Case study

Food Waste Collection Trials – weekly collections of food waste operating alongside alternate weekly collections of refuse

During 2007-08 WRAP provided support to 19 local authorities to carry out weekly food waste collection trials. This case study presents the key findings from those trials where food waste was collected in authorities operating alternate weekly collections of refuse.
Case study background

This case study looks at the performance of the WRAP supported food waste trials for local authorities operating alternate weekly (AWC) refuse collections, in particular focussing on two of the highest performing trials:

- **South Shropshire District Council**, which introduced AWC to 20,000 properties in 2005. South Shropshire is a rural district with mixed low density housing. The predominant ACORN categories in the trial areas, which were located within the market town of Ludlow, were ACORN 1 (17% of households) and ACORN 3 (44%).

- **Mid-Bedfordshire District Council**, which introduced AWC to 52,000 properties in 2004. The trial areas in Mid-Bedfordshire consisted chiefly of low density housing in semi-rural locations, with a range of housing types. The most common ACORN categories in the trial areas were ACORN 1 (31.9% of households) and ACORN 3 (47.4%).

Several other of the trials also operated AWC collections and are considered in this case study, though in less detail:

- Mole Valley District Council
- Guildford District Council (which changed from weekly refuse collections to AWC in December 2007 for two of their three food waste collection trial rounds)
- Broadland District Council (whose trial has only been operating for a few months at the time that this case study was written)
- Preston City Council and Waveney District Council, who both collected significantly less food waste per household than the other trials operating alongside AWC (for reasons discussed below).

The following table provides background information on the trials carried out in South Shropshire and Mid-Bedfordshire, which are the main focus of this case study.

<table>
<thead>
<tr>
<th>Local Authority</th>
<th>South Shropshire</th>
<th>Mid Bedfordshire</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of households in food waste collection trial areas</td>
<td>5,547</td>
<td>6,200</td>
</tr>
<tr>
<td>Number of Rounds</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Number of collection crew per vehicle</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Refuse collection frequency</td>
<td>Fortnightly</td>
<td>Fortnightly</td>
</tr>
<tr>
<td>Container presentation</td>
<td>Kerbside</td>
<td>Kerbside</td>
</tr>
<tr>
<td>Container type</td>
<td>Blue 25L kerbside container, kitchen caddy and liners</td>
<td>25L kerbside container, kitchen caddy and liners</td>
</tr>
<tr>
<td>Vehicle Type</td>
<td>Electric vehicle</td>
<td>Eurocargo Chassis Cab / Terberg toploder</td>
</tr>
<tr>
<td>Reprocessing</td>
<td>Anaerobic Digestion</td>
<td>Anaerobic Digestion</td>
</tr>
<tr>
<td>Participation rate</td>
<td>69.8%</td>
<td>71.5%</td>
</tr>
<tr>
<td>Kgs per household served, first half of the trial</td>
<td>2.15</td>
<td>1.87</td>
</tr>
<tr>
<td>Kgs per household served, second half of the trial</td>
<td>2.18</td>
<td>1.95</td>
</tr>
</tbody>
</table>
Collection method

South Shropshire
The trial in South Shropshire covered the market town of Ludlow, with 5 collection rounds operating Monday to Friday. Prior to the trial the householders could place out food waste fortnightly in the ‘green’ wheeled bin mixed with garden waste, (this scheme continued throughout the trial for the rest of South Shropshire). Householders obtained further liners by leaving a note on their container or by calling the local authority call centre. Replacement liners were kept on the collection vehicle and delivered by the crew.

The reprocessing (AD) plant is located in the same town as the trial areas and therefore down time for the collection vehicle was relatively low. The electric vehicle tipped two or three times per a day. The crews adopted different methods of collection, dependent on the type of properties being serviced. For most areas, the crews collected from a number of properties before returning to the vehicle to hand load. A slave bin was also attached to the rear of the vehicle and in streets with narrow or restricted access, the bin was detached from the vehicle and the contents of individual containers emptied into it before returning to the vehicle to load.

Mid Bedfordshire
The trial area for Mid Bedfordshire covered 6,200 properties. Replacement liners were delivered on request at the start but it was decided to distribute another 2 rolls to every property about halfway through the trial. Mid-Bedfordshire had not provided any form of separate food waste collection to residents prior to the trial.

The crews in Mid-Bedfordshire also used a slave bin, attached to the side of the collection vehicle.

Both authorities designed their trial rounds on the basis of pre-existing collection rounds, in order to collect food waste and refuse on the same day of the week.
**Performance of the trials in South Shropshire and Mid-Bedfordshire**

The trials in South Shropshire and Mid-Bedfordshire achieved a slight increase in amounts of food waste collected per household between the first and second half of the trials. This stands in contrast to many of the trial areas with weekly refuse collections, which tended to experience a decrease in food waste yields during the second phase of the trials.

South Shropshire had slightly lower participation rates in comparison to Mid-Bedfordshire, whilst achieving higher yields per household. Waste audits were carried out for 100 households in the trial areas in South Shropshire and these indicated that a relatively high capture rate was being achieved, with an average of 73% of food waste presented at the kerbside in food waste containers.

Attitudinal surveys, supported by WRAP, were carried out in both South Shropshire and Mid-Bedfordshire and these indicated reasonably high levels of satisfaction with the food waste collection service, with 93% of respondents in South Shropshire and 78% of survey respondents in Mid-Bedfordshire stating that they had not experienced any problems with the service. Amongst the minority of respondents that stated that they had experienced problems, the most commonly cited issues were:

- In Mid-Bedfordshire, failure of containers to be returned to the location where they had been presented by residents or liners splitting; (though these issues were not identified as being significant in the survey carried out by Mid-Bedfordshire District Council).
- In South Shropshire, insufficient liners provided or missed collections.

In South Shropshire, respondents were asked an additional question relating to the change from fortnightly mixed food waste and garden collections to separate weekly food waste collections. The responses clearly showed general approval with the change, with 83% of respondents disagreeing strongly or slightly that the collection worked better before the change. 80% of respondents reported that they found the weekly separate food waste collection service easier to use.

**Performance of the trials in other local authorities with alternate weekly collections of refuse**

**Guildford, Mole Valley and Broadland**

Guildford and Mole Valley District Councils (in Surrey) both achieved higher food waste collection yields in comparison to many of the other trials, with average amounts of food waste collected per household served per week of:

- Guildford: 1.76 kgs
- Mole Valley: 1.80 kgs

Both trials experienced an increase in the amounts of food waste collected per household during the second phase of the trials. In the case of Mole Valley, only a slight increase was experienced, but in Guildford the increase was quite significant. This is probably attributable to the introduction of AWC to two of Guildford’s three food waste collection rounds midway through the trial. The two rounds which switched from weekly refuse collections experienced an increase in the amount of food waste collected of 0.31 kgs per household served per week, whereas the third round – which remained on weekly refuse collections - saw yields drop slightly by 0.04 kgs per household per week.

Broadland achieved an average food waste yield of 1.95 kgs per household served per week, which compares well with the other WRAP trial areas.

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1 Mid-Bedfordshire District Council carried out its own survey in which over 90% of respondents stated that they were satisfied with the service.
**Preston and Waveney**

The food waste trials in Preston City Council and Waveney District Council are interesting because, whilst both authorities operate AWC, the amounts of food waste collected (per household served per week) were relatively low in comparison to many of the other trials:

- Preston: 1.25 kgs
- Waveney: 1.34 kgs.

In fact several of the WRAP supported trials where food waste was collected weekly alongside weekly refuse collections achieved higher yields per household. For example, the weekly food waste trial in Calderdale (operating alongside weekly refuse collections) out performed the trials in Preston and Waveney. There may be several reasons for this. The trial areas in Preston and Waveney were amongst the most deprived of the WRAP trial areas and the evaluation of the trials overall found that more deprived areas tend to be associated with lower food waste yields. However the trial area in Calderdale also had similar levels of deprivation. Calderdale collects refuse weekly in sacks, and trials with weekly sack collections generally performed better in comparison to trials with weekly wheeled bin collections.

The trial area in Waveney had a relatively high proportion of elderly residents living in bungalows, who are likely to produce comparatively little food waste (e.g. use of ‘meals on wheels’ services, often lower income households).

However it is clear that factors other than refuse collection frequency and deprivation affect food waste yields, including patterns of food consumption and generation, and – crucially – the effectiveness of different approaches to communicating with residents.

Nonetheless, the frequency of refuse collection is clearly an important factor. Anecdotal evidence suggests that the residents with alternate weekly collections of refuse have more incentive to use the weekly food waste collections, since residents are likely to prefer that the food waste fraction of their waste is collected weekly.

The differing performances of the WRAP food waste collection trials with weekly and fortnightly refuse collections are discussed in detail in the main report evaluating the trials: [www.wrap.org.uk/fwct](http://www.wrap.org.uk/fwct).

**Food waste collections operating alongside AWC refuse – design of collection rounds**

Adopting the existing refuse rounds for the food waste collections highlighted that food waste crews in some cases finished earlier than the refuse crews. In addition the food waste tonnages throughout the AWC trial areas remained relatively consistent week on week, unaffected by which week the refuse was collected on. Therefore there is scope for food waste rounds to be designed so that they cover more properties than refuse rounds, including in areas with AWC refuse.

**Further information and advice**

Contact ROTATE at WRAP: email: lgs@wrap.org.uk, tel: 01295 819661.