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HWRC booking systems and incidents of fly-tipping - *research into possible links*

Ray Purdy, Hervé Borrion and Mat Crocker

November 2022
Defra project reference EV04102

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List of Abbreviations

Defra	Department for Environment, Food & Rural Affairs
EA	Environment Agency
HWRC	Household Waste Recycling Centre
LA	Local Authority
LARAC	The Local Authority Recycling Advisory Committee
NAWDO	The National Association of Waste Disposal Officers
NFTPG	The National Fly-tipping Prevention Group
UK	United Kingdom
WISH	The Waste Industry Safety and Health Forum

Executive Summary

This project was funded by the Department for Environment, Food & Rural Affairs (Defra) in 2022 to primarily examine whether there was any link between the introduction of booking systems at local authority (LA) Household Waste Recycling Centres (HWRCs) and an increase in fly-tipping in England. We explored the four questions (in bold) below using a mixed method approach, including undertaking a literature review, a survey of LAs, and conducting interviews with LAs. A desk based study of which LAs were and were not using booking systems at HWRCs was also undertaken.

1. What are the pros and cons of HWRC booking systems to LAs (why are they using them or not using them)?

There would appear to be both positive and negative consequences to having booking systems at HWRCs. Whilst some of the same ones were raised by multiple LAs we concluded that these could be dependent on the individual circumstances of each individual site (and sometimes the approaches taken by LAs in how that site operated).

We surveyed 54 LAs for their views on the pros and cons of HWRC booking systems. The results below are mostly the perceptions of the LA stakeholders on this (the exceptions to this are where they had collected data).

The results show that 43% of LAs in England have some form of booking system at HWRCs. In the majority of these the booking systems apply to all vehicles, although some have booking systems for just larger vehicles and trailers and do not apply to cars. Sixteen benefits were identified to having booking systems at HWRCs. The main positive consequences given by those with booking systems were the impact that they had on reducing waiting times outside the HWRC (i.e. queueing), reducing crowding within the HWRC, and better identification of trade waste being dropped off in the HWRC facilities. Those LAs that did not have booking systems gave quite different responses to what they thought would be the main positive consequences of booking systems, possibly because some of them would not apply in their local areas.

Nine drawbacks were identified to having booking systems at HWRCs. The main negative consequences for those LAs with them were that they could discourage people that, for certain reasons did not want to share personal information (e.g., do not have ID, or car tax/MOT/insurance), users' perception that there weren't enough slots available, and the procurement and running cost of the booking system to the LA.

Generally, LAs gave and prioritised similar responses in respect to the pros and cons of booking systems. But those LAs that had booking systems in place were significantly more likely to respond positively about the positive consequences of them than compared to those without booking systems. Conversely, those LAs that did not have booking systems were far more likely to highlight the negative impacts of booking systems in their responses than those LAs that actually had booking systems in place.

There appears to have been extensive public consultation (often before and during the operation of booking systems) and evaluations undertaken of user experience at sites with booking systems. Where LAs have consulted residents there has normally been an overall positive response to booking systems. 86% of LA respondents to our survey believed that the local community was either satisfied or very satisfied with their booking system. Only a few considered that the local community was neutral (5%) or dissatisfied (5%).

Service improvements would appear to be taking place in some LAs as they have gained experience and received public feedback, and many of the earlier reasons that the public disliked booking systems

have been addressed (e.g. the vast majority of those surveyed (82%) allowed booking on the day of the visit, and many have also increased the number of booking slots available). Generally, most LAs offer accommodating solutions to users of HWRCs sites to make them easily accessible, and have tried hard to balance public opinion with what works for them at a local level; but not all LAs have been so effective. It is unclear why some LAs can (adapt and offer user friendly solutions), but others cannot, and there is potential for best practice guidance in this area.

Some LAs believe that HWRC booking systems have an important role to play in their area in improving traffic management, enhancing visitor experience, reducing pollution, increasing operational efficiency, allowing access to visitors from neighbouring LA areas, and deterring traders who seek to abuse the system, and for other LAs they feel that the situation does not warrant introducing booking systems at their sites. In this context, it was clear that there had been a great deal of discussion and analysis within LA's about what will work for their own sites, whether to adopt booking systems or not, and for those that have taken them forward, periodic reviews as to whether they should keep them or amend them (e.g. make them apply to vans only and not cars). A key conclusion of this research was that whether LAs had a booking system, or not, they strongly believed that this decision over whether they employ booking systems or not should be down to individual councils, not Government, as they know best what will work most effectively in their own areas and want to be able to respond to that. Public opinion may, however, be difficult to gauge if the public is not given a chance to try an effective booking system.

A possible solution may be to adopt the model used in some restaurants, and offer an optional booking system. In this way, individual users could decide whether they wish to do the extra effort of booking a slot in order to secure a place at a specific time, or come to the site without bookings but run the risk of having to wait until the site is less busy (with priority given to those that have booked). There is a risk that this could to an unknown degree negate the benefit of reducing queues. However, a pilot experiment could potentially be conducted to determine the impact of implementing such a hybrid system.

2. Was there any published literature on HWRC booking systems (and potential links to fly-tipping)?

We have found no academic literature or reports that provided evidence of a link between fly-tipping and booking systems (or conversely evidence that there was no link).

It appears a lot of media coverage has been generated focussing on the feelings/instinct of some local politicians and members of the public, about a linkage, sometimes because of a rise in fly-tipping (or fear of a rise), rather than any evidence of a link.

3. Do LAs have any evidence that shows links between HWRC booking systems and fly-tipping?

The surveys and interviews with LAs have not identified any evidence showing that there was a link between fly-tipping and booking systems (or conversely evidence that there was no link).

Fly-tipping data can potentially show trends which might point at linkages between rises/falls and HWRC booking systems. However, even where the figures show a rise in fly-tipping it is too simplistic to just attribute this to a booking system. Most booking systems were introduced in 2020 in response to the COVID-19 pandemic - at a time when major changes were happening in society generally, and in the waste sector more specifically. The fly-tipping figures might, therefore, have been distorted around the period of time covering the time of the COVID-19 pandemic, or only tell part of a story, because, as one LA found, at the same time that fly-tipping had increased, the tonnage being taken in and user numbers at a HWRC had also increased. Disentangling the effects of booking systems on fly-tipping from those of other factors (e.g., social distancing measures at HWRCs, behavioural changes and fluctuation in volumes of waste and the cost of living crisis) is very difficult, if not impossible at the

moment. In addition, 'booking system' is a general term that describes very different systems (e.g. some applied to all vehicles and others just certain types; and some are based on off-the-shelf technology and others use externally contracted technologies). Some booking systems might have an impact on fly-tipping volumes, while better designed, more user-friendly ones might not.

We looked in depth at 6 LAs across a broad geographical spread in England that had introduced booking systems to see what the fly-tipping statistics were showing. In all of these, fly-tipping incidences had reduced. About a third of all the LA survey respondents (32%) responded that fly-tipping numbers had stayed about the same in the last 12 months, and the numbers had decreased (27%) in more LAs than increased (15%). 27% said that they did not know.¹ It is difficult to understand why fly-tipping numbers have fallen in some LAs and risen in others, and it is even harder to determine if booking systems have played a role in this. A more complete study over a long timeframe post COVID-19 would be required to look at national trends at sites with booking systems, and those without booking systems, to draw conclusions on linkages. However, it would appear to be difficult to understand national trends based on just fly-tipping data alone (especially where very different things are happening from LA to LA). If there is a link between fly-tipping and booking systems this could also be because of the individual circumstances related to one site, or one LA.

No LAs with booking systems thought that these had increased fly-tipping nationally and a small number, about 5%, thought that booking systems were moderately reducing fly-tipping. About 21% of the LA survey respondents that did not have booking systems believed that booking systems moderately increased fly-tipping numbers nationally (but far more thought that they had no impact on fly-tipping or they didn't know if they did).

At a local level, a similar trend was apparent. LAs who had never had a HWRC booking system were much more likely to make the link between having a booking system and an increase in fly-tipping in their area. Over a third (38%) believed that if a booking system at the site was (hypothetically) introduced, fly-tipping in the area might increase (compared to 31% who believed it would have no impact on fly-tipping). There were not any LAs that had a booking system, or used to have a booking system (but then removed it), that believed that fly-tipping numbers were being influenced by booking systems. From those with a booking system more than half (57%) of them indicated that their answer (on whether there was a link) was based on the analysis of fly-tipping data.

4. What other key factors have influenced fly-tipping that have not been identified in previous research?

The respondents in areas where fly-tipping has increased in the last 12 months, indicated that they thought there were eleven issues causing fly-tipping. The main factor was thought to be an increase in rogue waste carriers and organised criminality in their area (and the fact that these had become cheaper). Other key factors influencing fly-tipping included householders being less willing to pay for waste collections, commercial waste carriers being less willing to dispose of waste legally due to change in opening times and availabilities of suitable commercial waste transfer stations, fewer people perceiving that they will be caught if they fly-tip, and fewer people being deterred by the severity of the sanctions.

In those areas where fly-tipping has decreased in the last 12 months, respondents believed that there were 12 possible reasons for this. The main factor thought to be affecting the fly-tipping levels was that more people perceived they would be caught if they fly-tipped. Other key factors helping prevent fly-tipping included: more, or more effective, investigation & enforcement by LAs, householders having more consideration for social norms / duties, and householders having less waste to dispose of compared to 12 months ago (because the cost of living crisis meant they were spending less on new items).

¹ The sum of the percentages is not equal to 100% due to rounding effects.

1. Introduction

Fly-tipping is a significant problem in England. For the 2020/21 year, Local Authorities (LAs) in England reported 1.13 million fly-tipping incidents, an increase of 16% from the 980,000 reported in 2019/20. Additionally, these operational metrics do not capture the full picture for two main reasons: the data only includes waste fly-tipped on public land and the definition of fly-tipping incidents vary between LAs.

It is important for Government to better understand the main causes and consequences of fly-tipping because it has significant financial, social and environmental impacts which affect communities across the length and breadth of the country.

In April 2022 the Government began examining the use of booking systems at Household Waste Recycling Centres (HWRCs). Booking systems were an initial reaction to the challenges posed by the public health measures introduced during the COVID-19 pandemic period, especially re-opening the HWRC service nationally after almost 2 months of being shut. Since then, some LAs have removed booking systems and returned to how things were before 2020, so members of the public no longer require an appointment to visit a HWRC. Other LAs have continued to use booking systems to manage HWRC visits.

The Government put out a call for evidence on booking systems at HWRCs seeking information around whether LAs were operating booking systems, the type of booking system they operate, the reasons why they have or do not have a booking system, future plans, any other restrictions at HWRCs and any impacts it might have on recycling rates.

Complementing the above call for evidence, this research was commissioned by Defra to shed light specifically on whether there were any links between HWRC booking systems and fly-tipping in England.

The project is based upon the following research questions:

- 1. What are the pros and cons of HWRC booking systems to LAs?**
- 2. Is there any published literature on potential links between HWRC booking systems and fly-tipping?**
- 3. Do LAs have any evidence that shows links between HWRC booking systems and fly-tipping?**
- 4. What other key factors have influenced fly-tipping that have not been identified in previous research?**

2. Research Methods

2.1 The Team

This project was undertaken by a team led by Air and Space Evidence Limited. The project team (Ray Purdy, Prof Hervé Borrión, and Mat Crocker) brought together relevant interdisciplinary expertise from both experienced academic researchers alongside a consultant with a regulatory background in waste crime. Further information about the individual members of the project team is contained in Annex 1.

2.2 Research Methods

We used a mixed method approach to answer the aforementioned research questions.

2.2.1 Literature review

A literature review was conducted in July 2022. We searched for relevant sources of information including news articles, reports, academic papers, website text, and reports published by local government. We identified 44 relevant sources of information.

The review found no peer reviewed literature on HWRC booking systems and potential links to fly-tipping, presumably because booking systems were a relatively new concept and the academic publishing process is slow. We discovered media stories and LA publications which were helpful. Further information about the information sources collected is contained in Annex 2.

2.2.2 Review of which LAs have and don't have booking systems

It was important to understand which LAs were and were not using booking systems to get a cross-sectional picture of the situation. Defra had drawn up a list in January 2022. We repeated this exercise in July 2022 and created our own list. This research was based on publicly available information on LAs websites and in respect to two LAs through telephone calls to them (when the position was not totally clear online). Where possible during this data collection stage we also identified LAs that had previously had a HWRC booking system but had stopped operating it. A report of these findings is contained in Annex 3.

2.2.3 Engagement with LAs and data collection plan

We wanted to elicit the views of professionals working in LAs about HWRC booking systems and fly-tipping in England. To assist us in contacting people that would be willing to engage with us we worked with some of the main stakeholders in the sector. The following bodies kindly contacted their members on our behalf asking for interview participants:

- The National Association of Waste Disposal Officers (NAWDO)
- The Local Authority Recycling Advisory Committee (LARAC)
- The National Fly-tipping Prevention Group (NFTPG)

In August 2022 we received messages from 54 English LAs that indicated that they would agree to engage with us on this project. We also received offers to participate from LAs in Scotland, Wales and Northern Ireland but because this project was focussed on England alone we did not take this any further. Of the 54 English LAs, 30 had some form of booking system (56%), and 24 of them did not have any booking system.

Our initial agreed plan was to undertake telephone interviews with 30 LAs, dividing these into two groups: 15 that had booking systems and 15 that did not. When it became clear that more LAs were interested in having their opinions heard, and we could provide Government with better insights, we changed the methodology to make it a mixed method approach. We decided to survey all 54 LAs that

had replied to us, using a structured questionnaire online. We would then conduct follow-up telephone interviews with a number of LAs to gain a deeper understanding of some of the issues, based on the analysis of the survey responses.

2.2.4 Online survey

The project team designed a survey targeted at the 54 LAs who had indicated they would be willing to share their views on HWRC booking systems. Participation was anonymous and voluntary, with no financial incentive given to respondents. In the survey design respondents were navigated down different paths, depending on their answers. The main branching points were: (1) whether they had a booking system in place or not, and if not (2) whether they had ever had a booking system historically. Other navigation filters also applied to whether they perceived fly-tipping had got worse, better, or remained static. A copy of the survey questionnaire can be found in Annex 4.

This survey was run online by the project team using an online platform (SurveyMonkey.co.uk) between 6 September and 23 September 2022. The survey was originally due to finish on the 19 September but the end date was moved 4 days later because of the Royal mourning period and funeral. The survey attracted 58 responses in total. We excluded all the responses with less than 50% of the questions answered. This left 41 respondents as the final sample size. Of these, 22 had a booking system and 19 did not have a booking system. Of the 19 who did not have a booking system, 6 had previously had a booking system and they had removed it and 13 had never had a booking system. In respect to geographic distribution there were respondents from every region of England. However, the nature of the sampling process (self-selection) and the small sample size means that **the results can only be used to comment on the study sample, not on LAs generally.**

2.2.5 Email correspondence

Some LAs did not want to participate in the survey but were still keen to get across their views. We received 3 emails from LAs outlining their views. This correspondence will be kept anonymous, with the findings presented in such a way as to not identify a particular LA or stakeholder.

2.2.6 Telephone interviews

The project team conducted 25 semi-structured interviews with LAs between the 13th and 29th September 2022. With these, we canvassed the views of over 30 LAs in total because 3 of the interviews were conducted with waste management partnerships (each representing 3 councils). In total, 13 of these interview participants had some form of booking system and 12 did not. The interviewees were carefully selected from the 54 LAs who completed the survey to get the widest possible views, and they formed a good balance of participants from different geographical regions,² LA type (disposal/unitary), size of LA/number of sites, those that had booking systems for all vehicles and those that had them for just larger vehicles, and those that had a booking system in the past but removed it.

The interviews were audio-recorded, after the participants provided informed consent. The resulting audio recordings enabled us to listen to the responses and create transcripts. A thematic analysis was subsequently performed to understand the most important characteristics of booking systems, the views of participants on the positive and negative impacts of booking systems, and the potential links between booking systems and fly-tipping. Thematic analysis is a method for “systematically identifying, organizing, and offering insight into patterns of meaning (themes) across a data set”.³ In this project,

² Participants were from 8 different English regions including: North East, West Midlands, South East, London, South West, North West, East, and Yorkshire and Humber.

³ Braun, V., & Clarke, V. (2012). Thematic analysis. In H. Cooper, P. M. Camic, D. L. Long, A. T. Panter, D. Rindskopf, & K. J. Sher (Eds.), *APA handbook of research methods in psychology, Vol. 2. Research designs:*

the method involved familiarising ourselves with the data, generating initial codes,⁴ searching for themes, reviewing them, and naming them. When needed we double-coded some of the answers to check the validity of the analysis, and elicited verbatim quotes for the report. Both inductive and deductive approaches were used for the thematic analysis.⁵ The interviews (audio, quotes, and results) are kept anonymous, with the findings presented in such a way as to not identify a particular LA or participant, unless they have given permission to do so (e.g., sharing information in a publicly available report).

Quantitative, qualitative, neuropsychological, and biological (pp. 57–71). American Psychological Association.
<https://doi.org/10.1037/13620-004>

⁴ Codes represent labels for data features that are potentially relevant to the research questions

⁵ Inductive thematic analysis refers to a bottom-up approach that “is driven by what is in the data” whereas deductive thematic analysis is a top-down approach “where the researcher brings to the data a series of concepts, ideas, or topics that they use to code and interpret the data”³

3. About booking systems

3.1 Introduction

HWRC booking systems were introduced in 2020 for two primary reasons. Firstly, because social distancing was required during the COVID-19 pandemic, and booking systems enabled better control of visitor numbers, allowing space for visitors and staff to distance themselves from each other. Secondly, to control traffic around the HWRC sites. This was because there were surges in visitor numbers to HWRC sites on their re-opening after their initial closure at the beginning of the pandemic. At some locations this caused long queues resulting in valuable police resources being used up to divert traffic and assist site staff, and even led to some sites being closed temporarily in order to reduce the impact on local roads.

While the term ‘booking system’ is used indiscriminately in reports and news articles, we found that it does not refer to standardised systems but to a heterogeneous category of technologies ranging from off-the-shelf technology (e.g., free event management websites) to bespoke booking systems connected to other HWRC technologies. Because of this, the systems in place vastly differ in terms of what they offer to staff and visitors. The following interview quotes give a glimpse into some of the key characteristics of booking systems:

Live system:

“Yes, a live system. [...] The booking system now has got a permit system already linked into it, so when someone books a van, it automatically tells them they can have a permit, once they have put the permit information in, it then allows them to monitor the number of bookings they have made, they are allowed 12 a year, and when they book they will get a confirmation email of how many they have got left.”

Checks:

“no untaxed vehicles can book a slot either, the registration that gets put into the system automatically goes back to the Government website to check that it’s a taxed and roadworthy vehicle.”

Self-service:

“They can amend the times, if they want to, change the vehicle registration on that booking as well. We have tried to make it as self-serve as possible.”

It’s easier to cancel or amend to a different time if you’ve already got a booking you can do that yourself online.”

Efficiency:

“We had paper permits that used to have to be stamped, and then a back office that would have to collate those.”

Simplicity:

“The old system, a lot of it was for our administration, it was very clunky back then when people said have I got a booking and we had to search through 20 different calendars to find it so a lot of it was to resolve our headache.”

Real-time:

“The new system you could book, you could be at the gate if there was space as long as it was 1 minute before the appointment time you could stand there and book an appointment so yeah we’ve got last minute bookings with the new system.”

3.2 Numbers of LAs with and without booking systems

The full breakdown of individual LAs with and without booking systems, as of July 2022, is contained in Annex 3. Table 1 shows that the majority of **English LAs (57%) do not have a booking system for HWRCs**.

Table 1: Local Authorities with HWRC responsibility

	LAs with some form of booking system	LAs without any booking system
Disposal authorities (31)	42% (13)	58% (18)
Unitary authorities (91)	44% (40)	56% (51)
Total (122)	43% (53)	57% (69)

We examined whether there was any obvious trend in the geographic distribution of HWRC booking systems. As Table 2 (below) shows, 4 regions have a majority of LAs using HWRC booking systems. These are located in the north, south and midlands, so there appeared to be no obvious regional trend.

Table 2: Local Authorities with HWRC responsibility – geographic distribution

Region	LAs with some form of booking system	LAs without any booking system
North East	75% (9)	25% (3)
West Midlands	71% (10)	29% (4)
South East	63% (12)	37% (7)
London	60% (9)	40% (6)
South West	43% (6)	57% (8)
North West	36% (4)	64% (7)
East	15% (2)	85% (11)
East Midlands	11% (1)	89% (8)
Yorkshire & Humber	0% (0)	100% (15)

Of the 53 LAs who had some form of booking system, 48 of these had booking systems at all sites (91%). Five LAs adopt a mixed approach whereby they have booking systems at just some of the sites they manage (9%). This indicates that some LAs are only using booking systems on a site-by-site basis, where they think they are most needed.

The majority of sites with booking systems – 44 out of 53 sites (83%) – apply these to both cars and larger vehicles (e.g. vans, pick-ups, trailers, 4x4s). Only nine sites (17%) had booking systems which only applied to larger vehicles such as vans, pick-ups, trailers and 4x4s (i.e. not cars).

3.3 Future Trends

From the literature, it is clear that some LAs adopted booking systems during the COVID-19 pandemic then removed or relaxed these following the peak of the pandemic. The Waste Industry Safety and

Health Forum (WISH) was one body that recommended relaxing restrictions.⁶ In the survey we asked LAs that had previously had a booking system why they removed it? The main reasons were “COVID restrictions lifting” (5/5 LAs) and “Local political pressure” (5/6 LAs). Another reason they gave was “Visitor dissatisfaction and negative public opinion” (3/5 LAs).⁷

Defra undertook a review of the number of sites with and without booking systems in January 2022. We found that 5 LAs had adopted new booking systems in the 6 months that followed Defra’s review. Of these new systems, 3 applied to all vehicles and 2 applied to larger vehicles (e.g. vans, pick-ups, trailers, 4x4s) only. At the same time 6 LAs removed some provision of their booking systems in 2022. Four of these removed the booking systems entirely and the other 2 removed them in relation to cars (but kept them for vans/trailers etc).

In our survey none of the LAs that already had a booking systems in place had plans to remove or adjust them.⁸ However, one of the LAs currently not operating a booking system said that they planned to adopt a booking system at sites in the future.⁹ Nearly half of LA survey respondents (46%) who had never had a booking system reported that their LA had considered having one.¹⁰ When asked why they did not go ahead with a booking system, they justified the decisions as follows: “COVID restrictions lifting” (6/6 LAs); “Visitor dissatisfaction and negative public opinion” (5/6 LAs) ; “Local political pressure” (3/6 LAs) and “Cost” (3/6 LAs). Interestingly, the first three reasons were also the same reasons why booking systems had been removed at HWRC sites that previously had operated them.

3.4 Understanding the value of booking systems

While many HWRCs have tried using booking systems, it can be argued that, as a whole, the sector is still in an early phase of the technology adoption lifecycle. Firstly, there exists many different types of booking systems across the sector, and the disparity among them means that user experience can greatly vary between sites. In certain places, user perception might have been different if a better booking system had been installed:

“We had quite a cheap and dirty one to start with and it wasn’t great, you know, it caused a lot of problems and it would crash and people would get upset and, you know, it was just a big headache, but the current one has been fab and no problems with it at all.”

or if HWRC staff had more time to learn how to operate it effectively:

“We have sort of learnt how the operation of the site copes with the booking system and vice versa, we have actually increased the number of slots available and, yeah, on the day booking.”

Secondly, the value of online/digital booking systems may not be apparent to those who have not tried them. This is an important point, as we found later that LAs without booking systems appear to overestimate the negative consequences of booking systems:

“At the time that was purely so that we didn’t have the issue with paper changing hands, but once we operated it we realised that actually it was a far more efficient system, it could be run digitally ...”

⁶ The Waste Industry Safety and Health Forum (WISH) Forum published an information document stating that because many restrictions relating to COVID-19 were being revised, relaxed, or withdrawn, public health civil amenity sites might consider booking systems just for weekends. Steve Eminton, ‘WISH Forum points to switch in COVID-19 approach’ (Letsrecycle.com, August 9, 2021)

⁷ Note that the number of responses in the survey matrix questions varied between sub-questions.

⁸ Survey response figure [n=20]

⁹ Survey response figure [n=18]

¹⁰ Survey response figure [n=13]

Booking systems should not be evaluated in isolation of the context within which they are implemented.

“[Even without a booking system], we just don’t have issues with queues or traffic management, you know, it is managed really nicely.”

The way booking systems interface with the technologies available at the HWRCs, for example, can have a major impact on their perceived value. Once a booking system is introduced, operatives must then check that people who want to enter the site have an actual booking. This new constraint may become a burden if it has to be managed manually. However, this burden can be reduced by linking the booking system to an automated barrier:

“At the moment site staff stand at the gate with a tablet with a list of bookings and they tick off car registrations as they arrive. [...] We’ve got one site with an automatic barrier which we’re testing. [...] By avoiding having the person stationed on the gate [...] it allows that person to do more useful things around the site and help people with their waste and do cleaning, tidying and other things rather than just standing at a gate all day waiting for people.”

Thirdly, HWRCs must often decide on the number of features to include in the booking system, and find the parameters that best fit their operational process, from the registration of an account (e.g., information to provide) to the production and use of business intelligence (e.g., predictive algorithms), through booking (e.g. number of slots per day). Optimising a booking system is not straightforward. It requires time and motivation for staff to learn and experiment with different functions, settings and parameters.

“We swapped over from a system where you could only book in advance, at least a day in advance, [...] to a live system, and we have been able to sort of tailor make it to the amount of vehicles per day.”

In those sites where booking systems were only used for a limited period of time, HWRC staff may not have had the time or opportunity to use them to their full potential.

“just better functionality [...] we’ve had some unplanned closures like in high wind or actually the [...] surprise bank holiday. [...] We didn’t have to like start shouting from the newspapers that we were closed. It was quite simple and no one had a wasted journey because we closed it off with our block function and no one could book an appointment for Monday.”

More generally, the value of booking systems is partly derived from the data these systems generate. Data can be extremely useful to optimise operations and visitor journeys.

“It gave us a good level of intelligence about frequency of use [...] we could pull apart that data and say what is the pattern of use for [...] the typical user.”

“It just gives you an extra bit of control and understanding of the business basically, it gives you important business data. Also, there’s a whole potential to tap into..., to use the data better as well. So, there’s huge potential.”

But not all operatives have the needs, vision and resources to create more efficient HWRC sites. Booking systems may play a key role in the digital transformation of society and the move towards a circular economy, but their values may not have been fully realised and leveraged at this point.

All this suggests that it is still too early to make any conclusive statement about the roles that booking systems might play in future. Importantly, as not all booking systems are the same, conclusions should not be drawn on the basis of the average impact seen across the sector. In this initial phase, the most promising use cases should be identified, analysed and disseminated within the

wider waste management community. Differences between booking systems across England, in terms of their performance, usability, flexibility, privacy, security and cost, should be examined, and standardisation opportunities considered where appropriate. As hinted above, booking systems and the data they generate can play a role in improving visitor experience, increasing efficiency, allowing HWRC access to visitors from neighbouring LA areas, and deterring traders who seek to abuse the system. Support should, therefore, be provided to help HWRCs leverage the operational value of these systems and drive innovation in this area. Section 4 makes a step in this direction and reveals more detailed information about the advantages and disadvantages of booking systems.

4. The pros of HWRC booking systems to LAs

4.1 Benefits of HWRC booking systems to LAs

Sixteen benefits (from the perspectives of LAs) were identified to having booking systems at HWRCs through the literature review and interviews. Each of them relate to one or more themes including: *customer behaviour* (vehicle queues around the HWRC; number of visitors and amount of waste brought to the HWRC; recycling rates) and *site management* (selective access, on-site operations, maintenance, visitor support, communication with visitors).

1. Better traffic management
2. Reduced pollution
3. Improved access to local residential and business properties
4. Improved access to the waste facilities for council refuse freighters and other council users
5. Financial savings
6. Enhanced site management
7. Decrease in the amount of waste going to the HWRCs
8. Fewer but more efficient visits
9. More effective access policies for non-residents
10. Better business intelligence, better service
11. Better communication between LAs and the public
12. More time to assist people with protected characteristics
13. Increase recycling rate
14. Better identification of trade waste
15. Better behaviour on site
16. Fewer disruptions for maintenance

These are detailed below and illustrated by quotes from participants. What is a positive impact on one site (or to one LA) might not be applicable on another site (or to another LA).

1. Better traffic management

On occasions, traffic queues could extend onto the main public highway impacting on main traffic routes. Sites tend to be busier at certain times and days. Booking systems enable the LAs to spread visits over the week instead of one or two very busy days or times.

“I am really sympathetic about the authorities that have [a booking system], because I know sometimes the sites can just get super busy or they can get surrounded by stuff [...] which at peak times can make things really dangerous sometimes.”

“With the permit system we limited the amount of permits a van could have, but we had no control over when they went to the site. [With the booking system], we had control over how many permits we issued on any given day and the appointments we issued on any given day, so we could make that more for weekdays and fewer at weekends when it is busier, and it is all done through an online digital system.”

2. Reduced pollution

The move away from peak time queuing can drive down emissions from queuing vehicles and improve air quality.

“We did actually have a question about carbon emissions on our last survey. [...] we found 75 percent of people said that their trips were more carbon efficient because they either tried to

combine their journey from somewhere else to the shop or something or because they make fewer but larger visits to recycling centres...

3. Improved access to local residential and business properties

If there is no queueing on the highway then this can enable better access to other local residential and business properties.

“The main benefits are in terms of resident queueing.”

“Both of our recycling centres are in areas where there are neighbouring businesses, I think the businesses have enjoyed the shorter queues as well, because there’s only one access road.”

4. Improved access to the waste facilities for council refuse freighters and other council users

Council waste collections may operate from the same sites as the HWRC and reducing congestion/queueing by public vehicles queueing inside and outside a HWRC site can improve council vehicle access, enabling a site to operate more smoothly.

“Our recycling centres are sort of co-located with waste transfer stations, so it is much better accessed for our vehicles collecting waste from the kerbside and stuff.”

5. Financial savings

Some LAs have reported that having booking systems have enabled them to reduce operational overhead costs (and that savings can be wholly attributed to the booking system and the resulting better management changes in the way the HWRCs are operated). One LA claimed that booking systems resulted in financial savings of £150k per annum.

“If we are not allowed to continue with a booking system and the DIY waste charging, it’s about a £2,000,000 funding pressure for me, so we are going to have to look at closing sites I suspect.”

6. Enhanced site management

Booking systems allow staff more time to interact with visitors if the site is less crowded and they are not having to manage traffic queues. This can lead to reduced contamination and greater material segregation.

“If the government pressed ahead with its proposal around DIY and construction and demolition waste, and we were allowed to have a booking system I think it would be inevitable that the County Council would have to consider one, because it would be the only way of providing a managed service.”

“The rules that Defra have proposed are kind of really hard to police, put in that kilo limit and weekly limit and we wouldn’t be able to get staff to do that. We would have to have that managed electronically one way or another. So, I think if something changes with the charging then that would probably force us to bring in software and equipment in order to keep an eye on absolutely everybody that comes in and out of the site.”

7. Decrease in the amount of waste going to the HWRCs

Some LAs with booking systems are reporting a decrease in waste tonnage at sites.¹¹ The cost of waste disposal is directly linked to the amount of waste that is handled by the Council on a per tonne basis, a reduction in tonnage will ultimately lead to a lower overall cost for the service. In some LAs the reduction in domestic waste tonnage had increased capacity for HWRCs to receive trade waste.

“the tonnages have dropped off compared to the previous year, but again, that could be down to a number of reasons, not necessarily just the booking system. There’s the cost of living crisis to throw into that, so you know, if people are spending less then generally waste levels drop as well.”

A potential risk is that booking systems could also be putting people off attending HWRCs, which might potentially result in more fly-tipping. This issue is considered in more detail in Section 7.6.1.

8. Fewer but more efficient visits

It appears from the data collected by many LAs that people are visiting HWRCs less often but are taking more items when they do go. So residents could be storing up waste/recyclables to take on one visit, and packing their vehicles more effectively, rather than undertaking multiple visits (that were not always wholly necessary). One LA reported that there had been a 34% reduction in visitors but only a 13% reduction in waste.¹² Another LA reported that prior to having a booking system, on average each vehicle would bring 44 kg of waste to the HWRC. This increased to around 60 kg per vehicle afterwards.¹³ Therefore, some unnecessary journeys to centres would appear to be reducing resulting in an environmental benefit of more material being taken per visit.

“We have noticed that we have got a lot less visitors to the recycling centre now, and only a slight reduction in tonnages, so people’s trips to the recycling centre are becoming a lot more efficient, they seem to be bringing more waste per visit.”

“People are visiting the household waste recycling centre less often but they are making much better use of their journey.”

9. More effective access policies for non-residents

Booking systems empower councils to implement more or less selective access policies at their sites. With the registration system, LAs could automatically prevent non-residents from using HWRCs so they don’t cover the cost of waste disposal from elsewhere. Alternatively, LAs can use booking systems to levy a charge for out of borough use. For example, one LA charges £5 for visitors outside their area to use HWRCs.¹⁴ If all HWRCs were using booking systems, people could be authorised to access any HWRC across England, and visitor data used to balance the costs of non-residents. One LA reported

¹¹ (i) West Sussex County Council, ‘Recycling Centres Booking System’, Report by Director of Environment and Public Protection (March 2022); (ii) Tom Burnett, ‘The Government has raised concerns advanced booking systems in some areas are leading to increased fly-tipping’ (Berkshire Live, 15 June 2022); (iii) Bracknell Forest Council, ‘Review Of Recycling Centre Booking System’ (17 June 2021)

¹² Tom Burnett, ‘The Government has raised concerns advanced booking systems in some areas are leading to increased fly-tipping’ (Berkshire Live, 15 June 2022)

¹³ Kent County Council, Booking to visit a Household Waste Recycling Centre – A view on a HWRC Booking System and a response to the public consultation from the Waste Management Service (2021)

¹⁴ Portsmouth City Council, ‘Household Waste Recycling Centre Operations update and booking system’, (27 July 2021)

that just over 2% of users after they introduced a booking system came from other administrative areas.¹⁵

10. Better business intelligence, better service

Some booking systems have been created to be flexible, meaning the number of slots and the length of slots on offer can be modified dynamically, in response to the changing needs of visitors. Additionally, asking people to indicate at the time of booking what types of waste they will bring enables LAs to better optimise their service delivery (e.g. they can better understand where to place containers and how often they will need emptying). This can result in cost savings as well as a better service for local residents.

“From an operational point of view there’s a definite benefit from having a booking system, because we can track visitor numbers so we can then kind of manipulate our operations around that, in terms of logistics.”

“It gives you important business data. [...] it will say what they are bringing, so you better understand when people are going to be bringing ..., ‘there’s going to be a lot of green waste today’, for example, so we need to staff the site in a certain way to deal with that or move things around.”

“There’s huge potential [...] all the benefits I have previously mentioned are just really good for us, and I think [booking systems] are a good thing”

11. Better communication between LAs and the public

The provision of contact details during the booking process has enabled LAs to have better communications with residents. This could be to inform them of emergency closures (so they don’t make unnecessary visits) or distribution of newsletters. One LA reported that their newsletter circulation increased from 500 subscribers to 25,000 after the booking system was introduced.

“Before, we [were telling] people to check our Twitter account as [it was] the most [...] instant way [to] say ‘we’ve had to shut because it’s flooded or whatever’. Whereas now, we can just do a bulk email, click a button and say, ‘sorry the sites closed, rebook’.”

12. More time to assist people with protected characteristics

Some LAs have reported that booking systems are enabling operatives more time to provide support to those who need it. Visiting an HWRC by appointment can also be a more predictable experience which is helpful for some, for example those with caring responsibilities or those users that avoid crowded places for various reasons (e.g., agoraphobia).

“We have put in an accessibility thing, so people [can] highlight [...] if they need specific assistance when they arrive.”

13. Increased recycling rates

For some LAs overall recycling performance is similar to previous years before the booking system started. However, the recycling rate seems to have increased at some LA sites since the booking system was in place. For example, one LA reported that the recycling rates at two of their sites were 78% and 72% after the booking system was introduced, compared to 74% and 72% before.¹⁶ Another LA

¹⁵ Kent County Council, Booking to visit a Household Waste Recycling Centre – Consultation Report (2021)

¹⁶ Bracknell Forest Council, ‘Review Of Recycling Centre Booking System’ (17 June 2021)

reported that recycling rates for 2021/22 increased to just under 70%, compared with 65% in 2019/20. It is not possible to confirm if this is due to the booking system but relevant factors for this may include more time for residents to prepare for visits (including packing the vehicle and segregating waste) and greater access to site staff.¹⁷ Lack of anonymity may also have encouraged more compliant behaviour.

14. Better identification of trade waste

Booking systems help LAs identify frequent users whose usage may suggest activity more like that of a trader (potentially depositing waste illegally, and at the tax payer's expense) rather than a householder. For those without booking systems, data relating to usage is sometimes done via a manual process, but having electronic data enables better surveillance. One LA found that whilst there could be benefits to removing the booking system, it would be better if there was still control around access to the sites, as the unregulated 'man with a van' using HWRC's was a big issue."¹⁸ Some LAs opted to remove booking systems for cars but to keep van access controls at HWRCs to prevent the deposit of non-household (i.e. commercial) waste for this reason.¹⁹

"It has also stopped traders trying to get in, because the permit system allows us to sort of check telephone numbers, addresses and email addresses, and doing Google searches on them, and so we can warn the actual operators of the sites to look for these as a potential trader."

15. Better behaviour on site

Some LAs reported fewer issues with visitor behaviour. Providing personal details clearly creates some level of accountability and, therefore, visitors were more likely to follow rules, and less likely to be abusive or misuse facilities. A booking system also meant that some abusive/problem users could be better identified and more easily managed – including prevented from visiting specific sites.

"If we get people that start being abusive to the staff, or they consistently do something wrong, we can send a letter out to them, [the] site can put comments against their booking of what's happened, it gets flagged up on the report each day and, if needs be, I can revoke their service and stop that vehicle going in to the site."

16. Fewer disruptions for maintenance

One LA reported that maintenance of HWRCs could be planned in line with customer demand (from booking records), rather than disrupting the service at times when customers are accessing the centres.

4.2 Survey Responses

The survey enabled us to understand which of the pros listed above were considered to be important for LAs.²⁰ As Table 3 below shows there were differences in response between those with booking systems in place and those that did not have booking systems. Only 'reduced waiting times outside the HWRC' and 'commercial waste less likely to be dropped in the HWRC facilities' were selected by both groups as one of their top 5 positive consequences. **The table shows that those with booking systems are far more enthusiastic about the positive benefits of booking systems than those that do not have booking systems.**

¹⁷ Kent CC, Increasing Recycling Rates with an Online booking system for Household Waste Recycling Centres

¹⁸ Lincolnshire Waste Partnership, A Meeting of the Lincolnshire Waste Partnership will be held on Thursday, 18 November 2021 at 10.30 am in the Council Chamber, County Offices, Newland, Lincoln LN11YL

¹⁹ Meeting of Warwickshire Waste Partnership, Wednesday 29 September 2021 2.00 pm (Item 7.)

²⁰ The survey was designed based on the findings of the literature review and administered before the interviews. This is why the content of Table 3 does not match the 16 consequences identified in the interviews.

Table 3: The main positive consequences of having a booking system in your local community context (select all that apply) [n=41]

Positive Consequence	Those with a booking system that said introducing one had positive consequences [n=22]	Those without a booking system that said introducing one could have positive consequences [n=19]
Reduced waiting time outside the HWRC	91% [1 st]	67% [3 rd]
Reduced crowding within the HWRC	73% [2 nd]	48% [6 th]
Commercial waste less likely to be dropped in the HWRC facilities	64% [3 rd]	81% [1 st]
Better/more information collected about HWRC users (e.g., where they live, how often they come)	59% [4 th]	48% [6 th]
HWRC staff and visitors more likely to follow social-distancing guidance during COVID periods.	55% [5 th]	38% [9 th]
More manageable workload for HWRC staff	50% [6 th]	57% [4 th]
Visitors more likely to place waste in the correct container in the first place	50% [7 th]	43% [8 th]
Non-residents less likely to be using the HWRC facilities	50% [8 th]	76% [2 nd]
Better/more information disseminated to HWRC users (e.g., service/facility news)	50% [9 th]	29% [11 th]
HWRC staff more likely to detect anomalies with waste (e.g., non-household waste, waste placed in the wrong container, etc.)	45% [10 th]	57% [4 th]
More friendly/respectful visitors	41% [11 th]	19% [15 th]
Reduction in annual HWRC costs (from better management or less waste)	36% [12 th]	29% [11 th]
More friendly/helpful HWRC staff	36% [12 th]	24% [13 th]
Visitors spend less time within the HWRC	32% [14 th]	24% [13 th]
Better/more information collected about user experience (e.g., waste brought to the HWRC, satisfaction surveys).	32% [14 th]	38% [9 th]
Reduced staffing	5% [16 th]	10% [16 th]

5. Drawbacks of Booking Systems for LAs

5.1 Negative consequences of booking systems

We identified a number of examples of negative consequences of having a HWRC booking system in the literature review and in the interviews:

1. Set up and running costs
2. Technical failure
3. Poor efficiency
4. Potential increase in the number of telephone calls made to book slots
5. Public and political criticism

These are detailed below:

1. Set up and running costs

A key drawback for some LAs implementing booking systems would appear to be their set-up and running costs (e.g. licence, software, provider support).

“In terms of the challenges for putting in the software and the cost to that and the support that we would need of IT, [...], we decided not to do that, so we tried other methods of controlling our residents instead.”

This varied widely between LAs. It also depended on how many sites managed by the LA this applied to. Some LAs reported that there were no additional resource implication to retaining a booking system, as it was primarily a self-service form completed on-line.²¹

“We still use [x] because it is a free of charge system.”

Other LAs had an initial spend from external partners to set up the system but it was then run in-house.²² A third group of LAs relied upon private contractors to manage the systems for them. One LA reported that the cost of their HWRC booking system was around £108,000 a year.²³ Another that it was £40,000 a year.²⁴ Another £21,000 a year.²⁵ Another reported that it would cost about £6000 for approximately eight months (end of tax year).²⁶ Another reported that the annual cost per site was fixed at £1,200 (and they were using it at 7 out of 11 sites at the time the report was published).²⁷

2. Technical failure

Some LAs have experienced technical issues with the booking systems.

²¹ Bath & North-East Somerset Council, Retention of the Recycling Centre Booking System (2 January 2022)

²² Gateshead Council, Housing, Environment and Healthier Communities Overview & Scrutiny Committee, ‘Fly-tipping Review’ (27 June 2022)

²³ Daniel Jaines, ‘Scrutiny councillors blame tip booking system for fly-tipping increase - “Plague” issue voted out’ (The Lincolnite, 13 July 2021)

²⁴ Hampshire County Council, Decision Report, ‘Household Waste Recycling Centres Booking System’ (27 January 2022)

²⁵ Kent County Council, Booking to visit a Household Waste Recycling Centre – Consultation Report (2021)

²⁶ Portsmouth City Council, ‘Household Waste Recycling Centre Operations update and booking system’, (27 July 2021)

²⁷ West Sussex County Council, ‘Recycling Centre’s Booking System’, Report by Director of Environment and Public Protection (March 2022)

“It caused a lot of problems and it would crash and people would get upset and, you know, it was just a big headache.”

For many this appeared to be when the systems were first introduced and the literature appeared to indicate that IT problems have now mostly been addressed. One LA reported that their system had been available 99.99% of the time since it was live.²⁸

3. Poor efficiency

One interviewee indicated that the system was hindering their operations. However, it is possible that this was due to the design of the booking system or the way it was set up (e.g., number of booking slots).

“It wasn’t the best system [...] for us in terms of maintaining tonnages and recycling.”

4. Potential increase in the number of telephone calls made to book slots

The number of calls LAs receive could increase due to people without online access needing to make bookings. One LA reported an additional cost of £25,000 to cover the increased calls to its contact centre to answer waste management enquires during the pandemic and make bookings for customers unable to book online.²⁹ However, we also noted that many of LA’s initial concerns did not materialise.

“We didn’t want to offer a telephone service, but we now actually take telephone bookings as well. We didn’t publicise it initially but we have sort of softened our approach and our customer service centre can cope with that.”

5. Public and political criticism

Some LAs had experienced criticism of implementing booking systems from local politicians or members of the public. These appeared to mostly be centred on booking systems creating a barrier to access, the availability of slots, and the links between booking systems and fly-tipping (or the perception of this as a problem). These are dealt with in more detail later.

5.2 The Survey

The survey enabled us to understand which of the negative consequences listed above were considered to be important for LAs. In the survey we asked LAs what the main negative consequences of having a booking system were³⁰ and Table 4 (below) shows all of the responses.

²⁸ West Sussex County Council, ‘Recycling Centre’s Booking System’, Report by Director of Environment and Public Protection (March 2022)

²⁹ Kent County Council, Booking to visit a Household Waste Recycling Centre –Consultation Report (2021)

³⁰ The survey was designed based on the findings of the literature review and administered before the interviews. This is why the content of Table 4 does not match the consequences identified in the interviews.

Table 4: The main negative consequences of having a booking system in your local community context (select all that apply) [n=41]

Negative Consequence	Those with a booking system that said introducing one had negative consequences [n=22]	Those without a booking system that said introducing one could have negative consequences [n=19]
Users' perception that there aren't enough slots available	23% [2 nd]	63% [1 st]
Discourage people that, for certain reasons do not want to share personal information (e.g., do not have ID, or car tax/MOT/insurance, have privacy concerns).	27% [1 st]	58% [2 nd]
Discourage people that don't speak English or do not use a computer	5% [4 th]	37% [3 rd]
Procurement and running cost of the booking system to the local authority	9% [3 rd]	32% [4 th]
Not enough booking slots to satisfy demand.	5% [4 th]	32% [4 th]
Abusive visitors	5% [4 th]	21% [5 th]

The two main consequences as selected by both those with booking systems, and those without booking systems, were that they might discourage people that don't speak English or do not use a computer, and the users' perception that there aren't enough slots available. However, **those without booking systems perceived the negative consequences of having these were far greater than those who already had booking systems in place.** The two main negative consequences identified by those with booking systems covered 27% and 23% of respondents only, whereas for those with booking systems this was identified by 58% and 63% of respondents, respectively. The numbers of negative consequences given by those with booking systems should also be contrasted with the 91% agreement for the top positive consequence. But we do not know who is right – and this could be dependent on an individual site and its circumstances rather than any pattern.

5.3 Perceptions of consequences and patterns of use for those that had a booking system and then removed it

Below are some opinions collected during this study from LAs who have had a booking system and then removed it (so they can see the positive and negative consequences from both sides):

“Since removing the booking system the pattern of use has reverted – with peak periods of use, and extended quiet periods. We have needed to divert more staff resources back to entry control, and the busy periods make it more difficult to ensure effective separation into recyclable and non-recyclable fractions.”

“We now have more people not entitled to use the service turning up to try and get entry, which rarely happened during the booking system period. We believe that some ‘free-riders’ do succeed in coming in during busy times, when access checking is harder, and the main concern is maintaining throughput and reducing queues, but by its nature this is not easily quantified.”

“Operating with a permit system enables more efficient operations and better use of resources with better recycling rates. Operating without one gives more resident flexibility and higher user satisfaction, but enables less recycling effort for those who want to just turn up, dump and go without sorting materials.”

5.4 LA opinions on the option of having booking systems

The literature and interviews show that some LAs believe that HWRC booking systems have an important role to play in their area (or certain sites under their control), and for other LAs they feel that they do not. There is perhaps no one size fits all approach and it was clear that there had been a great deal of discussion and analysis within LAs about what will work for their own sites, whether to adopt booking systems or not, and for those that have taken them forward, periodic reviews as to whether they should keep them or amend them (e.g. make them apply to vans only and not cars, or alternatively increase the number of slots available for booking).

Many LAs have clearly been weighing up the evidence and current local circumstances before making decisions relating to booking systems (and often repeating this exercise at regular periods). Some of those with booking systems appeared to be completely open to the possibility of reducing/removing them in the future if the evidence pointed that way and some of those without booking systems would like the option of having them in the future if local circumstances indicated that they would be beneficial.

Politics was often raised as an issue. One LA (that did not have a booking system) commented:

“I very much feel this is an area where local politicians should have freedom to decide this themselves according to local needs.”

They also noted that councillors were often considering usability as a primary factor:

“If you speak to members or councillors they perceive it as a blocker to use, it puts people off, so I think ..., it’s very subjective you see”

It was interesting to note that in the risk assessment process of analysing booking systems **some LAs flagged the risk that Government may issue guidance to prohibit booking schemes.**

“If we knew we were keeping it for maybe 5 years we will probably invest in a better system.”

When this was raised as a risk the response was that it was considered unlikely that government would use legislation to fetter local discretion, and booking systems was an issue that was best left to local determination. But one LA told us that one of the reasons they did not have a booking system was because:

“in a climate where politicians are visibly criticising the permit system, it becomes more trouble than it is worth.”

The need for local determination has also been raised by the associations representing the LAs. The Local Authority Recycling Advisory Committee (LARAC) have commented that they believe:

“It is up to individual councils as to whether they employ booking systems or not. Some want to continue with benefits as I have described as they have found that to be a successful system. Others may have other policies such as restricting by waste type, or by car reg numbers, in order to reduce numbers of customers visiting at any one time and enable social distancing to be maintained. It really depends on individual site circumstances as to what policies are best for that particular site.”³¹

The Local Government Association (LGA) have also commented that:

³¹ James Langley, ‘Councils weigh up HWRC booking systems’ (Letsrecycle.com, 6 April 2021)

“This decision is best left to councils as they know the sites and understand the needs of their local communities.”³²

³² Local Government Association, ‘LGA response to Defra call for evidence on booking systems at household waste and recycling centres’ (7 July 2022)

6. The pros and cons of HWRC booking systems to the public

6.1 Benefits to the General Public

Better control of the number of visitors using the site at any one time is reported as providing improving conditions for users. **The most important benefit is probably reduced queuing**, because the booking system spreads demand more evenly. The literature suggests that a significant problem for the public using some HWRC sites (before booking systems were introduced) was queuing. In a 2022 Defra research study the most experienced difficulty at HWRC centres was found to be long queues.³³ Figure 1 below shows that 37% of survey respondents from the general public said that this was an issue.

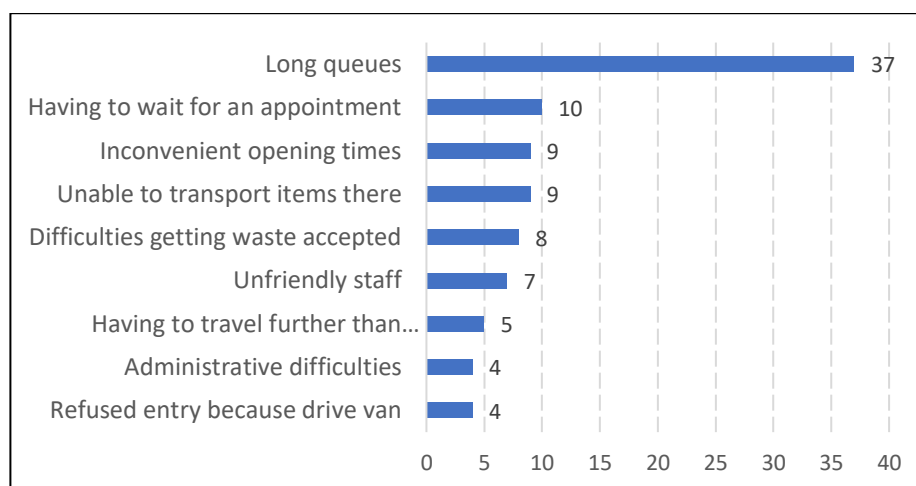


Figure 1: Proportion of people who had used household waste/recycling centre in the past 12 months who experienced difficulties (Public Survey: NatCen Panel 2021)

From the literature there was a suggestion that waiting times (at sites before booking systems were introduced) could sometimes be as long as 90 minutes at some sites, and one LA official commented that it could be as long as a five hour wait at peak demand periods.³⁴

“The big advantage is you don’t queue”

For LAs with booking systems residents now have **certainty** that they will be able to access the site at the time booked.

“People couldn’t stand turning up and not knowing how long they would have to queue [...] now you can plan your day,”

“People like it, it is really quick and easy to use and, once you have got your booking slot, then that’s your booking slot.”

“I think people are more aware that if you book something, it’s there, it’s yours. They have got the certainty of turning up, getting in what they need to do and gone.”

There are **no wasted trips** due to the site being too busy.

³³ Ray Purdy, Mat Crocker, Hervé Borrión, Paul Ekblom, Lisa Tompson, John Galvin, & Roger Fouquet, ‘Fly-tipping: Drivers, Deterrents and Impacts’ (Defra research project report, EV 04101, March 2022)

³⁴ Robyn White, ‘Councils praise HWRC ‘slots’ amid some criticism’ (Letsrecycle.com, 13 July 2020)

One council reported that "the booking system is still in place because we believe, on balance, most residents prefer to 'book and drop off' because 'turn up and queue' wastes people's time and fuel."³⁵

It has also **helped traffic management in the area** which has improved the public's use of roads near HWRCs and local residents access to their homes.

"Both of our recycling centres are in areas where there are neighbouring businesses, I think the businesses have enjoyed the shorter queues as well, because there's only one access road."

"Previously, that could be jam packed all the way up onto the main road, and then it would impact the ring road around [...]. We have actually had occasions when the police have had to step in and do traffic management, to stop people queueing up."

It is also **making the on-site experience of visitors run smoother** because they are less hurried and are more likely to put the waste in the right containers and be able to seek help from HWRC staff.

Feedback from residents in surveys and social media also indicates that for many the **HWRC visit experience is made much better** by being less-crowded.

"I think initially people are a bit wary of a booking system but then, once they get used to it, and once they realise there are no queues and they can just go in quite quickly and drop their waste off and back out again without having to queue for a long time then they tend to change their mind and we tend to get more positive comments."

At some LAs that do not have booking systems they have reported that they were still experiencing long queues and waiting times to access the HWRCs,³⁶ at the same time that LAs with booking systems were reporting queuing to no longer be an issue.

6.2 Drawbacks of the Booking System to the General Public

6.2.1 The inconvenience of having to book a slot

The 2022 Defra research project into fly-tipping found that **reducing effort when getting rid of waste was very or quite important to 72% of the general public.**³⁷ Inconvenience (and the inflexibility of booking) has been raised as a drawback at some sites with booking systems.

The most common criticism has been that some people want the flexibility to decide whether to go to a HWRC on the day. Some members of the public do not want to plan ahead, and when they decide to do something they could be frustrated if they have to wait. One LA reported that in terms of why residents felt negative about using the booking system **70% of the public wanted to decide about visiting the HWRC on the day.**³⁸ In another LA, 39% of residents who said that they had a negative view of the booking system said that this was for this reason.³⁹ The **primary improvement to booking**

³⁵ James Thomas, 'Herefordshire tip booking system is 'popular' – council update' (Hereford Times, 10 May 2022)

³⁶ Lincolnshire County Council, Household Waste Recycling Centre Booking System (5 March 2021)

³⁷ Ray Purdy, Mat Crocker, Hervé Borrión, Paul Ekblom, Lisa Tompson, John Galvin, & Roger Fouquet, 'Fly-tipping: Drivers, Deterrents and Impacts' (Defra research project report, EV 04101, March 2022)

³⁸ West Sussex County Council, 'Recycling Centres Booking System', Report by Director of Environment and Public Protection (March 2022)

³⁹ Kent County Council, Booking to visit a Household Waste Recycling Centre – Consultation Report (2021)

systems suggested in some LA surveys was to allow on the day bookings. Nearly two-thirds of the public in some areas have said in local surveys that on-the-day bookings would be beneficial.⁴⁰

A second drawback that has been raised by members of the public is that they have found it difficult to book slots because at times of high demand they had all been taken. This may have led to residents booking a slot that was not preferred, or booking further ahead than they would have liked. Figure 1 above shows that survey respondents from the general public in the 2022 Defra study reported that having to wait for an appointment was the second most experienced difficulty when using HWRCs (10% of respondents said this).⁴¹ But presumably if there was no booking system and high demand at a certain time this might have still led them to having to queue. And while booking systems can be perceived as burdensome, it is possible that people might prefer making a booking over queuing.

Another common theme in LA feedback surveys was that some members of the general public thought slots at HWRC sites should be increased.

A third drawback was having restrictions on the numbers of visits over a certain period. Some booking systems place a maximum weekly, monthly or annual limit on how often a site can be accessed. One member of the general public labelled this “insanity” in the local press.⁴²

There were also a small number of examples in the media of members of the public thinking that they had just wasted their time with the administration undertaken for making a booking because when they had gone to their HWRC they had found it was not that busy. It is unknown whether this was because of low take-up of these slots, or missing appointments (which can often equate to about 5-10% of all bookings).⁴³ One member of the public called this process of having to book what turned out to be a not very busy slot in the press as “absolutely ridiculous”.⁴⁴ It is hard to comment on this criticism because we do not know if the site would have been busy if the booking system had not been in place. However, it might be argued to be missing the point of a booking system to dislike the fact that a fixed slot that is designed to enable you to dispose of waste quickly, with no overcrowding, or queuing, shows that such a system might not be necessary.

Generally, it is problematic to broad brush label all HWRC booking systems as being restrictive in terms of accessibility because every site booking system is different. For example, whilst some LAs require booking the day before, others have a system that needs 2-hours’ notice, and sometimes even less. Some LAs also now have no limit to the number of bookings that can be made on one day, or up to a month in advance (sometimes with the caveat as long as existing bookings have been attended first).⁴⁵ One LA also reported that they had received no complaints from residents at all regarding not being able to book slots at the HWRC.⁴⁶ It is clear that there are issues at some sites, but these might not apply (or apply to a lesser extent) at other sites.

⁴⁰ 63% of the public in West Sussex – see, West Sussex County Council, ‘Recycling Centres Booking System’, Report by Director of Environment and Public Protection (March 2022). 61% of the public in Kent – see, Kent County Council, Booking to visit a Household Waste Recycling Centre – Consultation Report (2021)

⁴¹ Ray Purdy, Mat Crocker, Hervé Borrión, Paul Ekblom, Lisa Tompson, John Galvin, & Roger Fouquet, *Fly-tipping: Drivers, Deterrents and Impacts* (Defra research project report, EV 04101, March 2022)

⁴² Nigel Slater, ‘Raynesway booking system has ‘no link to increased fly tipping’ – Derby City Council bosses have spoken out’ (Derby Telegraph, 15 September 2021)

⁴³ Joshua Doherty, ‘Wiltshire sees 557 missed HWRC appointments in a week’ (Letsrecycle.com, 7 April 2021)

⁴⁴ James Thomas, ‘Herefordshire tip booking system is ‘popular’ – council update’ (Hereford Times, 10 May 2022)

⁴⁵ Jack Dyson, ‘Kent tip booking system blamed for spike in fly-tipping’ (Kent Online, 29 January 2022); and also: Birmingham City Council, ‘Booking system upgrades make it easier to visit the city’s Household Recycling Centres’ (Birmingham City Council website, 21st December 2020)

⁴⁶ Portsmouth City Council, Integrated Impact Assessment, Household Waste Recycling Centre (17 June 2021).

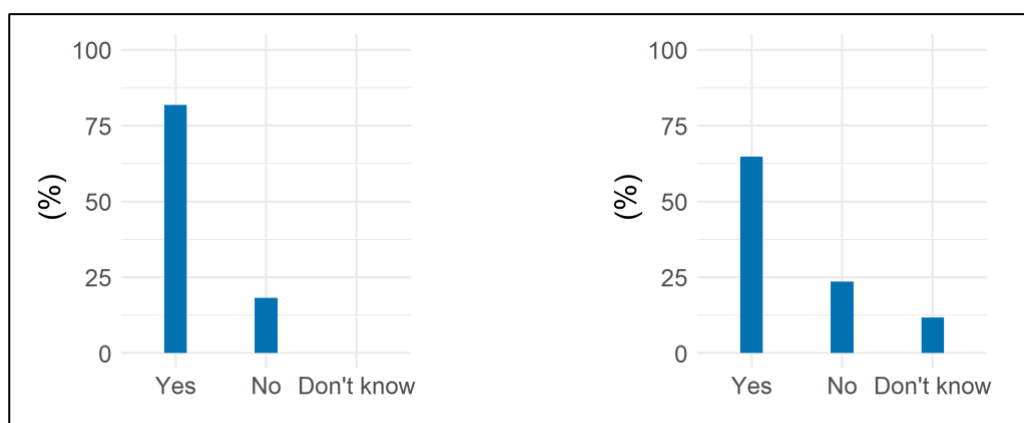
Clearly, access at a lot of sites was more restrictive when booking systems were first introduced because of the pandemic. **Since the introduction of booking systems those LAs with them have been learning about running a convenient system as they gain experience, and large numbers have made changes to meet customer demand** (e.g. more booking slots or same day slots). In one LA 99% of those using the booking system were reported as having got a booking either for the exact date they wanted, or an acceptable alternative date.⁴⁷ Similarly, the same LA found that after making system changes 55% of HWRC users had used the booking system to book ‘on the day’⁴⁸. Many LAs vastly increased the number of booking slots available after the pandemic restrictions ended and some people are now liking the booking process. One LA reported that complaints about both the availability of slots and the HWRC booking system had reduced since June 2021 when the HWRCs returned to full capacity, effectively doubling the number of spaces.⁴⁹ Some LAs have also changed the booking systems to not apply to cars and only large vehicles and trailers.

We asked a number of survey questions about what booking processes currently look like and the results are contained in Table 5 below.

Table 5: What applies in the booking process

Action	Yes	No	Don't know
Booking can be made on the day of the visit to the HWRC [n=22]	82%	18%	0%
Booking has to be made more than 48 hours in advance [n=22]	0%	100%	0%
There are restrictions on the numbers of visits over a certain period [n=21]	38%	57%	5%
Visitors must indicate the type of waste they intend to bring to the HWRC [n=22]	23%	77%	0%
Non-residents can deposit waste at the HWRC for a fee [n=21]	14%	81%	5%

In the LAs surveyed, no respondents had a system where booking had to be made more than 48 hours in advance. As shown in Figures 2 and 3, **82% of respondents with booking systems confirmed that booking was possible on the day of the visit**. Only 65% allowed account registration and booking on the day of the visit.



Figures 2 and 3: Proportion of booking systems that offer on-the-day booking (left) and on-the-day account registration and booking functionalities (right).

⁴⁷ Kent County Council, KCC Members Newsletter, Waste Management Update, September 2022.

⁴⁸ Kent County Council, KCC Members Newsletter, Waste Management Update, September 2022.

⁴⁹ Kent County Council, Booking to visit a Household Waste Recycling Centre – A view on a HWRC Booking System and a response to the public consultation from the Waste Management Service (2021)

We asked LAs to tell us what would happen if a resident arrived at a HWRC without a booking and the HWRC was not fully booked.⁵⁰ A small number (5%) of those surveyed with booking systems said that they had a dedicated number of timeslots for visitors without an appointment. Half (50%) reported that people without bookings would be told to book an immediate slot using their smartphone (and could then gain access if there were slots) and 36% reported that they could let them in at the discretion of the staff (without booking on their smartphone). **14% indicated that they would advise that the person wishing to dispose of waste would have to go home and come back another day.** While this only concerns a minority of sites, it raises questions as to why such drastic response is deemed necessary when the vast majority of LAs can be more accommodating. Interestingly, none of the 3 respondents who answered that users would have to come back the next day reported an increase in the numbers of fly-tipping in the area after the booking system was introduced (2 said fly-tipping has stayed the same, 1 answered they did not know).

Generally, most LAs with booking systems offer accommodating solutions to users of HWRCs sites to make them convenient and easily accessible, but not all do. It might be helpful to examine further why some can, but others cannot, and there is potential to issue best practice guidance in this area.

Many LAs believe that access to convenient booking slots is not as big a problem now as it had been before, but it seems that there could be a perception that accessibility and convenience is still an issue (which is in itself still a problem), even though this might not reflect the true reality of the situation. In one LA where negative feedback had been raised about the availability of slots in a consultation, this came from members of the public who had not used the HWRCs since the booking system had been introduced.⁵¹ It was unclear whether these people had actually tried to make a booking and were deterred by the waiting times or not; because for those residents who had visited a HWRC site the satisfaction levels of the waiting times between when a resident booked, and the actual appointment were very high with 94% either satisfied or very satisfied.⁵²

6.2.2 Difficulty making an online booking

There was evidence that some LAs were undertaking equality assessment reviews into booking systems.⁵³ Generally, these found that booking systems had a low potential for discrimination against any of the protected groups.

In the 2022 Defra fly-tipping project '*Fly-tipping: Drivers, Deterrents and Impacts*'⁵⁴ a focus group participant noted that HWRCs were often moving to an online appointment booking system, and commented that this may be digitally excluding a portion of society. Some members of society do not like using computers and find them complicated, or do not have computers/connected devices. This is most likely to apply to lower income households or older people (being a demographic less likely to have the tools or know-how to be able to book online). It is, therefore, possible that booking systems might exclude certain members of the public from visiting HWRCs.

⁵⁰ Survey response figure [n=22]

⁵¹ Bath & North East Somerset Council, Retention of the Recycling Centre Booking System (2 January 2022)

⁵² Bath & North East Somerset Council, Retention of the Recycling Centre Booking System (2 January 2022)

⁵³ E.g. Kent County Council – Highways Transportation & Waste, Equality Analysis / Impact Assessment (EqIA), Household Waste Recycling Centre (HWRC) Booking System (13 August 2021)

⁵⁴ Ray Purdy, Mat Crocker, Hervé Borrión, Paul Ekblom, Lisa Tompson, John Galvin, & Roger Fouquet, 'Fly-tipping: Drivers, Deterrents and Impacts' (Defra research project report, EV 04101, March 2022)

Our research found that LAs appeared to have systems in place to ensure that people without access to online booking systems could make appointments by phone⁵⁵ or sometimes via certain shops. In the survey we conducted almost all the respondents who indicated having a booking system confirmed that those with reduced access to a computer could still book a slot on the phone (91%), or ask someone else to book a slot for them (73%). About a third of them (32%) indicated using their own discretion to allow access on the day in such cases.

The majority of the respondents (71%) who have a booking system at the HWRC indicated that less than 5% of bookings were made on the phone; the other LA respondents (29%) did not know.⁵⁶ The literature review also found that bookings by telephone would appear to make up about 2-4% of total bookings.⁵⁷ One further LA reported that of the 3% of bookings that were made by phone, only 1% were as a result of a customer not having access to the internet and/or an email address. The remaining 2% of calls were either due to an individual's preference for calling or because they experienced some form of difficulty with the booking system.⁵⁸ This shows that some members of the public are clearly successfully making telephone bookings.

The option of a telephone booking appears to be an acceptable alternative to online booking, as long as members of the public are aware of it and are not left on hold too long. One LA customer survey found that the option to book by phone was not widely promoted and that it was sometimes difficult to get through to the contact centre, so the LA committed to improving these issues.⁵⁹ Another LA reported that a local Councillor claimed that "*people who booked over the phone could be waiting for 30 minutes*" although evidence provided by the LA in response to this Councillors claim stated that "there was an average 24 second waiting time for residents to book a slot over the phone and advice was given to elderly residents."⁶⁰ Again how much of an issue acceptable response times on the telephone will probably vary from LA to LA.

6.2.3 General difficulty using the online booking system

Surveys/consultation on LA booking systems have found that some people do find the booking system/forms complicated and think that they take too long to fill-in.⁶¹ Based on some of the surveys conducted by LAs in their own areas between 1 and 7% of those surveyed seem to be finding booking systems difficult. Table 6 shows that in some LAs the booking system has been improved in response to customer feedback. One LA made changes in response to feedback and found the online booking process took on average less than two minutes to complete.⁶² Some LAs had also introduced pictorial

⁵⁵ None of the respondents reported offering premium-rate phone booking options, which happens in some French LA areas

⁵⁶ Survey response figure (n=21).

⁵⁷ Examples: (1) Gateshead Council, bookings online 98% - bookings by telephone 2%, Gateshead Council, Housing, Environment and Healthier Communities Overview & Scrutiny Committee, 'Fly-tipping Review' (27 June 2022); (2) West Sussex Council, bookings online 98% - bookings by telephone 2%, West Sussex County Council, 'Recycling Centres Booking System', Report by Director of Environment and Public Protection (March 2022); (3) Hampshire Council, bookings online 96-97%, bookings by telephone 2-3%, Hampshire County Council, Decision Report, 'Household Waste Recycling Centres Booking System' (27 January 2022); (4) Kent County Council, bookings online 97% - bookings by telephone 3%, Kent County Council, Booking to visit a Household Waste Recycling Centre – A view on a HWRC Booking System and a response to the public consultation from the Waste Management Service (2021).

⁵⁸ Kent County Council, Booking to visit a Household Waste Recycling Centre – A view on a HWRC Booking System and a response to the public consultation from the Waste Management Service (2021)

⁵⁹ Kent County Council, Booking to visit a Household Waste Recycling Centre – Consultation Report (2021)

⁶⁰ Meeting of Warwickshire Waste Partnership, Wednesday 29 September 2021 2.00 pm (Item 7.)

⁶¹ Gateshead Council, Housing, Environment and Healthier Communities Overview & Scrutiny Committee, 'Fly-tipping Review' (27 June 2022)

⁶² Kent County Council, Booking to visit a Household Waste Recycling Centre – A view on a HWRC Booking System and a response to the public consultation from the Waste Management Service (2021)

communications on the booking website explaining how to do a booking, specifically to help overcome language issues.⁶³

Table 6: Online booking systems - user satisfaction levels in different LAs

West Sussex	83% said the booking system was extremely/quite easy, and 6% said quite/extremely difficult. ⁶⁴
Bath & NE Somerset	98% of those respondents who had used the booking system found it easy or very easy to use. ⁶⁵
Kent	2021 - 80% found it extremely easy or quite easy to use the online booking system; 7% found it quite difficult or extremely difficult. ⁶⁶ 2022 - 95% of respondents found it easy or extremely easy to use the booking system and 1% found it difficult ⁶⁷
Re3 partnership (Reading, Wokingham and Bracknell)	94% of respondents said the booking system was easy to use. ⁶⁸

6.2.4 Negative impact on those with protected characteristics

In one LA survey those people who stated they consider themselves to be disabled were less likely to be positive about a booking system (47% compared with 58% who do not consider themselves to be disabled).⁶⁹ A further LA found that there were several suggestions/challenges from respondents regarding disabilities, or health issues, older people and those with caring responsibilities. A key challenge mentioned by a number of respondents was the impact of having to book when they have a disability or mental health condition; for example, not knowing until the day whether they'll feel well enough or remember their appointment time.⁷⁰ Such a booking issue is most likely to apply in those LAs that do not have same day booking slots. This issue will vary from person to person and it is difficult to make a definitive judgement as to the size of the issue. As noted earlier, some LAs have also reported that booking systems are having a positive impact on some of those with protected characteristics. This is because they can enable operatives to have more time to provide support to those who need it; and visiting an HWRC by appointment can also be a more predictable/less stressful experience which is helpful for some. One LA was also trialling changes to the booking system so that certain customers can request assistance in advance (providing more certainty of assistance on the day compared to those attending sites without booking systems). This is for those who might need extra help as a result of age, disability or pregnancy and was identified as an action in an equalities impact assessment review.⁷¹

⁶³ Portsmouth City Council, Integrated Impact Assessment, Household Waste Recycling Centre (17 June 2021).

⁶⁴ West Sussex County Council, 'Recycling Centres Booking System', Report by Director of Environment and Public Protection (March 2022)

⁶⁵ Bath & North East Somerset Council, Retention of the Recycling Centre Booking System (2 January 2022)

⁶⁶ Kent County Council, Booking to visit a Household Waste Recycling Centre –Consultation Report (2021)

⁶⁷ Kent County Council, KCC Members Newsletter, Waste Management Update, September 2022.

⁶⁸ Tom Burnett, 'The Government has raised concerns advanced booking systems in some areas are leading to increased fly-tipping' (Berkshire Live, 15 June 2022)

⁶⁹ Kent County Council, Booking to visit a Household Waste Recycling Centre –Consultation Report (2021)

⁷⁰ Kent County Council, Booking to visit a Household Waste Recycling Centre –Consultation Report (2021)

⁷¹ Kent County Council, KCC Members Newsletter, Waste Management Update, September 2022

6.2.5 Requirement for identification / Checks as to vehicle status

Exclusion may also come from other aspects of the booking system. For example, identity documentation (e.g., to prove address) is more difficult to obtain when you are residentially transient because of precarious employment or due to difficult financial circumstances. One focus group participant in the earlier 2022 Defra study noted that in the Midlands people needed two forms of ID to prove residency in the local area to visit the HWRC during lockdown.⁷² This was to prevent people from other areas trying to get rid of waste but could potentially act as a barrier to people who did not have easy access to such forms of ID.

We could not see any reference to the requirement for identification potentially being a barrier in the literature review, but the survey found that a significant negative consequence of booking systems could be that they discourage people that, for certain reasons do not want to share personal information (e.g., do not have ID, or car tax/MOT/insurance). The AA have reported that around 3% of all motorists do not have car insurance⁷³ and Government research has found that around 2% of vehicles on UK roads do not have vehicle tax.⁷⁴ Table 4 above found that discouraging people without car tax/MOT/insurance or ID was the biggest negative consequence for LAs with a booking systems (27%) and the second biggest negative consequence for LAs without a booking system (58%).

Similarly to the issues raised in the access/convenience section, many LAs are clearly listening to user needs and some are striving to make booking service improvements based on the feedback. Not everyone is going to be satisfied and a small minority could still have access issues, but services appear to be working and evolving to make the system work for the vast majority (who are complying with motoring and vehicle laws). It could be beneficial for bodies like the Local Government Association to periodically seek feedback on best practice so that LAs can share experiences of what works (and doesn't work) when making their booking systems more inclusive to society.

6.3 Public Opinion

The majority of the LA respondents to our survey believed that the local community was either satisfied or very satisfied (86%) with the booking system at the HWRC. Only a few considered that the local community was neutral (5%) or dissatisfied (5%).⁷⁵

There appears to have been lots of public consultation (often before and during the operation of booking systems) and evaluations undertaken. Some of this has been informal via social media, and some of these formal user satisfaction surveys (some undertaken annually or even bi-annually). The majority of the survey respondents (62%) had done a survey to assess user satisfaction following the introduction of booking systems.⁷⁶ The 2 respondents who found that users were dissatisfied with the booking system at the site (see question in paragraph above where 5% answered dissatisfied) did not indicate having done a survey.

Methodological note: satisfaction surveys conducted at HWRC sites could be biased if they did not include those users who no longer come to the HWRC because they are dissatisfied by the booking system, or if they did not compensate for the fact that users who decide to come less often to the HWRC (for the same reason) are likely to be underrepresented on the sample. Also important to consider is that the data on how easy people find the booking system will have been completed by residents who are IT

⁷² Ray Purdy, Mat Crocker, Hervé Borrión, Paul Ekblom, Lisa Tompson, John Galvin, & Roger Fouquet, 'Fly-tipping: Drivers, Deterrents and Impacts' (Defra research project report, EV 04101, March 2022)

⁷³ <https://www.theaa.com/car-insurance/advice/uninsured-drivers>

⁷⁴ <https://www.gov.uk/government/statistics/vehicle-excise-duty-evasion-statistics-2021>

⁷⁵ Survey response figure (n=21, incl. 1 "don't know" answer)

⁷⁶ Survey response figure (n=21, incl. 2 "don't know" answers).

literate, and therefore those who might have trouble due to being unfamiliar with IT will have likely not taken part in the surveys.

The Local Government Association also found that “where councils have consulted residents there has been a positive response to booking systems.”⁷⁷ From the literature examined the overall trend was that a minority of the public did not like booking systems, but the majority were in favour of using them, as can be seen in Table 7 below:

Improvements would appear to be taking place on the back of these surveys and public consultations in many LAs. In some cases consultations have sometimes found that LAs should retain the booking system at some sites and not introduce it / remove it / make it apply to just vans and trailers at others. This demonstrates that that most are trying to balance public opinion with what works for them at a local level. The above shows that the majority of users like having a booking system and want to see them being retained. But the above also show there are still a significant minority of members of the public who dislike booking systems and would like to see them removed.

Table 7: Booking systems - user satisfaction levels in different LAs

Bath & NE Somerset	87% wanted to retain the booking system. Benefits cited were that visits were quicker, and they did not waste time or fuel sat waiting in queues, or visiting the site and finding the queues too long to wait or already closed. ⁷⁸
Birmingham City Council	“Feedback has been overwhelmingly in favour of the booking system.” ⁷⁹
Bracknell	64% of respondents at one site, and 65% of respondents at another site, said it made their visit to the sites more efficient as a result of needing to book. ⁸⁰
Gateshead	Satisfaction levels seem to be improving over time (ratings 1-5, with 5 being the highest). Nov 2021 – 3/5; December 2021 - 3.6/5; January 2022, 3.8/5; February 2022 - 4.1/5; March - 2022 4.2/5; April 2022 - 4.6/5. ⁸¹
Hampshire	89.9% were satisfied or very satisfied with the booking experience, and 78.4% supported continued use of a booking system in the future ⁸² .
Herefordshire County Council	"Our booking system is popular, easy to use and we get very few complaints." ⁸³
Kent	52% of the 10,000 respondents were in favour of keeping the system." ⁸⁴ 95% of respondents were either satisfied or extremely satisfied with their visit to a HWRC (less than 2% were dissatisfied) ⁸⁵ In 2021 49% of respondents were extremely positive or quite positive about using the booking system and 45% were extremely negative or quite negative about using the booking system. ⁸⁶ In 2022 52% who had used the booking system were positive about using it in future. ⁸⁷

⁷⁷ Local Government Association, ‘LGA response to Defra call for evidence on booking systems at household waste and recycling centres’ (7 July 2022)

⁷⁸ Bath & North East Somerset Council, Retention of the Recycling Centre Booking System (2 January 2022)

⁷⁹ Birmingham City Council, ‘Booking system upgrades make it easier to visit the city’s Household Recycling Centres’ (Birmingham City Council website, 21st December 2020)

⁸⁰ Bracknell Forest Council, ‘Review Of Recycling Centre Booking System’ (17 June 2021)

⁸¹ Gateshead Council, Housing, Environment and Healthier Communities Overview & Scrutiny Committee, ‘Fly-tipping Review’ (27 June 2022)

⁸² Hampshire County Council, Decision Report, ‘Household Waste Recycling Centres Booking System’ (27 January 2022)

⁸³ James Thomas, ‘Herefordshire tip booking system is ‘popular’ – council update’ (Hereford Times, 10 May 2022)

⁸⁴ Jack Dyson, ‘Kent tip booking system blamed for spike in fly-tipping’ (Kent Online, 29 January 2022)

⁸⁵ Kent County Council, KCC Members Newsletter, Waste Management Update, September 2022

⁸⁶ Kent County Council, Booking to visit a Household Waste Recycling Centre –Consultation Report (2021)

⁸⁷ Kent County Council, KCC Members Newsletter, Waste Management Update, September 2022

North London Waste Authority	“A survey of 906 residents saw 43% of respondents says booking system improved their experience, with a further 34% saying it had no impact.” ⁸⁸
Re3 (Reading, Wokingham and Bracknell)	87% of residents said they experienced shorter queues, and 78% said it was easier to recycle. ⁸⁹
Suffolk County Council	Has received “many positive comments and feedback” from residents. ⁹⁰
Swindon	“In my local area of Swindon, the booking systems have proven incredibly popular as people are able to get in and out with reduced queuing times when compared with before.” ⁹¹
West Sussex	62% (3863) strongly agreed/agreed that the booking system should be maintained, 38% (2382) disagreed or strongly disagreed. At the two busiest sites Littlehampton and Worthing 76% and 77% wanted the system to stay.

⁸⁸ Joshua Doherty, ‘Councils considering role of booking systems’ (Letsrecycle.com, August 11, 2021)

⁸⁹ Tom Burnett, ‘The Government has raised concerns advanced booking systems in some areas are leading to increased fly-tipping’ (Berkshire Live, 15 June 2022)

⁹⁰ Robyn White, ‘Councils praise HWRC ‘slots’ amid some criticism’ (Letsrecycle.com, 13 July 2020)

⁹¹ James Langley, ‘Councils weigh up HWRC booking systems’ (Letsrecycle.com, 6 April 2021)

7. HWRC booking systems and potential links to fly-tipping

7.1 Evidence of a Link in Publications

One local government report references a paper that had been published by the Environment Agency that stated there “is no link between restrictions at the recycling centres and fly-tipping,” but we could not locate this publication.⁹² We could not locate any academic literature or reports that provided evidence of a link between fly-tipping and booking systems (or conversely evidence that there was no link).

There have been numerous claims in the media that some members of Government⁹³ and some councillors within local Government either believed that there was a direct link, or there posed an increased risk, between booking systems and fly-tipping. These can normally be divided into three groups which are analysed in 7.2 to 7.4.

7.2 Fears of a link before they came into operation and in the early days

Some of the links between fly-tipping and booking systems were discussed by some local government politicians before booking systems even came into action, or in their very early operational days. Sometimes councillors had openly “foreseen” this as an issue, or expressed their “fears” that this would be a problem. For example, one councillor announced: “*I truly fear this ill-thought-out booking system will lead to an explosion in citywide fly-tipping. If Bristolians are forced to accept a booking system where they cannot be assured of taking recyclable items to the tip at a specified time and may be turned away, I can foresee a huge upsurge in Bristolians leaving their waste illegally elsewhere.*”⁹⁴ **It appears a lot of publicity has been generated by feelings/instinct rather than waiting to see evidence.**

7.3 Booking systems acting as crime promoter

Numerous local media reports have covered stories where local politicians held opinions that it should be made as easy as possible for people to dispose of their waste properly, and “*any barrier, like a booking system, will deter people from doing that*” and could be a link to fly-tipping.⁹⁵

A 2022 Defra fly-tipping research report found that convenience appears/ed to be an important factor which influenced how people got rid of waste.⁹⁶ This research found that ease of booking a waste service was very or quite important to 81% of the general public and 72% of businesses. Reducing effort when getting rid of waste was also very or quite important to 72% of the general public and 53% of businesses. Focus groups from this same Defra study also found that some people thought that HWRC booking processes were easy and efficient. For others the process seemed to require a lot of effort (e.g., booking online and having to take multiple forms of ID to prove residency). This matches the findings in the previous section. Views varied according to where people lived. Some stakeholders suggested that if

⁹² Meeting of Warwickshire Waste Partnership, Wednesday 29 September 2021 2.00 pm (Item 7.) <<https://democracy.warwickshire.gov.uk/ieListDocuments.aspx?CID=147&MID=3215#AI5436>>

⁹³ Tom Burnett, ‘The Government has raised concerns advanced booking systems in some areas are leading to increased fly-tipping’ (Berkshire Live, 15 June 2022); & Robyn White, ‘Councils praise HWRC ‘slots’ amid some criticism’ (Letsrecycle.com, 13 July 2020)

⁹⁴ ITV news, ‘Fears that new rubbish tip booking system in Bristol will cause ‘explosion’ in fly-tipping’ (ITV News, 16 May 2022)

⁹⁵ Jack Dyson, ‘Kent tip booking system blamed for spike in fly-tipping’ (Kent Online, 29 January 2022)

⁹⁶ Ray Purdy, Mat Crocker, Hervé Borrión, Paul Ekblom, Lisa Tompson, John Galvin, Roger Fouquet, ‘*Fly-tipping: Drivers, Deterrents and Impacts*’ (Defra research project report, EV 04101, March 2022)

there was a “hassle factor” that made it harder for householders to dispose of waste using public services, this could drive some people towards using more undesirable routes.

It is plausible that any “hassle factor” or friction in the system relating to the use of HWRCs, which has negative impacts on convenience, could act as a provocation for normally law-abiding people or businesses. When looking at those sites that have booking systems there can be certain aspects to this that might be seen as “hassle factors” (depending on different sites and authorities), such as:

- The need to spend time booking online (or by telephone)
- The need to create an online account before you can make a booking
- The need to book in advance
- The slot you want might not be available (so you might have to pick a less convenient time)
- Limit on number of bookings weekly or annually
- Slots only being released a certain time in advance (e.g. every 7 or 14 days)

But administrative or convenience type “hassle factors” such as the ones above that apply to booking systems, can also be an issue at sites that don’t have booking systems. For example, the following aspects could also be considered to be “hassle factors” at some sites without booking systems:

- Permits are required for all users (or certain types of vehicles, or frequent users)
- Permits are required in advance for certain types of waste on restricted lists (e.g. fridge freezers, car tyres, DIY waste)
- Having to register the vehicle in advance before using the HWRC
- Vans are only permitted to use sites on certain days
- Access is only allowed on an odd/even number plate system on different days
- You are not allowed to queue outside the HWRC (which could be problematic if you arrive with a car full of waste and there is no space inside to queue)
- The HWRC will close if the queues are too long
- You might have to queue for a period of time to get access
- You might have to bring and show proof of residency before being granted access

In the earlier Defra research project mentioned above one stakeholder gave an anecdotal example of a person they knew who filled up their car with unwanted items to take these to the tip.⁹⁷ They were refused entry because unbeknown to them the council had started operating an odd/even number plate system on different days which determined whether you could access the site. The person was frustrated that they couldn’t leave their waste at the tip even though the tip only contained 3 other cars at that time. They had to return home, empty the car again before picking up their children from school. This person was angry at the council for not providing a service that was “*transparent or worked*” and confided to the stakeholder that “*they were tempted to throw the whole lot on a verge – seeing so many others have done that.*”

What the above seeks to demonstrate is that different sites can have different rules and administrative hurdles before being able to access them, whether they have a booking system or not. It is a fair assumption to make that “hassle factors” might potentially act as provocations to bad behaviour (a.k.a. precipitators), but this could apply to both some sites with booking systems and some sites without booking systems. Its potential impact will probably depend on the rules and bureaucracy at each individual site.

⁹⁷ Ray Purdy, Mat Crocker, Hervé Borrión, Paul Ekblom, Lisa Tompson, John Galvin, Roger Fouquet, ‘*Fly-tipping: Drivers, Deterrents and Impacts*’ (Defra research project report, EV 04101, March 2022)

7.4 An increase in fly-tipping in the statistics

An argument that there is a link between fly-tipping and booking systems is sometimes seen at local councillor level. The core argument is normally that if fly-tipping is on the increase then “*it is difficult not to link the two issues*”.⁹⁸ Another councillor in a different area elaborated on this point and commented: “*it can surely be no coincidence that this [an increase in fly-tipping] has occurred at a time when an appointment system has been introduced at household waste sites. What else can you put it down to? There can be no other reason for it. I can’t understand [the councils] decision because it’s just an inconvenience – it’s an unnecessary thing to do. It’s illogical and counter-productive. I don’t think anyone at [the council] is looking at the increased amount of fly-tipping.*”⁹⁹ Such arguments appear common in local newspapers across the country in authorities with booking systems.

Saying that there *could* be a link with fly-tipping is not inherently wrong, but **this is often not accompanied by evidence.** Similar linkages between HWRC management and fly-tipping have also been raised before in respect to the relationship between fly-tipping rates and HWRC charging (for certain wastes being disposed) but a nationwide research report by WRAP found no evidence of an association between fly-tipping and charging at HWRCs.¹⁰⁰ The WRAP report concluded that “*if such a relationship does exist it is likely to be weak, as no difference in outcomes can be predicted based upon the data currently available.*” This points to the fact that the data needs to be carefully scrutinised before arriving at assumptions.

A common response from councils on the receiving end of political criticism about fly-tipping links and booking systems has been to either argue that fly-tipping has remained the same level (before and after the booking system)¹⁰¹ or has had minor increases, or to claim that the rise in fly-tipping does not correlate with the operations of the HWRC (i.e. that they do not believe that fly tipping has increased as a result of the booking system).¹⁰² A common theme seen from looking at the literature was that most LAs thought that there was no real evidence that the existence of HWRC booking systems had a material effect on fly-tipping – e.g. it didn’t change appreciably when introduced or removed, and booking systems did not have an overall impact on fly-tipping – although some fly-tippers might well use HWRC access arrangements including permit requirements as an *excuse* for fly-tipping – this being more after the event than the primary cause.

One issue with using the fly-tipping data to draw links is that there is a data lag. The annual statistics are published approximately six months after the statistical year ends because it takes time to process and report on the data collected from across the country. So the statistics are not always a complete up-to-date reflection of what is taking place.

Many local politicians have also sought to compare fly-tipping data from 2019/20 & 2020/21 to draw links. In a survey commissioned as part of a Defra funded project in July/August 2021, LAs did generally think that the fly-tipping situation had got worse though since the start of the COVID-19

⁹⁸ Danny Thompson, ‘Many disagree with the council and think changes to the way the tip is ran is contributing to a rise in fly-tipping’ (Coventry Telegraph, 21 October 2021)

⁹⁹ Jack Dyson, ‘Kent tip booking system blamed for spike in fly-tipping’ (Kent Online, 29 January 2022)

¹⁰⁰ WRAP, ‘*The relationship between fly-tipping rates and HWRC charging*’ (WRAP, 2021), <<https://wrap.org.uk/resources/report/relationship-between-fly-tipping-rates-and-hwrc-charging>>

¹⁰¹ Joshua Doherty, ‘Councils considering role of booking systems’ (Letsrecycle.com, August 11, 2021)

¹⁰² E.g. see: Nigel Slater, ‘Raynesway booking system has ‘no link to increased fly tipping’ – Derby City Council bosses have spoken out’ (Derby Telegraph, 15 September 2021); Jack Dyson, ‘Kent tip booking system blamed for spike in fly-tipping’ (Kent Online, 29 January 2022)

pandemic.¹⁰³ **So local politicians will often be correct in saying that fly-tipping has increased, but these figures might have been distorted around the period of time covering the first two years of the COVID-19 pandemic (when there were lockdowns).** This can be supported by an academic paper written by Dixon, Farrell and Tilley which found that **there was a statistically significant decline in fly-tipping during lockdown** due to increased perceived risk in densely populated urban areas.¹⁰⁴ Their research found that fly-tipping resurged when lockdown laws were relaxed. This was because the volume of waste material produced in urban areas and the cover provided by lawful activities, began to return. Any backlog of fly-tipping could be cleared under the new cover provided and the reduced risk of fly-tippers being stopped for breaching lockdown laws. Hence, the resurgence in fly-tipping after lockdown was likely to be a form of temporal displacement as fly-tippers cleared the backlog. This suggests **that some of the fly-tipping statistics from 2020 and 2021 might give a misleading impression around the impact of booking systems and any comparative before and after data should probably be assessed with caution.**

The research shows that many councils are proactively monitoring links between booking systems and fly-tipping. This is sometimes prompted by requests from Councillors, or overview and scrutiny committees within LAs. The literature also shows that an increase in fly-tipping is sometimes attributable to other things at a local level – e.g. some LAs are of the opinion that fly-tipping increases in certain locations can be attributed to people from another local authority (moving waste over administrative borders) rather than their own residents.¹⁰⁵ Clearly local knowledge can be an important factor. Derby Council found that between April 2019 and March 2020 (pre-lockdown) they had 5,728 fly-tipping incidents and between April 2020 and March 2021 (lockdown and post-lockdown) they had 7,207 fly tipping incidents.¹⁰⁶ So fly-tipping had significantly increased when comparing the years. The city council found that fly-tipping spikes were evident after lockdown ended but then fell significantly to pre-COVID levels after this time - when revised opening times and a booking system were still in place. They also thought that the rise in fly-tipping did not necessarily correlate with the operations of the HWRC because they increased capacity at the HWRC when it re-opened in 2020, and found that whilst tonnage capacity/access was increasing at the HWRC, fly-tipping was still rising.

In 2022 Southampton City Council commented that *“although we can't make a direct link between fly tipping rates and the booking system that was in place at the HWRC, we hope that the six month trial period [removing the booking system] will have an impact on this [fly-tipping] problem.”*¹⁰⁷ But another LA that had stopped operating a booking system told us that there had been no reduction in fly-tip tonnages, or street cleared tonnages generally since removing the booking system at their LA.

¹⁰³ Three quarter of respondents (76%) believed the fly-tipping situation in their local area had got worse since the start of the COVID-19 pandemic. This included 34% who described it as ‘a lot worse’ and 42% who described it as ‘bit worse’. 19% of respondents thought it had remained ‘about the same’ and 5% thought it had got a ‘bit better’ (no one thought it had got a ‘lot better’). Ray Purdy, Mat Crocker, Hervé Borrión, Paul Ekblom, Lisa Tompson, John Galvin, Roger Fouquet, *Fly-tipping: Drivers, Deterrents and Impacts* (Defra research project report, EV 04101, March 2022)

¹⁰⁴ Anthony Dixon, Graham Farrell & Nick Tilley, *‘Illegal waste fly-tipping in the COVID-19 pandemic: enhanced compliance, temporary displacement, and urban-rural variation’*, preprint at <<https://osf.io/preprints/socarxiv/df5ue/>>

¹⁰⁵ Meeting of Warwickshire Waste Partnership, Wednesday 29 September 2021 2.00 pm (Item 7.)

¹⁰⁶ Nigel Slater, ‘Raynesway booking system has ‘no link to increased fly tipping’ – Derby City Council bosses have spoken out’ (Derby Telegraph, 15 September 2021)

¹⁰⁷ Southampton Council, Trial removal of booking system at Millbrook Household Waste and Recycling Centre extended for a further three-month period (21 March 2022)

Some local authority politicians have adopted a more cautious stance when it comes to fly-tipping links: “booking system could be playing a part, but [...] it is too simplistic to blame just that”.¹⁰⁸ One LA commented to us that:

“There is a widespread perception voiced by some residents and politicians (particularly opposition and some national politicians) that HWRC booking systems ‘must’ cause increased fly-tipping, but this seems largely to be a reason that people cling to when they object in principle to having a booking system (as opposed to open access) – i.e. that the ‘evidence’ follows the conclusion, rather than leading to it. This is comparable to people arguing that having a charge for bulky waste collection causes fly-tipping – it is plausible, and people think it should be true – but there is no clear correlation in the data to support this.”

The Association of Directors of Environment, Economy, Planning and Transport (ADEPT) which represents directors from county, unitary and combined authorities, have expressed concern over “the lack of an evidence-based approach linking council policies to an increase in fly-tipping.”

We looked at 6 LAs in more detail to see what the fly-tipping statistics were showing.

(i) Bracknell Forest/Reading/Wokingham Councils (Re3 partnership)¹⁰⁹

The booking system was introduced by Re3 partnership in May 2020. Figure 4 below shows the total number of fly-tip incidents. The graph represents fly-tips of both commercial and household origins. It shows there has been an increase in the number of instances of fly-tipping in Wokingham and Reading but, from the graph, both appear to have commenced before lockdown and decreased later on. In the case of Bracknell Forest, levels of fly-tipping are relatively low and constant.

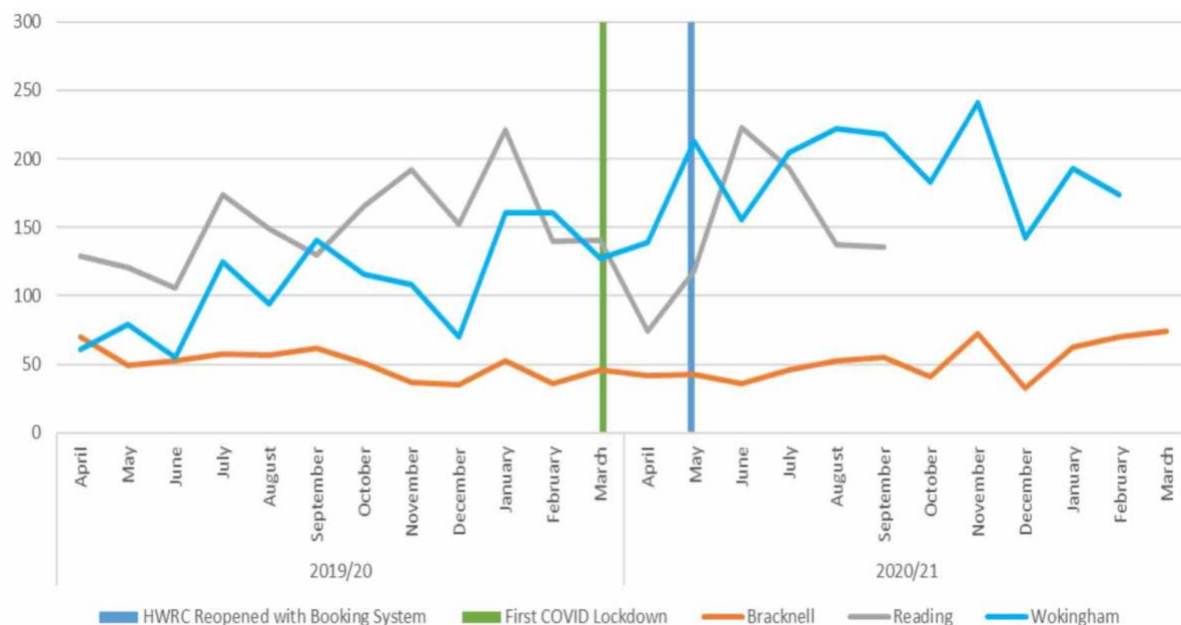


Figure 4: Fly-tipping Statistics Re3 – Number of incidents (April 2019 - March 2021)

¹⁰⁸ Danny Thompson, ‘Many disagree with the council and think changes to the way the tip is ran is contributing to a rise in fly-tipping’ (Coventry Telegraph, 21 October 2021)

¹⁰⁹ Bracknell Forest Council, ‘Review Of Recycling Centre Booking System’ (17 June 2021)

(ii) Gateshead Council¹¹⁰

This Council introduced a booking system in November 2021. In summary, Table 8 and Figure 5 show that fly-tipping increased significantly during the pandemic (nearly 22%, DEFRA reported an increase in 16% across all English authorities). Numbers of incidents then decreased overall in 2021/22 (with a trend that larger fly-tips have increased whilst smaller fly-tips have decreased).

Table 8: Fly-tipping Statistics Gateshead

Year	April-June	July-Sept	Oct-Dec	Jan-Mar
2018-19	2059	2084	2007	2385
2019-20	2553	1901	2282	2160
2020-21	2694	2933	2596	3018
2021-22	2566	1651	1289	1430

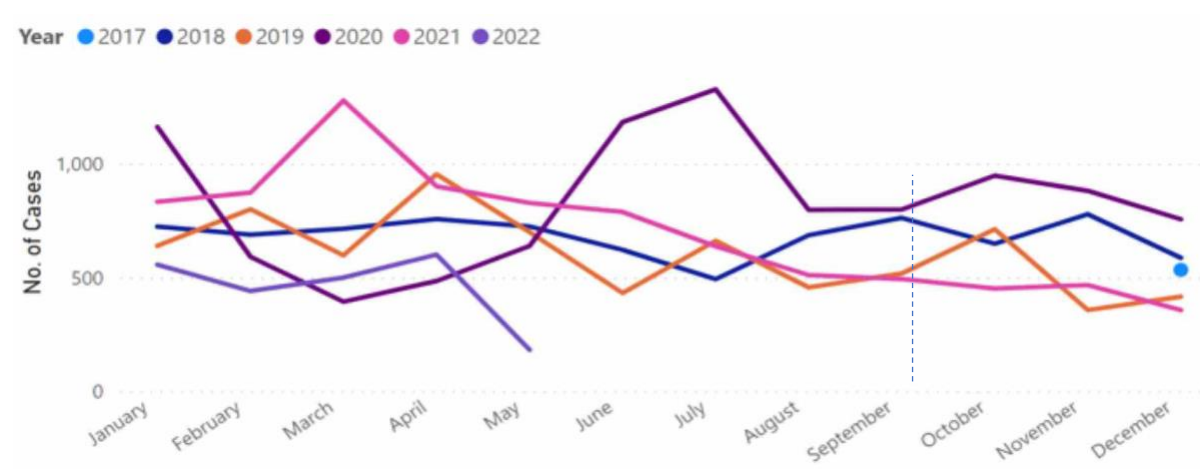


Figure 5: Fly-tipping Statistics – Number of incidents Gateshead (January 2018 – May 2022)

The introduction of the booking system seems to coincide with a sustained reduction in incidents. There is, therefore, no indicator that it led to an increase in numbers of fly-tipping incidents.

(iii) West Sussex¹¹¹

The booking system in West Sussex was introduced in April 2021. Table 9 shows the reported number of fly tipping incidents between April and September in both 2020 and 2021. The data shows that the number of fly tipping incidents is still fluctuating month by month, but overall reduced by 733 in the period that the system has been in place versus the previous year.

¹¹⁰ Gateshead Council, Housing, Environment and Healthier Communities Overview & Scrutiny Committee, ‘Fly-tipping Review’ (27 June 2022)

¹¹¹ West Sussex County Council, ‘Recycling Centres Booking System’, Report by Director of Environment and Public Protection (March 2022)

Table 9: Fly-tipping Statistics West Sussex (April-Sept 2020 and 2021)

	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Total
Incidents	<u>619</u>	<u>615</u>	<u>721</u>	<u>652</u>	<u>669</u>	<u>752</u>	<u>4028</u>
Tonnage	<u>192.55</u>	<u>203.68</u>	<u>267.98</u>	<u>217.95</u>	<u>262.56</u>	<u>240.04</u>	<u>1384.76</u>
	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Total
Incidents	<u>636</u>	<u>562</u>	<u>502</u>	<u>590</u>	<u>469</u>	<u>536</u>	<u>3295</u>
Tonnage	<u>240.32</u>	<u>263.86</u>	<u>229.34</u>	<u>244.7</u>	<u>232.88</u>	<u>219.63</u>	<u>1430.73</u>
Difference (incidents)	<u>17</u>	<u>-53</u>	<u>-219</u>	<u>-62</u>	<u>-200</u>	<u>-216</u>	<u>-733</u>
(%)	3	-9	-30	-10	-30	-29	-18

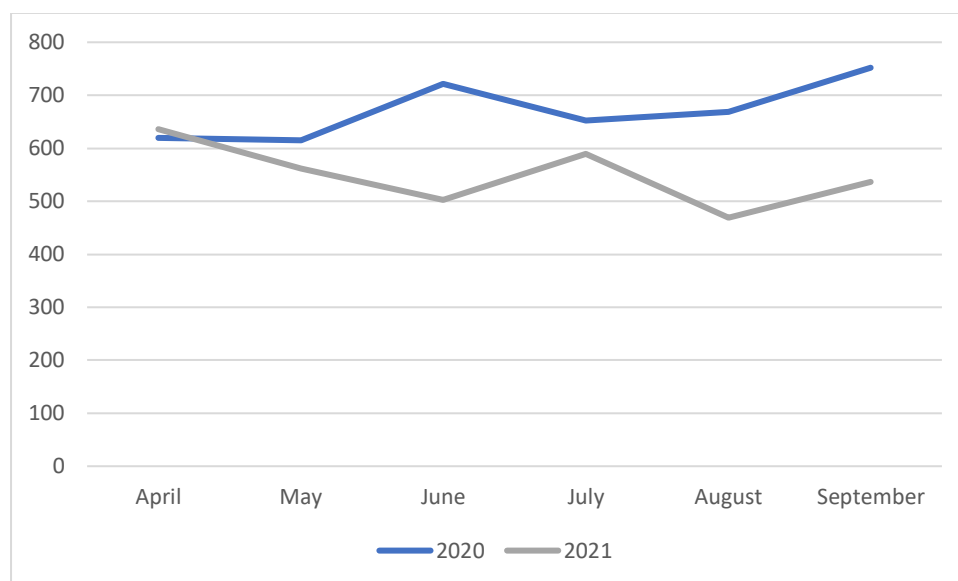


Figure 6: Fly-tipping Statistics – Number of incidents, West Sussex (April-Sept 2020 and 2021)

(iv) Northumberland¹¹²

Northumberland introduced an online booking system for vans and trailers in October 2020. On the most recent data, shown in Table 10 and Figure 7 below, fly-tipping is on a downward trend (compared to 2019/20 and 2020/21, although it is still higher than 2017/18 and 2018/19).

Table 10: Fly-tipping Statistics Northumberland

Year	Number of fly-tips	Difference (%)
2017/18	2511	
2018/19	3759	+50
2019/20	5040	+34
2020/21	5036	0
2021/22	4704	-7

The most recent data shows this downward trend is continuing. There has been a 27% decrease in fly-tips during April – July 2022, with 1343 fly tips actioned compared to 1847 fly tips actioned during the same period in 2021 (April – July 2021). The council attribute some of this decrease to a significant

¹¹² Data supplied by the Council

number of interventions which were introduced towards the end of 2019/20, aiming to reduce the acceptance of fly tipping in all communities, but especially in hotspot fly-tipping areas, and these interventions continued and were built on during 2021/22, and will be expanded further in 2022/23.

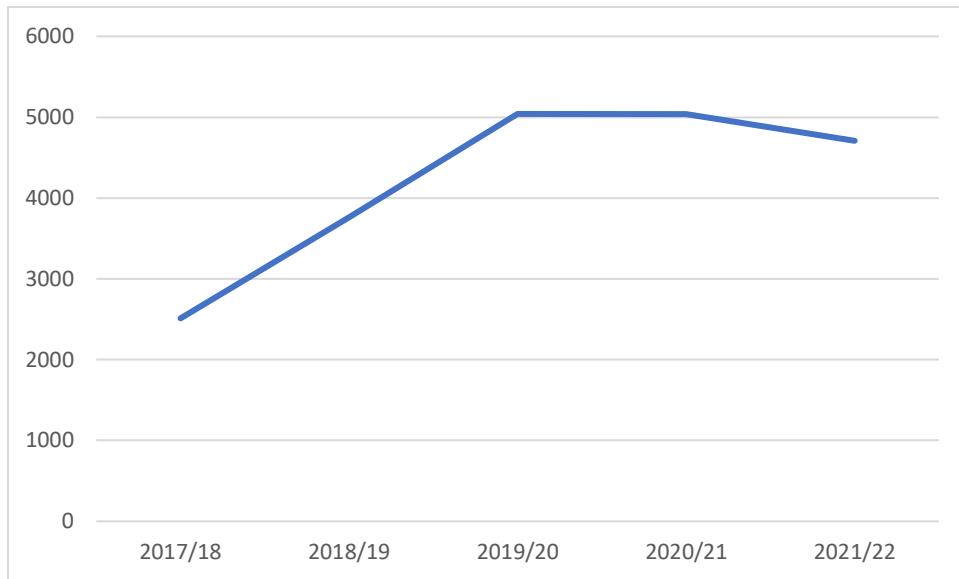


Figure 7: Fly-tipping Statistics – Number of incidents, Northumberland

(v) Kent CC¹¹³

Kent County Council started operating a booking system at sites in May 2020. The statistics in Figure 8 below show that there was a year on year rise in fly-tipping between 2017/18 and 2020/21, but the fly-tipping numbers then reduced since 2021/22.

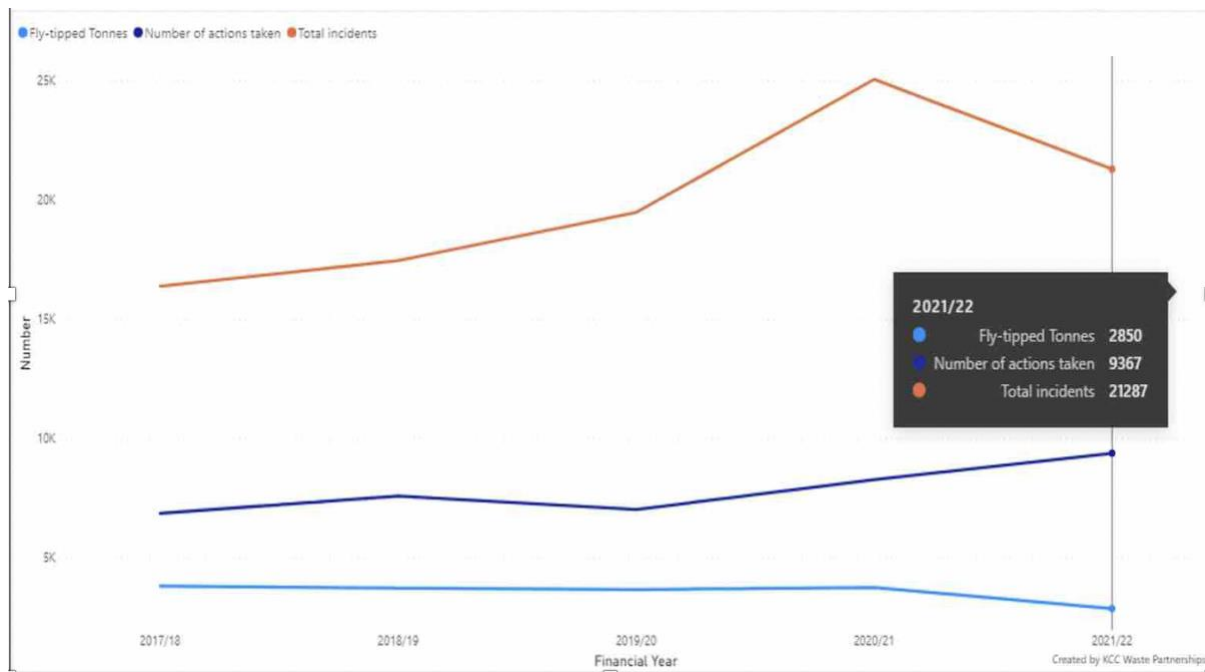


Figure 8: Fly-tipping Statistics – Number of incidents, Kent (2017-2022)

¹¹³ Data supplied by the Council

(vi) Dudley Council¹¹⁴

Dudley Council introduced a HWRC booking system in June 2022. Table 11 and Figure 7 show that there has not been an increase in the number of fly-tipping incidents since then, and incidents fell by about 10% between 2020 and 2021.

Table 11: Fly-tipping Statistics Dudley

Year	Number of fly-tips	Difference (%)
2018	844	
2019	738	-13
2020	757	-3
2021	684	-10

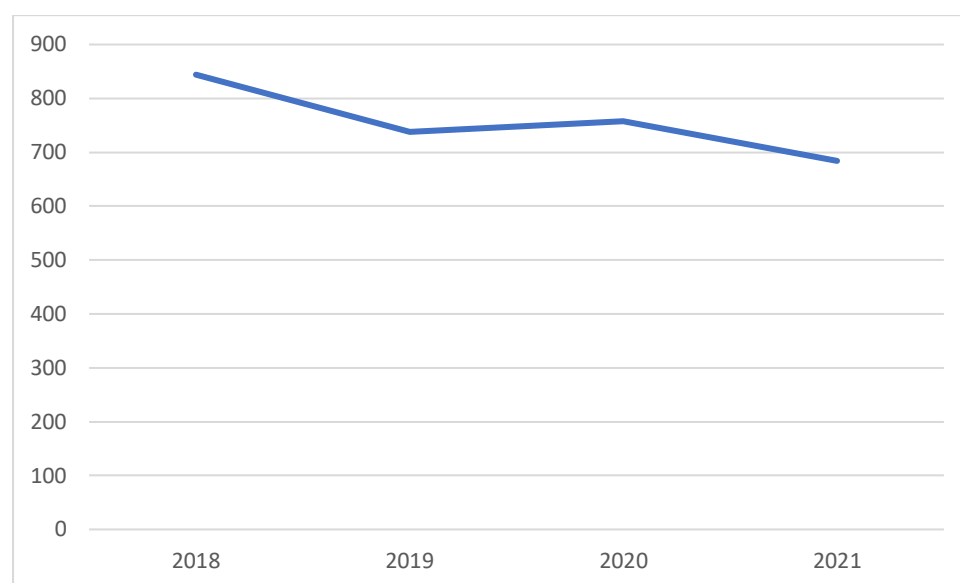


Figure 9: Fly-tipping Statistics Dudley (2018-2021)

Conclusion

A link between fly-tipping and booking systems cannot be ruled out, but from a look at some of the data (not all of the data) there is clearly no indication that such a link exists. The above examples show that fly-tipping numbers are down at some LAs with booking systems. It is difficult to understand why fly-tip numbers have fallen in some LAs with booking systems, and this fall may not be as a direct result of the booking system. It is likely that fly-tipping would have risen in some other LAs but the ones we examined did not find this. Where fly-tipping has increased in LAs with booking systems there could be a link but this cannot be easily demonstrated. A more complete study would be required to look at national trends at sites with booking systems, and those without booking systems, to see if the statistics post pandemic are showing linkages. However, it would appear to be difficult to understand national trends based on just fly-tipping data alone (especially where very different things are happening from LA to LA). If there is a link between fly-tipping and booking systems this could be because of the individual circumstances related to one site, or one LA.

¹¹⁴ Data supplied by the Council

7.5 LAs views about the impact of booking systems on fly-tipping

About a third of all the LA survey respondents (32%) indicated that fly-tipping numbers had stayed about the same in the last 12 months. Table 12 shows that more respondents believed the numbers had decreased (27%) than increased (15%).¹¹⁵

Table 12: Have fly-tipping numbers changed in your local area in the last 12 months? Select one [N=41]

Significantly increased	0%
Moderately increased	15%
Stayed about the same	32%
Moderately decreased	22%
Significantly decreased	5%
Don't know	27%

(i) Nationwide

When asked to think about the likely impact of HWRC booking systems across the country, Table 13 shows that the majority of respondents (64%) indicated booking systems were unlikely to have an influence on fly-tipping. About a third of them were unsure. None of those LAs with booking systems thought that these increased fly-tipping and a small number, about 5%, thought that booking systems were moderately reducing fly-tipping.¹¹⁶

Table 13: Do you think booking systems generally across the country might be increasing or reducing fly-tipping in England? [n=40]

	LAs with booking systems [n=21]	LAs without booking systems [n=19]
Significantly reduce it	0%	0%
Moderately reduce it	5%	0%
No impact	64%	32%
Moderate increase it	0%	21%
Significantly increase it	0%	0%
Don't know	31%	47%

Table 13 (above) also shows that about half of the respondents (47%) without a booking system reported they did not know if booking systems might increase fly-tipping. About 21% of the respondents in this group believed that booking systems moderately increased fly-tipping numbers. The others (32%) believe they have no impact on fly-tipping.

(ii) Their own areas

LAs were also asked to think about how booking systems might impact fly-tipping in their own areas.

Just over half (52%) of those who had a booking system said they considered that the introduction of a booking system at the site had no effect on fly-tipping in the area. A third of them (33%) were unsure, and 14% indicated that it has reduced fly-tipping.¹¹⁷ More than half (57%) of those who answered the previous question indicated that their answer was based on the analysis of fly-tipping data. This include those who indicated the introduction of the HWRC site contributed to reduce fly-tipping.¹¹⁸

¹¹⁵ Survey response figure (n=41, including 11 “don’t know”)

¹¹⁶ Survey response figure (n=21)

¹¹⁷ Survey response figure (n=22)

¹¹⁸ Survey response figure (n=21, including 3 “don’t know”)

Nearly two-thirds of respondents (68%) indicated that booking systems were unlikely to have influenced fly-tipping in other neighbouring local authority areas outside of their control that did not have booking systems. About a third of them (32%) were unsure. No one thought their booking system was influencing fly-tipping in other authorities.¹¹⁹

“Overall, we can’t say hand on heart that we have got a clear picture on fly-tipping, but our overall message is that booking at household waste recycling centres has actually not increased fly-tipping.”

“The data that is being presented to us doesn’t appear to show a significant increase in trend for fly-tipping since the booking system has been in operation.”

“I have spoken with our fly-tip teams [...] and none of them have drawn a link between the booking system and any changes in fly-tipping.”

“We analysed based on the 2020/2021 data compared to the previous non-COVID year before we had the booking system and I looked across all of the region authorities and I did an analysis of what direction of travel their fly-tipping stats have taken based on whether they had booking systems [...] no we certainly haven’t found a link between booking systems and fly tipping stats.”

No LA that had previously had a booking system, but had removed it, thought that fly-tipping was influenced by the booking system when this was in operation. Four said that it had no impact and two said that they did not know.¹²⁰ Of the respondents in this group, two-thirds believed that the booking system at the site had not influenced fly-tipping in the area, but they did not have firm evidence for this (only one LA confirmed that they had analysed fly-tipping data on this). The majority of respondents in this group (4) did not know if the booking system that had operated at the site had influenced fly-tipping in other neighbouring local authority areas outside their control that did not have booking system area. Two LAs (out of 6) said that they did not think it had had any impact.

“I don’t think there was any material impact [...] it becomes an excuse after the event.”

LAs who had never had a booking system were much more likely to make the link between booking systems and fly-tipping.¹²¹ Of the respondents in this group over a third (38%) believed that if a booking system at the site was introduced, fly-tipping in the area might increase. A slightly smaller number of respondents (31%) believed it would have no impact on fly-tipping. About a third (31%) answered that they did not know. The respondents in this group mostly believed that if a booking system was introduced at a site this would not influence fly-tipping in neighbouring LA areas (46%), or stated that they did not know (38%). Only 15% of LAs in this group thought that it might moderately increase fly-tipping in neighbourly authorities.

“I don’t see that as something that is going to break the system, it’s not going to turn a person who was filling their car up to come and recycle and dispose of it at the site into a fly-tipper.”

¹¹⁹ Survey response figure (n=21)

¹²⁰ Survey response figure (n=6)

¹²¹ Survey response figure (n=13)

7.6 Key factors influencing fly-tipping

7.6.1 What the LAs think is happening

We asked LAs what they thought was influencing the fly-tipping numbers in their own areas (not including HWRC booking systems). The respondents in areas where fly-tipping has increased in the last 12 months, indicated that they thought there were eleven issues causing fly-tipping, and the respondents in areas where fly-tipping has decreased in the last 12 months, believed that there were 12 possible reasons for this. The key replies are given in Table 14 below (in ranking order with the biggest factors influencing fly-tipping given first).

Table 14: Perceived factors influencing fly-tipping

Ranking	Areas where fly-tipping has decreased	Areas where fly-tipping has increased
1	More people perceiving that they will be caught if they fly-tip	More rogue waste carriers / organised criminality
2	More or more effective investigation & enforcement by local authorities Householders have more consideration for social norms / duties	Rogue waste carriers have become cheaper
		Householders are less willing to pay for waste collections
		Commercial waste carriers are less willing to dispose of waste legally due to change in open times and availabilities of suitable commercial waste transfer stations
		Fewer people perceiving that they will be caught if they fly-tip
3	Householders have less waste to dispose of (compared to 12 months ago)	Fewer people deterred by the severity of sanctions
4	Less errors or ignorance on the part of householders	

7.6.2 Booking systems reducing the amount of visitors and waste taken in at HWRCs

From the literature review, some sites with booking systems appear to be receiving fewer visitors. The survey found that half (50%) of the LA respondents who were asked to think of one HWRC site which had a booking system reported that user numbers stayed about the same at that site in the last 12 months. The respondents (36%) who believed the numbers had changed were equally split between increased and decreased.¹²² We did not ask in the survey whether user numbers had changed at sites without booking systems.

¹²² Survey response figure (n=22, including 3 “don’t know”)

The cost of waste disposal is directly linked to the amount of waste that is handled by the Council on a per tonne basis, and any reduction in tonnage will ultimately lead to a lower overall cost for the service. In some LAs the reduction in domestic waste tonnage enables a positive increase of trade use of HWRCs. Lower tonnages are being received at some HWRC sites after booking systems had been introduced. For example, West Sussex reported that in 21/22 there was a reduction in tonnage costs of £74,700 and in 2022/23 this was expected to be £86,400.¹²³ At the Re3 partnership (Reading, Bracknell and Wokingham) a comparison of the 2019/20 and 2021/22 tonnage figures there was a 13% reduction in waste.¹²⁴ In Bracknell Forest alone 2 sites had tonnages that were 16% and 18% lower.¹²⁵ If the waste tonnages being taken in at some HWRCs is reducing this raises the question about what is causing this?

But tonnage decreases are not applying to all HWRC sites. In Gateshead they reported that there had been a slight increase in overall tonnage at the Campground site (3%) and a decrease in overall tonnage at Cowen Road site (12%) when comparing December to March 2021/22 to the same period in 2019/20 before the pandemic.¹²⁶ In Southwark, tonnage intake during the period of booking systems is roughly comparable with about 2018, but since the permit system was removed in May 2022 it is currently lower. So there might be no link between booking systems and a reduction in tonnage. Again a more complete study would be required to look at national trends in more detail.

About 41% of the LA survey respondents who were asked to think about a HWRC site with a booking system reported that the amount of waste taken in had stayed about the same in the last 12 months. Of those who reported that the numbers had changed, more respondents indicated that the tonnage number had decreased (32%) than increased (27%) during that period.¹²⁷

A number of theories about why some sites with booking systems are seeing tonnage decreases were given by LAs. **The first is this that there has been changes in consumer behaviour caused by residents' behaviour and lifestyle changes caused by the cost-of-living crisis currently being experienced in the UK.** The public are buying less things because they have less money, so they are throwing away less things.

The second theory is that **instead of going to the tip more people are breaking up larger items of bulky waste** (that they might have taken to the tip before) and **were putting this in their domestic waste bins to be collected by Councils.** One Council reported that during 2020/21 their council collected tonnages (from the kerbside) increased by 16%.¹²⁸

A third explanation was because outside residents can no longer access some sites unrestricted.¹²⁹ Connected to this is the theory that **some residents were using outside facilities instead of HWRCs in their own areas** (with booking systems),¹³⁰ since these did not require pre-booking or were more convenient. But this can also be hard to measure because sometimes councils can have a reciprocal use agreement with other councils so people can use HWRCs in other areas.¹³¹

¹²³ West Sussex County Council, 'Recycling Centres Booking System', Report by Director of Environment and Public Protection (March 2022)

¹²⁴ Tom Burnett, 'The Government has raised concerns advanced booking systems in some areas are leading to increased fly-tipping' (Berkshire Live, 15 June 2022)

¹²⁵ Bracknell Forest Council, 'Review Of Recycling Centre Booking System' (17 June 2021)

¹²⁶ Gateshead Council, Housing, Environment and Healthier Communities Overview & Scrutiny Committee, 'Fly-tipping Review' (27 June 2022)

¹²⁷ Survey response figure (n=22, including 1 "don't know").

¹²⁸ Bracknell Forest Council, 'Review Of Recycling Centre Booking System' (17 June 2021)

¹²⁹ Gateshead Council, Housing, Environment and Healthier Communities Overview & Scrutiny Committee, 'Fly-tipping Review' (27 June 2022)

¹³⁰ Kent County Council, Booking to visit a Household Waste Recycling Centre – Consultation Report (2021)

¹³¹ Portsmouth City Council, 'Household Waste Recycling Centre Operations update and booking system', (27 July 2021)

Annex 1 – Project Team

Ray Purdy (Director, Air & Space Evidence). ASE is an academic spin-off company, originating from UCL. It's Directors have extensive experience working in academia, industry, and military intelligence. The company was founded to provide consultancy expertise in respect to monitoring technologies, environmental policy and regulation and law. Ray has worked in academia as a researcher since 1995 (University of Oxford, University College London, and Imperial College), and is currently an adjunct senior fellow in environmental law at University College Dublin. His key experience lies in projects examining the implementation and effectiveness of environmental policies and legislation, environmental regulation and governance, drafting of environmental legislation, the use of technology to identify environmental crime, comparative policy analysis, and the formulation and impact of environmental law and policies. He has undertaken (and project led) over 50 major environmental projects worth over £10m for international institutions, Research Councils, environmental agencies and Governments.

Prof. Hervé Borrion is a professor of crime science at University College London (UCL) and an advisor and consultant for various organisations. His research focuses on the application of digital technology and the management of criminal risks in socio-technical systems (e.g., smart cities, urban infrastructure). An advocate of crime science, he has made significant contributions to the integration of engineering and ecological approaches into crime prevention practice, including the use of computational techniques in systems design and analysis. His expertise has been used by police forces and government agencies (Home Office, Defra, Environmental Agency, Historic England) in a wide range of areas: waste crime, metal theft, cybercrime, transport security, heritage theft, and wildlife crime.

Mat Crocker (Director, Environment Policy and Regulation Ltd) is an experienced leader and thinker in waste and environmental regulation. He has a track record of working with Defra and Government to secure resources and influence and implement policy. He has directed multi-million pound budgets, successfully managed large projects and programmes. He has held multiple senior roles for the Environment Agency (EA) leading both policy and operations. His last role for the EA was Deputy Director for Waste and Illegals, where he led the reorganisation of how the EA tackled serious environmental crime. Whilst at the EA he was responsible for the delivery of a number of EU Life Projects including EDOC, EPOW and EQual. He now primarily works with industry, advising them on achieving better compliance with waste legislation.

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Annex 3 – Local Authorities

Local authority	Region	Type	No. of HRWCs	Booking system in place
Barnsley MBC (part of BDR consortium covering 3 authorities)	Yorks & Humber	Unitary	4	No
Bath and North East Somerset Council	South West	Unitary	3	Yes (2/3)
Bedford	East	Unitary	1	No
Bexley LB	London	Unitary	2	No
Birmingham City Council	West Midlands	Unitary	4 (one additional site closed)	Yes (4)
Blackburn with Darwen Borough Council	North West	Unitary	2	No
Blackpool Borough Council	North West	Unitary	1	No
Bournemouth Christchurch and Poole Borough Council	South West	Unitary	3	No
Bracknell Forest Borough Council (part of re3 partnership consisting of 3 councils)	South East	Unitary	2	Yes (2)
Bradford City MDC (MBC)	Yorks & Humber	Unitary	8 HWRCs 2 WMC's	No
Brighton and Hove Council	South East	Unitary	2	No
Bristol City Council	South West	Unitary	2	Yes (2)
Bromley LB	London	Unitary	2	No
Buckinghamshire County Council	South East	Disposal	9	No
Calderdale MBC	Yorks & Humber	Unitary	5	No
Cambridge City and South Cambs Councils	East	Unitary	2	No
Cambridgeshire County Council	East	Disposal	7	No
Central Bedfordshire	East	Unitary	4	No
Cheshire East	North West	Unitary	8	No
Cheshire West and Chester	North West	Unitary	7	No
Cornwall	South West	Unitary	14	No
Council of the Isles of Scilly	South West	Disposal	1	Yes
County Durham	North East	Unitary	13	No
Coventry City Council	West Midlands	Unitary	1	Yes (1)
Croydon LB	London	Unitary	3	No
Cumbria County Council	North West	Disposal	14	No
Darlington Borough Council	North East	Unitary	1	No
Derby City Council	East Midlands	Unitary	1	Yes (1)
Derbyshire County Council	East Midlands	Disposal	9	No

Devon County Council	South West	Disposal	19 (although 18 as one is currently closed for July and August)	No
Doncaster MBC (part of BDR consortium covering 3 authorities)	Yorks & Humber	Unitary	6	No
Dorset Waste Partnership	South West	Unitary	10	No
Dudley MBC	West Midlands	Unitary	1	Yes (1)
East London Waste Authority	London	Disposal	4	No
East Riding of Yorkshire Council	Yorks & Humber	Unitary	10	No
East Sussex County Council	South East	Disposal	10	No
Essex County Council	East	Disposal	21	No - cars Yes vans/trailers (10/21)
Gateshead MBC (part of South Tyne and Wear Waste Management Partnership which represents 3 authorities)	North East	Unitary	2	Yes (2)
Gloucestershire County Council	South West	Disposal	5	Yes (5)
Greater Manchester WDA (MBC)	North West	Disposal	20	No
Greenwich LB	London	Unitary	1	No
Halton Borough Council	North West	Unitary	2	No (cars) Yes vans/trailers (2/2) for vans and large trailers.
Hampshire County Council	South East	Disposal	24	Yes (24)
Hartlepool Borough Council	North East	Unitary	1	Yes (1)
Herefordshire Council	West Midlands	Unitary	6	Yes (6)
Hertfordshire County Council	East	Disposal	17	No
Isle of Wight Council	South East	Unitary	2	Yes

Kent County Council	South East	Disposal	21	Yes (21)
Kingston-upon-Hull City Council	Yorks & Humber	Unitary	3	No
Kirklees MBC	Yorks & Humber	Unitary	5	No
Lancashire County Council	North West	Disposal	16	No - cars Yes – vans and trailers (16)
Leeds City Council MBC	Yorks & Humber	Unitary	8	No
Leicester City Council	East Midlands	Unitary	2	No
Leicestershire County Council	East Midlands	Disposal	14	No
Lewisham LB	London	Unitary	1	Yes (1)
Lincolnshire County Council	East Midlands	Disposal	11	No
Luton Borough Council	East	Unitary	2	No
Medway Borough Council	South East	Unitary	3	Yes (3)
Merseyside WDA (MBC)	North West	Disposal	16	No (16) Yes - vans and trailers (16)
Merton LB	London	Unitary	1	Yes (1)
Middlesbrough Borough Council	North East	Unitary	1	Yes (1)
Milton Keynes Council	South East	Unitary	3	Yes (3)
Newcastle-upon-Tyne City Council MBC	North East	Unitary	3	No
Norfolk County Council	East	Disposal	20	No
North East Lincolnshire Council	Yorks & Humber	Unitary	2	No
North Lincolnshire Council	Yorks & Humber	Unitary	8	No
North London Waste Authority	London	Disposal	8	Yes (8)
North Somerset Council	South West	Unitary	3	No

North Tyneside Council	North East	Unitary	1	Yes
North Yorkshire County Council	Yorks & Humber	Disposal	21	No
Northamptonshire County Council (including North Northamptonshire and West Northamptonshire Unitary areas too)	East Midlands	Disposal	9	No
Northumberland	North East	Unitary	12	No – cars Yes – vans and trailers, pick-up trucks, 4x4S (12)
Nottingham City Council	East Midlands	Unitary	1	No
Nottinghamshire County Council	East Midlands	Disposal	12	No
Oxfordshire County Council	South East	Disposal	7	No
Peterborough City Council	East	Unitary	1	No
Plymouth City Council	South West	Unitary	2	No
Portsmouth City Council	South East	Unitary	2	Yes (2)
Reading Borough Council (part of re3 partnership consisting of 3 councils)	South East	Unitary	2	Yes (2)
Redcar and Cleveland Borough Council	North East	Unitary	1	Yes (1)
Rotherham MBC (part of BDR consortium covering 3 authorities)	Yorks & Humber	Unitary	4	No
Royal Borough of Kingston upon Thames	London	Unitary	1	Yes (1)
Rutland County Council	East Midlands	Unitary	2	No
Sandwell MBC	West Midlands	Unitary	1	Yes (1)
Sheffield City Council	Yorks & Humber	Unitary	5	No

Shropshire	West Midlands	Unitary	5	No
Slough Borough Council	South East	Unitary	3	No
Solihull MBC	West Midlands	Unitary	1	Yes (1)
Somerset Waste Partnership	South West	Unitary	9	No
South Gloucestershire Council	South West	Unitary	4	No
South Tyneside MBC (part of South Tyne and Wear Waste Management Partnership which represents 3 authorities)	North East	Unitary	1	Yes (1)
Southampton City Council	South East	Unitary	1	No.
Southend-on-Sea Borough Council	East	Unitary	1	No
Southwark LB	London	Unitary	1	No - cars Yes -vans (1)
Staffordshire County Council	West Midlands	Disposal	13	No.
Stockton-on-Tees Borough Council	North East	Unitary	1	Yes (1)
Stoke-on-Trent City Council	West Midlands	Unitary	2	No
Suffolk County Council	East	Disposal	11	Yes (11)
Sunderland City Council (part of South Tyne and Wear Waste Management Partnership which represents 3 authorities)	North East	Unitary	2	Yes (2)
Surrey County Council	South East	Disposal	15	No
Sutton LB	London	Unitary	1	Yes (1)
Swindon Borough Council	South West	Unitary	1	Yes (1)

Telford and Wrekin Council	West Midlands	Unitary	2	No
Thurrock Council	East	Unitary	1	No
Torbay Council	South West	Unitary	1	Yes (1)
Tower Hamlets LB	London	Unitary	1	No
Wakefield City MDC	Yorks & Humber	Unitary	3	No
Walsall MBC	West Midlands	Unitary	2	No – cars Yes – Vans and trailers (2)
Warrington Borough Council	North West	Unitary	3	No
Warwickshire County Council	West Midlands	Disposal	9	Yes (9)
West Berkshire District Council	South East	Unitary	2	Yes (2)
West London Waste Authority	London	Disposal	6	Yes (5/6)
West Sussex County Council	South East	Disposal	12	Yes (6/12)
Western Riverside Waste Authority	London	Disposal	Across 5 boroughs 1	Yes (1)
Westminster City Council	London	Unitary	1	Yes (1)
Wigan MBC	North West	Unitary	3	Yes (3)
Wiltshire	South West	Unitary	10	No
Windsor and Maidenhead Borough Council	South East	Unitary	1	No – cars Yes – vans (1)
Wokingham Council (part of re3 partnership consisting of 3 councils)	South East	Unitary	3	Yes (3)
Wolverhampton MBC	West Midlands	Unitary	2	No – cars Yes - vans (2)
Worcestershire County Council	West Midlands	Disposal	11	Yes (1/11)
York City Council	Yorks & Humber	Unitary	2	No

Annex 4 – Survey Questionnaire

The survey questionnaire contains five parts.

- Part 0: Information sheet and Consent form
- Part I: Background questions (all LAs)
- Part II: Main questions (LAs with booking systems)
- Part III: Main questions (LAs without booking systems)
- Part IV: Conclusion (all respondents)

Individual respondents followed one of the three branches represented in Figure 7. Part III is divided into two paths to differentiate between LAs that had a booking system but removed it (IIIa), and those that never had one (IIIb).

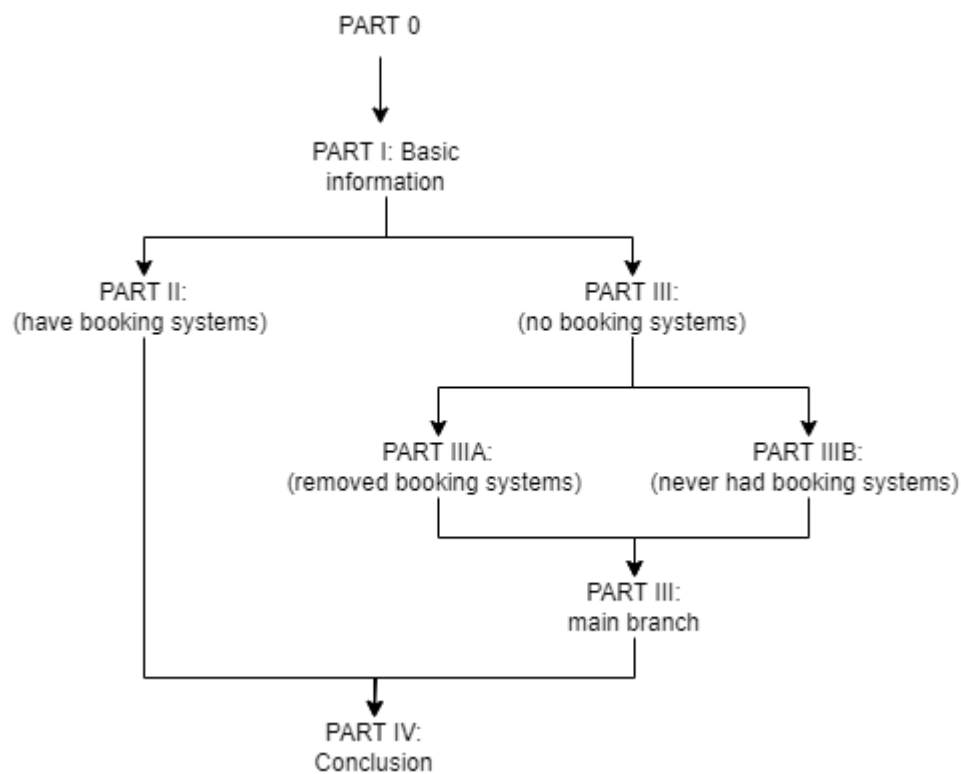


Figure 10: Survey structure

HWRC Survey

A Survey of Household Waste Recycling Centres

This research project is conducted by Air & Space Evidence (ASE) on behalf of Defra to investigate whether HWRC booking might be potentially acting as a driver to cause people to fly-tip (if they are causing barriers to households depositing their waste). Defra are interested in:

- Why local authorities use, or don't use, booking systems?
- What are seen as the pros and cons of booking systems to local authorities?
- Any views, or evidence, as to whether local authorities consider that there could be any links (or not) between booking systems and fly-tipping?
- Any other benefits / disbenefits arising from booking systems from those that have implemented them.

The outcomes from this work will be used to help inform government policy. It is expected to also help local authorities understand views of other local authorities from across England, which might enable them to refine their own policies and approaches.

HWRC Survey

INFORMATION SHEET

This page provides answers to questions you may have about the survey and follow-up interview.

What do I need to do in the study?

We need the help of Local Authorities to help answer some questions relating to the issue above.

- You will initially be asked to participate in the online survey and to give us your opinions on this issue. **This should take no more than 10 minutes.**
- Some people who have completed the survey (and given their contact details) will be selected for follow-up telephone interviews. The estimated time that these interviews will take is 15 minutes.

Do I have to take part in the survey?

Participation in the survey is entirely voluntary. You can withdraw at any time before the end of the survey, on September 19th, 2021. For this, please contact ASE (rp@space-evidence.net) with sufficient information to identify your entry (name, local authority, time completed the survey), and we will delete it.

What will happen if I am selected for a follow-up telephone interview?

This will be undertaken by the ASE project team. Again this is entirely voluntary. A date that is convenient to you will be organised. This is not expected to last for more than 15 minutes. You are free to change your mind about participation at any time by contacting ASE (rp@space-evidence.net); can skip questions, take a break, and leave the discussion at any point. There is no need to give an explanation in any of these instances.

With your permission on the interview day, the discussion will be audio recorded by ASE so we have a detailed and accurate record of what everybody says. The recordings and all other identifiable data will be stored securely in line with GDPR. Only named members of the research team will have access. Recordings will be securely deleted at the end of 2022.

What data will be collected and will I be identified?

Air & Space Evidence will collect your:

- name and contact details and name of your local authority
- views and experiences of a topic

For the survey we intend to publish aggregated data (statistics) and feedback (e.g. some quotes) in ensuing reports or publications. We will not publish any data that directly references individuals, or local authorities. As part of the project deliverables, Defra will receive a spreadsheet containing the anonymised survey responses to allow them to use this data in future. This information given to Defra will not be linked to individual local authorities.

If you are selected for an interview we intend to publish aggregated data (statistics) and feedback (e.g. some quotes) in ensuing reports or publications. Defra will receive a spreadsheet containing the coded interview responses and quotes to allow them to use this data in future. We will not publish any data that directly references individuals, or local authorities.



HWRC Survey

Consent Form

The legal basis for processing your personal data is your consent, and a task carried out in the public interest (for Defra to better understanding the causes of fly-tipping).

- I confirm that I understand by pressing the Next button below, I am consenting to this survey element of the study. If selected for the telephone interview this consent process will be repeated.
- I confirm that I have read and understood the Information Sheet for this HWRC booking study. I have had an opportunity to consider the information and what will be expected of me. I have also had the opportunity to email the researcher with any questions.
- I understand that the data controller will be Air & Space Evidence (ASE) and I know how to contact them if this is necessary.
- I understand that I will be able to withdraw my data at any point before the survey closes on Sept. 19th, 2022. This can be done by contacting ASE on the email address provided - **rp@space-evidence.net**. After this date, ASE will have anonymised and combined your data with other survey data. However, your raw data can be deleted up until the end of December at which point ASE will be deleting all the survey data.
- I understand that if I decide to withdraw, any data I have provided up to that point will be deleted, unless I agree otherwise.
- I understand that no promise or guarantee of benefits have been made to encourage me to participate.
- I understand that the information I provide will be used for the purposes explained to me. I understand that such information will be handled in accordance with all applicable data protection legislation.
- I understand that my data gathered in this study will be stored securely.
- I understand that the information I have submitted will be used in a Defra research report. Anonymised research data may also be used by Defra for future research.
- I understand it will not be possible to identify me (or my local authority) in any publications.
- I understand that I will not benefit financially from this study or from any possible outcome it may result in the future. I understand that the information I have submitted will be used in publications (e.g. dissertation and journal article). I agree that my anonymised research data may be used by others for future research.
- I am aware of who I should contact if I wish to file a complaint (rp@space-evidence.net).

* 1. I voluntarily agree to take part in this study.

Yes



HWRC Survey

In this section we would like to ask you some questions about your local area. Please note that all answers will be anonymised in the final report.

2. What local authority do you work for?

3. Does your local authority keep a database of fly-tipping incidents with precise geographic coordinates? (e.g., GPS, street or ward level)

- Yes
- No
- Don't know

* 4. Have fly-tipping numbers changed in your local area in the last 12 months? (Select one)

- Significantly increased
- Moderately increased
- Stayed about the same
- Moderately decreased
- Significantly decreased
- Don't know



Department
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HWRC Survey

5. Thinking only about your local authority area, what do you think are the main elements that have influenced fly-tipping numbers in the last 12 months? (Select all that apply)

- Householders have more waste to dispose of (compared to 12 months ago)
- More errors or ignorance on the part of householders
- Householders have less consideration for social norms / duties
- Householders are less willing to pay for waste collections
- Householders are less willing to drive to a HWRC due to the cost of petrol
- Householders are less willing to drive to a HWRC due to change in open times and availabilities of suitable HWRC facilities
- Householders are less willing to drive to a HWRC as a result of the introduction of booking systems
- Commercial waste carriers are less willing to dispose of waste legally due to change in open times and availabilities of suitable commercial waste transfer stations
- Reduction in availability (or increase in cost) of local authorities bulky waste collections
- Reduction in bin size or collection frequency of domestic refuse
- More rogue waste carriers / organised criminality
- Rogue waste carriers have become cheaper
- Weaker checks by the Environment Agency
- Fewer investigation & enforcement by local authorities
- Fewer people perceiving that they will be caught if they fly-tip
- Fewer people deterred by the severity of sanctions
- Fly-tipping that was happening in other local authority areas has been displaced to our area



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6. Thinking only about your local authority area, what do you think are the main elements that have influenced fly-tipping numbers in the last 12 months? (Select all that apply)

- Householders have less waste to dispose of (compared to 12 months ago)
- Less errors or ignorance on the part of householders
- Householders have more consideration for social norms / duties
- Householders are more willing to pay for waste collections
- Householders are more willing to drive to a HWRC due to the cost of petrol
- Householders are more willing to drive to a HWRC due to change in open times and availabilities of suitable HWRC facilities
- Householders are more willing to drive to a HWRC as a result of the introduction of booking systems
- Commercial waste carriers are more willing to dispose of waste legally due to change in open times and availabilities of suitable commercial waste transfer stations
- Reduction in availability or cost of local authorities bulky waste collections from households
- Increase in bin size or collection frequency of domestic refuse
- Fewer rogue waste carriers / organised criminality
- Rogue waste carriers have become more expensive
- Stronger checks by the Environment Agency
- More or more effective investigation & enforcement by local authorities
- More people perceiving that they will be caught if they fly-tip
- More people deterred by the severity of sanctions
- Fly-tipping that was happening in our local authority area has been displaced to other areas



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* 7. Does your council have a booking system for HWRCs?

- Yes, for all sites
- Yes, but only for some sites
- No
- Don't know



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HWRC Booking Systems

In the following section we would like to ask you some questions about HWRC booking systems. Please think about one HWRC site that has a booking system in your area.

8. What is the name of the HWRC?

9. What region is the HWRC in?

- | | |
|--|--|
| <input type="radio"/> South West England | <input type="radio"/> East of England |
| <input type="radio"/> South East England | <input type="radio"/> West Midlands |
| <input type="radio"/> London | <input type="radio"/> East Midlands |
| <input type="radio"/> North West | <input type="radio"/> Yorkshire and the Humber |
| <input type="radio"/> North East | |

10. What classification would best represent the areas where the visitors of this HWRC site live?

- A lot more urban than rural
- Slightly more urban than rural
- As much urban as rural
- Slightly more rural than urban
- A lot more rural than urban
- Don't know



HWRC Survey

Booking System

In this section, we would like to elicit your views about the impact of the booking system implemented at this site.

11. When was the booking system introduced at this site?

Date

Date

12. Do you think visitor/user numbers have declined, increased, or stayed about the same at this HWRC site, in the last 12 months?

- Significantly increased
- Moderately increased
- Stayed about the same
- Moderately decreased
- Significantly decreased
- Don't know

13. Still thinking about the same HWRC site, has the amount of waste being taken in increased, decreased, or stayed about the same, in the last 12 months?

- Significantly increased
- Moderately increased
- Stayed about the same
- Moderately decreased
- Significantly decreased
- Don't know



HWRC Survey

14. Do you think the introduction of a booking system at the site has influenced fly-tipping in the area?

- Significantly increased
- Moderately increased
- Stayed about the same
- Moderately decreased
- Significantly decreased
- Don't know

15. Do you have any evidence of this?

- We have analysed fly-tipping data (eg, before and after comparison)
- We have fly-tipping data but we have not analysed it
- We only have anecdotal evidence
- No evidence
- Don't know

HWRC Survey

16. Do you think the introduction of booking systems generally might be increasing or reducing fly-tipping in other neighbouring local authority areas (outside your control) that do not have booking systems?

- Significantly reduce it
- Moderately reduce it
- No impact
- Moderate increase it
- Significantly increase it
- Don't know

17. Do you think booking systems generally (across the country) might be increasing or reducing fly-tipping in England?

- Significantly reduce it
- Moderately reduce it
- No impact
- Moderate increase it
- Significantly increase it
- Don't know

HWRC Survey

How the HWRC booking system works

Please tell us a bit more about the way the booking system works at the site.

18. Do any of the following apply?

	Yes	No	Don't know
Visitors must set up an account on the online system before they can book at slot at the HWRC	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Both residents and non-residents may register an account.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Resident accounts are free of charge.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Non-resident accounts are free of charge.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Residents who use a large vehicle (e.g., van, pick-up or large trailer) must apply for a permit to dispose of household waste.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A fee applies for all permit applications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

19. What information are visitors required to provide in order to create an account?

	Yes	No	Don't know
Name	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Home address	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Email address	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Registration number of the vehicle(s)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Proof of residency	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Headshot	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

20. Do any of the following apply during the online booking process?

	Yes	No	Don't know
It is possible to register an account and book a timeslot on the same day	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Booking can be made on the day of the visit to the HWRC	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Booking has to be made more than 48 hours in advance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There are restrictions on the numbers of visits over a certain period.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Visitors must indicate the type of waste they intend to bring to the HWRC	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Non-residents can deposit waste at the HWRC for a fee	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

21. What would happen if a resident turned up at a HWRC without a booking, and the HWRC is not fully booked?

- They would have to go home and come back another day.
- They could book for an immediate slot using their smartphone.
- They may be allowed entry without booking at the discretion of the staff.

HWRC Survey

22. How do you ensure that sections of the population with reduced access to computers or Internet can still visit the HWRC? (select all that apply)

- Telephone booking is available at standard cost
- Telephone booking is available (premium rate)
- We have dedicated timeslots for visitors without appointment
- We use our own discretion in such cases
- Neighbours or relatives can make the booking online for them

23. Approximately what percentage of bookings are currently made on the telephone?

- | | |
|--------------------------------|----------------------------------|
| <input type="radio"/> 0% | <input type="radio"/> 21 - 25% |
| <input type="radio"/> 1 - 5% | <input type="radio"/> 26 - 50% |
| <input type="radio"/> 6 - 10% | <input type="radio"/> 51 - 75% |
| <input type="radio"/> 11 - 15% | <input type="radio"/> 76 - 100% |
| <input type="radio"/> 16 - 20% | <input type="radio"/> Don't Know |



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HWRC Survey

24. What have the overall reaction and satisfaction levels of the local community of the booking system been like (after the initial bedding in time)?

- Very satisfied
- Satisfied
- Neither satisfied nor dissatisfied
- Dissatisfied
- Very dissatisfied
- Don't know

25. Has your local authority undertaken any surveys or consultations with the public to estimate the extent to which they are satisfied with the booking system?

- Yes
- No
- Don't know



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HWRC Survey

26. What do you think have been the main benefits of having a booking system in your local community context? (Select all that apply at the end)

- | | |
|---|---|
| <input type="checkbox"/> Reduced waiting time outside the HWRC | <input type="checkbox"/> HWRC staff more likely to detect anomalies with waste (e.g., non-household waste, waste placed in the wrong container, etc.) |
| <input type="checkbox"/> Reduced crowding within the HWRC | <input type="checkbox"/> Commercial waste less likely to be dropped in the HWRC facilities |
| <input type="checkbox"/> Visitors spend less time within the HWRC | <input type="checkbox"/> Non-residents less likely to be using the HWRC facilities |
| <input type="checkbox"/> More manageable workload for HWRC staff | <input type="checkbox"/> Reduced staffing |
| <input type="checkbox"/> More friendly/helpful HWRC staff | <input type="checkbox"/> Reduction in annual HWRC costs (from better management or less waste) |
| <input type="checkbox"/> More friendly/respectful visitors | <input type="checkbox"/> Better/more information collected about HWRC users (e.g., where they live, how often they come) |
| <input type="checkbox"/> HWRC staff and visitors more likely to follow social-distancing guidance during COVID periods. | <input type="checkbox"/> Better/more information collected about user experience (e.g., waste brought to the HWRC, satisfaction surveys). |
| <input type="checkbox"/> Visitors more likely to place waste in the correct container in the first place | <input type="checkbox"/> Better/more information disseminated to HWRC users (e.g., service/facility news) |



HWRC Survey

27. What do you think have been the main negative consequences of having a booking system in your local community context? (select all that apply at the end)

- | | |
|--|---|
| <input type="checkbox"/> Not enough booking slots to satisfy demand. | <input type="checkbox"/> Less friendly/respectful visitors |
| <input type="checkbox"/> Users' perception that there aren't enough slots available | <input type="checkbox"/> Abusive visitors |
| <input type="checkbox"/> Procurement and running cost of the booking system to the local authority | <input type="checkbox"/> Discourage people that don't speak English or do not use a computer |
| <input type="checkbox"/> Less manageable workload for HWRC staff | <input type="checkbox"/> Discourage people that, for certain reasons do not want to share personal information (e.g., do not have ID, or car tax/MOT/insurance, have privacy concerns). |

28. Are there any plans to change the number of booking systems at your HWRC sites in your local area in the future?

- Apply to more sites
- No plans
- Apply to less sites
- Don't Know

HWRC Survey

No booking systems

In the following section we would like to ask you some questions about HWRC booking systems.

* 29. Have you previously had a booking system in your area but decided to remove it?

- Yes
- No
- Don't know

HWRC Survey

Previous booking system

30. Please think of one HWRC where a booking system was temporarily used in your area, and write its name below

31. What region is the HWRC in?

- South West England
- South East England
- London
- North West
- North East
- East of England
- West Midlands
- East Midlands
- Yorkshire and the Humber

32. What classification would best represent the areas where the visitors of this HWRC site live?

- A lot more urban than rural
- Slightly more urban than rural
- As much urban as rural
- Slightly more rural than urban
- A lot more rural than urban
- Don't know

33. When was the booking system introduced at this site?

Date

Date



HWRC Survey

34. When was the booking system removed?

Date

Date



35. Why was the booking system removed?

	Major reason	Minor reason	Not a reason	Don't know
COVID restrictions lifting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cost	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Potential link to increased fly-tipping	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Legal issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Booking system not working well (technical issues)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Visitor dissatisfaction / negative public opinion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
HWRC staff dissatisfaction	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Local political pressure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



HWRC Survey

In this section, we would like to elicit your views about the impact of booking systems on fly-tipping.

36. Do you think when you had the booking system at the site this might have influenced fly-tipping in the area?

- Significantly reduced it
- Moderately reduced it
- No impact
- Moderate increased it
- Significantly increased it
- Don't know

37. Do you have any evidence of this?

- We have analysed fly-tipping data (eg, before and after comparison)
- We have fly-tipping data but we have not analysed it
- We only have anecdotal evidence
- No evidence
- Don't know

38. Do you think when you had the booking system at the site this might have influenced fly-tipping in other neighbouring local authority areas (outside your control) that did not have booking systems?

- Significantly reduced it
- Moderately reduced it
- No impact
- Moderate increased it
- Significantly increased it
- Don't know



HWRC Survey

No booking systems

* 39. Has your Local Authority considered introducing a booking system in the past?

- Yes
- No
- Don't know

HWRC Survey

40. What made your Local Authority decide not to go ahead with having a booking system?

	Major reason	Minor reason	Not a reason	Don't know
COVID restrictions lifting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cost	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Potential link to increased fly-tipping	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Legal issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Booking system not working well (technical issues)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Visitor dissatisfaction / negative public opinion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
HWRC staff dissatisfaction	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Local political pressure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

HWRC Survey

In the following section we would like to ask you some questions about your sites.

41. Please think about a HWRC that does not have and never had a booking system in your area, and write name below.

42. What region is the HWRC in?

- | | |
|--|--|
| <input type="radio"/> South West England | <input type="radio"/> East of England |
| <input type="radio"/> South East England | <input type="radio"/> West Midlands |
| <input type="radio"/> London | <input type="radio"/> East Midlands |
| <input type="radio"/> North West | <input type="radio"/> Yorkshire and the Humber |
| <input type="radio"/> North East | |

43. What classification would best represent the areas where the visitors of this HWRC site live?

- A lot more urban than rural
- Slightly more urban than rural
- As much urban as rural
- Slightly more rural than urban
- A lot more rural than urban
- Don't know



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HWRC Survey

44. Do you think if you did introduce a booking system at the site this might influence fly-tipping in the area?

- Significantly reduce it
- Moderately reduce it
- No impact
- Moderate increase it
- Significantly increase it
- Don't know

45. Do you think if you did introduce a booking system at the site this might influence fly-tipping in other neighbouring local authority areas (outside your control) that do not have booking systems?

- Significantly reduce it
- Moderately reduce it
- No impact
- Moderate increase it
- Significantly increase it
- Don't know



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HWRC Survey

46. Do you think booking systems generally (across the country) might be increasing or reducing fly-tipping in England?

- Significantly reduce it
- Moderately reduce it
- No impact
- Moderate increase it
- Significantly increase it
- Don't know



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HWRC Survey

47. What do you think the benefits of having a booking system might be in your local community context? (select all that apply at the end)

- Reduced waiting time outside the HWRC
- Reduced crowding within the HWRC
- Visitors spend less time within the HWRC
- More manageable workload for HWRC staff
- More friendly/helpful HWRC staff
- More friendly/respectful visitors
- HWRC staff and visitors more likely to follow social-distancing guidance during COVID periods.
- Visitors more likely to place waste in the correct container in the first place
- HWRC staff more likely to detect anomalies with waste (e.g., non-household waste, waste placed in the wrong container, etc.)
- Commercial waste less likely to be dropped in the HWRC facilities
- Non-residents less likely to be using the HWRC facilities
- Reduced staffing
- Reduction in annual HWRC costs (from better management or less waste)
- Better/more information collected about HWRC users (e.g., where they live, how often they come)
- Better/more information collected about user experience (e.g., waste brought to the HWRC, satisfaction surveys).
- Better/more information disseminated to HWRC users (e.g., service/facility news)



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HWRC Survey

48. Which of the following negative aspects associated with having a booking system do you think would apply in your local community context? (select all that apply at the end)

- | | |
|--|---|
| <input type="checkbox"/> Not enough booking slots to satisfy demand. | <input type="checkbox"/> Less friendly/respectful visitors |
| <input type="checkbox"/> Users' perception that there aren't enough slots available | <input type="checkbox"/> Abusive visitors |
| <input type="checkbox"/> Procurement and running cost of the booking system to the local authority | <input type="checkbox"/> Discourage people that don't speak English or do not use a computer |
| <input type="checkbox"/> Less manageable workload for HWRC staff | <input type="checkbox"/> Discourage people that, for certain reasons do not want to share personal information (e.g., do not have ID, or car tax/MOT/insurance, have privacy concerns). |

49. Are there any plans to change the number of booking systems at your HWRC sites in your local area in the future?

- Apply to more sites
- No plans
- Don't Know



HWRC Survey

CONCLUSION

Thank you very much for your time. As explained in our initial email, we would like to talk to some of the respondents in order to gain a better understanding of the problem. If you are willing to talk to us, we would need your contact details to arrange a phone call at a time of your convenience and retrieve your answers.

50. Name

51. Email address

52. Phone number

53. Please leave any further comments/opinions that you might have in the box below.