

# REPORT

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London Borough of Havering Behavioural Insights Project to Reduce Waste: Scoping Study

March 2019

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# 1 INTRODUCTION

## 1.1 Background

This Programme is being funded by LB Havering with match-funding from the Local Government Association (LGA) as part of their behavioural insights programme, and its aim is to reduce total waste tonnages collected from households in areas of high waste producers. LB Havering has tried numerous waste prevention interventions and techniques but have not seen a demonstrable payback in waste disposal savings.

LB Havering has a weekly 'collect-all' black sack refuse collection and a weekly collection of recyclables from Council-supplied orange sacks. Small electrical appliances and batteries are accepted as kerbside recycling and collected separately by the collection crews. LB Havering also operates a chargeable fortnightly garden waste collection service (£55 per 240L wheeled bin) and a chargeable bulky waste service (£40 for up to three items and £10 per additional item).

## 1.2 Parameters of the programme

Currently, through the East London Waste Authority (ELWA) levy, LB Havering pays £130 per tonne of waste collected regardless of whether it is refuse or recycling. Therefore, this project is not primarily concerned with levels or quality of recycling. Its main objective is to reduce disposal costs by avoiding or preventing any waste materials arising as kerbside waste, specifically within refuse, recycling or bulky streams. The Council does operate a charged garden waste collection, which is not in scope for this project, but does not operate a food waste collection separate from refuse.

## 1.3 Purpose of the scoping study

The aim of the scoping study and this report is to investigate and provide advice on the most prudent elements of kerbside waste arisings to address, what section of LB Havering's population to target and what intervention options best suit the purpose. This Scoping Study has consisted of two main activities: desktop research and an officer stakeholder workshop.

### 1.3.1 Desktop research

A number of reports and data files were provided by LB Havering in order to help establish the most costly of fractions that arise in kerbside and bulky waste along with what demographic profile categories produce these wastes. LB Havering provided the following documents:

- LB Havering Waste Composition Analysis Feb 2016
- ELWA HWRC General Waste Composition Analysis, 2016
- ELWA Kerbside Residual Waste and Recycling Composition Analysis, 2016
- Residual Waste Options Modelling: Final Report for London Borough of Havering
- Green Points Data v2
- Quarterly Points Review, London Green Points – Havering
- Mosaic Ward Profiles, 2017
- ELWA HWRC General Waste Composition Analysis
- Bulky collections 01022018 to 01022019
- Tonnages by round, March 2018 to February 2019

After drawing some conclusions as to target wastes and demographics, the researchers conducted a brief literature review around current activity or interventions elsewhere that may provide some guidance as to how to proceed in LB Havering. The study then narrowed the options for targeted actions down to three ready for discussion at the Officer Stakeholder Workshop.

### 1.3.2 Officer Stakeholder Workshop

The 2.5-hour Officer Stakeholder Workshop, held on Friday 8 March, was an opportunity for key officers from LB Havering and from its contractor, Serco, to understand what the scoping study had found and discuss which intervention options should go forward to the next stage. The outcome of the Workshop is discussed in Section 3.

## 2 DESKTOP ANALYSIS

### 2.1 Waste composition analysis

The most recent waste composition analysis conducted of LB Havering's municipal waste was in February 2016 by the consultancy firm, M.E.L., with the following objectives:

- Understand using socio-demographic profiling which sectors of the community are producing which types of waste and which are using the recycling provision most effectively.
- Detect capture rates for individual materials which are already collected separately for recycling.
- Evaluate the amount of specific materials collected in the residual sacks that could potentially be collected separately for recycling.
- Evaluate the use of the receptacles used for collecting waste and recycling.
- Detect the amount of packaging and biodegradable material present.
- Assess the amount of contamination in receptacles meant for recycling material.
- Assess the amount of recyclable material being placed in the residual sacks.

To inform the scope for this project, from this data we are only interested in the quantities and weights of specific materials, from either recycling or refuse streams, which have the greatest potential for prevention as waste and which social profiles they mostly arise from.

M.E.L.'s analysis was measured from a sample of 300 households to incorporate three of the five main Acorn geo-demographic categories:

- Acorn 1: Affluent Achievers
- Acorn 3: Comfortable Communities
- Acorn 4: Financially Stretched

Within each of these Acorn categories, there are up to four sub-categories under which there are up to six further classifications. M.E.L.'s report only detailed results at the highest category level and therefore may not be as targeted as this project ideally requires.

From the sampling, M.E.L. was only successful in collecting refuse from an average of 62% of the sample households and recycling from just 57%. The refuse sample, in particular, was very low for this type of study. In our experience, the set-out and participation of refuse collections is normally above 90%. For this reason, most of the report expresses results as weighted averages (which would include the 38%+ that did not present anything), and therefore some reservations must be made as to the integrity of the final data. However, the report suffices for the purposes of this scoping study.

#### 2.1.1 Key findings

The study found the average weight of kerbside 'black sack' refuse from those households that actually presented material to be 10.81kg/hh/wk. This compares to Defra's most recent published Ex NI191, 'Residual household waste per household, 2017/18' of 620kg (11.92kg/hh/wk). Depending

upon the arrangement LB Havering has with the East London Waste Authority, LB Havering’s published NI191 figure could include other ‘non-black sack’ refuse within it, such as bulky items. Therefore, M.E.L.’s figures that represent actual sampled material will be used for the purpose of expressing kerbside ‘black sack’ refuse and recycling, ie, 10.81kg/hh/wk, which currently costs the Council £73 per household annually in disposal/treatment.

M.E.L found the average amount of orange sack recycling presented by those households actually presenting material was 4.6kg/hh/wk. This costs LB Havering a further £31.10 per household annually in processing, incurring £104.17 per household in total gate fee costs for all kerbside sack materials.

The M.E.L. study stated a 20.3% recycling rate from residual ‘black sack’ and recycling ‘orange sack’ kerbside waste. The standalone weights of each stream in fact would make a 30% recycling rate but it is assumed M.E.L. excluded the 27.2% contamination they found before establishing a ‘true’ recycling rate. This compares to Defra’s published figure for 2017/Ex BVPI92, ‘Percentage of household waste sent for reuse, recycling or composting’ of 37%, which would include garden waste and potentially other recycling reported by the Borough rather than ELWA.

By social profiling, the report found that Acorn 1, Affluent Achievers presented the most refuse and kerbside material overall. The table below summarises the average arisings from those sample households where material was actually collected from.

*Table 1, Average weekly kerbside refuse and recycling by top three Acorn profiles*

	<b>Average refuse weight from presented sacks per week (kg)</b>	<b>Average recycling weight from presented sacks per week (kg)</b>	<b>Total materials (kg)</b>
Acorn 1	11.68	4.43	16.11
Acorn 3	10.31	5.09	15.40
Acorn 4	10.77	3.79	14.56
<b>Average</b>	<b>10.81</b>	<b>4.60</b>	<b>15.41</b>

Other interesting phenomena gained from the report include:

- Whilst Acorn 4, ‘Financially Stretched’, are the worst recyclers, they throw away the least amount of material overall making them the cheapest classification to serve.
- Acorn 4, ‘Financially Stretched’ throw away a significant amount more glass than the other two Acorn groups.
- Acorn 4 appear to be the worst at producing recyclable waste cardboard and the worst at actually recycling it.

#### 2.1.1.1 Food waste

Unsurprisingly, the report found that food waste made up the largest single fraction of the refuse at 38%. This fraction alone costs LB Havering around £27 per year per household in disposal.

The report breaks down these food waste arisings into ‘Avoidable’, ‘Possibly avoidable’ and ‘Unavoidable’. For the purposes of this part of the scoping study, we will only concentrate on waste deemed ‘Avoidable’, as this category will present the most opportunity for diversion or prevention. The researchers found 24% of refuse was ‘Avoidable’ food waste, a potential annual saving of £17.50 per household if it was to be avoided. Acorn 1 households, ‘Affluent Achievers’, waste the most food with nearly half of what they throw being ‘composite mixed food waste’ and the other half mostly made up of that which could be home composted. Their level of wastage is at least 8% higher than the other two Acorn groups.

The maximum average potential diversion by home composting across all three Acorn classifications, would be 1.2kg/hh/wk – a saving of £8.11 per household per year. However, this assumes that a household composted all appropriate food waste, which must be considered as unrealistic.

#### 2.1.1.2 Plastics

The only plastic LB Havering accepts within its kerbside recycling collections is plastic bottles. For the scoping study, we will only focus on the non-recyclable materials. As such, plastic films made up 44% of all the plastic within refuse, double the weight of other plastic food packaging and costing around £2.20 per year per household to dispose of. A further 0.11kg of plastic film per household arises in the recycling stream, making the total cost of dealing with plastic films almost £3 per household per year.

#### 2.1.1.3 Textiles

62% of the textiles found in either the refuse or recycling streams were deemed to be recyclable or reusable. Diverting this to appropriate processors could save up to £1.42 per household. Whilst Acorn 4, 'Financially Stretched', produced the lowest levels of textile waste, their off-casts were almost wholly recyclable or reusable. Acorn 3 discards over double the amount of textiles as that from Acorn 4.

#### 2.1.1.4 Disposable nappies and AHP waste

With similar arising across Acorn 1 & 3, depending upon how the report is interpreted, these products could account for between £2.50 and £4 per household per year. However, with refuse samples only having been taken from 186 households, the measurement of this particular fraction could be easily skewed depending upon how many of those households homed nappy-aged children. Further analysis is recommended before drawing upon firm conclusions as to the accuracy of the costs per household stated here.

## 2.2 Bulky waste collections

By manipulating the text fields within a standard 'print-out' spreadsheet provided by LB Havering of all bulky bookings during the past 12 months, we have concluded the following typical bulky arisings:

- 1,800 mattresses are disposed of, at an approximate cost of £7,500
- 2,600 items of lounge seating, such as sofas, 3-piece suites and armchairs, with a possibly disposal cost of £30,000
- 909 items of other general furniture, such as sideboards, chest of drawers, dining tables and wardrobes, etc.
- 235 items were classified as carpet waste

The majority of items within all of the above categories arise in the RM3 post code and therefore predominantly from the wards of Harold Wood, Gooshays, Heaton – which are the most heavily populated areas of Havering. These wards are inhabited by represented by eight of the 14 Mosaic socio-demographic profiles:

- H. Aspiring Homemakers,
- D. Domestic Success,
- F. Senior Security,
- E. Suburban Security,
- M. Family Basics,
- K. Modest Traditions,
- O. Municipal Challenge,
- N. Vintage Value

### 2.3 Compost bin sales

382 compost bins have been ordered through the Council's scheme since April 2018. The analysis in Table 2 below shows the number of households within each post code prefix that ordered bins through the scheme; some having ordered more than one.

Table 2, number of households ordering compost bins between March 2018 and February 2019 by post code

Post code	RM1	RM2	RM3	RM5	RM7	RM11	RM12	RM13	RM14
HHs ordering bins	22	19	36	21	25	21	33	22	25
HHs in post code	9,655	7,566	16,857	7,564	11,315	12,366	14,206	11,724	10,844

RM3 and RM12 has the largest uptake of the discount compost bin offer but also consist of the greatest number of households. Therefore, it appears there is a reasonably even uptake across the Borough of LB Havering's discount compost bin scheme.

### 2.4 Reuse in Havering

LB Havering has a good array of information on reuse and waste prevention within its web pages. All reuse organisations signposted by links from the bulky bookings web page offer free collections. However, upon testing, many links do not necessarily lead straight to collection request pages and two links are not valid anymore.

There is a furniture reuse container at Gerpins Lane RRC but this is not clearly signposted from LB Havering's bulky collections web page. The ELWA website has further information on waste prevention and details of WEEE repair centres.

To help mitigate the costs incurred through disposable nappies, LB Havering offers a free sample pack of cloth nappies and accessories to parents of children up to 18-months.

LB Havering no longer offers sewing workshops to residents to residents who sign up but do still offer free cooking workshops. These workshops are organised according to the levels of interest registered on the website, however, this arrangement is not necessarily clear to the visitor.

### 2.5 Demography of kerbside arisings

According to the waste composition report, the highest arisings of kerbside refuse and recycling collections come predominantly from Acorn 1: 'Affluent Achievers', who are also the highest wasters of avoidable food waste. Acorn 4: 'Financially Stretched' are probably the cheapest socio-demographic group to serve in regards of disposal, according to the same report.

However, an analysis of LB Havering's tonnage by round data shows the highest wasting households, averaged over the year, appear to be four rounds within the Tuesday collection area (see Table 3) below. An initial response from officers suggests these rounds may be representative of lower-waged, 'financially stretched' areas and therefore conflicts with the findings of M.E.L.'s waste composition analysis.

Table 3, worst performing four collection rounds by refuse and refuse plus recycling arisings

Round	Day	Average (Refuse + Recycling) kg/HH/wk	Average weekly Refuse
L4	Tue	12.83	10.88
L1	Tue	12.74	10.02
L13	Tue	12.53	10.26
L10	Tue	12.18	10.11

Whilst the highest take-up of bulky bookings are from those residents living in RM3, and then RM12, they are also the post codes with the highest number of households. Therefore demography may play a slightly less significant role in determining preventable waste.

## 2.6 Prominent themes

Whilst M.E.L's waste composition analysis suggests items like plastic film and disposable nappies/AHP waste constitute significant costs to LB Havering, these are very difficult materials to prevent in the quantities that would be needed to achieve a viable level of savings payback. Also, the actual arisings of disposable nappies would require further estimation in order to confirm the real overall cost of this material. Therefore, of the most viable and preventable waste fractions that could be tackled by the Programme, food waste and reusable items appear to stand out.

### 2.6.1 Food waste

From analysis of key data provided by LB Havering, and particularly the waste composition analysis, it is clear that affluence appears to be the driver for the highest overall kerbside refuse and recycling arisings. It is also very clear that food waste has the largest single impact upon these arisings. Whilst being a very real behavioural challenge, avoidable food waste – i.e. leftovers, out-of-date, over-purchased, etc – is perhaps the most preventable of this type of waste. There are at least 106,000<sup>1</sup> households currently in LB Havering and if each one stopped presenting avoidable food waste, it could save £1.8m; this is, of course, unrealistic. However, if around 12,000 households only reduced their avoidable food waste fraction and only by 25%, LB Havering would realise the £50k saving they aspire to achieve through the effects of this project.

### 2.6.2 Reuse

Reuse is an important tool in any fight to reduce waste. An increase in two specific reuse activities could be advantageous to LB Havering:

- Increased furniture reuse opportunities, particularly within the RM3 post code, could bring about healthy savings and provide 'financially-stretched' communities with more choice of affordable furnishings.
- Preventing reusable textile items from becoming waste has the potential to save £000's every year. LB Havering do already host a number of textile banks within their Borough but currently do not run any Council-authorised doorstep collection of the material.

## 2.7 Suggested behavioural insights activity and literature review

### 2.7.1 Food waste

Tackling food waste has the single most potential impact for achieving cost savings. There are certain characteristics that make households more likely to waste food. It has been found that younger and middle age groups are more likely to waste food than those over 65. Large households also produce more waste overall and those with younger children are also more likely to waste food due to the preference to serve 'new food' to children rather than leftovers. Households with higher education also produce more food waste. Within Havering, it has been found that Affluent Achievers (Acorn 1) are the most likely Acorn category to waste food.

Drawing on a systematic literature review of 84 articles on the main drivers and barriers to food waste reduction, there are a few key behavioural insights<sup>2</sup>. Research has identified a 'good provider' identity. This is where the individual (e.g. parent, host at a party) tends to buy and prepare more food than is necessary, and typically keeps a large stock of food at home. Linked to this identity is

<sup>1</sup> [http://www.haveringdata.net/wp-content/uploads/2017/04/This-is-Havering\\_Havering-Demographic-Profile\\_Main-Document-v2.4.pdf](http://www.haveringdata.net/wp-content/uploads/2017/04/This-is-Havering_Havering-Demographic-Profile_Main-Document-v2.4.pdf)

<sup>2</sup> Isadora do Carmo Stangherlin and Marcia Dutra de Barcellos (2018) 'Drivers and barriers to food waste reduction', *British Food Journal*, vol. 120, 10, pp. 2364-2387

the 'compensation effect', whereby a parent (for example) would prepare unhealthy meals, but then compensate by also preparing healthy meals. Furthermore, there is a tendency to over-buy healthy foods, even if they will not get eaten and to over-prepare food when cooking from scratch.

Research has identified that certain values can have an influence on individual behaviour. It has been shown that the majority of individuals report feeling 'guilt' over food waste. However, there is no evidence that appeals to guilt work as a motivator for behaviour change. Social norms messaging/approaches however do appear to have a positive influence on individual behaviours. Environmental concern has been linked to lower levels of food waste production. On the other end of the spectrum, materialistic values have been linked to higher levels of food waste.

The literature around food waste has identified key behaviours that lead to food waste. These are:

- Over-preparing food
- Over-buying: bulk buying, large packages, stocking food at home, impulse buying
- Buying in large supermarkets
- Shopping less frequently (e.g. once per week)
- Offers and discounts - effect unclear overall
- Food storage – improper habits (long storage, low visibility, lack of knowledge about optimal storage conditions)
- Use by / best before dates

Certain approaches to tackling food waste have been suggested and tried. These have included information based campaigns, but these have been shown to have limited impact. Other approaches have focused on skills development, such as cookery classes, unfortunately these have limited reach. Educating individuals about planning and management (e.g. planning meals, knowing what's in stock) have also been tried as a means to reduce food waste. Saving money is considered an important driver to reduce food waste, however this does not necessarily align with other insights on this topic.

It is recommended that this project utilises values-based messaging, social norms messaging, and positive messaging that fosters a connection with food and self-identity. It is also recommended that there be a focus on the preparation and serving of food as well as the storage and disposal. A focus on the purchasing practices of individuals should also be considered. The area with the greatest potential for change is in addressing household routines and lifestyles. Unfortunately, there are limited examples of successful interventions.

### 2.7.2 Limiting refuse

As reducing overall consumer kerbside waste is the aim in this project, it is pertinent to research how else this has been done in other parts of the country or world.

Currently, Havering operates a collect-all weekly refuse service from householder-supplied black sacks. In a 2012 options report, commissioned by WRAP and written by Eunomia Research & Consulting, several service change scenarios were modelled. From this, the only scenario of interest here is the one that only altered Havering's baseline service by introducing 140L wheeled bins for refuse, hence restricting the amount that households could present. Whilst this modelled an increase in recycling, it also suggested a decrease in overall kerbside arisings by 6%. However, notwithstanding the additional capital outlay for wheeled bins or vehicle adaptations, the report predicted a 36% increase in collection costs. At Havering's current disposal levy rate, the net cost of this scenario would have been around £220k per year.

However, some local authorities have done, or do, issue a restricted authorised supply of refuse sacks to their residents and only collect these as part of the service. In Havering's case, this may prove a cost effective means to reduce overall waste - at least until such times as new disposal

and/or collection contracts make wheeled bins a viable option.

Restricting the residual waste capacity of households has been shown to have a great impact on the amount of refuse and recycling produced in Victoria, Australia. Studies have shown that by reducing residual waste capacity of households, the amount of refuse decreased whilst that of recycling increases. Councils in Victoria which provide 80L refuse bins generate 15-20% less refuse by volume per year than councils which provide a 140L refuse bin. Overall, the waste produced per household decreases as the size of bin provided decreases. Closer to home, when LB Bexley restricted the residual waste capacity of households by introducing fortnightly residual waste collections in 2008, almost 20,000 tonnes was diverted from the kerbside residual waste stream in the first year. About 5,000 tonnes went into the food waste stream, just under 4,000 tonnes went into the recycling boxes and just over 2,000 tonnes was deposited at the Reuse and Recycling Centres. The remaining 8,000 tonnes was food waste reduced by residents representing an actual reduction in waste.

### 2.7.3 Reuse

Reviewing the current opportunities available to residents and creating an easy-to-use referral service to fewer reuse partners, may help the user journey to arrive at a furniture reuse option. This journey could be better directed by developing a triage process within the bulky waste booking page, whereby the user must first answer predetermined questions about their bulky item prior to progressing either to a reuse booking page or to LB Havering's bulky booking page, whichever is deemed the most appropriate. There may also be scope to partner with onsite repair services, such as Homeserve or specific-interest organisations that refurbish mattresses, for example.

For textiles, an increased awareness of what costs could be saved if items are donated along with the social and environmental benefit of doing so is worth pursuing. Possibly a trial of officially-authorized doorstep collections in partnership with a textile processor may be worth considering.

In order for reuse to be an effective cost saving activity, it is likely to require a raft of campaigns and initiatives. No one reuse activity alone is likely to return the level of savings required.

## 3 OFFICER WORKSHOP

The workshop was attended by:

- Waste and External Contracts Manager, LB Havering
- Public Realm Project Officer, LB Havering
- Senior Communications & Campaigns Officer, LB Havering
- Data Officer, Serco
- Waste Insights Manager, Keep Britain Tidy
- Business Development and Innovations Manager, Keep Britain Tidy

During the workshop session, officers were taken through the findings of the desktop analysis, before focusing on what may prove to be the most beneficial waste themes and target areas to tackle, along with how that may be carried out. Whilst there was room for further suggestions arising from the desktop analysis, officers were presented with three identified themes for discussion:

- Food waste
- Restricting waste
- Reuse

Officers were happy with the suggested target areas of LB Havering's waste arisings and so the Workshop discussed which one(s) the Programme should focus upon.

Officers explained that reuse is something they are currently looking to develop and there is

potential for them to create firmer links with a local reuse organisation. Part of this work will be to review the website and bulky booking pages. With respect to food waste, officers suggested seeking results from nearest neighbour boroughs where food waste collections influence overall waste reduction.

Of particular interest to the officers was the opportunity to trial the effect of restricting residual waste in Havering. This is something that has been suggested at a strategic level for future service/contract changes. As Eunomia's options appraisal calculates, under the current ELWA arrangement, weekly collections from wheeled bins would result in a net cost, not saving. However, having some insight into its true effect within a Havering context, testing how residents would adapt to such changes and what support and communications work best, would prove an invaluable tool for informing the medium-term waste strategy.

The Workshop discussed how such a trial could be shaped and opinions were shared regarding size of the pilots, what interventions could be developed, how results could be measured and could be achieved for the budget. Officers were keen to use larger-scale pilot areas, up to three rounds, and to run them for up to six months. In terms of demographics, it was decided that a pilot that could encompass typically affluent and financially-stretched areas – being Acorn 1 and 4, two of the largest three Acorn categories in Havering - would allow for adequate analysis by social profile. Regarding communications, Keep Britain Tidy explained how they would seek resident input into the design and content of the engagement materials and actions that will support the trial. These would then be used consistently across all pilot areas. This input would be gleaned from one or more resident 'co-design' workshops, whereby volunteers from within the trial areas would attend a session(s) with Keep Britain Tidy researchers and work through subjects of values, behaviours and motivators. The same workshops would be used to determine the type and format of intervention or support these residents require and would be amenable to. This is a process that Keep Britain Tidy's Centre for Social Innovation have developed and made successful over several years'-worth of projects with public and private organisations.

This pilot would of course require political backing from LB Havering and the authority would have to very carefully consider how it would implement the trial. It would also require close cooperation of LB Havering's collection contractor, Serco.

## 4 RESTRICTED WASTE INTERVENTION PILOT

### 4.1 Intervention overview

Residents in Havering are currently allowed to place an unlimited number of black (general waste) and orange (recycling) sacks out for collection each week. The 'restricted waste' intervention pilot will test whether restricting the number of black/general waste sacks that households can present on collection day leads to an overall reduction in the overall amount of waste they generate. The intervention aims to do this by:

- altering the **choice architecture** – There is a large body of evidence to suggest that the provision of default options can be used to encourage more positive (and negative) behaviours<sup>3</sup>. Currently the default option for residents is to put out an unlimited amount of waste for collection. This intervention will flip this by introducing a restriction on the number

<sup>3</sup> See, for example, Owain, S. *et al.* (2014) *EAST: Four simple ways to apply behavioural insights*, Behavioural Insights Team; Davidai, S. *et al.* (2012), 'The meaning of default options for potential organ donors', *Proceedings of the National Academy of Sciences*, pp. 15201-15205; Pichert, D. *et al.* (2008), 'Green defaults: Information presentation and pro-environmental behaviour', *Journal of Environmental Psychology*, vol. 28, 1, pp. 63-73

of sacks that can be presented on collection day. Two bags per household will be allowed. If a household leaves more than two bags out for collection, they will receive direct feedback on the behaviour (e.g. in the form of a letter or leaflet), which will be co-designed in workshops with residents from the target areas using behavioural insights frameworks.

- addressing the **feedback loop** on household waste generation – Feedback loops play an essential role in reinforcing actions and behaviours. Under the current collection arrangements, the direct feedback provided to residents is that they can generate an unlimited amount of waste and that this will continue to be collected by the council without repercussions. While Havering Council has information-based communications and other activities in place to encourage better waste management practices, these have limited reach and impact on behaviours. This intervention will provide a direct, intuitive and tangible feedback loop to households regarding the amount of waste they generate. Our hypothesis is that this will prompt households to reduce the overall amount of waste they generate (whether consciously or unconsciously), perhaps in a similar way to the well-known nudge of reducing plate sizes to reduce food waste.

One of the major challenges in tackling in-home waste, particularly food waste, is developing interventions to encourage positive environmental behaviours within the context of existing routines and lifestyles. Through this pilot, we are interested to see whether restricted waste prompts households to make positive changes to their own routines and lifestyles in a way that works them. Our evaluation of the pilot will include an assessment of what changes households make and the extent to which these changes are sustained in the longer term.



Source: Yellow Advertiser

## 4.2 Application of behavioural insights

In addition to the two behavioural insights highlighted above which inform the restricted waste concept (choice architecture and feedback loops), this intervention will use behavioural insights approaches to co-design communications/engagement approaches with residents recruited from the target areas to. The communications and engagement approaches will:

1. inform residents of the waste restrictions in advance of the intervention; and
2. provide feedback to households on their waste behaviours during the intervention.

As detailed below, 16 residents will be recruited from two target areas to participate in a self-ethnographic diary task and two workshops. The workshops will guide participants through a series of activities to design communications and engagement approaches using tested behavioural insights frameworks, such as the EAST and MINDSPACE frameworks by the Behavioural Insights Team. Keep Britain Tidy has successfully used these frameworks in numerous co-design workshops with target audiences and other stakeholders. In this instance, the workshops will include an activity to map the journey of waste in their household to identify key ‘pinch points’ in which decisions are made or influenced. This will help to prime participants to consider the behavioural context of waste in households, and to design effective engagement approaches around this. Workshop participants will then be presented with the appropriate behavioural insights framework and tasked with developing engagement approaches which are based on the insights and which they think will work

best in their community, for example:

Table 4, Insights from the Behavioural Insights Team's EAST framework and example tasks

Theme	Insight	Example task questions
Feedback	We are more likely to achieve a goal if provided with timely, structured feedback on how we are performing in relation to that goal	What is the best way to provide direct feedback to households? What does this look like? When does it happen? How do we attract the household's attention? What feedback messaging and approaches are motivating? What types of feedback should we definitely avoid?
Descriptive norm	We use other people's behaviour as a cue for what's acceptable and desirable	What do you think most people do? What advice do you have for other residents for reducing waste based on your experience during the diary task? What types of waste tend to be produced by different people in your household? Who generally manages the waste in your household? What types of social norming messaging do you find most and least motivating?
Messenger effect	We are heavily influenced by the communicator of information	Who are the influencers in your community? Which messengers do you trust? Are they appropriate messengers for communications about waste? What do messenger communications look like?
Framing effect	We react differently to the same information, depending on how it is framed	What types of messages do you think will work best to motivate behaviour change (e.g. values-based, fun, competitive, enforcement messages)? What values should we appeal to? How can we talk about waste issues differently to have more appeal/leverage?

### 4.3 Piloting the intervention

#### 4.2.1 Pilot design

The pilot will test the intervention across two collection rounds, with two additional collection rounds acting as controls in the pilot. The collection rounds selected for the pilot will be broadly representative of Havering in terms of its overall demographic profile.

The two target sites will test two approaches to engagement:

1. basic communications to inform residents of the restricted waste rules, and
2. basic communications plus additional engagement to provide further support to residents in managing their household waste.

The purpose of this is to gain insight into the level of support that would be required should the intervention be scaled borough-wide.

Collection round	Intervention version
Round A	Restricted waste + basic comms
Round B	Restricted waste + basic comms + additional engagement
Round C	Control
Round D	Control

The pilot will be delivered over three phases:

### **Phase 1: Workshops with target residents to design the basic communications and additional engagement packages**

This phase will engage target residents in a process to co-design the basic communications and additional engagement packages to be used in the interventions. The aim of this is to develop messaging and approaches that are reflective and representative of the needs and values of the local community.

Keep Britain Tidy and its partner fieldwork agency will recruit 16 local residents who will each be asked to participate in two workshops with a one week diary challenge in-between. The residents will be recruited from the pilot target areas and split into two groups to represent the Acorn 1 and Acorn 4 areas (meaning there will be eight participants in each group and four workshops in total). The residents will be recruited via on-street and/or doorstep surveys in the target areas using a screening questionnaire to ensure that they meet the needs of the research, and will be offered a £125 cash incentive for their time (£50 per workshop and £25 for the diary task). Keep Britain Tidy is highly experienced in recruiting for and conducting these types of workshops and we are confident that the resident will remain engaged for the duration of this element of the project, particularly with the monetary incentive in place.

#### *Workshop 1*

Workshop 1 will firstly take a traditional focus group format, whereby the group will discuss in-depth behavioural context, drivers and challenges with regards to waste generation in their households. The workshop will then take on a deliberative approach, whereby participants will be presented with information and evidence about waste issues and what the pilot is aiming to achieve, followed by further in-depth discussion. Finally, we will set the one week diary challenge for participants and introduce their task for next workshop, which will involve co-designing communications and engagement approaches to support other residents in reducing the amount of waste they generate.

#### *Diary task*

The aim of the diary task is to capture the types of waste generated and avoided by participants as they go about their daily activities, and the behavioural context, perceptions and decisions at play in this. Alongside this, participants will be asked to reduce the amount of waste they generate to determine the number of black sacks per week they think they would reasonably be able to restrict themselves to under a 'restricted waste' scenario. This will help to inform the number of black sacks that will ultimately be allowed during the pilot intervention.

Participants will be provided with a diary task template which will prompt them to record the types and amounts of waste they generate, alongside the immediate and broader context of this. In addition, participants will be asked to record their views on what makes it easy and difficult to reduce their waste, with a view to informing their recommendations for others. Participants will be asked to bring their completed diaries to Workshop 2 for discussion.

Throughout the week, participants will be sent text messages (or alternatively opt-in to receive a telephone call) to remind them to complete their diary.

#### *Workshop 2*

Workshop 2 will discuss the learning, opportunities and challenges that participants gathered during their diary challenge, and use these to co-design communications and engagement approaches to be used during the piloting of the restricted waste intervention. Participants will be guided through a range of activities that will inform the communications and approaches to be used to ensure that these are easy, attractive and timely to make them more effective in reaching residents and prompting the desired behaviour change. For example, participants will have input into

the most appropriate delivery format for the basic communications (e.g. a leaflet), alongside the specific messaging to be used. The activities in this workshop will introduce and draw on behavioural insights approaches to increase the effectiveness and appropriateness of the communications/engagement, e.g. by using social norming messaging and feedback on what residents in the local community do and say.

At the end of this phase of the project, Keep Britain Tidy will analyse the results of the workshops and diary challenge, and make recommendations for the communications and engagement approaches and messaging to be used in Phase 2.

### **Phase Two: Design of communications and engagement approaches to be used in the intervention pilot**

The aim of this phase of the project is to use the insights from Phase 1 of the project to design the overall approach to the intervention pilot (i.e. the number of bags allowed under the restricted waste intervention) and the communications and engagement approaches used to support this.

There will be two outputs from this phase of the project:

- 1) A basic communication that will be used in both versions of the intervention to be piloted that will tell residents all they need to know about the new restrictions (e.g. the number of bags allowed, the time period and why the restriction is being piloted); and
- 2) A package of engagement approaches that will provide additional support to households to encourage them to reduce their waste.

Keep Britain Tidy will design and provide mock-ups of all communications/approaches to LB Havering for input. The final versions will be signed off by LB Havering and may be council-branded.

### **Phase 3: Intervention pilot**

The pilot will commence with implementation of the basic communications to inform residents in the target areas of the pilot and new restrictions. At the same time, residents will be provided with the refuse sacks to be used in the pilot.

The additional engagement activities will be rolled out to further support households in reducing their waste. The specific activities will depend on the outcomes of the resident co-design workshop, but could include information packages and doorstep visits.

#### **4.2.2 Monitoring and evaluation**

This pilot will involve one month of baseline monitoring, three months of intervention monitoring and one month post-intervention monitoring, conducted three months after the end of the intervention phase to assess longevity of impacts once the restrictions are no longer in place.

The monitoring for this pilot will include:

- monitoring of waste tonnages within the target and control areas, to be conducted by Serco (Havering Council's contractor)
- monitoring of the number bags presented by each household on collection day within the target and control areas, to be conducted by Serco
- monitoring of black sacks taken to the local Reuse and Recycling Centre, to be conducted by LB Havering/ELWA
- monitoring rates of black sacks fly-tipping in the target areas, to be conducted by LB Havering
- doorstep perceptions surveys (50 per target area – 100 in total), to be conducted by Keep Britain Tidy during the last month of the intervention phase to assess awareness, perceptions and behaviours with regards to the restricted waste intervention

- two semi-structured group interviews to be conducted by Keep Britain Tidy project managers with LB Havering's key operative staff, such as collection crew, to gather feedback on what worked well, what could be improved and learnings to improve future iterations of the intervention.

Keep Britain Tidy will analyse all results and produce a full report on the pilot.

#### 4.2.3 Statistical significance

##### *Sample sizes*

Each collection round in Havering represents approximately 1,500 households. Based on Havering's population of 104,000 households, this sample size gives a confidence interval of three and a confidence level of 95% for each round. This means that the sample size is large enough to ensure a statistically significant representation of the full population of Havering's households and that we can be 95% confident that if we were to monitor all households across Havering, the results would fall within a margin of +/-3% of the results gathered through the pilot.

The sample size for the doorstep perceptions surveys is too small to be statistically representative of the broader population of households per round and should be treated as indicative only. The intention of the doorstep surveys is to gather further insight into the effectiveness of the intervention by understanding changes to awareness, perceptions and behaviours alongside the household waste monitoring.

##### *Analysis and interpretation of results*

Where appropriate, findings from the research will be tested for statistical significance using a 95% probability. This includes testing the significance of differences in proportions across the results from the doorstep perceptions surveys. Statistical significance tests are used to determine the likelihood that the same results would be found if the survey was repeated using a different or larger data sample, rather than being due to chance.

#### 4.2.3 Timings

The detailed timetable for delivery will be discussed and agreed during the next stage of the Programme. An initial timeline is shown below. Please note this is organised around avoiding monitoring or running the three month intervention period during the school holiday period in July/August due to seasonal waste generation variation.

Month	Phase 1: Officer and resident workshops and diary task	Phase 2: Design of communications and engagement approaches	Phase 3: Intervention pilots	Monitoring and evaluation	Reporting
May 2019					
June					
July					
August					
September					
October					
November					
December					
January 2020					
February					
March					
April					
May					

#### 4.4 Budget allocation

Task	Project management budget	Direct costs budget
Phase 1: Officer and resident workshops and diary task	£5,686	£5,226
Phase 2: Design of communications and engagement approaches	£3,355	included in project management
Phase 3: Intervention pilots	£5,505	£18,441
Reporting and wrap up	£4,867	£38
Overall project management, quality assurance and liaison with LB Havering	£4,883	included in project management
<b>Totals</b>	<b>£24,294</b>	<b>£23,706</b>
	<b>Grand total</b>	<b>£48,000</b>

The direct costs budget includes:

- Travel costs for staff
- Recruitment and incentive costs and venue hire for the resident workshops in Phase 1
- Design, production and delivery of black sacks and leaflets, and additional communications and engagement in Phase 3

LB Havering have agreement to proceed from their Lead Member, Cllr Osman Dervish, Cabinet Member for Environment.



# KEEP BRITAIN TIDY.

Wigan office  
Elizabeth House  
The Pier  
Wigan  
WN3 4EX  
01942 612621

London office  
9-13 Kean Street  
London  
WC2B 4AY  
020 7420 4400

[keepbritaintidy.org](http://keepbritaintidy.org)

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