Making recycling work for people in flats 2.0

A research project on improving recycling performance in flats in Lambeth

July 2022

ReLondon

Funded by ReLondon and Ecosurety

ecosurety

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Executive summary

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This research, and the toolkit that will follow, is a vital building block in helping boroughs achieve the Mayor of London's targets for 50% of local authority-collected waste to be recycled by 2025; and 50% of household waste by 2030.

In 2020 ReLondon, a partnership of the Mayor of London and London boroughs, published 'Making recycling work for people in flats', a report outlining the results of a project to improve capture and recycling rates in purpose built flats. We know that people who live in flats recycle much less than those who live in houses, and this project (known as 'Flats 1.0') aimed to understand why.

Flats 1.0 showed that big improvements can be achieved by rolling out a range of dry mixed recycling interventions known as the 'Flats Recycling Package' – but that there are still significant barriers to achieving higher recycling rates in flats.

Shortly after the publication of that report and its supporting toolkit and case studies, ReLondon secured funding from the Ecosurety Exploration Fund to work with Lambeth Council and Peabody to take this research a step further: by exploring the impact of introducing additional materials – including food waste – into the recycling services on four estates of mixed tenure purpose-built flats in the London Borough of Lambeth.

The results have been transformational. Across the four estates, there has been an average 152% increase in the recycling rate, rising from a low baseline of 11% to a rate of 27%. In part this was driven by particularly high food waste capture rates, in some cases comparable with those seen in local authority kerbside collections. But capture rates of all other dry materials also increased and the amount of food waste found in the residual waste reduced by 45%.

This result has been achieved by implementing the Flats Recycling Package from Flats 1.0 on those estates, but this time with the addition of new bins and collection services for food, large card, small electricals and textiles. These improvements were based on findings from Flats 1.0 and the in-depth resident insights underpinning it, which centred around making it **easier** for residents to recycle; **motivating** them to recycle; and improving their **knowledge** around what can and cannot be recycled. In addition to these key values, five guiding principles were used to design the interventions:

1. Multiple, connected changes to disrupt existing habits – consider how to interrupt waste journeys.
2. Bold, prominent and highly visible – role for strong, colourful, visually-led communication.
3. New services to solve people's problems – show what we can do for you, not what you can do for us.
4. End-to-end solutions – with in-home infrastructure where possible to make the whole recycling journey easy.
5. Start with a big bang, continue with ongoing prompts – create a calendar of 'events' to maintain interest.

The whole project – known as Flats 2.0 – kicked off with comprehensive baseline measurement of the amount and composition of recycling and residual waste, and the new services were launched with engaging, disruptive communications designed to stand out from the background noise of other estate notices, signage and leaflets. Operationally, the food waste service was introduced with new, pedal-operated bins and kitchen caddies; all the waste streams were co-located to make it easier to recycle a range of materials all at once; residual waste chutes were closed; regular textiles collections were introduced; and bright pink bins for small electricals installed.

Further waste composition analysis was conducted part-way through the pilot, and again at the end, to provide evidence of impacts. This was supported by insights research with residents and caretakers, to better understand the reasons behind the results.

As was seen in Flats 1.0, recycling rates varied according to a range of factors, including housing tenure and age of lead occupants. A further contributing factor seen on some estates was the design and layout of internal bin storage areas. It was found however that those estates with lower recycling rates saw greater uplift following the interventions.

It was also clear that the Flats 2.0 interventions had the biggest impact on those residents who were already motivated to recycle and were already recycling some dry mixed recycling items; but they have been less successful at engaging and changing the behaviour of non-recyclers. This doesn't detract however from the impressive results gained by engaging with those who are already recycling and suggests some potential future avenues for further research.

London's recycling targets are ambitious, and the results outlined in this report make it clear that there is still work to be done. However, this research has proved that significant progress can be made to improve recycling performance in flats, by implementing the operational and communication guidelines of the Flats Recycling Package shown here and described in the following report. We hope that it offers a valuable, practical resource to help those who commission, manage and deliver waste and recycling services betterunderstand what deters people in flats from recycling, and how they can design services which encourage them to do more.

Flats Recycling Package (revised 2022)

The revised package includes the following guidelines:

Operational

1. Collection of the six main dry recyclable materials* and food
2. Co-location of rubbish, dry recycling and food bins
3. Appropriate dry recycling and food bins (including caddies and liners)
4. Adequate collections to prevent overflows (rubbish, dry recycling and food) and appropriate dry and food recycling capacity (minimum 60 litres/hh/wk and 10 litres/hh/wk respectively)
5. Clean and well maintained bins and bin areas
6. Regular monitoring of sites

Communication

7. Clear and visible signage on rubbish, dry recycling and food bins and at bin storage areas
8. Service relaunch and disruptive communications
9. Ongoing communications – yearly recycling leaflet and posters displayed in communal areas
10. Informing residents what they should do with their bulky waste items

*paper, card, glass, food and drink cans, plastic bottles and mixed rigid plastics (tubs, pots and trays)

The Flats Recycling Package toolkit can be viewed at www.relondon.gov.uk/resources/toolkit-flats-recycling-package

Introduction

Introduction

About this report

This report presents the project development, delivery, results and research findings of a 13-month project (January 2021-February 2022) looking at opportunities to improve recycling rates for purpose-built flats in London. It was carried out by ReLondon in partnership with housing association Peabody and the London Borough of Lambeth, and funded by the Ecosurety Exploration Fund and ReLondon.

The project sought to maximise recycling in purpose-built flats. It built on the findings from previous research carried out by ReLondon and WRAP in partnership with Peabody and six London boroughs, otherwise known as 'Flats 1.0[1]', by introducing the Flats Recycling Package that had worked well during the Flats 1.0 project but simultaneously adding new services for food, textiles and small electricals.

What are purpose-built flats?

Purpose-built flats are dwellings in buildings which were constructed as individual apartments rather than those which have been converted from their original purpose into apartments (for example, a house conversion or repurposed commercial building). Purpose-built flats can be a mix of tenure (rented or owned), a stand-alone block or several blocks together making up an estate. Purpose-built flats have communal collections for waste and recycling and have particular challenges when it comes to recycling performance as a result. Throughout the rest of the report 'purpose-built flats' will be referred to simply as flats.

Low performance in flats

All evidence shows that recycling rates for communal flat collections are significantly lower than those from individual household kerbside collections. This is due to a complex set of circumstances which include the communal nature of collections, inconsistent and often poor collection provision (including old or inadequate collection infrastructure, such as poor bin storage arrangements), and a lack of knowledge, ownership and engagement from residents.

Improving recycling performance in flats presents a particular challenge across London and other English authorities with dense urban centres, where the number of people living in flats is highest and where nearly all new-build properties are flats. In London, with recycling rates from flats as low as 10%[2], it is easy to understand why only 33% of household waste is recycled. Just over a third of current housing in the capital is flats, but with nearly 90% of the housing planned to be built in the next decade expected to be flats, estimates suggest 46% of the capital's households will be living in flats by 2030.[3] This could have a significant impact on London's recycling rate.

Policy landscape

With the Mayor of London's aim for London to be a zero-carbon city by 2030, and the UK government's ambitious targets to help combat the climate emergency, it is essential that we find new and better ways to support residents living in flats to recycle.

The Mayor of London has set a target for 50% of local authority collected waste to be recycled by 2025 and a target of 50% recycling of household waste by 2030. It also includes a policy commitment to support efforts to increase recycling rates in flats. The national and London strategies both highlight the requirement for a consistent minimum standard of recycling service for all households, including flats. This comprises the collection of six main recyclable materials: glass, cans, paper, card, plastic bottles and mixed rigid plastics (tubs, pots and trays), as well as a separate food waste collection by 2023. London boroughs are required to set out how they intend to meet these performance standards in their Reduction and Recycling Plans, which will be updated in September 2022.

Historical context

Many of London's flats are in multi-block developments ('estates') built before there was a requirement for the provision of recycling services. On these estates the communal bin areas were often housed away from buildings' main entrances and walkways. As collection services evolved to include recycling, the focus was on operational compatibility and access for waste collection vehicles rather than on residents' needs. For newer flat developments, despite being built in an age when recycling is commonplace, there are numerous examples (including one in this report) of poor bin area design contributing to low recycling performance. Recent work by Tower Hamlets in partnership with ReLondon has looked at improving the design of bin areas in new developments by setting out principles in supplementary planning guidance.[4]

Previous research

Flats recycling research 1.0

In 2017 ReLondon (in partnership with WRAP up to 2020) started a programme of activity to understand the barriers to recycling for people living in flats, with a particular focus on the point of view of residents. ReLondon used this understanding to design and test practical and replicable measures that could be taken by housing providers, building managers and service providers to help improve recycling provision and increase recycling rates.

A key principle of the programme was to base interventions on sound research, and to ensure that robust monitoring and evaluation was used to inform recommendations to stakeholders in the form of guidance and toolkits.

The first project, known as Flats 1.0, was set up in 2018 and was a two-year project in partnership with housing association Peabody and six[5] inner London boroughs. Flats 1.0 demonstrated the effectiveness of improving the look and feel of recycling and waste facilities in order to increase dry mixed recycling (dry mixed recycling) performance. These interventions became known as the Flats Recycling Package.

What was done

The initial research for Flats 1.0 involved:

- Detailed inventories of 132 inner London Peabody estates consisting of purpose-built flats, including physical surveys of the buildings and their waste and recycling facilities.
- In-depth ethnographic research with residents to understand people's attitudes, practices and barriers to recycling.

Inventories showed a lack of consistency in the quality of waste and recycling services provided and that services tended to be based around operational compatibility, which in some cases conflicted with the needs of residents.

The ethnographic research revealed a complex picture, with many reasons why people living in flats might not recycle. However, it was clear that effective recycling is only achieved when three interdependent conditions are met:

Residents want to recycle (motivation), know how to recycle (knowledge) and find it easy to do so (ease).

Using these learnings, and in consultation with housing providers, local authorities and waste management providers across London, as well as behaviour change experts, ReLondon designed and implemented a range of interventions across the estates that were tested to see how effective they were at improving recycling and capture rates.[6]

What were the outcomes?

The results showed that improving the look and feel of the communal waste and recycling facilities using a package of measures, known as the Flats Recycling Package – including updated and improved communications – increased the recycling rate by 27% and decreased contamination by 24% across the estates.

The Flats Recycling Package

- Clean and well-maintained bins and bin areas
- Adequate collections to prevent overflows and appropriate recycling capacity
- Appropriate apertures on recycling bins big enough to accept plastic bags of recycling and with locked reverse lids
- Collection of the six main recyclable materials
- Clear and visible signage on and above the bins
- Convenient location of recycling bins for residents
- Recycling leaflet sent to residents once a year
- Posters highlighting recycling messages displayed in communal areas
- Residents informed of what they should do with bulky waste items

ReLondon developed a toolkit for housing and service providers and building managers giving practical advice and downloadable assets to help implement the Flats Recycling Package, as well as an online tool to help London boroughs understand the benefits and costs of implementing it.

In addition, the project findings highlighted a number of areas for further investigation, including increasing the range of materials collected to increase recycling performance beyond the (average) three percentage point uplift achieved through the introduction of the Flats Recycling Package.

ReLondon addressed many of the issues around ease and knowledge of recycling for residents in Flats 1.0 by improving the look and feel of the waste and recycling services using the Flats Recycling Package. However, recycling rates remained low and there had been little success in motivating residents to recycle. This new flats project (Flats 2.0) looked to address these issues in conjunction with introducing new materials to recycle.

Flats 2.0 - Project details

Introduction

The aim of the Flats 2.0 project was to maximise the capture and quality of dry mixed recycling and introduce collections of additional materials that have high embodied carbon and are often found as contaminants in dry mixed recycling: food, textiles and small electricals.

Designing the interventions

Ethnographic research conducted in 2018[7] showed us that effective recycling is only achieved when residents are **motivated** to recycle and their experience of it is more positive; when they have the correct **knowledge** of what can and can't be recycled; and if they find it sufficiently **easy** to do so. With the support of a specialist behaviour change agency, these three key values, alongside the following five further guiding principles, were kept at the heart of the intervention design:

1. **Multiple, connected changes to disrupt existing habits – consider how to interrupt waste journeys.**
2. **Bold, prominent and highly visible – role for strong, colourful, visually-led communication.**
3. **New services to solve people's problems – show what we can do for you, not what you can do for us.**
4. **End-to-end solutions – with in-home infrastructure where possible to make the whole recycling journey easy.**
5. **Start with a big bang, continue with ongoing prompts – create a calendar of 'events' to maintain interest.**

Using these key values and guiding principles we designed the interventions in consultation with a wide group of stakeholders (responsible for waste and recycling service delivery and policy, housing providers and specialists in behaviour change) to ensure they were effective, appropriate and replicable.[8]

The interventions introduced on the four estates focused on:

- Improving the existing dry mixed recycling service;
- Introducing a new food waste service; and
- Providing textiles and small electrical equipment recycling facilities.

Previous WRAP research shows that capturing food waste, especially from flats, can be challenging. The new food waste service introduced across the estates was designed to make it easy for residents to use, take away as much of the 'yuck' factor and avoid as many kitchen space issues as possible. We tested a new push pedal external unit so that residents wouldn't need to touch any part of the bin lid and smaller internal caddies to see if they were more suited to small kitchens.

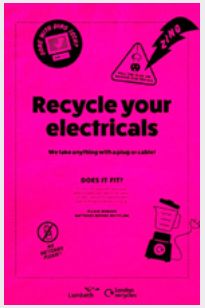
The introduction of new materials and improvements in the service significantly increased the potential capture of recycling. The maximum possible recycling rate increased from 29% to 60%. Most of this potential was from food, which accounted for 26% of the overall waste produced on the estates.

The following table 1 details the interventions that were chosen for each key material and explains how the choices addressed the key areas of ease, knowledge and motivation.

Monitoring and evaluation

In order to draw meaningful conclusions from the project and to update the Flats Recycling Package, a comprehensive monitoring and evaluation plan was used. This included waste composition analysis of all waste streams (one week before, during and after interventions); resident and stakeholder insight surveys (an online questionnaire and 35 in-depth interviews); and regular visual monitoring of estates. **See Appendix 1** for more information.

Table 1: Interventions

	Dry mixed recycling	Food waste	Small electricals	Textiles
Overarching principles	Flats Recycling Package (1.0) Co-location of dry mixed recycling, food and residual waste bins (inc. closure of residual chutes) Service relaunch and disruptive communications (inc. doorstepping) Motivating residents by solving common problems			
Infrastructure	Outside: increased recycling capacity for card with addition of new card bin.[9] New 1280 litre dry mixed recycling[10] and large card bin at every residual waste area.  Inside: in-home storage bags issued part-way through project in December 2021.  	Outside: new housing unit with improved aesthetics (timber side panels) foot pedal and 140 litre bin inside at every residual waste area.  Inside: kitchen caddy for small spaces (2 estates had standard 5 litre caddies and 2 estates had new 3 litre caddies with hooks).  	One 1100 litre small electricals bin on each estate for small items.  Plus: Quarterly collection service with collection bags and leaflet distributed to homes 2-3 weeks ahead of collections.  	Quarterly collection service with collection bags and leaflet distributed to homes 2-3 weeks ahead of collections.  

	Dry mixed recycling	Food waste	Small electricals	Textiles
Ease	Dry mixed recycling and large card bins at each residual area making it easier to access recycling.	Food waste bins at each residual area and a caddy delivered to every flat with free liners delivered every 3 months. Push pedal for external bin so residents don't have to touch the bin.	Easy access to small electricals disposal through either permanent bin or collection service. Regular collections with easy and timely drop-off point for bags.	Regular collections with easy and timely drop-off point for bags.
Knowledge	Service relaunch and disruptive communications including directional signage for all recyclable materials.   	Using a paper caddy bag as a communications platform and eye-catching leaflets and signage. Caddy, liners and leaflets delivered in person in the bag with recycling information on.   	Visual and simple information about items accepted.  	Visual and simple information about items accepted. 
Motivation	Problems being solved: • increase in bulky card, especially since COVID-19 • unpleasant experience at bins.	Problem being solved: • pests from food waste in residual bins • smell of food lingering in residual bins need for frequent emptying.	Problem being solved: • clutter/'that drawer' of leads, old phones etc.	Problem being solved: • lack of storage space, helping residents to clear out and tackle 'emotional hoarding'.

Estate selection

In conjunction with Lambeth Council and Peabody, four estates of flats were selected for the project. The estates were chosen on the basis of:

- Similar housing tenure (approx. 60-80% social rent and 20-40% owner occupied).
- Situated on quiet roads where the likelihood that non-residents would use the bins was low.
- Provision of an existing dry mixed recycling service with regular cleaners/caretakers on site but no food waste service.
- No major building work taking place for the period of the project.
- Small enough in household numbers to ensure that waste composition analysis costs were manageable (max 200 households).
- Mix of medium and low-rise blocks.
- Estates that are similar to other estates in London.

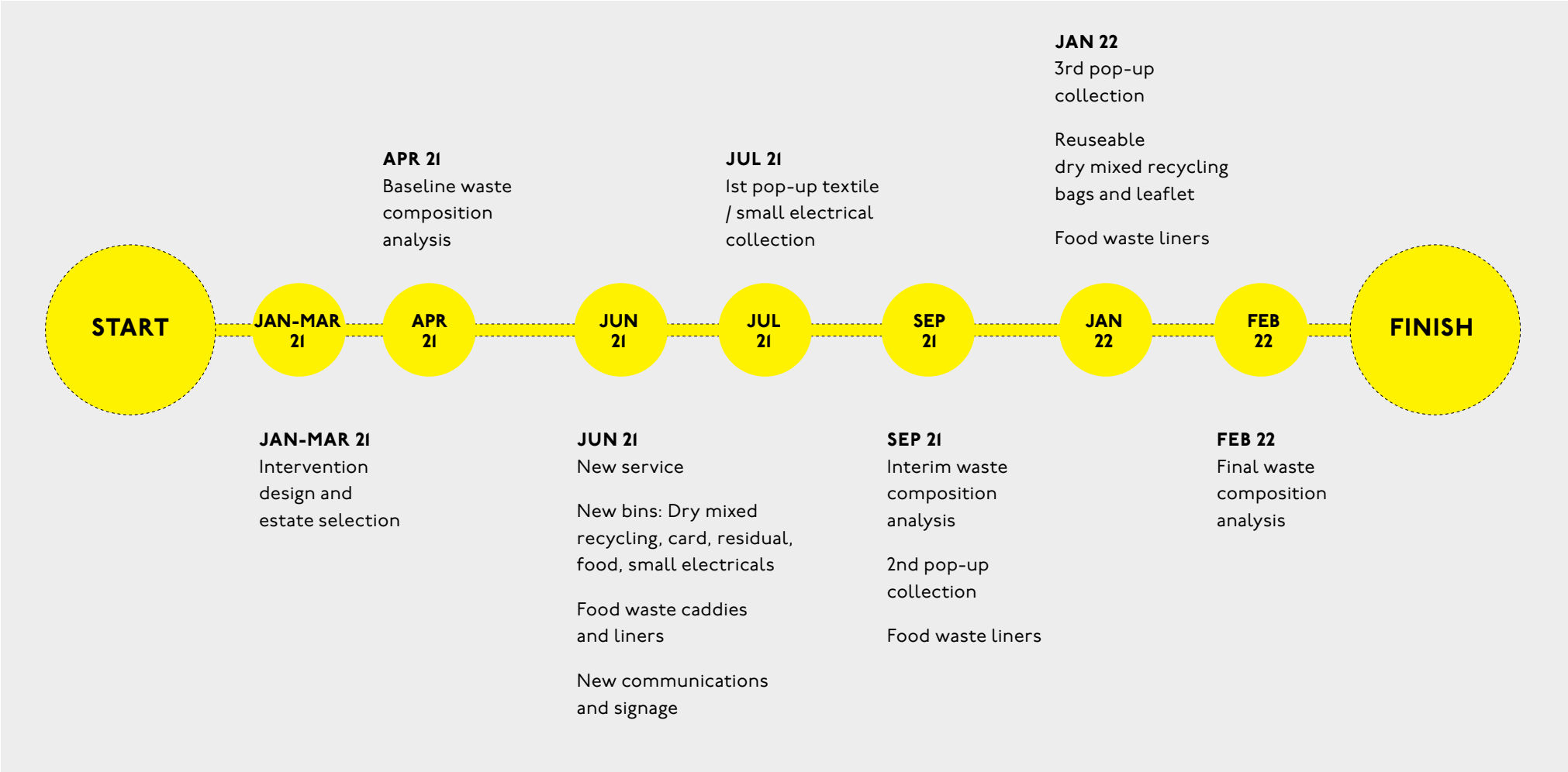
The following Table 2 shows the key characteristics of the estates before the interventions were rolled out.

Table 2: Estate Characteristics

Estate Reference letter	Households	Social rent / owner occupied split	Photo	Built	Layout	Selection differences
A	134	64 / 36		1930s	6 blocks (5 around a courtyard, 1 separate)	Estate split into two parts separated by a road. Highest number of 3 and 4+ person households (77%). 1 block with residual chutes.
B	82	67 / 33		1950s	7 blocks around a courtyard	External areas in a poor state of repair. Textile bank.
C	172	73 / 27		1960s (majority of flats)	8 blocks spread out over a large area, interspersed with small houses	Several blocks have residual chutes on 1st/ground floor. Textile bank.
D	89	79 / 21		2000s	2 main blocks and 16 houses around a courtyard	Newer estate. Internal bin stores. High proportion of younger (<44 years) lead tenants.

Project timeline and roll-out

Chart 1: The following chart shows the timeline for the 13-month project.



Before and after roll-out photos and communications material

The below images show examples of the communications material and photos of the estates before and after the interventions were rolled out.

Before:
Residual chutes, poor quality bin areas (smelly) and recycling service (old bins with no locks/lids), inconsistent and poor signage.



After:
New small electrical, dry mixed recycling, large card and food bins, locked lids, large apertures, good quality signage. Residual and recycling co-located, chutes closed.



Key findings

Headlines

The following key results are averages across the four estates:

- **The recycling rate excluding contamination increased by 152% from 11% to 27%.**
- **The dry mixed recycling[11] capture rate increased by 44% from 41% to 58%.**
- **The food waste capture rate was 35% (one estate was as high as 43%).**

- The contamination rate decreased only marginally from 31% to 29%.
- Residual waste arisings decreased by 31%, alongside a decrease in total waste.
- There was wide variation in the levels of improvement from one estate to another – detailed on page 28.

Overall, residents viewed the service changes as positive, with three-quarters of residents surveyed saying they were recycling more or a lot more than before, mainly as a result of the introduction of food waste recycling. In particular, residents commented that they felt the bin stores and bin areas were cleaner, tidier and more inviting and intuitive to use than they were before. Some residents also said that they liked that there were now more bins (increasing the capacity) and that the bins were now closer to their block.

The interventions worked well for those who were already engaged with recycling to at least some degree, with the majority reporting increased recycling behaviours. However, they have been less successful at engaging and changing the behaviour of non-recyclers.

The following pages provide further detail and discussion of these results.

Waste composition analysis

Below is more detail on the findings from the waste composition analysis, with data expressed as an average across all four estates and pre-intervention data compared against post-intervention data. It should be noted that the data varied for each estate and this can be found on page 28.

Recycling rates have been calculated to exclude contamination, as this is the true recycling rate once all the non-target material or contamination is removed.

The dry mixed recycling contamination rate is the combined rate from the dry mixed recycling and card bins as they were co-collected.

Table 3: Overall performance metrics pre-, interim and post-interventions (average across all four estates)

Key Measures	Pre	Interim	Post	% change (+ / -) between pre and post intervention
Recycling rate (excl. contamination)	11%	20%	27%	152%
Capture rate dry mixed recycling	41%	47%	58%	44%
Contamination rate dry mixed recycling	31%	26%	29%	-7%
Capture rate food	No service	29%	35%	21%[12]

Composition of waste

Chart 2 below shows the average composition of total waste from the four estates across the three phases of waste composition analysis, which showed very little change between the phases. Chart 3 shows that with the introduction of the new services, 60% of waste is recyclable.

Chart 2: Overall composition of all waste - average of the three waste composition analyses

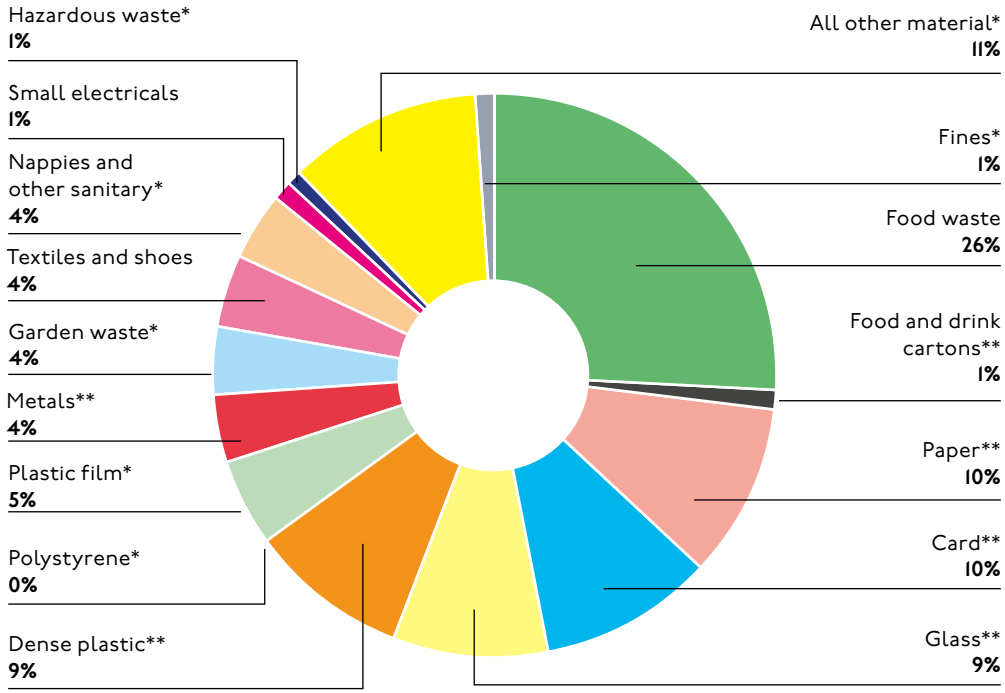
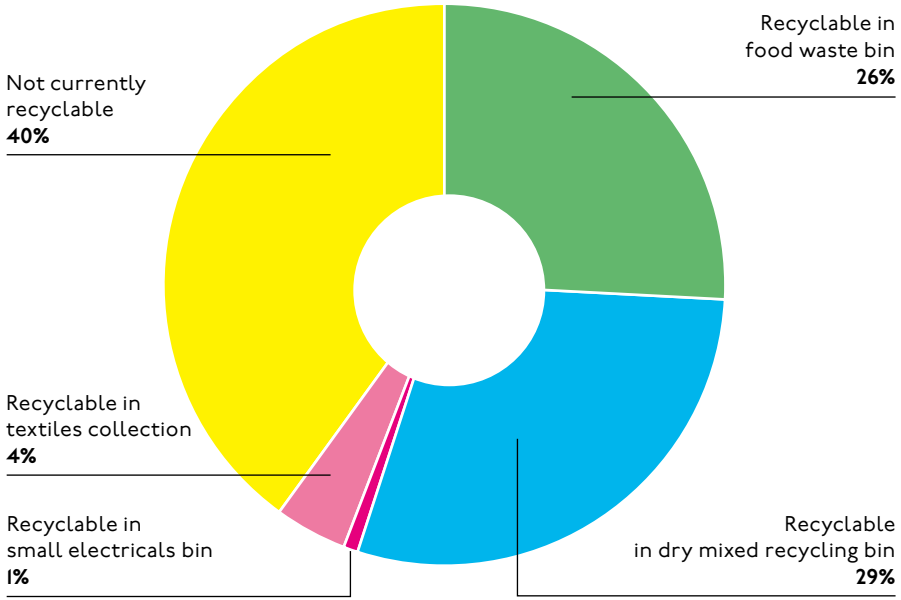


Chart 3: Potential recyclability of all waste with new services introduced (%)



* Not currently recyclable
** Recyclable in dry mixed recycling

Waste arisings

Chart 4: Total waste arisings pre-, interim and post- interventions (kg/hh/wk)

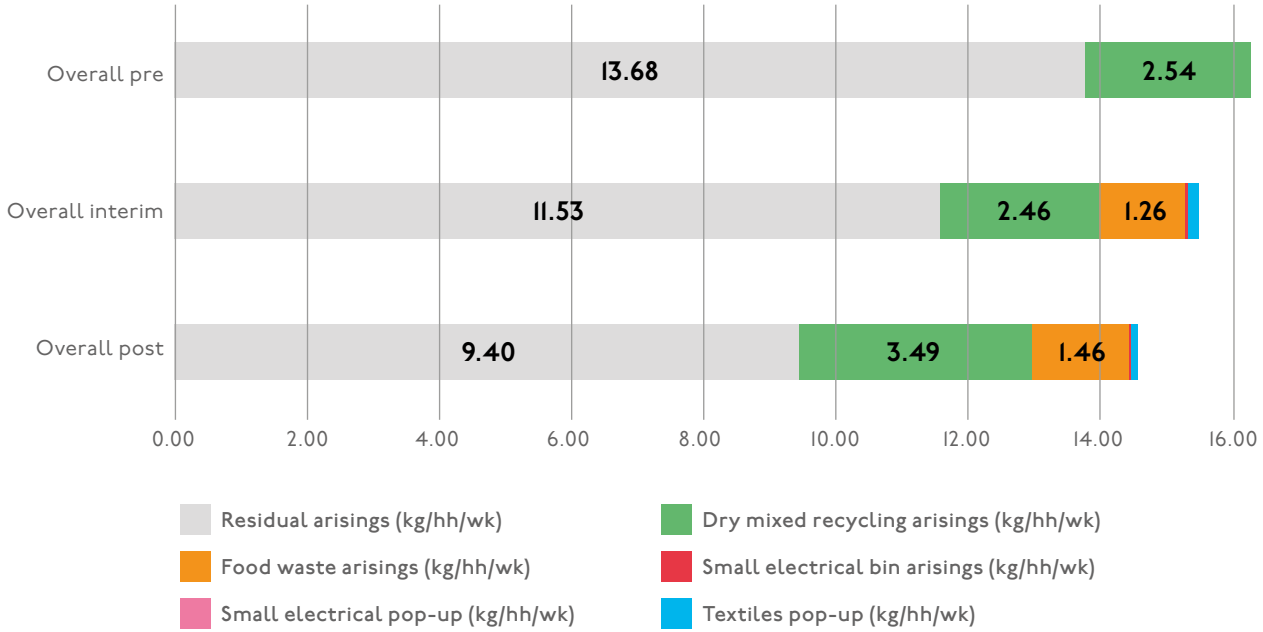


Chart 4 shows that overall waste arisings decreased throughout the course of the project.

In addition, there were significant changes to the residual waste stream after the interventions were implemented, including:

45% reduction in the amount of food waste found in the residual waste, alongside a reduction in food waste arisings overall.

16% reduction in the amount of card found in the residual waste.

25% reduction in the amount of target textiles in residual waste.

20% reduction in target textile contamination in the dry mixed recycling.

52% reduction in the amount of target small electricals in residual waste.

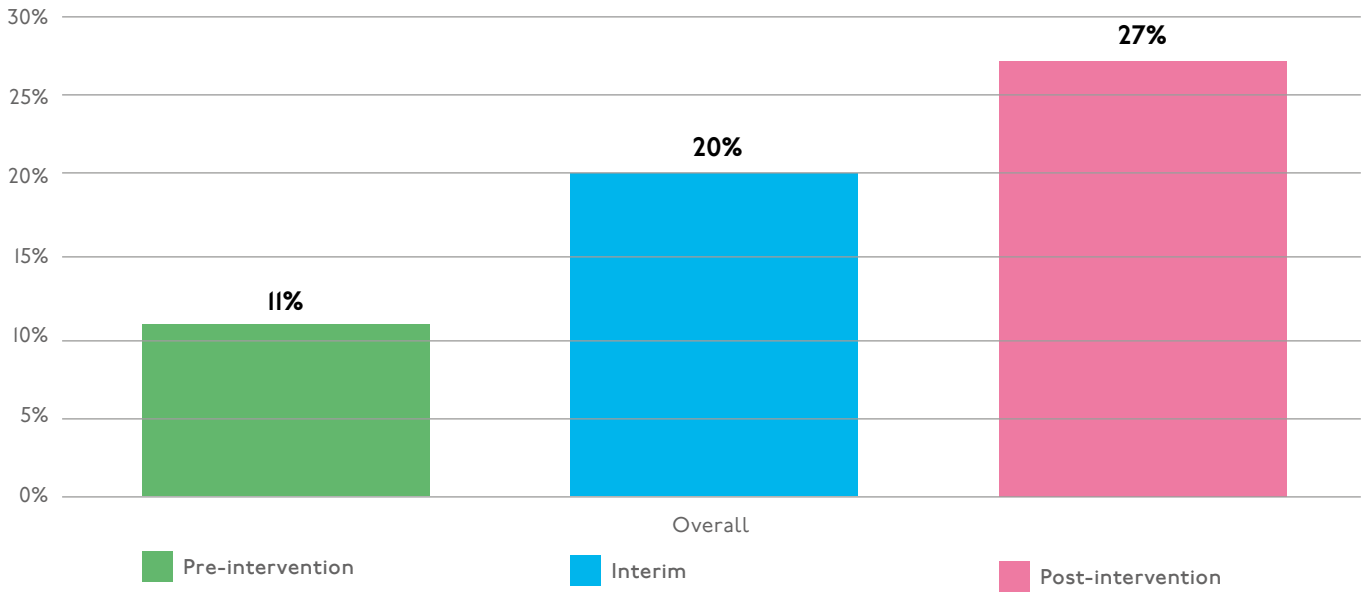
49% reduction in target small electricals contamination in dry mixed recycling.

35% reduction in the amount of food waste in the dry mixed recycling.

Recycling rates

The overall recycling rate increased by 152% (16.4 percentage points) over the lifetime of the project, with food waste recycling responsible for 9.5 percentage points of the increase and dry mixed recycling for 6.9 percentage points.

Chart 5: Recycling rates excluding contamination pre-, interim and post-intervention (%)

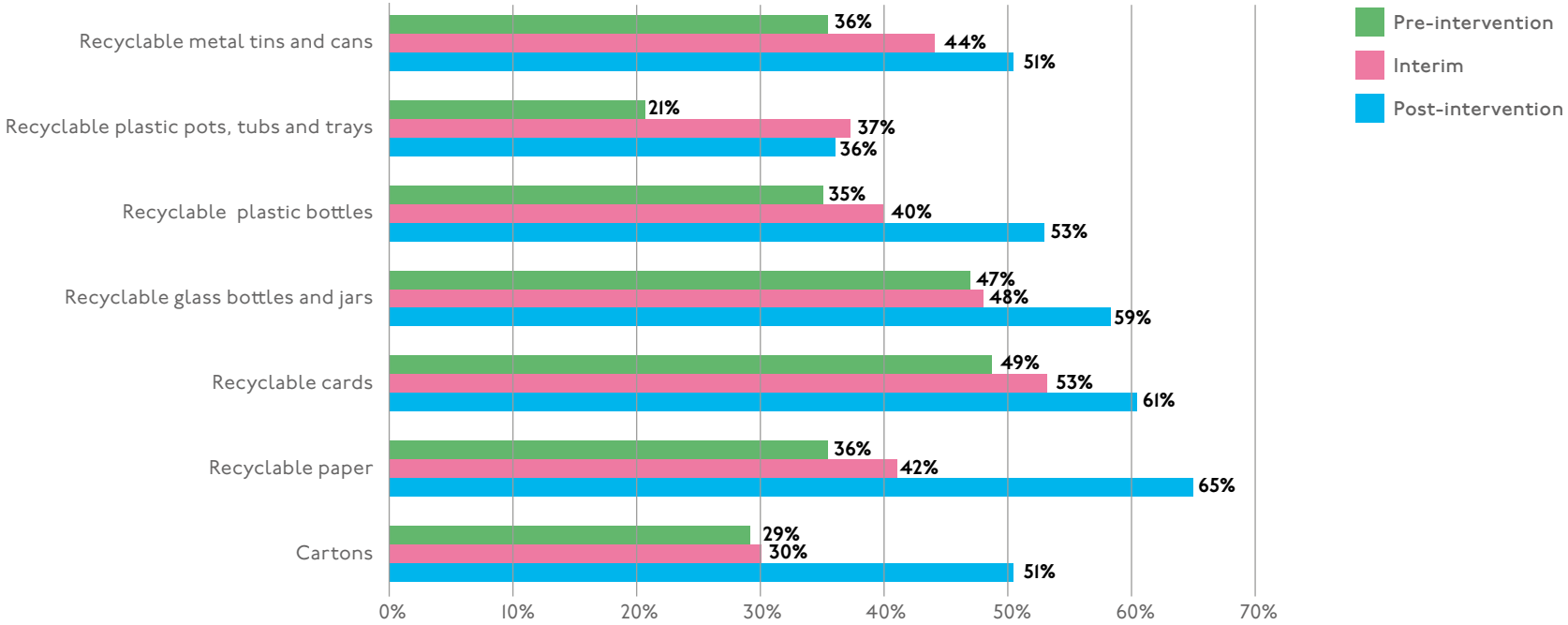


Capture rates

The dry mixed recycling capture rate increased by 44% from 41% to 58% during the project. Chart 6 shows that capture rates increased for every material, although the rates varied widely depending on the material. The lowest capture rates were for plastic pots, tubs and trays, tins and cans, cartons and plastic bottles. Similarly low capture rates were seen for these materials in the Flats 1.0 project. This highlights an opportunity to target these materials specifically in future communications.

The food waste capture rate was 35% at the end of the project.

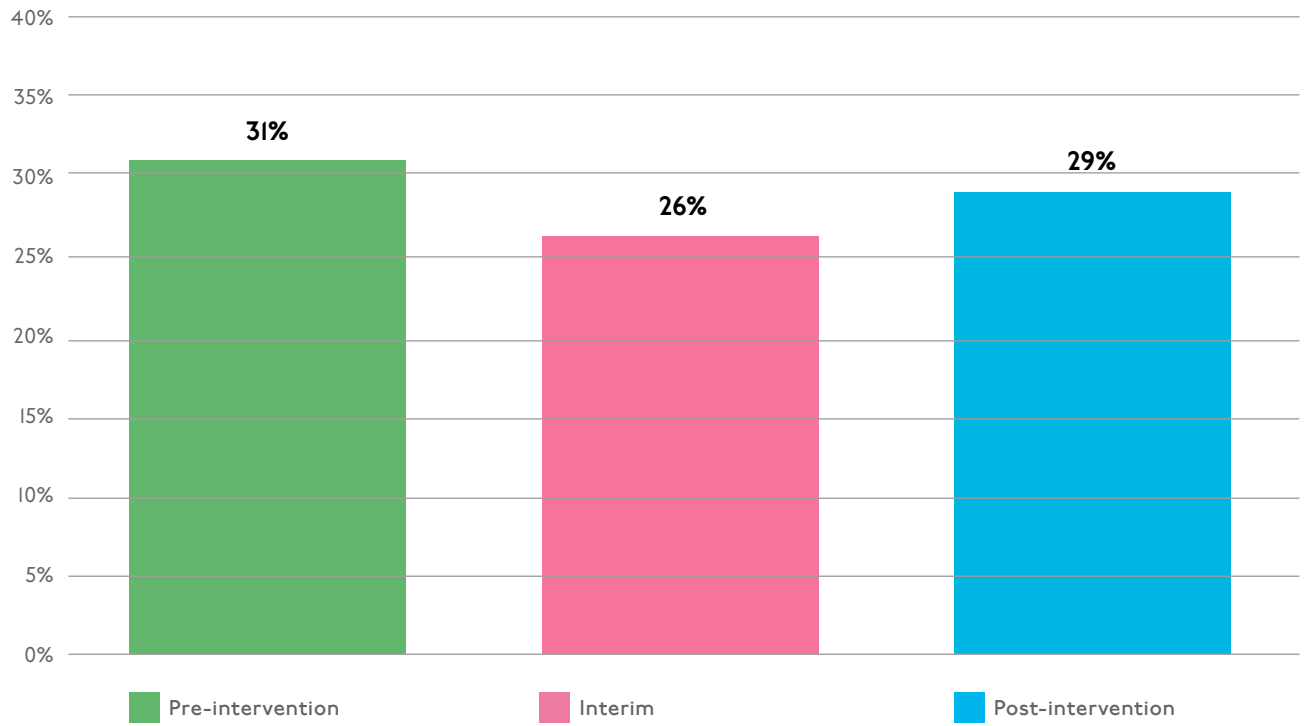
Chart 6: Dry mixed recycling capture rates pre-, interim and post-intervention (%)



Contamination rates

Despite efforts to improve resident knowledge through improved communications, Chart 7 shows that combined dry mixed recycling and card contamination rates across the four estates remained high throughout the project, accounting for 0.77kg/hh/wk at the end of the project. The main contaminants were plastic film, food waste, non-recyclable paper and card (e.g. plastic coated or wet) and contaminated recyclable items.

Chart 7: Dry mixed recycling capture rates pre-, interim and post-intervention (%)



For the duration of the project, the card bins were co-collected with the dry mixed recycling bins, although residents were not aware of this. For the purpose of the waste composition analysis, however, the card bins were separately collected and analysed to understand more about this material stream. Results showed that contamination (and non-target dry mixed recycling) in the card bins was significantly higher than the dry mixed recycling bins, with only 45% of the material being card and 32% made up of other dry mixed recycling that was recyclable and 23% general contamination. Whilst this was not an issue for the project due to co-collection, it is an interesting finding for other local authorities looking to segregate some materials and mix others.

The quality of the material in the food waste bins was high, with only 3% of the material being contamination (i.e. plastic film and carrier bags).

The contamination rate in the small electrical bins was 26% (see chart 7), and this was made up of a range of non- small electricals materials.

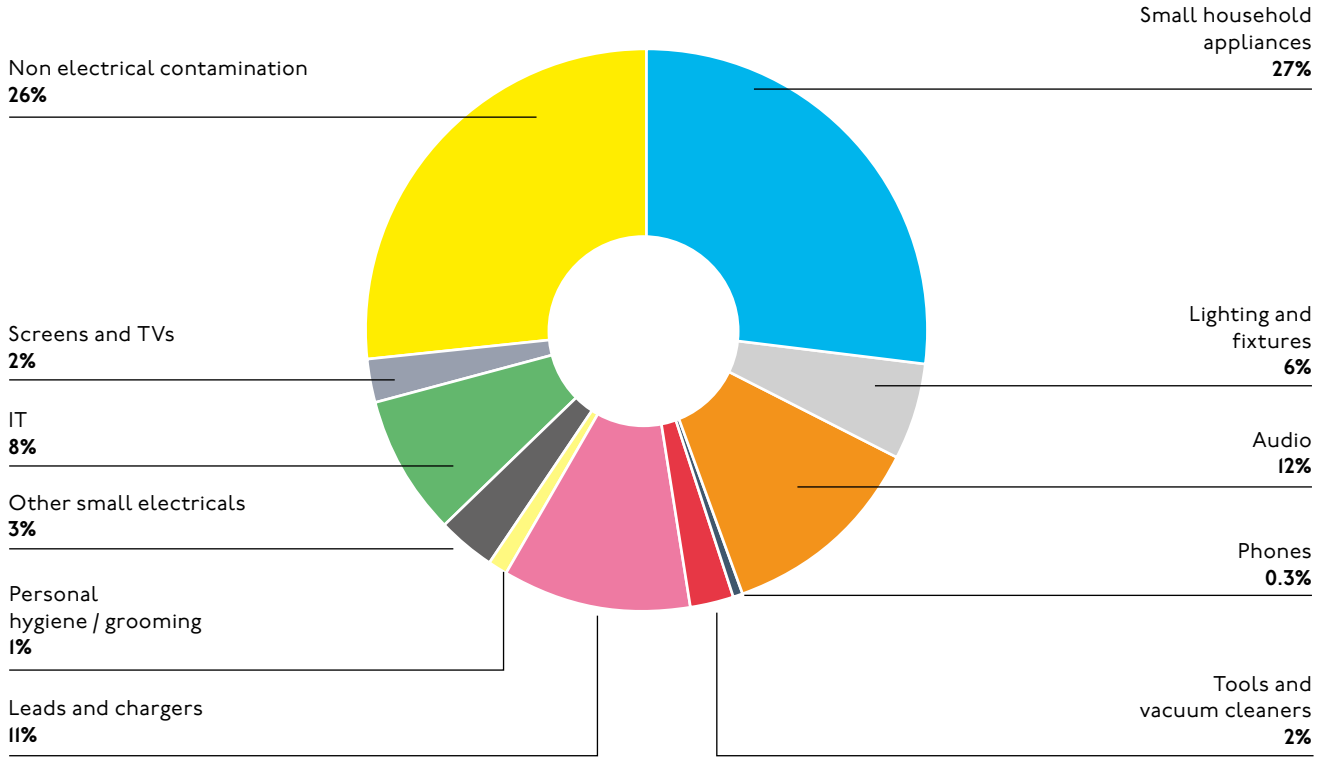
Textiles

1,240kg (or 2.64kg/hh) of textiles were collected from the estates over the 30-week period (3 collections).

Small electricals

The small electricals bins collected 0.015kg/hh/wk over the course of the project. Chart 8 below shows the composition of the small electricals bins, with small household appliances such as kettles and irons being the largest proportion of small electricals recycled by residents and contamination comprising over 25% of the material deposited.

Chart 8: Overall composition of the small electricals bins



Estate differences

While the overall results of the project were good, the tables below highlight the key differences between the estates using the three main metrics of recycling, capture (dry mixed recycling and food) and contamination (dry mixed recycling).

For food waste capture rates the figures are the percentage change between the interim and post-intervention analysis, as there was no food waste service on the estates in the pre-intervention phase.

Table 4: Recycling rates for each estate pre, interim and post intervention

Estate	Pre	Interim	Post	% change (+ / -) between pre and post intervention
A	7%	15%	21%	200%
B	17%	24%	30%	43%
C	12%	22%	27%	125%
D	7%	18%	17%	142%

Table 5: Capture rates for each estate pre, interim and post intervention

Estate	Waste type	Pre	Interim	Post	% change (+ / -) between pre and post intervention
A	Dry mixed recycling	31%	41%	43%	39%
	Food		18%	25%	39%
B	Dry mixed recycling	63%	59%	67%	6%
	Food		25%	24%	-4%
C	Dry mixed recycling	47%	50%	63%	34%
	Food		38%	43%	13%
D	Dry mixed recycling	22%	33%	31%	41%
	Food		37%	28%	-24%

Table 6: Contamination rates for each estate pre, interim and post intervention

Estate	Pre	Interim	Post	% change (+ / -) between pre and post intervention
A	20%	26%	27%	35%
B	21%	31%	23%	10%
C	38%	25%	31%	-18%
D	28%	23%	32%	14%

Resident insight

Introduction

In order to capture views on the interventions being tested, the project team conducted in-depth interviews with 35 residents across the four estates, alongside an online questionnaire which attracted 70 responses from residents.

Analysis was conducted to identify specific groups or types of residents for whom the interventions worked well or less well. Generally, the changes influenced the behaviour of residents depending on where they were on their recycling journey before the intervention. Three broad groups were identified as outlined below.

Good recyclers

Residents who were already recycling lots of items, regularly, and being vigilant about rinsing applicable items

(16 interviewees)

Medium-to-low recyclers

Residents who recycle some items but not all, not as regularly, consistently or vigilantly

(13 interviewees)

Non-recyclers

Split into the following two groups:

- those unaware of recycling facilities before the intervention, but now more engaged (6 interviewees)
- residents disengaged from recycling, and sometimes from the estate more generally (no interviewees)

Who did the intervention work well for and why?

The interventions worked well for those who were already engaged with recycling to at least some degree, with the majority reporting improved recycling behaviours. Good recyclers, and some medium-to-low recyclers, added food waste to their existing routine, and many used the new textiles and small electricals services.

The interventions also worked well for some residents who were engaged with the idea of recycling but were unaware, before the intervention, that there were recycling facilities on their estate. In addition, the research identified some issues and challenges even for this group, which if addressed could provide an opportunity to further improve recycling behaviour. These are summarised in Table 7.

Table 7: Successes and challenges for residents for whom the intervention worked well

	Successes	Challenges / areas for improvement
Knowledge	• Successful communication – signage, letters, leaflets and branding – disrupted resident behaviour, as they were noticeable, colourful and easy to understand. In some cases the communications have improved knowledge of what can and cannot be recycled, reducing contamination.	• Better information to remedy confusion around what can and can't be recycled. • Raising awareness of the small electricals recycling collection, promotion of which may have been lost in other communications that were delivered at the same time. • Further information on the importance of food waste recycling. • Informing residents where they can purchase biodegradable liners in future to help them to continue recycling their food waste. • For textiles, a better understanding of what happens to items after they have been collected, e.g. for clothes and small electricals items, are they reused or are parts recycled.
Motivation	• Residents wanting to reciprocate the investment made by the council into the waste services. • Residents were appreciative of door-knocking / efforts to engage them about the changes. • For some, improved hygiene and cleanliness (e.g. cleaner and tidier bin areas) motivates people to make the effort to keep the space in good condition.	• Residents feel a lack of responsibility for certain behaviours such as flattening card; this may be partly because the estate cleaners regularly tidy the bin areas – including flattening card and putting it into the bins. • When the food liners discontinue, some residents suggested that they may not feel motivated to pay for further biodegradable liners. • Some residents do not like using enclosed bin rooms, feeling they are unpleasant in general and / or because they were concerned about catching COVID-19 (widespread at the time of the project). This can deter them from using some facilities at all, or from using them responsibly.
Ease	• Greater capacity, with the introduction of more bins, makes it easier for residents to dispose of their waste correctly. • Caddies and free liners for food storage and transportation give people the tools to adopt food recycling behaviour. • The orange reusable bags provide an easy form of storage and transportation for dry mixed recycling. • The collections provide a convenient alternative to recycling textiles and small electricals waste off-site.	• Bins are not easily accessible by shorter and/or disabled residents, either due to their location, or the physical features of the bin e.g. height, slots being too small. • Some bins feel more difficult for residents to use: for dry mixed recycling it takes more time to put items in one by one (rather than throw a bag of recycling in). Some residents feel it is too difficult to flatten large card. • Bin overflows, especially at busier times like Christmas, make it difficult for people to recycle. • The frequency of the textiles and small electricals collections requires residents to store items in their flats, which is difficult if there is limited space.

Who did the interventions not work so well for and why?

The interventions have been less successful at engaging and changing the behaviour of existing non and low recyclers. The reasons for this and considerations on how to address these are set out in Table 8:

Table 8: Challenges and considerations for residents for whom the intervention worked less well

	Challenges	Further considerations
Knowledge	• The less engaged are generally harder to reach through door-knocking and communication materials; these are potentially transient individuals who work away from home.	• Face to face engagement at the bins may help to explain the rationale for recycling to residents.
Motivation	• A lack of accountability means people feel less responsibility and pressure to use the bins correctly. • When others leave the space untidy or fail to dispose of their waste correctly, some may not feel responsibility to recycle well themselves, compounding the issue. • Existing animosity towards the council may demotivate some individuals to engage with the intervention. • Disengaged residents are potentially less invested in the space and have bigger personal issues to think about than recycling.	• Ways of increasing accountability for residents who do not behave responsibly are hard to design but could be co-developed with the wider resident community.
Ease	• The slots on the bins are harder to use than lidded bins; some residents feel it is difficult to place items in the bin one at a time, which deters them from using it, or means they use it incorrectly. • The circumstances of some disengaged residents may be less conducive to recycling, e.g. lack of storage space, higher occupancy, not wanting to store food for longer periods of time.	• Consider different bin options.

Appendix 2 shows more detail on the findings for each material and across each recycling group.

Discussion of results

The interventions significantly increased recycling performance over the project reporting period. The following pages further analyse and discuss the results.

Flats Recycling Package (revised)

The Flats Recycling Package, which was at the heart of improvements, was designed to bring the look and feel of the bin areas up to a good standard and to provide residents with clear and reliable information about recycling and waste services. Additional elements were added to the Flats Recycling Package for this project in order to (a) further improve recycling performance and (b) introduce new materials to be recycled.

The introduction of the revised Flats Recycling Package across all existing and new waste streams led to significant increases in recycling performance. The results show that the estates that had particularly poor standards before the trial started (Estates A and D) experienced the greatest increases in recycling rates, supporting the finding that the Flats Recycling Package was instrumental in improving levels of recycling on the estates in the trial.

Achieving recycling targets

Despite the significant improvements in recycling rates, the average recycling rate was still only 27%. Whilst this is above Lambeth's average flats recycling rate of 17% and higher than other flats services across London, it is still some way short of achieving the Mayor of London's target of recycling 50% of household waste by 2025. Lambeth's current borough-wide recycling rate is 36%, with flats at 17% and kerbside collections at 42%. Lambeth's modelling suggests that if the interventions trialled on this project were rolled out across the borough, and assuming similar levels of performance, this would lead to a 5% increase in the borough-wide recycling rate, taking it up to 41%.

All the recycling rates in this report exclude the high levels of contamination that were seen in the dry mixed recycling and card bins, so that the rate reflects the actual recycling rate on the estates. This is a highly accurate analysis due to the wholly hand-sorted nature of the waste composition analysis.

Analysis of Flats 2.0 with Flats 1.0 data[13] has shown that waste from similar estates in London is homogenous in composition. Combined results from the two projects show that the introduction of the national consistency requirement for food recycling services and the requirement to recycle six key dry recyclable materials in flats would mean that up to 55% [14]of the total waste stream is recyclable, though there would need to be capture rates of 100% in order to achieve this. This is felt to be unrealistic given the inconsistency in people's behaviour revealed both in this project and in Flats 1.0.

Factors affecting performance

Whilst the overall results of the project were good, showing significant increases in recycling and capture rates, there were differences between the estates that are important to note and understand in order to consider how recycling performance on estates across London could be improved. The differences seen across the estates are likely to be caused by a range of factors.

Lower starting performance
Waste composition analysis shows that recycling rates at the beginning and end of the project varied hugely between the estates, from 7-17% pre-intervention and from 17-30% afterwards. Following the changes, all estates saw significant increases in recycling, with those estates (A and D) with the lowest initial recycling rates and poorest recycling service seeing the largest uplift, although still having lower recycling rates overall compared to the other two estates.

Societal factors
Flats 1.0 showed that estates with higher numbers of younger people and lower levels of home ownership were associated with lower capture rates. Estate D, which was the lowest performing estate throughout the project, had the highest proportion of younger (under 44 years of age) lead residents and lowest owner occupancy. It is likely that these factors, alongside a general

lack of engagement (as shown by the difficulty in recruiting residents for the insight research), poor design and quality of the bin rooms and a poorer dry mixed recycling service before the changes could go some way to explaining this.

Estate A was the second lowest performing estate, and there are no obvious reasons within the demographic or other data for this. There was a lack of recycling bins across the estate before the changes but the project addressed this. The resident insights research suggests that a lack of care and a lack of accountability may explain poor recycling on some areas of this estate.

Design of internal bin stores

The internal bin rooms on Estate D (with the lowest recycling and dry mixed recycling/card capture rate) were narrow, dimly lit, smelly and generally uninviting, leading to residents not using the facilities properly. Whilst changes were made to make the bin rooms more inviting (including additional cleansing), the physical design of the rooms was something that could not be changed. On the same estate the food waste bins were mostly in locations outside the bin rooms and the estate had the second highest food capture rate.

This suggests that alongside the societal factors detailed above, design of the bin room had an impact on the recycling rate and there is a potential recycling 'ceiling' on estates where bin rooms are not conducive to recycling. This could suggest that on estates where bin rooms cannot be re-designed it may be better to look at placing the recycling containers outdoors to encourage better quantity and quality of recycling.

Tower Hamlets, in partnership with ReLondon, has produced a Supplementary Planning Document[15] for reuse, recycling and waste in new-build properties to try to ensure a more consistent design of bin areas and higher performing recycling services.

Lack of knowledge

Despite efforts to improve resident knowledge through improved communication materials (leaflets, bin stickers and signage), contamination rates across the four estates remained high throughout the project. Two potential reasons for this could be:

- Resident insight evidence suggests that tenure affects recycling behaviour. For example, a higher proportion of renters scored 7 or lower (out of 10) when asked what items can or can't be recycled on the estate. Some interviewees (residents and stakeholders) felt that renters are less invested in their home and estate, and therefore also care less about their recycling behaviour. Contamination rates were highest on Estates C and D, where the ratio of renters to owner occupiers was highest.
- Resident insight showed that residents were confused about some materials, and especially plastic films, which were one of the key contaminants in the dry mixed recycling.
- There were so many changes happening all at once that some messages could have been missed by residents who focused on using the new food waste service correctly, rather than correcting or changing already established behaviour with the dry mixed recycling.

In-home storage solutions
Interim waste composition results showed lower than expected improvements in dry mixed recycling rates after the project launch. Resident insights showed that one reason for this was that only medium-to-low recyclers tended to increase the amount of dry mixed recycling they were recycling, but only by a few smaller items such as yoghurt pots.

Following the interim findings on dry mixed recycling capture and recycling, a reusable bag (with accompanying communications) was delivered to all residents. Results show that it was one of the key influences in changing resident dry mixed recycling behaviour as it provided an in-home storage solution for some residents who did not have a recycling system in place before.

"I really like using it, it is a good size, easy to take down, and then bring back, it's easy to wipe out. It's actually been a really great solution for us as it means we don't have a big solid bin hanging around as well. It is quite neat and fits in just behind the door or we can hang it somewhere."

Food waste performance
The project had significant success in capturing food waste, with 35% of food waste produced by the estates being put into the food waste bins. This is high compared to other flats food waste services throughout the country, where rates are between 15% and 30%.[16] The reasons for these high capture rates are likely to include the provision of a high-quality service including caddies, ongoing supply of liners and new push pedal housing units, alongside disruptive communications (floor stickers, tea bag leaflet and paper delivery bag), doorstepping and general improvements to the estate's whole recycling service. These food waste elements have been added to the Flats Recycling Package.

Caddy: Residents of Estates B and D were given a newly designed caddy which could be hooked onto a store cupboard door. Residents of Estates A and C were given a standard grey caddy, already in use by other Lambeth residents. Resident reaction to both caddies was positive overall, with most suggesting that the size was appropriate for the amount of food waste they have, whilst not taking up too much space in their kitchens. There was no evidence to suggest that the new smaller caddy was preferred or had a greater impact.

"Our caddy does have the hooks, and it is a good idea, but we didn't have anywhere that was suitable, so it's just on the side."

Liners: Residents were given an ongoing supply of caddy liners delivered directly to their doors. The evidence shows that the liners were an important part of creating and sustaining a perception that food recycling is easy and isn't unpleasant. Many residents used the liners, rather than the caddies, to transport food waste to the external bin as they wanted to deposit food on their way out of the estate rather than having to return home to store the caddy.

"I like the liners, but to be honest when they run out I'm not sure I'll go purposefully looking for them to buy them."

External collection points: Push pedal external food waste collection bins were co-located with residual, dry mixed recycling and card bins and were outside nearly every block. Residents largely found the outdoor food waste bin well-located and easy to use. Although 1 in 4 residents weren't aware of the push pedal, those who were liked it because they felt it made using the bin a more hygienic experience, or because it made the bin easier to use (especially when carrying children or other items, or because of height and reach constraints).

Textiles
The majority of residents were aware of the three-monthly pop-up collections provided for textiles and small electricals over the course of the project (90% and 80% respectively), with over half of residents using the service. At a high level, the textile collection worked well for good recyclers and some medium-to-low recyclers and the amount of target textiles in the residual and dry mixed recycling/card stream decreased. However, some residents found the textile collection service difficult to use as collection times didn't always suit their schedules or they didn't have space to store items between collections. Residents on the estates that previously had textile banks preferred having an on-demand service, as the new collection service 'felt like a downgrade'.

Small electricals
The initial three-monthly pop-up collection was used by some residents, but few items were deposited in the following two collections. The small electricals bin collection was popular with good and some medium-to-low recyclers using it, although the location wasn't suitable for all residents and the quantity of material was low. Contamination in the small electricals collection bins was high, mostly with general household waste.

There was not enough evidence from the textiles and small electricals collections to draw meaningful conclusions and recommendations; further research is needed.

Bulky waste
Despite newly designated areas marked for bulky waste being introduced to each estate, the majority of residents were unaware of these. The project didn't monitor bulky waste tonnages, but feedback from residents, tenant and resident associations (TRAs) and caretakers showed that there was little/no change in bulky waste behaviours.

Conclusions and recommendations

The project led to an average 152% increase in the recycling rate[17] from the estates, from 11% to 27%, and achieved some of the highest food waste capture rates in UK flats.[18]

The research found that the revised Flats Recycling Package, which includes a high-quality food waste service, co-location of all waste streams and disruptive service relaunch communications, is key to improving knowledge, ease and motivation amongst residents in order to significantly improve recycling performance from flats.

The interventions had the biggest impact on those residents who were already motivated to recycle and were recycling some dry mixed recycling items. Many of these residents recycled more dry mixed recycling while also recycling food waste for the first time. Crucially, however, this package of interventions appears to have had little impact on residents that are disengaged from their estate and disengaged from recycling.

The information in this report provides a snapshot of waste composition from flats at the time of publication. It should be noted that the composition of household waste may change as a result of the government's Resources and Waste Strategy for England (collectively known as the Collection and Packaging reforms). This may in turn affect the proportion of waste that is recyclable from household collections.

Flats Recycling Package (revised)

The revised package includes the following existing guidelines with new additions in **bold**:

Operational

1. Collection of the six main dry recyclable materials* **and food**
2. **Co-location of rubbish, dry recycling and food bins**
3. Appropriate dry recycling **and food bins (including caddies and liners)**
4. Adequate collections to prevent overflows (rubbish, dry recycling **and food**) and appropriate dry and **food recycling capacity** (minimum 60 litres/hh/wk and **10 litres/hh/wk respectively**)
5. Clean and well-maintained bins and bin areas
6. **Regular monitoring of sites**

Communication

7. Clear and visible signage on rubbish, dry recycling and **food bins** and at bin storage areas
8. **Service relaunch and disruptive communications**
9. Ongoing communications – yearly recycling leaflet and posters displayed in communal areas
10. Informing residents what they should do with their bulky waste items

*paper, card, glass, food and drink cans, plastic bottles and mixed rigid plastics (tubs, pots and trays)

Overall recommendations

- Organisations can improve recycling capture rates in flats by working together to put in place and maintain the standards defined in the revised Flats Recycling Package on every estate.
- The revised ReLondon Flats Recycling Package toolkit offers practical advice and guidance to help organisations implement the package in flats. The toolkit is available at www.relondon.gov.uk/resources/toolkit-flats-recycling-package.

Future considerations

This project has yielded clear recommendations for local authorities and housing providers wanting to improve recycling services for flats. However, it has also shown potential opportunities for additional interventions by local authorities, and for further research.

Further considerations for local authorities:

Knowledge

- Consider staggering communications and service changes to ensure that you get multiple moments of change to keep residents engaged over time. Staggering the launch of interventions for different services or materials, especially if introducing food waste (which is a significant change for residents), may help to ensure that key messages around each material stream aren't lost.
- Provide high quality information focusing on key confusion materials to give residents the correct knowledge on what can and can't be recycled for every waste stream – and consider staggering these messages over time for highest impact.

  Communicate:

  - items with low capture rates, such as plastic pots, tubs and trays, plastic bottles and cartons
  - that plastic film should not be put into the dry mixed recycling bin
  - that all food can be recycled.

Ease

- Consider options to encourage residents to flatten/break up card boxes to prevent large quantities being left around the bins.
- Consider providing an in-home storage solution, such as a reusable bag, for residents to store dry recyclables and transport them to the communal bins.
- Monitor collection crews to ensure that bins are collected as per schedule and bins put back in the right place.
- Investigate options for plastic film collections – although light, films accounted for 4% by weight of the total waste arisings from the estates and a significant proportion of contamination.

Motivation

- Ensure enclosed bin stores are kept clean, well-lit and not smelly. Where bin rooms are not conducive to recycling, look to relocate all bins outside.
- Communicate the benefits of recycling and food waste recycling, as many residents are unaware of the link to climate change.

Considerations for further research:

- Better understanding the barriers for non-engaged recyclers to start recycling or improve their recycling behaviour; and considering what could be done to help these residents connect with their estate and other residents, and take more responsibility for their waste and recycling.
- Investigating options to increase accountability for residents who do not behave responsibly.[19]
- Redesigning the dry mixed recycling bins (e.g. making the slots bigger and bins lower) to make it easier and quicker for residents to dispose of their recycling.
- Testing different approaches to textiles and small electrical collections including the feasibility of co-locating textile and small electrical collection bins at every recycling/ rubbish point.

Case studies

Estate A

Estate details

Estate A is a purpose-built development on a quiet residential street near Waterloo in central London. It is owned and managed by Lambeth Council. Built around the 1930s, it consists of 134 privately owned and socially rented flats (approximate split 36:64) in six four-storey blocks: five arranged around courtyards and one slightly separate across a small lane. Estate A has a Tenant and Residents Association and the highest number of three and four+ person households (77%).

Interventions

Before: Five blocks each with external residual bin areas under canopies, three blocks with dry mixed recycling bins and one block with residual chutes on each floor and dry mixed recycling outside. Residual bins collected three times per week, dry mixed recycling weekly.

After: New dry mixed recycling and large card and food waste bins in each residual bin area (apart from one) and one small electricals bin in the middle of the estate. Closure of residual chutes at one block, replaced by lidded 1100 litre external bins. No changes to collection schedules. Small electrical collections on demand. Residents were given the existing five litre Lambeth food waste caddy.

Results

Table 9: Pre-, interim and post-intervention performance rates (denotes averages across all four estates for comparison)

Key Metrics	Pre	Interim	Post	% change between pre and post
Recycling rate	7% (11%)	15% (20%)	21% (27%)	200% (152%)
Dry mixed recycling capture rate	31% (40%)	41% (46%)	43% (58%)	39% (44%)
Dry mixed recycling contamination rate	20% (30%)	26% (26%)	27% (29%)	35% (-7%)
Food capture rate	-	18% (29%)	25% (35%)	39% (21%)

Successes

Estate A had the lowest pre-intervention recycling rate, which increased 200% to 21% post-intervention.

Challenges

Significant issues with dumped card and overflowing dry mixed recycling bins throughout the project.

The council wrote to tenants who left addresses on dumped card. Additional dry mixed recycling and card bins were placed at key points to solve capacity issues, as the council was unable to increase the collection frequency.

Residents wouldn't allow the installation of a dry mixed recycling and card bin at one of the blocks due to concerns over dumping; a food waste bin was placed there instead.

Interviews with the cleaners, Tenants and Residents Association representatives and residents on the estate suggest that a lack of care and a lack of accountability may explain poor recycling on some areas of their estate.

Conclusion

Estate A had the highest recycling rate increase of any of the estates but increases in contamination meant greater improvements were not achieved.

Estate B

Estate details

Estate B is a purpose-built development on a quiet residential street near Gipsy Hill in south London. It is owned and managed by Lambeth Council. Built in the 1950s, it consists of 82 privately owned and socially rented flats (approximate split 33:67) in six three-storey blocks, arranged around a courtyard. Estate B has the highest number of lead residents over 45 years old (73%) and the highest number of smaller bedroom flats, with 67% being two beds and, alone among the four estates, no three-bedroom flats.

Interventions

Before: Two small blocks with an external residual bin store, and four larger blocks with one residual bin store at either end of each block. All residual bin stores are accessed via a metal door. Three external dry mixed recycling areas (one inside a housing unit) dotted around the estate. Weekly collection for residual, dry mixed recycling/ card and food. Textiles on demand via on-site bank.

After: New dry mixed recycling and large card and food waste bins were installed outside every residual bin store and a small electricals bin was installed at the central recycling area. The textile bank was removed and textiles were collected every three months. Residents were given the new design smaller food waste caddy as flat sizes were smaller. No changes to collection schedules.

Results

Table 10: Pre-, interim and post-intervention performance rates (denotes averages across all four estates for comparison)

Key Metrics	Pre	Interim	Post	% change between pre and post
Recycling rate	17% (11%)	24% (20%)	30% (27%)	43% (152%)
Dry mixed recycling capture rate	63% (40%)	59% (46%)	67% (58%)	6% (44%)
Dry mixed recycling contamination rate	21% (30%)	31% (26%)	23% (29%)	9% (-7%)
Food capture rate	-	25% (29%)	24% (35%)	-4% (21%)

Successes

The estate had the highest recycling and dry mixed recycling capture rate of all estates.

Challenges

Despite having the highest dry mixed recycling capture rate, the estate had the lowest food waste capture rate, for reasons that are unclear.

There were issues with car parking making it difficult for collection crews to access a residual bin store and food waste bin on several occasions.

Collection crews frequently missed a dry mixed recycling and food waste bin that was not easily visible.

Conclusion

Recycling and dry mixed recycling capture rates were the highest of all the estates in the project, although the estate had the lowest percentage change between pre and post rates. Although contamination increased slightly, it remained the lowest. The estate had the lowest food waste capture rate.

The estate had the highest recycling and dry mixed recycling capture rate of all estates and the highest proportion of older residents, with nearly three-quarters of lead residents over 45 years of age.

Estate C

Estate details

Estate C is a purpose-built development on a quiet residential street near Tulse Hill in south London. It is owned and managed by Lambeth Council. Built in the 1960s, it consists of 172 privately owned and socially rented flats with some small houses (approximate split 27:73) in eight two-three storey blocks, spread out over a large area. The estate has the highest number of one and three+ bedroom properties (35% and 43% respectively). Reflecting the bedroom numbers, it has the highest number of two and four+ person households. The estate has a very active Tenant and Resident Association.

Interventions

Before: 19 external residual bin stores, some of which are accessed by both residual chutes on the ground floor and externally via a metal door. Seven external dry mixed recycling areas dotted around the estate. Textiles on demand via on-site bank. Significant bulky waste dumping issues in certain areas of the estate.

After: New dry mixed recycling and large card and food waste bins were installed outside every residual bin store and a small electricals bin was installed at a central recycling area. The textile bank was removed and textiles were collected on demand. Residents were given the existing Lambeth food waste caddy. No changes to collection schedules.

Results

Table 11: Pre-, interim and post-intervention performance rates (denotes averages across all four estates for comparison)

Key Metrics	Pre	Interim	Post	% change between pre and post
Recycling rate	12% (11%)	22% (20%)	27% (27%)	125% (152%)
Dry mixed recycling capture rate	47% (40%)	50% (46%)	63% (58%)	34% (44%)
Dry mixed recycling contamination rate	38% (30%)	25% (26%)	31% (29%)	-18% (-7%)
Food capture rate	-	38% (29%)	43% (35%)	13% (21%)

Successes

The highest food waste and dry mixed recycling capture of any of the estates. High levels of engagement from the Tenant and Resident Association on the estate, which helped with promoting the new services and resident insight research.

Challenges

Some elderly residents complained about the residual chute closures due to issues accessing the proposed external bins, which led to two chutes remaining open. Awareness of the small electricals bin was low, probably because the estate is sprawling and, although the bin is in the middle, it wasn't obvious unless you live in the immediate blocks.

Conclusion

The estate had the second highest recycling rate both pre- and post-intervention. Dry mixed recycling capture rates on this estate were the second highest and food waste capture was the highest, with 43% of food arising being recycled. Additionally, Estate C was the only estate where contamination decreased, although it remained high at 31%. The estate also had unusually high total waste arisings, which could be partially explained by the high number of 3+ bedroom properties.

A combination of high resident engagement and active Tenant and Resident Association and high density of recycling facilities could be key reasons for the high capture rates seen on Estate C.

Estate D

Estate details

Estate D is a purpose-built development on a quiet residential street near Gipsy Hill in south London. It is owned and managed by Peabody. Built in 2007 it consists of 89 privately owned and socially rented flats with some small houses (approximate split 21:79) in two blocks (two- and three-storey blocks) around a courtyard with a few houses in between. The estate has the highest number of lead residents under 45 years old (61%) and the highest number of rented and one-bedroom properties (52%).

Interventions

Before: two internal bin rooms on the ground floor – one small & narrow and one larger room. Both bin rooms had a dry mixed recycling bin at the very back of the bin store and were very unpleasant, with waste on the floor, lots of flies and very smelly.

After: New dry mixed recycling and large card bins were installed inside each internal bin room, with the narrow bin room having smaller 360 litre bins and the larger one the standard 1280 litre bins. A small electricals bin and food waste bin were also installed in the larger bin room. Four additional food waste bins were installed externally at block entrances and in the courtyard. The majority of residents were given the new design smaller food waste caddy. No changes to collection schedules.

Results

Table 12: Pre-, interim and post-intervention performance rates (denotes averages across all four estates for comparison)

Key Metrics	Pre	Interim	Post	% change between pre and post
Recycling rate	7% (11%)	18% (20%)	17% (27%)	142% (152%)
Dry mixed recycling capture rate	22% (40%)	33% (46%)	31% (58%)	41% (44%)
Dry mixed recycling contamination rate	28% (30%)	23% (26%)	32% (29%)	14% (-7%)
Food capture rate	-	37% (29%)	28% (35%)	-24% (21%)

Successes

Despite low dry mixed recycling capture rates, the interim food waste capture rates were high and the post-intervention capture rates were the second highest.

Challenges

Despite the addition of a third bin room cleanse per week bin room cleanse, residents continued not to use the facilities properly, meaning they remained smelly and generally uninviting.

There was a general lack of engagement from residents with the insight research. Despite two rounds of door-knocking and putting posters up, only six residents were interviewed instead of the target eight.

Conclusions

The estate had the lowest recycling rate both pre- and post-intervention. Dry mixed recycling capture rates on this estate were the lowest and food waste capture was the second highest, with 28% of food arising being recycled.

The combination of a high proportion of lead residents under 44 years old and high number of renters, alongside poor quality bin rooms and disengaged residents, are likely to be key reasons why, despite a 142% change in the recycling rate, Estate D still had the lowest recycling rate.

Appendices

Appendix I

Monitoring and evaluation

In order to draw meaningful conclusions from the project to update the FRP, a comprehensive monitoring and evaluation plan was drawn up. This included waste composition analysis, resident and stakeholder insight surveys and regular visual monitoring of estates.

Waste composition analysis

All waste streams from each of the four estates were separately collected for one week before (May 2021), during (September 2021) and after (end February 2022) the intervention period. The waste and the contents of the dry mixed recycling, card and food bins were collected and sorted separately by hand.

Resident insights

In order to capture views on the interventions being tested and better understand any behaviour change, ReLondon commissioned research with residents, Tenant and Resident Association representatives and cleaners/ caretakers. This research comprised three main elements:

1. Online survey of residents – a short online survey was developed (with a £100 prize draw incentive). The survey included the opportunity for residents to opt in for a qualitative interview to discuss their views and recycling behaviours in depth. 70 surveys were completed, with completion rates on the estates averaging 15% (with a range between the estates of 13-18%).

2. Qualitative interviews with 35 residents – there was a target of eight interviews per estate. However, due to recruitment issues, only six residents were interviewed at Estate D. The interviews were up to an hour long and residents were given a £50 incentive to participate.

3. Qualitative interviews with Tenant and Resident Association representatives to capture views on:

   - how other residents treated the bin areas and views expressed to the Tenant and Resident Association (or housing officer) by residents about the waste and recycling services;
   - their role in relation to waste and recycling and their views on resident recycling behaviour before and after the interventions were introduced.

Appendix 2

Table 13: To show who the intervention has worked well and less well for by material type and recycling behaviour

Type of recycler	Dry mixed recycling and card	Food	Textiles	Small electricals
Good recyclers	More pleasant to recycle – cleaner/brighter bin areas – enhances and sustains motivation to recycle Greater capacity, easier to recycle	Good recyclers have added food to their existing routine: • already motivated to do it to some extent; for some it has enhanced motivation due to positive feelings about the service • caddies and liners (especially) make it low effort and easy to use; designs liked • liners enable easy bin transport (for many)	Good recyclers will avoid putting textiles in the residual bins where possible. Collection has given them an option to consider alongside charity shops (and others) depending on timing of collection and value / quality of items	Good recyclers like the addition of the small electricals bin / collection – an enhanced waste service – and are therefore motivated to use it Bin / collection is easier for some than correctly disposing of item elsewhere, e.g. recycling centre
	Some find slots **harder** to use than lidded bins, notably for smaller / disabled individuals Residents unsure about whether they could recycle plastic pots, tubs and trays **(knowledge)**	**Knowledge** of what can / can't be recycled – some of this is due to personal preferences, but also some misunderstandings around meat, mouldy food and leftovers Weak understanding of why food waste should be recycled (many)	Items that are not reusable (e.g. holes, spoiled) may still end up in the residual waste – opportunity to improve **knowledge** of where these can go?	Awareness – locating pink bin in only some areas of the estate means that some residents are unaware **Knowledge** of whether the bins / collections are for working and / or broken items (some working items may be held onto by resident) **Knowledge** of whether batteries etc. need to be removed

Type of recycler	Dry mixed recycling and card	Food	Textiles	Small electricals
Middle- low recyclers	More pleasant to recycle – cleaner / brighter bin areas – enhances motivation to recycle Investment in new service has **motivated** them to pay more attention Made them think about what can / can't be recycled – therefore contaminating less (knowledge) Orange bags encouraged better routines, enabling small items to be recycled **(ease)**	**Motivated** by investment in services, perception of improved hygiene / cleanliness of bins, and because it is easy (caddy and liners provided)	Some will consider the collection as a disposal option alongside other options, e.g. charity shop, and for some a collection is **easier** than travelling off-site	Like the addition of the small electricals bin / collection – an enhanced waste service – and therefore motivated to use The bin feels easier than collection, because of issues with storage space
	Some find slots harder to use than lidded bins, resulting in bags of recycling and large card by the bins Flattening card is too much effort **(ease)** Don't feel responsible for flattening card and / or putting bags of recycling into the bins "not my job" – because cleaners do it **(motivation)**	Lapsed users deterred by experiencing early problems **Knowledge** of what can / can't be recycled – some of this is due to personal preferences, but also some misunderstandings around meat, mouldy food and leftovers Weak understanding of why food waste should be recycled (many) Knowing that plastic film is a contaminant (some)	For some, the collection feels too **difficult** – space to store items between collections, having to be around on a specific day / time, particularly when comparing to having a bin on-site. Residents may take items to an alternative location (e.g. charity shop) but may put them in a residual bin or by the bins in the hope that someone else can reuse them	(N.B. Same issues as for good recyclers. However, due to lower motivation to recycle / do the right thing, it is more likely that items will be left by the bins or put in the residual waste.) Awareness – locating pink bin in only some areas of the estate means that some residents are unaware

Type of recycler	Dry mixed recycling and card	Food	Textiles	Small electricals
	Residents unsure about whether they could recycle plastic pots, tubs and trays. **(knowledge)** Contamination – plastic film, carrier bags, black bags **(knowledge)**	Uncertainty about sourcing and affordability of liners in future – risk to participation	Items that are not reusable (holes, spoiled) may still end up in the residual waste – **knowledge** of where these can go? **Knowledge** of what happens to items collected – how will they be used, by whom? Lack of knowledge affects what items they put into the collection	Awareness – pink sacks appear to have been 'lost' amongst textile collection information **Knowledge** of whether the bins / collections are for working and / or broken items (some working items may be held onto by resident) **Knowledge** of whether batteries etc. need to be removed **Knowledge** – where can larger items like microwaves go? Slot in bin is too small?
Non-recyclers	It has encouraged some that were unaware of recycling facilities to start recycling, but these were already engaged with the idea of recycling	Those unaware of recycling facilities beforehand, but engaged with the idea of recycling, are food waste users	Those unaware of recycling facilities beforehand but engaged with the idea of recycling will consider collection alongside other options	Those unaware of recycling facilities beforehand but engaged with the idea of recycling will use bin or collection if aware
	The intervention hasn't overcome the motivation barrier for the disengaged: • bigger personal issues than recycling to think about • some have bad feeling towards Lambeth council regarding other issues • general disengagement with their surroundings and neighbours, means they don't care • lack of accountability	Due to disengagement issues, they are likely to have dismissed it automatically without considering it – food waste goes in with residual waste	Due to disengagement issues, they are likely to have dismissed it automatically without considering it – items likely to be put into residual waste	Due to disengagement issues, they are likely to have dismissed it – likely to put items in residual bin or leave with other bulky waste

References

1 https://relondon.gov.uk/resources/report-making-recycling-work-for-people-in-flats

2 Data collected from 6,000+ households by ReLondon from 2018-2022.

3 GLA Housing Growth Projections, 2019

4 https://talk.towerhamlets.gov.uk/rrwp

5 Camden, Hackney, Islington, Lambeth, Tower Hamlets and Westminster

6 The proportion of the six main recyclable materials collected for recycling

7 https://relondon.gov.uk/resources/research-making-recycling-work-for-people-in-flats

8 See Appendix 1 for full list of stakeholders

9 ReLondon flats waste composition analysis before and after the pandemic shows increased amounts of card in the waste stream.

10 Dry mixed recycling bins also advertised accepting card. Dry mixed recycling and large card bins were co-collected but residents were not made aware of this.

11 Combined figure for dry mixed recycling and card bins

12 Percentage change between interim and post only as there was no food waste service in the pre phase.

13 Waste composition data from Flats 1.0 and 2.0 covers analysis from over 6,000 households over different seasons with a confidence level of 90%.

14 60% of the waste stream is recyclable if textiles and small electricals collections are added.

15 https://talk.towerhamlets.gov.uk/rrwp

16 Based on waste composition analysis from a small sample of households across the UK.

17 Excluding contamination

18 Waste composition analysis from flats food waste services across the UK shows that capture rates vary between 10-30%.

19 ReLondon's Flats 1.0 project explored the use of accountability messaging, and it may be worth revisiting how this could be used or adapted (after better understanding the barriers residents face).

Glossary of terms used

Capture rate

The proportion of the six main recyclable materials collected for recycling.

Recycling rate

The proportion of total household waste recycled.

Contamination rate

The proportion of non-recyclable or non-target materials collected for recycling.

Special thanks to:

Steering Group members

- **James Glass**
  Head of Estate Services, Peabody
- **Rachel Rehling**
  Commissioning and Performance Manager, Lambeth Council
- **Linda Elliott**
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- **Andrew Dunwoody**
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- **Coralline Dundon**
  Senior Consultant, Resource Futures
- **Gareth Morton**
  Discovery Manager, Ecosurety

Consultants

- **Waste composition analysis**
  Resource Futures
- **Resident insight research**
  Winning Moves
- **Intervention and communication development and design**
  Behaviour Change and Among Equals

Others

- **Florence Balogun**
- **Tenant and Resident Associations on all estates**

Suppliers

- **Storm Environmental**
- **Peter Ridley**
- **Weber**
- **JPH signage installation**
- **Typecraft**
- **Streetscape**
- **Jump**
- **Islington council**
- **TRAID**
- **European Recycling Platform (ERP)**

Our funder Ecosurety and fund manager Gareth Morton for being so supportive and making the whole process of project monitoring so straightforward.

Gemma Scott, Senior Advisor, ReLondon for her dedication to making recycling work for people in flats.

Contacts and further help

ReLondon

ReLondon is a partnership of the Mayor of London and the London boroughs to improve waste and resource management and transform the city into a leading low carbon circular economy.

Our mission is to make London a global leader in sustainable ways to live, work and prosper, by revolutionising our relationship with stuff and helping London waste less and reuse, repair, share and recycle more.

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Ecosurety

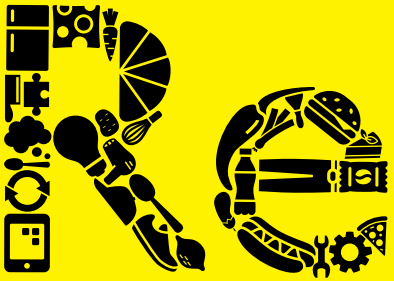
Ecosurety is the market-leading compliance scheme committed to accelerating change towards an environmentally sustainable world. It ensures its members comply with the UK's packaging, e-waste and batteries environmental regulations.

Through broad collaboration, it enables businesses to make sustainable product and packaging decisions. Ecosurety supports efficient and transparent investment in UK recycling projects through improved infrastructure, innovation and consumer awareness campaigns.

In November 2019 it launched the Ecosurety Exploration Fund – providing £1million of funding over three years for projects that offer tangible solutions to the negative effects that packaging, batteries and electronic waste have on the environment.

It has now enabled seven innovation and research initiatives, including the ReLondon project above awarded in 2021, with the final round of funded projects announced in February 2022.

As the only B Corp certified compliance scheme in the UK, Ecosurety is committed to the balancing of profit with social and environmental performance. For more information please visit www.ecosurety.com



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