KEEP BRITAIN TIDY.

REPORT

London Waste and Recycling Board
Contamination Hit Squad Pilot 2019-20

May 2020

ABOUT KEEP BRITAIN TIDY.

Keep Britain Tidy is an independent environmental charity with three goals – to eliminate litter, improve local places and prevent waste.

We understand that we cannot reach our goals by working alone, so we work with businesses, schools, communities, individuals, government - local and national – and other charities and voluntary organisations.

We know that if people care for the environment on their own doorstep – the local park, the street in which they live, the river that runs through their area – then the environment, the community and the individual will all benefit. How can we expect people to understand and care about global environmental issues if they don't understand the importance of, or care about, their own local environment?

Keep Britain Tidy is a charity with a wealth of experience and expertise. We have been working and campaigning to eliminate litter, improve local places and prevent waste for many years. We want to share that experience and expertise with others, supporting businesses, communities, schools and government.

We fund our work by offering services and expertise to those who can benefit from them, by delivering accreditation schemes for parks, beaches, schools and public spaces and by developing relationships with partners in the corporate sector to support our research and campaign activities.

REPORT RELEASE SHEET

Date:	11th May 2020
Written by:	Gust Michiels, Senior Project Manager With contributions by Dr. Anna Scott (MCIWM), Waste Insights Manager
Quality checked by:	Dr. Anna Scott (MCIWM), Waste Insights Manager
Lead contact details:	Keep Britain Tidy Tintagel House 92 Albert Embankment London SE1 7TY
Telephone:	020 8076 9253
Email:	anna.scott@keepbritaintidy.org

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1 EXECUTIVE SUMMARY

The London Waste and Recycling Board (LWARB) commissioned Keep Britain Tidy to deliver the Contamination Hit Squad, a pilot project developed in partnership with the London Environment Directors Network (LEDNet). The aim of the project was to establish proof of concept and feasibility of a shared London officer resource to tackle contamination in kerbside domestic recycling collections, through the delivery of targeted feedback to households.

A brief overview of the feedback loop is as follows:

Working ahead of the collection crew, and monitoring recycling bins for six consecutive weeks, Recycling Quality Officers tag contaminated recycling bins (as an indicator to the collection crew not to empty the bin) and record the corresponding address. The tag also serves to provide feedback to the household and the unemptied bin requires action from them. On top of the contamination tag used on every incident, on the second and third incident of contamination, households receive a stage 2 and 3 letter respectively, with an increasingly serious tone warning of bin removal. A stage 3 letter may also be accompanied by a household visit from the Recycling Quality Officer. After four or more incidents of contamination, the recycling bin may be removed, alongside a stage 4 letter, if that is the borough policy.

The project ran in four London Boroughs – Brent, Greenwich, Haringey and Lewisham – between September 2019 and March 2020.

This report presents the methodology of the project and documents the Recycling Quality Officers delivery time and outputs. The Contamination Hit Squad pilot was an extremely complicated project which was highly nuanced across the boroughs. The main focus of the report is on detailing the challenges of the project, how these challenges were managed and the lessons learnt. The discussion covers the recruitment, training and management of Recycling Quality Officers, contamination monitoring, back office administration, household visits, and stakeholder management.

The various challenges navigated did not prevent the project from being an operational success. The successful delivery of the project was underpinned by a quality team from Keep Britain Tidy, both in terms of project management and delivery staff. Central considerations for any future Contamination Hit Squad should be appointing an experienced management team and allocating sufficient management time, and attracting high-calibre Recycling Quality Officers who are well-trained and managed.

A theme that ran through a number of challenges was the data solution used for recording contamination incidents and escalating addresses through the contamination policy. Any future Contamination Hit Squad should find a way to work with the borough's existing data solution where this exists, especially where this is linked to in-cab technology used by the crew for reporting contamination. This is by far, the most efficient way to run the Contamination Hit Squad. Where such data solutions are unavailable, then the fall-back option should be a data solution specifically developed for the purposes of the Contamination Hit Squad which can be adapted to the borough in question.

A further theme that ran through a number of challenges was the lack of full involvement of the wide range of relevant staff needed from the borough/their contractor, including operational staff, communications staff and IT staff. In particular, the complete understanding and cooperation of crews is needed. Any future Contamination Hit Squad needs to assertively communicate its requirements to the boroughs, and facilitate the active involvement of all those required to set a firm foundation for successful delivery.

The results of the Contamination Hit Squad will be presented separately, by the contractor Winning Moves.

2 INTRODUCTION

With all London local authorities collecting some form of co-mingled dry recycling from households, contamination in the domestic recycling stream is a common problem across the capital – both undermining the quality of materials and leading to increased service costs. Research by LWARB in 2017/18 with London local authorities found that the most effective way to tackle contamination at the kerbside is through a structured and targeted feedback loop to individual offending households. The successful application of a borough's contamination policy was dependent on recycling collection crews tagging and recording contaminated bins, but crews were not delivering this consistently. Furthermore, resourcing this approach to tackling contamination at an individual authority level is not a high priority due to pressures from competing budgets. As a result, LWARB wanted to test if taking responsibility for tagging and recording contaminated bins off the crews, and giving it to shared London officer resource, would more effectively tackle contamination.

In May 2019, LWARB commissioned Keep Britain Tidy to deliver the Contamination Hit Squad, a pilot project with the aim of establishing proof of concept and feasibility of a shared London officer resource to tackle contamination in kerbside domestic recycling collections, through the delivery of targeted feedback to households. The project was developed in partnership with the London Environment Directors Network (LEDNet).

A brief overview of the feedback loop is as follows:

Working ahead of the collection crew, and monitoring recycling bins for six consecutive weeks, Recycling Quality Officers tag contaminated recycling bins (as an indicator to the collection crew not to empty the bin) and record the corresponding address. The tag also serves to provide feedback to the household and the unemptied bin requires action from them. On top of the contamination tag used on every incident, on the second and third incident of contamination, households receive a stage 2 and 3 letter respectively, with an increasingly serious tone warning of bin removal. A stage 3 letter may also be accompanied by a household visit from the Recycling Quality Officer. After four or more incidents of contamination, the recycling bin may be removed, alongside a stage 4 letter, if that is the borough policy.

The project ran in four London Boroughs – Brent, Greenwich, Haringey and Lewisham – between September 2019 and March 2020, before being prematurely ended by the coronavirus (COVID-19) pandemic. These boroughs are anonymised throughout the rest of this report. Two monitoring cycles (each of six weeks) were completed as planned in Borough A, while one cycle was completed in Borough B. Borough B was not taken forward into the second cycle due to round changes and data issues. The second cycle was suspended part way through week 4 in Borough C and Borough D due to coronavirus.

This report presents the methodology of the project and documents the Recycling Quality Officers delivery time and outputs. Primarily however, this report focuses on detailing the challenges of the project, how these challenges were managed and the lessons learnt. These reflections are not undermined by the early end of the project. Winning Moves was commissioned by LWARB to undertake monitoring and evaluation of the Contamination Hit Squad – as such, the results of the pilot project will be presented separately.

3 METHODOLOGY

Please note that where the term 'borough team' is used throughout the remainder of this report, it refers to any staff of the local authority and, where applicable, any staff of their waste and recycling collection contractor that are in some way involved in the planning, support and delivery of the Contamination Hit Squad's activities and tasks.

3.1 Timeline

The basic timeline of the project was to operate a six week monitoring cycle in two boroughs simultaneously, followed by a contingency week, and then operate a further six week monitoring cycle in another two boroughs simultaneously, before repeating the cycle again in the same boroughs around three months later.

Cycle 1 took place simultaneously in Borough A and Borough B from mid-September 2019, with one contingency day used in Borough B. Cycle 1 then took place simultaneously in Borough C and Borough D from early November 2019, with two contingency days used in Borough D and one day used in Borough C, finishing well before Christmas.

Cycle 2 took place in Borough A from late January 2020, commencing well after the Christmas/New Year period changes to collections and household behaviour. No contingency days were used here. Cycle 2 did not take place in Borough B as planned due to substantial changes to the rounds monitored in cycle 1, affecting the comparable monitoring and evaluation of the rounds. Cycle 2 commenced in Borough C and Borough D in February, but ended in the fourth week of the monitoring cycle due to the coronavirus (COVID-19) pandemic.

Details of the exact dates of the two cycles in each borough and the reasons contingency days were used are shown in Table 1 in section 3.8.

3.2 Inception and initiation meetings

An inception meeting between Beverley Simonson, Local Authority Support Manager at LWARB and Dr. Anna Scott, Waste Insights Manager at Keep Britain Tidy was held on 23rd July 2019.

Initiation meetings were held with each borough around four weeks in advance of both the first and second cycle of monitoring. Gust Michiels, Senior Project Manager at Keep Britain Tidy attended all seven meetings (cycle 2 in Borough B did not take place), supported at the first initiation meeting by Dr. Anna Scott. Beverley Simonson also attended five of the seven meetings, with other LWARB officials attending the other two meetings.

We requested that the initiation meeting was attended by the following representatives of the borough team: the lead borough officer, depot supervisor, call centre representative and IT/CRM representative. The initiation meeting discussed how the feedback loop would be delivered in the borough, including the borough's contamination policy, round collection logistics, CRM system and IT systems. We produced meeting minutes with a list of actions and deadlines for all parties.

3.3 Recruitment of Recycling Quality Officers

A total of eleven Recycling Quality Officers, one Recycling Quality Advisor and six reserve Recycling Quality Officers worked on the project, recruited from our existing bank of experienced workers and through external advertising. Channels utilised included the Keep Britain Tidy website and social media channels, Environment Job and Indeed. Recycling Quality Officers were selected based on key criteria including their interpersonal, teamwork, administration and communication skills and their ability to work independently, record data accurately and use IT. Applicants were required to provide their CV and a covering letter outlining how they met our requirements and shortlisted applicants were interviewed face to face by the Project Manager at LWARB's office before selection.

In total there were four rounds of recruitment in preparation for cycle 1 Borough A/Borough B, cycle 1 Borough C/Borough D, cycle 2 Borough A and cycle 2 Borough C/Borough D. At any one time in each cycle for each borough, there were two dedicated Recycling Quality Officers plus a reserve Recycling Quality Officer as contingency in case of absence. In Borough C cycle 2, a part time Recycling Quality Advisor was recruited to provide additional capacity for household visits – see Table 1 in section 3.8.

3.4 Training of Recycling Quality Officers

All Recycling Quality Officers underwent a comprehensive training programme immediately prior to commencing work. The training programme consisted of two parts:

Part 1 involved one day of classroom-based training at LWARB's offices and consisted of:

- general introduction to the project and the different stakeholders;
- background on waste and recycling in the UK and the local authorities involved;
- more detailed instructions on the different activities involved in the role and team planning including:
    - contamination monitoring including data recording
    - data management and letters
    - resident engagement including conflict management
    - health and safety
- HR policies

Part 2 involved a day of on the ground training in the specific borough the Recycling Quality Officers were working in. This consisted of a practice run of monitoring recycling bins, distributing tags, recording addresses and sending feedback letters.

3.5 Contamination monitoring

Each borough selected five daily rounds (one each day Monday – Friday) to be monitored over six consecutive weeks in cycle 1, and then again in cycle 2. Depending on the borough's choice, this was either one crew's weekly round or five daily rounds served by different crews – see Table 1 in section 3.8. The boroughs were a mix of in house and contractor operations – see Table 1 in section 3.8.

The two Recycling Quality Officers met at the agreed starting point and time of the round and travelled through the round on foot, working ahead of the collection crew and monitoring recycling bins prior to collection. Although the Recycling Quality Officers were unable to ride with the crews, some boroughs supported travel to/from the start/end of the round in separate vehicles – see Table 1 in section 3.8.

In order to keep ahead of the collection crew and avoid slowing down the pace of collection unreasonably, we requested the following from each borough for the five rounds in question:

- A round map highlighting the streets served
- A list of streets served in typical route order including typical lift times and break arrangements
- Commitment from the collection crew drivers to follow the route order as far as practically possible, communicate with the Recycling Quality Officers about any necessary deviation, and hang back where required allowing the Recycling Quality Officers to work in front of the crew.

Each crew consisted of one driver and two loaders (although with the exception of Borough A's crews which operated with three loaders) – see Table 1 in section 3.8. Matching this typical arrangement, the two Recycling Quality Officers typically worked down separate sides of the street and conducted a visual inspection of recycling bins contents. If the recycling was contaminated to the extent that it should be rejected as agreed with the borough concerned, then the Recycling Quality Officer tagged the bin to identify it to the collection crew. Consistent

across all boroughs, recycling bins were rejected and tagged if at least one of the following was found:

- Obvious presence of food (sight or smell)
- Any sanitary products or signs of bodily fluid/waste (nappies, items with blood on, faeces etc.)
- Any needles or medical equipment
- Black bags
- Garden waste

The above items/materials were termed as 'red flags' with no subjectivity allowed.

More prone for subjectivity were any other materials on a non-target list provided by each borough. Any item/material on this list would be reason to tag a bin as contaminated if it was prevalent to the extent where there was no good material present, or if there was, it could not be recovered. Recycling Quality Officers were trained by borough officers to recognise unacceptable levels of these materials, levels that could vary from borough to borough. Non-target materials included the following:

- Clothing/textiles
- Coat hangers
- Coffee cups
- Crips packets
- Electrical/electronic items
- Greasy pizza boxes
- Hard plastics
- Metal pots/pans
- Polystyrene
- Pouches
- Soft plastic
- Sweet wrappers
- Tissues/toilet roll
- Wood
- Scrap metal
- Broken window glass
- Broken drinking glass
- Wet or dirty paper/cardboard
- Carrier bag(s) or similar
- Plastic film
- Wallpaper

The generic tag used communicated to the resident that their bin contained items that cannot be recycled, including a list of the main contaminants in the borough. Tagged bins were not emptied by the recycling collection crew. With the exception of Borough B, the tag advised the resident that the bin would not be collected until they had removed the contamination. In Borough B, contaminated recycling bins were collected as residual waste later the same day – see Table 1 in section 3.8.

Keep Britain Tidy developed a tailored data solution (in MS Excel) to store all addresses logged as contaminating and execute the contamination policy by escalating contaminating addresses accordingly. This solution was used where the boroughs did not have their own data solution in place, or it could not be made to work for the purposes of the Contamination Hit Squad pilot – see Table 1 in section 3.8.

The Recycling Quality Officers recorded contaminating addresses using 4G enabled tablets and the survey software Nest Forms, which created a systematic framework by which to record data, promote consistency of data collection and allow easy integration into a MS Excel

electronic database. Each survey form was tailored to the borough in question and recorded the following as a minimum:

- Street of the contaminating household – restricted dropdown list
- Property number of the contaminating household – free text box
- Three most prevalent contaminants – restricted checklist with appropriate contaminants (e.g. black bags, nappies, food waste, etc.) with a free text box to specify other

Where the address of a contaminated bin was not clear, i.e. at a property converted into flats or an HMO, this was assigned to the main property and a comment added about the presence, nature and number of other properties involved. If a contaminated bin was clearly labelled as belonging to a particular flat, then this address was recorded.

As each Recycling Quality Officer recorded contaminating addresses, responses where uploaded in real time to a cloud-based solution, allowing the retrieval of a complete record at the end of each round.

Contamination monitoring was ordinarily part of the crews' responsibilities in all four boroughs. While the aim of the Contamination Hit Squad was to establish proof of concept and feasibility of a shared London officer resource to tackle contamination – i.e. responsibility lifted from crews – LWARB and the boroughs were of the view that temporarily removing the responsibility of contamination monitoring during the two cycles was not prudent to maintaining this behaviour outside of the project. Therefore, crews continued to monitor as per normal during cycle 1 and cycle 2, applying the same tags to any contaminated bins not identified by the Recycling Quality Officers because (1) upon collection the bin was heavy and therefore likely to be contaminated, (2) the bin was presented after the Recycling Quality Officers had monitored, and (3) the bin was not presented due to an assisted collection. Addresses were recorded by the crews either on paper log sheets or through an in-cab system depending on the borough – see Table 1 in section 3.8. Where the boroughs used an in-cab system, addresses recorded by the crews were cross-referenced against addresses recorded by the Recycling Quality Officers. Any addresses missed by the Recycling Quality Officers were either imported into their complete record of the round, or passed on to borough team if the borough's data solution was used – see Table 1 in section 3.8.

3.6 Back office administration

Once the Recycling Quality Officers had finished monitoring the round, they travelled to the borough office, either with the assistance of the borough or by bicycle or public transport to compile the complete record of contaminating addresses (see section 3.5) and undertake feedback letter administration.

From the second week of contamination monitoring onwards in cycle 1, and the first week of contamination monitoring in cycle 2, feedback letters were sent to any address (with unnamed recipients) contaminating for the second, third or fourth time – this took into account contamination incidents recorded by the crew between cycle 1 and 2 where possible:

- A stage 2 letter was sent after two incidents of contamination. This advised the household about what contaminants had been found, and advised about what can and cannot be recycled.
- A stage 3 letter was sent after three incidents of contamination. With the exception of Borough D, this warned the household that their bin would be removed if they contaminate again. Stage 3 letters were supported with household visits where possible.
- A stage 4 letter was sent after four incidents of contamination in three of the boroughs – see Table 1 in in section 3.8. This advised the households that their bin was going to be/had been removed. In Borough D, there was no stage 4 letter, but rather a household visit, and at stage 5 (five incidents of contamination) the matter was referred to the enforcement team.

Keep Britain Tidy's tailored data solution allowed the identification of addresses contaminating for the second or more times. The Recycling Quality Officers extracted the list of addresses at each stage of the escalation process and used this in a mail merge function to generate the relevant letters in MS Word, with the exception of two boroughs which managed this process internally. Following this, either the Recycling Quality Officers printed the letters ready to be sent through the borough's post system, or the borough team managed this internally – see Table 1 in section 3.8.

Removing bins after the fourth incident of contamination was the policy in three of the four boroughs – see Table 1 in section 3.8. Where Keep Britain Tidy's data solution was used, the Recycling Quality Officers extracted the list of addresses at stage 4 (four incidents of contamination) which were passed to the borough team to action bin removal.

Assuming that the Recycling Quality Officers were aware there were multiple properties at one address, the escalation of unidentified contaminating addresses within multiple flats/HMOs was handled in accordance with the borough's policy – see Table 1 in section 3.8.

3.7 Household visits

The Recycling Quality Officers carried out household visits to addresses at stage 3 (three incidents of contamination) (or stage 4 (four incidents of contamination) in Borough D only) to discuss contamination face to face with the resident and attempt to prevent further incidents of contamination and bin removal.

This was approached in different operational ways depending on the time available and the Recycling Quality Officers' preferences, with visits either carried out each day or bundled into fewer days per week – see Table 1 in section 3.8.

Keep Britain Tidy developed a guide for the Recycling Quality Officers to base their conversation around and the outline was as follows:

- Introduce yourself (and show ID)
- Explain the reason of your visit and ask if they had noticed the recycling bin tags and received the letter(s) (noting that they might not have received or read the stage 3 letter by the time of the visit).
- Ask if they understand why their recycling bin has been tagged and explain you are there to help them resolve the issue (focus the conversation on the more prominent contaminants from your data).
- Try to identify the barrier(s) that's causing the contamination and help resident to overcome the barrier
- Make sure the resident understands what the consequences of not changing the behaviour will be and that you want to help avoid the bin from being taken away.
- Thank the resident for their time

The Recycling Quality Officers took a short written log after the conversation, recording reflections on the conversation, any follow-up actions required, and the resident's barriers to recycling correctly. These records were integrated with stage 3 escalation data.

3.8 Overview of project parameters by borough

Table 1 provides a comparative overview of the project parameters for each of the boroughs.

Table 1 Overview of project parameters for the boroughs

	BOROUGH A	BOROUGH B	BOROUGH C	BOROUGH D
Cycle 1	16/09 – 25/10/19	16/09 – 25/10/19	4/11 – 13/12/19	4/11 – 13/12/19
Cycle 1 contingency	-	28/10/19	16/12/19	17 – 18/12/19
Reason for contingency	n/a	Import crew logs Escalation and visits	Import crew logs and finalise escalation	17th: monitoring + back office following change of round in week 1 18th: import crew logs from 17th and finalise escalation
Cycle 2 planned Cycle 2 reality	20/01 – 28/02/20 n/a	Cancelled n/a	24/02 – 3/04/20 24/02 – 16/03/20	24/02 – 3/04/20 24/02 – 17/03/20
Cycle 2 contingency	-	-	-	-
Team set up	2 RQOs (2 FTE) + 1 reserve RQO	2 RQOs (2 FTE) + 1 reserve RQO	2 RQOs (2 FTE) + 1 reserve RQO Cycle 2: +1 RQA (0.4 FTE)	2 RQOs (2 FTE) + 1 reserve RQO
Service operator	In house	In house	Contractor – Veolia	Contractor – Veolia
Round selection	1 crew	1 crew	Multiple crews	Multiple crews
Crew set up	1 driver, 3 loaders	1 driver, 2 loaders	1 driver, 2 loaders	1 driver, 2 loaders
Travel support	To collection round From if capacity	No support	To and from collection round	No support
Crew response to contamination tag	No collection by recycling crew until contamination removed, but special collection by refuse crew after second incident only	Collected by refuse crew later in the day	No collection by recycling crew until contamination removed, but special collection by refuse crew after second incident only	No collection by recycling crew until contamination removed
Crew contamination monitoring during pilot	Continued as per normal (paper log sheet system)	Continued as per normal (including tags left by RQOs)	Continued as per normal (ECHO in-cab system)	Cycle 1: continued as per normal (ECHO in-cab system)

	BOROUGH A	BOROUGH B	BOROUGH C	BOROUGH D
		(Whitespace in-cab system)		Cycle 2: reiterated importance of logging all incidents, including RQO tags
Data solution used Current crew logs Historic crew logs between cycles	KBT's Not cross referenced Integrated with cycle 2	KBT's Cross-referenced and imported missing logs n/a	KBT's Cross-referenced and imported missing logs Integrated with cycle 2	Borough's Cycle 1: Cross-referenced and missing RQO logs sent to borough team for escalation Cycle 2: escalation based entirely on crew logs integrated with cycle 2
Letters produced	Stage 2, 3 and 4 letters	Stage 2, 3 and 4 letters	Stage 2, 3 and 4 letters	Stage 2 and 3 letters
Letter administration	List of addresses prepared for mail merge by RQOs, printed and sent out by borough team	Letters prepared for mail merge, printed and sent out by RQOs	Letters prepared for mail merge, printed and sent out by RQOs	Cycle 1: Letters prepared for mail merge, printed and sent out by borough team Cycle 2: Letters prepared for mail merge and printed by borough team, sent out by RQOs
Escalation of unidentified contaminating addresses within multiple flats/HMOs	Remained at stage 2 and handed over to borough team for follow up	Remained at stage 2 and handed over to borough team for follow up	All stage letters sent to all addresses	All stage letters sent to all addresses
Household visits at stage 3	Daily visits performed by 1 RQO	Daily visits performed by both RQOs	Cycle 1: Visits bundled into fewer days and performed by both RQOs Cycle 2: Dedicated RQA performing only visits, bundled	Cycle 2 only: visits bundled into fewer days and performed by both RQOs (stage 4 rather than 3)

	BOROUGH A	BOROUGH B	BOROUGH C	BOROUGH D
Bin removal	Stage 4 addresses submitted to borough team for action	Stage 4 addresses submitted to borough team for action	Stage 4 addresses submitted to borough team for cross-departmental consultation before action	Stage 5 addresses referred to enforcement team through ECHO

4 DELIVERY TIME AND OUTPUTS

Table 2 shows the time spent by the Recycling Quality Officers in each borough and the proportion of time spent on each aspect of delivery, and delivery outputs.

Table 2 Recycling Quality Officer time spent and delivery outputs in each borough

CYCLE	BOROUGH	RQO DAYS DELIVERED	AVERAGE WORKING HOURS/DAY DELIVERED	PROPORTION OF WORKING HOURS SPENT ON							
				CONTAMINATION MONITORING (EXCL TRAVEL)	CONTAMINATION INCIDENTS LOGGED	BACK OFFICE (EXCL TRAVEL)	LETTERS SENT	HOUSEHOLD VISITS (EXCL TRAVEL)	VISITS DONE	CONTACT RATE	TRAVEL *
1	Borough A	60	7.2	67.5%	2,587	14.8%	n/a	6.4%	153	43.1%	11.3%
	Borough B	62	5.5	53.0%	2,724	22.4%	802	8.1%	131	44.3%	16.5%
	Borough C	61	8.2	40.1%	4,462	48.8%	1,864	2.1%	82	22.2%	8.9%
	Borough D	62	5.0	67.5%	4,509	24.9%	n/a	n/a	n/a	n/a	7.6%
	ALL	245	6.4	55.7%	14,282	29.1%	2,666	4.2%	387	32.0%	11.0%
2	Borough A	60	7.8	61.0%	1,990	17.6%	n/a	5.9%	237	28.7%	15.4%
	Borough B	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Borough C	36	8.4	30.3%	1,539	52.3%	762	6.0%	89	24.7%	11.4%
	Borough D	34	9.2	55.1%	2,379	28.6%	no data	1.1%	16	56.3%	15.2%
	ALL	130	8.3	50.5%	5,908	30.7%	1,708	4.6%	342	28.9%	14.2%
1 & 2	Borough A	120	7.5	64.1%	4,577	16.3%	946	6.1%	390	34.4%	13.4%
	Borough B	62	5.5	53.0%	2,724	22.4%	802	8.1%	131	44.3%	16.5%
	Borough C	97	8.2	36.3%	6,001	50.2%	2,626	3.6%	171	23.4%	9.9%
	Borough D	96	6.5	61.3%	6,888	26.7%	n/a	0.6%	16	56.3%	11.4%
	ALL	375	7.1	53.6%	20,190	29.8%	4,374	4.3%	729	35.6%	12.3%

* Travel between the depot and round where applicable, between the round and back office, and between the back office and where household visits started.

The following points are worth highlighting:

- The planned number of delivery days in each borough was 60 in line with two Recycling Quality Officers working for five days a week for six weeks. One or two contingency days were added in cycle 1 involving one or two Recycling Quality Officers. Cycle 2 ended after 17 working days in Borough D (Tuesday, week 4) and 16 working days in Borough C (Monday, week 4) due to coronavirus, with a further four days worked by the Recycling Quality Advisor on households visits by this time.
    - The average working hours per day and the proportion of time spent on each aspect of delivery are based around the full complement of days worked. However, the cycle 2 delivery outputs go as far as the end of week 3, and do not incorporate the final two days of work in Borough D and the final day of work in Borough C in week 4.
- In cycle 1, the average working hours per day varied between a low of 5.0 in Borough D and a high of 8.2 in Borough C. In cycle 2, the comparative hours in two of the boroughs remained relatively stable – 7.8 in cycle 2 compared to 7.2 in cycle 1 in Borough A, and 8.4 in cycle 2 compared to 8.2 in cycle 1 in Borough C. The average working hours increased substantially in Borough D from 5.0 in cycle 1 to 9.2 in cycle 2 due to specific circumstances discussed in section 5.4.7.
- The number of contamination incidents logged in cycle 1 and cycle 2 is only directly comparable in Borough A, as cycle 2 in Borough D and Borough C ran for just over 50% of the planned time. In Borough A, the number of contamination incidents dropped from 2,587 in cycle 1 to 1,990 in cycle 2. Although anecdotal, the Recycling Quality Officers also felt there were fewer contamination incidents in cycle 2 compared to cycle 1 in Borough D and Borough C. This suggests longer lasting behaviour change outside of cycle 1.
- The proportion of time spent on travel increased in cycle 2 as there was less support available from the boroughs and therefore more travel by bicycle and public transport (see section 5.4.10).
- The average length of the working day is primarily related to the number/nature of different activities delivered by the Recycling Quality Officers as opposed to the prevalence of contamination itself – although of course all activities take longer where there are more contamination incidents. As such, shorter working days were typically found where the borough team were responsible for back office administration activities such as letter administration. However, other factors also influenced time spent on activities:
    - The time spent on contamination monitoring increased substantially where Recycling Quality officers worked alongside the collection crew as opposed to ahead of them (see section 5.4.7).
    - The time spent on back office administration increased substantially where crew contamination monitoring data was cross-referenced against addresses recorded by the Recycling Quality Officers, and furthermore where historic records logged by the crews between cycle 1 and cycle 2 were integrated into the database (see section 5.5.3).
- The contact rates achieved in relation to household visits were relatively high, given no revisits to non-contacted addresses were undertaken. This may reflect the socio-demographics of residents who persistently contaminate.

5 CHALLENGES

This section focuses on detailing the challenges of managing and delivering the Contamination Hit Squad pilot, how these challenges were managed and the lessons learnt.

5.1 Recruitment of Recycling Quality Officers

5.1.1 Attracting candidates due to the job title

Challenge: Early on in the recruitment process for cycle 1, it became clear that the job advertisement was not yielding the desired pool in terms of number and profile of candidates. We were following Keep Britain Tidy's tried and tested recruitment strategy in terms of channels utilised and remuneration package, and therefore this was an atypical situation. Based on queries and feedback received we identified the issue to be with the role name, at that point advertised as 'Contamination Officer'.

Resolution: We changed the role name to 'Recycling Quality Officer' to better specify the purpose of the role and avoid any confusion caused by the term 'contamination'. This yielded a significant increase in applications of candidates with the desired profile and we were successful in recruiting all the necessary officers for each recruitment cycle.

Lessons learnt: Avoid the term 'contamination' in the job title as it has different meanings in different industry sectors, and it is more likely to be overlooked by those looking for work in the waste and recycling industry. Use the term 'Recycling Quality Officer' or a similarly clear, concise and positive job title.

5.1.2 Attracting candidates and staff retention due to geographical areas targeted

Challenge: Our initial project budget, when the four participating boroughs had not yet been identified, assumed two rounds of recruitment and training across the project, and therefore a reasonable degree of staff retention. As such, the corresponding aim of cycle 1 recruitment was to recruit a team of Recycling Quality Officers to work in Borough A/Borough B who would then move on to Borough C/Borough D. However, because of the large geographical spread of the participating boroughs and the early morning starts involved, we anticipated the impact this would have on candidates applying and on staff retention, i.e. it was unlikely that Recycling Quality Officers working in one borough would continue to work in another borough on the other side of London, and vice versa.

Resolution: We narrowed the scope of the Recycling Quality Officer job advertisement from a London-wide, 12 week role to a borough-specific, six week role. This doubled the number of rounds needed to recruit the necessary Recycling Quality Officers, with corresponding training rounds added as well.

Lessons learnt: Should LWARB move forward with the Contamination Hit Squad, it may be best advised to take a more London-regional approach, with different teams of Recycling Quality Officers operating in different London regions, in order to minimise recruitment rounds. However, there may still be significant barriers to Recycling Quality Officers automatically moving from one borough to the next given the vast areas that regions of London may still cover coupled with early morning starts. The most cautious approach may be to assume a recruitment round may be needed in each borough/cycle although this runs somewhat contradictory to the central concept of the Contamination Hit Squad as a shared London officer resource.

5.1.3 Attracting candidates and staff retention due to the nature of the work

Challenge: We anticipated that the nature of the work itself would impact on the number of quality candidates applying and on staff retention – namely a short-term contract without the guarantee of continuation of work beyond this, coupled with early morning starts and variable hours with payment for hours worked only. While recognising that high levels of staff retention

as we moved between boroughs was unlikely, the loss of Recycling Quality Officers mid-cycle would be particularly problematic with additional recruitment and training costs.

Resolution: We paid the Recycling Quality Officers the London Living Wage of £10.55 per hour and guaranteed a minimum number of paid hours per day. We also paid an extra amount, a 'shift allowance' to boost earnings and incentivise remaining on the project; this equated to 50% of their hourly wage for each completed working day and the additional 50% for completion of all working days within a two week period. With this pay structure and our position as a high-profile and respected environmental charity, we assembled a motivated and capable team of Recycling Quality Officers with low levels of staff turnover. Only two Recycling Quality Officers left the project before the end of a cycle leading to 86% staff retention throughout the project. Furthermore, three Recycling Quality Officers from cycle 1 returned for cycle 2.

Lessons learnt: An attractive pay structure is essential to attracting a sufficient pool of quality candidates and retaining staff through a cycle and beyond. We very much stand by our approach of paying at least the London Living Wage, guaranteeing a minimum number of paid hours per day, and linking additional payment to the completion of multiple working days.

A wider observation here is that for these kind of short-term positions, Keep Britain Tidy generally attracts high-calibre candidates with (often multiple) relevant degree(s) but limited work experience. What such individuals lack in experience they usually make up in flexibility and swift comprehension of the role's responsibilities. A short burst of experience as a Recycling Quality Officer may suffice to secure another role within or outside the industry. Should LWARB move forward with the Contamination Hit Squad with longer term/permanent positions offered, two scenarios should be considered. Firstly, it may continue to attract candidates of a similar profile, in which case staff turnover needs to be planned for – again, the most cautious approach may be to assume a recruitment round may be needed in each borough/cycle. Secondly, it may attract candidates of a different profile with more work experience but fewer academic qualifications, who are perhaps more likely to stay in the role. There are implications here for the training approach which are discussed in section 5.2.1 below.

5.2 Training of Recycling Quality Officers

5.2.1 Training approach, general content and tailored content, knowledge transfer

Challenge: Providing adequate training to equip the Recycling Quality Officers with the knowledge, skills and confidence to deliver their multiple responsibilities effectively, consistently and efficiently from day one, with multiple nuances from borough to borough. A further challenge was to guarantee continued high delivery quality when we returned to each borough for cycle 2, but not necessarily the same officers to fulfil the roles.

Resolution: We recognised the need for a substantial training programme for the Recycling Quality Officers from the outset. The training programme was developed and delivered by the Project Manager who holds Train the Trainer qualifications, and it was delivered over two days to allow for comprehensive training on the various aspects of the job at a pace which was not overwhelming for the high-calibre intake of Recycling Quality Officers.

The first day of classroom training was attended by all Recycling Quality Officers working in the two boroughs. As set out in section 3.4, this training consisted of:

- general introduction to the project and the different stakeholders;
- background on waste and recycling in the UK and the local authorities involved;
- more detailed instructions on the different activities involved in the role and team planning including:
    - contamination monitoring including data recording
    - data management and letters
    - resident engagement including conflict management
    - health and safety
- HR policies

Different approaches relevant for Recycling Quality Officers working in different boroughs were mentioned where applicable and updated with learnings from cycle 1 for cycle 2 training. However, the focus of the first day of training was very much on understanding the overall aims and objectives of the project and their responsibilities as part of the project delivery team.

The second day of on the ground training was specific to the borough the Recycling Quality Officers were working in and was therefore able to focus on the nuances in each borough and any knowledge transfer from cycle 1. We anticipated that two particular challenges of the project would be keeping ahead of the recycling crew to monitor bins before collection and working efficiently as a contractor within the borough IT systems – and despite preparation in conjunction with the borough teams, problems would still arise once work had commenced. The on the ground training was designed to overcome this through a practice run of monitoring recycling bins, distributing tags, recording addresses and sending feedback letters, supported by relevant members of the borough team.

In reality, the second day of training tended to focus on monitoring recycling bins and ascertaining when bins should be rejected. The IT system for the Recycling Quality Officers was only up and running in one borough on the training day (see section 5.5.1), thus preventing the practice run of back office administration activities. As a result, the Project Manager upped his active support of the Recycling Quality Officers in the early weeks of each cycle as they embarked on each back office administration activity for the first time (both in person and remotely).

We managed to retain three of the eight Recycling Quality Officers from cycle 1 to cycle 2 which proved invaluable in terms of continued quality delivery in cycle 2 which was inherently more rigid in terms of approach as work flows and delivery expectations had been established in the previous cycle. Returning Recycling Quality Officers were trained again alongside new recruits in cycle 2.

Lessons learnt: We strongly take the position that a comprehensive training programme for Recycling Quality Officers is essential for the quality delivery of the Contamination Hit Squad. Training needs to cover the full range of responsibilities that Recycling Quality Officers deliver, and ongoing support should be provided as Recycling Quality Officers undertake each activity for the first time. Work in different boroughs is highly nuanced and borough-specific training is indispensable before Recycling Quality Officers commence work – this should include all relevant members of the borough team (see section 5.2.2 below).

The design of the training programme reflected the capabilities of the high-calibre intake of Recycling Quality Officers. As noted in section 5.1.3 above, should any future Contamination Hit Squad involve less academic officers, then a redesigned training programme may be recommended – even more explicit in its instructions and less compact in nature, training in each activity as it is encountered.

5.2.2 Borough support during training

Challenge: Securing support from the borough teams for Recycling Quality Officer training – including the classroom training and on the ground training – despite this being listed as a requirement from the boroughs from the outset.

We invited a representative from the borough team to the relevant classroom training to introduce the recycling services in their borough and their approach to contamination. However, not all boroughs involved were able/willing to send a representative along to the cycle 1 training session, which was a missed opportunity to meet the Recycling Quality Officers, show their commitment to and interest in the project we were delivering on their and LWARB's behalf and answer any questions from the Recycling Quality Officers.

We also invited representatives from the borough team to attend different elements of the on the ground training to provide relevant support. Again, there was a lack of availability and/or involvement of the correct staff from some of the boroughs, and therefore we didn't always

have the relevant representative supporting the practice run of contamination monitoring or back office administration activities.

Resolution: We increased emphasis on the importance of a representative from the borough team attending the classroom training for cycle 2 and stressed their attendance would only be required for a short amount of time at the start of the training day. Unfortunately, one borough still failed to send a representative along to the classroom training.

With respect to borough support for the on the ground training, we brought this to the attention of the borough team and made sure to have the relevant people attend for the cycle 2 training, where before we had identified gaps in training.

Lessons learnt: Make support from the borough team at Recycling Quality Officer training a condition of participation in any Contamination Hit Squad resource, communicating exact requirements clearly. LWARB may need to actively ensure this, particularly if a contractor is delivering the project and/or the borough is not paying for this service. As a minimum, the following representatives should be involved at different points during on the ground training:

- Crew supervisor/operational manager that has relevant knowledge on acceptable levels of contamination and can accompany Recycling Quality Officers on the practice run of contamination monitoring and where possible introduce the Recycling Quality Officers to the crews involved.
- Borough and/or contractor project lead to introduce the Recycling Quality Officers to the relevant staff in the back office.
- Communications, outreach or similar manager/officer to support contamination communication procedures like feedback letters and resident engagement.
- Where applicable, data officer to support on access to crew contamination monitoring logs and other necessary data.
- IT officer to support set up of Recycling Quality Officers at the back office.

5.2.3 Recycling bins already emptied during practice run of contamination monitoring

Challenge: In one of the boroughs, when doing the practice run of contamination monitoring as part of the on the ground training, recycling bins had already been emptied on the selected round. This made it more difficult to benchmark acceptable levels of contamination as perceived by the borough, although we did get a decent idea of what was deemed as contaminated by the crew as those bins had been tagged and left unemptied by the crew. In this particular instance it didn't lead to any issues during monitoring.

Resolution: For cycle 2 training, the timings of the different training elements for that day were adjusted to make sure we could catch full recycling bins and get a better understanding of what residents were presenting and what was deemed contaminated or not.

Lessons learnt: Allow ample set up time to accommodate the borough team's preparation for the on-the-ground training day and be very clear to all borough officers about the objectives and requirements of the training. Don't assume that the borough's project lead will disseminate accordingly within the borough team and set up a direct line of communication with all borough officers involved.

5.3 Staff management

5.3.1 Guaranteeing continuous monitoring throughout the six week cycle

Challenge: Monitoring recycling bins for six consecutive weeks during each cycle to provide robust data for monitoring and evaluation purposes and fair escalation for all residents on the targeted collection rounds.

Resolution: Measures to support staff retention, particularly linking additional payment to the completion of all working days within a two week period (see section 5.1.3), helped to Recycling

Quality Officer absence. This was further assisted by the Project Manager's management style with clear communication about expectations and the importance of avoiding absence, and the value of the Recycling Quality Officers' efforts.

The Project Manager responded to any absence with a four point plan of action (in order of preference):

1. Draft in the reserve Recycling Quality Officer allocated to that borough
2. Arrange to cover the shift/s themselves where availability allows
3. Allow one Recycling Quality Officer to complete the round alone if feasible
4. Cancel the shift/s with the day/s concerned to be pushed into the contingency week

In total, six reserve Recycling Quality Officers were recruited and trained, of which five did at least one day cover. This was typically in response to planned absence, i.e. holiday or longer periods of absence due to illness, although on one occasion the Project Manager covered. In cases of unplanned absence or when cover wasn't available, one Recycling Quality Officer managed to cover the round on their own most of the time. This was feasible depending on the round size and support available from the borough, but we wouldn't suggest this as a long term, sustainable solution. Throughout the entire project, no monitoring days were lost due to absence.

Lessons learnt: A plan of action with multiple options is required to successfully manage planned and unplanned absence and ensure continuous monitoring through the cycle, but this should also be support by a management approach which helps prevent absence. We very much stand by our approach here.

When a reserve Recycling Quality Officer steps in to cover absence, a backlog in back office administration should be anticipated while whilst the reserve gets up to speed with the established work flow. However, we anticipate this would be less of an issue when there is less need for the collection of robust, comparable and consistent data to inform monitoring and evaluation as part of the pilot.

5.3.2 Excessively long working days

Challenge: Considering the full range of activities and tasks to adequately execute the contamination policy, ring-fencing the time spent to an average 7.5 hours working day proved to be challenging in some of the boroughs. Different boroughs provided different challenges in this regard and some of these will be discussed in more detail where applicable in the following sections.

Resolution: Firstly, the Project Manager closely monitored time spent for different tasks and activities with the support of detailed time-keeping from Recycling Quality Officers. This helped to identify where excessive time was spent so to focus efficiency measures accordingly. This always happened in close consultation with the Recycling Quality Officers given their better understanding of the on-the-ground situation.

Secondly, the Project Manager explored if the borough team could provide support on certain tasks to lighten the task load of the Recycling Quality Officers.

Thirdly, in agreement with the Recycling Quality Officers, they performed extra hours to complete all tasks. And finally, for one of the boroughs (Borough C), in cycle 2 we decided in agreement with LWARB to bring in extra resources in the form of a 0.4 FTE Recycling Quality Advisor to undertake household visits.

Lessons learnt: A good understanding of the task load in each borough is essential to help plan resources needed and this might differ from one borough to the next. This will lead to the need of some flexibility when it comes to Contamination Hit Squad staff assignment to different boroughs. Detailed preparation with the borough team is essential. This report will provide a good indication of time spent on different activities to help plan and identify any additional

resources that would be needed to bring in or to identify any tasks that would need the borough team's support. Please note that that increasing the number of Recycling Quality Officers monitoring a round/carrying out back office administration from two is unlikely to represent a viable solution to the need for additional resources, as monitoring a round is typically most efficient with a pair of Officers. Back office capacity to house even two Officers was sometimes strained and having multiple Officers accessing and manipulating data simultaneously can be problematic.

5.4 Contamination monitoring

5.4.1 Selection of collection rounds and working alongside multiple collection crews

Challenge: A different approach was taken by the boroughs when it came to selecting the targeted rounds for contamination monitoring. Borough A and Borough B decided to assign the Contamination Hit Squad to one (generally more compliant) crew's weekly round, whereas in Borough C and Borough D the selection was based on contamination issues experienced in certain areas, selecting daily rounds that were served by different crews. Where multiple crews were involved in the pilot in particular, the crews' understanding of and compliance with the work done by the Recycling Quality Officers added an additional challenge, which resulted in different other challenges as will be outlined in more detail in the following sections.

Resolution: At the start of each cycle, during the initiation meeting and any follow-up, we clearly communicated with the boroughs as to what the expectations of the collection crews were as part of the project and any changes were always discussed with the boroughs, with support of LWARB where issues arose, we worked with the borough project lead to resolve as soon as possible, although this didn't always yield the desired results.

Lessons learnt: We followed LWARB and the borough's approach in the selection of rounds and agree that in terms of the biggest impact, especially for the one off intervention as part of the pilot, selection of rounds should be based on known contamination issues in the borough. When, however, better control of the project outcomes and smoother project management are desirable, the more straightforward approach would be to monitor one crew's weekly round for each cycle of Contamination Hit Squad support. If this is not a feasible approach, then we recommend firstly that a collection manager and/or supervisor are included in the borough team from the start; this is in order to increase involvement of the operational team as this is crucial to successful delivery. Secondly, where possible, a dedicated 'toolbox' session with the crews and their supervisors led by the Contamination Hit Squad service provider to increase awareness and outline procedures.

5.4.2 Staying ahead of the crew without slowing them down

Challenge: We anticipated that one particular challenge of the project would be keeping ahead of the recycling crew to monitor bins. Some residents put their bin out for collection in advance of the time collections start, while some residents put their bin out just before the vehicle passes. As such, there is a short window of time just before collection to monitor if the aim is maximising the number of set out bins monitored. However, alongside this sits the need to monitor without slowing collection crews down to an unreasonable extent, and the risk of streets being missed from monitoring if recycling bins are emptied before the Recycling Quality Officers arrive.

Resolution: In order to keep ahead of the collection crew and avoid slowing down the pace of collection unreasonably, we requested the following from each borough for the five rounds in question:

- Rounds which are a contiguous geographical area, negotiable on foot
- A round map highlighting the streets served
- A list of streets served in typical route order including typical lift times and break arrangements
- Commitment from the collection crew drivers to follow the route order as far as practically possible, communicate with the Recycling Quality Officers about any

necessary deviation, and hang back where required allowing the Recycling Quality Officers to work in front of the crew. Contact numbers were also shared between Recycling Quality Officers and supervisors and/or crew drivers.

In general, these measure were successful in mitigating the challenge of staying ahead of the crew without slowing them down. However, on some occasions, some streets were missed, especially in the first week of each cycle when the Recycling Quality Officers were still familiarising with the street collection order for each round or where a crew deviated from the typical route order without either properly alerting the Recycling Quality Officers of the change in route or the Recycling Quality Officers not having the opportunity to change their route in time. Sometimes streets were also missed because inadequate resources like maps and street lists had been provided by the borough team.

Where maps turned out to be inadequate, this was reported back to the borough team and updated maps and/or a sit-down with one of the crew drivers/supervisors/managers was arranged to make sure the Recycling Quality Officers had the correct round street order.

Where despite the above measures streets were missed because bins had been emptied ahead of monitoring, this was always reported back to the Project Manager and a record was kept of streets missed for each day. An overview of these streets is provided in appendix 7.1.

Lessons learnt: We very much stand by our approach above in order to keep ahead of the crew and avoid slowing them down. Building a good rapport and having a way of communicating with the crew is essential to avoid missed streets and this initiative sits very much with the Recycling Quality Officers, under instruction from the Project Manager. Despite the best efforts, due to unforeseen circumstances, streets might still be missed. This needs to be monitored to identify if this is a recurring issue and if so, the underlying reasons. It is strongly advised to keep a detailed record of streets missed for escalation purposes.

5.4.3 Borough A: keeping pace with the crew's 'puller'

Challenge: In cycle 1 in Borough A, the collection crew consisted of one driver and three loaders. Here, the pace of collection was considerably faster and the size of the rounds was bigger. As such, the Recycling Quality Officers worked very closely with the third loader (the 'puller') who went ahead of the rest of the crew to pull out the wheeled bins to facilitate tipping. Beneficially, the puller guided the Recycling Quality Officers through the round, so no streets were missed and he point out any contamination he spotted. The challenge however was keeping pace with the puller (as he would sometimes run) whilst checking for and recording contamination. In addition, sometimes the puller would dispute and even overturn the Recycling Quality Officers' decisions.

Resolution: Recycling Quality Officers were instructed to keep pace with the puller and where this was not possible to at least stay ahead of the crew, although they would be following swiftly. Some diplomacy from the Recycling Quality Officers' side was also needed to keep the puller's cooperation whilst still reporting all contaminated bins. In cycle 2, the crew had changed their approach, no longer having a puller in the team, and the Recycling Quality Officers managed to stay ahead of the crew without issues and by keeping a good line of communication.

Lessons learnt: The situation on the ground can be very different in different boroughs based on the way the crew tackles their rounds and flexibility will be required from the Contamination Hit Squad to adapt to this as crews substantially changing their approach to accommodate the Contamination Hit Squad is unlikely to be forthcoming.

5.4.4 'Hidden' contamination and bins not presented for collection

Challenge: A continuing challenge throughout the project was a discrepancy between the number of bins tagged as contaminated by the Recycling Quality Officers and the number of bins left unemptied by the collection crew. Discrepancies were positive or negative, depending on the cause or combination of causes. Causes of a greater number of bins left unemptied than

tagged by the Recycling Quality Officers were:

- The bin was not yet presented at the time Recycling Quality Officers were at the property to monitor
- The bin was not accessible because it was part of an assisted collection scheme
- Recycling Quality Officers had missed any 'hidden' contamination which was detected by the crew through the weight of the bin or contents shuffling when moving it or by rummaging through the contents (as part of health and safety procedures, Recycling Quality Officers were instructed not to touch the waste)

Resolution: As soon as we became aware of this issue (Borough B, cycle 1, week 2), addresses recorded by the crews were cross-referenced against addresses recorded by the Recycling Quality Officers where crew logs were available. As a result one complete record combining both sets of data was created to inform escalation through the contamination policy.

Going forward, where boroughs allowed it, health and safety procedures were relaxed to allow Recycling Quality Officers to enter the front outside space of a property to gain access to the bin to reduce the number of bins left not monitored by Recycling Quality Officers.

Lessons learnt: Close communication with the borough team in set up but also once the Contamination Hit Squad is on the ground is vital for a consistent execution of the contamination policy. This includes instructions given to crews regarding whether a bin is or is not considered as presented and how assisted collections are managed, and developing appropriate monitoring procedures (in line with health and safety procedures) in order to minimise bins missed for contamination monitoring. Even where the number of missed bins is reduced by entering the front outside space of a property, hidden contamination will still remain an issue to a greater or lesser extent. How and in what format the Recycling Quality Officers can gain access to the crew's contamination logs should be established during set up with each borough.

5.4.5 Acceptable levels of contamination

Challenge: Continuing on the challenge of a discrepancy between the number of bins tagged as contaminated by the Recycling Quality Officers and the number of bins left unemptied by the collection crew, a further cause of inconsistency was differences in opinion about what was viewed as acceptable contamination or not. Most of the times this led to Recycling Quality Officers' decisions being overturned by crews, with crews finding the Recycling Quality Officers' decisions too strict. Less often, crews would tag additional bins as contaminated. We learned that this could mainly be attributed to certain types of non-target materials that the crews saw as not acceptable, no matter how prevalent they were. Examples were tissues in Borough B, following a targeted campaign to keep tissues out of recycling, and polystyrene in Borough A because it would 'stick' to the inside of the RCV.

Resolution: Establishing acceptable levels of contamination in each borough was part of the set up with the borough team and a feature of the practice run of monitoring as part of the Recycling Quality Officer training. In most cases, especially where crews were overturning Recycling Quality Officers' decisions, we pursued three interventions:

1. Firstly, a re-calibration of the Recycling Quality Officers' levels was completed in line with what crews would reject. We however found that even after such re-calibration, often the tolerance for contamination of crews was too high to warrant any behaviour change from residents. In these cases:
2. The crews were reminded by their supervisors of acceptable levels of contamination. Where issues persisted:
3. Recycling Quality Officers ended up going right in front of crews to show exactly what and why they were tagging.

In Borough B, intervention 1 was implemented to align better with crews, whereas in Borough D, all three interventions had to be implemented. In Borough D, LWARB planned to run a dedicated 'toolbox' session to talk to the crews about their experiences with the project to identify any

issues they might experience between cycles 1 and 2. Unfortunately, due to a clash with other crew training, this session did not take place.

Lessons learnt: This challenge in particular highlights how important it is to have the complete understanding and cooperation of the crews involved in the project. We learned that more often than not, the crews had ulterior motives for overruling Recycling Quality Officers' decisions. In Borough B for example, we found that we had to limit the number of bins tagged, because the unemptied recycling bins were then emptied by the refuse crew in the afternoon and if we tagged too many bins they would have too many lifts to do on their round. In both Borough A and Borough D, we found that crews sometimes feared retaliation from residents and in some cases preferred to prioritise the relationship with residents over recycling quality.

5.4.6 Borough D: Crews not logging all tags left by Recycling Quality Officers

Challenge: In Borough D, there was a working data solution in place which automatically escalated addresses through the contamination policy based on in-cab records from the crews. As such, in cycle 1, the Recycling Quality Officers undertook contamination monitoring while the borough team was responsible for escalating contaminating addresses through the contamination policy. The Recycling Quality Officers cross-referenced addresses they had recorded as contaminating with the crew's records and passed missing logs to the borough team for escalation. However, the Borough D ECHO team was unable to upload the Recycling Quality Officers' logs to the borough's data solution retrospectively and had to do this in a less automated way which took a disproportionate amount of time in cycle 1.

Consequently, in cycle 2 it was agreed that only addresses logged by the crews would be escalated through the contamination policy, with no attempt to integrate addresses recorded by the Recycling Quality Officers. Recycling Quality Officers continued to monitor, tag bins and record addresses as normal, but serving only to inform crew's performance on recording. Very soon however it became apparent that crew's logs were not matching up with Recycling Quality Officers' logs (as shown in Table 3 with anonymised crew names), with a total discrepancy over the 16 complete days of monitoring data of 56.6%.

Table 3 Comparison of Recycling Quality Officer and crew contamination logs in Borough D cycle 2

WEEK	DAY	DATE	CREW	RQO NUMBER OF LOGS	CREW NUMBER OF LOGS	DISCREPANCY	PROPORTION OF NUMBER OF LOGS CREW VS RQO
1	Mon	24/02/2020	A	195	74	121	37.9%
1	Tue	25/02/2020	B	207	131	76	63.3%
1	Wed	26/02/2020	C	135	9	126	6.7%
1	Thu	27/02/2020	D	234	21	213	9.0%
1	Fri	28/02/2020	E	152	137	15	90.1%
2	Mon	02/03/2020	A	109	38	71	34.9%
2	Tue	03/03/2020	B	89	41	48	46.1%
2	Wed	04/03/2020	C	119	61	58	51.3%
2	Thu	05/03/2020	D	190	154	36	81.1%
2	Fri	06/03/2020	E	122	61	61	50.0%
3	Mon	09/03/2020	A	108	46	62	42.6%
3	Tue	10/03/2020	B	128	104	24	81.3%
3	Wed	11/03/2020	C	142	76	66	53.5%
3	Thu	12/03/2020	D	139	119	20	85.6%
3	Fri	13/03/2020	E	143	168	-25	117.5%
4	Mon	16/03/2020	A	89	63	26	70.8%
4	Tues	1703/2020	B	125	*	*	*
TOTAL (EXCL TUESDAY WEEK 4)				2,301	1,303	998	56.6%

* Crew logs were received one day in arrears and therefore were not received when the project ended abruptly due to coronavirus.

Resolution: A range of different reasons for the discrepancy were observed by Recycling Quality Officers ('observed') and/or given by Borough D ('given). Below we give an overview with steps taken to resolve:

- Observed and given: residents removing contamination and tags or only tags in the time window between monitoring and collection. Efforts were made by the Recycling Quality Officers to reduce the time window between monitoring and collection to reduce the risk of residents removing contamination and/or tags. However, staying right ahead of the crew to have a minimal time window was not feasible as it would lead to increased time spent on monitoring, not leaving enough time for Recycling Quality Officers to deliver on other activities.
- Observed and given: tags blown off by wind in time window between monitoring and collection. This was an issue already observed during cycle 1 after which Recycling Quality Officers received updated instructions as to how to more securely attach the tags. These instruction were reiterated for cycle 2. This seemed to reduce numbers being lost to wind and rain.
- Observed: crew member decontaminating bin and subsequently emptying bin, but not removing contamination tag. This was reported back to Borough D to give opportunity to update crew with instructions that they should then also remove the tag to avoid confusion with residents. During cycle 1 this could have potentially led to incorrect escalation, although we have no record of this as crews did not report back where they had decontaminated.
- Acceptable levels of contamination: Observed: crews overturning Recycling Quality

Officers' decisions. Given: Recycling Quality Officers too stringent and tagging bins with only low contamination. In line with section 5.4.5 above, Recycling Quality Officers were asked to tag only where one of the 'red flags' were found or where the contamination was very prevalent. However, analysis showed that the Recycling Quality Officers were indeed mainly tagging bins with red flags, and therefore the discrepancy was more likely stemming from the crew's recording.

- Given: hidden contamination and bins not presented for collection of time of monitoring (see section 5.4.4 above). Likely to only account for a very small number of extra bins recorded by the crew.
- Given: crews not systematically recording contamination incidents on in-cab technology, with two crews confirming they were only recording any additional incidents of contamination they found. Crews were reminded of their duties in regards to contamination monitoring. Where initial instructions were misunderstood, crews were reminded to also record tags left by the Recycling Quality Officers.

Despite best efforts from the Project Manager and the borough team, a discrepancy continued to persist until when the project had to be ended abruptly due to coronavirus, not giving us the chance to get to the bottom of the issue. In the last week before the monitoring ended, the Recycling Quality Officers were asked to monitor closely ahead of the crews to help crews understand what they were doing and to keep any discrepancies due to external factors to a minimum (see section 5.4.7 below for related challenges).

Lessons learnt: In retrospect, we should not have agreed to change the approach in cycle 2, but rather try and support the borough team with the additional work load following the approach taken in cycle 1. We don't think any of the parties concerned had anticipated such large discrepancies in records. However, this does evidence the rationale for lifting responsibility for contamination monitoring from crews as part of the Contamination Hit Squad pilot.

5.4.7 Borough D: Monitoring alongside the crews

Challenge: As documented in section 5.4.6 above, by week 3 of cycle 2 the Recycling Quality Officers were asked to monitor right ahead of certain crews in order to minimise discrepancies between crew and Recycling Quality Officer contamination logs. This considerably increased the time spent monitoring as the crew's pace was lower than that of the Recycling Quality Officers. This had a knock-on effect on working day length as the Recycling Quality Officers were still asked to perform on the other back office tasks, leading to unacceptably long days.

In relation to this, the Borough D borough team did not consult with the Keep Britain Tidy Project Manager or LWARB when instructing the Recycling Quality Officers to start monitoring ahead of the crew which was a significant change of approach with notable consequences. This put the Recycling Quality Officers in an awkward position and forced the Project Manager to play catch up to review instructions in line with resources available.

Resolution: We did not resolve the issue of excessively long working days following the change in monitoring approach, because of the abrupt ending of the work due to coronavirus. At this point the Project Manager was drafting a response to Borough D to tackle the issue which was going to suggest either reverting back to the original monitoring approach or asking the borough team to support on other activities in the back office to alleviate pressure on the Recycling Quality Officers.

The response was also going to stress that any proposed change in working approach for the Recycling Quality Officers has to be discussed with the Project Manager first. The Recycling Quality Officers were not in an informed-enough position to be able to set their own work load.

Lessons learnt: This highlights points earlier made in section 5.3.2 about balancing the work load of Recycling Quality Officers and to have clear arrangements in place about task load in each borough. Where unforeseen circumstances push Recycling Quality Officers into overtime, this has to be carefully monitored and solutions to discussed with the client and borough to arrive at a workable solution.

Given that Recycling Quality Officers work in much closer proximity to the borough team than their own management, they might sometimes find themselves in compromising situations, causing uncertainty whom to take daily management instructions from. The management structure of the Recycling Quality Officers should be made clear to the boroughs in project set up, and to the officers themselves during training. Close monitoring of and communication with Recycling Quality Officers is essential to support them in their position and to give them the opportunity to discuss any issues or conflicting instructions.

5.4.8 Residents removing tags in time window between monitoring and collections

Challenge: Reports were made by Recycling Quality Officers and by crews that residents had been seen removing tags in the time window between monitoring and collection. There could be several reasons to explain why residents were removing the tags:

- Confusion: unsure of its purpose.
- By removing the tag, the crew would still empty the bin and the residents wouldn't be left with a full bin they needed to decontaminate themselves ahead of the next collection.
- Resident decontaminated the bin before the crew arrived and subsequently removed the tag.
- Shame associated with having a tag hanging from the bin. In one instance, Recycling Quality Officers reported a resident following behind them and removing tags from the bins as soon as they went ahead.

Resolution: Where Recycling Quality Officers were confronted with tag removal by residents, they politely reminded them of the purpose of the tags and the consequences of contamination in the bin. In Borough A, removing the tag also could potentially lead to the bin not subsequently being emptied by a designated 'contamination crew'. Removing the tag also would not prevent the property from being escalated to the next stage in the contamination policy and it removes an important first point of communication. Where possible and applicable, we also tried to narrow the time window between contamination monitoring and collections.

Lessons learnt: To help with confusion and tag removal in general, wider communications campaigns in areas targeted by the Contamination Hit Squad may help to raise awareness and highlight expected behaviour. When looking at narrowing the time window between monitoring and collections, it should be taken into account that this will significantly increase the time spent on monitoring as Recycling Quality Officers need to match the crew's working pace, leaving less time to spent on other activities.

5.4.9 Abusive residents

Challenge: As anticipated, during the contamination monitoring and also during household visits, Recycling Quality Officers were confronted by residents about the monitoring of their bins and any communication they had received as a consequence. The vast majority of interactions were positive or neutral, where residents wanted to understand why Recycling Quality Officers were looking inside their bins and were often open to a conversation about any contamination found. Some residents however were less understanding and this would sometimes lead to verbal abuse towards Recycling Quality Officers and by extension the collection crew. In appendix 7.2, we have documented two incidents of verbal abuse as escalated by Recycling Quality Officers. We believe these best demonstrate the level of abuse to anticipate, albeit very rarely. In another reported case, residents prevented Recycling Quality Officers from checking their bin for contamination.

Resolution: The classroom training for Recycling Quality Officers covered proper conduct, conflict management and how to deal with certain situations. Training also included insights into recycling behaviour to prime Recycling Quality Officers with a range of different perspectives on recycling and how to understand different barriers people might experience. This was all to help them maximise engagement outcomes without causing conflict and to defuse and manage conflict where it had arisen. During contamination monitoring, the Recycling Quality Officers

were instructed not to spend too much time with residents as they had to prioritise completing the round. When performing household visits, more time was spend on trying to resolve any issues the resident was experiencing.

Where conflict did arise, this was reported to the relevant borough team officer and a decision was made based on each case as to continue escalating the property through the contamination policy or not.

Lessons learnt: As the Recycling Quality Officers are frontline workers are likely to have to deal with conflict and abusive residents, they need training in engagement principle, techniques and conflict management to help protect their safety and wellbeing, and help avoid any discontent and ultimately complaints from residents to their borough. This further supports our position set out in section 5.2.1 that a comprehensive training programme for Recycling Quality Officers is essential for the quality delivery of the Contamination Hit Squad.

5.4.10 Time spent on travel between collection round and back office

Challenge: Whilst travelling during the working day was inevitable for Recycling Quality Officers, as they travelled from the end of the collection round to the borough office, ideally this time had to be kept to a minimum to allow more time to spend on other activities.

Resolution: Boroughs were asked if they could support with travel, especially from the collection round to the back office. While Borough B and Borough D did not have capacity to support with travel, Borough C was able to drop the Recycling Quality Officers at the start of the round each morning and take them back to the back office once monitoring was finished. Borough A was able to drop the Recycling Quality Officers at the start of the round each morning but had limited capacity to bring them back to the back office daily. The Recycling Quality Officers used public transport or cycled for journeys where no support was available.

Lessons learnt: Travel time is not an insignificant proportion of Recycling Quality Officer delivery time, not just to and from the collection round but also when doing household visits. This should be factored in to planning workloads alongside the most appropriate forms of transport, recognising that borough support with travel may not always be available. With low environmental impact, both public transport and independent transport means (bicycle, e-bike) should considered in terms of time-cost analysis, with the added consideration of Uber/similar companies.

5.5 Back office administration

5.5.1 Access to IT at borough's back office

Challenge: A series of IT (access) issues were experienced in the first days Recycling Quality Officers started working in the borough's back office. Issues ranged from setting up user profiles last minute because names of Recycling Quality Officers were not known until the week before work started, not being able to access the correct software or hardware (e.g. printers) to not having enough laptops/desktops available for the Recycling Quality Officers to work on. Resolving these issues took valuable time at the start of each cycle, delaying data handling and contamination policy escalation and causing Recycling Quality Officers to spend extra hours to work away at any backlog build-up. In Borough C, persistent IT issues in cycle 2 forced the Recycling Quality Officers to give amnesty to certain properties because they hadn't received the correct communication in time.

Resolution: We had anticipated that working efficiently as a contractor within borough IT systems would be challenging, and that systems were unlikely to be up and running smoothly by the start of the project without a strong push from us. Indeed, the on the ground training with the practice run of back office administration was partly designed to flush out these IT problems and give some opportunity to resolve them before back office administration commenced fully. However, only Borough B managed to have the IT system for the Recycling Quality Officers up and running for the on the ground training. This was despite the IT set up in the back office being listed as a requirement from the boroughs from the outset, and also discussed at the

initiation meeting with each borough. The Project Manager made sure to inform the borough teams as soon as possible on new starters' names.

Where issues arose, the borough teams endeavoured to get these sorted as soon as possible. In some cases, the Project Manager had to remotely conduct some of the back office activities whilst sending the Recycling Quality Officers home. Exceptionally Recycling Quality Officers ended up working from home using personal IT equipment. The start of the cycle 2 saw less IT issues, following knowledge and experience gained from cycle 1. In one borough, we ended up sourcing a laptop to allow Recycling Quality Officers to be able to carry out the back office activities.

Lessons learnt: Make adequate and timely IT access a condition of participation in any Contamination Hit Squad resource, communicating exact requirements clearly. Investigations should be made with the IT department ahead of any decisions. As discussed in section 5.2.2, the on the ground training for Recycling Quality Officers should include the involvement of a borough IT officer to support set up of the Recycling Quality Officers at the back office, and where applicable, the data officer to support on access to crew contamination monitoring logs and other necessary data.

From our experience as part of the pilot, it might advised for Recycling Quality Officers to be supplied with their own IT equipment, with access to the borough's network and data where possible or otherwise for a dedicated borough officer to be responsible for forwarding the necessary data. This decision will of course also be influenced by the decision which data solution to use (see section 5.5.2 below).

5.5.2 Available data solution for recording and escalation of contamination logs

Challenge: For the purpose of the pilot, Keep Britain Tidy developed a tailored data solution (in MS Excel) to store all contamination logs made by the Recycling Quality Officers and execute the contamination policy by escalating properties accordingly. Some boroughs however already had their own data solution in place to inform contamination policy escalation. The challenge was in identifying which solution was best fit for purpose, with some of the borough's solutions being much better developed and robust and also interconnected with in-cab technology and other databases. Other boroughs' solutions were less efficient or applicable or none existent. The better integrated the data solution is, the more efficiently Recycling Quality Officers can perform the back office activities.

Resolution: At the initiation meeting with each borough we established if they currently had an active contamination policy escalation procedure and what data solution they had in place to execute it. Where a well-developed system existed, we adapted the Recycling Quality Officers' data collection and handling processes to fit into the existing system. This was the case in Borough D, although it later emerged there were issues further down the line when trying to integrate Recycling Quality Officer logs with the existing system (see section 5.5.6 below), because we couldn't access the in-cab technology used by crews to directly report into the system. In Borough C and Borough B, no solution existed and the Recycling Quality Officers used the Keep Britain Tidy solution. In Borough A, the borough team had an active escalation database in use, but it was not fit for a large influx of contamination logs that would require too much time to escalate properties. Therefore, Keep Britain Tidy's solution was also used in Borough A.

Lessons learnt: Where possible, we strongly recommend using an existing data solution, especially where this is linked to in-cab technology used by the crew for reporting. Ideally, Recycling Quality Officers would gain direct access to the existing solution and record contaminating addresses as if they were a crew member.

Using Keep Britain Tidy's solution had the advantage of giving full control over the data management and escalation and allowed for tailoring to the situation in each borough. However, using this solution brought extra challenges in terms of crew log integration (see section 5.5.3 below). Furthermore, should any future Contamination Hit Squad develop its own solution in line

with Keep Britain Tidy's, we strongly recommend resources be put towards developing a robust, yet adaptable solution. Keep Britain Tidy's solution was very much developed for the purpose of the pilot and performed as expected, allowing the Recycling Quality Officers to escalate addresses through the right stages to inform any follow-up activity. However, it will lack in processing power and user-friendliness if used for longer running interventions.

5.5.3 Data integration of borough contamination logs with Keep Britain Tidy's data solution

Challenge: Where Keep Britain Tidy's data solution was used, we needed to be able to transfer in additional data to the list of contaminating addresses record by the Recycling Quality Officers:

- Current contaminating addresses missed by the Recycling Quality Officers but recorded by the crews (see section 5.4.4)
- Historical contamination incidents recorded by the crews between cycle 1 and cycle 2

This presented a challenge because of the format in which these additional records were presented, not always making it straightforward to integrate with and import to Keep Britain Tidy's data solution. Integrating historical logs and cross-referencing and integrating current unique crew logs, proved to be a time-consuming part of back office data management.

Resolution: To a certain extent and very much dependent on how the property addresses were formatted in the logs that needed to be imported, we succeeded in created a module that would be able to flag most records that were already part of the Recycling Quality Officers' logs and those that weren't. Any logs missing from the Recycling Quality Officer logs were then presented in a compatible format to be imported to the database for escalation. Some records still required manual cross-referencing with the Recycling Quality Officers' logs and manual editing before they could be imported.

Lessons learnt: Firstly, as stressed before, this can theoretically be avoided where the Recycling Quality Officers can access and directly report onto an existing reporting software. Where this is not available, it is crucial to get an example data export of crew logs ahead of the start of the work. The example export will inform development and adaptation of the log cross-referencing module. In most cases, the borough will also be able to make changes to the format in which the logs are exported, so always ask for changes to be made to the export format where necessary.

5.5.4 Borough A: interim contamination log escalation

Challenge: Escalation of properties in the interim period between cycle 1 and cycle 2 was based on records taken by Recycling Quality Officers in cycle 1. However, Borough A's team had based any interim escalation on incomplete records, mainly missing the records of the first instance of contamination at a property. When interim logs were then integrated to Keep Britain Tidy's database, for properties where the borough team had no record of the first tag, those properties found themselves in a more escalated stage than what they had been communicated. The Recycling Quality Officers had to prevent around 50 properties reaching bin removal stage without having received the proper communications.

Resolution: Properties where the initial log (first tag) was missed and that received another tag in cycle 2, were de-escalated to the point where they would have received all the proper communications ahead of bin removal. In practice this meant that they would get another chance of getting it right before their bins would be removed. The Recycling Quality Officers made sure to check the history on each property to make sure they were being properly escalated following the contamination policy.

Lessons learnt: A misunderstanding from Keep Britain Tidy's team as to what records Borough A had access to at the end of cycle 1 led to incomplete records being shared with the borough team. During cycle 2, we made sure that all the records, including the first tags, were shared with Borough A to make sure they had a complete record to continue after cycle 2. It is important to make sure that when the Contamination Hit Squad ends its work in a borough, the borough team has access to the necessary records in a format they can use.

5.5.5 Access to or data integration with existing data solutions

Challenge: Setting up (temporary) access to the relevant IT hardware and software to allow direct input into existing data solutions proved very difficult for the short term pilot. Alternatively, no process was identified by the parties involved to upload contamination logs taken by the Recycling Quality Officers to the existing borough's data solution.

Resolution: No resolution could be found where this was the case because company policies would not allow for temporary 'guest' or likewise accounts to be set up to tap into existing solutions. In Borough C, where their contractor Veolia uses the ECHO system, the issue was circumvented by importing crew logs into Keep Britain Tidy's data solution. In Borough D, where their contractor Veolia also uses the ECHO system, initially any additional contamination logs taken by the Recycling Quality Officers that didn't appear on the crew's contamination log sheets were passed on to the borough team for escalation. This approach brought additional challenges (see section 5.5.6 below) and in cycle 2 it was decided to only rely on the crew's contamination logs, under the instructions that the crew would log all bins tagged as contaminated by the Recycling Quality Officers.

Lessons learnt: Both the solutions in Borough C and Borough D brought additional challenges that sometimes felt very cumbersome and unnecessary as their existing data solution was much more powerful to process the contamination logs appropriately and was completely integrated with all other systems used. Solving the access issue and working together with the partner boroughs to integrate the contamination policy with their existing data solutions is very much what should be aimed for. This may require working with the contractor/technology company staff at higher levels than borough operations.

5.5.6 Borough D: lack of data integration with existing data solution

Challenge: In Borough D cycle 1, their ECHO team was unable to cope with extra workload caused by the additional logs from the Recycling Quality Officers mainly because of data incompatibility. The ECHO team was unable to upload the Recycling Quality Officers' logs to the borough's data solution to facilitate escalation and had to do this in a less automated way which was more time consuming.

Resolution: Given that Borough D had a working data solution in place automatically escalating properties following the contamination policy based on in-cab records from the crews, it was decided in cycle 2 to completely rely on crew logs. This brought with it its own set of challenges – see section 5.5.5 above. In agreement with all parties it was decided not to migrate to Keep Britain Tidy's data solution because this would cause capacity issues for the Recycling Quality Officers.

Lessons learnt: As discussed in section 5.5.2 above, where a data solution exists, we strongly recommend that Recycling Quality Officers are granted access to enable contamination incidents to be recorded directly onto the existing system and thus avoiding time-consuming exercises to cross-reference and integrate records across different systems. For the pilot, in retrospect, if we would have known of the issues with crew's recording, it might have been better to try and support Borough D's team with the additional work load to better deliver on the contamination policy.

5.5.7 Escalation of addresses at properties converted into flats/HMOs

Challenge: The escalation of properties that formed part of an HMO or a building converted into flats was different in every borough depending on the borough's policies. Sometimes it only became apparent after a second round of monitoring or after a visit to the property that there were multiple dwellings and bins were shared.

Resolution: In agreement with each borough's policy, the Recycling Quality Officers were briefed on how to correctly escalate these type of properties where they were identified. If it only retrospectively came to light that a property had bins shared between different dwellings, the Recycling Quality Officers accounted for this appropriately in the escalation following the

borough's policy.

Lessons learnt: Make sure this matter a clear part of the initiation meeting with each borough so the applicable procedures can be put in place to account for HMOs and converted flats. The identification of such properties may be assisted by referring to the LLPG and list of licensed HMOs where applicable, but such cross-checking also has time implications for Recycling Quality Officers.

5.5.8 Borough C: bin removal protocol

Challenge: Once the first properties reached bin removal stage in Borough C, in week 4 of cycle 1, the borough team flagged that they would like to scrutinise the list of properties where bins were to be removed and to cross-reference with the enforcement team. The borough team hadn't raised this request during set up of the project and no procedures were put in place ahead of start of work to accommodate it. The first challenge presented here was to urgently set up a procedure to allow this to happen across all the teams involved. The second challenge was then to get a timely response from the borough team. This in turn created a backlog in bin removals.

Resolution: First of all we worked swiftly to set up a procedure to allow the borough team to have access to the list of properties down for bin removal. Then it took close follow up from the Project Manager and the Recycling Quality Officers to get the required approvals for removal whilst the list of properties grew daily. Because it took longer than a week to get a response from the involved teams, the collection rounds were monitored again by the time bins would otherwise have been removed, essentially giving residents another chance to decontaminate. Where this happened, the Recycling Quality Officers granted an amnesty to those properties with bin removal on hold until they contaminated again. This created extra administrative work to deal with these exceptions. A more robust procedure with reassurances from the borough team for swift replies was put in place ahead of cycle 2. This included providing the borough team with a list of stage 3 addresses with a view that these could potentially become a stage 4 addresses for bin removal by the time they were was approved.

Lessons learnt: The initiation meeting with the borough team ahead of the start of each should allow for close scrutiny of the contamination policy and the tasks associated with each element. It is advised that participating boroughs have a set contamination policy already agreed before involvement with the Contamination Hit Squad.

5.6 Household visits

5.6.1 Planning and logistics of household visits

Challenge: The numbers of stage 3 addresses (three incidents of contamination) eligible for a household visit were not very high with addresses often geographically spread out. It was therefore a challenge to maximise the efficiency of the number of household visits conducted per hour.

Resolution: Different approaches were explored with maximum efficiency and the health and safety of the Recycling Quality Officers in mind. Ultimately two different approaches were adopted, depending on time available and Recycling Quality Officers' preferences:

1. Borough A and Borough B: visits were carried out the day after monitoring, once all contamination logs were processed. In Borough A, impact on travel time was reduced by only one of two Recycling Quality Officers doing visits each day (rather than as a team, as in Borough B). The Recycling Quality Officers in Borough A were comfortable to perform visits individually and appropriate lone working procedures were put in place.
2. Borough D (cycle 2) and Borough C: visits to properties from different collection rounds were bundled to increase number of visits conducted on one day and so reduce travel time. This meant that the Recycling Quality Officers were out for visits two to three days each week rather than every day, but sometimes resulting in slightly longer working days.

An alternative approach that was briefly considered involved limited data manipulation on the handheld devices used by the Recycling Quality Officers at the end of the round so they didn't need to travel back to the office after monitoring. This was however abandoned as it would have been much harder to guarantee quality and avoid mistakes being made. Keep Britain Tidy health and safety policies and Recycling Quality Officer personal preferences also directed the visits approach, with not all Recycling Quality Officers feeling comfortable to perform visits alone and Keep Britain Tidy not forcing to do so if they weren't. Another consideration taken when deciding on the approach in Borough B was hours performed. As the Recycling Quality Officers were performing much below the anticipated hours, we decided to allow daily visits, rather than the more efficient bundled approach to give them a chance to top up their hours and decrease the chances of staff leaving the project early.

Lessons learnt: Consider the task load in the borough before selecting the most appropriate approach to conducting household visits and maintain flexibility to maximise efficiency. Household visits may not be needed if the resident has already been in touch with the call centre, but this requires a formal system of passing of information between call centre staff and the Recycling Quality Officers.

5.6.2 Borough C: Misunderstanding about household visits as part of activities

Challenge: In Borough C cycle 1, the Recycling Quality Officers worked longer than average days because of huge pressure on the available time. This pressure was caused by the full suite of back office administration (handling Recycling Quality Officers' logs and crew logs, escalation and letters) carried out in combination with a high average number of contamination incidents recorded and less-than-ideal IT systems at the back office. Due to this pressure on available resources, we initially decided not to do any household visits. The borough team however was under the impression that visits were a guaranteed part of the work to be delivered by Keep Britain Tidy and an upcoming attempt to visit the resident was also stated in the stage 3 letter. In response, we prioritised the delivery of household visits while we attempted to rectify the situation with the borough team with support from LWARB. Prioritising visits led to a backlog on the back office activities and more pressure on the Recycling Quality Officers' available hours.

Resolution: As soon as it became clear that the borough team expected the Recycling Quality Officers to perform visits and this was what the wording in the letters said, we clarified that visits had always been an optional, 'when-the-time-is-available' part of the remit of the Recycling Quality Officers. We also sent progress reports to the borough team to show that the number of contamination incidents and the suite of activities carried out was different to other boroughs where visits were being conducted. LWARB supported us in this matter by confirming this.

Despite the feedback letters having been reviewed by all parties, the wording had not been adapted to reflect that there was no guarantee that residents would receive a visit. As soon as this came to light, we initiated efforts to have the wording changed as a priority, to avoid any confusion and disappointment from residents. Our rationale for prioritising visits was to offer help to residents who had been told they would receive a visit before potentially losing their recycling bin, and to avoid the borough's authority being undermined by not delivering on what residents had been told. Once the wording on the letters had been updated, no more visits were carried out due to lack of available resources. For cycle 2 it was decided to siphon unused resources from Borough B into providing an additional role, the Recycling Quality Advisor, who would solely perform on household visits for two days a week to make sure we could deliver visits as part of our intervention.

Lessons learnt: Clear communication, proper support documentation and a well-structured, focused initiation meeting are centrally important to come to good agreement on the deliverables and to help avoid misunderstandings down the line. It also highlights the importance of having thorough review procedures in place for any public communications that go out as part of the contamination policy.

5.7 Stakeholder management

5.7.1 Lack of involvement from stakeholders in general and of specific staff/teams

Challenge: In general, stakeholders in the pilot project were very supportive and recognised the importance of the activities carried out by the Contamination Hit Squad. Unfortunately, this didn't always translate to the daily running of the pilot and some of the aforementioned challenges could have been prevented and/or more rapidly resolved with a greater investment by the borough team in general and sometimes more specifically by (better) involving different departments/levels within the borough team. Paradoxically, the most demanding borough to work with proved most challenging to get necessary decision-making done.

Resolution: Where getting the required support or decision-making from stakeholders proved challenging, the first action was to try and speak to the correct person within the borough team directly or find out who the correct person to speak to was in the first place. Any calls were always supported by a message by email. If this proved difficult or insufficient, LWARB was asked to get involved to help identify the correct person within the borough team and/or, as the leading partner, add some authority to specific requests. Most issues were resolved with time, but unfortunately that time wasn't always available and prevention or swifter resolution of issues would have helped prevent some of the challenges documented above.

Lessons learnt: It is very important that boroughs are aware of all the elements involved with the Contamination Hit Squad intervention. A thorough understanding coupled with sufficient set up time, this should allow them to identify the necessary officers to be involved in the project team. Contamination Hit Squad management should help them identify these officers, and LWARB may need to actively ensure this if a contractor is delivering the project and/or the borough is not paying for this service. Once the borough's project team is assembled, it is crucial that the entire team is briefed accordingly and ideally joins any initiation meeting(s). This will help to generate awareness and involvement within the borough team to better ensure cooperation and support if/when it is needed.

6 CONCLUSIONS AND RECOMMENDATIONS

While the results of the Contamination Hit Squad pilot project will be presented separately by Winning Moves, from our perspective, the project was operationally a success. In particular, we maintained six weeks of continuous contamination monitoring in the boroughs as required (albeit with a premature end to the coronavirus (COVID-19) pandemic) and escalated contaminating addresses appropriately through the borough's contamination policy. With its range of activities including contamination monitoring, back office administration and household visits, which were highly nuanced across the boroughs, the Contamination Hit Squad pilot was an extremely complicated project. This brought with it a number of challenges pertaining to these activities themselves, but also the recruitment and training of Recycling Quality Officers, and stakeholder management – as we have documented in this report along with the lessons learnt. Nonetheless, we feel that the successful delivery of the project was underpinned by two factors:

1. The Keep Britain Tidy management team was highly experienced in managing teams of temporary staff to deliver monitoring and back-office support projects in London, and were therefore able to anticipate many challenges and mitigate new challenges appropriately. The management team also offered a highly informed approach to data collection and analysis, vital to address the complexities of recording and managing contamination monitoring data. The project was managed on a day to day basis by a Senior Project Manager with over five years of project management experience in the environmental sector, in an approximately 0.5 FTE role*.
2. The Recycling Quality Officers were generally very capable with high levels of motivation to do a good job and increase recycling quality, which was a reflection of the attractive pay structure offered and the way in which they were managed by the Project Manager. Furthermore, they were equipped to do a good job through the comprehensive training programme.

(* As a side point, the project was costed around day rates for a Project Manager rather than a Senior Project Manager, as the individual concerned was promoted to this role after the Contamination Hit Squad was awarded, which may have a bearing on any cost-benefit analysis of the project.)

As such, central considerations for any future Contamination Hit Squad should be appointing an experienced management team and allocating sufficient management time, and attracting high-calibre Recycling Quality Officers who are well-trained.

A theme that ran through the whole project were challenges associated with the data solution for recording contamination incidents and escalated addresses through the contamination policy. The lessons learnt here are clear – that where there is an existing data solution, especially where this is linked to in-cab technology used by the crew for reporting contamination, then this solution should be used. The time spent integrating crew contamination records (both current and historical between cycle 1 and 2) with the Recycling Quality Officers' records was significant and could have been minimised through using existing data solutions. Such systems may also offer a link between call centre contact and contamination incidents, thus helping to reduce the number of household visits. Effort should be spent on finding a way to make these potentially powerful and efficient systems work for the Contamination Hit Squad in a borough.

While the barriers to accessing existing borough data solutions may be easier to overcome for a longer term Contamination Hit Squad project, it may that the barriers are insurmountable. Furthermore, some boroughs may lack a system altogether. If such boroughs are to access any future Contamination Hit Squad resource, then this highlights the need to invest appropriate resource in the development of a robust, yet adaptable data solution. Integrating current and historic crew contamination records here is still likely to be a drain on Recycling Quality Officer time. While integrating current incidents of contamination recorded by the crew but missed by

the Recycling Quality Officers due to hidden contamination is likely to be prudent, it is worth considering whether integrating historical logs is worth the effort. In short, if the six week cycle period is long enough to capture the vast majority of households who repeatedly contaminate, and the number of additional households repeatedly contaminating between cycles is not significant, then it may be more cost effective to streamline focus to the six week monitoring period only.

Further to the issue of working outside existing borough data solutions, and utilising a central data solution, this raises the prospect of centralising back office administration. This would avoid the challenges of IT access at the borough's back office, which may be viewed as unnecessary if existing borough systems are not being utilised. We maintain that the IT access issues we faced are surmountable, and that there are benefits to the Recycling Quality Officers carrying out back office administration in the borough. Centralised back office administration, perhaps involving Recycling Quality Officers who specialise in monitoring or back office administration, would be a very different Contamination Hit Squad model, and not one which we necessarily favour – but worth highlighting.

Another theme that ran through the whole project were challenges involving the full range of relevant staff needed from the borough teams in the project, despite our best efforts. A wide range of staff need to be involved in the project from the outset to shape the nuances of the project approach in the borough and ensure agreed ways of working are implemented – this includes operational staff, communications staff and IT staff. In particular the complete understanding and cooperation of crews is needed, which is in increased issue if multiple crews are involved. While it should be the borough's project lead's responsibility to effectively disseminate accordingly within the borough team, it is unsafe to rely on this and there needs to be a direct line of communication with all staff involved.

A wider observation here is that lack of involvement in the project may have been exacerbated by the offer of free participation in the Contamination Hit Squad by LWARB. As a contractor, it was sometimes difficult for us to communicate assertively enough with the boroughs about our requirements and the consequences of these not being met. LWARB may need to champion these requirements more forcefully with any future Contamination Hit Squad, particularly if a contractor is delivering the project and/or the borough is not paying for this service.

7 APPENDICES

7.1 Overview of streets missed from contamination monitoring

BOROUGH	CYCLE	DATE	DAY	NUMBER OF STREETS	REASON
Borough B	1	16/09/19	Monday	1	Crew ahead of RQOs
Borough B	1	17/09/19	Tuesday	2	Late start following issues with commute
Borough B	1	24/10/19	Thursday	1 (section)	Crime scene
Borough D	1	12/11/19	Tuesday	1 1 (half)	Crew ahead of RQOs
Borough A	2	21/01/20	Tuesday	6	Crew deviated from normal round order because of film crew filming recycling collections. Logs based on tags left by crew.
Borough A	2	29/01/20	Wednesday	2	Late start following issues with commute. Logs based on tags left by crew
Borough D	2	24/02/20	Monday	3 1 (section)	Route change due to additional collections
Borough D	2	25/02/20	Tuesday	4	Wrong indication on the round map
Borough D	2	28/02/20	Friday	2 (one side)	Crew ahead of RQOs
Borough D	2	03/03/20	Tuesday	1 2 (section)	Crew ahead of RQOs
Borough D	2	06/03/20	Friday	1 (section) 1	Crew ahead of RQOs

7.2 Examples of abusive incidents

7.2.1 Borough A – 22nd October 2019

As reported by Recycling Quality Officer 1, one of the two Recycling Quality Officers active in Borough A at the time and that were target of the abuse:

"As per your conversation with [Recycling Quality Officer 2] I'm just writing to flesh out the details of our residential encounter this morning, October 22nd. While carrying out our contamination round the resident of [address removed] called me over and proceeded to verbalise a series of complaints about our recycling project, culminating in a threat to speak to the local news and writing to the council. Having tagged her recycling bin the previous week for food waste (her contention which we refute was that it was tagged for two teabags), this week the resident in a state of high agitation accused us of a variety of egregious actions, using hyperbolic language such as "violation" and "harassment" in carrying out the simple duties of our impersonal tasks. She also used pointed personal insults, calling us "pathetic" and telling us we should be ashamed of what we were doing. We remained neutral during the exchange, seeking to deescalate the situation, but any attempts to placate her seemed to increase her agitation. The resident took extraordinary umbrage at [Recycling Quality Officer 2]'s wearing of a head torch further, suggesting that going through recycling bins was both disgusting and invasive. She seemed unaware of who Keep Britain Tidy was and deflected any attempts at our explaining our overall remit, choosing to extend her diatribe in to ever more unreasonable statements, including suggestions that attempts to rationalise the regional recycling process were returning the area to a state of medieval privation. When we were finally able to politely extricate ourselves from the encounter she shouted "get lost" at our retreating backs."

7.2.2 Borough D – 12th March 2020

As reported by Recycling Quality Officer 3, one of the two Recycling Quality Officers active in Borough D at the time:

"On Thursday 12th March, we monitored the round alongside the crew meaning all the tagged bins by ourselves were not collected by the crew that day. Residents seeing their bins not taken by the loaders are keener to get upset than usual.

The first incident happened with a man living at [address removed]. He asked the crew what was wrong with his bin. The crew asked him to direct his questions to me so I went about trying to help him to get a better understanding. He started to record me with his phone without telling me and asked questions about the wrong items in his bin. I pointed them to him in a kindly manner and showed him the leaflet with all the wrong items. The crew already passed the property, so I told him the loaders will collect his bin the next week if properly sorted. He then prevented me from walking to the next house, asking me my name and getting angry. I told him I had to go because I was already late. He said he was recording me with his phone and that he will complain to the Council about me. I finally managed to move on as he started swearing at me.

A few minutes later, a man living at [address removed] asked questions about why the loaders did not take his bin. We came and realised that he had removed food waste from the top of the bin and hidden it in his garden. But still we found more food waste in his bin and showed it to him. He started to swear and called the council to complain about us. He also took pictures of both us and the lorry.

The third incident took place at [address removed]. A couple asked about the wrong items in their bin. I showed them all the contaminating items but there were too many of them, so it was impossible to clean the bin before collection. I told them that their bin will be collected the next week if properly sorted. But they did not want us to go and started taking things out of the bin in a rush. One of the loaders came to help me and we left them shouting and complaining about us.

On [street removed], I saw a man carrying his bin towards us from the previous street ([street removed]). We were all together at that time (three crew members from Veolia and two Recycling Quality Officers from Keep Britain Tidy). He threatened the driver and my colleague saying he would "mess you up and kill you" if his bin wasn't collected. The driver stepped back saying he was going to report the abuse. The guy was shouting and took a grey bin from another resident. He emptied his bin in the other resident's general waste bin and left us bringing back his bin."

KEEP BRITAIN TIDY.

Wigan office
Elizabeth House
The Pier
Wigan
WN3 4EX

01942 612621

London office
Tintagel House
92 Albert Embankment
London
SE1 7TY

020 8076 9262

keepbritaintidy.org
/keepbritaintidy
@keepbritaintidy
/keepbritaintidy

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This document was first published in 2020 by Keep Britain Tidy