LINCOLNSHIRE WASTE PARTNERSHIP **11 July 2022**

SUBJECT:	**Food Waste Collection Trial – Final Report**
REPORT BY:	**Councillor Mark Whittington, Cabinet Member for Waste and Climate Change, South Kesteven District Council**
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BACKGROUND INFORMATION

1.1 In June 2018 South Kesteven District Council commenced a separate food waste collection trial on behalf of the Lincolnshire Waste Partnership. The trial was funded by Lincolnshire County Council until June 2020, South Kesteven then continued to fund the trial until the end of March 2022.

1.2 The original objectives of the trial were to assess:

- the amount of food waste that can be collected on a weekly basis
- the impact on the different waste streams
- the impact on recycling rates
- the impact on the volume of residual waste (sent to the energy from waste plant)
- the levels of participation and customer acceptance
- the collection costs

Pilot Scheme Details

1.3 The trial operated across an existing refuse collection round, incorporating 4,508 properties across both rural and urban areas. Flats (no.248) were excluded from the trial due to the associated external storage issues, however, as the other waste streams were collected in the same vehicle the tonnage data for residual and mixed dry recycling includes the waste from the flats.

1.4 Food waste was collected on a weekly basis as part of the existing fortnightly collection model (residual one-week, mixed dry recycling the following). It was

delivered to the waste transfer station at Gonerby Hill Foot where it was bulked into a skip and transported to the anaerobic digestion plant at Hemswell Cliff for processing. This produced biogas for energy and a soil conditioner by-product.

1.5 Households were provided with 2 containers; a caddy for use in the kitchen and a larger container to be kept outside and placed at the kerbside for weekly collection. Caddy liners were also provided (additional supplies were available on request free of charge) and were found to be a relevant factor in encouraging participation.

1.6 To maximise participation, targeted information was sent to each household in the area and drop in information events took place. Information was also available on the Council's website and wider promotion through social media and press releases.

Collection Model

1.7 Two collection vehicle options were available;

- Separate dedicated food waste collection vehicles (requiring 1 driver and 2 loaders)
- Split body "pod" type vehicles which accommodate the collection of food waste alongside other materials (requiring 1 additional loader).

1.8 For the purposes of the trial a split body vehicle "pod" was utilised, this required one additional crew member. Due to the costs of incorporating additional dedicated collection vehicles (additional crew, running costs, maintenance etc) these were not considered efficient for the purposes of the trial. However, to assess the performance of a separate collection vehicle, this was tested over a 4-week period during the trial.

1.9 The results showed that the dedicated vehicle was 4 hours 28 minutes quicker than the pod style vehicle over the course of the weekly round. The pod vehicle was limited by the capacity required for the residual/recycling materials which had a higher yield than the food waste and filled up more quickly, requiring more frequent unloading, taking longer.

Results

Weight of Materials

1.10 The weight of food waste collected each month remained consistent over the first 2 years of the trial period, averaging 26 tonnes per month. Although food waste collections continued during the Covid19 pandemic restrictions (June 2020 – May 2021 data), the amount of food waste collected reduced. Aligned to this, the amount of mixed dry recycling and residual waste increased significantly over the same period. This may be related to the restrictions placed on individuals resulting in them spending more time at home and revised arrangements at household recycling centres. By the final 10 months of the trial the average monthly amount of food waste collected had reduced to 20 tonnes. Table 1 shows the different waste streams and collection weights before and during the trial. Table 2 provides an overview of the average weekly weight of each material collected.

Table 1: Waste Stream Collection Weights Before and During the Trial

	Residual Waste (tonnes)	Mixed Dry Recycling (tonnes)	Food Waste (tonnes)	Total (tonnes)
June 2017 to May 2018 (pre-trial)	1563	971	0	2534
June 2018 to May 2019	1318	990	314	2622
June 2019 to May 2020	1317	946	323	2586
June 2020 to May 2021	1412	1025	297	2734
June 2021 to March 2022 (44 weeks)	1188	907	203	2298

Table 2: Average Weekly Collection Weights Before and During the Trial

	Residual Waste (tonnes)	Mixed Dry Recycling (tonnes)	Food Waste (tonnes)	Total (tonnes)
Weekly average June 2017 to May 2018 (pre-trial)	30.1	18.7	0	48.8
Weekly average, June 2018 to May 2019	25.3	19.0	6.0	50.3
Weekly average, June 2019 to May 2020	25.3	18.2	6.2	49.7
Weekly average, June 2020 to May 2021	27.2	19.7	5.7	52.6
Weekly average, June 2021 to March 2022 (44 weeks)	27	20.6	4.6	52.2

1.11 Over the period of the trial, food waste comprised 11% of the total waste collected. Residual waste decreased against pre-trail weight; this was anticipated as the food waste which was previously in this stream had been removed. A small increase in the average weekly weight of mixed dry recycling was observed.

1.12 As food waste was diverted to recycling, the overall recycling rate increased to an average of 48.9% (as detailed in table 3). This excludes garden waste.

Table 3 :Overall Recycling Rates During the Trial

	Total Waste Recycled (mixed dry recycling + food waste) (tonnes)	Total Waste (tonnes)	Recycling rate
June 2017 to May 2018 (pre-trial)	971	2534	38.3%
June 2018 to May 2019	1304	2622	49.7%
June 2019 to May 2020	1269	2586	49.1%
June 2020 to May 2021	1322	2734	48.4%
June 2021 to March 2022 (44 weeks)	1110	2298	48.3%

1.13 Householder Participation and Feedback

Of the 4,260 households in the trial area who could participate, the average participation rate in the first 12 months was 80.2%, each collecting an average of 1.8kg of food waste each week. Over the course of the trial a gradual decline in participation was observed, this stood at 63.6% over the final 10 months. However, the amount of food waste collected by those who continued to participate did not reduce significantly (as detailed in table 4). In other studies, average participation levels were typically 35-55%, with good participation being over 55%.

Table 4: Participation Rates During the Trial

	Average Weekly Food Waste Collected per Participant (kg)	**Participation Rate**
June 2018 to May 2019	1.8	80.2%
June 2019 to May 2020	1.8	72.7%
June 2020 to May 2021	1.6	69.8%
June 2021 to March 2022 (44 weeks)	1.6	63.6%

1.14 A survey of householders in the trial area was carried out in 2019, a detailed report is attached at Appendix 1. 1260 responses were received, a response rate of 30.3%. There was strong support for the scheme, even from those who chose not to participate, with only 1.6% stating that they did not support the trial. A significant proportion of participants were motivated by environmental concerns and there was strong support for each of the various parameters of the scheme i.e., weekly collection, caddies and liners.

1.15 Of the respondents who stated that they were not participating, the main reasons given for this were:

- Because they compost their food waste
- Because the amount of food waste they produce is so small
- Because their household does not produce any food waste

1.16 The reasons for the reduction in participation during the trial are not clear, however, there are a number of factors which may have contributed to this:

- After the initial launch, targeted engagement with participants reduced over the course of the trial
- The Covid19 pandemic and associated restrictions may have influenced behaviours

DISCUSSIONS

2.1 The overall aim of the trial was to increase the understanding of the impacts of food waste collection in Lincolnshire and to inform the Lincolnshire Waste Partnership.

2.2 In summary, the data collected has established that:

a) On average, 1.7 kg of food waste was collected each week per participatin household

b) Food waste represented approximately 11% of the total waste produced

c) By year 3, participation rates remained high at 64%

c) Food waste collections increased the amount of waste recycled by approximately 10.5%

d) The majority of householders who responded to the survey agreed with the trial

2.3 The impacts of the Covid19 pandemic on behaviours cannot be fully understood and as such the year 3 data in particular should be interpreted with this in mind.

2.4 Regular and ongoing direct communications with participants is necessary to maintain enthusiasm and engagement. This should be linked to waste minimisation messages to ensure the waste hierarchy is followed.

Cost Comparison

2.5 As a further exercise, the additional costs to roll out food waste collections to all properties in the district was considered. This was a relatively high level assessment which considered the following variables:

- Type of vehicle; pod type or dedicated
- Additional employee costs; 1 additional loader for a pod vehicle compared to 3 for a dedicated vehicle
- Spare vehicles; required for cover
- Additional travel time; impacts of additional trips to offload due to capacity issues or different waste transfer station locations for separate materials
- Additional fuel costs

2.6 High level estimates indicate that introducing weekly food waste collections in South Kesteven could add costs of between £952,000 and £1,301,000 per annum (excluding haulage and treatment costs). In the current financial climate, fuel and refuse collection vehicle purchase costs are increasing significantly.

2.7 The most effective vehicle choice will vary depending on a range of factors, including geography, population density, property types, location and requirements of waste transfer stations.

2.8 Pod vehicles have a higher capital purchase cost and more frequent emptying is needed which makes them less efficient, but only one additional operative per crew is required. Dedicated vehicles require an additional crew of 3 per vehicle and have the additional associated operating costs of increasing the overall vehicle fleet. However, they do not rely on the whole fleet being replaced as would be required with the pod option and can offer more flexibility to offload food waste at different locations to other waste streams.

2.9 Based on this limited trial, it is estimated that if dedicated vehicles were used throughout, an additional 10.5 vehicles would be needed in South Kesteven to collect food waste on a weekly basis.

OPTIONS

3.1 In July 2021, the Department for Environment, Food and Rural Affairs (DEFRA) consulted on the "Consistency in Household and Business Recycling in England". This included a proposal which would require all Waste Collection Authorities (WCAs) in England to arrange for the collection of food waste, separately and at least once a week for recycling or composting. The consultation indicated that this requirement could be introduced from 2023/24, however, the Government has not yet published its response to the consultation.

3.2 In view of the above, the trial was suspended at the end of March 2022. Once the results of the DEFRA consultation are published, the future roll out of a mandatory food waste collection scheme will be further considered.

RECOMMENDATIONS

That the Lincolnshire Waste Partnership notes the results of the Food Waste Collection Trial.