Leeds By Example

Second Impact Report - December 2019


ZARA

Executive summary

We consume more food and drink 'on-the-go' in the UK than ever before, getting through thirteen billion plastic bottles, nine billion cans and almost three billion coffee cups each year. Yet the much-needed recycling infrastructure for all this packaging used and discarded on our streets has not kept up with demand.

Only two out of every five local authorities offer recycling on-the-go (which is defined as recycling outside of the home). The material collected by those that do is often too poor quality to be recycled. Local authorities need support to create behaviour change through infrastructure and communications that encourage the public to use on-the-go recycling bins effectively.

Hubbub and Ecosurety decided to test different approaches to recycling on-the-go and develop a high-profile, multi-stakeholder campaign that aimed to find scalable solutions to the problem. Hubbub secured funding, identified Leeds as a suitable city and undertook the development and project management of the campaign. Leeds By Example was launched in October 2018, and the first phase ran for six months. The second phase ran until the end of September 2019, giving robust insights from a 12-month trial. This report summarises results from the full 12 months.

Brands, manufacturers and retailers came on board as funding partners, and a range of local partners agreed to collaborate, including Leeds City Council. The aim was to introduce new recycling infrastructure across Leeds City Centre, backed up by a high-profile communications campaign and a strong, recognisable campaign brand. We worked collaboratively with 29 partners across the city, testing a range of solutions and interventions which were independently measured and evaluated.

The campaign ambitions were to:

- Make a connection – raise awareness of on-the-go packaging and inform the public and employees in Leeds City Centre of which items can be recycled on-the-go.
- Change behaviour - nudge people to recycle their on-the-go packaging in the correct recycling bins.
- Make a transformation – leave a lasting legacy of on-the-go recycling for Leeds City Centre whilst creating a collaboration of groups to tackle the issue, and to propose a new method for recycling on-the-go nationwide.

186 new recycling points and technology were introduced in the square mile of Leeds City Centre, including:

79 new on-street recycling bins for plastic and cans, brightly coloured with playful messaging including 35 litter bins reskinned as recycling bins, 20 had a circular yellow aperture

In-store coffee cup collections at 30 city centre stores

60 new indoor coffee cup bins for managed spaces, brightly coloured with playful messaging

10 new on-street coffee cup recycling bins, brightly coloured with playful messaging

8 recycle reward machines tested in different locations with different rewards (one temporarily, so seven remain)

4 plastic and can bins in Seacroft, a suburban area in East Leeds

The We Recycle app, developed by OPRL, was tested for the first time in Leeds in phase one to help the public locate on-the-go recycling for drinks packaging.

All plastic bottles, cans and cups were recycled in the north of England.

A range of communications were tested to support this new infrastructure, to ensure that the public in Leeds were aware of the campaign and saw consistent communications with a clear call to action.

This included:

Media and PR campaign with **255 pieces of coverage**

Digital advertising sharing key messages and four animations

Messaging on recycling bins: **'Empty plastic and cans, nowt else'** and '#LeedsByExample, 'If in doubt, leave it out'

Social media campaign using the hashtag #LeedsByExample, **with a reach of 18.8 million** (a 67% increase from phase one)

Supporting messaging in managed spaces such as workplaces, retailers, shopping centres and universities

Campaign messages shared through a range of **national and local partners**

66 public engagement events, using interventions such as bins that burp and blow bubbles, a 'Re-Cycler' cargo bike that offers rewards for recycling, a seating area made of recycled plastic and two public installations.

Key results, findings and insights are outlined below.

On-street recycling bins

140,000 cans and 160,000 plastic bottles were recycled.[1]

- **Average contamination rate of 25% for plastic and can bins by volume and 39% by weight,** which is better than the national average. There was a wide range of contamination levels depending on location and time of day or season.
- A survey of nearly 1000 people found the number of people who said they disposed of recyclable target material in a general litter bin decreased from 77% to 49%.
- The number of people who said they disposed of target material in a recycling bin **increased from 17% to 49%.**
- **Simply changing the messaging and colour of the bin has a significant impact on the amount of recycling collected;** 35 litter bins were reskinned as recycling bins which immediately increased target material in them from 42% to 57%.
- Reskinned litter bins with a circular aperture collected the highest quality material; 17% contamination versus 25% in original yellow bins. **Older reskinned bins with a wide aperture collected the most target material but had 30% contamination**.
- T**he public respond to visual cues like icons and aperture shape.** Changing to a circular aperture helped reduce contamination to around 17% from 30% in reskinned bins.
- **The most noticed element of the campaign was the yellow plastic/can recycling bins (70%),** followed by the orange bins (47%) demonstrating the value of brightly coloured infrastructure with clear, distinctive messaging.

[1] From on-street bins and recycle reward machines, plus Kirkgate market. This is an under-estimate as not all managed space recycling was captured.

- The quality of recycling reduces during holiday or leisure periods when footfall rises, with more people who are not 'regulars' in the city centre who are not familiar with the messaging and infrastructure. The night-time economy also appears to have an impact.
- People pay less attention when in a rush and our observations showed people spend under two seconds at a bin. **Sites next to bus stops, by pedestrian crossings or in Seacroft had less contamination** than where people are rushing, such as outside the train station. However busy areas collect a higher quantity of recycling.
- Visibility helps. The top performing bins were visible from afar, often on the edge of the pavement with bright colours and messaging helping them to stand out.
- Situating recycling bins next to a litter bin was important in limiting contamination of the recycling bin.
- **Bin placement is important:** recycling bins viewed first at an intersection such as the bottom of steps near the station or on a corner of the street, had higher contamination. It was found that contamination could be improved with repositioning, so the litter bin is seen first.
- The type of litter bin may make a difference: the worst performing bins were next to 'belly bins' which have handles that need to be touched to be opened. The best performing recycling bins were next to litter bins with open apertures on every side, making them easy to use and therefore possibly reducing contamination of the recycling bins.

Cup recycling

At least 1.2 million coffee cups were recycled, equating to over 7 tonnes of cups[1]. 117,000 from on-street bins (1.4 tonnes), over 469,000 from managed locations such as workplaces and universities and over 608,000 from retailers[2].

- The average contamination rate of on-street cup bins was 56%[3]; the main contaminants were recyclable materials like plastic bottles, but **lid contamination reduced from 21% in phase one to 10% in phase two.**
- Cup bins (indoor and on-street) had the highest contamination rates of all of the recycling units trialled in the campaign.

- Cup bins collected the most target material of any bin collection method, while retailers collected the highest volume of cups overall, despite not all retailers being able to provide data.
- **Quality and quantity of cup recycling varied depending upon location** suggesting high demand for cup bins around high footfall areas like transport hubs.
- Plastic and can bins adjacent to cup bins still had cup contamination, but cup it would therefore have been higher without the cup recycling option.
- **On-street cup bins that require the public to stack their cups should be avoided as they are likely to overflow and cause litter.**
- Liquids were a contaminant but were generally of a small enough quantity that they evaporated or were absorbed by the cups and did not reduce the ability for cups to be recycled.
- The public are generally confused about whether cups can be recycled, so more public awareness is needed. **32% of people we surveyed in January 2019 thought cups should go in the mixed recycling bin, and a further 30% thought they should go in litter bins,** whereas in fact they should be recycled separately.
- **A cup recycling trial at Trinity Leeds shopping centre helped increase awareness of cup recycling from 29% to 70%** and reduce lid contamination from 77% to 20%, though people still said they were confused about cup recycling.
- The public feel uncomfortable recycling a cup in a different store to the one in which it was purchased and more public awareness is needed to promote this.
- **Cup recycling messaging is complex and was a focus for phase two of the trial.** Public surveys showed the **number of people recycling their cup increased from 14% to 53%** by the end of the trial.[4]

[2] This is likely an underestimate as not all retailers provided data for the full trial period and not all managed space recycling data was captured.
[3] An average of cup recycling waste audits from phase one and two.
[4] Four public surveys were undertaken, those in August/ October 2018 and March 2019, surveyed around 300 people each. The final survey in August 2019 surveyed nearly 1,000 people and so is directly comparable with the results from August 2018.

Recycle reward machines

8 recycle reward machines were trialled (seven remain in situ), collecting 31,700 items for recycling, of which more than half were cans.

- Recycle reward machines collect very high-quality material with less than 10% contamination, although some indoor recycling bins were just as effective.
- **95% of 396 people surveyed liked the idea of recycle reward machines (39% had used one);** people said they would be motivated to use them if there were more of them around.
- Usage was mainly motivated by a belief in recycling rather than financial rewards. Under 10% of the reward vouchers were redeemed from most machines and removing the financial reward altogether didn't affect usage.
- **However, financial rewards were more popular with a student and convenience store audience, where 50% and 43% of vouchers respectively were redeemed.**
- **More vouchers are redeemed when they can be redeemed cumulatively** (such as the convenience store), meaning numerous items can be recycled at the same time to give a higher reward and discount.
- Location is important. The most used machines were very visible, often from all sides.
- They are effective in high footfall closed-loop locations where people buy, consume and dispose of food and drink packaging such as a large campus or food hall.
- Recycle reward machines collected significantly better-quality recycling than on-street bins but some indoor bins performed just as well.
- At £5,000 each the units were relatively expensive in comparison to equivalent recycling bins.

Recycling in managed spaces

- Managed space recycling is generally better quality than on-street, but there is high demand for on-street recycling as 56% of the target material was disposed of on-street (versus only 18% in workplaces for example).
- Engaging managed spaces such as shopping centres, universities and workplaces to share communications helped amplify the call to action and ensures consistent messages across the city centre.
- 87% of managed spaces agreed the campaign had helped raise awareness about recycling on-the-go.

'We Recycle' app

Despite people saying in surveys that they would use an app to help them recycle, the We Recycle app was downloaded and used by very few people despite being promoted across multiple channels. The app was only promoted in phase one.

- There were 284 downloads and 225 packaging scans in Leeds between October 2018 and March 2019.
- Of these packaging scans, 94% took place during the launch period in October. This suggests that after downloading the app, people did not continue to use it.

Communications

- **The number of people who had seen or heard anything about recycling in Leeds City Centre more than doubled from 23% to 54%** during the campaign period.
- Of those who had seen something, 85% recalled hearing or seeing something about the campaign.
- The hashtag #LeedsByExample was well received, helped give the campaign a distinctive brand and organically began to symbolise city pride.
- Consistent messages on social media supported the physical communications around Leeds City Centre.
- Visualising the issue and offering local statistics helps to engage people on recycling and change behaviour, as does making recycling fun. Nudge tactics were effective such as circular apertures on bins. These were generally more effective than incentives.


On the streets of Leeds city centre, we bin enough food and drink packaging to fill one of these containers every 3 days.
le when you're on-th

The main conclusion from the trial are outlined below:

Collaboration is key to raising awareness when introducing recycling

The campaign was a unique combination of corporate partners, a local authority, the waste industry and local organisations in Leeds. This allowed various partners to input expertise, facilitate the different interventions and amplify key messages, as opposed to all of the onus being on the local authority to tackle this issue alone.

Recycle reward machines are popular with the public

The machines are expensive but they are popular, especially in closed-loop, managed spaces with high footfall, where people buy, consume and dispose of food and drink packaging and when rewards can be redeemed cumulatively or with a student audience. They collect higher quality material, but some indoor bins performed just as well.

Consistent monitoring is important

To date there has been limited comparable research to measure the effectiveness of on-the-go recycling. Leeds By Example provides some robust insight on this issue and was able to demonstrate it performed better than other recycling on-the-go schemes based on research done by UK waste charity WRAP. Further data is needed to understand the impact of recycling in different locations and to establish a robust set of recommendations for other towns and cities.

Quality of recycling can vary and is affected by bin positioning

Quality is generally lower in high footfall areas and during holidays periods, especially where people are new to recycling infrastructure and communications. The most effective recycling bins were positioned where the public had more time to take in messaging and communications, demonstrating the importance of bin positioning. However all plastic/ can recycling quality improved over time. Leeds By Example and previous Hubbub trials have shown that recycling bins should always be placed next to litter bins, to minimise contamination. Litter bins should also be placed first at busy intersections and when there are two recycling bins (an orange cup bin and a yellow bin), these should be placed either side of the litter bin, to minimise contamination.

Consistent communications are crucial

We know people are confused about recycling and that they spend under two seconds at a bin. We aimed for clear, simple and consistent communications from the point of purchase to the point of disposal. This led to almost a threefold increase in people recycling their food and drink packaging during the campaign period, and 85% of the people in Leeds City Centre who had seen something about recycling of food and drink packaging, remembered the campaign.

Cup collections are important

1.2 million cups were collected during the trial. In general, cup collection yields higher quality in managed spaces, although they also work well in high footfall areas such as around transport hubs. Contamination was highest in cup bins, but the number of cup lids disposed in cup bins reduced and the number of people saying that they recycled their cup increased from 14% to 53%. Coffee cups continued to be a major contaminant in plastic and can recycling bins, demonstrating the need to provide cup collection facilities and to further educate the public about cup recycling.

Make recycling simple, visual and fun

The trial showed that the public respond to playfulness, bold messaging and interventions that visualise the issue and make recycling fun. They also want recycling to be convenient and say they will recycle if a recycling bin is nearby. These were more effective than incentives. Quality and quantity of recycling improved over time, showing that behaviour change takes time to embed, as people make recycling a habit.

What next?

Leeds By Example continues to thrive, as Leeds City Council have taken over waste collections and are continuing to work with local partners Zero Waste Leeds and Dr Elaine Kerrell to promote and monitor the scheme. They are keen to increase the number of recycling points over time and to build on what's been learnt to date. Leeds By Example has come to symbolise city pride and is increasingly recognisable as a local brand for environmental sustainability, which will be exemplified by the Leeds By Example website, focusing on the climate emergency (www.leedsbyexample.co.uk).

The recycling on-the-go trials under the 'In The Loop' umbrella in Edinburgh and Swansea run until spring 2020, to enable findings from Leeds to be tested in different cities. We believe that combining the learnings from the three cities (and countries) will provide robust data to inform a new approach to recycling on-the-go.

Hubbub will create an inspiration guide to help other towns and cities implement effective recycling on-the-go, including a set of guiding principles to follow, specific recommendations and a toolkit of useful communications assets. We will actively share this with other towns and cities in 2020.


The Re-Cycler
Roll up
Roll up!
Get rewards for Re-cycling on the go
1
Finish your drink, come say hello, we'll recycle your packaging on-the-go.
2
We'll reward you with a gift in a flash, forget your wallet we don't take cash.
3
Spread the word, just tweet & share #LeedsByExample everywhere.
Recycle here
Empty plastic and cans, nowt else.
#LeedsByExample

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Context

About Hubbub

We're an award-winning environmental charity that creates positive campaigns to inspire ways of living that are good for the environment and create scalable impact.

www.hubbub.org.uk

The issue: on the go

We consume more food and drink 'on-the-go' in the UK than we used to. We get through thirteen billion plastic bottles, nine billion cans and nearly three billion coffee cups each year. This trend for convenience is particularly popular with younger age groups and is projected to grow significantly. Yet much needed on-the-go recycling infrastructure for all this packaging has not kept up.

A common challenge in collecting this material is the lack of consistency in what packaging is made from, plus what can be collected varies from place to place. Research shows the public want to recycle but are confused about the issue.[5]

Local authority challenges

A 2017 RECOUP survey found that only 42% of local authorities provide on-the-go recycling, as it was not cost-effective to provide[6]. Many had withdrawn this service due to contamination issues and maintenance costs.

The report found:

High contamination rates meant the quality was often too poor for the material to be recycled, particularly around tourist areas or transport hubs.

Budget for communications is insufficient and local authorities recognised the need for more frequent and consistent communications, across multiple channels.

Education, infrastructure, maintenance and servicing are what almost half of local authorities would spend additional funding on.

The cost of maintenance and collections of the bins themselves are high, meaning that operational issues can outweigh the benefits.

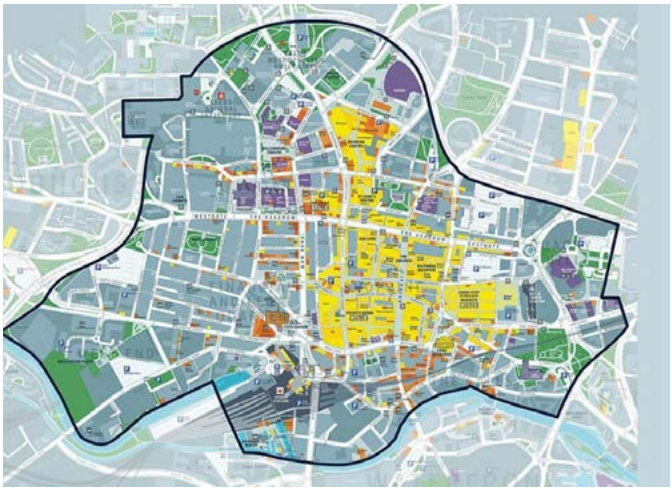
These findings inspired Hubbub to trial a new approach to recycling on the go.

[5] Veolia-You-Gov polling, 2017: https://www.plasticsnewseurope.com/article/20170926/PNE/170929928/uk-notes-worryingly-low-rates-for-on-the-go-recycling; British Science Association, 2018: https://www.britishscienceassociation.org/news/british-science-week-lifts-the-lid-on-recycling-misconceptions

[6] RECOUP Consumer Insight 2016: http://www.recoup.org/p/293/consumer-insight-2016

Leeds

Leeds is one of the UK's major cities with a population of 761,500. Leeds is an international city with a growing city centre that operates 24 hours a day. It's a vibrant and diverse place of learning, culture, work and play that has 1.2 million people in the city every week. Home to four universities, 18% of the population are aged 20-29 (the age group most likely to consume on-the-go food and drink). The city centre has a significant number of food and drink outlets that sell on-the-go items.



Partners

Leeds By Example is a collaboration of leading retailers, brands and manufacturers aiming to tackle recycling on-the-go, working alongside Leeds City Council (local authority) and the third sector. Led by Hubbub and compliance scheme Ecosurety, who work with large producers and recyclers to make a positive impact on UK recycling, the trial also had input from waste and recycling charities.

Funding partners include:

Phase One: Alupro, Asda, Association of Convenience Stores, Ball Beverage Packaging Europe, British Plastics Federation, Bunzl, Caffè Nero, Coca-Cola GB, Costa Coffee, Co-op, Crown Packaging, Danone, Ecosurety, Greggs, Highland Spring, Innocent Group, Klöckner Pentaplast (kp), Lucozade Ribena Suntory, Marks and Spencer, McDonald's UK, Morrisons, PepsiCo, Pret a Manger, Starbucks and Shell.

Phase Two: Starbucks, Ecosurety, Asda, Bunzl, Caffè Nero, Coca-Cola GB, Costa Coffee, Danone, Highland Spring Group, Innocent Group, Lucozade Ribena Suntory, Marks & Spencer, McDonald's UK, Nestlé, Pret a Manger and Shell.

A number of affiliate partners have helped to shape the project and donate in-kind support or resources, including Cromwell Polythene, and in phase one RECycling of Used Plastics Limitied (RECOUP) and WRAP.

Local partners have been essential to the trial's progress and success, including waste contractor Forge Recycling, Materials Recovery Facility (MRF) HW Martin, and local delivery partner Zero Waste Leeds.

A range of local stakeholders helped share the messages and installed recycling points including three universities, the NHS, shopping centres such as Trinity Leeds, Leeds Business Improvement District (BID) and a range of businesses and larger local workplaces.

Hubbub's role

Hubbub and Ecosurety developed a vision to establish a high-profile, multi-stakeholder campaign to test different approaches to recycling on-the-go. Hubbub secured funding, identified Leeds as a suitable city and undertook the development and project management of the campaign, in collaboration with Leeds City Council and Zero Waste Leeds. More of the delivery was undertaken by local partners in the second phase (April – Sept 2019), to transition the project to be locally owned.

Hubbub's ethos is to gain insight into an issue, then test different behaviour change solutions and creative communication techniques. By openly sharing the results of trials we hope others will follow to maximise impact. Bringing together different stakeholders to work collaboratively is always central to our work.

Funding partners and affiliate partners were regularly consulted and provided guidance and support throughout, whereas local partners offered local expertise and helped with the 'on-the-ground' delivery of the campaign.

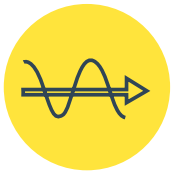
The Approach

Aim: a new approach to recycling on-the-go

The aims and ambitions of Leeds By Example were to:

Launch the trial with a high-profile media and social media campaign.

Explore a range of solutions collaboratively and imaginatively.



Test the impact of behaviour change, recycling infrastructure and awareness-raising interventions.

Use an independent evaluation framework and openly share results.

Create a consistent recognisable brand for on-the-go recycling in Leeds.

Create a viable, sustainable model that can be replicated.

Independent monitoring and evaluation

The data presented in this report has been independently compiled by a range of partners including consultant Dr Elaine Kerrell (local monitoring and evaluation partner), Forge Recycling (local waste contractor), HW Martin (local facility where plastic/can recycling was taken for processing), James Cropper (paper cup recycling facility), participating retailers, WRAP (public survey analysis for phase one) and RECOUP (validating material recycling destinations). The results were then analysed by Anthesis in phase one and Dr Elaine Kerrell in phase two, which have been compiled into this impact report.

Scope

The scope of phase one of Leeds By Example was:

- 6-month trial: 9 October 2018 - 31 March 2019.
- 1 square mile in Leeds City Centre.
- Introduce new on-street recycling infrastructure to collect plastic and cans and paper cups.
- Engage with managed spaces to introduce new recycling bins, discounted waste collections and free consistent communications.
- Unite retailers to collect any paper cup.
- Trial playful, engaging communications and new technology.

Phase two of the project involved:

- Six-month extension from 1 April – 30 September 2019.
- One square mile in Leeds City Centre and a small antennae suburban site called Seacroft.
- Expand the on-street recycling infrastructure to install a further 45 on-street recycling bins.
- Tweak the campaign based upon learnings and insight from phase one.
- Collate 12 months' worth of data, including data over the summer months when people may consume more food and drink outside on-the-go.
- Develop a legacy to handover to local partners.

Glossary

Belly bins

Leeds City Council have 18 litter 'belly bins' in the highest footfall areas that compact rubbish to increase capacity and a 'fullness' sensor conveys when they need emptying.

Contamination

Is materials which are present in recycling bins, but were not targeted for collection by the campaign. This could be food, drink or other materials that were not asked for (contamination found in Leeds included 'hen do' accessories, a wallet, ornaments, identity cards, leftover coffee, porridge and sweetcorn, used disposable nappies; and a pair of walking boots, amongst other things).

Orange bins

Refers to the ten on-street 'smiley' coffee cup bins throughout this report.

Yellow bins

Refers to the on-street recycling bins that collected plastic and cans. There were three types:

- 40 original in the city centre, plus four in Seacroft
- 15 reskinned litter bins with yellow vinyls on each side and
- 20 reskinned litter bins with the vinyls plus a yellow circular aperture plate to encourage people to dispose of only plastic and cans.

Unless the type is specified, yellow bins = all 79 plastic and can bins.

Trial interventions

New recycling infrastructure

On-street

9 October

20 x Yellow 240 liter 'empty plastic and cans' bins.

4 December

5 x Orange cup shaped bins (and then removed 10 December as the cup stacking method resulted in them overflowing with litter).

22 February

15 x litter bins reskinned into yellow 'empty plastic and cans' bins.

4 July

20 x 240 liter 'empty plastic and cans' bins.

20 November

5 x Orange "smiley" 240 liter 'empty coffee cups' bins.

2 January

4 x Yellow 240 liter 'empty plastic and cans' bins introduced in Seacroft, a suburban area outside the city centre.

10 June

5 x Orange "smiley" 240 liter 'empty coffee cups' bins.

6 September

20 x litter bins reskinned into yellow 'empty plastic and cans bins with added circular aperture.

Indoor

60 indoor coffee cup-shaped bins e.g. in the three universities, shopping centres, NHS, workplaces and council offices.

8 recycle reward machines installed (7 remain in situ).

30 retailers who accepted any paper cup for recycling, regardless of where it was bought from. This included Caffè Nero, Costa, McDonald's UK, Pret a Manger and Starbucks.

Total of 186 new recycling points installed and signposted.

Prior to the trial, Leeds had no on-the-go recycling infrastructure, yet over 500 litter bins in the city centre. Therefore, the trial was a significant start to enabling Leeds to be a city that recycles on-the-go.
Recycling collections in the yellow bins mirrored Leeds City Council kerbside recycling during the trial - Leeds did not collect glass or some plastics such as margarine tubs, yoghurt pots or black plastic (plastic types 3 (PVC/V), 5 (PP), 6 (PS) and 7 (other plastics). Therefore, the plastic collected in the trial was PET plastic bottles, plus plastic food packaging types 1 (PETE), 2 (HDPE) and 4 (LDPE). For ease of communication, bin messaging stated ‘empty plastic’ with a bottle icon.

Recycle Reward Machines

Over the course of the campaign eight recycle reward machines were installed; five collected plastic bottles and cans, the other three collected coffee cups. The aim of the machines was to test whether a financial reward helped incentivise people to recycle, and whether they collected better quality recycling than on street recycling bins.

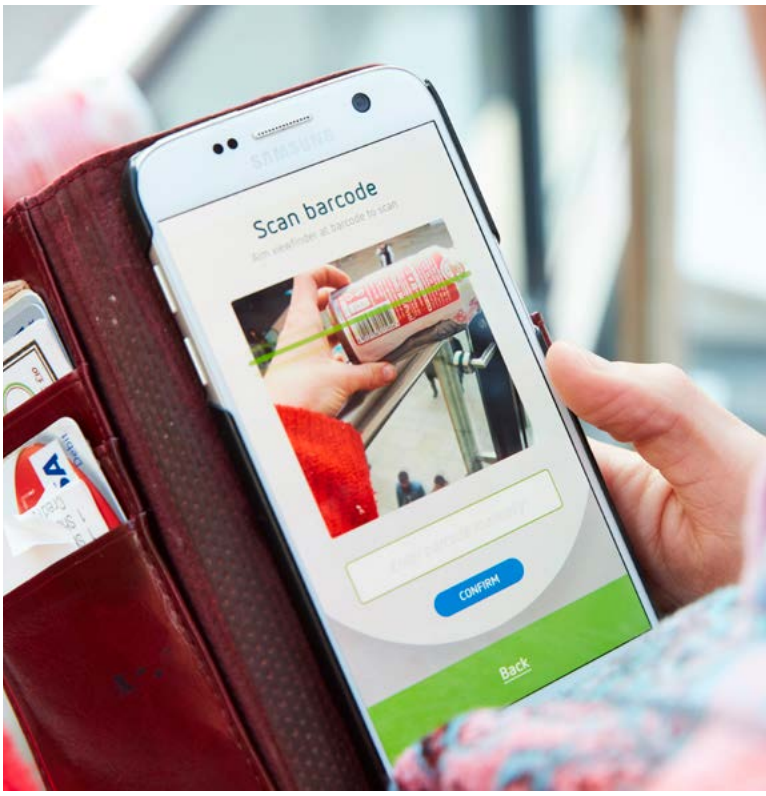
All machines featured the campaign branding and issued varying reward values that had to be redeemed within one week. Only one was redeemable per transaction and rewards were not cumulative.

Machines were installed at:

- **Beckett University:** one plastic bottle/ can machine and one cup machine in a cafeteria. Rewards (initially 5p) were redeemed at three university cafes. From 8 Nov – Jan this switched to a 10p charity donation to a local homeless charity. From February the reward rose to 20p.
- **Kirkgate market:** One bottle/ can machine was placed in the food hall area of the market, issuing 10p rewards to spend at over 10 different market stall holders.
- **Shell Regent Garage:** One bottle/ can machine was placed on the forecourt, issuing 10p rewards to be spent on any non-fuel product within the garage. Temporarily trialled from December to February.
- **Trinity Leeds shopping centre:** One bottle/can machine was placed in Trinity Kitchen food hall from 25 October, offering 10p rewards to spend at two food stalls. Two additional cup machines were installed at the end of March, they did not issue rewards but built on the playfulness of the machines via a cup character with animated eyes.
- **Heron Foods convenience store:** in phase two a bottle/ can machine was placed in Heron Foods, a convenience store in the Merrion Centre. It issued 10p rewards to be spent within one week at one of three Heron Foods stores in wider Leeds. The rewards were able to be accumulated unlike rewards at other sites.

'We Recycle' App

- Developed by On-Packet Recycle Label Ltd (OPRL), the app aimed to help people locate their nearest recycling point for drinks packaging. The app had already been developed by OPRL and was tested for the first time as part of the Leeds By Example trial. By scanning the barcode on drinks packaging, the app displayed whether the item could be recycled and using GPS informed you where your nearest recycling point was.
- Not all brands and retailers provided barcode data for the app (depending upon whether they were an OPRL member), meaning it did not universally apply to all drinks packaging. The app was only promoted in phase one of the campaign.




Recycle here
Empty coffee cups, nowt else.
Liquids
Collars
Recycle
coffee cu
for money off
1
2
3
#LeedsByExample
Recycling

Communications

A consistent brand and tone was developed for the campaign to make recycling infrastructure and calls to action simple, consistent and easily recognisable.

Branding and iconography

A common **#LeedsByExample** brand was developed with a yellow campaign colour and individual icon colours consistent with WRAP guidance: grey for cans, red for bottles/plastic and orange for coffee cups. Wherever possible we opted for icons and symbols rather than words.

The coffee cup icon is now being used as the consistent cup symbol by the Paper Cup Recycling and Recovery Group (PCRRG) and in The Cup Fund winning projects to kickstart cup recycling.

Messaging

Messaging was intended to be playful, eye-catching and engaging on the basis that people spend very little time at a bin, for example our observations in Leeds found 92% of people spent under two seconds throwing something away.[7]

Food and drink are some of the worst contaminants of on-the-go recycling, so the term 'empty' was always used on the recycling bins.

To take a playful approach, a Yorkshire dialect was used on the bin messaging: "Empty plastic and cans, nowt else". Despite a few complaints, the feedback on this approach was overwhelmingly positive.

Whilst plastic food packaging could be collected, the yellow bins featured an icon of a plastic bottle as that is the most easily recognisable plastic item.

Some additional nudge messaging was applied on some litter bins with an arrow pointing towards the plastic and can or cup bin.

Whilst being Yorkshire-specific, this local, playful approach could be translated to other towns and cities to give the messaging about recycling a light-hearted tone.

Grace C Roberts @GraceCRoberts · 9 Oct 2018
Nowt else! Love it!
#leedsleedsleeds #LeedsByExample

Leeds Council News @LeedsCC_News
Keep an eye out for these bins across the city centre to get rid of your recyclable waste on the go!
#Leedsbyexample @hubbubUK

[7] Observations of people using bins in leeds City Centre were completed in October 2018 (248 observed) and in March 2019 (210 people observed)

Insight

Amplifying reach

To amplify the campaign messages a communications guide was shared with all national and local partners. It contained key messages, links to assets, an employee engagement guide and suggested social media posts. This created a consistent, recognisable brand, plus generated a social norm of a city working together to #LeedsByExample, by recycling on-the-go.

On-street communications

Digital advertising featured across the city centre to raise awareness of the campaign and nudge people towards recycling:

- 9 - 22 Oct: 50 screens at Leeds Trinity, Victoria Gate, Leeds station with a potential reach of 2.6 million.
- 17 October onwards: Leeds Big Screen in Millennium Square.
- 17 October onwards: Seven second clip of the plastic and can message at the city centre and Seacroft Leeds One Stop (indoor council contact centre).
- 6 March onwards: cup recycling message displayed on 19 screens at Trinity Leeds multiple times per hour.
- Two weeks per month throughout the year: BT In Link kiosks showed campaign messages 432 times per day, for example about in-store cup recycling, the We Recycle app and contamination messaging.

Interventions

We trialled several engagement interventions during the trial, including bins that burp and blow bubbles, a 'Re-Cycler' cargo bike that offers rewards for recycling, a seating area made of recycled plastic and two separate public installation. See the results section for more details.

To discourage people from recycling the wrong thing, the words "If in doubt, leave it out" were included on top of every bin and on social media, to encourage quality over quantity.

Phase Two

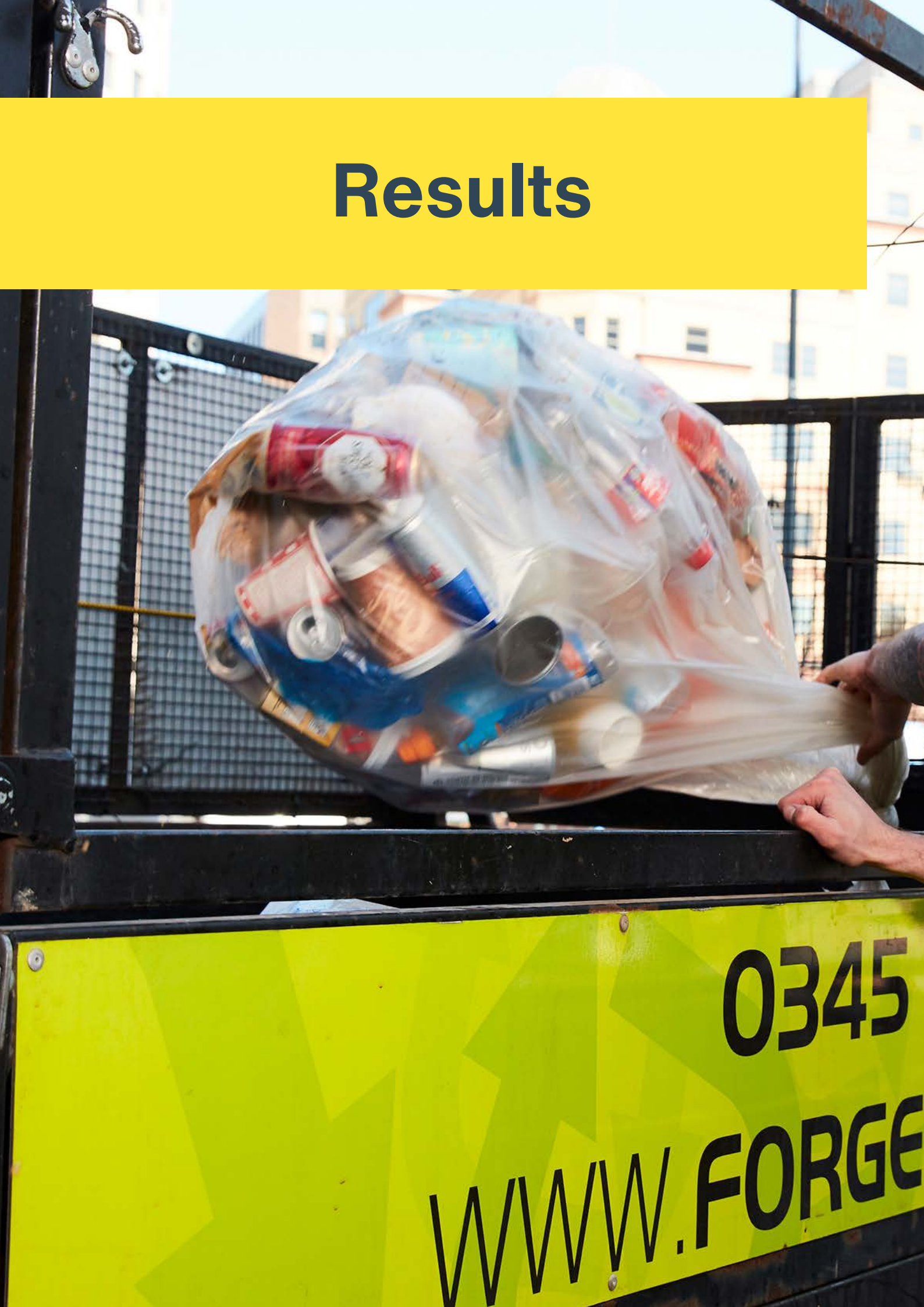
The main aim of the second phase of the campaign (April – September 2019) was to increase the number of recycling points available in Leeds city centre and to run the campaign through summer when more people are out and about.

45 additional on-street recycling bins were installed. Positioning of new bins took into account of insights from phase one, placing bins in locations where people had time to take in messaging from afar or were in less of a rush, while still being in high footfall areas. Circular yellow apertures were added to new reskinned bins to see if this would improve quality of material in reskinned bins. Some key stakeholders (such as the NHS) utilised the campaign messaging and installed cup recycling bins.

Extending the campaign also gave the opportunity to tweak it, building on what had been learnt in phase one. For example, there was increased focus on social media ads as an effective means of conveying the campaign messaging and fewer on-street events which were resource intensive. Three recycling animations were developed, which personified the packaging icons and told the story of recycling packaging.

Otherwise phase two was 'business as usual' enabling more robust data to be collected, while more aspects of the campaign were handed over to local partners such as Zero Waste Leeds and Leeds City Council.

Results



On-street plastic and can recycling

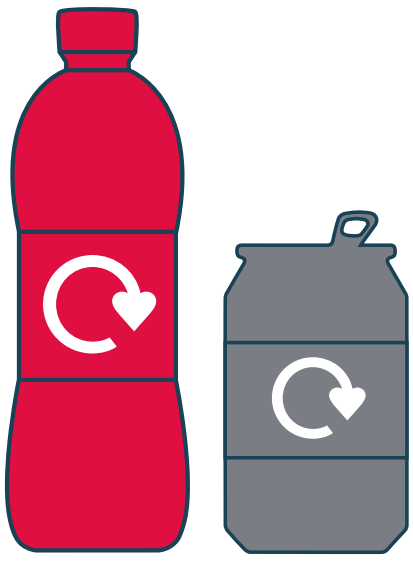
Quantity

Over the year, the Leeds By Example on-street yellow plastic and can bins recycled:

- **6.1 tonnes of plastic and cans**
- **114,375 cans**
- **153,685 bottles**

The volumes collected during the trial were relatively low in comparison to the volume of waste generated on the streets of Leeds City Centre. However only 75 yellow recycling bins were introduced at different stages in the city centre (plus four in Seacroft), versus over 500 existing city centre litter bins. As a trial, the objective was to test what works and monitor the effectiveness of different communications, bin designs and positioning.

Historic Big Belly waste data for Leeds since March 2016, shows that the amount of waste thrown away in Leeds City Centre consistently rose from October 2016 to September 2018. This indicates that Leeds By Example has been a contributing factor in diverting recyclable packaging to recycling bins. A recycling bin was introduced next to a Belly Bin in September 2019 in Dortmund Square and as a result the Belly Bin needed emptying fewer times compared with the same period in 2018[8]. This demonstrates a positive trend but further analysis of this data is required over a longer period of time which is part of the next phase.



Several waste audits of waste from belly bins and general litter bins were conducted to give insight into what proportion of target recyclable materials was ending up in the general waste bins.

Belly bin audits in phase one showed 80% of target materials (plastic and cans) were still disposed of in the belly bins rather than recycled even when a recycling bin was directly next to the general waste bin, with 18.5% of target material captured for recycling. Plastic bottles were the most likely to be recycled (28%), then cans (14%), with plastic food packaging least likely to be (9%).[9]

In phase two, this was repeated for general litter bins and reskinned yellow bins. This showed an improvement with older reskinned bins capturing 23.2% of target material and newer reskinned bins capturing 19.4%. The newer bins were only recently installed and so were still bedding in. Plastic bottles were still the item most likely to be collected.

In phase one, plastic charity RECOUP verified destinations for re-processing the materials collected during the trial. They confirmed that all plastic bottles, cans and cups were re-processed in the North of England; plastic bottles were reprocessed in Lincolnshire, cans in Cheshire and cups in Cumbria. Plastic food packaging was recycled in north Wales and Scotland, however there was a small possibility that some made its way outside the UK.

The campaign was a contributing factor in reducing the amount of recycling in general waste bins but would need to be tested on a larger scale to fully understand this.

Awareness and behaviour change takes time as people adapt to and use new infrastructure.

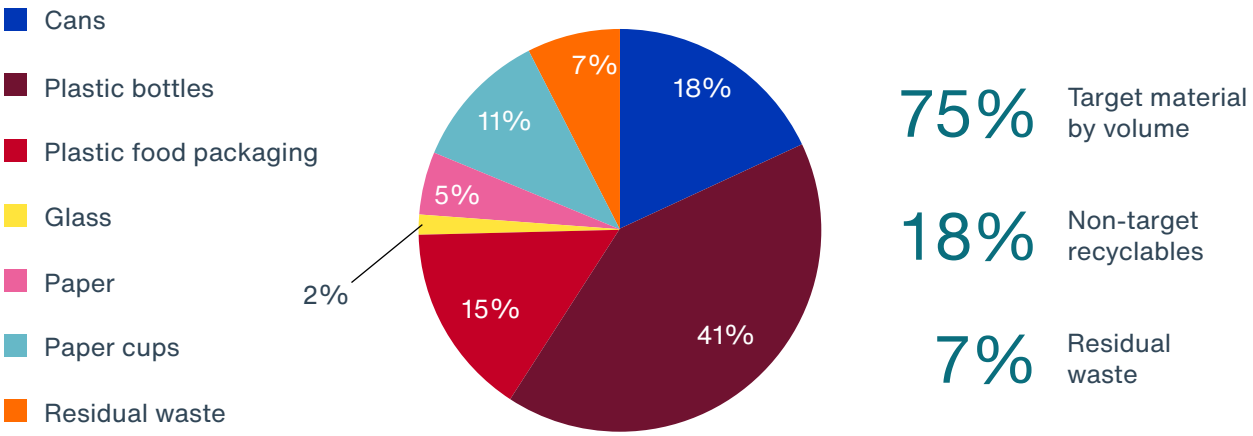
The public respond to nudges and visual cues like icons and aperture shape, not just messaging.

[8] Analysis is based upon a review of Belly Bin data from 12 Belly Bins for which there is data from March 2016 - September 2019 and which had an adjacent yellow bin. Analysis of Dortmund Square is based on 49 full bins in Sep/Oct 2018, compared with 35 full bins in Sep/Oct 2019.
[9] Based upon three audits of residual waste from belly bins in phase one and so may have changed in phase two.

Quality

Contamination rates in the plastic and can bins **averaged 25% by volume over second phase of the trial**[10]. This was **a significant improvement from 39% in phase one**[11]. There was a substantial range between different yellow bins, dependent upon location and time of the day, week or season. **Overall quality improved significantly over the trial.**

Figure 1 : Yellow bin breakdown of materials by volume, April – September 19



Audits of the recycling bins showed that 18% of yellow bins contents were non-target materials that are technically recyclable, such as glass, paper and paper cups (albeit cups require a different bin). Therefore only 7% was actually residual waste like food or drink or materials that cannot be recycled. However this varied depending upon bin type and location. Figure 2 shows the average breakdown of different materials collected in phase two (for all yellow bin types).

[10] An average of six-monthly waste audits, assessing the contents of 10 bags chosen at random, apart from the last audit which looked at 20 bags.
[11] This is a weight average based upon 12 waste audits of all 39 plastic and can bins, including 20 original on-street, 15 reskinned plastic/can bins installed from February and 4 in Seacroft. The contamination rate was 50% by weight. See methodology and the discussion for details of how the contamination rate was calculated and changed over time.

Figure 2: Average contamination rate (%) by volume by yellow bin type of individual bins audited

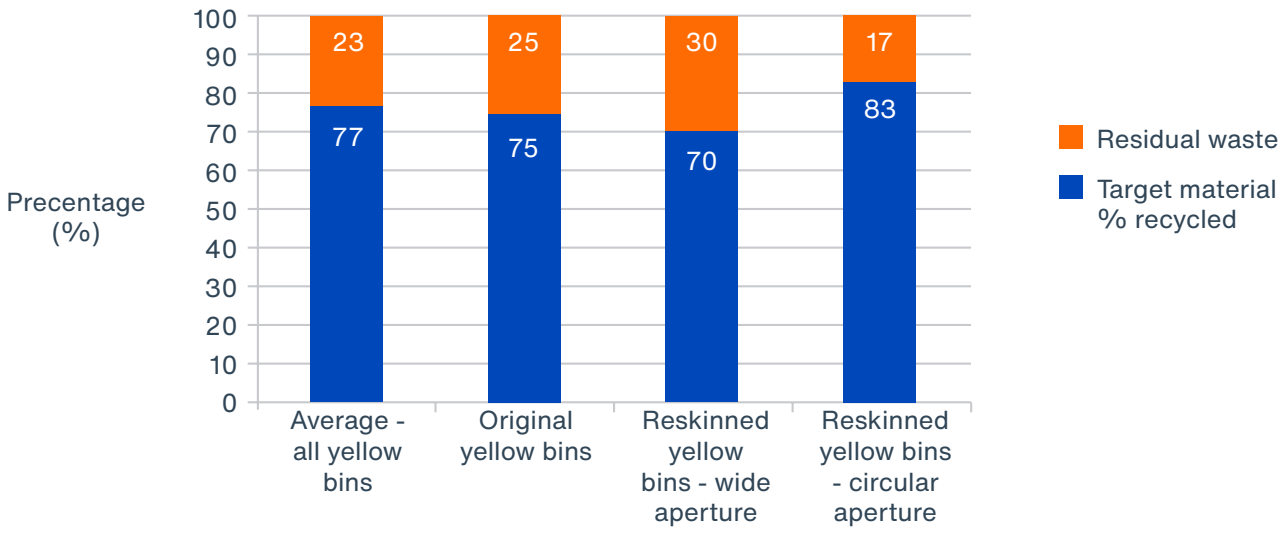


Figure 2 shows how bin type can affect quality. Reskinned yellow bins with the addition of a circular aperture performed better on average than the original yellow bins (17% versus 25% contamination). However, reskinning litter bins and leaving them with a wide aperture meant they performed slightly worse than original yellow bins (30% versus 25% contamination).

This was a change from phase one, when the original bins performed better. This could be for a number of reasons:

- Reskinned bins were installed late in phase one (February) and so people had not yet adapted to them being switched to recycling bins.
- Initially the design of the reskinned bin resembled the general litter bin too closely, so people did not distinguish the difference.
- The open aperture of the reskinned litter bin model was too easily accessible for people to put anything in which was why a new yellow circular aperture was trialled.
- The new circular yellow aperture was easily differentiated by colour and shape from the adjacent litter bin and helped nudge people to recycle circular items like bottles and cans.
- Location may make a difference as reskinned yellow bins are in lower footfall locations than where original yellow bins are sited so people may be in less of a rush and use them correctly.

Simply changing the messaging and colour of existing litter bins to be recycling bins increased the amount of recycling collected by 36%.

Note that reskinned bin audits were done in February and September, shortly after both types were installed and so may not have had time to fully 'settle-in'.

The bins were audited before they were reskinned, which showed 42% of the contents were the target plastic and can material, which immediately rose to 57% after being reskinned.

With all the yellow bins, location significantly affected quality and some original yellow bins performed better than reskinned bins. Phase two gave the opportunity to investigate this further.

The trial clearly shows a trend of contamination rates getting worse when footfall increases. This occurs most noticeably in mid-December and the lead up to Christmas, with further dips in recycling quality, in late October/ early November, mid-February, at the end of March/ April and again in July. These are all holiday periods for schools in Leeds and surrounding areas and significant shopping periods with increased visitor numbers.

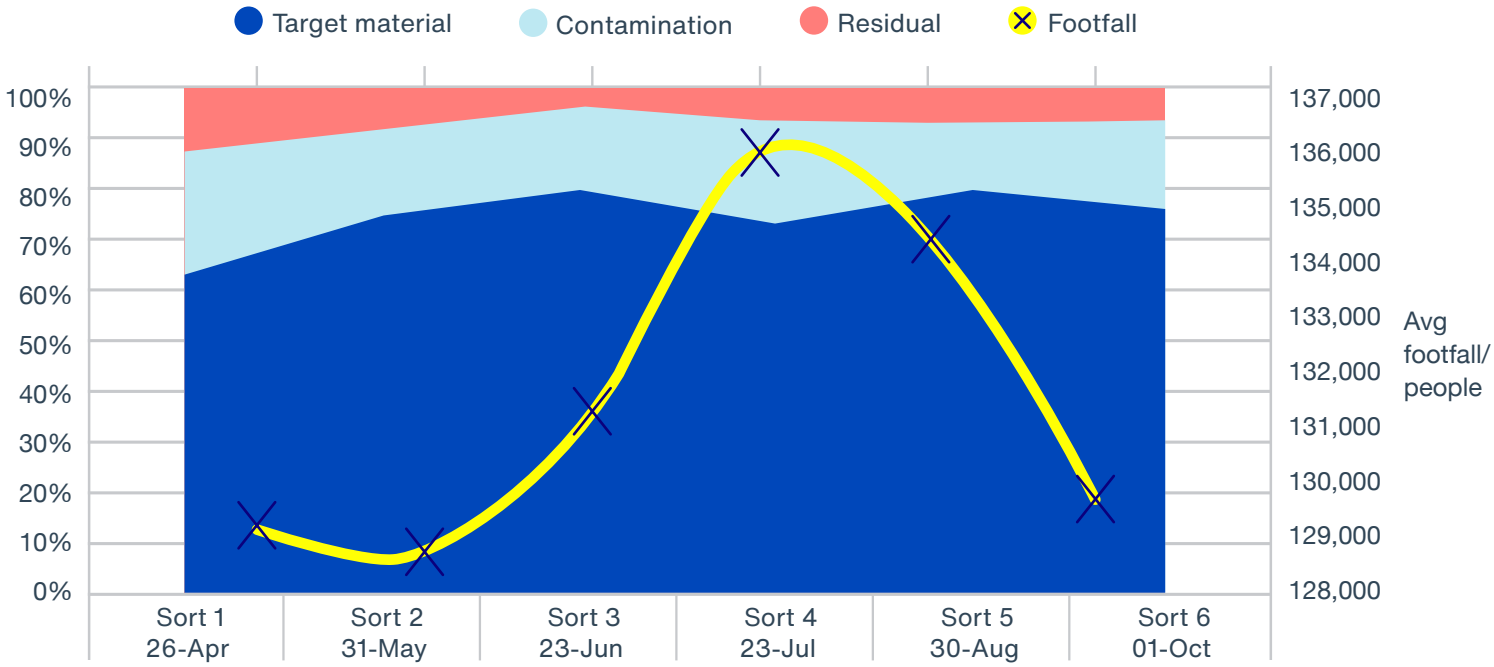
This is supported by bins in the highest footfall locations also having the most contamination. In general, bins around the train and bus station and on busy transport corridors had higher contamination. However, these locations also collected high volumes of recycling.

There may be more visitors to the city centre in these periods who are not 'regulars', so are unfamiliar with the messaging or infrastructure. Contamination rates were lowest in June, August and September when the city centre was 'business as usual', with more regular users such as students and commuters. August appeared to be an anomaly with the lowest contamination recorded of 21%. Overall the quality of recycling improved as the trial progressed.

Observation data (from March) showed 92% of people using the recycling bins were alone rather than in a group, suggesting they may be more regular users rather than one-off social visitors to the centre. It also showed coffee cups were most likely to be disposed of in the morning commuter period, with no clear correlation with other materials.

Likewise, time of the day and week also appear to make a difference. A visual inspection was completed on a Friday evening to assess the impact of the night-time economy. This revealed that the recycling bins around the train station and in the highest footfall areas were most contaminated and included lots of glass bottles. These were the oldest recycling bins, installed due to being in a high footfall location. This suggests that contamination is affected by the likelihood of the public consuming alcohol, such as at weekends and at Christmas.

Figure 3: Change in contamination rates by volume (litres) over time



- **People pay less attention when in a rush:** Observations showed people spent under two seconds at a bin and often didn't look at the messaging. Sites next to bus stops, by a pedestrian crossing, on quieter streets and in Seacroft performed better than where people are rushing, such as outside the train station.
- **Visibility helps:** The top performing bins were visible from afar, often on the edge of the pavement with bright colours and messaging helping them to stand out.
- **The type of litter bin makes a difference:** The worst performing bins were adjacent to belly bins with handles which need to be touched to be opened. The 'yuck factor' and the additional effort required may make the recycling bins more appealing to use even for non-recyclable material. The best performing recycling bins were next to litter bins with open apertures on every side, making litter bins easy to use. Using restricted circular apertures for the recycling bins helps nudge behaviour to dispose of the right items.

Looking at which locations perform the best and the worst, some are located in close proximity to each other yet perform very differently. The quality of recycling appears to be affected by people being 'in a rush', if they cannot see the messaging from afar or the type of adjacent litter bin affects which bin is more appealing to use.

Bin positioning is also important. If a yellow bin is positioned so that it is seen first, it attracted more contamination than if a litter bin was seen first. Yellow bin positions were adjusted at the foot of some busy steps, on a busy corner and by fast food outlets so it was the litter bin that was seen first, which anecdotally reduced contamination. Some yellow bins had to be removed for large events such as Leeds Pride and then were put back in the wrong location or further away from adjacent litter bins, which was observed to worsen contamination.

Therefore, contamination rates are very nuanced depending upon location, footfall, time of day and season and bin positioning. Local partners in Leeds are investigating the potential for a bin mapping tool to compare different datasets to help inform where best to position recycling bins.

On-street coffee cups

1.2 million coffee cups recycled*

Quantity

Over the year, the ten on-street 'smiley' orange coffee cup bins collected:**

- **1.4 tonnes of coffee cups**
- **116,666 cups (assuming an average cup weight of 12g).**

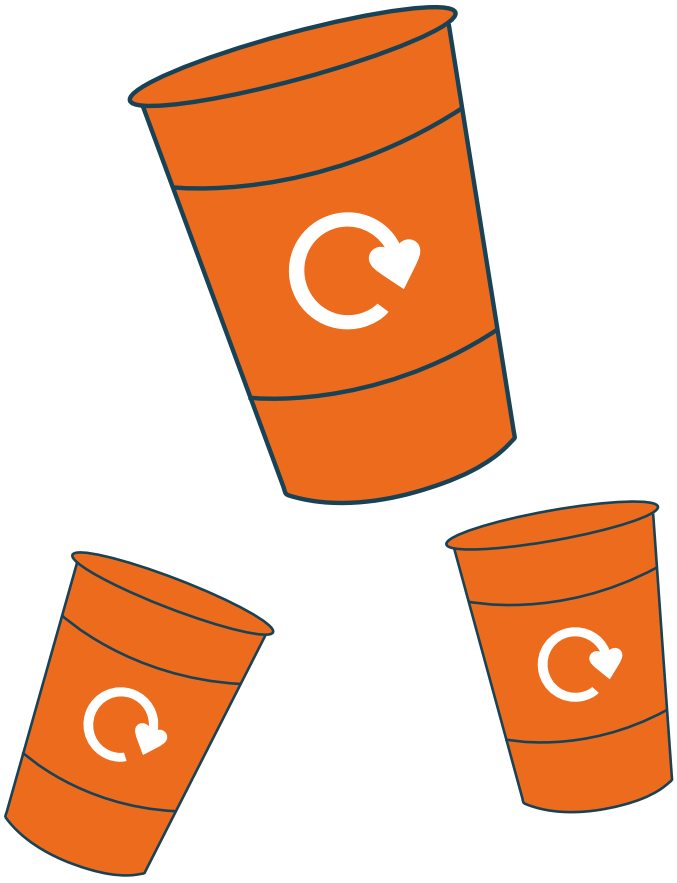
High volumes of cups were collected on-street, suggesting the initial chosen locations around the station and in high-footfall commuter areas were appropriate. Some locations had a seasonal impact with a cup bin in an outdoor square in a business district used far less beyond the summer and at weekends.

Coffee cup bins have the highest capture rate of any bin type. In locations with a yellow, orange bin and litter bin, comparing how cups are disposed in phase one showed that the majority of cups were still disposed of in litter bins, yet orange bins captured around a quarter of all cups and therefore were more successful at diverting target material than the yellow bins.

Cups were still disposed of in yellow bins even when they were next to an orange cup bin (around 2-5% by volume) but this shows that contamination of the yellow bins would have been much worse without the cup bin beside it.

In early December, five cup-shaped bins with receptacles for lids and liquids were briefly tested but they were removed within a week because they required the public to stack cups. Users repeatedly put in cups upside down, with lids on or put in other items such as sandwich cartons, causing them to jam and overflow with litter.

- Cup bins collected the largest volume of target material of any collection method, suggesting high demand for cup bins around target areas like transport hubs with commuters.
- Cup bin demand can be seasonal, with less demand in parks and squares outside of the summer, when the weather changes or in business areas at weekends.
- Contamination remained high in adjacent plastic and can bins, but would have been even higher without cup bins present
- The 'smiley' bright orange cup bins were easily recognisable and popular on social media.
- On-street cup bins which require the public to stack their cups should be avoided.



*From on-street bins, retailers and managed spaces. This is likely to be a significant underestimate as not all managed spaces or retailers provided data.
**Five cup bins were in place from November, with another five installed in June

Quality

The bins used did not offer an option for the user to separate lids and liquids, but this did not prove to be an issue. Coffee cups were collected separately by Forge Recycling and sorted at their depot in Leeds. The quality was good enough for recycling, although it required Forge Recycling to do a sort to remove the main contaminants, such as cup lids and plastic bottles. The cups were then baled and sent to the James Cropper paper mill in Cumbria to be reprocessed.

A waste audit of on-street cup bins in phase two, showed an average contamination rate of 56%, an increase from 46% in phase one. The main contaminants were recyclable materials (29% versus 12% in phase 1), mainly plastic bottles that were easy to remove rather than general waste. Cup lids significantly reduced from 21% to 10% of contamination. On average, 44% of the volume was paper cups (52% in phase one).

This audit was done just after the new cup bins were installed and may reflect the new locations not having bedded in yet. It also hides a big variation in performance from 20% to 73% contamination. The most contaminated cup bins were new bins in high footfall locations, though these also collected more cups.

A survey in January of people in Trinity Leeds shopping centre showed that 32% thought they were doing the right thing by disposing of their cup in a mixed recycling bin, whereas another 30% thought they should go in litter bins. This highlights that despite extensive communications there is still widespread public confusion about whether cups can be recycled and a lack of understanding that they require their own bin.

- **Contamination of on-street cup bins was high** (mostly recyclable items like plastic bottles) and some liquid was present, however this did not impact the ability for the cups to be recycled as Forge Recycling could extract them.
- **The public are generally confused about whether cups can be recycled,** so more public awareness raising is needed. Though increased communications helped as more people were recycling their cup and lid contamination also reduced.

Coffee cup messaging was a focus for the campaign in phase two. However, the messaging is complex as there are so many aspects to consider, including cups that serve hot and cold drinks, liquid, cup lids, sleeves and compostable cups. The public survey showed that the number of people who said they recycled their coffee cup in Leeds city centre increased from 14% before the trial to 53% by the end. See Trinity case study overleaf which showed awareness of cup recycling significantly increased and contamination from cup lids reduced.

Managed space cup recycling

469,166 cups collected from managed spaces over the year

Forge Recycling collected cups from 28 different sites in Leeds such as workplaces, universities and one retailer. This service was established as part of their involvement in the Leeds By Example trial. Bearing in mind some managed spaces involved in the trial did not use Forge Recycling to collect cups, so 469,166 cups is likely an under-representation of cups collected from all managed spaces in Leeds.

A total of 60 indoor cup recycling bins were installed featuring campaign messaging. Some sites already had cup recycling in place, such as some of the universities.

Example: Trinity Leeds shopping centre

Trinity Leeds was chosen for a mini-trial around coffee cup recycling. An initial survey of the public in January found that 95% wanted to recycle their cups but were mostly confused about whether or how they could be recycled. It found less than a third of people had heard anything about recycling cups in Leeds City Centre. Various cup bin designs were introduced, including two recycling machines, along with a giant cup installation, events promoting cup recycling, and digital ads, as well as additional messaging in retailers.

- **Nearly 8,000 cups were collected from January to May,** with the contamination rate ranging from 37%-55%. (Trinity is extremely well maintained, and bins regularly emptied, but it is almost 'on-street' as it is a covered thoroughfare through the city centre with eight different entrances and is never closed to the public.)
- As infrastructure (20 new bins and three recycle reward machines) and communications were introduced, **lid contamination reduced from 70% to 22%.**
- Trinity performed marginally better than the on-street cups bins, with a major contaminant also being lids, as well as plastic bottles and food packaging, particularly plastic cups. Many of these items were from retailers in the centre.
- **Awareness of cup recycling increased from 29% to 70%;** with 95% of respondents who had seen or heard something about cup recycling mentioning Trinity in May compared to 24% in January. Though there was still confusion about how to recycle coffee cups.

When the public in Trinity were asked what would encourage them to recycle more, the main responses were bins being nearby and knowing where bins are located.

The public feel uncomfortable recycling a cup in a different store to the one in which it was purchased and more public awareness is needed to promote this.

However some retailers saw an increase in the quantity of cups collected.

Anecdotally, more cups were collected in stores where staff were engaged on the issue and quality may be better when staff separate out cups.

Retailer cup recycling

608,229 cups recycled in retailers over the trial*

There were 30 participating stores as part of the trial that agreed to collect any cup for recycling, regardless of where it was bought from. These included all city centre Caffè Nero, Costa, McDonald's UK, Pret a Manger and Starbucks stores.

Most retailers collected cups by asking customers to leave them on the side to be collected by staff, whilst some had specific cup bins or disposal points. This generally depended on the available space in store. Feedback suggests that ensuring staff are responsible for collecting cups results in better quality, as any contaminants can be separated before cups were sent for processing. All stores featured some form of campaign communication such as window stickers advertising their participation in the trial, to table talkers, posters or messaging at the point of sale.

Surveys were undertaken to capture retailers' views at the end of phase one (four out of five responded) and phase two (three out of five responded), asking different questions. They found:

- 66% saw an increase in cup recycling collections (phase two)
- **75% of retailers said staff awareness had increased** and 50% noted fewer operational issues (phase one)
- The main barriers cited to recycling more cups were the public not knowing they could bring any branded cup in for recycling and getting customers to use the collection system correctly, while storage, cost, backhauling cups and staff awareness were also mentioned.
- **When asked how customers responded to the trial, 68% said very positively or positively** and 42% said neutral as public perception was anecdotal (phase one and two).

Recycle reward machines

The trial introduced eight recycle reward machines in Leeds (one was only for a few months trial period), each machine cost £5,000.

- **Collected 31,773 items (over half were cans)**
- **Average contamination rate of under 10%**
- **Only 9% of rewards were redeemed for most machines, except for a university and convenience store which were significantly higher.**

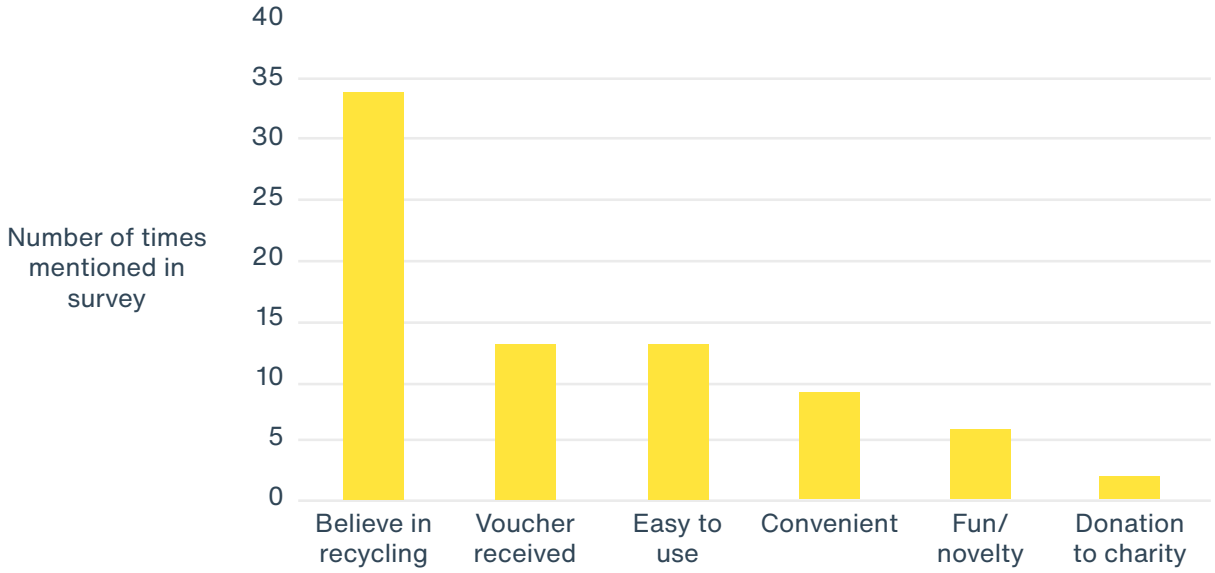
There was a significant variation in the usage of the eight machines. The machines at Trinity Leeds shopping centre and the Heron Foods convenience store were the most popular. Less used machines included one at Shell Regent Garage and the machines at Beckett University which were moved and so partially hidden (partly restricted by needing an electrical point), but additional signage was added to increase visibility. Some machines were recalibrated during the trial, meaning data had to be averaged out. Most sites showed an initial 'excitement effect', until usage averaged out.

Each site was asked to keep a weekly log of the quality of material collected. The majority reported under 10% of the contents were contaminated. An audit at Kirkgate Market found just 6% contamination and very high-quality contents, with 71% cans and 23% plastic bottles. A Trinity kitchen plastic/ can machine audit found a slightly higher contamination rate of 16%, which was mostly plastic cutlery.

A survey of 396 people in mid-March at the reward machine locations asked questions about the machines.

- **95% thought recycle reward machines were a good idea**
- **39% of people had seen the machines**
- **36% of those who had seen a machine had used one**

Figure 4: Motivation for using a recycle reward machine



Token redemption was generally low being under 10% but varied a lot from site to site. This suggests financial rewards may appeal more to a student demographic, and / or when the rewards are cumulative or can be spent on everyday items, rather than eating or drinking out.

At Beckett University, the redemption rate increased by about 22% when the reward increased to 20p from 5p in January and then rose to more than 50% in phase two, suggesting people became more aware of the rewards and students are motivated to recycle by a financial reward.

The Heron Foods machine was popular and had a high redemption rate from the outset at 43% and generated a lot of public interest and enquiries such as when the machine was out of service or needed emptying. As a convenience store it sells food, drink and everyday home goods. The rewards were also redeemable at two other Heron Foods stores across the city and could be cumulatively redeemed, meaning a bigger discount if multiple items were recycled. Anecdotally this was people bringing multiple plastic bottles and cans in bags, rather than just passing by with individual items consumed on-the-go. This suggests that incentives may be more popular and motivate recycling for convenience store users or when rewards could be cumulatively redeemed. As it was installed in phase two, survey data isn't available to compare motivations for use.

At Beckett University, in the lead up to Christmas, the reward was replaced with a 10p donation and nearly £150 was donated to a local homeless charity. At Trinity Leeds a machine for cups was introduced which was gamified and made to look like a person swallowing the cup, without offering a financial reward. Neither of these changes led to a significant change in usage of the machines.

- **Recycle reward machines collect very high-quality material** with low contamination, although some indoor recycling bins were just as effective e.g. in Kirkgate Market.
- **The public like recycle reward machines but said they were motivated by a belief in recycling rather than financial rewards.**
- Location is important. The most popular machines were very visible, often from all sides.
- Whilst recycle reward machines are more expensive than equivalent bins, they may help encourage recycling in specific closed-loop, high-footfall locations where people buy, consume and dispose of food and drink packaging such as a large campus or food hall area.
- Novelty or fun appears to be a factor, as few rewards are redeemed and removing the financial reward altogether didn't affect usage at Trinity Leeds.
- **Financial rewards are most popular with a student and convenience store audience and when they can be cumulatively redeemed** to get a bigger discount.

Managed space recycling

A range of managed spaces - shopping centres, to universities, a hospital, market and workplaces - took advantage of the free communications and discounted recycling bins and waste collections offered as part of the trial.

60 indoor coffee-cup shaped bins were installed, plus a small number of indoor plastic and can bins. Waste audits were conducted to compare the quality and quantity of recycling indoors versus on-street, mainly at Trinity Leeds shopping centre and Kirkgate market.

Managed space recycling was found to be generally better quality than on-street. This supports findings from previous Hubbub trials which shows almost half the amount of contamination in managed space bins, compared to on-street. In managed spaces, there is more of a social norm to conform and people may have more time.

The August 2019 survey in Leeds found 18% of target material was disposed of at work, with 56% disposed of on the street. Therefore, whilst providing workplace recycling is important to collect high quality material, on-street collections are important to capture larger quantities of recycling.

A survey was sent to the managed space contacts in Leeds, of which 15 replied in full. Overall, all said that they thought that the campaign had raised awareness locally about recycling on-the-go. It found:

- **87% had used the communications guide and 93% thought the campaign was playful and engaging.**
- **53% had seen a noticeable increase in volume of recycling and 47% an increase in quality (the others were neutral and mostly stated they had no means of measuring this).**
- **87% agreed or strongly agreed that Leeds By Example had raised local awareness about recycling on the go.**

Kirkgate Market

Kirkgate Market has a large open food hall, with street food type vendors and a seating area. Prior to the trial there were no recycling bins available for the public, the trial introduced a plastic/ can recycle reward machine and two yellow bins.

The audits of the indoor yellow bins found contamination of around 9% and the contaminants were mainly polystyrene cups, food trays and cutlery (associated with food bought and consumed in the food hall).

- **Managed space recycling is generally better quality than on-street**, but on-street recycling is important to collect larger quantities.
- **Engaging managed places to share consistent recycling communications helped amplify messages** and change behaviour to increase quality and quantity of recycling.

Audits of the machine found a contamination rate of 9% or less. The contaminants found were cups, cups lids and sleeves. Audits of nearby on-street yellow bins showed high contamination rates of 30-69%, possibly due to the high footfall at the bus station and nearby roads.

Example: Universities

- Beckett University has two recycle reward machines (one for plastic bottles/cans, one for cups), plus two cup-shaped bins and made use of the free communications materials and two visits from the Re-Cycler.
- Leeds University had two cup-shaped bins and made some use of the free communications materials, as well as having a couple of visits from the Re-Cycler.
- Leeds Arts University had a cup-shaped bin and hosted a workshop for students about plastic reduction and Leeds By Example.
- Leeds City College had a visit from the Re-Cycler at their freshers festival, just after the end of the campaign, that was very popular.

Meg Ojari, Student President at Leeds Arts University said: ***"It's easy to see the difference when it's as part of a large group of people making small differences that add up."***

Comparing collection methods

In order to evaluate the effectiveness of different recycling collection methods, a comparison was made to assess the quantity and quality of recycling by collection type.

Figure 5: Quality and quantity of different collection methods

Bin type	Target materials (Per day per bin in litres)	Contamination (By volume%)	Cost
On-street yellow bin	19.4	25%	£645 each (including artwork)
Re-skinned yellow bin	21.2 (older*) 16.9 (newer**)	30% (older) 18% (newest)	£110 each to reskin existing ones £400+ each for new units
On-street cup bin	24.3	56%	£600 each (including artwork)
Indoor cup bin	5.8 (Trinity only)	51%	£149 (including artwork + 25% project discount)
Recycle reward machines	4.7 (Coffee cups) 9.99 (Plastic and cans)	2-10%	Circa £5k each including install and artwork)
Retailer In-store	82.1 (per store and day, several bins)	NA	Not available

*Older - Installed Feb 2019 **Newer - Installed Sep 2019

All recycling collections and bin types apart from recycle reward machines (which were relatively stable), **saw an improvement in general performance over time.**

Note that collection costs have not been included for comparison. This is because collections were done by Forge Recycling rather than by Leeds City Council, to facilitate the trial. To facilitate monitoring, the recycling was held at Forge's depot before going to the Materials Recovery Facility for processing, meaning collection costs were likely higher and are not representative of what it would cost a local authority to undertake. The councils are completing collections for In The Loop trial cities, so Hubbub will aim to show the costs to provide this service, to help establish a business case for introducing recycling on-the-go.

Emptying frequency varied depending upon the bin location and type. Initially each bin was checked daily, with most yellow bins settling into a Monday/ Wednesday/Friday emptying schedule. Some were emptied less frequently, such as Seacroft and others needed emptying at weekends such as high footfall locations around the station.

- **On-street coffee cup bins captured the most target material**
- Coffee cup bins (indoor and on-street) also had the highest contamination
- Retailers collected by far the most cups
- **Reskinned yellow bins with circular apertures had less contamination** than original yellow bins and captured slightly more target material, once they had bedded in
- **Recycle reward machines had the lowest contamination rates,** though still comparable to some indoor plastic/ can bins

National benchmark comparison

Unfortunately, there is very limited data and research into on-the-go recycling, making a national benchmark comparison very difficult. Expanding the campaign to the In The Loop cities, will help to build a picture of best practice for recycling on-the-go.

WRAP published **'Drinks Recycling On-the-Go'** in February 2019, comparing on-the-go recycling schemes such as on-street or in workplaces. When comparing contamination by weight, the Leeds trial compares favourably.

For on-street local authority schemes the average contamination rate is 51% of contents by weight, yet with a huge variation per scheme (19% - 87% contamination). Leeds By Example on-street plastic and can recycling had an average of 39% contamination by weight in phase two (with a range of 34%-58%). This is a big improvement from phase one, which had 50% contamination by weight.[12] As noted in the methodology, the focus was on volume as weight overemphasised heavier items such as glass.

Many local authority schemes studied would have included materials that were categorised as contamination in Leeds such as glass, which is a heavy material. There were also differences in how contamination and dry mixed recycling were categorised between Leeds By Example and the schemes reported by WRAP, so Leeds By Example may have performed better than this comparison suggests. For example, if paper and glass were also recyclable within the scheme, then the contamination rate would significantly reduce to 21% (residual waste and paper cups). In summary, Leeds By Example performed significantly better than the national benchmark and would perform even better if paper and glass were also included.

Leeds By Example performed significantly better than other on-street recycling schemes and would perform even better if glass and paper were included, but more comparable research is needed and In The Loop cities will help to build this.

A note on methodology

Waste audits

Leeds By Example was independently monitored by a consultant who undertook multiple waste audits, for the various waste streams. Recycling was taken fortnightly in phase one and monthly in phase two, to the Materials Recovery Facility (MRF) - HW Martin to be audited, before being sorted then sent for reprocessing. Some audits were also completed at Forge Recycling's Leeds depot and at the council depot at Leeds markets. Usually a sample of ten bags was chosen at random.

Over the period 18 – 31 March, all 39 plastic and can bins were labelled by location and every bag was audited, therefore providing data on performance per location. A larger sample of 20 bags was analysed in September 2019. Results in this report predominately relate to an average of the six, monthly waste audits in phase two, from April to September, unless specified.

Several waste audits were done to assess the performance of individual litter and recycling bins. This involved relying on partners to empty the right bin, at the right time and labelling the bags with the bin number. Unfortunately, this was not always possible or sometimes the wrong bags were collected, or the bags were not numbered meaning fewer waste audits were completed than hoped. This is an operational reality that has to be considered in future on-the-ground trials.

Volume versus weight

As the target material being collected for recycling – cans, plastic bottles, food packaging and cups – are very light, these results are predominantly provided in volume rather than weight. This was at the suggestion of our measurement and evaluation consultant Dr Elaine Kerrell.

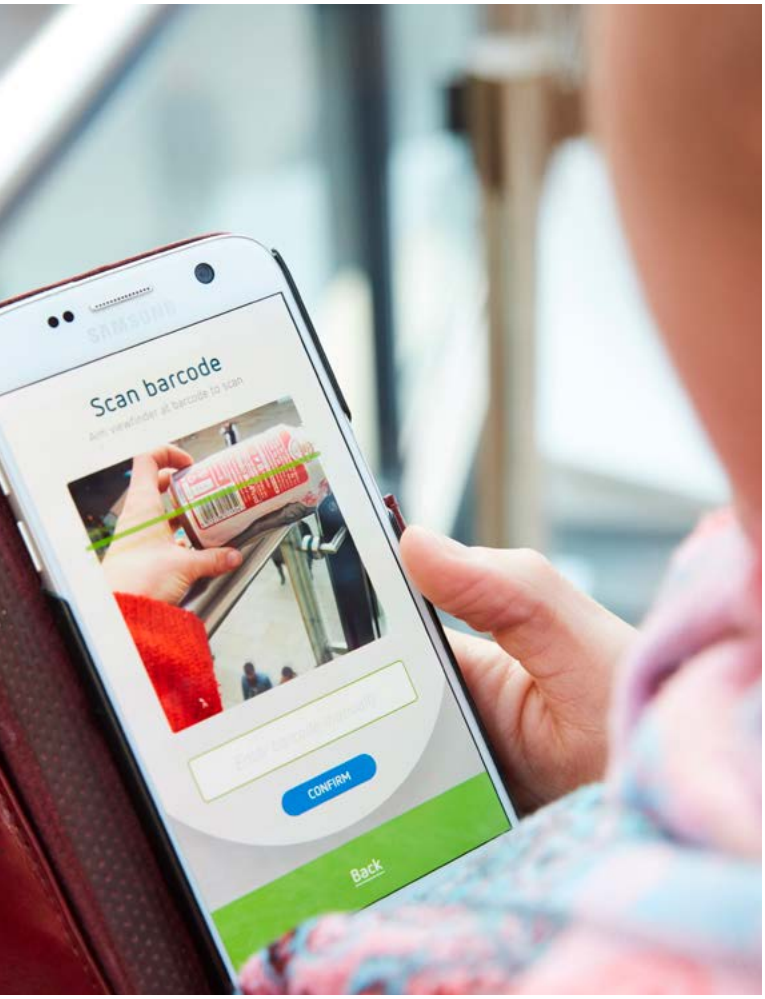
Contamination such as liquid, food or glass is heavy and therefore skews results. Given the recycling industry mainly uses weight, all recycling was also weighed, therefore some weight figures are also provided. It was not possible to measure liquid content, apart from that contained within or on other materials.

[12] This is a weight average based upon six waste audits across phase two of a sample of 10 bags from plastic and can bins (20 bags at the last audit). The contamination rate was 39% by weight. This was an improvement from 50% by weight in phase one, which was an audit of all yellow bin contents for the final fortnight in March. See methodology and the discussion for details of how the contamination rate was calculated and changed over time.

Definitions

There are three different categories for measuring recycling in the trial:

- **Target material:** Materials which are intended to be collected in each bin type - plastic and cans in the yellow bins or coffee cups in the cup bins. Only plastic types PETE, HDPE and LDPE can be recycled in Leeds.
- **Non-target recyclables:** Materials which are potentially recyclable but were not intended to be collected in the recycling bin e.g. glass and paper.
- **Contamination:** materials which are present in recycling bins but not targeted for collection. For plastic/ can bins this is non-target materials (glass, paper and paper cups) and leftover waste such as food, liquid and other packaging. For cup bins this would be anything other than paper cups, including plastic, cans, paper, lids, food or liquid.



'We Recycle' app

The app had 284 downloads and 225 packaging scans in Leeds between October and March.

Of these packaging scans, 94% took place during the launch period in October. This suggests that having downloaded the app, people did not continue to use it. The app was not promoted in phase two.

The app being promoted through various channels including social media posts and on-street digital screens as well as directly through managed spaces such as the universities.

To assess what role technology may play in encouraging recycling, a public survey was undertaken in February 2019, with 396 respondents.

- **84% thought technology had a role to play.**
- **3% of people had heard of the We Recycle app.**
- **60% of people said they would in theory download an app that told them if something can be recycled and located their nearest recycling point.**
- **Of those who said yes, the majority wanted it to locate the nearest recycling point (58%), followed by it telling you whether an item of packaging could be recycled (37%).**
- **For those who would not download an app, the main reasons were that they wouldn't use it, would look for bins on-street, already recycle or don't have space on their phone for another app.**
- **People were asked what technology would help them to recycle:**
  - **26% said recycle reward machines.**
  - **24% said links to social media.**
  - **24% said a downloadable app.**

There may be a role for technology to encourage recycling, but despite people saying in surveys they would use an app, the 'We Recycle' app was downloaded and used by very few people.


The Re-Cycler
rewards for Re-cycling on the g
1
Finish your drink,
come say hello,
e'll recycle your
ckaging on-the-go.
2
We'll reward you
with a gift in a flash,
forget your wallet
we don't take cash.
3
Spread the word,
just tweet & share,
#LeedsByExample
everywhere.

Awareness

To measure awareness of recycling in Leeds and any impact of the trial, public surveys were undertaken by Ecosurety volunteers in August 2018, October 2018 (post launch) and at the end of phase one in mid-March 2019. Over 300 people were surveyed each time. A final survey was undertaken in August 2019, of nearly 1000 people, making this comparable with the survey in August 2018, in terms of time of year. Comparing the first and last survey shows:

- **The number of people who had seen or heard anything about recycling in Leeds City Centre increased from 23% to 54% (42% in March).**
- Other questions were asked about how people disposed of their packaging, which showed:
- **The number of people who said they disposed of target material in a general litter bin decreased from 77% to 49% (63% in March).**
- **The number of people who said they disposed of target material in a recycling bin in Leeds City Centre increased from 17% to 49% (32% in March).**
- **The number of people who said they recycled coffee cups more than doubled from 24% in March to 53% in August 2019, while those recycling plastic bottles increased from 15% before the campaign to 61% after.**

At the final survey, 85% of people who had seen something about recycling, recalled hearing or seeing something about the campaign. The most noticed interventions were the on-street yellow plastic/ can bins (70%) and the orange on-street cup bins (47%). Awareness of both bin types increased from March to August 2019, reflecting the increased number of recycling bins installed. The next most noticed interventions were those in Trinity Leeds (24%).

Awareness was higher amongst those who were regular users of the city centre; 64% of those in the city for three to seven days that week reported seeing or hearing something about the campaign, versus 42% of those there for one to two days. Therefore, given the last survey was completed during the August bank holiday week, actual awareness of the campaign is likely to be higher when the city is more 'business as usual'. This suggests the value of targeting commuters and regular city centre users and highlights that behaviour change takes time to embed while the message is reinforced through multiple channels over time.

- **Bold, consistent communications meant awareness of recycling more than doubled and a lot of people recognised the campaign.**
- **The yellow plastic/ can recycling and orange cup bins were the most noticed intervention,** demonstrating the value of brightly coloured infrastructure with clear, distinctive messaging.
- **Target regular city centre users and recognise that behaviour change takes time** as the message is reinforced through multiple channels over time.

Social media

An online social media campaign (#LeedsByExample) was crucial to sharing the key campaign messages, raising awareness infrastructure and targeting audiences such as commuters and students.

Hubbub's own channels featured regular #LeedsByExample posts in phase one, templates for which were also shared with partners to amplify reach. In phase two, social media was managed locally by Zero Waste Leeds. This resulted in:

2,629 different contributors

18.8m reach social media channels (including some Facebook paid adverts) a 67% increase from phase one, much of which was organic as people began to use the hashtag

7,176 twitter posts

12,983 combined likes on Instagram posts

1,000 comments on Instagram and YouTube, demonstrating that the campaign stimulated debate

195,115 engagement (such as likes, shares or comments)

Analysis of a sample of 20 posts with comments across Instagram, Facebook and Twitter in phase two, had a total of 54 comments. Of these 41% were positive, 9% negative and 41% were questioning, suggesting, or commenting. These posts were shared 266 times and liked 610 times, showing how the scheme had high engagement and got people talking about recycling.

Targeted Facebook and Instagram ads were successful; six ads were run in phase one which resulted 52,014 engagements. This was increased in phase two with 17 ads run targeted different audiences with different messages at different times of day. This resulted in a reach of over 250,000 and 127,320 forms of engagement such as likes, shares and comments.

The Leeds By Example webpage and associated blogs had nearly 7,000 views.

Building on the Leeds By Example brand, a separate, related communications campaign was run with Leeds City Council in May/ June 2019, starting a conversation about what people throw away. This included what people do at home, as well as on-the-go and looked a reuse, recycling and reduction. A separate website was developed for this (www.leedsbyexample.co.uk) which had 6,048 page views over four months.

This website and the Leeds By Example brand, has in effect become the name for all things related to the environment in Leeds, both organically and owned by local groups such as Leeds City Council and Zero Waste Leeds.

The hashtag #LeedsByExample was well received and helped give the campaign a distinctive brand and has become a celebratory phrase for the city with the website starting to represent broader environmental issues in Leeds.

Consistent messages on social media supported the physical communications around Leeds City Centre.

A strong social media campaign was achieved by amplifying reach via partners and targeted social media ads.

Media and PR

Leeds By Example attracted extensive media coverage both nationally, locally and in trade press. There were 255 pieces of coverage with opportunities to see or hear of 173 million.

Highlights included:

- Campaign launch announcement featured throughout the day on BBC Radio Leeds news bulletins.
- Launch covered by BBC Radio (five regions) and BBC Look North, Leeds TV, Heart, Capital, Sunshine, Magic and Radio Aire.
- National coverage includes Huffington Post, inews and MSN, plus mentions in The Guardian and The Daily Telegraph.
- Local print and online coverage included Yorkshire Post and Yorkshire Evening Post.
- Extensive pick up by trade media when the project launched.
- BBC North West evening and late news, BBC Look North evening and late news and an ITV Tonight programme on waste.

The media campaign helped to raise awareness among the public that new recycling facilities were now available, and what items should be recycled.

In summary of 255 pieces of coverage there were:

28
Broadcast

27
Print

22
Online

106
Trade

47
Social media (external only during launch)

9
Influencer blogs and vlogs

Events

66 different events were held, leading to direct conversations with 3,629 people. Most of these involved the Re-Cycler visiting high footfall areas. In phase two, some events were held in office workplaces with other interventions such as a cup pong game.

The most successful event was a workshop for local social media influencers, as a way of reaching the 18-25 year-old age group. This resulted in 42 blogs, vlogs and social media posts with opportunities to see of 338,925.

Events need to be targeted at specific audiences such as local influencers or take place in places where food and drink is consumed (e.g. community fairs or large workplaces).

Giveaways or competitions helped attract more people to talk to the event team.

Public engagement events were time-consuming and resource intensive.

Interventions

Several engagement interventions were trialled. The following pages give a summary of their effectiveness in terms of practicalities, value for money and raising awareness.

Bubble bin

- 2 'bubble bins' were developed which burped and blew bubbles when used to collect plastic and cans at events.
- Cost £7,000 for 2.
- Competition held on social media in autumn 2018 named them 'Gordon and Alan Binnit'.

Positives

- Highly engaging, fun, good at starting conversations
- Very popular as a media hook and on social media with lots of interest from people outside of Leeds
- Able to move to Swansea and Edinburgh to support recycling on-the-go campaign launches

Negatives

- Impractical to move around; electrics and artwork easily damaged.
- Needs to be staffed.

Verdict

A fantastic engagement tool, works best in a managed space where it can be overseen, but not a long-term option.

Launch installation

- A shipping container on Briggate (the main shopping street) for ten days during the campaign launch.
- The shipping container had one side filled with empty plastic, cans and cups, helping visualise three days' worth of rubbish disposed of on the streets of Leeds.
- Inside it featured information about the campaign.
- Cost £10,000, though Leeds BID provided the shipping container for free.

Positives

- Strong visual focal point for launch week with clear messaging.
- Indoor communications useful to share key campaign messages.

Negatives

- Resource intensive during the day and required security at night which proved expensive for ten days.
- Limited sharing on social media.

Verdict

22% of those who had seen something about the campaign in the interim surveys had seen the installation. Useful focal point for launch, but it was expensive and was not shared on social media as much as hoped.


On the streets of Leeds city centre, we bin enough food and drink packaging to fill one of these containers every 3 days.
Recycle when you're on-the-go in Leeds. #LeedsByExample
Recycle when you're on-the-go in Leeds. #LeedsByExample

Cup installation

- A giant disposable coffee cup in Trinity Leeds made out of paper cups, with a sleeve featuring Leeds' skyline from January to June at Trinity, then repaired before going to St James' Hospital.
- "600 cups every 10 minutes" to help visualise the impact of paper cups and nudge people towards disposing of cups in the orange bins provided in Trinity and on-street.
- Cost £5,000, plus maintenance.

Positives

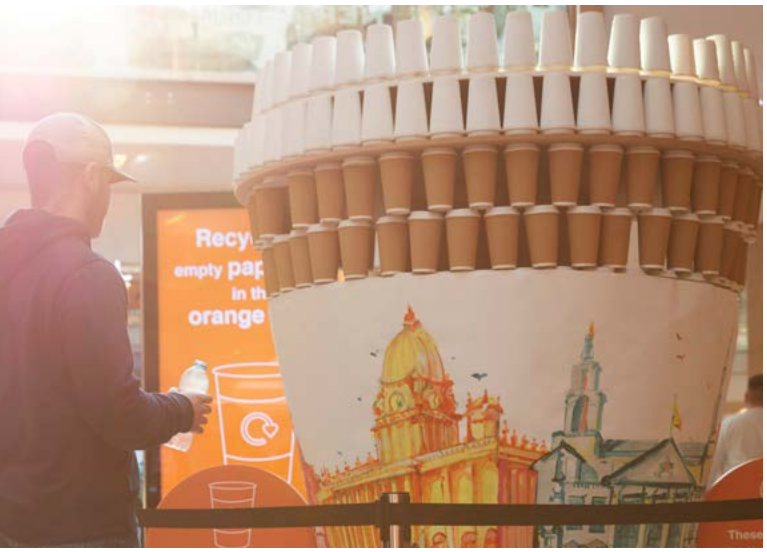
- Good visual installation that looked very like a disposable cup, with clear messaging.

Negatives

- Quite delicate and had to be repaired several times following vandalism.
- Some criticism on social media about use of paper cups and that people should use reusables instead.

Verdict

- 9% of those who had seen something about the campaign in the final surveys noted the installation. A great concept but robustness and security should be considered, for example making it more easily moveable.



Showcase what recycling can be turned into, keeping it simple and tangible.

Visualising the issue and offering local statistics helps to engage people on recycling and change behaviour.

Pop-up seating area

- A seating area made of recycled plastic material including information about the campaign and demonstrating the circular economy.
- In Dortmund Square from 6 November until April giving the public somewhere to enjoy their on the go food and drink. Moved to St James' hospital.
- Cost £7,000.

Positives

- Useful circular economy story and ongoing focal point.
- Well designed and constructed.

Negatives

- Limited social media engagement.
- The wood effect meant that the plastic message was slightly lost, and it looked quite grey over winter.
- Attracted some anti-social behaviour.

Verdict:

Final survey showed 2% of those who had seen something about the campaign had seen the seating area. It could have been brighter and more clearly made of recycled material. Would work better in a greener, less urban location and over spring and summer when more people sit outside.

Re-Cycler

- The Re-Cycler gives out rewards in return for recycling, to help incentivise behaviour change.
- A cargo trailer was pulled by an electric bike, featuring fold out messaging boards.
- It attended events and gave out treats such as sweets, fruit and recycled pens.

Positives

- Very visual and eye-catching.
- Useful to start a conversation; the electric bike drew in a different audience.

Negatives

- Impractical and resource intensive.
- Engagement levels depended on location.
- Unable to fit indoors in some buildings.

Verdict

A useful engagement tool but it is unot sustainable for longer term use and a similar visual intervention could have the same impact with less effort.

Animations

- A three-part series of short animations helped tell the recycling story by personifying the target packaging and different bins, to bring the project to life.
- The three versions were 'why should I recycle?', 'right thing, right bin' and 'behind the scenes'.
- The animations were promoted on YouTube and via Instagram and Facebook ads to target a local audience .
- Cost £7,000 total for 3 animation videos.

Positives

- Engaging and playful way to tell the recycling story.
- Good engagement on social media, of over 80,000 reach and 2,384 forms of engagement.

Negatives

- Delivered quite late in phase two so minimal impact on the trial, but a strong legacy for the project and local partners to continue using.
- Some debate about the use of Yorkshire accents, but overall positive (genuine accents were used).

Make recycling emotive and relatable through use of stories.

Conclusions and Recommendations

Collaboration is key

Leeds By Example demonstrates the impact of collaboration to tackle pressing environmental issues. By bringing together a unique combination of corporate partners, a local authority, the waste industry and local partners in Leeds, the campaign has successfully installed 186 new recycling points, reached 18.8 million people on social media and established a recognisable brand, that is locally owned.

This would not have been possible without the unique collaboration of various partners to input expertise, facilitate the various interventions and amplify key messages, as opposed to all of the onus being on the local authority to tackle this issue alone.

Receiving regular measurement and feedback throughout the trial enabled Hubbub, Leeds City Council and Zero Waste Leeds to quickly adapt the approach where necessary.

Recommendation: Maintain an open dialogue to support Leeds taking on ownership of the trial, as local partners (Zero Waste Leeds, Leeds City Council and Dr Elaine Kerrell continue the scheme). Continue a collaborative approach in other In The Loop cities. Hubbub will continue to openly share results to inform a national and collaborative approach to recycling on-the-go.

Consistent communications are critical

Awareness of recycling in the city more than doubled from 23%-54%, while 85% of those people had seen the campaign, which significantly increased the number of people recycling their food and drink packaging. The same messages were seen across the city centre, whether on-street, in retailers or in privately managed areas such as shopping centres. These messages were supported on social media.

We created a strong and recognisable brand – bold, clear, playful messaging and easily recognisable colour and icons were seen from the point of purchase to the point of disposal, as well as in the media, social media, advertising and public installations.

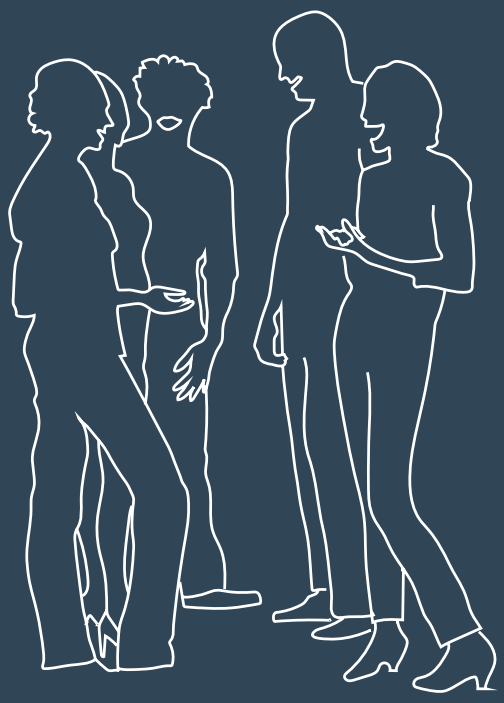
Inconsistent messaging to the public about recycling is a significant barrier to recycling in the UK. Leeds By Example demonstrates what can be achieved by having a clear, concise call to action, amplified by a range of different partners to achieve scale and change behaviour.

Recommendation: Use the same consistent colours, icons and messaging to build public awareness of recycling on-the-go. This has begun in In The Loop cities and The Cup Fund winners who are using the same packaging icons and messaging. A national approach would further help to increase public understanding and awareness.

Raise awareness when recycling is introduced

Alongside the introduction of new bright yellow recycling bins in Leeds City Centre, Hubbub led a high-profile media launch, a social media campaign using the hashtag #LeedsByExample and various public awareness installations and events. This helped more than double the number of people who had seen or heard something about recycling in Leeds City Centre. This ensured that a high proportion of the public were ‘warmed up’ to the idea of recycling. Changing behaviour takes time and so maintain momentum of communications to raise awareness.

Recommendation: clear communications and an awareness-raising campaign are required alongside the introduction of new recycling infrastructure. Recycling awareness and behaviour significantly increased over the trial, suggesting a clear correlation between the communications activities and use of the new recycling bins. Our surveys clearly showed that the public want to recycle and believe it is the right thing to do. Maintain momentum of communications to embed behaviour change over time.



Quality of recycling can vary

Leeds By Example aimed to understand what will motivate the public to recycle on-the-go. It is clear that the public mostly want to recycle but are often confused about what can be recycled, and there is a 'value-action gap' in what people say they want to do and what they actually do.

It demonstrated that contamination is worse in high footfall areas, especially where people are new to recycling infrastructure and communications.

Highest quality - vs - lowest quality

- Where people have more time such as at bus stops or pedestrian crossings **vs** where people are in a rush
- Where recycling bins are visible from afar, such as across the road, with bright, bold messaging **vs** where people only recycling bins at the last minute or messaging is hidden or not clear
- In suburban or lower footfall areas (though lower volume) **vs** the highest footfall areas of the city centre
- When footfall is lower, during business as usual/ 'term time' **vs** school holidays or when new people are in the city
- During the working day **vs** the night-time economy, especially Friday/Saturday night or the lead up to Christmas
- When general waste bins are easy to use **vs** when general waste bins are further to reach or have a barrier such as a handle
- When general waste bins are placed first such as on a corner or at the bottom of busy steps **vs** when a recycling bin is placed first and the most easily accessible
- When recycling bins use nudge techniques e.g. a circular or shaped apertures **vs** when they have a wide open aperture making it easy for people to dispose anything
- Plastic/ can bins on-street **vs** coffee cup bins
- Recycle reward machines and 'managed space' recycling **vs** on-street recycling (though on-street varies hugely by location)

Recommendation: When placing recycling bins in very high footfall areas, ensure recycling bins are visible and in locations where people are in less of a rush. Ensure there is a general waste bin directly beside the recycling bin and make it just as easy to use as the recycling bin.

Further understanding is needed of the impact of different seasons, time of day and footfall to inform placement of recycling bins.

Include both managed space and on-street recycling

Quality of recycling is higher in managed spaces and lots of food and drink packaging will end up in workplaces, but in Leeds By Example more than half of all packaging was disposed of on the street and a significant proportion of recyclable packaging was still not being recycled.

Therefore, it is important to have a combination of on-street and managed space recycling facilities. Our surveying shows people predominantly use the nearest bin and want recycling to be easy and convenient.

Recycle reward machines are popular with the public and may form a useful part of the infrastructure needed in a city; they are effective in closed-loop, managed spaces where people both consume and dispose of food and drink packaging, though also appear to work well when rewards can be cumulatively redeemed.

Recommendation: A combination of on-street and indoor, managed space on-the-go recycling should be introduced in urban areas (where possible with a common, shared message). This could include a range of different locations including workplaces, on-street, universities, transport hubs, shopping centres and retailers.

Cups needed to be collected

Paper cups can be recycled but need to be collected and recycled separately from other materials. At least 1.2 million coffee cups were collected during the trial and yet they continued to be a major contaminant in plastic / can recycling, demonstrating the need to provide cup collection facilities and to further educate the public about cup recycling.

Cup collections in managed spaces generally yield better quality recycling, on-street bins were also effective particularly in high footfall areas where lots of people are drinking takeaway hot drinks, such as commuters coming out of the train station. Retailers collect the highest volume of cups and so play an important role.

The benefit of recycling more cups is twofold:

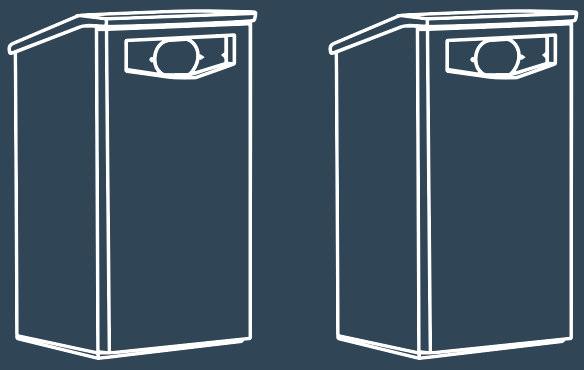
- Recovering high-quality paper from the cups and recycling more of the almost 3 billion cups that are disposed of each year in the UK
- Cups are one of the main contaminants of on-street recycling other dry mixed recycling and often contain milky liquid which can ruin whole batches of good quality recycling.

Positioning of bins is important

Leeds By Example and previous Hubbub trials demonstrate that recycling bins should always be placed next to litter bins, to minimise contamination. The quality of recycling in the plastic and can bins varied significantly in areas where people were in a rush versus where they had more time to take in messaging and communications, demonstrating the importance of bin positioning. High footfall areas collect lowest quality but higher volumes of recycling.

Cup recycling was invaluable in Leeds around transport hubs which collected a large volume of cups (though this also resulted in high contamination in places) and in managed spaces like workplaces.

Recommendations: Always position recycling bins directly next to general waste bins and place recycling bins in areas where they are visible from afar and people have time to take in messaging rather than where people are in a rush. Position on-street cup bins strategically in high footfall areas and at busy intersections position the litter bin so it appears first.



Recommendation:

More infrastructure and awareness raising is needed to boost cup recycling, both on-street and in managed spaces. The Cup Fund, managed by Hubbub (www.thecupfund.com) recently awarded funding to kickstart cup recycling in 12 locations across the UK. More public awareness is needed that many retailers will accept any cup for recycling.

Recommendation:

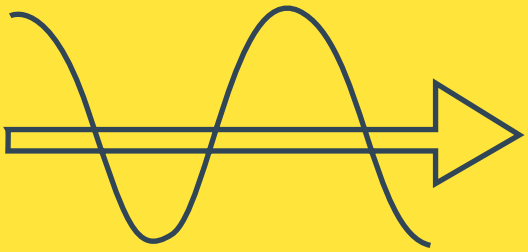
Recycling is an everyday, banal subject for most people. To engage a mainstream audience, it needs to be eye-catching and easy to do. Behaviour change techniques can play an important role in catching the attention of the public to increase levels of engagement and takes time to embed until recycling on-the-go is a habit.

Make recycling simple, visual and fun

The trial showed that the public in Leeds are not significantly motivated by financial rewards or incentives, but do respond to playfulness, bold messaging and interventions that visualise the issue. Quality and quantity of recycling improved over time, showing that behaviour change takes time as people make recycling a habit.

The most effective behaviour change techniques have been:

- Nudge techniques at the point of action, such as playful messaging and bright bins, which surveys showed was the intervention that the most people noticed. Circular apertures also helped to nudge people and increased the quality of recycling.
- Interventions that are fun or interactive, for example Bubble Bins which successfully engaged the public, as did the recycle reward machines.
- Visualisations which showed the scale of the issue such as the giant cup installation, animations and the shipping container installation during the week of launch.



Consistent, robust monitoring is needed

It is crucial to monitor the impact of different recycling interventions, to understand what is effective and to adapt the approach based on findings.

To date there has been limited comparable research to measure the effectiveness of on-the-go recycling and it is difficult to compare a national benchmark of what is considered good on-the-go recycling. Leeds By Example provides some robust research on this issue and helps build a baseline for good practice. The In The Loop cities will help to build further insight to understand the impact of recycling in different locations and to establish a robust set of recommendations for other towns and cities.

Recommendation:

Future trials should ensure robust, independent monitoring and make available comparable data, to provide more insight and help inform national policy-making, as well as establish a national benchmark. Insights from Leeds and In The Loop cities should be combined to help create a list of recommendations for other towns and cities.


On the streets of Leeds city centre, we bin enough food and drink packaging to fill one of these containers every 3 days.
le when you're on-th

What next?

Leeds By Example continues with a strong legacy for the city, as Leeds City Council and local partners have taken over its ownership and are keen to increase the number of recycling points and build on what's been learnt, in the longer-term. The council have taken over waste collections from on-street recycling bins and will continue to work with Dr Elaine Kerrell as an independent monitoring partner to review this for another six months. Zero Waste Leeds will also remain closely involved in the campaign.

Leeds By Example has come to symbolise city pride and is increasingly recognisable as a local brand for environmental sustainability, which will be exemplified by the Leeds By Example website, focusing on the climate emergency (www.leedsbyexample.co.uk).

The approach has been rolled out to Edinburgh and Swansea under the name 'In The Loop', where they will run until at least spring 2020. These will test the approach taken in Leeds in a different context. We believe that combining the learnings from the three cities will provide robust data to inform a new approach to recycling on-the-go.

Hubbub will create an inspiration guide to help other towns and cities implement effective recycling on-the-go, including a set of guiding principles to follow, specific recommendations and a toolkit of useful communications assets. We will actively share this with other towns and cities and will target further cities in 2020.

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