



Neat Streets Grassmarket Summary report

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Contents

Executive summary	1
Aims and objectives	2
Background	3
Methodology	4
Project Interventions	6
Phase One: increasing civic pride.....	6
Phase Two: increasing the visibility of bins.....	7
Phase Three: targeting specific causes of litter – night time economy and Festival leaflet litter.....	9
Results	10
Phase One: increasing civic pride.....	12
Phase Two: increasing the visibility of bins.....	13
Phase Three: targeting specific causes of litter.....	14
Summary of key findings	15
Recommendations	16
Appendix 1	17



We are constantly striving to improve the appearance of our streets for residents, visitors and tourists alike, which is a particular challenge during the Festival season. By working with Keep Scotland Beautiful during the summer we were able to explore new and innovative ways of encouraging the public to dispose of their rubbish responsibly, helping to create a more tidy and welcoming environment for everyone.

We have been able to use this experience to influence Our Edinburgh, our ongoing campaign to discourage anti-social behaviour like fly-tipping and litter-dropping, which encourages social responsibility and makes use of some of the creative approaches adopted by Neat Streets, such as the popular ballot bins.

Councillor Lesley Hinds, Environment Convener

Executive summary

The Neat Streets Grassmarket project aimed to raise awareness of, and reduce, litter. A series of interventions were trialled between May and August 2016, in the Grassmarket area. The project was delivered in three phases which aimed to reduce litter through a variety of distinct methods. Whilst general litter was targeted throughout, some interventions targeted a specific litter type, for example, cigarette litter.



The Neat Streets concept was originally conceived and tested by the environmental charity Hubbub in London. Alongside Edinburgh City Council and the Greater Grassmarket Business Improvement District (BID), Hubbub remained key partners in the Grassmarket version of the project. The core funding supporters of the Neat Streets project were Coca-Cola Enterprises, INCPEN, McDonald's, Costa, Lucozade Ribena Suntory, Veolia, British Plastics Federation, the Packaging Federation and Packaging Recycling Group Scotland.

The first phase, running from May to June 2016, aimed to increase civic pride and involved lamppost wraps and banners, a 'my street is your street' gallery of local people, and business packs distributed to shops. The second phase, commencing in June 2016 and running throughout the project, increased the visibility of bins. Salient bins, ballot bins for cigarette litter and a concertina ashtray were all installed. The third phase ran from June to August and targeted specific types of litter. Eyes painted onto a dark close wall to make people feel like they are being watched and the "Trashconverters" who traded litter for a reward, tackled night time economy litter. A brightly coloured recycling bin was installed in August to address leaflet litter.

Litter counts were carried out on 21 occasions, 14 during the day time and seven at night time. These were supported by bin sensor and footfall data. Baseline and final opinion surveys were completed by a total of 96 local stakeholders, with intercept interviews carried out on five occasions, targeting 299 pedestrians and staff in the businesses.

One of the key successes of the project was the salient bins, which saw, on average, a 24% increase in use from the baseline. Additionally, the leaflet litter bin was also well utilised, with 315kg of leaflets deposited in the 22 days it was in service. Other interventions, such as the lamppost wraps, banners and the cigarette bins, had an

immediate, short term impact, but counts of littered items later returned to the average despite interventions being in place.

The project was consistently visible across both audiences engaged with litter as an environmental problem and those who are not, evidencing that the project is able to raise awareness with new audiences. Moreover, interventions were highly visible and recognisable, with 55% of people surveyed during phase two having seen one or more of the interventions.

The close proximity and overlap in timing between some of the interventions meant that it was sometimes difficult to isolate whether the results were due to the effect of the interventions as a whole, or a particularly salient single intervention. In addition, significant changes to the local authority cleansing schedule and increased footfall surrounding the Edinburgh Festival, meant that the longer term impact of the interventions could not be assessed.

A much clearer picture of the impact of individual interventions would emerge if they were run in discrete periods. Additionally, increasing the longevity of the project, in particular the monitoring schedule post interventions, would enable greater understanding of the long term and individual impact of each of the interventions. However, certain interventions had a demonstrable impact and learnings from this project should be used when designing future projects.

One key legacy success is the work Edinburgh City Council is carrying out. They are utilising learnings from Neat Streets to design their 'Our Edinburgh' anti-littering project. Several bins have already been wrapped across the city centre to mimic the salient bins from the Grassmarket project and this is planned to continue over 2017.

Aims and objectives

The project aimed to further the understanding of the Neat Streets concept and assess its impact within the new context of a busy Scottish city centre. As the interventions were designed to either encourage correct litter disposal behaviour or engender a personal sense of ownership of the area, the overall aim was to reduce litter.



The objectives were to:

1

Develop and implement a bespoke methodology for evaluating a series of anti-littering nudge interventions using a before, during and after design.

2

Evaluate the impact of each individual intervention.

3

Assess public perception of the interventions and their ability to influence littering behaviour.

Background

Litter context

In a recent report we published results which confirmed that, after many years of improvements, we are now seeing a decline in local environmental quality indicators. 80% of streets surveyed nationally were found to be littered.¹ This was reinforced by public perception surveys, with 73% of people stating the littering problem has stayed the same or become worse since 2013. With more than £1million spent weekly in Scotland addressing litter and flytipping, litter remains a costly but avoidable issue.

Behaviour change theory and research

Behavioural theories and research are fundamental to informing the design and delivery of any intervention. Indeed, the importance of grounding behaviour change interventions in current theory and research is becoming increasingly recognised.²

As the national leaders in litter monitoring and evaluation, we use behaviour change theories to inform our work. We have found that the Individual, Social, Material (ISM) tool and Nudge theory, used together, capture and increase our understanding of a wide variety of different factors that influence choice and behaviour.

ISM

We believe effective interventions can be developed using ISM. It encourages a holistic approach and collaboration on specific challenges to generate more creative and insightful ideas for interventions. ISM avoids the inherent problems of traditional approaches which tend to focus on only the material or individual contexts, generally ignoring social factors.³

Nudge

A nudge intervention can be defined as “any aspect of choice architecture that alters people’s behaviour in a predictable way without forbidding any options or significantly changing their economic incentives.”⁴ Simply, a nudge is a soft measure that encourages alternative behaviours. It is optional and carries none of the penalties associated with traditional enforcement approaches to littering.

Both of these are explored in further detail within the ‘intervention design’ section of this report, as they were used to inform the interventions implemented.

The Neat Streets context

The Grassmarket Neat Streets project sits within a family of Neat Streets initiatives, originally conceived and trialled by Hubbub on Villiers Street in London. A similar initiative is currently running in Manchester and another is planned for Birmingham in 2017.

The Villiers Street project reported successes, with a 26% drop in litter based on the litter counts conducted, and a 16% reduction in observed littering behaviour. However, one of the main limitations of the data was there was no way of attributing these reductions to the interventions alone, due to salient contributing factors which were not monitored. These factors include measuring what was correctly disposed of in the established bins and whether fluctuations in footfall could explain the drop in littering behaviour. These were considered when designing the methodology for the Grassmarket iteration of the project.

The Grassmarket context

The Grassmarket is one of the oldest parts of Scotland’s capital city, and it remains a busy area. The demographic is comprised of tourists and visitors to the area, though people working in the area and residents are also present. The area is known for its bustling nightlife and many of the businesses are tailored to this market.

The main section of the Grassmarket consists of a pedestrianised area with street trees and seating areas, with a restricted access road to the north serving a selection of pubs and eateries. A busy vehicular road runs to the south side of the pedestrianised area, with another selection of eateries and independent shops. To the east, Victoria Street, Cowgate and Candlemaker Row branch off from the main section. These were included in the monitoring of the project. To the west, King’s Stables Road and West Port lead away from the Grassmarket which were not included in the monitoring of the project.

¹<http://www.keepsotlandbeautiful.org/media/846579/state-of-the-nation-final-100316-low-res.pdf>.

²Darnton, A, Practical Guide: An overview of behaviour change models and their uses, (Government Social Research Unit, 2008b).

³<http://www.keepsotlandbeautiful.org/sustainability-climate-change/sustainable-scotland-network/using-ism-for-sustainable-change/>.

⁴Thaler and Sunstein, C. Nudge. (Penguin Books, 2008).

Methodology

The monitoring schedule followed a before, during and after study structure. Following baseline surveys of both litter counts and public opinion, a schedule of monitoring was designed to capture the immediate impact, with subsequent monitoring to capture the mid-term impacts of each intervention. 14 daytime litter counts and seven night time counts were conducted, supported by footfall data which was used as a control measure (supplied by an external auditor, Springboard). In addition, sensors were placed in the bins which were used for interventions. Alongside this quantitative data, baseline and final project surveys, four sets of intercept interviews and a business specific survey were conducted to provide qualitative public feedback on the project. A full schedule of the monitoring can be found in Appendix 1.

The variety of monitoring methods used in this project were selected to specifically build on the outcomes from the Villiers Street project and to complement each other. Litter counts were specifically selected to assess the impact each intervention had on litter on the ground, as this is the best measure of success for an anti-littering project. This data was supported by public feedback on the project, bin sensor data and footfall data as a control.

Litter counts

To enable accurate litter monitoring and evaluation, the Grassmarket was zoned into 25 sections. Using these zones, an auditor counted litter following the Local Environmental Audit and Management System (LEAMS) format, a validated method used on a national scale to monitor litter and environmental quality. In addition to reporting on the general waste items, cigarette litter was counted separately as two interventions targeted this specifically. During each litter count, a perception rating was given as an indication of how the area looked overall.

Bin sensor data

Sensors were placed in all established bins in the Grassmarket, allowing the trends of correct waste disposal to be tracked, complementing the trends of incorrectly disposed of litter recorded through counting. This data was provided by a third party through the City of Edinburgh Council.

Footfall data

Average footfall data for the whole of the Grassmarket area was used as a control, to establish whether fluctuations in litter could be attributed to changes in the number of people present in the area. This was provided by a third party (Springboard) through the Business Improvement District (BID).

Perception surveys

A series of surveys to capture the general public's, residents', business owners' and employees' perception of the project were conducted:

- SurveyMonkey baseline opinion survey, before interventions were placed in the Grassmarket, available online and through targeted face-to-face interviews,
- Four sets of intercept interviews carried out within the Grassmarket to capture immediate and mid-term feedback on the interventions,
- Targeted business specific survey carried out face to face,
- Final SurveyMonkey opinion survey available online and through targeted face-to-face interviews.

The public perception surveys enabled a range of stakeholders to give their feedback on the project and allowed for assessment of which interventions were most noticeable. This complement the litter counts and the Villiers Street behavioural observations.



Stakeholder engagement

An open event was held before the project commenced, allowing members of the public, local residents, businesses and members of the local authority to help design the project. Throughout, local stakeholders continued to be engaged and their views sought on all of the interventions. The instrumental partners in this were the BID, who shared project updates and surveys with all of the businesses in the area, and Edinburgh City Council, who provided valuable communications support, sharing the project messages across their media channels.

Limitations of the research

- Litter counts provide snapshots of the environmental quality in the immediate area and at the time conducted. The indicative trends reported in the results are specific to the Grassmarket and as such, interventions should continue to be tested and monitored to understand the viability and transferability of their impact.
- Due to the increased cleansing schedule including extra staff being hired, and increased footfall surrounding the Edinburgh Festival, it was not possible to assess the longer term impacts of the interventions. Counts were stopped midway through

July as conditions of the run up to, and duration of, the festival were exceptionally different to the baseline. Time constraints did not allow for longer term audits to be carried out after all interventions were removed.

- Due to the permissions required for installation, some interventions were removed sooner than originally planned. Again, due to permissions, interventions were not always placed in an ideal area (i.e. where the biggest problem had been found in the baseline monitoring) or where there had been a bin previously. In this case, it is not possible to tell if the intervention bin has a particular salience and resulting impact on littering, or if a standard bin would have had the same impact.
- The sample sizes for the public perception were often small when targeting a specific demographic (e.g. business owners / employees) and the majority of responses were from tourists. Understanding the impact of the project is therefore limited by this factor and should be replicated to ensure the results indicated are repeatable for a wider audience.

Project interventions

Over the period of the project between May and August 2016, a series of interventions in three phases were implemented. Each of the phases had a distinct aim and approach to tackling litter. Throughout, the same colours and graphics were used to promote coherency and build overall momentum. The following summarises the phases and interventions within each one.

Phase one: increasing civic pride (May – June)

Phase one ran from May to June and launched the project publically. It included three interventions, all aimed at improving the general appearance of the Grassmarket, engendering a sense of community pride and public ownership of the area.

Supporting theory

Analysed through the ISM tool, increasing civic pride in the Grassmarket could impact upon behaviour by activating both individual and social contexts that influence it. The communications appealed to personal ownership, encouraging the agency of those in the area to act. Instilling a sense of pride, ownership of place and pleasure in people can strongly contribute to them developing a positive attitude to actions to improve poor environmental quality. Socially, the more members of the community in the Grassmarket area that understand the litter problem, the greater the momentum to solve it, as it becomes the norm that it is cared for.

Phase one interventions

'My street is your street' a poster campaign, showcasing photos of local people with handwritten signs encouraging others to take pride in the Grassmarket:

- These were displayed in two formats: on four lamp post wraps and on a poster drum at the west end of the Grassmarket.

'Take pride in the Grassmarket' eye catching banners in project colours:

- These were displayed on four banner poles along the edge of the Grassmarket.

20 Business packs given to businesses to further involve them with the project, including project colour planter boxes to increase natural materials in the streets, project coloured brooms to sweep and badges to give out to customers.

Video

A video was produced to give an overview of the campaign: <http://y2u.be/DJ5ewQVauE8>



I hope it makes a difference. Education gets to peoples' attention and conscience.

Resident

Phase two: increasing the visibility of bins (June – July)

Phase two followed from June onwards, following the removal of all of phase one's interventions bar the business packs. All of the interventions within this phase aimed to directly target littering behaviour by increasing the visibility of general waste bins and by installing cigarette litter bins across the Grassmarket.

Supporting theory

In previous studies, it has been found that increasing the visibility of bins has proven to be an effective “nudge” to promoting correct waste disposal.⁵ Adding an additional element of interactivity with a voting option again increases the “nudge” to engage with the bins.

Installing new bins promotes correct disposal behaviour by working within the material element of ISM; providing new and increased infrastructure should make it easier to put your waste in the bin.

The positive emotions associated with novelty bins may incentivise people to break their habitual behaviour (littering) for a period of time and replace it with a new behaviour (putting their litter in the bin). In order to ensure this intervention is successful in encouraging behaviour change, the costs associated with putting litter in this type of bin should not outweigh the benefits. Consideration needs to be given to where the bins are placed to make certain that this is not the case.



Phase two interventions

Salient bins (five pre-existing), general waste bins were wrapped in bright, reflective project colours with positive reinforcement messages printed on them:

- These were spread across the Grassmarket and Victoria Street to see if bins noted to have low use could be improved, and to ensure that the project was visible across the Grassmarket. NB: Whilst monitoring for phase two ended in July, both the salient and general waste voting bins remain in place.

General waste voting bins: two pre-existing double slot general waste bins were wrapped in bright and reflective messaging, encouraging visitors to vote with their waste:

- These were placed at either end to ensure they were visible from both approaches to the Grassmarket.

Four new cigarette ballot bins were installed, encouraging smokers to vote with their cigarette butts:

- Care was taken to try to position these close to an existing ashtray so potential litterers already had the option of correct disposal.

A new concertina ashtray: one new concertina ashtray, printed with pictures from the ‘my street is your street’ gallery was installed, encouraging people to dispose of their butts by making smokers feel like they were being watched:

- This style of bin had never previously been trialled within the UK so further knowledge was gained on both the practical elements of installing, plus an indication of whether the being watched effect would work in this situation.

⁵Rae, B., Eadie, D. and Stead, M. NUDGE Study implementation toolkit: promoting the use of street litter bins, (Keep Scotland Beautiful, ISM and University of Stirling, 2015).



Phase three: targeting specific causes of litter – night time economy and festival leaflet litter (June – August)

Phase three built upon the changes to infrastructure carried out in phase two, by moving on to target specific litter streams. Two particularly problematic elements of littering behaviour were identified as night time economy litter and leaflet litter caused during the Fringe Festival. This phase trialled innovative methods of targeting interventions to these particular situations.

Supporting theory

Night time economy litter is often one of the hardest to tackle, so the interventions were designed to be engaging and fun, and reinforce the positive behaviour of those who might not have previously disposed of litter correctly.

The leaflet bin was new and targeted infrastructure, so added an element of novelty and increased ability to correctly dispose of waste and influence correct behaviour. Those who used the bin were offered the chance to win prizes, again reinforcing habits that putting litter in the bin is rewarding. Moreover, through utilising social media as the platform for winning the prizes, the project messages were spread to new audiences.

In previous research, it has been found that utilising eye imagery, to make people feel like they are being watched was successful at reducing dog fouling.⁶ This was applied in a new setting, aimed toward night time behaviours, in an urban close setting.

Phase three interventions

Trashconverters: two actors in fancy dress engaged with members of the public on nights out, encouraging them to dispose of their waste correctly in exchange for a small reward. <http://y2u.be/qTkBGg3c9io>

“Watching” eyes: highly visible fluorescent eyes were painted on a wall of Castle Wynd South to make it feel like those in the close were being watched, with the aim of limiting all antisocial behaviour.

Festival leaflet recycling bin: one bright, project coloured bin, encouraging people to recycle leaflets and to join a competition to win prizes to reward positive behaviour, was installed for the duration of the Edinburgh Festival.

⁶Keep Scotland Beautiful and NFU Scotland: A collaborative nudge research project on dog fouling ‘We’re Watching you’ (2015).

Phase 1 materials



Phase 2 materials



Phase 3 materials



Results

Overall project impact

The project was consistently visible, whether those surveyed were aware of litter or not.

- This could indicate that the project was able to raise awareness with new audiences (i.e. those who do not notice or who are not bothered by litter) rather than only being visible to those who are already engaged with littering as an environmental issue (i.e. those who notice it and are bothered by it). There is only a 3% difference across the highest and lowest percentages.

Prior to the project commencing, litter was highlighted as the second worst aspect of living or working in the Grassmarket. After the project, litter had dropped to the third worst aspect of living or working in the Grassmarket.

- Whilst litter dropped from the second to third worst aspect, on average more individuals rated it as the worst aspect, rising from 16% in the pre-project survey to 23% final project survey. This could indicate that the project was able to raise awareness of litter as an important issue, whilst demonstrating a commitment to tackling litter in the Grassmarket and improving overall perceptions.

The perception ratings stayed consistent across the project.

- Day time perception ratings peaked on the 17th June, the day after cigarette bins were installed and the date that the bin stickers were installed, indicating an immediate improvement caused by the interventions. However, with only a 0.3 point difference between highest and lowest individual rankings (on a scale of 0 – 5, 0: heavy presence of litter, 5: no litter), there is unlikely to be a noticeable difference of litter on the ground.
- Night time perception ratings were consistently lower than day time ratings, (average 1.6 during day, 0.8 during evening) showing that night time economy litter remained a persistent issue.

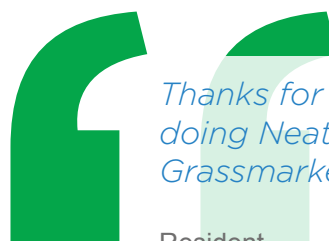
In the final project survey:

81% of people had seen one or more of the interventions.

80% of people correctly associated the interventions with litter, a clean and tidy environment or the Neat Streets project.

When asked for their opinion of the project, 52% of people surveyed responded positively, 29% negatively and 19% neutrally.

- Whilst opinions of the project were generally positive, when asked if there had been a change in littering over the project period, no clear, causal relationship between the interventions and people's perception of littering in the Grassmarket could be found. Those surveyed cited external factors outside of the project, such as changes to the recycling bins or frequency of waste uplifts, as influences on the littering behaviour. Whilst it is impossible to control these external factors, by working with the local authority and those who manage waste in the area, it is possible to track when outside influences might have impacted and attempt to correct for these during the monitoring process.



Thanks for the effort of doing Neat Streets... The Grassmarket is improving.

Resident



In the business specific survey:

92% of employees or business owners had seen one or more of the interventions.

28% of employees or business owners surveyed thought that the interventions could impact their business positively, 36% were positive about the project but did not think it would directly impact their business and 24% thought there would be no impact on the business at all.

44% of employees or business owners surveyed were positive about being involved with the project if it continued (strongly agreeing or agreeing). Of those who neither agreed or disagreed (40%) half stated they would be interested in getting involved, dependent on the commitment.

Most employees or business owners did not feel like they had been adequately engaged (60% strongly disagreeing or disagreeing) or feel ownership over the project (76% strongly disagreeing or disagreeing).

■ Although local stakeholders, including the businesses, were engaged with the scoping of the project, its launch, posed for the 'my street is your street' gallery and received their business packs, engagement levels dropped as the project progressed. The BID was instrumental in liaising with the businesses, as they already had good contacts in the area. However, this did arise as a point of confusion as some respondents to the business survey expressed that they believed the BID was the group leading the project. In future projects, if working with partners, it would be beneficial to ensure that one point of contact from the core project team is highlighted in all communications and, if possible, host design sessions with all of the businesses to allow them the opportunity to adjust the business packs to their needs.

■ Moreover, a linked issue, which was not monitored, was trade waste. During the litter counts it quickly became apparent that this was one of the main issues, with trade waste bins and bags left in the street for collection causing litter when blown over or torn open by seagulls. It is possible that this skewed the overall litter counts as this was not corrected for when designing the monitoring schedule. In future projects, in areas with high business saturation, trade waste issues should be included within the monitoring schedule. Indeed, a reduction in the amount of trade waste disposed of incorrectly could point to an increase in businesses responsibility and care of the area, so could form a vital aspect to monitor.

Media impact

A total of six articles were published on the project, reaching an estimated 185,373 people, with a projected £8,771.85 advertising value equivalent.

Across social media channels, project posts were widely shared. Edinburgh City Council reported a fivefold increase in reach when promoting the Neat Streets ballot bin. A particular highlight was a retweet from Ewan McGregor, which got over 33,000 likes.



Phase One: increasing civic pride

Impact on litter

Immediately after the banners, posters and lamppost wraps were installed, the day time count of littered items dropped significantly for two audit cycles (up to 20th May).

Similarly, for the same period, the count of cigarette littered items drops significantly for two audit cycles.

- Beyond this, the litter counts gradually increased to be similar to the initial baseline audits, and cigarette litter counts increased beyond the baseline. This suggests that it was the novelty of the interventions having an influence, rather than having a longer term impact upon existing behaviours or perceptions within the area.

There is not a noticeable impact upon night time counts of littered items.

- Whilst there are periods of improvement, on average, the count of littered items increased after the interventions were in place. No trend can be identified for night time cigarette litter as only one audit took place before the cigarette specific bins were installed. This outcome is not unexpected however, as all of the interventions within this period were not tailored to this issue and hence would have lower visibility and impact during the dark.

Impact on public perception of the Grassmarket

29% of people surveyed noticed a campaign about litter, civic pride or greening and growing, or have seen one of the interventions.

- Lamppost wraps were the most noticed intervention, followed by the posters and the banners.

The baseline and final project survey results are stable, with little change from the baseline in measurements of community pride and ratings of the area:

- Ratings of “proud to live or work in the Grassmarket” have increased: 9% increase in those agreeing and stable percentage of those strongly agreeing with the statement (33%), though overall weighted average has only marginally increased (3.95 to 4.04 out of 5). There are marginal drops from the weighted averages from the baseline in: sense of community (3.45 – 3.33) and residential responsibility (3.62-3.35). The overall weighted average of recommending the Grassmarket as a good place to visit stayed exactly the same.
- During surveying, it became apparent that other arising factors often eclipsed the litter issue. For example, the proposed development of a new hotel received significant community backlash and as one resident commented “there are MUCH greater issues that the local community is contending with”. External factors such as this, linked to but not controlled by the project, skewed people’s feeling of pride or ownership of the area, and their perception of the project overall. To have a greater impact on community pride, the project would need to run for a much longer period of time and with a deeper level of engagement, including community capacity building to ensure that those who wanted to act felt able to.



Phase Two: increasing the visibility of bins

Overall phase two salience

Of all people surveyed, 55% of people had seen one or more of the interventions.

- Residents are most likely to have seen one of more of the interventions (74%) and tourists least likely (47%).
- During the surveys for phase one, respondents were not prompted with photographs of each of the individual interventions. This was adjusted for phase two surveying as it appears that people are more likely to notice individual interventions, rather than the overall campaign: 24% of people had noticed an overall campaign about litter, but an extra 31% of people had noticed one of the interventions. Due to the permissions required to install interventions, most of phase one's had to be removed before phase two (only project planters remained). It is possible that if there had been overlap, the campaign salience would have been much stronger, with the phases reinforcing each other.

Salient bin impact on litter

Intervention bins had a significant increase in use over non-intervention bins.

- From the baseline bin sensor data from 1st May to 16th June, to the intervention period of 17th June to 31st of July, stickered salient bins saw an average increased use of 1.37kg per day, a 24% increase.

For non-intervention bins, there was only a 0.17kg increased use which is a 3% increase. During the festival period, all bins saw a further increase in use due to greater footfall. Intervention bins still were used marginally more (0.12kgs on average extra per day). It is possible that the bins were reaching full capacity and hence limiting the difference between intervention and non-intervention bins, or potentially that bins had lost their novelty factor.


- Only one of the intervention bins did not increase its usage, bin 17, which showed a -0.22kg drop in use. This is probably due to the voting design on the bin. Most people who commented upon this thought the bin was offering directions, rather than encouraging them to vote with litter ("Which is your favourite Edinburgh landmark?", with arrows pointing to disposal slots misinterpreted as pointing to the direction of the landmarks). It is hypothesised that the confusion surrounding whether it is a voting bin or offering directions might have caused people to not use it. The other general waste voting bin saw increased use in line with the other salient bins, so to ascertain whether the voting bins are more or less effective than that salient bins, they would need to be replicated further.

The salient bins were the most noticed interventions: 44% of people had seen either a salient bin and / or a general waste voting bin.

Cigarette bin impact on cigarette litter

There was an immediate, but short term, reduction in cigarette litter after installing the cigarette bins.

- Cigarette litter reduced for the whole of the Grassmarket for two audit cycles after installing the bins. However, after this, the cigarette litter returned to above the baseline. During the night time audits, cigarette litter increased immediately after installation. This was followed by a reduction for two audit cycles, then an increase.
- The overall reduction in cigarette litter (i.e. that there was a drop on average across all zones despite not all having a bin installed) could indicate that the cigarette bins were able to raise awareness of correct disposal amongst smokers, encouraging them to walk a little further to a cigarette bin. Another interpretation is that the impact in each intervention zone would be greater, if cigarettes were not so easily wind-blown and likely to move out of the zone in which they were deposited.
- An issue highlighted during counts was that there tended to be a cumulative effect where cigarette ends became trapped between cobbles or under street trees. In future projects, it might be worthwhile excluding these areas as they are harder to clean and therefore difficult to tell whether the litter was recently dropped or there since the last count.
- In line with the general picture, for the concertina ashtray zone there was a marginal improvement on average during the daytime, and a marginal increase on average from night-time counts post intervention. This result is despite some installation issues, such as a lack of fencing within the Grassmarket to attach it to and bins facing the same way rather than in opposite directions as planned. However, also due to installation issues, the concertina had to be placed in an area where there previously had been no bin, so it is possible that any design of bin might have had this impact. As this was the first installation of a concertina ashtray, it would need to be replicated to assess longer term impact, if any, in comparison to the ballot bins and novel standard bins.



Think you're already doing a good job, like the colourful bins, keep it up, keep it varied.

Employee

Phase Three: targeting specific causes of litter

Impact of the Trashconverters

There was a marginal decrease in the overall perception rating of the Grassmarket immediately following the Trashconverters, and no impact on the litter on the ground.

- The Trashconverters stunt was repeated during the festival to provide footage to share online, and also to gather anecdotal feedback. Trashconverters was undoubtedly engaging and well received, and as a novel awareness raising tool, very impactful. However, it would need to be incorporated longer term into a litter project, to reinforce the messaging, to see greater impact on litter on the ground. Training street pastors or security personnel to encourage correct litter disposal for the night time economy could be more impactful in changing long term behaviour.

Impact of “watching” eyes

There was a drop in littered items during daytime litter counts in the watching eyes intervention zone, but no change at night.

- The baseline litter counts in this zone showed very low numbers (14 items on average during the baseline and 5 post intervention), however, due to permissions this was the only place this intervention could go. At night time, no discernible change in the amount of litter on the ground was noted (25 baseline, 23 post). Although the paint used was fluorescent, it was not glow in the dark, so it is likely that visibility was limited during the night. The watching eyes would need to be repeated where there is firstly, a greater littering issue to verify its impact during the day, and secondly, better background lighting or glow in the dark paint to assess the night time impact.

Impact of the festival leaflet recycling bin

21 bags uplifted in total over the 22 days the leaflet bin was serviced. The average weight of a bag of leaflets was 15kg, giving a total of 315kg of recycled leaflets during the festival.

- The leaflet bin was obviously well used, reinforcing the result that bright, novel and salient bins are more noticeable and therefore more likely to be used. However, as there was not another similar leaflet recycling facility, it is not possible to compare this to a baseline, like the salient bins were. This type of bin should be replicated, alongside a control bin, to further assess its impact.

Summary of key findings

1

The project was consistently visible whether people were engaged and noticed litter or not.

2

There was immediate, short term impact as a result of several of the interventions: the phase one banners, lamppost wraps and planters, and the cigarette bins.

3

55% of people had seen one or more of the interventions during the project, with the most noticed intervention the salient bin (44% people had seen one).

4

The salient bins showed a remarkable increase in use (24% increase on average).

5

The interventions specifically targeting the night time economy had no impact, though the watching eyes did show limited reduction in litter during the day.



Recommendations

The interventions need to be tested in isolation, both spatially and temporally, to determine the individual impact of each. For example, as the phase two interventions were installed within the same week, the immediate reduction in cigarette litter could be a direct result of the new cigarette voting bins, indirectly resultant from the salient bins which also had cigarette disposal facilities, or a combination of both. In addition, where the bins were completely new (i.e. no previous bin) it is not possible to ascertain whether a standard bin would have had the same impact as the intervention bin. Ideally, a new bin should be installed during the baseline monitoring in this instance.

External compounding factors, due to the busy nature of the Grassmarket area (i.e. changes in bin uplifts, style of bins, commercial developments etc.) further obscure the clarity regarding the overall impact of the project. To reduce the background noise impacting the results, the project could be replicated in a quieter area, to gather a greater understanding of the cumulative impact of the interventions. A more residential area, with less transient footfall, would also positively impact on the understanding the longer term impact of the project, particularly in relation to the civic pride factors.

Extending the project over a longer period when there were no large events such as the festival would have a twofold benefit. Firstly, increasing the number of post intervention audits would provide a

greater understanding on the longer term impacts of the interventions. Secondly, a longer timescale would have allowed for greater flexibility when establishing the baseline, as the parameters of the counts could be amended to account for unforeseen factors (for example, trade waste was highlighted as an issue partway through the project but could not be retrospectively excluded, as post intervention data would not have matched the baseline).

The findings gathered from the Grassmarket should be considered in conjunction with the findings from the Villiers Street project. Alongside the results from the Manchester and Birmingham projects, this would build an overall and cumulative evidence base for the Neat Streets interventions as a suite of methods to tackle littering.

Partners and funders

Thanks to our partners:



Thanks to our funders:



Appendix 1 - Monitoring

Daytime Economy	Night-time Economy	Survey	Intervention Start	Intervention Finish	Intervention	Weather
31.03.16						Overcast, light winds
01.04.16						Strong intermittent gusts
	03.04.16					Cold, no wind
07.04.16						Light gusts, sunny
08.04.16						Overcast, light gusts, occasional drizzle
	10.04.16	Baseline survey opened 14.04.16				Cold, no wind
			02.05.16	30.05.16	Banners	
			12.05.16	29.05.16	Wraps	
			02.05.16	08.05.16	Poster drum	
06.05.16						Warm, light wind
	08.05.16					Drizzly, wet, cold
13.05.16		Intercept interviews 13.05.16				Overcast, light winds
			17.05.16		Planters	
			17.05.16		Brooms	
20.05.16						Warm, light wind
27.05.16		Intercept interviews 27.05.16				Occasional light drizzle
03.06.16						Hot, blue sky
10.06.16						Warm, good weather
			16.06.16		Concertina ashtray	
			16.06.16		Ballot ashtray	
17.06.16						Wet and drizzly throughout
			17.06.16		Bin wraps	
			17.06.16		Eyes	
	19.06.16					Cool, no breeze
			23.06.16		Ballot general waste voting bins	
24.06.16						Overcast, sunny periods
			25.06.16		Badges	
	26.16.16					Mild
01.07.16		Intercept interviews 08.07.16				Sunny
15.07.16		Business specific surveying 15.07.16				Heavy rain spells before starting, light drizzle during
	17.07.16					Mild
		Intercept interviews 22.07.16	23.07.16		Trashconverters	
	24.07.16					Mild
		Final campaign opinions survey opened 10.10.16				

Daytime litter counts

Carried out on 14 occasions during the early afternoon, following an agreed break in the local authority's cleansing schedule. These audits allowed for an overall trend in litter on the ground to be established, and were scheduled to capture the immediate and midterm impact of the interventions. Due to increased cleansing schedules in preparation for and during the Edinburgh Festival, litter counts stopped on the 15th July, as after this, data did not accurately match the baseline.

Night time litter counts

Carried out on 7 occasions from 3am to 6am to assess night time economy litter, ahead of local authority teams cleansing the area. Again, due to the Festival cleansing schedules, night time litter counts stopped on the 24th July.

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