

FAREHAM

BOROUGH COUNCIL

Report to Streetscene Policy Development and Review Panel

Date **11 July 2013**

Report of: **Director of Street Scene**

Subject: **KERBSIDE FOOD AND VEGETABLE WASTE COLLECTION**

SUMMARY

The purpose of this report is to investigate the feasibility of introducing a kerbside domestic food and vegetable waste collection service in the borough

RECOMMENDATION

That kerbside food and vegetable waste collection in the Borough should not be introduced due to:

- The significant capital and revenue costs that would be incurred
- The detrimental effect on the environment
- Little evidence of resident demand in the Borough
- The low take-up rates in a number of other authorities that have introduced a food collection service

INTRODUCTION

1. At the Council meeting on 24 April 2013, a motion was received from Councillor D. Norris requesting that the Council investigate the feasibility of collecting food and vegetable waste with either a private contractor or with an adjoining Council, to be implemented at nil or minimum cost. It was agreed that the motion would be referred to the Streetscene Development and Review Panel for review.
2. Three possible options for the collection of combined food and vegetable waste are investigated in this report; provision of an in house service, working in partnership with another local authority and collections made by a private contractor. These options are outlined in this report, along with the related financial and environmental impacts.
3. The Borough has approximately 48,000 domestic properties which currently receive an alternate weekly refuse and recycling service. Garden waste is also collected once per fortnight from each property. The collection costs to provide these services are met by current budgets (£1.8 million for 2012-13) with the disposal operation and costs managed by Hampshire County Council.
4. Due to the nature of the waste a weekly food and vegetable waste collection service would be required, irrespective of the number of participating households.

OPTION 1 – PROVISION OF FOOD AND VEGETABLE WASTE COLLECTIONS IN HOUSE

5. A new fleet of vehicles would need to be purchased to offer the service to the whole Borough. There are two options for the type of vehicle that could be used; split body vehicles (collect refuse and food waste on the same vehicle) or dedicated food and vegetable waste collection vehicles.
6. Split body vehicles are standard 26 tonne refuse vehicles which contain a pod to collect food and vegetable waste and also a conventional hoist at the back of the vehicle to collect refuse/recycling. The vehicles have a reduced refuse load capacity to allow for the food and vegetable waste collection pod to be fitted on the vehicle, meaning that more vehicles would be required to replace the existing fleet of refuse vehicles.
7. It would require 11 split body vehicles to replicate a similar capacity for the 8 rounds of the Borough which currently utilise 10 refuse vehicles. The number of vehicles required allows for spare vehicles to overcome problems such as breakdowns and to allow for the vehicles to be safety checked every 5 weeks throughout the year.
8. If this option were to be introduced, it would require a major change to resident's collection schedules, as the rounds would have to be rebalanced to accommodate the reduced refuse capacity with possible day changes for collections.
9. The split body vehicle option would require vehicles to travel to the disposal site for refuse and recycling in Portsmouth, 8 miles to the east of the Council Depot, whilst the food and vegetable waste would need to be disposed of in Christchurch, Dorset, which is the closest existing disposal facility, 52 miles to the west. The locations of food waste disposal facilities in South East England are detailed in Appendix (A). A brief explanation of the two main disposal methods can be found at Appendix (B).

10. If specific food and vegetable waste collection vehicles were to be purchased, nine 7.5 tonne plastic body vehicles would be needed for the service to cover the entire Borough. This allows for 8 vehicles to collect food and vegetable waste, and one spare vehicle to be used when the main vehicles are safety checked and as a backup resource in case of vehicle breakdowns.
11. The schedule of collections for residents would not be affected and they would receive their food and vegetable waste collection on the same day as their other waste collections.
12. There would be an additional cost of employing a further 8 drivers and 8 loaders to carry out collections in food and vegetable waste vehicles. There would also be a requirement for an additional vehicle fitter for the workshop to carry out a further 90 safety checks per year on the food and vegetable waste vehicles.
13. Providing food and vegetable waste collections would increase the number of Council vehicles on Fareham's roads each day as the vehicles would need to cover the whole Borough each week in addition to the existing refuse vehicles. This would mean that each road in the Borough would be visited by a refuse vehicle, a recycling vehicle, a garden waste vehicle, and a food and vegetable waste vehicle in a fortnightly period.
14. All residents would be required to have an additional food and vegetable caddy to be presented for collection each week, and also a smaller kitchen caddy to collect the food and vegetable waste initially. The waste would need to be transported to either a transfer station or direct to the disposal site in Christchurch, Dorset.
15. The introduction of food and vegetable waste collections would cost an additional £300,000-350,000 per year in fuel depending on which type of vehicle is used. There would also be a cost to publicise the new food and vegetable waste collection service to all residents informing them on how to use the service and the revised schedule of collections.
16. Currently the Council is able to dispose of all waste and recycling locally in Portsmouth, only 8 miles from the Council Depot. This practice is consistent with the Project Integra key objective that all 'partners will encourage the treatment of waste as close as reasonably possible to its source and at the highest level of the waste hierarchy as is economically practicable, minimising the cost of waste transport, and consistent with the principles of environmental sustainability and whole life cycle costs.' This can be found on page nine, Objective 3, in the Reference paper linked to this report. 'Project Integra Revised Joint Municipal Waste Management Strategy, November 2012'.
17. Details of the estimated costs of the option described above can be found at Appendix (C).

OPTION 2 – PROVISION OF FOOD AND VEGETABLE WASTE COLLECTIONS IN PARTNERSHIP WITH ANOTHER LOCAL AUTHORITY

18. Within Hampshire, only one other local authority currently provides a domestic food waste collection service. This authority provides a weekly food caddy collection service 5 days per week across their Borough. From information received, the service has a take-up rate from residents which yields just over 2,000 tonnes of food and vegetable waste per year.

19. The waste is collected in split body refuse collection vehicles. It is initially transported to a waste transfer station in Otterbourne near Winchester. Once the larger container is full, it is then transported to the disposal site near Christchurch, Dorset, (up to a 3 hour round trip).
20. The transfer station does not have the facilities to accept dedicated food waste vehicles, which require the vehicle to tip the waste into a ground level receptacle. The transfer station can only accept food and vegetable waste from food pods of split body vehicles which are lifted off the collection vehicle and tipped into the large container at height.
21. Following discussions with officers from this authority, it is clear that there is not sufficient spare vehicle capacity to be utilised to collect food and vegetable waste in Fareham. However, there may be an opportunity to share the transfer station as a disposal site for food and vegetable waste collected by Fareham and thereby reduce disposal costs.
22. Consequently, the purchase of 11 split body vehicles to replace the Council's current fleet of refuse vehicles would be required, along with employment of an additional driver and two loaders for the ninth crew required due to the reduced load capacity of the split body vehicles.
23. This option would require a major change to resident's collection schedules, as the rounds would need to be rebalanced to accommodate the reduced refuse capacity with possible day changes for refuse and food and vegetable waste collections.
24. There would be a cost to publicise the new food and vegetable waste collection service to all residents and to inform them of how to use the kitchen caddy and food waste bin, along with the revised schedule of collections.
25. Details of the estimated costs of this option can be found at Appendix (C).

OPTION 3 – PROVISION OF FOOD AND VEGETABLE WASTE COLLECTIONS BY AN EXTERNAL CONTRACTOR

26. After extensive research within the waste industry it has been found that there are limited numbers of private companies carrying out commercial food and vegetable waste collections across the UK, with most of these targeting commercial properties such as restaurants and hotels, where a large volume of food and vegetable waste is collected from a single business.
27. Within South East England, 8 companies were found to offer commercial food waste collections. The companies were contacted but none were willing to offer a domestic food and vegetable waste collection service within Fareham.
28. The main reasons given were the lack of a local disposal site and that the tonnages collected would not make the collection process financially viable for a private company. Full details of the companies and their services can be found at Appendix (D).

ENVIRONMENTAL CONSIDERATIONS

29. Carbon footprint is defined as the total amount of greenhouse gases (predominantly carbon dioxide CO₂) produced to directly and indirectly support an activity. It is measured in tonnes of carbon per year. The carbon footprint for collecting the food and vegetable waste from residents of the Borough is estimated to be 160 tonnes per year. In addition, a further 450 tonnes of carbon per year would be produced by the 8 vehicles driving the 88 mile daily round trip from the Council Depot to the disposal site in Christchurch, Dorset. Therefore, in the worst case the additional amount of carbon produced could potentially be 610 tonnes annually.
30. The current carbon footprint to collect and dispose of all refuse, recycling and garden waste for Fareham Borough Council is approximately 280 tonnes of carbon per year.
31. The current method of refuse disposal includes incineration. This process recovers energy from the waste and provides electricity for the national grid. Therefore use of fossil fuels is reduced – one tonne of solid waste equates to one third of a tonne of coal. The incinerator is located 8 miles from the Fareham Council Depot ensuring local disposal of waste that does not contribute to landfill and provides sustainable energy production.
32. Collecting food and vegetable waste in Fareham will increase the number of vehicles not only on the local roads but also the motorways and other roads to the disposal site. This would increase the total mileage driven by approximately 175,000 miles per year and would add to traffic congestion.
33. The number of bins each resident will need to put out will increase, requiring more storage space for bins at individual properties as each house will require a kitchen caddy within their property to initially collect the food and vegetable waste and also a food and vegetable waste caddy to put out for collection.
34. Based on information received from other authorities, it is estimated that the Council's recycling rate could increase by between 2 and 5 %.

CUSTOMER DEMAND

35. During the last 3 years, the Department of Streetscene has received one request from a resident of the Borough enquiring about food and vegetable waste collections, asking if the Council will be providing this in the future. This suggests that there is not a significant demand for this service within the Borough currently.

OTHER LOCAL AUTHORITIES

36. Officers have carried out an analysis of local authorities in South East England to find out how many currently offer a domestic food and vegetable waste collection service.
37. Within this geographical area, 18 of the 42 local authorities currently offer a food and vegetable waste collection service. A list of the participating authorities can be found at Appendix (E).

38. During 2009, WRAP (Waste and Resources Action Programme) funded a widespread pilot scheme for separate food and vegetable waste collections, involving nineteen English local authorities. Of these 19 local authorities, less than half have continued to offer a food and vegetable waste collection service.
39. The main reason given for not continuing with the service was lack of participation and therefore lower tonnages collected than forecast, making many of the services financially unviable. Another reason stated by several of the local authorities was the increased number of complaints from residents unhappy with two further receptacles to sort their waste into alongside their existing wheeled bins for residual waste and recycling.
40. The authorities that have continued to collect food and vegetable waste mostly dispose of their residual waste to Landfill and are generally contracted out services.

CONCLUSION

41. Streetscene officers have undertaken extensive research into the feasibility of introducing a kerbside collection of domestic food and vegetable waste in the Borough.
42. It is clear from this research that all of the options explored would incur a significant capital and revenue cost and have a detrimental effect on the environment due to the additional vehicle mileage required and the generation of hundreds of tonnes of carbon dioxide. These impacts are due in part to the lack of a suitable disposal facility in Hampshire.
43. A number of other authorities in England have introduced such a collection service and several have since removed them due to high cost and low demand. The majority of those still operating a food waste collection still dispose of other domestic residual waste to landfill. This is not the case in Fareham as this type of waste is incinerated to generate electricity.

Background Papers:

None

Reference Papers:

[Project Integra Hampshire Joint Municipal Waste Management Strategy November 2012.doc](#)

Appendices:

Appendix A – Map of Food Waste Disposal Sites in South East England

Appendix B – Disposal Process of Food and Vegetable Waste

Appendix C – Estimated Costs

Appendix D – Food and Vegetable Waste Collection Companies

Appendix E – Local Authority Policy on Food Waste Collections

Enquiries:

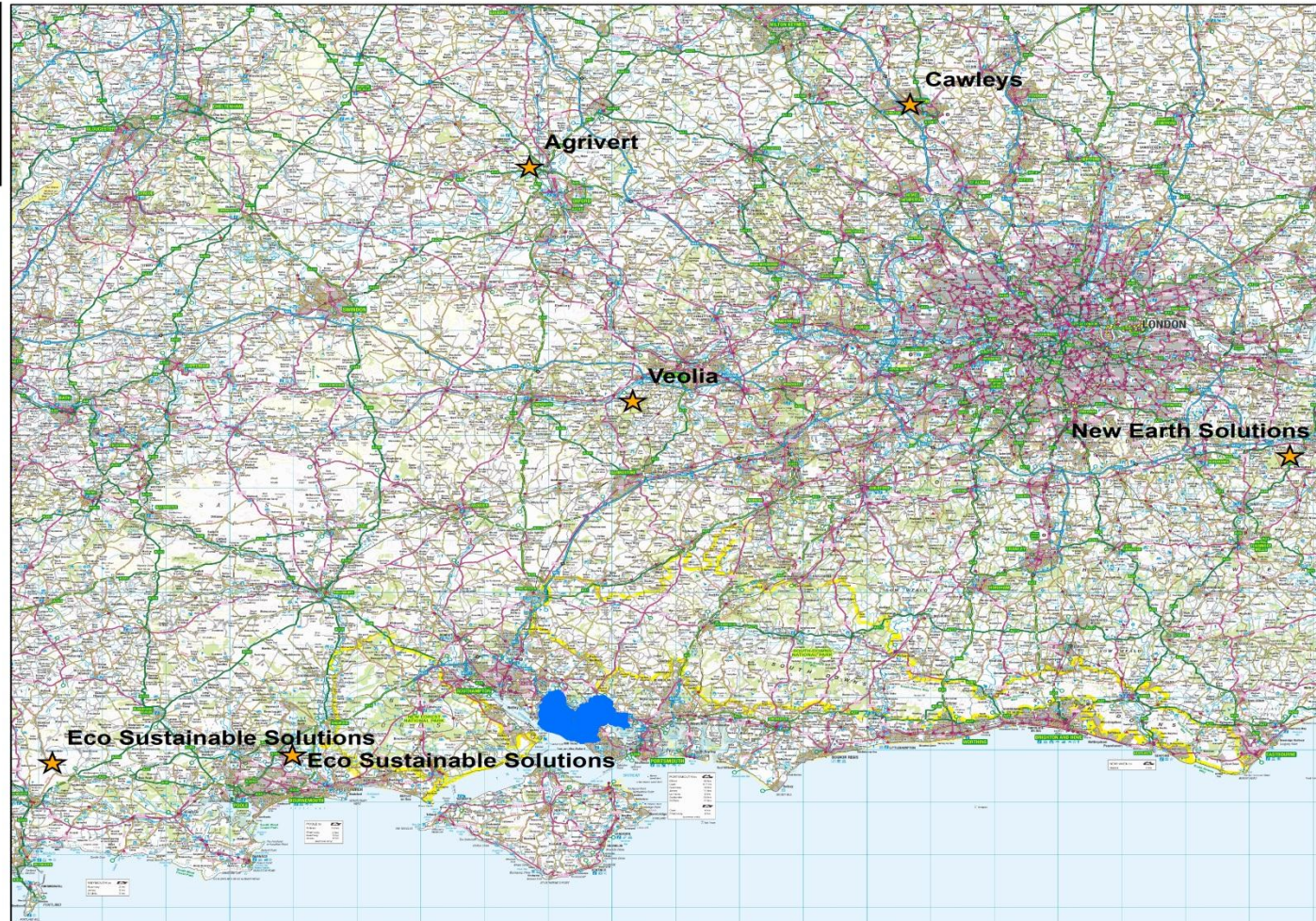
For further information on this report please contact Kitty Rose (Ext 4747)

APPENDIX (A) – MAP OF FOOD WASTE DISPOSAL SITES IN SOUTH EAST ENGLAND

Legend

- ★ Food Disposal Site
- Fareham Borough

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COMPANY	ADDRESS	DISTANCE FROM FAREHAM COUNCIL DEPOT
Eco Sustainable Solutions	Parley, Christchurch, Dorset	44 miles
Eco Sustainable Solutions	Piddlehinton, Dorchester	66 miles
New Earth Solutions	Blaise, Maidstone, Kent	96 miles
Agrivert	Witney, Oxon	94 miles
Cawleys	Luton, Bedfordshire	108 miles
Veolia	Lower Padworth, Reading, West Berkshire	56 miles

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APPENDIX (B) – DISPOSAL PROCESS OF FOOD AND VEGETABLE WASTE

There are two types of disposal process available for food and vegetable waste, in-vessel composting and anaerobic digestion.

In-vessel Composting

Once the food and vegetable waste has been transported to the disposal site in Christchurch, Dorset, it is processed using an in-vessel composting facility. The waste is shredded and put in to sealed units (clamps), where it is left for 10 - 12 days to heat up to a minimum of 70°C for at least 1 hour to sterilise. The temperatures are automatically monitored and recorded during this period. Once the batch has reached the required standard and is sampled and analysed, it is moved outside for maturation for a further 12 - 14 weeks.

After this, the nutrient rich compost is screened (with any plastic residue separated) and used on agricultural land to replenish the soil with nutrients.

Anaerobic Digestion

Anaerobic digestion is a natural process in which micro-organisms break down the organic matter found in wet biomass waste (such as food and vegetable waste, sewage sludge, animal manure and slurry) in the absence of oxygen, to produce biogas (mainly a mixture of around 60% methane and 40% carbon dioxide) and digestate (a nitrogen rich fertiliser).

The biogas can be burned directly in a gas boiler to produce heat or burnt in a combined heat and power (CHP) unit to produce heat and electricity. Alternatively, the biogas can be cleaned to remove the carbon dioxide and other substances, to produce biomethane. This can be injected into the national gas grid to be used in the same way as natural gas, or used as a vehicle fuel.

The digestate is then used to make fertiliser for agricultural land.

APPENDIX (C) – ESTIMATED COSTS

OPTION 1 – PROVISION OF FOOD WASTE COLLECTIONS IN HOUSE

a) Weekly collections aligned with current refuse/recycling rounds, using bespoke food waste vehicles

Capital Costs

9 bespoke food collection vehicles	£	450,000
48,000 large & small kitchen caddies	£	144,000
publicity	£	20,000
Total	£	614,000

Revenue Costs

8 crews of 1 driver + 1 loader	£	344,350
vehicle maintenance costs	£	54,000
fuel costs for collection	£	51,200
fuel costs for disposal	£	258,350
gate fees at disposal site	£	100,000
vehicle cleaning costs	£	3,600
additional vehicle fitter for workshop	£	31,900
Total	£	843,400

b) Weekly collections aligned with current refuse/recycling rounds, using split body vehicles with food waste pods to collect refuse and food waste at the same time

Capital Costs

11 food pod split body refuse collection vehicles	£	1,870,000
48,000 large & small kitchen caddies	£	144,000
publicity	£	20,000
Total	£	2,034,000

Revenue Costs

additional crew of 1 driver + 2 loaders due to reduced load capacity	£	64,100
vehicle maintenance costs	£	66,000
fuel costs for collection	£	57,600
fuel costs for disposal	£	290,650
gate fees at disposal site	£	100,000
vehicle cleaning costs	£	4,400
Total	£	582,750

Figures have been calculated based on collecting 2500 tonnes of food and vegetable waste per year.

OPTION 2 – PROVISION OF FOOD WASTE COLLECTIONS IN PARTNERSHIP WITH ANOTHER LOCAL AUTHORITY

Weekly collections sharing disposal options with another Local Authority but using FBC vehicles for collections

Capital Costs

11 food pod split body refuse collection vehicles	£	1,870,000
48,000 large & small kitchen caddies	£	144,000
publicity	£	20,000
Total	£	2,034,000

Revenue Costs

additional crew of 1 driver + 2 loaders	£	64,100
vehicle maintenance costs	£	66,000
fuel costs for collection	£	57,600
fuel costs for disposal	£	132,700
rental and transfer costs of large food waste container	£	90,000
gate fees at disposal site	£	100,000
vehicle cleaning costs	£	4,400
additional vehicle fitter for workshop	£	31,900
Total	£	546,700

Figures have been calculated based on collecting 2500 tonnes of food and vegetable waste per year.

OPTION 3 – PROVISION OF FOOD WASTE COLLECTIONS BY AN EXTERNAL CONTRACTOR

None of the companies contacted were prepared to provide an estimate of costs at this time.

APPENDIX (D) – FOOD WASTE COLLECTION COMPANIES

- Wastecare.co.uk – established in 1980, they offer a recycling and waste management service enabling waste producers from all industrial and commercial sectors to manage their waste, from collection to recovery regardless of the type volume or location.
- Biffa – a leading nationwide integrated waste management business providing collection, treatment, recycling and technology driven energy generation services.
- Sita - A recycling and resource management company, who deliver solutions to 12 million residents and 40,000 business customers throughout the UK. Sita currently only collect food waste from commercial premises.
- Palm Recycling - provide collection and recycling services to both public sector and commercial clients with over 25 years' experience. Palm collect from a number of Councils in the north (Liverpool & Edinburgh) as part of a full recyclables collection service.
- Select Environmental Services (Reading) – an independent waste management, recycling and hygiene specialist, collecting food waste from commercial premises.
- Eco Food Recycling –offer a commercial food waste collection service in Southern England including Dorset, Hampshire, Berkshire, Wiltshire, Surrey and Sussex. Veolia use Eco Food Recycling as a sub-contractor for their commercial food waste collections.
- Cawleys (Bedfordshire) – offer collection, sorting, treatment and recycling of a wide range of waste streams. Cawleys do not offer a collection service for food waste. Local authorities in the local area (Luton) deliver to their depot, but the individual authorities provide the collections.
- Bio Collectors – based in Surrey provide a food waste collection from commercial waste premises and have over 40 years' experience in the waste industry. Bio Collectors require a minimum of 2 x 120 litre bins collected once per week per premises to make the collection service viable.

APPENDIX (E) – LOCAL AUTHORITY POLICY ON FOOD WASTE COLLECTION

Area	Council	Food Waste Collection Service Provided	Refuse Disposal Method
Hampshire	Basingstoke & Deane East Hampshire Eastleigh Fareham Gosport Hart Havant New Forest Portsmouth Rushmoor Southampton Test Valley Winchester	No No Yes No No No No No No No No No No	Incineration
Kent	Ashford Canterbury Dover Maidstone Medway Shepway	Yes Yes Yes Yes Yes (mixed green waste & food waste) Yes	Landfill/ incineration
Surrey	Elmbridge Epsom & Ewell Guildford Mole Valley Reigate & Banstead Spelthorne Surrey Heath Tandridge Waverley Woking	Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes	Landfill
West Sussex	Adur Arun Chichester Crawley Horsham Mid Sussex Worthing	No No No No No No No	Landfill
East Sussex	Brighton & Hove Eastbourne Hastings Lewes Rother Wealden	No No No No No No	Incineration