

Waste and Recycling Collection Considerations

Food Waste

The Government has set a legal requirement for councils to introduce a separate weekly collection of food waste from all households by 31st March 2026.

To enable residents to participate and contribute to the Council achieving this, a small internal food waste caddy (approx. 7 litres) will need to be provided to households for use in the kitchen. This provides the household with somewhere to store food waste in the short term and helps improve collection yields.

Residents will empty their food waste into an external 23 litre food waste caddy (approximately 10% of the size of a wheelie bin) which can be placed either on top of or beside their existing bins. Residents in flats etc where larger communal bins are will have larger external bins to empty their internal food waste caddy into.

Waste collection teams will then empty the material from these external caddies or communal bins into a specific food waste collection vehicle.

The Council will need to purchase new dedicated food waste collection vehicles. Current lead times are estimated at a minimum of 12 months and further pressure on the supply chain is likely as all local authorities which do not currently collect food waste will be looking to procure vehicles.

In addition to requiring additional dedicated vehicles there is a need to procure both internal and external food waste caddies, plus additional bins for communal properties.

Evidence from the Waste and Resources Action Programme (WRAP) (see background documents), advises that to maximise participation and therefore yield/diversion of food waste from landfill, local authorities should provide food caddy liners to residents. This helps reduce the perception of mess and smells from using the food waste service. Liners do not need to be compostable; they cannot be broken down through food waste treatment plants and food waste treatment facilities prefer them to be plastic as either way, the liners are removed in the process and are sent for energy recovery. Plastic liners are also less expensive than compostable ones.

The Government has provided the Council with new burdens capital funding of £894,056 for the purchase of food bins (this includes internal kitchen caddies, external kerbside caddies and communal bins, but not liners) and food waste collection vehicles, and has indicated it will provide ongoing new burdens revenue funding. At the time of writing there had been no confirmation of the amount, what that would cover or for how long.

Residual Waste

The Council currently collects residual waste weekly, in single use black plastic bags. Residents are provided with a delivery of bags each year, at an annual cost of around £79,000 (paid for via the management fee to ECSS). Residents are given enough to fill one per week, The Council does not restrict the number of bags it will collect each collection, and residents can purchase more from shops if they wish.

For several years, despite having the desire, the Council has not changed the collection methodology to wheeled bins as it has been waiting for the updated legislation from the Government to ensure any changes would comply long term. It has already set aside budget for the provision of wheeled bins for residual waste of £1,000,000 in its Capital Strategy Budget.

The Council operates six RCVs (including a spare vehicle) to collect residual waste. They were purchased in 2018 and are due to be replaced by 31 March 2027. They do not have the lifting mechanism fitted to enable emptying of wheeled bins.

The most recent waste composition analysis (2021) found that within collected black bags, nearly 25% was recycling and 36% was food that could be captured by the existing recycling and garden/food service.

Based on best practice research and advice from WRAP, the most effective way to increase recycling performance and reduce the Council's environmental impact is to limit residual waste. This has the twin effect of reducing residual wastes and increasing materials presented for recycling.

Limiting residual waste can be achieved through the introduction of rigid wheeled bins and rejecting additional waste. Restricting the frequency of collections also helps to drive residents to use recycling services. The key benefits of wheeled bins are the following:

- Limits the amount of residual waste that can be put out per property, and therefore drives residents to reduce their waste and recycle more.
- Reduces cleansing issues, with a significant reduction in ripped sacks and litter.
- Reduces the Council's impact on the environment through the provision of single use plastic bags every year.
- Safer ways of working for operatives through reducing manual handling and risk of sharps injuries.

It is also difficult to identify non-residential properties placing waste out for collection that should be paid for under a commercial waste service.

Garden Waste

The Council currently co-collect garden and food waste in the green lidded bin. The Council does not make a charge for the collection of this. Charging for the collection of garden waste is allowed under legislation as the collection is not a statutory right, but

food is not allowed to be charged for. Residents can have a second garden waste bin, which they pay an annual subscription for, yielding an average yearly revenue (based on the last 5 years) of £37,000 per annum.

Simpler Recycling allows Local Authorities to continue decide whether they charge for garden waste or provide it free of charge. It also makes provision for Local Authorities to continue to co-collect this waste, but as it contains food, it must be weekly.

In its early stages, the WP considered continuing to co-collect food and garden waste and increase the frequency from fortnightly to weekly to comply with the new legislation. It was realized that this would incur significant capital expenditure (exceeding the new burdens grant from DEFRA) and ongoing revenue costs, as the current fleet of garden waste vehicles would need to be doubled. These vehicles cost approximately £200,000 each. Through the modelling work, providing a separate weekly collection of food, with much smaller vehicles, would be more cost effective.

Options

The WP considered the performance data provided by the consultants of differing collection options, both financially and in terms of waste yields and therefore recycling performance.

Four service options were modelled for the different material streams (residual, recycling, garden waste and food waste) with variables between each such as the frequency of collection, charging and not charging for garden waste.

Table 1 Four service options modelled

| Material stream | Option 1 | Option 2 | Option 3 | Option 4 |
|-----------------------|--------------------------------|------------------------------------|------------------------------------|--------------------------------|
| Residual waste | Weekly, 140lt WB | Weekly, 140lt WB | Fortnightly, 140lt WB | Fortnightly, 140lt WB |
| Recycling | Fortnightly 240lt WB | Fortnightly 240lt WB | Fortnightly 240lt WB | Fortnightly 240lt WB |
| Garden waste | Fortnightly 240lt WB FOC | Fortnightly 240lt WB Charged | Fortnightly 240lt WB Charged | Fortnightly 240lt WB FOC |
| Food waste | Weekly, 7/23lt caddy | Weekly, 7/23lt caddy | Weekly, 7/23lt caddy | Weekly, 7/23lt caddy |

Two versions of each service option were also presented to show the difference in costs between collecting waste in a single stream vehicle or co-collection in a dual body vehicle. Therefore, a total of eight operational solutions were presented.

Co-collections would require a transition to a different Rear Collection Vehicle (RCV) which would have a twin compartment with recycling waste one side and food waste on

the other. As the service had recently procured a fleet of vehicles which would need replacing (at approximately £2 million of extra capital cost) it was agreed that these would not deliver value for money given the other viable options to be considered.

Estimated vehicle CAPEX and operational (revenue) costs were also calculated for each operational solution.

The model clearly demonstrated a significant variation in performance based on the collection frequencies adopted by the Council. Specifically, the frequency of residual waste collection and whether the Council charges or retains a 'free' garden waste collection had a profound effect on the recycling rate and the cost of the service. Table 2 summarises these variances.

Table 2 The effect of differing frequencies of collection and charging for garden waste on the estimated recycling rate

| | Baseline | Option 1 | Option 2 | Option 3 | Option 4 |
|---|----------|----------|----------|----------|----------|
| Estimated recycling rate | 58.5% | 60.5% | 54.5% | 58.6% | 64.5% |
| Estimated variance in operating cost | - | +28% | -4% | -20% | +11% |

Moving to alternate week collection for residual waste could result in a 5% transfer of recyclable waste and 5% transfer of food waste from the residual bin to the recycling bin and food waste bin (by weight).

The modelling showed that option 4 would likely achieve the highest overall recycling rate (c64.5%) and option 2 seeing an overall decrease in the recycling rate (to c54.5%).

Option 3 would yield the most significant saving with an annual reduction in service cost of 20%.

Option 1 would incur the most significant increase in annual service cost of 28%.

Please note that these cost figures are used on a comparative basis to assess options as part of a desktop exercise. Certain elements were excluded from modelling, such as disposal/treatment costs and recycling income. The modelling cost outputs were not and therefore should not be viewed in the context of budgeting and instead should be used as a strategic tool to compare the different options. All the options and the baseline have been based on the same cost assumptions.

Overall, the introduction of alternate weekly collection for residual waste and weekly food waste would see an increase in recycling rates, however the impact of introducing a chargeable garden waste service would negate this.

The WP gave considerable thought to introducing a charge to residents for collecting garden waste. There were advantages (mitigates the additional costs incurred from

introducing the collection of food waste) and disadvantages (reduces the recycling rate, reduces opportunity to mitigate additional costs), to this as the model showed. The WP acknowledged that most councils in the UK have introduced a charge for collecting all garden waste. For residents in East Cambridgeshire, the WP agreed that retaining a free collection for every resident, and therefore maximising the opportunity to divert waste from landfill was most important. With this in mind, the WP also agreed to recommend the removal of paying for additional recycling and garden waste bins. This would result in a reduction of c£90,000 per annum.

Size of the residual waste bin

The original modelling work proved that current levels of residual waste per household in East Cambridgeshire would fit inside a 140lt bin over the two-week period. The size of residual waste bins can encourage/discourage recycling by providing too little or too much capacity.

The WP requested further modelling work to explore options for a larger sized residual waste bin: a 180 lt and 240lt were subsequently modelled. Both options were modelled as a fortnightly collection, with weekly food waste, free of charge garden waste and 'as is' dry recycling collection scheme.

The following table summarises the impact that the different sized bins would have on recycling performance compared to the original 140lt bin model:

Table 3: The effect different bin sizes have on recycling performance

| Bin size (lt) | 180 | 240 |
|--|------------|------------|
| Reduction in recycling rate per additional lt | 0.05% | 0.05% |
| Total tonnage lost from food and dry recycling | 487 | 1218 |
| % lost from food and dry recycling | 50% | 50% |
| % of lost recycling from food stream | 50% | 50% |
| Estimated kerbside recycling rate | 62.5% | 59.5% |
| Estimated reduction in kerbside recycling rate by not using 140lt | 2% | 5% |

As referenced through WRAP research, any increase in residual bin size increases the amount of waste sent to landfill and decrease the recycling rate. As well as this, it is important to note that a larger bin size has implications on the operational resource (number of vehicles and operatives) required:

Table 4: The effect of different bin sizes on the capacity of the collection rounds

| Residual bin size | Average round utilisation | |
|-------------------|---------------------------|--------|
| | Weight | Volume |
| 140lt | 74% | 79% |
| 180lt | 79% | 84% |
| 240lt | 86% | 92% |

Providing a 240lt bin as the standard size would disincentivise residents to use their recycling bins and provide opportunity to dispose of waste that would have been taken to the Recycling Centre at Witchford. The modelled increase in waste collected, whilst not requiring an increase in resource, would limit the capacity left in the rounds for periods of more waste being produced (e.g. Christmas) and property growth, and therefore an additional round (1 extra vehicle and 1 driver, 2 loaders) would likely be included in the final costing work carried out by ECSS to provide resilience in the service.

The model showed that providing a 180lt bin would not significantly impact the round capacity, requiring no additional resource and therefore no cost impact compared to the 140lt bin (i.e. the original modelling of vehicle and operative numbers would have capacity for the small increase in waste to be collected). The WP agreed that providing this as the standard bin size could also mean that those who may need additional capacity e.g. larger families or producers of healthcare waste, may find this size of bin adequate and therefore may be less likely to request additional capacity. This would mean that residual waste could be kept low. An option to provide a bigger bin for households that met the policy criteria would be included, and this would be managed through an application process. (see Agenda Item Waste and Recycling Policy 2026 considered at the 23 September 2024 Operational Services Committee).

Therefore, the WP unanimously agreed to progress the following as the preferred model and instruct ECSS to provide a detailed financial model.

Table 5: Preferred standard service

| Waste Stream | Container | Frequency |
|------------------|--|-------------|
| Residual Waste | 180 litre bin | Fortnightly |
| Food Waste | 23lt kerbside caddy 7lt kitchen caddy | Weekly |
| Recycling | 240 litre bin | Fortnightly |
| Garden Waste FOC | 240 litre bin | Fortnightly |