

Portsmouth Food Waste Collection Trial

Case Study

Introduction

From the Waste Composition Analysis carried out in 2018, it was found that 30.3% of refuse was avoidable food waste and 9.1% was unavoidable food waste. With food waste making up nearly 40% of total collected kerbside refuse, the decision was made by PCC to trial a food waste collection service. The food waste tonnage for the whole city was estimated to be 17,766.6 tonnes for the 2018/19 period.

Food Waste Collection Trial One (FWT1)

Households on the trial

Collection rounds

The food waste rounds were chosen by members and matched to the existing refuse rounds. This was in order easily compare the tonnage of refuse collected to the tonnage of food waste collected. As the rounds have expanded, the food waste rounds now overlap other refuse rounds.

Houses

The trial was initially rolled-out to 8,773 houses split between the five collection days. Flats were not included in the original roll-out so officer efforts could be concentrated on any issues arising from the house collections.

The collection crew were finishing earlier than the refuse and recycling crews, so after 22 weeks, additional roads were added onto the original rounds. The number of houses now included on the trial now stands at 11,485.

Flats

Flats started to be introduced to the trial from the 6th week of collections. There are now 500 individual flats split between 28 blocks receiving a food waste collection. These are split between PCC housing blocks and private blocks. PCC blocks were easier to get agreed and we had the added help of our Estate Service Officers to monitor the use of the bins. Private blocks were generally welcoming of the food waste collection, as long as there was adequate space for the bins and communication if issues arose.

Containers

Houses

Houses were supplied with two caddies:

- 5 litre caddy - to be kept in the kitchen for daily use
- 23 litre caddy - to be used for collection

Caddies were acquired from Mattiussi, with a lead time of 4-4.5 weeks with Council logo hot stamp. Prices for the 5 litre and 23 litre were £0.86 and £2.73 respectively when 10,000 of each ordered.

Caddies were kept at a cost at Fort Cumberland before the trial began, as they need to be stored indoors.

Flats

Individual flats were supplied with a 5 litre caddy to be used inside the flat. A communal 140L bin was installed for the flats to empty their caddy into and for collection.

The number of 140L bins supplied was based on the number of flats in each block. We initially based this on each flat potentially producing 23 litres of food waste a week (to match the larger caddies given to houses). So for six individual flats, one 140L bin was supplied. However, we did find that flats did not use the service to the level of houses. We monitored the level of use each week, and if they were not fully used, we would remove the additional bin/bins in order to prevent contamination.

Vehicle

We are using a 7.5 tonne vehicle to collect from both houses and flats. We had to ensure the vehicle back was not too low when tipping to ensure we could use the skip at the ERF.

Model: Micro L Body

Max payload: 3.58 Tonnes

Bin lifter: 120-1100 litre "Comb"

The vehicle was acquired through Biffa from another contract.

Caddy liners

One roll of 5 litre complimentary liners was supplied to all properties for use in the smaller caddy. These were purchased from Mattiussi for £14.30 per 1,000.

Communications

Letter

An introductory letter was delivered to all households participating in the food waste collection service. These were to prepare residents two weeks prior to receiving the food waste caddies. Details included were the reasons behind the trial, when to expect the caddies, when the first collections will commence and how to present the caddies on collection day.

Booklet

An information booklet was supplied inside the caddies when delivered. This answered the majority of the assumed 'frequently asked questions. For example, what can be put in the caddy, how to present the caddy, how to use the caddies and information about liners. The WRAP design was not used for the booklets, mainly due to having a template already from when black bins were rolled out across the City.

Stickers

Two stickers were also provided in caddies on delivery. One was an address label for the outside caddy and one was an information sticker for the indoor caddy. The stickers were taken from the WRAP design. Communal block bins had a laminated poster stuck to the top of the bin lid to show it was for food waste.

Council webpage

A new page was created to provide details of the roads included in the trial, more information on the trial and how to use the caddies.

Press release

A press release was circulated a week prior to the start of collections, with comments from members.

Costs

To provide 9,000 households with communications cost £2,500.

Resident enquiries

There was a dedicated phone line set up just for the food waste collection enquiries. This worked well to start with, as there was a large number of enquiries. However, as the enquiries diminished, it wasn't worth having an officer monitoring these calls and so officers were deployed to resolving other waste issues. This led to residents being unable to contact us and frustration. The phone line was then disconnected and calls diverted to the usual route for waste enquiries.

Collection

Collection Round Numbers

Collection rounds for the food waste trial matched number of the refuse round.

Monday - 1,621

Tuesday - 1,475

Wednesday - 1,889

Thursday - 2,201

Friday - 1,587

Collection Method

Rather than emptying each caddy into the back of the vehicle, the crew were supplied slave bins for each crew member (one for each side of the road). This allowed the crew to empty multiple bins before needed to empty in the vehicle. Originally a 240L bin was used, however this was found to get too heavy so was swapped for 140L bins.

The collection crew were satisfied with the caddies and how easy they were to empty.

Disposal

The food waste was disposed of in a skip located at the ERF. The skip had a hydraulic lid which was opened when the crew arrived. Two skips were available, one for disposing into and one to replace when the skip was transported to the anaerobic digestion site.

Round Expansion

The crew is able to get round more households due to the use of the slave bin, and servicing around 10 houses before going to the vehicle. This has been done gradually over the year to ensure the crew do not get overwhelmed with the number of properties. The number of households serviced grew by nearly 30% and 28 blocks have been added. The rounds now look like this:

Monday - 2,618 houses and two blocks comprising of 30 flats

Tuesday - 2,207 houses and eight blocks comprising of 309 flats

Wednesday - 2,790 houses and four blocks comprising of 39 flats

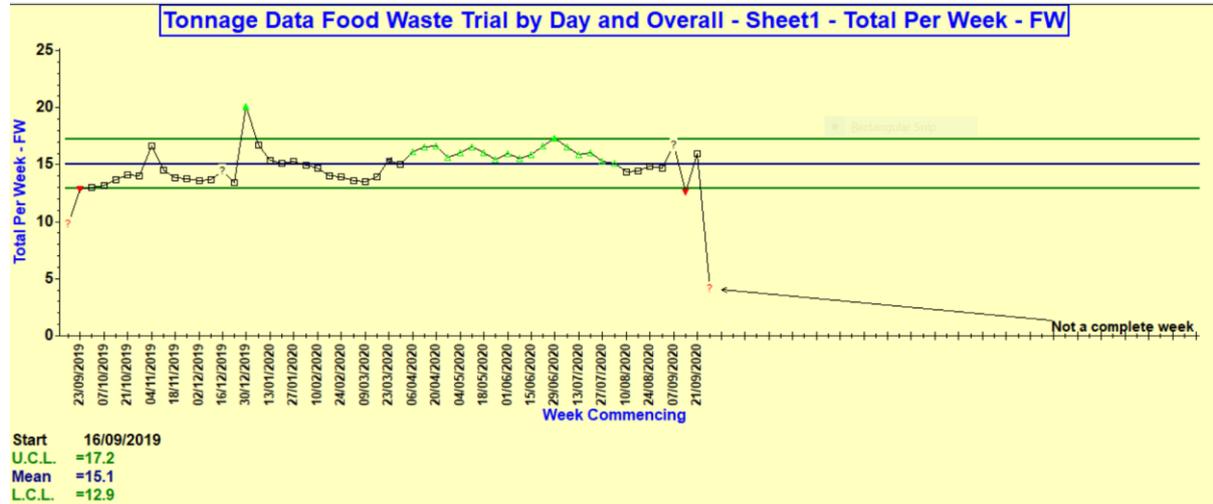
Thursday - 2,498 houses

Friday - 2,095 houses and 14 blocks comprising of 122 flats

Results

Tonnage data

Since the start of the trial, an average of 15 tonnes of food waste has been collected per week. This equates to 1.2 kg per household per week.



Approximately 20% of waste has been diverted from the refuse to food waste recycling. As the WCA showed food waste to make up 40% of refuse, this indicates 50% of the total food waste is being removed from the refuse in the trial areas.

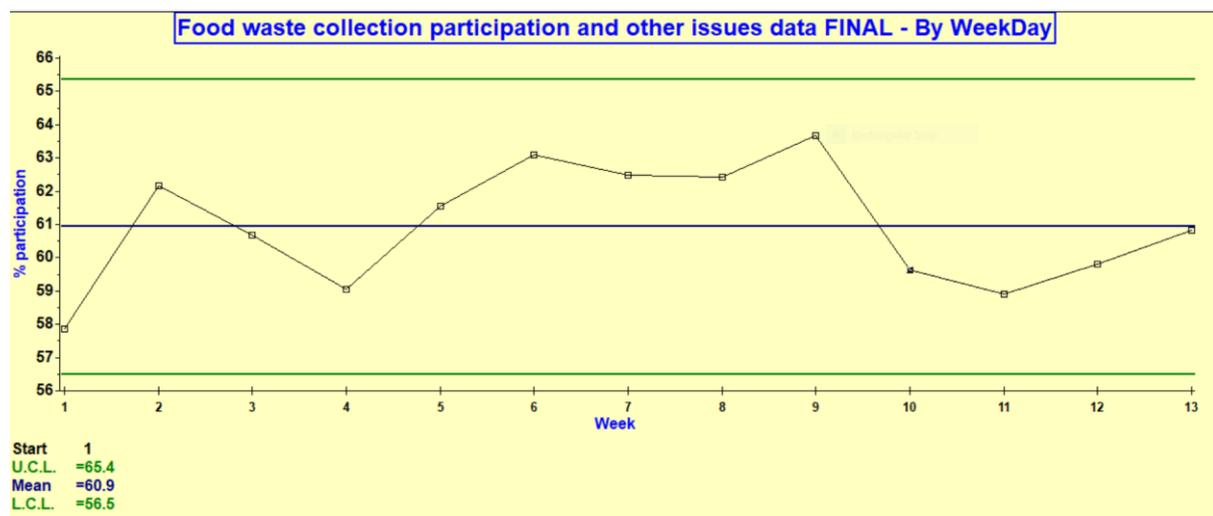
It was expected the tonnages would lessen over the weeks, due to realisations of how much food is being wasted and shopping habits changed. However, this was mitigated due to adding more households onto the service. The average food tonnage collected each week has remained stable, so it is assumed the original houses have reduced their food waste. If not, through adding additional households on, the tonnage for food would have increased.

Participation

Houses

For the first 13 weeks of the trial, officers were with the crew recording the properties who had not presented a food waste container. The crew do have an in-cab PDA, however because the crew are emptying 10 containers before going to the vehicle, it was difficult to remember all the addresses by the time they got back to the vehicle.

Participation for the houses was an average of 61% per week:



Flats

Checking participation for flats was more difficult, as it wasn't known which particular flat was participating or not. The fill levels of the food waste bins were monitored to get an idea on how well the service was being used. Approximately, 50% of the available capacity was being used. If bins were recorded as empty over a couple of weeks and the remaining bins were not full, bins would be removed. This was to ensure bins were being used to their full capacity, rather than having 25% in each bin for example and needing more tips than necessary.

Resident Satisfaction Survey

Residents were asked to complete a survey just before Christmas. Flyers were posted through the doors of all households in the trial with an address to a SurveyMonkey survey.

The majority of responses came from houses, with only four responses from flats.

Nearly 11% of houses included in the trial responded with 93% of respondents being either very satisfied or satisfied with the introduction of a food waste collection. The main reason for being dissatisfied was "it smells". Of the responses, 48% said they have changed their shopping habits to reduce food waste. Nearly all of respondents (97%) are able to dispose of all their weekly food waste in the 23 litre caddy and 98% found the caddies easy to use.

Learning from the trial

From this trial, there were a few points which could be improved for the next trial:

- Ensuring there is a plan for more roads to be added as soon as it is found the crew can take more capacity.
- Providing a larger liner than the caddy size. The 5 litre caddy liners were found to slip off the rim of the caddy easily, tore due to weight and was harder to tie up. For the next trial, 7 litre caddy liners have been provide for the 5 litre kitchen caddy.
- When monitoring fill rates in flats, have a standardised method of recording. Officers would record the fill rates as percentages as well as number of bags in the bin. It would be better to record the data as percentages for ease of analysis.
- Rather than a dedicated phone line for food waste enquiries, ensure the team who usually deal with general waste enquiries have the resources to take food calls as well.
- Order more stickers than households involved in the trial. Residents may need to swap their caddies due to damage, theirs have gone missing or they need an additional caddy due to the volume of food waste they produce.

Appendix

Food waste caddies



Vehicle





Technical Specification

Model: Micro L Body

Body Capacity	m ³	5
Body External Dimensions	Length mm	3,230
	Width mm	1,984
	Height mm	1,300
Equipment Weight	kg	1,200
Max Payload (Subject To Refuse Density)	kg	3,580
G.V.W.	kg	7,500
Maximum Working Pressure	bar	200
Maximum Compacting Ratio		3:1
Engine Revs During Working Phases	rpm	1,000
Refuse Loading Speed	m ³ /min	1.5
Complete Loading Time	sec	25
Full Body Unloading Time	sec	55
Body Unloading System		By Tipping
Equipment Working System		Hydraulic
Compaction Cycles		
i Semi-Automatic with Stop at the end of each cycle		
ii Manual with Electrical Control		
Steel: Hypostressed Structural Components		Fe 360
Mechanical Elements		C 40
Container Lifting Device		Comb For 120-240-360-1100h Bins

MAIN FEATURES

- Shorter overall vehicle length as bin lift stows underneath rear and within body length - Ideal for restricted access, rural & inner city collections.
- Large hopper for 1100 / 1280 litre bins - Can be tipped without spillage in one cycle. Faster loading without 'choking of the hopper' due to one piece body design with no separate hopper. No waiting for hopper clearance cycles at multiple bin collection sites.
- One piece body retains liquid up to 1000mm deep / 3650 litres with front body drain as standard - Ideal for food waste and materials with a high liquid content.
- Alternate compacting cycle
- Hydraulic compacting blade
- Compaction cycles: - single synchronized with container lifting device - manual
- Unloading by body tipping with double effect cylinder at the first stage
- Stabilizers for unloading operations
- Drainage gate



BODY CONSTRUCTION

- Curved shaped one piece construction, rolled high tensile steel body for high strength and good aesthetic appearance
- Concave shaped body floor to facilitate easy leachate collection and drainage
- Body roof for waste containment and better packing strength distribution with reduced stress points
- Body drainage gate with screw tap

TAILGATE CONSTRUCTION

- One piece construction body with no separate tailgate / hopper ensures no leakages
- Top mounted, fully enclosed compaction blade with 3:1 compaction
- Compaction blade cylinders mounted outside the hopper area, keeping them clear of the refuse loading area



Letter



Portsmouth
CITY COUNCIL

**Housing, Neighbourhood and Building
Services**

Civic Offices
Guildhall Square
Portsmouth
PO1 2AL

Phone: 023 9284 1244
Fax: 023 9284 1561
Email:
recyclingandrubbish@portsmouthcc.gov.uk
Date: August 2019

To all food waste trial residents

Please recycle this letter

Dear Residents

Your road has been selected to take part in a food waste collection trial

About 40% of the rubbish collected in Portsmouth is food waste, so providing a separate food waste collection service will reduce the amount of rubbish being sent for incineration and will help Portsmouth become a greener city.

In the next few weeks we will be delivering two caddies to every household in the trial area. The smaller caddy is to be kept in the kitchen for you to use on a daily basis. Once it's full you can empty the contents of your smaller caddy into the larger caddy, which is then put out on the pavement alongside your other rubbish and recycling bins on collection day. Your food waste will be sent for anaerobic digestion to produce biogas and fertiliser.

An introductory roll of compostable caddy liners will be provided to use in the smaller caddy. You can use the compostable liners in this caddy, newspaper or just put the food waste straight in. **Do not use plastic bags.**

We will start collecting food waste from Monday 16 September 2019. Your food waste will be collected **weekly on the same day as your rubbish collection.**

We will be monitoring the amount of normal weekly rubbish and separate food waste collected weekly during the trial. The results from this monitoring, along with any feedback from residents, will help us decide if we should introduce the scheme across the whole of the city.

An information booklet will be given to each household when the caddies are delivered. This will give you the full details of the trial and should answer most of the frequently asked questions, but for any further queries feel free to contact us on **023 9284 1244** or by email at recyclingandrubbish@portsmouthcc.gov.uk If you do not receive your food waste caddies by Friday 13 September 2019, please let us know.

Yours faithfully,

Your Waste Management Team

Booklet

recycle
for Portsmouth

Portsmouth
CITY COUNCIL

Your new caddies for food waste have arrived!

- ✓ Easy storage for food waste
- ✓ Reduced waste in black bins/bags
- ✓ Safer from animals - cleaner streets
- ✓ Energy and fertiliser production

Please recycle this leaflet!

Food waste will be collected every week

www.portsmouth.gov.uk

Your new food waste caddies

Why am I getting a food waste caddy?

Many residents have asked for a food waste collection and the government is currently looking to make it compulsory, so we are trialling it in some areas of the city. Food waste collections will increase recycling and reduce waste.

Do I have to have a food waste caddy?

Yes. All households in the trial areas will be issued with food waste caddies.

Can I use my own container?

No, we will only empty official Portsmouth City Council food waste caddies.

Why do we have two caddies?

The smaller caddy is to be kept in the kitchen so you can put your plate scrapings and other food waste directly into it. Once it's full, transfer the waste into the larger caddy which is most commonly kept outside (in a front garden or forecourt) and will be used for the main collection. If you don't have a front garden or forecourt, store the large caddy to the rear of your property and only present it on the pavement on collection day.

When will collections start?

You can use your food caddy straight away. Collections take place on the same day as your rubbish collection. Please ensure the larger caddy is out by 7am as it will be collected by a different collection crew.

Won't animals be able to knock the food caddy over and get into it?

For collection, put the handle of the caddy straight up or fully forward over the front and this will lock the lid. So even if it is knocked over, the food waste will not spill out.



Before taking your caddy out for collection, check:

- All food waste is in the larger caddy
- The caddy lid is closed
- The caddy is at the front boundary of your house by 7am on collection day

What can I put in the food waste caddy?

All of your food leftovers, raw and cooked, including:

- All uneaten food and plate scrapings
- Tea bags and coffee grounds
- Out of date or mouldy food
- Raw and cooked meat, including bones
- Raw and cooked fish, including skin and bones
- Dairy products such as cheese
- Eggs and egg shells
- Rice, pasta and beans
- Baked goods such as bread, cakes and pastries
- Fruit and vegetables, including raw and cooked vegetables and peelings
- Shredded paper
- Cut flowers

What can't go in the caddy?

Please do not put any material that is not food waste, including:

- Packaging of any kind
- Plastic bags
- Glass
- Liquids such as milk - these may leak causing spillages when transporting the food waste
- Cat litter/animal faeces
- Compostable cutlery

Address labels

An address label sticker is provided with the food caddies so you can write your house number on it to identify your larger caddy after collection. An advice sticker will also be included to put on the smaller indoor caddy.

Where does it go?

The food waste is sent for anaerobic digestion.



Can I have a bigger caddy?

No, they only come in the set size, but we can supply extra caddies if you find you have a lot of food waste. However, please trial your caddy for a few weeks first before contacting us for an extra one, as you may find that you naturally cut down the amount of food waste you produce over time.

Are you providing liners for the caddies?

During the trial we will issue residents with one roll of fully compostable caddy liners free of charge. Using liners inside your caddy is not compulsory; however, it does help to keep the caddy clean. If you decide not to use liners and the caddy gets dirty, it can simply be rinsed out to clean it. If you run out you can either line your caddy with

newspaper, or you can purchase compostable liners from most major supermarkets. Please make sure that any liners you purchase are fully compostable and display the seedlings logo, or state they are 100% compostable with the reference EN13432. **IMPORTANT** - If the caddies are lined with plastic bags, then the caddy will not be emptied by the crew.

I am unable to get the food caddy to my front boundary for collection, what can I do?

An assisted collection service can be provided if there is no one at the property that is physically capable of putting their bins at the front boundary. Call 023 9284 1244 to apply for an assisted collection. You do not need to do anything if you already have an assisted collection.

For more information:

- Call **023 9284 1244**
- Email recyclingandrubbish@portsmouthcc.gov.uk
- Search **food waste trial** at www.portsmouth.gov.uk



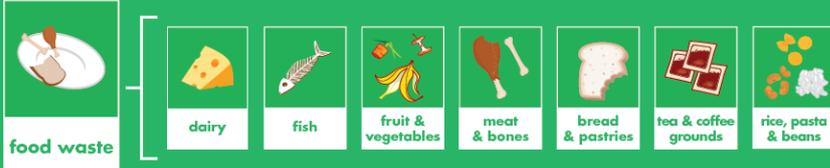
You can get this information in large print, Braille, audio or in another language by calling 023 9284 1244

Designed by: marketing@portsmouthcc.gov.uk • Published: July 2019 • Ref: 34.131

www.portsmouth.gov.uk

Stickers

What can I put in my caddy?



food waste

dairy
fish
fruit & vegetables
meat & bones
bread & pastries
tea & coffee grounds
rice, pasta & beans

Place **any raw** or **cooked food** in your caddy. You can even scrape **uneaten food** straight into your caddy.

Top tip
Remember to not let your caddy get too full before emptying it

Remember
Recycle your mouldy and out of date food, including ready meals removed from their packaging

Food waste caddy



Communal bin poster



Food recycling

Yes please

- ✓ All uneaten food and plate scrapings
- ✓ Mouldy and out of date food (including ready meals)
- ✓ Raw and cooked meat and fish, including bones
- ✓ Tea bags and coffee grounds
- ✓ Dairy products, cheese, egg, egg shells and yoghurt
- ✓ Rice, pasta and beans
- ✓ Bread, cakes and pastries
- ✓ Raw and cooked vegetables and fruit, whole and peelings

No thanks

- ✗ Packaging of any kind
- ✗ Liquids such as milk
- ✗ Oil or liquid fat
- ✗ Any material that is not food waste



food waste

If you notice any issues with this bin or the food waste collection trial in general, please phone the Recycling and Rubbish Team on 023 9284 1105 or email recyclingandrubbish@portsmouthcc.gov.uk