

Household food waste collections guide



This publication updates the 2009 guide and pulls together the findings from more recent studies and pilots conducted by WRAP and others. Through the various sections, this guide is designed to support local authorities by detailing good practice and evidence which can help inform the design and delivery of high capture, cost-effective food waste collections.

Section 11: Increasing food waste capture from existing separate weekly collections

This section draws on the findings from pilots WRAP undertook with 11 local authorities between 2013 and 2015 to implement cost-effective solutions aimed at increasing food waste for recycling. These solutions were designed to help address some of the main barriers to participation cited by residents (see Section 2).

A total of 19 projects were run over the 11 local authority areas. Before and after tonnage data were collected weekly. Participation surveys were carried out before and after the solutions were introduced and focus groups were held to gauge residents' opinions of the suggested solutions.

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11.1 Potential solutions

Various solutions were developed to overcome the barriers raised in previous face-to-face surveys and focus groups (see Section 2).

11.1.1 Free supply of liners

Providing free liners helps to alleviate concerns over hygiene issues. Free supplies of liners were provided to households on a continuous basis. These liners were printed with artwork highlighting the type of food waste that can be recycled (see Figure 11.1).

Figure 11.1 Liner artwork



The liners were either compostable or made of polyethylene (PE) depending on the treatment route. Compostable liners were used in local authority areas where an in-vessel composting (IVC) facility was used. Polyethylene liners were tested in some areas where anaerobic digestion (AD) plants were able to accept this type of liner.

One local authority tested rolls of liners wrapped in a printed bag (see Figure 11.2), removing the need for a leaflet and protecting the compostable liners.

A number of the projects also tested different indicators to alert the collection crews of the need to leave another roll. The indicator was either a red strip on the last few liners or a tag inside the roll of liners. Providing a mechanism by which residents alerted the crews removed the barrier for residents of phoning the council and waiting for a delivery, or placing notes on caddies that were likely to get lost.

Figure 11.2 Artwork for liner wrapping



11.1.2 Leaflet with amended communications

Communications leaflets from local authorities to residents were redesigned to address the barriers raised by the surveys and focus groups. The revised leaflets included:

- details of what happens to the food waste and where it is taken to;
- tips to encourage regular emptying of the caddy to reduce smells and spills;
- an emphasis on the flexibility for individual householder to use the indoor caddy so that it works best for them;
- details of the types of food waste that can be recycled, drawing attention to packaged ready meals in particular; and
- a thank you to those residents already using the service.

The leaflets were tested further in another focus group to ensure the messages were being received correctly. Figure 11.3 shows the redesigned leaflet.

Figure 11.3 Redesigned leaflet

Reasons to recycle your food

Q. Why recycle food waste?

A. Recycling your food waste is better for the environment. Rotting food in landfill generates methane, a greenhouse gas that is 25 times more potent than carbon dioxide and contributes to global warming and climate change. Food waste that ends up in the general rubbish, instead of your food recycling bin, is sent to landfill.

The cost of sending food waste to landfill is increasing, so by recycling your food you will help the Council and its residents save money too.

Q. How is my food waste recycled?

A. Your food waste can be turned into something useful, if you recycle it. The food waste is taken to a special processing plant [insert location of processing plant] where it is used to generate electricity and to produce a safe compost material which is used on local farms [insert local information where possible].

Q. How can I waste less food?

A. For tips and recipes to help you waste less food and save money, visit lovefoodhatewaste.com

For more information contact us
Visit [insert website address]
Call [insert contact number]
Email [insert contact number]

Thank you for recycling.
 Last year households recycled almost **3,000 tonnes** of their food waste.
 Let's work together to recycle even more!

Food recycling

It really does make a difference



Improving your food recycling service

We are making it **easier and cheaper** for you to recycle your food waste. We are providing you with **free caddy liners** to encourage everyone to use the food recycling service more.

What food can I recycle in my caddy?

Remember, you can include food in your recycling bin that you can't compost at home, including raw and cooked meat and fish

<p> food waste</p> <ul style="list-style-type: none"> ✓ All uneaten food and plate scrapings 	<p> dairy</p> <ul style="list-style-type: none"> ✓ Dairy products ✓ Cheese ✓ Eggs 	<p> bread & pastries</p> <ul style="list-style-type: none"> ✓ Bread ✓ Cakes ✓ Pastries
<p> meat & bones</p> <ul style="list-style-type: none"> ✓ Raw meat ✓ Cooked meat ✓ Bones 	<p> tea & coffee grounds</p> <ul style="list-style-type: none"> ✓ Tea bags ✓ Coffee grounds 	<p> fruit & vegetables</p> <ul style="list-style-type: none"> ✓ Raw vegetables ✓ Cooked vegetables ✓ Whole fruit ✓ Peelings
<p> fish</p> <ul style="list-style-type: none"> ✓ Fish ✓ Cooked fish ✓ Bones 	<p> rice, pasta & beans</p> <ul style="list-style-type: none"> ✓ Rice ✓ Pasta ✓ Beans 	<p style="text-align: center;">Remember to recycle your mouldy and out of date food, including ready meals removed from their packaging</p>

Printed on recycled paper

Using your food recycling collection

- Line your indoor caddy with one of the **free liners** supplied and put your food waste in it.




Top Tip
If you would rather use your own indoor container that's fine - do whatever works for you
- Whenever you need to empty your caddy, tie the top and put it in your outdoor food recycling caddy.




Top Tip
Remember to not let your caddy get too full before emptying it
- Remember your food recycling bin comes with a lockable handle. **Please put your food recycling out for collection by 7.00am every week on your normal recycling day.**





If you do not have a kitchen caddy, or an outside food recycling bin, or you want to find out how to get more liners please order online at [insert web address] or call [insert phone number]

11.1.3 Residual bin stickers

A5 stickers (see Figure 11.4) were placed on the lid of residual bins to discourage residents from putting food waste into them.

Figure 11.4 Examples of residual bin stickers



11.1.4 Food caddy stickers

Food caddy stickers (see Figure 11.5) were developed to try to overcome the apparent lack of knowledge about which types of food waste could be accepted for food recycling.

Figure 11.5 Food caddy sticker



11.1.5 Door-to-door engagement

Door-to-door engagement was carried out in one local authority area to encourage use of the food waste service.

11.1.6 Housing units for communal bins

Communal bins for food waste can potentially cause issues with hygiene. The housing units servicing communal bins in the local authority areas participating in the research were fitted with a pedal mechanism. This opened the bin without residents having to touch the lid.

11.1.7 New kitchen caddies for flats

To overcome the barrier of small kitchens in flats, a new design of caddy was issued to some flat residents. These caddies could be attached to the inside of kitchen cupboard doors to save space.

A summary detailing how the different solutions/ intervention measures were applied in the various pilots is provided in Table 11.1.

Table 11.1 Summary of pilots to test different solutions to increase food waste capture

Pilot	Number of households	Free liners	Amended leaflet	Residual bin sticker	Caddy sticker	Door-to-door engagement	Housing units for communal bins	New kitchen caddy for flats
1	2,956		X	X				
2	14,000		X	X				
3	5,100	X	X	X				
4	4,200	X	X	X				
5	9,400	X	X					
6	3,700	X	X		X	X		
7	3,000	X	X		X			
8	3,500	X	X					
9	3,500	X	X					X
10	3,000	X	X				X	
11	7,700	X	X	X				
12	4,957	X		X				
13	5,253	X (wrapped roll)						
14	3,700	X	X		X			
15	2,800	X	X		X	X		
16	5,123	X	X					
17	9,500	X	X	X				
18	15,000	X	X	X				
19	4,200	X	X	X				

X = solution tested

11.2 Tonnages collected from different pilot projects

Table 11.2 shows the percentage uplift in tonnage and participation from the different pilot projects (typically four weeks before and eight weeks after). In general, the greatest percentage increase in participation was seen in areas where residual bin stickers were used. Free liners and leaflets only were the least effective. The pilot that included door-to-door engagement did not significantly change tonnage or participation compared with other measures.

Table 11.2 Summary of weekly tonnage figures and percentage increase for different pilot projects

Pilot	Solution/ measure*	Tonnage before	Tonnage after	Tonnage percentage increase**	Participation percentage increase***
3	Residual bin sticker, liners, leaflet	1.85	3.00	62%	18.2%
4	Residual bin sticker, liners, leaflet	3.36	4.58	36%	23.8%
9	Caddy, liners, leaflets (flats)	2.03	2.74	35%	
18	Residual bin sticker, liners, leaflet	13.26	16.87	27%	
11	Residual bin sticker, liners, leaflet	5.03	6.39	27%	
1	Residual bin sticker, leaflet	2.99	3.7	24%	11.5%
10	Housing units, liners, leaflets (flats)	1.98	2.43	23%	
17	Residual bin sticker, liners, leaflet	8.25	9.94	20%	
19	Residual bin sticker, liners, leaflet	5.43	6.40	18%	
12	Residual bin sticker, liners	5.54	6.25	13%	8.1%
14	Caddy sticker, leaflet, liners	3.18	3.38	6%	2.7%
15	Caddy sticker, leaflet, liners, door knocking	4.01	4.19	5%	-3.9%
6	Caddy sticker, leaflet, liners, door knocking	4.27	4.45	4%	-2.7%
2	Residual bin sticker, leaflet	12.84	13.31	4%	
5	Liners and leaflet	10.60	11.00	3%	2.9%
7	Caddy sticker, leaflet, liners	3.74	3.86	3%	-1.9%
8	Liners and leaflet (flats)	1.80	1.82	1%	
13	Wrapped liners	4.46	4.48	1%	4.4%
16	Liners and leaflet	5.18	5.19	0%	-0.9%

* Ordered according to percentage increase in tonnage after introduction of package of measures.

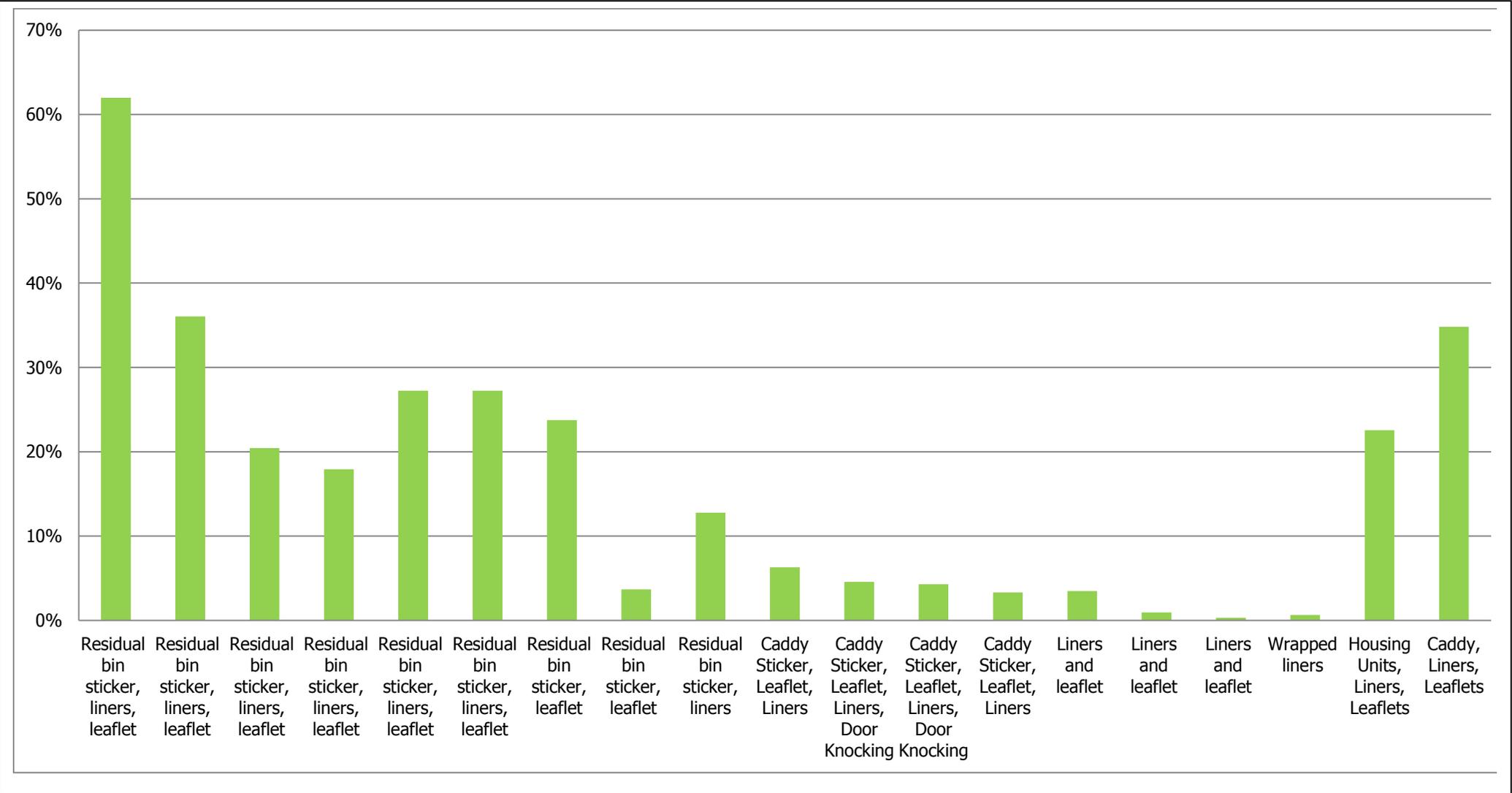
** From weekly monitoring of tonnages collected.

*** From participation surveys.

Figure 11.6 shows the percentage change in tonnage as a result of the pilot projects. Those pilot areas which provided residual bin stickers saw the greatest increase, with an average of 28%. The most effective 'package' (liners, residual bin stickers and leaflet) saw an increase of 32% on average. The liner and leaflet only solution was the least effective, with an average increase of only 2%.

Appendix H contains a detailed analysis of the findings from the tonnage monitoring and participation surveys.

Figure 11.6 Percentage increase in weekly tonnages collected as a result of the different packages of measures



11.3 Guidelines on increasing food waste capture

The guidelines below on how to implement a successful service relaunch to increase food waste capture are based on lessons learnt from the pilots.

11.3.1 Planning

Planning the relaunch of the collection service in order to increase food capture is fundamental to its success.

Implementation plan

- Develop an implementation plan with the agreement of the main stakeholders (members, contractors, contact centre).
- Agree the key tasks with the contractors. Having contractors on board to carry out the delivery of the liners, stickers, etc. can save time and money.
- Appoint a dedicated project manager to ensure smooth implementation.

Liners

- Agree the specification of the liners with the treatment facility.
- Before ordering, check the chosen liner is compatible with the kitchen caddy already issued to residents.
- Where possible, request a sample roll to check quality and suitability.
- Order the liners as early as possible, as they are likely to have the longest lead time.
- Smaller rolls (e.g. 26 liners) reduce wastage should residents decide not to take part. They also easier to deliver. The pilot projects used rolls of 26.

Equipment

- Order caddies and bins (where required) as early as possible due to long lead times.
- Make sure caddy replacements are in stock and there is sufficient delivery resource in place to deal with any increase in demand (see Section 11.3.4). The revamped food waste leaflet generated requests for other recycling bins and containers.
- Print leaflets in full colour and on good quality recycled paper.
- Order good quality, ultraviolet-resistant stickers. Specify A5 to ensure they fit neatly on the lid of the bins.
- Print stickers on rolls so collection crews can attach them to their belts to make distribution easier. Single stickers with crack backs were found to make distribution more difficult and time-consuming.

11.3.2 Monitoring

If the tonnage is not already recorded by round, a robust process for obtaining monitoring data needs to be in place to measure the impact of the relaunch.

Monitoring tonnage

- Ensure the contractors are on board so tonnage information can be recorded correctly.
- Where practical, carry out monitoring for eight weeks before implementation and three months after implementation. This will provide a useful dataset for analysis.
- Separate collection rounds are the easiest to monitor. However, collection crews need to be aware of the changes as they must tip off at the end of their round before supporting other rounds.
- Food collected by stillage or resource recovery vehicles: pallet scales were used in some of the pilot areas. Each stillage was weighed as it came into the depot and before the food waste was emptied into the skip/ collection container. Alternatively, rather than targeting single rounds, targeting a single day means the collection container for the day can be weighed before leaving the depot rather than each individual stillage.
- Food collected with pod vehicles: use a similar method to that for stillage vehicles.

Other measures to monitor

- Monitoring the number of caddy requests by rounds is useful to be able to plan for further roll-outs.
- Recording the compliments and complaints can be useful feedback. The responses to the stickers provided during the pilot projects were, in general, not negative and many were positive. Very few (if any) complaints were received.
- Supervising the delivery staff will help to ensure households receive the liners, leaflets and residual bin stickers.

11.3.3 Delivery

In the pilot projects, the most successful delivery was by the collection crews. Residual waste collection crews placed stickers on the bins as they were emptied and an additional crew member delivered liners and leaflets to the properties. Key advice is as follows.

- Deliver all the materials at the same time, so the resident receives a 'package' in one go. Where delivery was not completed at the same time, this was seen by one resident as a waste of council tax. It also created confusion among residents, generating phone calls to the council.

- Either leave liners on the doorstep or post them through the letter box (provided they are in a secure roll). Do not put them in collection caddies. Placing the liners in caddies resulted in residents not using them because they were not aware they had been delivered.
- Only place stickers on residual waste bins when presented on collection day. To reduce complaints from residents, avoid distribution crews walking onto the property.
- Delivering stickers can be difficult when conditions are wet as the bins need to be wiped clean for the sticker to stay attached.
- Provide advice to collection crews to ensure the stickers are placed on the bins correctly. A copy of the guidance used in the pilot projects is available from WRAP.
- Use the collection crews to replenish liners. This was found to be the most effective way to distribute liners. One local authority provided crews with a holster/ small bag so that they did not have to return to the vehicle to fetch more liners.

11.3.4 Caddy requests

Any form of communication is likely to increase requests for caddies from residents. The number of requests varied for each local authority carrying out pilot projects. However, on average 2% of the households in the pilot areas requested caddies following the delivery of different communications (see Table 11.3).

Table 11.3 Increase in requests for caddies following delivery of materials

Local authority	Type of material	Number of requests	Number of households	Percentage requesting
Calderdale	Instruction leaflet	132	5,021	2.60%
	A6 sticker 'no food in bin'	132	6,161	2.14%
	Wrapper liners	89	4,696	1.89%
	Control round	10	825	1.21%
Broadland	Liners, leaflet, stickers	279	14,560	1.91%
	Control (before project)	34	14,560	0.23%
Newcastle under Lyme	Liners, leaflet, stickers	169	28,000	0.60%
	Control (before project)	114	28,000	0.40%

More caddy requests would be expected if door-to-door engagement is undertaken. For example, the door-to-door surveys carried out in 2013 (see Section Error! Reference source not found.) in Somerset, Corby and Daventry resulted in 11%, 12% and 10% of households requesting replacement caddies, respectively.

11.3.5 Indicative costs

The average cost per household of the individual measures piloted is shown in Table 11.4. These averages, however, are inflated due to the small sample sizes of the pilots. A roll-out to more households would result in lower average costs, particularly for liners.

Table 11.4 Average cost of individual elements of the pilot projects

Material/ activity	Average cost per household	Range of costs
Sticker print	£0.16	£0.04–0.35
Leaflet print	£0.08	£0.02–0.31
Liners – polyethylene (roll of 26)	£0.13	£0.005 per liner
Liners – compostable (roll of 26)	£0.46	£0.017 per liner
Delivery (stickers, liners and leaflets)	£0.35	£0.21–0.35
Door-to-door engagement	£2.16	

Based on these costs, Table 11.5 gives the estimated cost of implementing a service relaunch. For local authorities looking at rolling out the most effective ‘package’ of measures, the cost would be £1.12 per household for polyethylene liners or £2.10 per household for compostable liners. This cost excludes any staff time and any associated monitoring costs.

The Year 2 costs per household are considerably less due to the cost of the initial 100% liner delivery, leaflet and residual bin sticker in Year 1 (i.e. only liners are delivered to participating households in Year 2). The ongoing liner costs are based on 65% of households in the target area participating in the food recycling scheme.

Table 11.5 Estimated cost per household for relaunch package

	Year 1	Year 2*
Relaunch package – leaflet, free polyethylene liners, residual bin sticker	£1.12	£0.42
Relaunch package – leaflet, free compostable liners, residual bin sticker	£2.10	£1.50

* Year 2 cost includes a year's supply of liners to 65% of households in the target area with no accompanying leaflet.

11.4 Summary of lessons learnt

Delivering materials to households can have a positive impact on increasing the tonnage of food waste collected from the kerbside. This is particularly the case when a 'package' of a residual bin sticker, a leaflet and a roll of caddy liners is provided to residents. This package represents the best value for money solution to raising participation, particularly as there are efficiencies in delivering all measures simultaneously.

However effective implementation from the outset of a new service will reduce the chance of having to relaunch it at a later date. Although the relaunch package is a low cost option, it is still an expense that could be avoided.

The impact of residual waste bin stickers highlighted by the pilot projects means they should be included as part of any new collection service.

The supply of liners should be free, continuous and in sufficient supply for households. This will help to manage residents' expectation of the service, maximise its cleanliness and avoid the cost barrier for many households.

Communications materials on their own are unlikely to address key infrastructural barriers faced by residents such as liner supply. However, it is essential to convey within the 'package' information about the importance of food recycling and the various aspects of the service.

Working to engage with contractors early on will improve the success in implementing a food waste collection service.

Recording and analysing the tonnages collected per round will help to measure a scheme's success and the impact of any future measures to improve its effectiveness. It is also important to have a monitoring process in place to check that materials (caddies, liners, leaflets, stickers, etc.) have been delivered correctly.

Comments from the local authorities taking part in the pilots

“The project was really successful.” – Recycling Officer

“We would be very interested in rolling out residual bin stickers, liners and leaflets to further properties.” – Waste Services Manager

“Relatively straight forward, organising everything in a relatively short space of time was challenging, but with WRAP’s help, it all went according to plan.” – Recycling Officer

“The positive feedback has been good – residents are happy to recycle their food waste without having to pay for liners to do it.” – Recycling Officer

“The red stripe [on the last few liners in the roll] has worked extremely well, with only one resident calling to ask for more liners. This proves that the crews are keeping their eyes peeled for the stripe and replacing the liners then.”

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