



Waste topic paper 5:

Commercial and industrial waste survey: summary



Somerset County Council

Minerals and Waste Development Framework

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Introduction

To develop a better understanding of local business waste generation and management, Somerset County Council carried out a review of the waste produced by commerce and industry in Somerset.

The industrial sector includes all manufacturing, fuel production, electricity, gas and water. The commercial sector includes wholesale and retail, hotels, restaurants, transport, financial services, public administration, health care and education.

The data gathered informs the provision of waste management capacity in the county. In particular the data will help Somerset County Council, the county's Waste Planning Authority, to develop policies to stimulate and manage the provision of appropriate facilities where they are needed.

The data also highlights how much business waste is produced across the county that is similar in nature to household waste. Waste types common to both sources include food, metals, wood, plastic, card and paper. This information is useful because it should be possible for wastes of the same type to be managed via the same facilities. By adopting this approach, in principle economies of scale may be found in the provision of facilities that could benefit individuals and businesses alike. In practice, combining household waste and business waste management presents certain technical, legal and logistical challenges; however, this study focuses on data collection rather than analysis of those challenges.

Somerset County Council undertook this survey in late 2006 and early 2007. Since then the UK has entered a recession and this will have impacted on the amount of waste produced. (One of the aims of the Waste Strategy for England 2007 is to break the link between economic growth and waste growth; however, this has yet to be shown to have been successfully achieved.) Consequently the amount and potentially the composition of waste produced by businesses across Somerset will have changed since the study was undertaken. Nonetheless the study provides useful baseline data, which the county can update in the future, supported by other studies delivered on a regional or national level.

Data collection

Delivering an effective commercial and industrial waste survey is a big task. The small number of such surveys undertaken at national, regional or local levels reflects the size of the challenge. The methodology used by the Environment Agency (EA) in its survey work, which is publically available, shows how resource-intensive a meaningful waste survey can be.

For its survey, Somerset County Council gathered data in two main ways.

It undertook face-to-face interviews with larger businesses in Somerset, having drawn up a list of 200 companies in Somerset that employ more than 100 people. At least one company from each business category was interviewed to ensure a good distribution of data. The UK Standard Industrial Classification (SIC) coding system was used to identify different business categories. More information on SIC coding is available in the main report or via the Office for National Statistics.

In addition it sent a postal questionnaire to approximately 2000 small and medium-sized enterprises (SMEs) in Somerset. Companies employing between 3 and 99 staff account for over half of the 22,000 companies in Somerset. Somerset County Council used the following channels to identify 2000 such companies:

- 250 distributed by Mendip Chamber of Commerce
- 500 distributed by Somerset Chamber of Commerce
- 265 distributed to companies that had previously contacted Somerset County Council's Economic Development team
- 985 randomly selected by a marketing company database from all company types, based on employee number only

Waste produced by the agricultural, quarrying and construction industries were excluded from the Somerset survey. (To reiterate, the focus of Somerset County Council's research was waste similar in nature to household waste.) Sewage was also excluded since data on sewage are maintained by relevant water companies. And the waste industry was not surveyed to avoid the possibility of double-counting.

When developing its approach, Somerset County Council took into account the approach taken by the EA in its research on commercial and industrial waste, in particular a study conducted in 2002/03.

Data processing

Somerset County Council gathered data from 537 companies, of which 232 provided complete quantitative data with waste figures in tonnes.

Some respondents were unsure of the amount of waste they produced but were able to provide some information on what happens to their waste. In such cases, data were managed in a semi-quantitative way, recording that companies who stated they recycled some waste, or gave a figure of greater than zero tonnes of waste recycled, were counted as recycling something.

In addition to the actual estimates collated via the survey, Somerset County Council also undertook a series of 'grossing up' calculations to account for the companies not included in the survey returns.

The 'grossing up' calculations were informed by the work done by the EA in its 2002/2003 commercial and industrial waste survey. The calculations took account of the size of the company, divided into employee bands:

- Band 0: 1-2 employees
- Band 1: 3-9 employees
- Band 2: 10-24 employees
- Band 3: 25-99 employees
- Band 4: 100-249 employees
- Band 5: 250-499 employees
- Band 6: 500+ employees

Using the data gathered, Somerset County Council calculated the waste generated by 19,380 companies employing 190,875 people, which represents the majority of companies in Somerset.

How much waste is produced

Somerset County Council calculated that approximately 425,000 tonnes of household-equivalent commercial and industrial waste were produced in Somerset in 2006. This total is calculated by combining Somerset County Council waste survey data with 'grossed-up' data from the Environment Agency. (When performing this calculation using EA data alone, the total figure for household-equivalent commercial and industrial waste is 404,000 tonnes.)

The table below shows the 'grossed-up' tonnages for the county in more detail, informed by Somerset County Council's survey. Industry generated about 41% of the total and commerce 59%. Mixed waste accounted for over 200,000 tonnes.

Estimated household-equivalent industrial and commercial waste produced in Somerset in 2006 (tonnes)

Waste type	Industry	Commerce	Total
Mixed waste	54,254	148,046	202,300
Metal waste	25,935	5957	31,892
Non-metallic waste	46,455	78,404	124,859
Animal and vegetal waste	46,600	18,131	64,731
Total	173,244	250,538	423,782

Results from Somerset County Council's survey were also broken down in percentage terms, as shown below. The analysis of Somerset's results was extended to cover the different material streams for the 'non-metallic' waste type, which includes paper and card, plastics, wood, glass and textiles.

Estimated household-equivalent industrial and commercial waste production in Somerset in 2006

	Industry (%)	Commerce (%)
Mixed	31	59
Paper and card	23	31
Plastics	3	4
Wood, glass and textiles	4	2
Animal and vegetal	28	2
Metal	7	5

The overall total for commercial and industrial wastes generated in Somerset in 2006 was estimated to be 525,000 tonnes. This includes approximately 100,000 tonnes of commercial and industrial waste that differ in nature from household waste, calculated using EA data. This figure does not include construction and demolition waste, which tends to be analysed and, indeed, managed separately from commercial and industrial waste.

To compare this overall total against earlier studies, the Regional Waste Strategy for the South West 2004 – 2020 indicates that Somerset should provide a total capacity for commercial and industrial waste by 2010 of 620 – 690,000 tonnes.

Identifying where waste management capacity is needed

In addition to providing headline figures on the total amount of waste produced, Somerset County Council's study was designed to help Somerset County Council make decisions about where waste should be managed, for instance to minimise the distance it travels and maximise the opportunities to increase reuse, recycling and energy recovery.

It was therefore considered important not only to gather data on the countywide picture, but also to consider the spatial distribution of waste 'arising'. Thus, when processing the data, Somerset County Council split the county into three zones.

- Zone 1: Taunton Deane, Sedgemoor, West Somerset and Chard and Ilminster.
- Zone 2: Mendip
- Zone 3: South Somerset less Chard and Ilminster.

These zones are shown on the map below.

The three zones used for analysis of waste production in Somerset



This zoning approach was used to acknowledge:

- a) there may be significant differences in the types and quantities of waste being generated in different parts of the County; and
- b) the impact of the existing transport network on how wastes are managed. In particular the freight network was considered to be significant; for example, waste from Chard may be more likely to be sent towards Taunton than Yeovil using the identified freight routes. And the M5 corridor develops a strong link between Taunton, Bridgwater and Bristol.

Taking this approach, the survey indicated that the three zones show some strong similarities in the type and quantity of wastes produced. For instance, the proportion of mixed waste produced is similar in all zones, ranging from 46 – 49%. Similarly the proportion of non-metallic waste is comparable, ranging from 26% to 31%.

Nonetheless, some variations between zones were identified. For instance, in zone 2 24% of the household-equivalent commercial and industrial waste was animal and vegetal waste (the latter meaning it is composed of vegetation or plants), compared with 16% in zone 1 and 11% in zone 3.



Animal and vegetal wastes were shown to be proportionally highest in Mendip (Zone 2)

One reason for this could be that the proportion of food and drink industries is slightly higher in Mendip compared with the other two zones

In contrast, metallic waste was shown to be significantly higher in zone 3 at 15% compared with 4% and 5% in the other two zones. Zone 3 (South Somerset less Chard and Ilminster) employs proportionally more people in industry at 22% compared with 13% and 12 % in zones 1 and 2 respectively. Consequently it's not surprising that zone 3 generates more metallic waste than the other zones.

A more detailed analysis of the survey data is included in the full report.

How is this waste being managed?

According to the Environment Agency research from 2002/03, the following business sectors were tending to landfill more than half of their waste:

- Hotels, catering
- Travel agents, other businesses, finance, real estate and computer-related activities
- Social work and public administration
- Education

The Regional Waste Strategy published in 2004 includes targets for commercial and industrial waste management capacity in Somerset, split as shown below.

Indicative annual commercial and industrial waste management capacities for target years. Adapted from: The Regional Waste Strategy for the South West 2004 - 2020

Year	Recycling / reuse (tonnes per year)	Recovery (tonnes per year)	Landfilled (tonnes per year)	Total
2010	240,000 – 260,000	120,000 – 140,000	260,000 – 290,000	620,000 – 690,000
2013	250,000 – 280,000	160,000 – 170,000	220,000 – 240,000	630,000 – 690,000
2020	270,000 – 300,000	240,000 – 260,000	110,000 – 120,000	620,000 – 680,000

The targets outlined in the table above translate in percentage terms into a minimum of 44% of commercial and industrial waste to be recycled or composted by 2020 and 39% being recovered, leaving no more than 17% to be landfilled.

Thus, from the above data, it is clear that a fundamental change is needed in the management of commercial and industrial waste, particularly in certain sectors, if we are to move from landfilling over half to less than one fifth of total arisings for commercial and industrial waste.

Commercial and industrial waste management in Somerset

When delivering this study, Somerset County Council simplified the potential waste management methods to recycling/reuse, landfill and treatment/transfer.

From the semi-quantitative analysis undertaken, Somerset County Council estimated that 88% of industry recycled something, compared to 72% of commerce. In other words, the evidence suggested that 1 in 9 industrial businesses and 1 in 4 commercial businesses were not recycling at all.

These results support the need for a 'step-change' as mentioned on the previous page, particularly for commercial waste management.

This conclusion is reinforced when examining the volumes of waste being recycled or landfilled. Somerset County Council's survey suggests that approximately 55% of Somerset's commercial waste was landfilled in 2006, as shown in the table below.

Estimated industrial and commercial waste management methods in Somerset

Waste management method	Industry	Commerce
Landfill	31%	55%
Recycling/reuse	62%	39%
Treatment/transfer	7%	6%

When considering the above results, it natural to ask why is this happening? Why is more material not being recycled?

The survey offered a valuable opportunity for Somerset County Council to gather anecdotal evidence on what is happening and why.

Challenges faced by businesses vary from a lack of knowledge on what options are available to a lack of access to services. Waste services can be particularly difficult to arrange for smaller businesses that do not generate large amounts of waste and so can struggle to engage effectively with large waste services providers. Detailed information on the feedback from businesses is provided in the full report.

The drivers for improving on this position are numerous. Fundamentally, treating waste as a resource means that one is extracting the maximum value from the material and avoiding the escalating costs associated with landfill disposal. Therefore, better waste management impacts on the 'bottom line'.

Broader public interest in the green agenda is also having an effect, with sustainability issues being increasingly picked up during procurement of services and thus being a factor in winning new customers. Exemplifying this, waste management can form part of the Corporate Social Responsibility plans implemented and reported on by larger companies, which in turn can influence decisions on trading partners.

Focusing on specific waste types, the following results were observed.

Separated paper and card accounted for 23% of total household-equivalent industrial waste and 31% of commercial waste. 91% of companies indicated that they produce paper and/or card waste. Of these 68% were recycling at least some of this waste.

Recycled or reused plastics accounted for just 3% of total waste in both the industrial and commercial sectors. Around 60% of companies identified plastics in their waste and of these 46% of industrial and 39% of commercial companies recycled or reused some of their plastics.

Separated glass, wood and textiles account for a very small proportion of the total waste. Around 30% of companies indicated that glass and/or wood waste is present in their waste streams. Of these companies just over 50% were recycling at least some of these materials.



Wood accounts for a small proportion of the total waste; however, anecdotal evidence suggest this is not always straight-forward to manage

Textiles are less commonly identified with only 14% of companies noting textiles in their waste, but of those that do around 40% are recycling or reusing them.

Animal and vegetal waste accounted for 27% of the total waste tonnage produced by Somerset's industrial sector. A few large food and drinks companies, producing very significant quantities of this type of waste, skew this figure.

29% of the industries surveyed identified food waste as being produced and 47% of these recycled/reused some of this waste, typically via land spreading or use as animal feed. One significant food waste producer was sending waste to the Holsworthy anaerobic digester in Devon that produces energy and fertiliser.

42% of commercial businesses identified food waste as part of their waste stream although overall this waste only accounted for 0.5% of their waste. Of the companies that identified this waste stream, 21% had found alternatives to landfilling it, including the use of macerators to take the waste into the waste water system. Cooking oil and canteen food waste were the most common types of food waste mentioned by the commercial sector. Cooking oils tended to be collected and recycled by specialist waste operators.

Of the total waste produced by industry 7% was identified as metal, the bulk of which was made up of machinery parts, swarf, used metal packaging such as steel barrels or rejects from manufacture. 60% of industry listed metal waste and of these 90% were recycling or reusing it.

Metals accounted for 5% of commercial waste. 32% of commercial businesses cited metal waste and of these 64% were recycling or reusing it. 5% appears high but is skewed by transport and vehicle maintenance operators in particular.

Mixed waste accounts for 41% of Somerset's total household-equivalent commercial and industrial waste with 31% of industrial waste and 59% of commercial waste being mixed. Landfill is by far the most common way of managing this type of waste.

Realising what makes-up mixed waste is vital when trying to identify better ways to manage it. Over half of mixed office waste (by weight) was calculated to be paper and card, and about a third of mixed canteen waste was animal and vegetal.



Realising what makes-up mixed waste is vital when trying to identify better ways to manage it

Final comments

This study revealed a variety of interesting conclusions, which will inform a variety of discussions and decisions undertaken by Somerset County Council. The following points are highlighted in this summary report:

- Approximately 425,000 tonnes of household-equivalent commercial and industrial waste were generated in Somerset in 2006.
- Almost 60% of commercial waste is mixed. Overall in Somerset, approximately 55% of commercial waste was sent to landfill in 2006. Indications are that about 1 in 4 commercial businesses did not recycle anything in 2006.
- Animal and vegetal waste accounts for over one quarter of the waste produced by the county's industrial sector.
- Animal and vegetal waste is proportionally more significant in Mendip (Zone 2) when compared to the other two zones.
- Metallic waste is proportionally more significant in South Somerset less Chard and Ilminster (Zone 3) when compared to the other two zones.
- Approximately 39% of commercial waste and 62% of industrial waste was estimated to be recycled or reused in Somerset in 2006.
- Relatively low levels of treatment or transfer of commercial and industrial waste occurred in 2006, beyond what was involved in recycling and reuse.

The above list is short and is not intended to be comprehensive. However, it does highlight that significant potential exists for recovering value from business waste in Somerset and that the nature of these opportunities can vary across the county.

A central challenge will be to reduce the amount of mixed waste being sent to landfill, in particular by the commercial sector.

A copy of the full commercial and industrial waste report is available from Somerset County Council on request.

Accessibility

This document is also available in Braille, large print, on tape and on disc and we can translate it into different languages. We can provide a member of staff to discuss the details

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