been redeveloped.
CASE STUDY 1: Greater Manchester Waste Disposal Authority: Investing in HWRCs to maximise diversion from landfill

Background
GMWDA is modernising its network of HWRCs, with new and redeveloped facilities. This has allowed the network to be rationalised as part of an ongoing programme of efficiency savings. After consultation, six hard-to-develop sites with limited space were approved for closure in June 2011. Four of these closed in September 2011; the other two, in Bolton and Salford, will close when a new purpose-built site in Bolton comes on stream. Site staff have been kept informed, and the contractor VLGM has committed to redeploying personnel.

Site redevelopment: Chester Road HWRC

When the Chester Road HWRC was built in 1984 it was innovative and modern – split-level, with a one-way system and a central reservation. There is a separate access road for service vehicles leading directly into the service yard. Some containers are serviced within the public access area, including dry recyclables and small skips.

Its location near Junction 7 of the M60 makes Chester Road easy to access, but there can be congestion on the access road at peak times. This access is so close to the junction between the M60 and the A56 that vehicles waiting to get into the site can cause problems for traffic on the A56, and sometimes on the motorway exit slip road.

Redevelopment began in January 2012. Initial plans had included relocation to the site of an old landfill behind the current site, but this would have needed costly ground-stabilisation works, so it was prohibitively expensive. GMWDA and VLGM then looked at ways to redevelop the existing site to be fit for purpose, more user-friendly and more pleasant to work in, including:

- developing a two-lane access road;
- repainting and treating the metal tipping wall fascia;
- reconfiguring the apron area; and
- adding a re-use container for furniture and other reusable items.

The main disposal area has a tipping wall, where users drop their waste and recycling into bays on the operational side of the site. Repainting and treating the large and prominent metal tipping face will improve the appearance of the whole site. There are no containers in the area of the service yard behind the tipping wall. Instead, site operatives use a shovel loader to move the waste into containers or directly on to lorries. This maximises payloads and minimises haulage, making it an economical way to manage waste.

Although not part of the original design, there are now containers and cages on the site’s central reservation. By using this space, GMWDA and VLGM have been able to meet changing requirements for segregating items such as small recyclables.

The site’s design capacity is 28,000 tonnes. In 2010/11 the total throughput was 14,440 tonnes; 65.1% of this was recycled, composted or sent for recovery. Figures for 2011/12, show that the total diversion rate increased by 2.76% for the first three quarters of the year.

Waste arisings and diversion rates at Chester Road HWRC

<table>
<thead>
<tr>
<th></th>
<th>2010/11</th>
<th>1 April to 31 Dec 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tonnes</td>
<td>Percentage of total arisings</td>
</tr>
<tr>
<td>Total site arisings</td>
<td>14,440</td>
<td>9,917</td>
</tr>
<tr>
<td>Composted waste</td>
<td>1,691</td>
<td>11.71%</td>
</tr>
<tr>
<td>Recycled waste</td>
<td>4,441</td>
<td>30.75%</td>
</tr>
<tr>
<td>Recovery</td>
<td>3,268</td>
<td>22.64%</td>
</tr>
<tr>
<td>Total diversion</td>
<td>65.10%</td>
<td></td>
</tr>
</tbody>
</table>
CASE STUDY 1: Greater Manchester Waste Disposal Authority: Investing in HWRCs to maximise diversion from landfill

A new site at Woodhouse Lane, Altrincham

This site was opened in April 2010. By acquiring a large new site next to an existing but outdated HWRC, GMWDA was able to replace the old facility with a purpose-built super-site, easily able to process 23 different waste streams with room for more. Communication will be key to encouraging residents to make full use of the site’s capabilities.

The site has a long access road and a two-lane entrance. The bulk containers and the small recyclable containers each have their own parking bays, aiding traffic flow and safety. There are clear road markings and bays, as well as a walkway painted red for pedestrians. Public and service areas of the site have separate access. Staff maximise the payload of each container using a vehicle that can grab, compact or shovel.

The site segregates carpet as well as more usual items. There is a separate container for residual waste that can be used in the energy from waste (EfW) plant. Cans, glass and plastic bottles are collected co-mingled in response to site-user demand. Waste electrical and electronic equipment (WEEE), tyres and gas bottles are segregated in lockable cages. Reusable furniture goes into a container for a local re-use organisation. All of this helps maximise landfill diversion at the site.

The site can handle 25,000 tonnes of waste. Total throughput in 2010/11 was 9,104 tonnes, of which 66.88% was recycled, composted and recovered. Figures for the first three quarters of 2011/12 indicate that composting, recycling and recovery rates have all increased.

Waste arisings and diversion rates at Woodhouse Lane HWRC

<table>
<thead>
<tr>
<th></th>
<th>2010/11</th>
<th></th>
<th>1 April to 31 Dec 2011</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tonnes</td>
<td>Percentage of total arisings</td>
<td>Tonnes</td>
<td>Percentage of total arisings</td>
</tr>
<tr>
<td>Total site arisings</td>
<td>9,104</td>
<td></td>
<td>6,916</td>
<td></td>
</tr>
<tr>
<td>Composted waste</td>
<td>1,354</td>
<td>14.87%</td>
<td>1,173</td>
<td>16.96%</td>
</tr>
<tr>
<td>Recycled waste</td>
<td>2,923</td>
<td>32.11%</td>
<td>2,356</td>
<td>34.07%</td>
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<tr>
<td>Recovery</td>
<td>1,809</td>
<td>19.87%</td>
<td>1,463</td>
<td>21.15%</td>
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<tr>
<td>Total diversion</td>
<td>66.85%</td>
<td>72.18%</td>
<td></td>
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</tr>
</tbody>
</table>

Overview

GMWDA has rationalised its HWRC network by investing in sites that are fit for purpose and maximise segregation and landfill diversion. Sites that could not provide the safe, straightforward and modern service that users expect did not help GMWDA to meet its goal of zero waste and were deemed surplus to requirements. Four sites that fell into this category were closed in September 2011.

GMWDA has committed significant sums to redeveloping other sites to give a pleasant user experience and allow all residents to recycle more than 20 different material streams. The authority is also addressing ongoing problems with illegal commercial-waste deposits at many HWRCs, despite operating a disclaimer system.

GMWDA works with local community groups and has re-use containers at an increasing number of HWRCs. Its policy is to work with well-established charities and offer re-use credits, to minimise the risk that an organisation cannot meet the level of service required.
CASE STUDY 1: Greater Manchester Waste Disposal Authority: Investing in HWRCs to maximise diversion from landfill

Key learning points
- Communication is required to promote new sites and encourage the public to use them.
- Redeveloping sites can increase recycling and composting rates.
- Using tipping walls and subsequent loading into containers or lorries can minimise haulage costs.
- Improving access minimises congestion in and around the site.

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CASE STUDY 2: Suffolk County Council: Community- and contractor-managed sites

Introduction

Suffolk County Council (SCC) has made cuts of £42m since 2010. As part of its efforts to reduce the waste-management budget, SCC decided to close seven household waste and recycling centres (HWRCs) and start charging to receive commercial waste.

Suffolk’s HWRC network manages over 75,000 tonnes of waste and recycling per year, with recycling rates as high as 90% at some sites. The council knew that closing sites could harm the network’s performance, and trigger knock-on effects from general discontent to increased fly-tipping. Finding external partners was identified as one way to keep sites open. If sites are funded by an external partner and linked with partner businesses, it’s possible to develop financially self-sufficient facilities.

Facts and figures

- Suffolk is England’s eighth-largest county with a population of over 719,000.
- SCC manages waste from seven collection authorities and until April 2011 operated 18 HWRCs. In 2010/11, the council recycled 55% of its waste.
- The seven authorities plus SCC work together through the Suffolk Waste Partnership. Since 2005, the partnership has moved from recycling 40% of household waste to over 50%.
- In 2010/11, Suffolk’s HWRCs recycled and composted 74% of the waste they handled, excluding rubble.
- Budget restrictions saw six HWRCs close (after consultation), before reopening under contract to third parties. Some of the contractor-operated sites are free to use. Others levy part or full charges. A seventh site is still closed.
- Until these changes, contractor WRG managed the entire HWRC network through a seven-year contract worth £30 million.
- WRG continues to manage 11 council-owned sites.
- A strong community-led programme hopes to boost re-use at all sites.

Background

Three main factors determine how much an HWRC costs to run: ownership, staffing and the waste people bring in. The last of these is largely out of a council’s control, so Suffolk had to look for savings by selling sites or reducing staff costs. The cheapest thing to do was simply to shut sites. But the council predicted that would lead to a steep decline in how much waste would be collected in the areas affected, so an alternative was needed. Several community organisations and waste companies were interested in reopening closed sites under an alternative banner. The challenge for the council was to maintain or improve performance while reducing management costs.

Section 51 of the Environmental Protection Act 1990 (EPA 1990) obliges local authorities to provide household-waste sites within reasonable range of population centres. With seven sites closed, Suffolk went from one site per 40,000 residents to one per 65,000. Over 90% of Suffolk residents were still within a 20-minute drive of an HWRC, and 93% could reach either a community recycling centre or an HWRC in the same time as previously.

The public consultation into site closures showed that people would rather pay a small fee to use a site than see it close. However, the EPA 1990 states that householders should be able to deposit household waste free of charge. Suffolk took legal advice, and produced a strategy for overcoming these restrictions.

Six months after the site closures were announced, six of the seven sites have been taken on by third parties and operate with various charging systems as community recycling centres. These sites coexist with the remaining HWRC network of 11 sites operated by WRG.
CASE STUDY 2 : Suffolk County Council: Community- and contractor-managed sites

A contractor-managed site: Bury St Edmonds HWRC

- A large HWRC operated under contract by WRG.
- Charges for commercial waste only.

The Bury St Edmunds HWRC, one of the larger sites in Suffolk, is in a mixed commercial and industrial area on the edge of the town. Redeveloped in 2009, it's a well-organised facility, with a range of containers inside a wide road and parking area. Traffic is directed around the outside of the site.

WRG employs a team of six, with four on site during the week and six at the weekend. The team has been working at this site under various contract arrangements since before it was redeveloped.

This site is operated for SCC, so there is no charge for household waste. The facility takes commercial waste as well, at prices that are the same county-wide. Residual waste and recyclable materials both attract a charge, though the throughput of recyclable material is small and the majority of commercial waste goes to landfill – it's acknowledged that few traders will pay to dispose of materials that have a value such as scrap metals.

Two skips (out of more than 40 containers on site) are reserved for reusable items, and are emptied once a week by a third-sector organisation, Newmarket Open Door. The re-use area is not particularly prominent, but a staff member meets and greets site users at the gate and points them to the right skip or container for the material they have brought.

Bury St Edmunds HWRC is improving its recycling rate, achieving a rate of 86% (including rubble) in September 2011.

A community-managed site:
Newmarket Open Door Re-use and Recycling Centre

- Operated by Newmarket Open Door, a charity that provides supported and homelessness services in West Suffolk.
- Charges for non-recyclable and commercial waste.

When this site was initially closed in July 2011, it was achieving recycling rates of up to 70% (including rubble). Newmarket Open Door (NOD), a well-established charity which operates a nearby second-hand superstore and housing association, agreed to take it over and continue providing recycling services from August 2011. NOD has a minimum of two staff on site at weekends and one on weekdays. Extra staff from their other facility nearby can be called to help if necessary.

Some HWRC operations, such as collecting residual waste and managing recycling or composting streams, involve material that is difficult and costly to manage. At the start of this arrangement SCC agreed that NOD would target a reduced range of recyclables and would not collect residual waste. The site focuses on re-use, aiming to boost levels of re-use as much as possible. Sales of re-used items offset operating costs and local people can deposit reusable and recyclable materials for free.

As this is a community-led project which focuses on recycling and re-use, NOD can charge for accepting other waste. Once it had clarified the legal position, NOD decided to accept materials such as garden waste, wood and residual waste. The charity's charging system is based on the type and quantity of materials deposited – recyclables are free but residual and garden waste costs between £3 and £12, depending on vehicle size. Commercial recyclables are accepted, but commercial residual waste is not.
CASE STUDY 2 : Suffolk County Council: Community- and contractor-managed sites

A contractor-managed site: Bury St Edmonds HWRC Cont.

A staff member meets users at the entrance barrier, takes payment in cash if required and lifts the barrier. Cash is stored in a safe and removed at night. Accepting cash at the site does represent a security risk which could be avoided by using a different payment system. The scope for changing the payment system and other aspects of infrastructure depends on how financially self-sufficient the site becomes. Scope to improve layout is limited by the site’s compactness, but elements such as signage and access could still benefit from investment.

Overall, the site provides the same services as the old HWRC at a much lower cost to the council. SCC charges NOD a peppercorn rent, and Newmarket Town Council has given £15,000 towards running costs. Forest Heath District Council contributed £40,000 for a van and set-up costs at the recycling centre and a new charity store in Mildenhall. NOD gets the revenue from the material streams but is also responsible for the costs relating to the handling and disposal of residual waste.

Set in a densely populated urban environment, the site is well located for a community-led operation. There is a constant stream of users (first reports put numbers at between 25 and 40 per hour) and what public objections there have been were mostly from users taken aback at having to pay to deposit residual or garden waste. The nearest SCC provided free site is 11 miles away with a travel time of around 20 minute’s weekdays and this can double at weekends. Complaints are decreasing as more people get to know about the charges. It’s hard to judge the long-term prospects of the site at this early stage, but there’s local support for a continuing service in Newmarket.

Overview

Both of these operating models can successfully provide a service to residents, though each brings challenges. Solid relationships between third-sector providers and local authorities can result in high-quality services at reduced cost. On the other hand, authorities still need to be actively involved to support the new operators on aspects like training, safe operating procedures, monitoring and knowledge transfer. The different natures of organisations like WRG and Newmarket Open Door should not affect service delivery or general maintenance, but it will take time to find out how third-sector ventures manage to invest in HWRCs longer-term.

SCC discovered a wealth of support from the county’s community sector for taking on sites earmarked for closure. Five of the six reopened sites are operating as community-led projects. With regard to Section 51 of the EPA 1990, SCC view is that its service provision at the 11 WRG-managed HWRCs fulfils its obligations, Section 51. EPA does not apply to the six community-managed sites.
CASE STUDY 2: Suffolk County Council: Community- and contractor-managed sites

**Key learning points**

- The many synergies between HWRCs and third-sector stakeholders can be exploited to support or boost existing systems.
- Third-sector providers in particular are likely to have significant gaps in operating knowledge. A council developing this type of partnership should be willing to share experience and provide guidance on running an effective and safe HWRC.
- Recyclate prices fluctuate and keeping segregation policy under review will help to maximise revenue. Non-ferrous scrap is a key material.
- Customer service is an important success factor when changes are made to services. Effective communication minimises public discontent and side effects such as increased fly-tipping.
- The compromise of outsourcing the provision of HWRCs to avoid outright closure has widespread support in the areas affected, but further bedding-in time is required before these new services are operating at their full potential.

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CASE STUDY 3: Leeds City Council: Including a re-use shop in site redevelopment

Introduction
Leeds City Council (LCC) provides a re-use shop on its newly redeveloped East Leeds HWRC at Seacroft. The shop is run by Revive Leeds, a community-interest company (CIC).

Facts and figures
- Leeds has nine HWRCs for a population of 787,000 (337,000 households). Furniture is segregated on many of them, for subsequent sale by a furniture re-use organisation (FRO).
- A re-use shop was part of the redevelopment of the East Leeds HWRC in 2010/11. The shop is within the boundary of the site but outside the licensed area.
- LCC leases the shop to Revive Leeds, a CIC formed of three of the city’s FROs. As well as rent, there are clauses on operational issues including staffing, marketing, health and safety, information recording and meetings with council staff.
- Revive Leeds staff meet and greet users at the HWRC, to intercept reusable items as they arrive.

Background
The LCC area has nine HWRCs, most of them recently redeveloped. When the network was reviewed, East Leeds HWRC at Seacroft was identified as a priority, since its renovation allowed the closure and restoration of the HWRC at the former Gamblethorpe landfill nearby as per its planning permission.

The East Leeds HWRC closed in November 2010 for renovations including substantial groundworks to make the site fit for purpose as a waste and recycling centre. The fully redeveloped site, including a re-use shop, reopened in August 2011. It features a one-way system, with marked bays for users to reverse into, and like the other sites in the network it is open every day, from 8am to 6pm between April and October, and 8am to 4pm the rest of the year. There is a separate 15-space car park for the re-use shop, which closes 30 minutes before the HWRC.

The re-use shop is a 410m2 purpose-built warehouse-style building. LCC supplied it fitted out with a kitchen and disabled toilets, leaving the successful bidder to finish off the remaining space for shop, warehouse and workshop activities. This included installing partitions, electrics and lighting, and decorating. The re-use shop opened a week after the HWRC, so that stock could be built up before trading started.
CASE STUDY 3: Leeds City Council: Including a re-use shop in site redevelopment

The approach

LCC's options appraisal concluded that the shop should only be offered to the third sector. It would then achieve a range of social benefits in line with council aims and the Leeds Strategic Plan, as well as contributing to recycling and re-use targets. LCC's legal department advised the council to manage the re-use shop through a lease agreement rather than the contracting arrangements in place for other on-site re-use shops run by third-sector organisations. LCC then did a soft market test in June 2010, by inviting local third-sector organisations to discuss its requirements. This determined appropriate procurement terms and made sure that tendering would attract bidders. For example, the terms were extended from three years to five so that bidders could be assured of making a return on their investment. The council sent out a pre-qualification questionnaire (PQQ), followed by an invitation to submit lease offers. The successful applicant was agreed in June 2011.

Revive Leeds re-use shop entrance

The winning bidder was Revive Leeds CIC, a collaboration between three Leeds FROs: St Vincent de Paul (also known as St Jude's), Emmaus Leeds and South Leeds Alternative Trading Enterprise (SLATE). While the contract is for a lease, in reality the council is developing a partnership approach with Revive Leeds. The aim is for Revive Leeds to earn enough to cover rent, salaries and other costs, so that the re-use shop is cost-neutral to the council.

The lease arrangement is contracted out under the security of tenure provisions of the Landlord and Tenants Act 1954, so the tenant has no automatic right to a lease extension when the contract expires. This allows the council to maintain flexibility on what is an operational site, so that changes can be made to its future use. The lease is a ‘green lease’, in that it obliges tenants and owners to minimise environmental impact, reflecting the overall environmental objectives of the scheme.

One of the lease's requirements is for Revive Leeds to meet and greet site visitors, intercepting them before they get to the disposal area of the HWRC. Meet-and-greeters near the entrance gate can direct cars to the shop's donation area, which has its own parking.

Staff in the donation area sort, test and clean items, and then take them to the retail area or store them if the shop has no room or items are seasonal. There is a PAT-testing station for small electrical items and televisions, and a steam cleaner for textiles. The extra storage in the donation area allows staff to rotate stock that is not selling, which is important as the shop attracts many repeat customers.

Under the terms of the lease, Revive Leeds can dispose of 10 tonnes of waste per month free via a skip provided. Any waste above this is charged at the rate for commercial waste. The HWRC accepts recyclable materials from Revive Leeds for free. This gives the shop an incentive to find outlets for any items it cannot sell. For example, Revive Leeds can offer surplus items to its parent charities, and sell excess textiles and clothes to textile merchants.
CASE STUDY 3: Leeds City Council: Including a re-use shop in site redevelopment

The shop sells:

Bric-a-brac; dining-room furniture; lounge furniture; beds and mattresses; crockery; books; DVDs; CDs and records; videos; clothing; jewellery; small electrical items; and televisions.

Safety requirements mean that baby equipment and certain other items that require safety labels must have them intact, and that items like car seats and cycle helmets are not sold. As well as stock from donations and the HWRC, the shop sells seconds floor tiles by arrangement with a Yorkshire-based floor company. Although the shop does not have a tiered pricing system for customers receiving income-related benefits, items are reasonably priced. For example, a sofa will retail at £50, a dining-table and chairs costs £80, and clothing and other smaller goods are £1 per item.

The staff record postcode details for people who buy and donate items, which helps to target communication activities.

Overview

The shop is diverting around five tonnes of waste from landfill per month. In November 2011, this included 316 items of furniture. About 300–500 items of bric-a-brac are sold each week, for which the council is awaiting a decision on agreed weights – the number of items being sold means a significant tonnage of bric-a-brac, books and other small items may be being diverted. PAT-testing staff estimate that around 80% of the electrical items donated to the shop are working and saleable.

The shop needs to earn approximately £2,000 per week to break even, and the aim is to achieve around £3,000 per week. It has two full-time and two part-time staff. Volunteers and young people completing Community Payback help to unload, clean and warehouse the donations and move items into the retail area. Trained staff are responsible for PAT-testing the electrical items. In future, Revive Leeds aims to provide volunteering and training opportunities to disabled adults.

Initial feedback from Revive Leeds and the council suggests that the shop will be a great success. It has been well received by site users, who are quickly learning that they can donate directly to the shop. Some users are visiting the site to make re-use donations only, and not using the HWRC to dispose of other recycling or waste. Footfall is good, and a large number of people come to browse, often going on to purchase small items. Larger items such as sofas and beds sell quickly, and there is a strong market for baby items. Collectors of records and bric-a-brac, as well as antique and second-hand dealers, are also now regularly browsing. Minibuses from a local care home for the elderly have visited the shop as part of a day out for residents.
CASE STUDY 3: Leeds City Council: Including a re-use shop in site redevelopment

Key learning points

- When setting up a re-use shop as part of a site redevelopment, a phased handover on completion would be beneficial. The shop tenant should get access to the building as soon as possible to complete fitting-out and initial stocking. This will also allow the re-use shop and the HWRC to open together.

- Conducting a soft market test is an important opportunity to gauge whether the council's requirements are appropriate, and to obtain feedback from the third sector. It also publicises the council's intentions, giving organisations time to decide whether to bid.

- The third sector has great expertise in second-hand retail, but councils need to provide support and work in partnership to ensure the facility succeeds.

- A good working relationship between the tenant and the HWRC staff is essential. Staff have a key role in intercepting reusable items by encouraging the public to drop them off at the shop or put them in the re-use container.

- Site staff should be trained so that they clearly understand their role and relationship with the tenant.

- Easy-to-use recording and stock-control systems are needed to provide monitoring and evaluation data.

- The tonnage diverted from landfill is unlikely to be large in proportion to site throughput, but on-site re-use is very popular with site users. There is evidence in the National Assessment of Civic Amenity Sites (NACAS) report and more recent data to suggest that a well-run re-use system promotes recycling awareness and can change public behaviour.

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CASE STUDY 4: Cambridgeshire County Council: Integrating a new HWRC into the local community network efficiency

Introduction

Nine HRWCs are run under a PFI contract with AmeyCespa on behalf of the county council. In November 2011, a new £5m facility at Witchford in East Cambridgeshire was opened. This case study looks at the innovative design approach and the vision of making a visit to the local recycling centre ‘an experience’.

Facts and figures

- The Witchford HWRC facility has a design capacity of 12,500 tonnes and will service up to 31,500 homes by 2026. At maximum capacity, this equates to 0.25 tonnes per household per year.
- The Cambridgeshire household-waste and recycling strategy aims to develop infrastructure around the proximity principle. This site serves the main population area of East Cambridgeshire District Council, including Ely city and the surrounding villages.
- The strategy shows that about 90% of the county's population live within a nominal 15 minutes' drive of an HWRC.
- Witchford is a state-of-the-art recycling centre. It is designed to have a low visual impact and to be easy to use thanks to its enclosed, split-level format.

Background

The new facility is about half a mile east of Witchford and replaces an old site at Grunty Fen two miles away. It is nearer to Ely than Grunty Fen, and can be accessed without driving through Witchford village itself.

The 2006 Cambridgeshire waste strategy identified limitations to improving Grunty Fen. Its licence was linked to the attached landfill, so its long-term future was not guaranteed. The proximity of the landfill was an obstacle to expansion, and run-off from the landfill caused flooding in the winter.

After a review that recommended closing Grunty Fen, consultants were brought in to put together a business case for a high-quality design which would meet the stringent planning requirements for building in the target area, which is a gateway to the village of Witchford. The business case was accepted and financing for a new site nearby was built into the council's budget.

Grunty Fen HWRC had access issues which often caused queues back on to a small B-road in both directions and led to road-safety management issues. The problem was compounded by the fact that when skips were changed the site had to be closed for space and safety reasons. There could be up to two hours of down-time over the course of a busy day.

Grunty Fen was an open-air site designed around gantry access to the bins. Other sites in the county had been redeveloped around a split-level format, and feedback indicated that the public liked this design and found it easy to use. Some residents were travelling to split-level sites even if they had a gantry-step site closer to home. The user-friendliness of split-level sites meant they offered better access to a larger proportion of residents, including older people who were put off using sites where they had to climb steps with bulky items.

The design consultation process

As part of the gateway to a residential area, the site's design specification needed to be high. There was an extensive design consultation process with local residents, which helped to get their buy-in. The vision was for an HWRC that would have a low visual and environmental impact and that residents would have pride in. It was to be more than just a tip – a high-end facility for recycling in the county and a centre for re-use. The county council formed a site- liaison group including members of the public at the start of the design process, which served as an open channel for information and feedback. It also held two public consultation meetings including displays of the plans at the village hall and village school.
CASE STUDY 4: Cambridgeshire County Council: Integrating a new HWRC into the local community network efficiency

Following the consultation the following features were built into the design:

- Exterior wood cladding of the building from sustainable sources. The cladding has been through intensive heat treatment that changes its chemical structure to be naturally weatherproof for 30 years without the need for chemical coatings;
- A visually low-impact wave-shaped roof further enhanced by a ‘living green roof’ with 13 species of sedum plants. The planted area covers 2,600m² and has the added benefit of dampening noise;
- Extensive landscaping to further enhance biodiversity and reduce the visual impact of the facility from the road out of the village;
- Wooden acoustic boundary fencing on the side adjoining neighbouring businesses and the village, which mitigates visual impact from the west;
- An attenuation pond to receive all external drainage; and
- A tank to capture internal drainage that could be contaminated by waste; this is tested and disposed of appropriately.

The site was reduced in length by 30m after a downward revision of the estimated tonnage it would need to handle. However, planning permission was obtained on the basis of a phased build, so the size of the building can be increased if needs are greater than currently expected.

The new facility

Witchford has been designed to fit in with the local area. The county council wanted a site that residents would be proud of and use more frequently than the old facility, increasing the amount they re-use and recycle. The facility incorporates numerous improvements over Grunty Fen, and has been designed to be adaptable in the future too.

The public drives around a U-shaped site. The unloading area on both sides and the service area in the middle are covered. One side has ground-level bins similar to those at a bring bank. The other contains the loading area for bulk recycling, with bulk bins on a raised level to facilitate disposal.

The unloading areas at Witchford HWRC
CASE STUDY 4: Cambridgeshire County Council: Integrating a new HWRC into the local community network efficiency

- Covered areas protect residents from the elements as they deposit their waste, which means users will visit in all weathers and thus effectively increases the time that the site is usable during opening hours.
- Management operations such as skip changeovers are carried out in the middle of the site, away from users. The site stays open while bins are changed, avoiding the down-time suffered at Grunty Fen.
- The split-level design means that there is no need to climb steps to access any of the skips.
- One of the first questions asked at the public consultation meetings was whether the ‘helpful and polite’ staff from Grunty Fen would move to the new facility. They have done, and their excellent relationship with site users has eased the transition to the new site.
- The new, larger site means that a bigger range of materials is targeted for re-use and recycling, including: garden waste; metals; WEEE; wood; fluorescent light bulbs and tubes; batteries; cooking oil; engine oil; paint, at a Community RePaint collection and distribution point; plasterboard; paper and card; plastic bottles; metal cans; and glass bottles and jars.
- The site also segregates residual waste into two streams: black-bag and bulky waste. Recyclable materials in the black-bag waste are sorted, with organic material sent to the facility’s composting hall and the residual waste going to the local mechanical biological treatment (MBT) facility. Bulky waste still goes straight to landfill.
- Measures to minimise the running costs include sun pipes to reduce the need for artificial lighting and heat-pump technology in the office and re-use areas.
- There is currently a temporary set-up for re-use on site, consisting of two shipping containers. Witchford also has a built-in shop-front unit for future re-use activities. AmeyCespa and the county council are considering their options for maximising the potential of this unit.

- The site is a pleasant working environment as staff are protected from the elements, with good light levels from natural and artificial sources. There are two open sides (one slatted), so the site does not smell. The design allows straightforward and efficient servicing, as the centre of the site is a restricted area. Its spaciousness means the site can remain open as skips and other containers are changed.

**Contractual aspects**

The site is managed by AmeyCespa under a PFI contract. AmeyCespa subcontracts two companies to manage the network of nine HWRC sites. AmeyCespa is responsible for maintenance, but the design and build costs came through the local-government budget setting process, following the presentation of a business case.

The contract includes bonuses related to key performance indicators for the operation and recycling rates at the nine HWRCs. Targets are based on the combined performance of all sites. The management of Witchford is subcontracted to Fenland Recycling, whose contract with AmeyCespa reflects the bonus structure of the main contract.
CASE STUDY 4: Cambridgeshire County Council: Integrating a new HWRC into the local community network efficiency

Key learning points
- The relatively high build costs were linked to local planning and strategic targets. There was a limited choice of sites, and the chosen site was close to a residential area. High design specifications were needed to minimise visual impact.
- Setting up a site-liaison group for residents ensured that they were consulted and involved in the design of their local facility. This resulted in a functional design that local people feel pride and a sense of ownership in.
- Open communications with the local community through the site-liaison group were key to getting the plans agreed. Information was sent out regularly, displays and posters were put up, and articles were run in the parish magazine and local newspaper.
- Staff who are well educated on the rationale for recycling and trained in customer service help to counteract an instinctive resistance to change and are key to the success of bedding in a new site. The experienced site staff showed people how to use the new site and could explain the reasons for the changes.
- The site-liaison group formed during the design and construction of the facility will continue to meet so that the views of the local community continue to be considered in the day-to-day operation of the site.

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CASE STUDY 5: South London Waste Partnership: Maximising diversion from landfill through a combined HWRC partnership network efficiency

Introduction

The London boroughs of Kingston, Merton, Sutton and Croydon recognised that they could find better and more cost-effective solutions by working together on waste management. By pooling finances, resources and expertise, the four boroughs could save money and deliver a more efficient service. The South London Waste Partnership (SLWP) was formed in 2003.

The four boroughs work together in a spirit of genuine partnership, sharing a commitment to common objectives. The 'glue' that holds the partnership together is a legally binding document called the Inter Authority Agreement. It defines the role of each borough and ensures that all of them gain equal benefit from being involved.

The partnership aims to manage waste in ways:
- that are more sustainable and cause less damage to the environment; and
- that are more cost-effective, for the benefit of council-tax payers.

The most effective way of achieving these aims is to stop waste going to landfill sites and do something more innovative and environmentally sound with it instead. The current focus of the SLWP is to run education and awareness campaigns, and to put in place contracts that ensure as little waste as possible is sent to landfill.

Facts and figures

- The four boroughs that make up the partnership have a combined network of six HWRCs managed under a single contract by Environmental Waste Controls (EWC) since September 2008.
- The overall partnership recycling rate across all HWRCs averaged 75% for February 2010 to January 2011, up from 50% in 2007/08, the final year of the old contract.

Background

The partnership decided to put the management of the network of HWRCs out to tender, in order to:
- harness the economies of scale of a joint procurement process;
- introduce a uniform service across the network;
- improve the recycling performance at the sites; and
- reduce the amount of waste going to landfill.

In 2008, EWC was awarded the contract for 14 years, with a seven-year break clause and the possibility to extend for another five years. The sites are leased to EWC under a repair lease. After a service-delivery review, Merton decided to close its Weir Road site in April 2011 as part of a £26m cost-reduction programme. Weir Road only accepted dry recycling and the operating cost per tonne was far higher than at Merton’s other site at Garth Road. To mitigate the impact of closing Weir Road the council introduced free kerbside bulky-waste collection. Residents can dispose of up to five items every three months, and the council is working with EWC to trial the segregation of bulky items for re-use at the Garth Road site.

Performance since the start of the contract

The partnership set stretched yearly targets for recycling performance at each of the HWRCs through the contract. They also put in place a service-failure mechanism that effectively caps liabilities for waste being sent to landfill. By the end of the first year, every site had exceeded the stretch targets put in place for the first four years of the contract.
CASE STUDY 5: South London Waste Partnership: Maximising diversion from landfill through a combined HWRC partnership network efficiency

Performance targets against actual performance

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<tr>
<th>Facility</th>
<th>Pre-contract actual</th>
<th>Year 1 target</th>
<th>Year 1 actual</th>
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</table>

The Weir Road site only accepted recyclable waste, and was closed in April 2011.

EWC get a fixed management fee for each site, with variable costs for:
- haulage of residual and green waste; and
- bonus payments related to the contractually agreed targets. The contract caps the bonus payments that can be paid out in any 12-month period.

Factors contributing to improved performance

Material-diversion targets

The recycling targets set for each site excluded rubble and hardcore, and took into account factors including performance to date, materials collected previously, potential to expand the number of materials diverted and staffing provision. Even though the targets were seen as challenging, EWC exceeded them on all sites from the start. The contract not only caps bonuses but also stipulates that they are renegotiated in year five.

The site staff, referred to as recycling advisors, get bonuses linked to recycling performance and reducing waste to landfill. The bonus is site-specific, and is based on a combination of recycling rate and commodity sales.

The contract also sets out a minimum list of materials that will be targeted for diversion at each site. EWC have delivered against this list and exceeded it through legal compliance, as a result of changes to regulations on sending plasterboard to landfill, as well as through identification of markets for additional materials such as dense plastics.

Contract management

The HWRC contract stipulated monthly meetings between officers from the four boroughs and EWC. This management group was quick to see the link between this communication channel and improvement, so they changed the frequency to fortnightly. The meetings cover all aspects of the running of the sites. Regular items on the agenda are health and safety records, diversion rates and operational issues. There is also a rolling agenda item looking at detailed diversion performance for specific materials and sites so that lessons learned can be rolled out more widely.
CASE STUDY 5: South London Waste Partnership: Maximising diversion from landfill through a combined HWRC partnership network efficiency

The contract requires EWC to report on the diversion of specific materials. This has led to EWC developing an online database that records the nature and tonnage of material lifted from each site each day. The database is accessible to key personnel from the boroughs and EWC. The information is entered by EWC, giving a real-time snapshot of performance. This resource is used extensively in the fortnightly meetings to monitor performance, including on health and safety issues.

The database also includes information about the disposal route for different materials, including details of the receiving company’s licences, in order to provide a full audit trail. Officers report that it has been invaluable in providing transparency on the performance of the sites, as well as enabling effective dialogue with EWC and joint working on improvements. Officers and EWC are continually adding new modules to the database to streamline the data gathering process and get more insights. Health and safety incident and accident information is already held on the database for ease of access and the next development is for the database to link to the boroughs’ WasteDataFlow returns directly.

Operational factors

Through the partnership contract there is now consistency of service provision across the network. The combined contract has also resulted in improved health and safety management as a result of learning from good practice and effective communication at the fortnightly management meetings.

EWC introduced meet-and-greet recycling advisors to all sites at the start of the contract. These staff are key to ensuring that visitors understand how to use the site and they play an important educational role in demonstrating and explaining why recycling is important. The recycling advisors also sort black sacks of residual waste to reclaim any recyclable material. This helps the sites to achieve their targets and trigger the linked bonus payments. Anecdotal feedback from SLWP officers is that the public are more engaged with recycling at the HWRCs, and feedback on the staff is generally very positive.

Improvements to infrastructure

The improvements to performance have been achieved without any major redevelopment at the sites. However, changes to infrastructure made by EWC include:

- introducing compaction of key high-density materials (wood, residual and garden waste);
- recycling advisors;
- introducing more materials for diversion; and
- updating the access gantry and signage.

Under the new contract it was agreed that EWC would update the signage on all of the sites. The new signage was based on the WRAP Recycle Now iconography and follows good practice on size and position, providing clear instructions for site users. Officers and EWC staff report that updating the signage has been invaluable in providing transparency on the performance of the sites. The new signage makes the sites easier and more rewarding to use. Each site has a sign at the exit showing its recycling performance. This simple measure is seen as important in communicating to users that their efforts are adding up to real benefits.

The contract requires EWC to report on user numbers. EWC has installed automatic number-plate recognition (ANPR) at all of the sites, which provides details on frequent users, enabling council officers to target suspected commercial-waste abusers. There is no partnership policy on tackling commercial-waste abusers: the appropriate response is left to the individual boroughs. In future, the data from the ANPR system will be used to review site catchment, as well as user footfall on a daily and seasonal basis, to see if changes...
CASE STUDY 5: South London Waste Partnership: Maximising diversion from landfill through a combined HWRC partnership network efficiency

to opening hours or staff provision would be beneficial.

EWC introduced compaction on several high-tonnage waste streams on all of the sites in order to improve their haulage efficiency. The timber bins were fitted with Gigant roller compaction arms, doubling their tonnage capacity, and static compaction units were fitted to all residual- and garden-waste bins.

Key learning points

- Reducing the amount of residual waste sent to landfill between 2007/08 and 2009/10 has saved the partnership £876,000 on landfill tax costs, based on the 2009 rate of £40 per tonne.
- The combined contract has led to a consistent service across the partnership.
- Regular HWRC management meetings are a vital aspect of ensuring consistent performance across the network.
- Online real-time data collation presents an up-to-date picture of site activity that can be used to maintain and improve performance.
- Contractual recycling targets and associated bonus payments are key factors in enabling change.

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CASE STUDY 5: South London Waste Partnership: Maximising diversion from landfill through a combined HWRC partnership network efficiency
CASE STUDY 6: Durham and Norfolk County Councils: Introduction of mattress recycling at HWRCs

Introduction

The segregation of mattresses at Household Waste Recycling Centres (HWRCs) for onward re-use, recycling or recovery is challenged by numerous operational, financial and contractual factors. This case study provides examples of how Durham County Council (DCC) and Norfolk County Council (NCC) are diverting mattresses from landfill in two very different ways, which meet their individual objectives and circumstances. DCC is diverting mattresses from landfill by stripping them into their metal and fabric components at all 12 of its HWRCs; and NCC is sending mattresses from four of its HWRCs to a reprocessor called Salhouse Recyclers.

Facts and Figures

Durham

- DCC has a network of 12 HWRCs which are operated by their contractor, HW Martin.
- It is estimated that approximately 670 tonnes of mattresses are collected at these sites each year.

Norfolk

- NCC has 20 HWRCs, four of which are now collecting mattresses for recycling.
- An analysis of mattress waste quantities was last carried out between April and May 2012, when 2,740 mattresses were accepted across all 20 of the HWRCs.
- This equates to between 68 - 125 tonnes per month on average (depending on the weight of each mattress); resulting in approximately 820 - 1,500 tonnes per annum or 33,000 mattresses.
- On average, 27 tonnes per month have been collected for recycling since roll-out to all four HWRCs in November 2015.

Figure 1: HWRCs in Norfolk, and location of mattress reprocessor
CASE STUDY 6: Durham and Norfolk County Councils: Introduction of mattress recycling at HWRCs

Background

Durham
HW Martin is incentivised to increase recycling, both through the terms of the contract and a financial mechanism. However, there is no space for additional skips at any of the 12 HRWC sites for mattress segregation, so there has been a need to find a suitable solution which delivers increased recycling without requiring additional space.

Norfolk
NCC has regularly reviewed the potential of sending mattresses for recycling. Previously, reviews have identified that the overall cost would prevent the scheme from proceeding i.e. the overall cost being made up of the gate fee per mattress, delivery charge, and the contractual bonuses they were liable to pay to the contractor at the time. However, the change from external contractor management to the in-house (i.e. authority) management of the HWRCs, as well as the rise in landfill tax, presented a new opportunity to investigate mattress recycling.

Introducing increased mattress recycling

Durham
In Durham, HW Martin is currently selecting mattresses for stripping based on the quality i.e. if they are soiled or too wet then they are not stripped. No additional operatives have been employed to strip the mattresses; they are managed within the current staffing levels of each of the HWRCs. The operatives split the metals from the fabric and foam. This is predominantly a manual process, although some sites utilise 360˚ grab machines. The metal is added into the general scrap metals skips and is sent for recycling. The fabric and foam goes into a skip with carpets, and this material is taken by HW Martin to a reprocessor who produces a refuse derived fuel (RDF).

Another solution has also been investigated, to explore whether the mixed carpets/fabric/foam could be sent to a reprocessor for recycling, rather than for recovery as RDF. The nearest reprocessor is based in Grantham and can guarantee a 55% recycling rate. However, this option was discounted on economic grounds as a result of assumed additional transport costs.

Norfolk
In August 2014, NCC started sending mattresses from four of their HWRCs to a reprocessor called Salhouse Recyclers, based in Norwich (see Figure 1 for location of all HWRCs and the reprocessor). These four sites were selected because of their capacity to have an additional container on site and because of their proximity to the reprocessor, ensuring that transport costs are not prohibitive.

Salhouse Recyclers charge a gate fee for processing on a per mattress basis, depending on size. They collect directly from each of the four HWRCs once the site reports that a container is full. Collection is charged on a per load basis, depending on the distance from the facility and also depending on whether Salhouse Recyclers can utilise any existing routes for backhauling opportunities to make it cheaper. It ranges between £15-30 per load.
CASE STUDY 6: Durham and Norfolk County Councils: Introduction of mattress recycling at HWRCs

Overview

**Durham**

As the mattresses that are handled by DCC are split on site into separate skips along with other metals and textiles (e.g. carpets), no records are kept as to the quantity of waste mattresses that are recycled or recovered. However, this solution has enabled greater diversion from landfill, meeting both the contractor and the authority's objectives, despite there being no space to collect separately at their HWRCs, and solving the problem of the expense of transporting a bulky waste stream to a reprocessor.

**Norfolk**

On average, 27 tonnes of mattresses a month have been collected from NCC by Salhouse Recyclers, who aim to recycle both the metal and the fabrics. However, market fluctuations do mean that fabric sometimes goes to produce an RDF, meaning that NCC reports this element as being recovered rather than recycled. Despite this change in markets, the collection of mattresses fits with NCC's main driver, which is to divert from landfill and drive materials up the waste hierarchy. This solution is currently cost neutral for the authority, in comparison to sending the mattresses to landfill or EfW. They are considering introducing additional containers for mattresses at other HWRCs for reprocessing by Salhouse. It is considered that it may be a more expensive option than landfill or EfW for some sites, but overall it is likely to be a cost neutral solution.

Key Learning Points

- A regularly changing market, and changes to service delivery, mean that regular review is advised as new opportunities to recycle and recover mattresses may arise.
- Transport is often a limiting factor, but there are ways of making it more affordable, such as on-site stripping, or back hauling.
- On-site stripping of mattresses offers a method of recovering material without requiring additional space for skips, where skips are already available for metals and fabrics and can be utilised.
- Segregation of mattresses from the residual waste stream may provide additional benefits other than cost savings e.g. not ideal materials for EfW facilities.
- Success of the solution, including the outlet (e.g. recycling, recovery etc.), is most likely if it meets with the objectives of the both authority and the contractor.

A document has been produced which enables local authorities to work through logically to ascertain whether it is feasible for them to separate mattresses for recycling.
CASE STUDY 7: Warwickshire County Council: Introduction of carpet recycling at HWRCs

Introduction
Warwickshire County Council (WCC) has been segregating carpets for recycling at some of its Household Waste Recycling Centres (HWRCs) since 2012 when trials began with their current contractor, Roade Fibres. The scheme has since been extended to six of the nine sites under WCC's jurisdiction, through an exercise to prioritise waste streams collected for recycling at HWRCs. WCC delivers the segregated carpets to Roade Fibres, and together the costs of transport and the gate fee, are cheaper than sending the waste carpets to landfill.

Facts & Figures
- WCC has nine HWRCs, six of which are segregating carpets for recycling.
- The council operates all but one of the nine HWRCs, which FCC Environment operates and FCC has worked cooperatively with WCC to introduce collections.
- It is estimated that approximately 2,800 tonnes of carpet waste arises per annum at these nine sites.
- 1,300 tonnes of carpet waste was collected for recycling in 2014/15, which means roughly 46% of carpet waste expected to be generated is being captured.

Background
Prior to segregation at HWRCs, carpet waste was collected with the rest of the residual waste stream at all of the sites. Residual waste was becoming increasingly more expensive to send to landfill, in part due to landfill tax. Carpet was identified as a material which offered potential as an additional waste stream to divert from residual waste, in part due to the relatively close proximity of the contractor, Roade Fibres, which is based in Northampton.

Introducing carpet recycling
WCC started by separately collecting carpet waste, by providing 40 cubic yard roll-on, roll-off (RO-RO) containers at four of their HWRCs in 2012:
- Hunters Lane, Rugby;
- Burton Farm, Stratford-upon-Avon;
- Princess Drive, Lemington Spa; and
- Lower House Farm, Atherstone.

Space restrictions at the other five HWRCs meant that additional containers were not able to be accommodated. FCC Environment was very supportive and has facilitated the placement of an additional skip at the site they operate through a reorganisation process. Since the initial trials, some reprioritisation of waste...
CASE STUDY 7: Warwickshire County Council: Introduction of carpet recycling at HWRCs

Streams has meant that containers for plasterboard (trade waste) have been replaced with containers for carpet waste at two additional sites:
- Shipston, Shipston-on-Stour, and
- Cherry Orchard, Kenilworth.

The carpet waste containers at the two additional HWRCs are not currently covered, allowing exposure to wet weather. This is not a concern for the carpet recycler Roade Fibres, as they can accept carpet in a wet or dry condition. However, other contamination in the carpet collection containers has been a problem. Non-carpet waste has been placed in the containers at the HWRC sites despite clear signage (see Figure 1). The contractor has to remove this contamination manually before the carpet can be processed. The HWRC operators hope that continued communication with members of the public who are disposing of the waste inappropriately at the sites will reduce the levels of contamination in the carpet waste containers. If contamination cannot be reduced the gate fee paid to Roade Fibres may increase, meaning that it may no longer be economically viable to continue recycling carpets.

WCC arranges their own transport for the carpets to be delivered to Roade Fibres. The council operates three of their own vehicles but can also call on a third party contractor if required.

Residents within the county have been made aware that six HWRCs now offer carpet segregation for recycling. This has been communicated through a variety of media, including a leaflet, the website, council press bulletin, tweeting and other social media.

Overview

Sending carpet waste for recycling offers WCC a saving of at least £20 per tonne compared to landfill disposal. Transportation costs are roughly comparable, with it being marginally more expensive to transport to landfill. Therefore there is an overall saving for WCC to send carpet waste for recycling over landfill. However, contamination is a significant problem and perhaps highlights the important role HWRC staff play in ensuring the waste is correctly deposited by residents in the right skips, as clear signage at the site has not been sufficient to minimise contamination. Any potential resultant increase in the gate fee charged by the contractor to account for the additional contamination level found in the skips will impact on the economics of collections by WCC. The authority needs to show an overall saving as a result of recycling carpets, or for it to be cost neutral, against the cost of sending to landfill to be able to continue with the scheme.

Despite the contamination issue, over 1,300 tonnes of carpet waste was captured for recycling from the six participating HWRCs in 2014/15, and over 3,000 tonnes of carpet waste has been diverted from landfill since trials began in 2012. The reuse, recycling and composting rate across all nine sites was 65% for 2014/15, but the average rate across the six sites which collect carpets increased to 69%.

Key Learning Points

- Proximity to a reprocessor is likely to mean that the overall cost of recycling, including transport, is comparable, or cheaper, than sending carpets to landfill.
- Finding the space at HWRCs for carpet segregation is not always possible, especially as other waste materials start to be segregated for recycling. Prioritisation of waste for segregation is required in these cases.
- Collecting carpet waste for recycling has the potential to increase the overall performance of a site.
- Clear communication and signage is required at the HWRCs to ensure as much carpet waste as possible is diverted and to reduce contamination levels. However, staff play an important role in increasing capture and reducing contamination.

A document has been produced which enables local authorities to work through logically to ascertain whether carpet segregation at HWRCs is feasible for them.
For further information about support available to local authorities visit www.wrap.org.uk/local_authorities

or contact
lasupport@wrap.org.uk

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Contents