University of South Australia | Ehrenberg-Bass Institute for Marketing Science

Which Bin Campaign Evaluation

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Objectives

This report details the findings of research undertaken for Green Industries SA (GISA) by the Ehrenberg-Bass Institute, based at the University of South Australia. The research was conducted from September until October 2019.

The research assesses the new launched *Which Bin* campaign in terms of awareness, message outtake and claimed impact on bin system usage. The research provides direction for further campaign refinement and a better understanding of how South Australian householders use their green organics, recycling and landfill bin system.

The *Which Bin* recycling education campaign used social media, press advertising and television commercials. It was supported with public relations and face-to-face community engagement, a 1300 telephone hotline, and virtual 'helpdesk' answering 'which bin' to use through Facebook, email and a website. Anchored by the character 'Vinnie', a passionate recycler and family members, the strategy was to provide easy access to a range of resources with consistent message. Assets were extended to local councils to customise and adapt for their residents.

Method

This research builds on prior research undertaken by GISA, starting back in 2010. Waste education research was conducted by the Ehrenberg-Bass Institute for GISA in 2010, 2012 and 2014. The 2019 research consisted of 803 online interviews with householders across South Australia. Because the area of waste management is subject to poor respondent recall and also biases towards respondents overclaiming "correct" behaviours, 400 bin inspections were also conducted across the wider metropolitan area. The recycling, green organics and landfill bins were all inspected for visible signs of contamination and best/poor practice. Finally, 10 depth interviews were undertaken with councils and waste educators so that the "Which Bin" campaign's impact amongst its primary users could be measured.

Householder Findings

Infrastructure

The vast majority of respondents (83%) said they had access to all three kerbside bins, reflecting the efforts that have gone into standardisation of the kerbside bin system across the state. Over two thirds of respondents (76%) said 75% to 100% of household members were actively engaged in recycling efforts. This shows the wide relevance of messages to householders as it is not just the domain of one member.

Just over a third of households claimed that the recycling bin reached capacity before collection. This sets a ceiling on how much can be diverted from the landfill bin (you cannot put more in recycling if it is full) and so is a problem. It is also of concern that the green organics bin reaches capacity before collection in almost a quarter of cases (23%), given the current focus on food scrap diversion from landfill to organics.

Almost two thirds (63%) present their bins for collection even when they are not full. This is an additional unnecessary cost to councils and highlights an area where educational messages could be built.

Attitudes
The perceived importance of recycling remains high from 2018 and a high 96% self-assess as knowing the bin system well. This may make them non-receptive to messages as they do not perceive they need them.

A series of attitudinal statement about recycling shows the positive and moral obligation householders felt towards recycling and how, in the main, they are willing to make the effort and feel their efforts are worthwhile. There a high willingness to recycle even more. This is a positive finding and indicates receptiveness of the audience.

Barriers to recycling
Respondents were also asked, prompted, if there was anything stopping them from recycling as much as they would like. Half the respondents perceive no barriers. Of those that did, the main barriers were bin capacity, followed by the unwillingness of other household members to assist. In 2014, 71% said there were no barriers, but the question was not prompted as the data was collected by telephone. It may be the prompting has led to differences in answers across the years. Certainly, when barriers are identified, they are of the same nature and relative rank order of frequency in both 2014 and 2019 research.

Miss opportunity or contaminate
Respondents were also asked “When you are not sure if something can be recycled, are you more likely to put it in the waste bin to not risk contamination or put in the recycling bin to not miss an opportunity to recycle. The respondents were conservative, with 80% choosing landfill over recycling.

Food discards & soft plastics
There were only 16% who claimed not to be making any attempts to recycle food scraps.

There was 41% of respondents claiming to have taken soft plastics back to a supermarket for recycling. This is more than double that of 2014 (19%).

Respondents were asked “Thinking about how much of your household’s soft plastics are recycled, compared to this time last year are you recycling more, the same amount or less soft plastics?” There was 53% of respondents who claimed they were recycling more, 37% the same amount and only 10% said less.

Respondents who said they had recycled soft plastics (41%) were asked to estimate what percentage overall of their household’s soft plastics that they currently recycle back through the supermarket. The mean was 64%. There was 10% (n=31) who claimed they recycled 100%.

All these findings show a positive trend that can be built upon.

Householder Findings *Which Bin*

Unprompted recall & messages
Of those recalling media coverage (n=248, 31%), there was 48% that accurately described the “Which Bin” campaign. This is higher than the 2014 results of 26% recall amongst a comparable group.

Respondent were also asked what the key message was from the campaign. This question was only asked of those who recalled seeing media coverage of waste and recycling in the last four months. The key message recalled was the general message to use the bin system correctly and to know what goes in each to maximise opportunities to recycle. This was followed by the message that recycling is worthwhile and benefits the environment. Food scraps in the organics, pizza boxes and Ask Vin were also all recalled as specific messages from the media exposure, but only by a few respondents. This ability of respondents to recall specific messages was higher in 2019 than in the 2014 Recycle Right research where 45% of those who had seen bin related ads or information could not recall any specific of the message. In 2019 only 8% were in this situation.

Claimed behaviour changes from media messages
Respondents who recalled seeing some media coverage were asked if they had disposed of any items differently as a result of the media coverage. A quarter (n=60) said they had.

The main changes were around better disposal of soft plastics (25%), followed by food discards (17%), pizza boxes (13%), better practice with recyclables (10%) and then bottle lids (8%). There was also a spread across a wide range of other options like fabric and long-life milk containers and ash (27%).

P**rompted recall & messages**
All respondents were asked the prompted recall question of “Have you seen or heard the “Which Bin” Campaign”. At this stage, there were no supporting examples of the campaign given. A high 37% of all respondents said they recalled the campaign with just brand name prompting. There was 11% of those who recalled the ad that could name the character correctly. This translates into 4% of all respondents. This is a strong, but not atypical result seen for advertising performance.

Campaign evaluation
All respondents were shown as series of statements about the campaign (which they had all now been exposed to even if they could not recall it without seeing it) and asked for their level of agreement with the statement using an 11-point scale where “0” meant “completely disagree” and “10” meant “completely agree”. The scores are all high and positive. A high 66% of the audience felt they had gained new knowledge from the advertisement messages.

Table 1: Campaign evaluation statements

	Mean	SD
Recycling is an important enough issue to warrant a TV campaign	**8.4**	**2.3**
This campaign makes it easier to recycle correctly	**7.9**	**2.3**
I like this campaign	**7.7**	**2.6**
This campaign motivates me to recycle more	**7.1**	**2.7**
This taught me things I did not know	**6.6**	**3.1**
Total	**803**	

There were 5% (n=42) that claimed to have visited the “Which Bin” website. A lower 2% (n=17) claimed to have visited the “Which Bin” Facebook page while just over 1% (n=11) said they had called the “Which Bin” 1300 number. These are all low reach activities.

The message importance and simplicity were the most liked aspects of the campaign. Half the respondents would not make any changes to the campaign, even if they could. There was a strong call for wider reach and repetition of the campaign.

Observational Bin Audit Findings

Because the area of waste management is subject to poor respondent recall and biases towards respondents overclaiming “correct” behaviours, 400 bin inspections were conducted across the wider metropolitan area. This removes the errors associated with claimed behaviour measures.

Recycling bins

The recycling bins were slightly fuller on presentation than they were in 2014 audits. In 2019, contamination and/or poor practice (71%) was higher than in 2014 (61%), but lower than 2012 (86%) and on par with 2010 (68%). Contaminants were visible in 58% of bins and poor practice in 41%. Overall, no contamination or poor practice was only visible in 29% of recycling bins. Soft plastics remain the most prevalent visible contaminant.

Green organics bins

The green organics bins were fuller on presentation than previous audits. The rate of contamination in audited green organics bins was less than that seen in recycling bins (58% for recycling bins and 20% for green organics bins), suggesting that householders find it easier to distinguish between items that can or cannot go in the green organics bin than they can between items that can and cannot go in the recycling bin.

In the 2019 audits, less than a quarter of green bins audited contained items that were not green waste (20%). This result is lower than the 2010 audits (25%) but higher than the 2012 and 2014 audits (15% and 7% respectively).

The green bins were inspected for best practice of having food discards in them and also examined for pizza boxes (which are also appropriate for this waste stream if they have food in them). There was only one pizza box seen in the audited bins. Food discards were in nearly a quarter of bins. This shows the importance of continued messaging around food discards in the green organics bin in the *Which Bin* campaign.

Landfill bins
The landfill bins appear to be presenting in a fuller state than in previous audits.

Over three quarters of the waste bins (81%) contained items that should have gone in the recycling or green organics bins. This is an increase again on 2014 (51%). That said, the items that can go into other waste streams have changed across the course of the research and there are now more of them (e.g. soft plastics).

Recyclables (70%), were the most prominent item that should have been in another discard bin, followed by compostable paper (33%), food scraps (21%), and garden organics (13%). An additional category of soft plastics was added to address changes in recycling practices due to the emergence of soft plastics collection at supermarkets and other places. Soft plastics were visible in 77% of landfill bins, making them the most common recyclable item that appeared in the landfill bins audited.

Council and Waste Educator Findings

The Which Bin Campaign is well liked by councils and waste educators. They are a receptive audience and have clearly signalled their willingness and keenness to use the campaign and supporting materials in their own waste education efforts through the research findings.

There is growing recognition that a centralised, consistent and continuous approach to waste education is needed to affect change and that this will never be achieved while councils work in a disparate way. That said, some still insist on the development of their own materials, creating the potential for market confusion and mixed messages. There are territorial feelings around waste education by these critical gatekeepers and the need for them to feel involved in processes.

To address this, there is a real opportunity for GISA to run workshops with councils and waste educators on the principles of effective waste and recycling communication and education for behaviour change and to use the results of this research to illustrate that and to bring people “into the fold”. This will result in better collaboration moving forward.

GISA is seen as a natural choice to take the leadership role in the waste education of householders, but they need to further improve their communication channels with councils and waste educators to work even more effectively in this space.

We would recommend as the campaign is refined, and continue to focus on just a few central messages. Having a few key messages within a campaign ensures key messages are clear and does not over complicate the campaign. Materials with more

and different messages or more information can be made available for councils but not delivered via mass media

Many respondents believed a focus should be the diversion of food waste to the organics bin. This was a prominent message of the *Which Bin* campaign and it is recommended GISA continue with this message as this is a large area for opportunity, but tailoring messaging for regional councils.

There was consensus that negative messages (i.e. saying not what not to do) should be avoided. The focus should be about where things go rather than where they should not.

Recommendations

The *Which Bin* campaign is well-liked and has had high cut-through amongst the target audiences. The research has given clear direction for further campaign development and shown the effective reach that has been achieved, using TV and social media as primary vehicles.

Given the effectiveness and likeability of the creative, it is recommended that the *Which Bin* campaign continue to be used to build improved knowledge of the kerbside bin system and other recycling paths and to bring cost efficiencies through reuse of creative. It is important that these educational messages have consistency and continuity as Mental Availability takes time to build and requires reinforcing as it erodes if not refreshed.

BACKGROUND & RESEARCH OBJECTIVES

This report details the findings of research undertaken for Green Industries SA (GISA) by the Ehrenberg-Bass Institute, based at the University of South Australia. The research was conducted from September until October 2019.

The research aim is to better understand how South Australian householders use their green organics, recycling and landfill bin system. The research also assesses the new launched *Which Bin* campaign in terms of awareness, message outtake and claimed impact on bin system usage. The *Which Bin* campaign's aim is to reduce householder contamination of the green organics and recycling streams through correct bin usage and to avoid materials going to landfill when they could be diverted to the other waste streams. Finally, the research also aims to provide direction for further campaign refinement.

The research involved both phone interviews and bin audits with householders across South Australia. Additionally, interviews were conducted with councils and waste educators. Where possible, the results from this current research are compared to prior GISA research results.

Campaign Background

Which Bin? was funded from the $12.4 million support package announced by the Minister for Environment and Water in May 2018 in response to the impact of China's National Sword Policy. It was developed in consultation with a High-Level Education Working Group and a survey of 1,000 householders. This market research by The Planning Exchange identified a preference that any campaign should unify and simplify recycling communications. It highlighted that recycling advice is often inconsistent and variable between councils.

In November 2018 Showpony Advertising was appointed by GISA to develop an integrated marketing campaign with media planning provided by Wavemaker. This campaign sees household recycling education and community education returning to the agency as a core role. After the absence of funding and hence co-ordinated education efforts since 2013 in South Australia, the campaign has had to work hard to establish a new brand (*Which Bin),* to re-engage with local council waste educators and address its core purpose of improving recycling knowledge and behaviours. At the outset of this research, it was expected that the years of educational message silence, coupled with changes in what can be recycled, would be seen in the results as a decline in householder knowledge of correct recycling and in correct kerbside bin usage.

The *Which Bin* recycling education campaign used social media, press advertising and television commercials. It was supported with public relations and face-to-face community engagement, a 1300 telephone hotline, and virtual 'helpdesk' answering 'which bin' to use through Facebook, email and a website. Anchored by the character 'Vinnie', a passionate recycler and family members, the strategy was to provide easy access to a range of resources with consistent message. Assets were extended to local councils to customise and adapt for their residents, further entrenching and

establishing the brand, and promoting the *Which Bin?* hotline (1300 137 118) and website (whichbin.sa.gov.au) as the consolidated locations to get fast, accurate answers on which bin to use.

Four television commercials (TVC) addressing common recycling issues identified by industry stakeholders were produced:

- Food waste goes in the green bin, not the waste bin
- Soft plastics never go in the yellow bin – return to supermarkets that provide soft plastic recycling
- Containers with a 10 cent deposit don't have to go in the yellow bin – return to a depot for cash
- Recycling is easy. Cans, bottles and packaging all go in your yellow bin - give containers a quick rinse

The TVCs were supported by a social media campaign, entrenching the *Which Bin?* brand and extending core messages regarding the difference that small changes can make. 10 second *Which Bin* advice animations were developed for YouTube and Facebook, with quizzes developed to Buzzfeed, and native content delivered through Plista.
Video and animation campaign messages included:

1. Keep clothing and fabric out of the yellow bin
2. Take e-waste back to an electronics recycler
3. Put food waste in the green bin
4. Take soft plastic back to a supermarket that recycles
5. Put shredded paper in the green bin, not the yellow bin

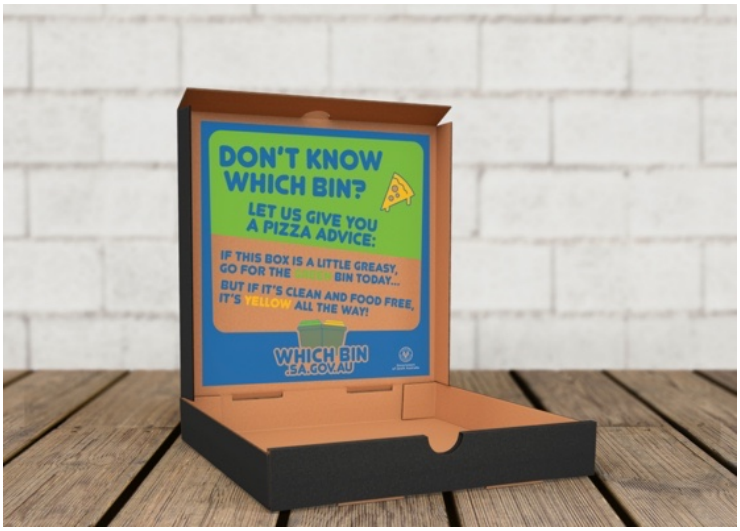
A YouTube campaign activity exposed the audience to the same messages, customised for the YouTube platform, including 'skippable' content so GISA was only charged if a user viewed 100% of the campaign message.

Plista campaign activity delivered content as inline native website ads. Buzzfeed campaign activity used two quizzes on the Buzzfeed website and distributed channels, encouraging people to test their recycling knowledge and share results on how well they knew which bin to use. SheShopped used three long form content pieces produced through SheCreative addressing the core messages of food waste, waste avoidance, and more mindful consumption and disposal. SheCreative also developed Instagram stories and web content from the videos.

The three videos and supporting social media campaign reaching 61,298, 32,193 and 55,971 people respectively. The first video and supporting content targeting food waste/green bin video was reported by SheCreative as the highest engagement content for the year to date at the time of writing.

Finally, pizza boxes present a unique recycling challenge. Composed of cardboard, these are easily recyclable through the yellow bin if clean. However, if boxes are stained with oil or left-over cheese or crusts, these can be composted and treated as food waste and placed in the green bin. To reduce confusion and contamination, messages were developed and trialled inside pizza box lids through MediaNest. 14,000 pizza boxes were supplied to independent pizza outlets in metropolitan

Adelaide. The message specifically advised placing greasy or pizza boxes with leftovers in the green bin, and only clean, dry pizza boxes in the yellow bin.



BUILDING MENTAL AVAILABILITY

Mental Availability is the propensity of the brand, or in this case a correct disposal behaviour, to come to mind in a choice situation. It means having the knowledge of the best disposal path to choose for an item at the point in time when you need it. Without Mental Availability, the action cannot be undertaken – it is akin to trying to win an Olympic gold medal without first going through the qualifying heats. If you do not qualify to get in the race, you cannot win.

Building Mental Availability takes time and consistent messaging in order to gain cut-through and build memory structures amongst an audience. Much marketing effort is screened out by audiences as they lead their busy lives. Communication that has emotional cut-through and likeability has a higher chance of being noticed and hence the message being encoded and retained. That is why these two measures are commonly used in evaluation of advertising campaigns. Additionally, memories erode with time and so it is important to have continuity in message exposure to refresh and strengthen the knowledge that has been built.

Establishing a directly causal effect between advertising exposure and a resultant behaviour change is problematic. In many instances, the audience will be exposed to a message when they are not close to the relevant point of behaviour. For this reason, it is very hard to take a direct measure between exposure and behavioural change. Instead what advertising aims to do is to nudge everyone's propensity to undertake the desired behaviour when they are next in that context. Additionally, between the point of advertising exposure and the behaviour of interest there are a myriad of other situational influences and internal and external factors affecting a person, making it hard to establish clear ROI relationships between advertising and behaviour change. Evidence, such as an increase in mental availability or a claimed change in relevant behaviours act as useful proxies and are therefore used in this report to evaluate the impact of the *Which Bin* campaign.

Further Reading

Romaniuk, Jenni. (2016). Building mental availability. In J. Romaniuk & B. Sharp (Eds.), How Brands Grow: Part 2 (pp. 62-86). Melbourne: Oxford University Press.

METHOD

2019 research

This research builds on prior research undertaken by GISA, starting back in 2010. Waste education research was conducted by the Ehrenberg-Bass Institute for GISA in 2010, 2012 and 2014 and one of the researchers on these original projects (Dr Anne Sharp) is also on this current research project. This brings continuity to the research design and instruments, as well as experience in researching the category and GISA's stakeholders.

Online survey

The 2019 research consisted of 803 online interviews with householders across South Australia. The purpose of this part of the research was to measure awareness, message and media recall and likeability of the "Which Bin" campaign. It was also to identify current knowledge and practices around recycling and compare them to prior findings.

Bin inspections

Because the area of waste management is subject to poor respondent recall and also biases towards respondents overclaiming "correct" behaviours, 400 bin inspections were also conducted across the wider metropolitan area. The recycling, green organics and landfill bins were all inspected for visible signs of contamination and best/poor practice. The inspections were carried out at the kerb. Visual inspections only were conducted – the researchers did not sort through the contents of bins – which was generally adequate to assess whether any contaminants were present.

Bins were inspected on the date of council recycling, green organics and landfill collection to ensure they would most accurately represent what was to be collected by council. Bin audits were conducted across a range of metro council regions, ensuring a diverse spread of respondents and differing socio-economic areas.

Waste educators and councils

Finally, 10 depth interviews were undertaken with councils and waste educators so that the "Which Bin" campaign's impact amongst its primary users could be measured. The interviews were done face-to-face or by phone at a date and time of the respondent's choosing. Each took approximately 45 minutes.

Summary of Past Research

2010 Benchmark research

The benchmark telephone survey was conducted in August 2010 with randomly selected residents from four council areas (Mitcham, Adelaide City, West Torrens and Murray Bridge). This initial research took place before GISA (then Zero Waste SA) released their 2010 Recycle Right® mail package campaign. Across the four councils, 346 phone interviews were conducted in total and 111 audits.

A second telephone survey was conducted in late October 2010, approximately five weeks after distribution of the direct mail campaign. 377 telephone interviews were conducted, 243 of which were with respondents who had previously participated in the benchmark survey. The remaining 134 interviews were with new randomly recruited residents from the four pilot council areas. 110 audits were undertaken.

The results that occurred prior to the campaign's launch serve as benchmarks. The follow-up 2010 results are not often used for comparison due to the geographically constrained nature of the sample.

2012 research
Phase 1 of the 2012 research was conducted in late January/early February 2012 with randomly selected respondents from South Australia, after the second burst of the 2011/2012 Recycle Right® campaign. A broader sample was included in comparison to the benchmark study to ensure representativeness of the reach of the 2011/2012 Zero Waste SA Recycle Right® campaign, which was targeted at South Australian residents in general. Sampling quotas were set to ensure a 75:25 split between metro and regional respondents. A total of 220 interviews were conducted in Phase 1 of the research.

The second phase of the research was conducted in May 2012 after the third and final burst of the 2011/2012 Recycle Right® campaign. The same questionnaire was used in Phase 2 as was in Phase 1 with a couple of additional questions. The sample was also randomly recruited from the South Australian population with a 75:25 metro:regional quota. An additional 209 respondents were interviewed in Phase 2.

In total 429 telephone interviews were completed in 2012. In addition, 110 bin audits were undertaken with respondents who agreed to opt in after the telephone survey. The audits were only conducted in the metro area due to time and budget constraints, but still covered 16 councils.

2014 research
In May 2014, 340 telephone interviews were completed with a cross section of the South Australian population. 16% of telephone respondents were based North, 18% South, 11% East, 9% West, 24% in the Hills and the remaining 22% regionally. This reflects a good geographical spread.

305 observational bin audits of kerbside bins were undertaken. Some bin audits (n=105) were undertaken with a subset of willing survey participants who opted in at the end of the phone interview. The additional random kerbside audits (n=200) were undertaken to boost the phone interview observational sample.

2018 research
In 2018 an online survey was conducted with 1000 South Australians to help shape the "Which Bin" campaign development.

Measures
Because of the online method, it was possible to use prompted recall measures by showing respondents the actual “Which Bin” materials, if they did not recall them unprompted. This was also possible in 2018, but not prior to this, as the surveys were conducted by phone.

Scales from “0” to “10” are used in the report as this scale provides more sensitive measures than a shorter scale. People are used to thinking in units of 10 in everyday life and so it is easy on the respondent and it is consistent with measures used in the prior research, allowing for results comparability.

Analysis
Some of the questions in the online householder survey were open-ended so that the respondent could answer in their own words, and this verbatim has been used in the report. This is signified by italics to bring the reader closer to the findings.

The council and waste educator interviews were all open-ended and so have been reported thematically.

The data was analysed and reported using SPSS 26 and Excel 2019. Where possible and useful, comparisons are made to prior year’s results.

Table Format
The structure of the tables for the majority of the report is as follows; the first column shows the possible responses for each question. The following columns show the number of respondents giving each response and the final column shows the percentage of respondents. Sometimes, a cumulative column is included to highlight important patterns.

In some instances, response percentages add to slightly over or under 100%. This is due to rounding.

Report Structure
Householder findings are reported first. Awareness of the “Which Bin” campaign and the message out-take give context as to how much it might affect the attitudes and behaviour of the respondents. The objective knowledge of where different items should be disposed of along with respondents’ procedural knowledge in relation to disposal behaviour are reported in the section following the campaign recall, along with some general perceptions. The results of the bin inspections are then detailed. Finally, the waste educator and council interviews are then discussed in light of the householder findings.

Recommendation
The *Which Bin* campaign’s first burst ended on July 20. The research occurred in September 2019. It is recommended that any evaluation of further campaign activity have a similar timing to ensure comparability of results.

HOUSEHOLDER FINDINGS

Infrastructure

The vast majority of respondents said they had access to all three kerbside bins, reflecting the efforts that have gone into standardisation of the kerbside bin system across the state. However, there was still just over one in 10 with no organics bin access. Very few respondents claimed to not have recycling bins or recycling and organics bins. Those without recycling bins were all regionally based but the organics bins were missing from both regional and metro respondents as were the arrangements of "something else" for their kerbside system. The "something else" included the situation of multiple organics bins (as offered by some councils), industrial bin access, rubbish chutes only for apartment dwellers and the same three bin system but with different coloured lids. Two respondents also claimed to have no landfill bin but access to organics and recycling.

Table 2: Bin ownership

	n	%
All three	**671**	**83**
No green organics	**98**	**12**
No yellow recycling	**5**	**1**
No organics or recycling	**15**	**2**
Something else	**16**	**2**
Total	**805**	**100**

Bins reaching capacity and bin presentation

Respondents were asked which of their bins were typically full before collection day. This was to investigate capacity issues and see if respondents were running out of space. As each bin was asked about separately, the total adds to more than 100%. The findings in Table 3 show that the capacity issue is most encountered with the landfill bin. This is perhaps not surprising given it is the smallest of the bins in size. Still, less than a third said there was a capacity issue for them in the landfill bin.

Just over a third of households claimed that the recycling bin reached capacity before collection. This sets a ceiling on how much can be diverted from the landfill bin (you cannot put more in recycling if it is full) and so is a problem. It is also of concern that the green organics bin reaches capacity before collection in almost a quarter of cases, given the current focus on food scrap diversion from landfill to organics.

Only a small 5% said they run out of capacity in all three bins before collection. Those who indicated this were larger households in 50% of cases (four or more in the household), the properties were houses in 76% of cases, but 12% were flats or apartments. The respondents were metro based in 93% of cases. They were no

more likely to state recycling was important to them than those who still had capacity and their self-assessed knowledge of the kerbside system was the same as those who had capacity. It is not the case that they are necessarily doing a much better job of recycling and hence running out of capacity.

Finally, a quarter of respondents had no capacity issues in any of their kerbside bins.

Table 3: Bins at capacity on collection

	2018	2019	
	%	n	%
Yellow recycling	56	291	36
Red landfill	43	253	31
None	18	212	26
Green organics	34	181	23
Varies a lot	1	66	8
All three	-	42	5
Total		805	-

The results are somewhat different from 2018 where more respondents claimed their bins were full prior to collection, in the instance of each of the kerbside bins. In 2019, a higher percentage claimed capacity in all their bins (26% cf 18% in 2018).

Respondents were asked if they put their bins out at every council collection, even if they were not full. A high 63% said that they did. This is an additional unnecessary cost to councils and highlights an area where educational messages could be built. There was 15% who stated they only presented when bins were full, while 20% said “it varies by bin”. The remainder said this was not an issue as they had apartment chutes.

How many actively involved

Respondents were asked the size of their household and also how many people were actively involved in recycling. There was a good spread of household sizes, with the biggest group being two person households. This is shown in Table 4. By controlling for household size, it is possible to calculate the percentage of household members actively involved in recycling and thus get a better understanding of typical household dynamics.

Table 4: Household size

	n	%
One	128	17
Two	320	42
Three	128	17
Four	116	15
More than four	80	9
Refused	33	-
Total	805	100

Table 5: Percentage of Household members actively involved

	n	%
Up to 25%	14	2
25%to 50%	103	13
51% to 75%	71	9
75% to 100%	584	76
Refused	33	-
Total	805	100

In over three quarters of households, 7%% or more of members are actively engaged in recycling. This is a very positive finding. This shows the wide relevance of messages to householders as it is not just the domain of one member.

Attitudes

Responsibility

The respondents to the survey tended to be the person in the household with primary responsibility for recycling and waste management. Just over half (52%) claimed to be the only one in the household most responsible for this task. There were 43% who said it was an evenly shared responsibility while 5% stated other people in their home were mostly responsible. This high level of self-identified responsibility means that the results we will see are going to be reflective of the most engaged and knowledgeable members of the household. It is important to remember that this gives somewhat of a ‘best case” scenario for the findings and the overall population will fall somewhere short of these results. The less engaged respondents, because of their lack of interest and knowledge, tend to self-select out of research and those who do participate will tend to report their own behavio0ur in the best possible light.

These findings closely mirror the 2018 research findings, providing support for the comparability of samples.

Importance

Respondents were asked how important recycling was to them personally, using a five-point agreement scale to allow for comparisons to 2018 results. As might be expected, those who claimed low levels of responsibility or shared responsibility tended to give lower importance ratings.

Table 6: Importance of recycling

	n	%
Very important	**522**	**65**
Fairly important	**248**	**31**
Not very important	**23**	**3**
Not at all important	**10**	**1**
I don't know	**2**	**<1**
Total	**805**	**100**

These findings also mirror the 2018 findings, showing that we have achieved a sample that is attitudinally similar and also that attitudes have not changed much in the last year.

Current self-assessed performance

Claimed understanding of the bin systems remains high, despite changes coming in with organics and soft plastics and some items being banned from landfill in the last few years. Respondent were asked "How well do you understand what items can be placed in each of the bins in your household? We are just looking for an overall estimate." A high 96% self-assess as knowing the system well. This may make them non-receptive to messages as they do not perceive they need them. This is, however, a common result when asking people for self-assessment. Known as the Lake Wobegon Effect (from a radio show on a fictional community in Lake Wobegon where all the women are string and all the men good-looking and all the children above average), there is a known tendency for people to rate themselves as "above average".

Table 7: Understanding of the bin system

	2018	2019	
	%	n	%
Very well	52	302	38
Fairly well	45	469	58
Not very well	3	27	3
Not at all	-	3	1
I don't know	1	4	1
Total	100	805	100

Respondents were asked if there was any waste related information that they would like to receive but don't currently. A high 86% did not have anything they wanted. This shows an audience that is not very receptive to marketing communications as they already feel they know the information well enough. This exact pattern was also seen in the 2018 research.

Of those that did want additional information, the main request was for a guide to "everything." There was also a range of specific information sought on items such as E-waste, food scraps, meat trays, foam, toothpaste tubes, and batteries.

There was a small group that asked for greater transparency in the waste process - such as where things go and statistics on recycling performance.

Respondents were also asked to estimate how much of their household waste they manage to recycle. The results were similar to 2018 and are shown in Table 8. Over 80% of ho0useholds feel they recycle 70% or more of what could be recycled in their household.

Table 8: Self-assessed performance

	2018	2019	
	%	n	%
Almost every item that can be recycled is (over 90%)	46	305	38
A lot is recycled but not every item that can be recycled (70-90%)	42	365	45
Some items are recycled (30-70%)	10	109	14
Not very much at all (less than 30%)	2	25	3
Total	1000	803	100

General recycling attitudes

Respondents were read a series of statements and asked to what extent they agreed with them. They used a “0” to “10” scale where “0” was “disagree completely” and “10” was “agree completely”.

The results in Table 9 shows the positive and moral obligation felt towards recycling and how, in the main, they are willing to make the effort and feel their efforts are worthwhile. Again, we see indications that they feel they have enough knowledge to do the recycling job correctly, although we know this is not seen at kerbside practice. There is, however, a high willingness to recycle even more. This is a positive finding and indicates receptiveness of the audience.

Table 9: Attitudes to recycling

	2014	2019	
	Mean (n=340)	Mean (n=803)	SD
Recycling makes me happy to be doing my bit for the environment		8.1	2.2
I feel my recycling efforts are worthwhile	8.7	7.7	2.4
I would like to recycle more of my/our household waste		7.3	2.5
I feel I have been given sufficient information about how to use my kerbside bin system in the best way possible	7.7	7.0	2.4
When I don't recycle, I feel guilty that I haven't done the right thing		6.9	2.7
I place organic waste in the green bin, even if it takes extra effort on my part		6.8	3.1
I often have other things on my mind which are more important than worrying about recycling		4.5	3.1
Rules about what can and can't be placed in your bins makes recycling all too complicated		4.4	3.1
It doesn't matter whether I place items in the recycling bin or the waste bin because everything ends up getting mixed together anyway		3.7	3.1

Stockpiling in Australia and the effect on householders

Half of the respondents (51%) said they were aware of the media coverage currently on recycling being stockpiled by waste collection businesses. This is lower than might be expected given the question was prompted and that such questions often have acquiescence bias associated with them.

Of those that were aware, 16% said it had led them to reducing their own recycling efforts. This is not a very large proportion - just 8% of the total respondents.

Respondents were also asked, prompted, if there was anything stopping them from recycling as much as they would like. The results were multiple response and are shown in Table 10. Half the respondents perceive no barriers. Of those that did, the main barriers were bin capacity, followed by the unwillingness of other household members to assist. In 2014, 71% said there were no barriers, but the question was not prompted as the data was collected by telephone. It may be the prompting has led to differences in answers across the years. Certainly, when barriers are identified, they are of the same nature and relative rank order of frequency in both 2014 and 2019 research.

Table 10: Barriers

	n	%
No barriers	**385**	**48**
Recycling bin gets too full	**151**	**19**
Other household members don't participate	**101**	**13**
Green bin gets too full	**81**	**10**
Other	**71**	**9**
Too busy	**63**	**8**
Unsure	**61**	**8**
TOTAL	**803**	

"Other" included the belief that recyclables were not really recycled, no compost, concern over pests if food is in the green bin, a bin missing in the household infrastructure or lack of information.

Claimed Behaviours

How they recycle

Approximately half of the respondents have a separate bin for recyclables inside the home (47%) and approximately half take it to the recycling bin straight away as the need arises (47%). Only 4% do separation of recyclables and landfill from a single collected source at the actual bins. There was 2% that claimed not to recycle and this is a positive finding in terms of having a sample of respondents that is not polarised to just the engaged householders. It is good that we captured in the sample respondents that were not recycling simply because they did not want to rather than because of reaching bin capacity.

Kitchen caddy

Respondents were asked how they currently disposed of food discards in their home and given a range of response options. The question was multiple response so does not add to 100%. There were only 16% who claimed not to be making any attempts to recycle food scraps. Interestingly, many are disposing via the green bin (or compost) but without using the bio bin/caddy on the benchtop.

Table 11: Food discard disposal

	n	%
Separate bin then take to green bin	**226**	**28**
Separate bin then take to compost	**172**	**21**
I don't separate	**128**	**16**
Feed to animals	**114**	**14**
Benchtop bin/caddy then take to green bin	**108**	**13**
It varies	**98**	**12**
Benchtop bin/caddy then compost	**55**	**7**
Worm farm	**46**	**6**
Other	**34**	**4**
Garbage sink disposal e.g. sink grind	**11**	**1**
Straight to green bin	**6**	**<1**
Total	**803**	**100**

"Other" included mostly feeding to animals and composting.

Soft Plastics

There was 41% of respondents claiming to have taken soft plastics back to a supermarket for recycling. This is more than double that of 2014 (19%).

Respondents were asked "Thinking about how much of your household's soft plastics are recycled, compared to this time last year are you recycling more, the same amount or less soft plastics?" There was 53% of respondents who claimed they were recycling more, 37% the same amount and only 10% said less.

Respondents who said they had recycled soft plastics (41%) were asked to estimate what percentage overall of their household's soft plastics that they currently recycle back through the supermarket. The mean was 64%. There was 10% (n=31) who claimed they recycled 100%.

All these findings show a positive trend that can be built upon.

Container Deposit Scheme

Respondents claimed to collect bottles and cans to redeem at a depot in 18% of cases (n=144). However, 20% claimed less than 25%, 39% less than 50%. So, there is still lots of scope for improvement, even amongst those who have started this recycling behaviour.

Unprompted Campaign Recall

Recall of category advertising

Respondents were asked “Thinking back over the past four months, that is since May, have you seen/heard any advertising or received any information about your recycling, organics or general waste bins?” This was to test general awareness of the waste and recycling category. A third (31%, n=248) said they had, the majority said they had not (59%), while 10% remained uncertain. This level of message recall in the last four months was higher than that recalled for the **last year** in 2018 (29%).

Claimed media recall

Respondents who claimed to have seen or heard media coverage were asked where they had seen or heard this information.

Table 12: Understanding of the bin system

	n	%
TV	128	51
Local newspapers	43	17
Social media sites	33	13
Council website	31	12
Sides of waste collection trucks	31	12
Message on packaging	25	10
Advertiser/Sunday Mail	26	10
Bin stickers	22	9
Friends/family	20	8
Bus shelters/outdoor advertising	20	8
Info from kids at school	15	6
Radio	15	6
On street bins	12	5
Internet search engines	12	5
Neighbours	6	3
Other websites	3	1
Other	3	1
Can’t recall where	7	3
Total	250	

The question was multiple response as they may have seen/heard it in more than one medium. The patterns mirror householders' media consumption. This is a common pattern seen in research findings. However, they also show the role of waste truck advertising and other campaign efforts in the media mix. These non-mass media are typically very small reach. They also highlight how strongly TV delivered, followed by social media.

"Other" included on a street banner (Unley Rd) and a visit to a retirement village by a KESAB rep. The street banner result is a very positive finding given it had been up for less than two weeks at the time the research was conducted.

Unprompted Which Bin ad identification

The respondents who claimed to have seen media coverage (31%) were asked to describe the recycling campaigns they had seen/heard explaining and/or promoting recycling. The question was open-ended and coded post data collection.

The main recall for media coverage that was not for "Which Bin", was for clear kerbside bins to potentially be introduced, the issuing of fines for poor practice and contamination, and the receipt of information from their local council about what goes in each bin (this final communication was the most recalled non-"Which Bin" response).

Table 13: Unprompted Which Bin recall all respondents

	n	%
Which Bin campaign correctly described	**119**	**15**
Recall but not for Which Bin	**128**	**16**
No recall of any messages	**556**	**69**
Total	**803**	**100**

The results above are for all respondents to give an overall unprompted recall measure. Of those recalling media coverage (n=248), there was 48% that accurately described the "Which Bin" campaign. This is higher than the 2014 results of 26% recall amongst a comparable group.

The remainder described council activities, other news stories or were too vague to be able to attribute the exposure to the campaign.

Message outtake from media

Respondent were also asked what the key message was from the campaign. Again, this was open-ended and coded into themes, post survey, by the lead researcher. This question was only asked of those who recalled seeing media coverage of waste and recycling in the last four months.

The key message recalled was the general message to use the bin system correctly and to know what goes in each to maximise opportunities to recycle. This was followed by the message that recycling is worthwhile and benefits the environment. Food scraps in the organics, pizza boxes and Ask Vin were also all recalled as

specific messages from the media exposure, but only by a few respondents. This ability of respondents to recall specific messages was higher in 2019 than in the 2014 Recycle Right research where 45% of those who had seen bin related ads or information could not recall any specific of the message. In 2019 only 8% were in this situation.

Table 14: Unprompted waste and recycling main message outtake

	n	%
Use the three bins correctly/recycle correctly	**129**	**52**
Recycling is good for the world and we should do more	**29**	**12**
Can't recall specifics	**19**	**8**
Soft plastics to supermarket	**16**	**7**
Food scraps/green organics	**13**	**5**
Pizza boxes in green organics	**2**	**<1**
Ask Vin	**1**	**<1**
Other	**37**	**15**
Total	**246**	**100**

Claimed behaviour changes from media messages

Respondents who recalled seeing some media coverage were asked if they had disposed of any items differently as a result of the media coverage. A quarter (n=60) said they had.

The main changes were around better disposal of soft plastics (25%), followed by food discards (17%), pizza boxes (13%), better practice with recyclables (10%) and then bottle lids (8%). There was also a spread across a wide range of other options like fabric and long-life milk containers and ash (27%).

Prompted Recall of Which Bin Campaign

Prompted recall

All respondents were asked the prompted recall question of "Have you seen or heard the "Which Bin" Campaign". At this stage, there were no supporting examples of the campaign given. A high 37% of all respondents said they recalled the campaign with just brand name prompting.

Respondents who could recall the campaign (n=298) with this level of prompting were asked if they could name the main character in the campaign. This was asked as a test of if they really were recalling the correct campaign and had processed the message to this degree. The question was open-ended and coded post-survey. There were 74% of respondents that said they could not name the character. A

further 15% named the character, but incorrectly. There was 11% of those who recalled the ad that could name the character correctly. This translates into 4% of all respondents. This is a strong, but not atypical result seen for advertising performance.

Execution prompted recall

All respondents were shown one of the four TV ads. Which one they saw was randomly chosen. They were then asked if they recalled seeing the ad before the survey. There were 40% that said they did recall, which is very high ad recall.

They were then shown all the print ads (as opposed to just one as was the case with the TV) and also asked if they recalled seeing the print advertisements before the survey. The recall levels were lower across all executions, but were highest for food scraps, the “Which Bin” web site and soft plastics.

The results do not add to 100% as respondents could choose as many or few exposures as they wanted.

Table 15: Recall of Which Bin print ads

	n	%
Food scraps	**145**	**18**
Which Bin web site	**130**	**16**
Soft plastics	**124**	**15**
Shredded paper	**107**	**13**
Electronics	**88**	**11**
Fabric and clothes	**89**	**11**
Pizza box – received one	**19**	**2**
Total	**803**	**-**

Campaign evaluation

All respondents were shown as series of statements about the campaign (which they had all now been exposed to even if they could not recall it without seeing it) and asked for their level of agreement with the statement using an 11-point scale where “0” meant “completely disagree” and “10” meant “completely agree”. The scores are all high and positive. A high 66% of the audience felt they had gained new knowledge from the advertisement messages. This is evidence the campaign is building new knowledge and memory structures amongst housholders.

Table 16: Campaign evaluation statements

	Mean	SD
Recycling is an important enough issue to warrant a TV campaign	**8.4**	**2.3**
This campaign makes it easier to recycle correctly	**7.9**	**2.3**
I like this campaign	**7.7**	**2.6**
This campaign motivates me to recycle more	**7.1**	**2.7**
This taught me things I did not know	**6.6**	**3.1**
Total	**803**	

There were 5% (n=42) that claimed to have visited the “Which Bin” website. A lower 2% (n=17) claimed to have visited the “Which Bin” Facebook page while just over 1% (n=11) said they had called the “Which Bin” 1300 number. These are all low reach activities.

Respondents were asked to rate the campaign for overall likeability using a 1 to 5 scale where “1” was “I do not like it at all” and “5” was “I like it a lot”. High likeability is associated with attention and higher levels of processing of messages and hence is a desirable quality to have in adverts. The mean was 4.0 with a SD of 1.0, meaning that respondents were quite similar in their ratings. Only 8% gave a rating of “2” or “1”. A “5” rating was given by 33% of respondents and the “4” by 41%. Only 18% gave the middle score of 3. The higher ratings appeared to be given for the advertising being fun and its easy to understand and simple message. The low ratings were given for the character Vin being unappealing to some and also tended to be given by people who were generally negative towards recycling.

Like most about campaign

All respondents were asked what they liked most about the campaign. The question was open-ended and coded post interview. Seven key themes emerged.

Table 17: Thing most liked about campaign

	n	%
Message importance/simplicity	**395**	**50**
Other	**97**	**12**
Fun execution/ad style	**89**	**11**
Fun execution and good message	**72**	**9**
Unsure	**68**	**9**
Characters	**67**	**8**
Feels negative about advertisement	**9**	**1**
	797	**100**

"Other" responses included the bright colours, the song and various message outtakes such a soft plastics and food scraps.

Change one thing

Respondents were asked if they could change one thing about the campaign, what would it be?

Table 18: Thing would change about campaign

	n	%
I would change nothing	**401**	**50**
Other	**143**	**18**
Vin/characters/look and feel of ad	**98**	**12**
Use more and wider media	**79**	**10**
Unsure	**79**	**10**
More on food scraps	**3**	**<1**
	803	**100**

It is a very positive finding that half the respondents would change nothing. There was approximately one in 10 who did not like the look and feel of the ads, especially the main character. Interestingly, 10% wanted to see the advertisement have wider exposed through all media. A further 10% were unsure. The "other" responses covered a wide range of suggested changes from the inclusion of a wider range of messages, some specific messages people wanted to see (eg what to do with lids, showing consequences of incorrect choices), making the ads shorter, not being as patronising/juvenile, changing the music, having it in more languages, and not trying to make it humorous.

Objective Knowledge of Recycling and Best Practice

In addition to the questions on current disposal for food scraps, soft plastics and CDLs, a range of additional questions were asked about hypothetical disposal of items to test respondents' awareness of their correct disposal paths and best practice for disposal. Food scraps were also covered again in a hypothetical, more general question.

Plastic Bags
There were 30% of respondents who claimed to still dispose of plastic bags in the landfill bin. This is down from the 42% in 2018 and 61% in 2014. This is a positive finding but still shows scope for improvement.

There were 17% that said they (incorrectly) placed it in recycling (down from 25% in 2018) and 2% in the green organics bin. The majority (56%) said they took it to the supermarket. This is an increase on the 37% in 2018.

A low 2% were unsure. There were 4% who said "other". This mostly related to using them for other purposes such as lining kitchen bins or reusing them in general. The question was multiple response.

Nappies
There were 74% of respondents that said they would put disposable nappies in the landfill bin, recycling and organic bins and compost got 3% each. There were 18% who were unsure. The 3% that chose "other" almost all used this option to reinforce that they did not use them. These results are the same as those seen in 2018.

Electronic items
There were 14% of respondents that would put electronics in the landfill bin, 9% chose recycling, only 1% chose the organics bin, while a high 72% chose an e-waste depot or council collection. There was 17% who also said they use charity for some electronic items. Only 3% did not know how to dispose of an electronic item. The 3% that chose "other" most frequently referred to Bunnings drop offs or hard rubbish collections. These results are, again, similar to those of 2018.

Shredded paper
The landfill bin would be used by respondents for shredded paper in 6% of cases. There was 48% who would use recycling (down from 61% in 2018), 38% the organics bin (up from 18% in 2018) and 17% in the compost. "Other" was chosen by 3% and mostly included use with pets as bedding. Only 2% did not know where to dispose of shredded paper.

Pizza boxes
Only 5% of respondents said they would put a clean pizza box in the landfill bin compared to 46% of it still had food in it. A high 87% would use the recycling bin for a clean box compared to just 9% if the box was dirty. This is fairly unchanged from 2014 (91% recycling bin for clean box).

There was 9% of respondents who would put a clean box in the organics bin compared to 32% if it was dirty (up from 9% in 2014). A clean box would go in the compost 3% amongst 3% of respondents and a dirty one 11%. There were 6% that did not know where to put a dirty box compared to only 2% for clean. The 7% who chose “other” for the dirty boxes mostly said they would separate the food and put that in organics and the box in recycling.

Clothes
Almost a third (27%) would put used clothing in the landfill bin. In 2014 and also in 2012 and 2010 the level was higher and steady at 50%. There still remains 8% who would put it incorrectly in recycling, but this is down from the 14% in 2014. The most common disposal method was second-hand retailers (79%). This is a big increase on prior research years where only about a quarter of respondents would use this method (26% in 2014).

Only 2% didn’t know, which is understandable given it is a disposal decision we all face. The 45 that chose “other” made rags from used clothing or used a pet bedding.

These results are also very similar to 2018 where 24% would put clothes in the landfill bin and 84% take to second-hand retailers.

Food scraps
Only 16% claim to put food scraps in the landfill bin. Only 2% said they would use the recycling bin, while 63% correctly said the green organics and 40% said the compost. The 3% who chose “other” were mostly all feeding scraps to animals or worm farms. The 2018 results saw 54% using the organics bin, 43% compost and 25% landfill (37% in 2014); the changes are all in the right direction.

Plastic bags and recyclables
There were 7% of respondents who said they “always” use a plastic bag to hold their recyclables together and a further 17% who do so “sometimes”. This is a quarter showing poor practice. The positive finding is that 75% said they “never” did this. A 2% were unsure. This message needs to be reinforced though as in 2014, 88% claimed to never do this poor practice. This should be a target area for further campaign messaging to encourage best practice.

Rinsing of containers
The majority (56%) “always” rinsed their containers before disposing of them and an additional 34% did “sometimes”. This compares to 79% “always” and 14% “sometimes” in 2014. Only 9% “never” did and fewer than 1% were unsure. The results are not too dissimilar across the years, with just a few more “sometimes” and fewer “always” responses in 2019.

What if you are unsure?
Respondents were asked “When you're not sure about how something should be disposed, who or what would you consult to work out which bin it should go in?” The question was multiple response and it is important to note that it was prompted.

Table 19: Information source

	n	%
Local council info	336	42
Packaging label	277	35
Bin stickers	249	31
Council website	274	34
Dept of Environment & Planning	30	4
KESAB	58	7
Manufacturer's website/phone	25	3
Waste collectors e.g. East Waste	105	13
Ask friends/partner	124	15
Ask kids	30	4
Ask neighbour	34	4
Social media sites	59	7
Internet search	241	30
Local newspapers	16	2
TV	25	3
Radio	9	1
Advertiser/Sunday Mail	8	1
Community groups	14	2
Wouldn't bother. Just put in waste bin	88	11
Other	15	2
Don't know	53	7
	803	100

"Other" has the most popular response of "just guessing".

"Social media sites" referred to the Which Bin website in almost all cases.

Miss opportunity or contaminate

Respondents were also asked "When you are not sure if something can be recycled, are you more likely to put it in the waste bin to not risk contamination or put in the recycling bin to not miss an opportunity to recycle. The respondents were conservative, with 80% choosing landfill over recycling.

Householder Demographics

Some final sample demographics were captured.

Gender

There were 54% female and 46% male respondents.

Age

There was a good spread across the age brackets. This is similar to the 2018 respondent profile with slightly more younger (25-34 years) and slightly fewer older (55 to 64 years) respondents in 2019.

Table 20: Age group of respondents

	n	%
18-24 years	59	7
25-34 years	157	20
35- 44 years	148	18
45-54 years	146	18
55 to 64 years	130	16
65 years and over	165	21
Total	805	100

Geographical location

In line with the spread of the population, 75% of respondents were in the metro area while 25% were regional/rural/remote. This also matched the prior research sample profiles.

Table 21: Location of respondents

	n	%
In the Adelaide metro area	603	75
Regional or remote area	200	29
Total	803	100%

Household income and home arrangements

Respondents were asked for their household's annual pre-tax income from all sources.

Table 22: Household income pre-tax all sources

	n	%
Less than $20 000	64	8
$20 000 to less than $40 000	154	19
$40 000 to less than $60 000	135	17
$60 000 to less than $80 000	88	11
$80 0000 to less than $100 000	98	12
$100 0000 to less than $125 000	71	9
$125 000 to less than $150 000	47	6
$150 000 to less than $200 000	33	4
$200 000 and over	29	4
Don't know/prefer not to say	84	11
Total	803	100

Table 23: Home arrangements

	n	%
Separate/detached house	628	78
Semi-detached house, terrace or townhouse	78	10
Flat, unit, apartment in a 1-2 storey building	58	7
Flat, unit, apartment in a 3 storey building/block	10	1
Flat, unit, apartment in a 4+ storey building/block	7	1
Flat, unit, apartment attached to a house	6	1
Other	16	2
Total	803	100

"Other" included: caravan, granny flat, motorhome and retirement village unit (the majority).

Language spoken at home
The main language spoken at home was English in 95% of cases, as would be expected. The other language groups included Mandarin, Greek, Vietnamese, Cantonese, Filipino, Arabic, Hindi, Polish, Russian, German, Bengali, Sinhalese, Urdu, Telugu, Bangla, Bengali, Burmese and Portuguese. This reflects a good diversity in the group with English as a second language.

Our Recommendations from Householder Findings

The intervening years since the last funded householder educational campaign has seen many changes to the kerbside bin systems. There is evidence that new behaviours are forming around food discards in the green organics bin and also of soft plastics being recycled through supermarkets. These fledgling behaviours are still in the minority and so there is a strong need to support them and grow them via educational campaigns. The *Which Bin* campaign has high likeability and great cut-through reflecting its strength as just such an educational campaign.

OBSERVATIONAL BIN AUDIT FINDINGS

Because the area of waste management is subject to poor respondent recall and biases towards respondents overclaiming “correct” behaviours, 400 bin inspections were conducted across the wider metropolitan area. This removes the errors associated with claimed behaviour measures.

Bins were inspected on the date of council recycling/green organics and landfill collection to ensure they would most accurately represent what was to be collected by council. Bin audits were conducted across 10 different metro council regions, ensuring a diverse spread of respondents across metropolitan Adelaide.

Recycling, green organics and landfill bins were inspected for visible signs of contamination, good practice and poor practice. These were all visual inspections only – the researchers did not sort through the contents of bins – which is generally adequate to assess whether any contaminants are present. Photographic records were taken to match against auditors’ notes. The results from the 2019 bin audits are compared to the results of the earlier audit research. All audits in the 2019 research were completed over a month period across October and November

This section outlines findings from the bin audits in terms of:

- The proportion of recycling and green organics bins that contained contaminants;
- The proportion of green organics bins that showed evidence of good practice;
- The proportion of recycling bins that showed signs of poor practice;
- Missed opportunities to recycle in the landfill bin; and
- The most prevalent contaminants / examples of poor practice.

Contamination in the recycling bin includes observation of items such as plastic bags, polystyrene foam and food items. Poor practice relates to cases where the household did not rinse recyclable items properly (to the extent that they were significantly soiled), left lids attached to bottles and jars, or placed detached lids in the recycling bin. A full list of observed contaminants and cases of poor practice is presented in Table 28.

Recycling Bins

Contamination and poor practice: recycling bins

This section outlines the incidence of contamination and poor practice in the recycling bin. It starts by examining how full bins were.

Table 24: Fullness of the recycling bins

	2019 Audits		2014 Audits	
	n	%	n	%
0-25% Full	11	11	16	8
26-50% Full	11	11	49	23
51-75% Full	26	25	43	21
76-100% Full	48	46	102	49
Overfull	8	8	-	-
Total	104	100	210	100

The 2019 recycling results show a similar pattern to the 2014 results though, on average, the bins were slightly fuller, warranting the introduction of a new category of “overfull” for 8% of bins. There were 11% of bins that were less than a quarter full. Only 10% of the recycling bins audited were one quarter to half full, one quarter were half to three quarters full while 46% were between three quarters and full and 8% were overfull. So, approximately two in 10 are presenting their bin when it is below 50% capacity.

Table 25: Incidence of visible contamination or poor practice in the recycling bin

	Benchmark 2010		2012 Audits		2014 Audits		2019 Audits	
	N	%	n	%	n	%	N	%
Some contaminant(s)/poor practice visible	76	68	63	86	130	61	74	71
No contaminants/poor practice visible	35	32	10	14	84	39	30	29
Total	111	100	73	100	214	100	104	100

In 2019, contamination and poor practice was higher than in 2014, but lower than 2012 and on par with 2010.

Table 26: Incidence of visible contamination only in the recycling bin

	Benchmark 2010		2012 Audits		2014 Audit		2019 Audits	
	n	%	n	%	n	%	n	%
Some contaminant(s) visible	64	58	49	67	92	43	60	58
No contaminants visible	47	42	24	33	124	57	44	42
Total	111	100	73	100	215	100	104	100

Contaminants in the recycling bin include items that cannot be recycled. When only assessing contaminants, the incidence is higher than 2014, lower than 2012, and on par with 2010.

Table 27: Poor practice visible in recycling bin

	Benchmark 2010		2012 Audits		2014 Audits		2019 Audits	
	n	%	n	%	n	%	n	%
Poor practice visible	37	36	49	67	72	33	43	41
Poor practice not visible	74	63	24	33	143	66	61	59
Total	111	100	73	100	215	100	104	100

Poor practice includes placing recycling items in the recycle bin without appropriately preparing them first, such as not rinsing food from containers, not removing lids from bottles or leaving lids loose in the recycling bin. The incidence of poor practice was higher in 2019 than in 2014 and 2010, but not by much.

The observed incidence of different contaminants and cases of poor practice are outlined below in Table 28.

In 2019, 28 of 104 recycling bins (27%) had both poor practice and contaminants evident, a higher fraction than in 2014 (18%).

Table 28: Contaminants and poor practice observed in recycling bins

	Benchmark 2010		2012 Audits		2014 Audits		2019 Audits	
	n	%	n	%	N	%	n	%
Plastic bags/ Soft and mid-strength plastic	45	40	49	67	72	34	52	50
Lids attached or separated	39	35	58	79	67	31	36	35
Miscellaneous other	13	12	9	12	13	6	4	4
Soiled containers	7	6	9	12	13	6	14	13
Polystyrene foam	8	7	5	7	11	5	11	11
Fabric	3	3	2	3	7	3	7	7
Miscellaneous metal	5	5	4	5	5	2	0	0
Bundled or shredded paper	0	0	4	5	4	2	0	0
Toys and other hard-waste	2	2	2	3	4	2	1	1
Organics	7	6	5	7	2	1	3	3
E-waste	1	1	1	1	2	1	1	1
Food	1	1	3	4	1	<1	0	0
Nappies	0	0	0	0	1	<1	0	0
Drinking glasses	0	0	2	3	0	0	1	1
Crockery	1	1	0	0	0	0	0	0
Total	111	NA	73	NA	215	NA	104	NA

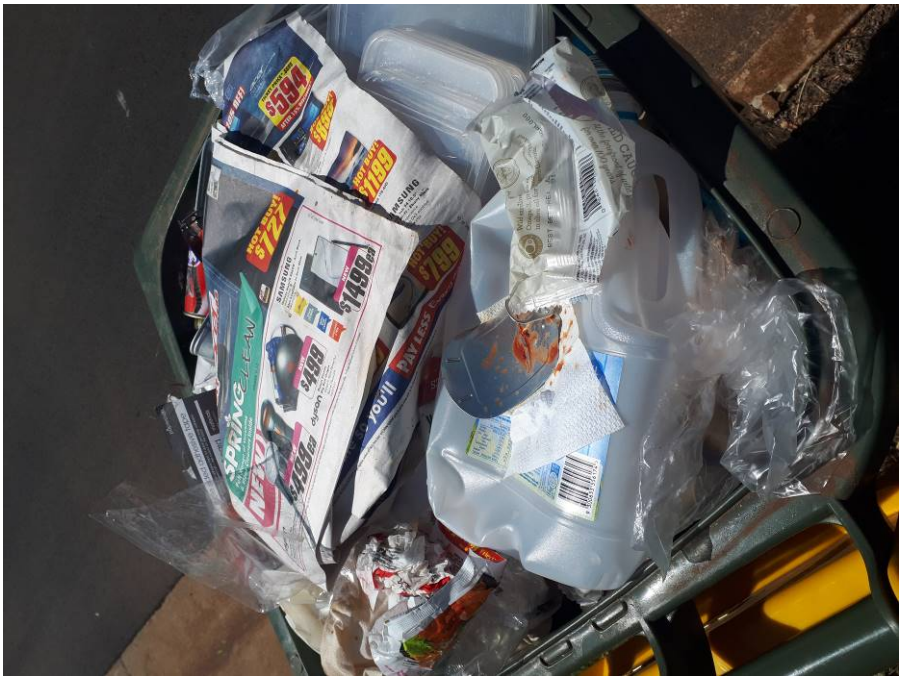


Figure 1: Soft plastics contamination and evidence of poor practice in recycling bin.

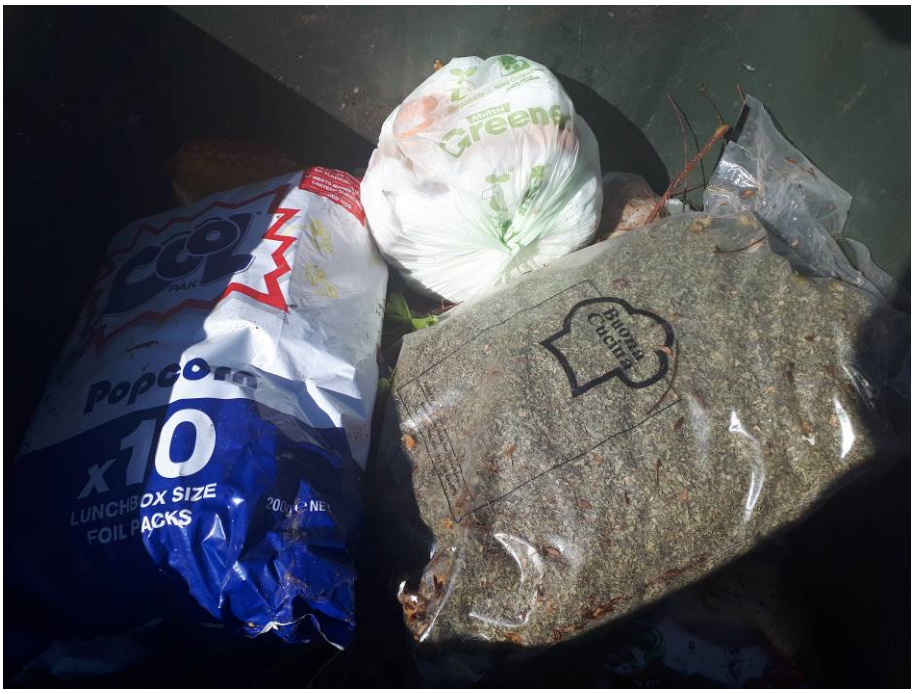


Figure 2: Soft plastics contamination in organics bin.

Green Organics Bin

Green organics bins were also inspected during the bin audits.

Table 29: How full were the green organics bins?

	2012 Audits		2014 Audits		2019 Audits	
	N	%	n	%	n	%
0-25% Full	21	33	16	26	12	13
26-50% Full	8	13	15	25	12	13
51-75% Full	15	23	7	11	16	18
76-100% Full	14	22	24	39	42	47
Overfull	6	9	-	-	8	9
Total	64	100	62	100	90	100

Audits were conducted on 90 green organic bins. Just over a quarter of these were less than half full, with 13% less than one-quarter full, and 13% one quarter to half full. 18% were half to three quarters full, 47% were more than three quarters full and an additional 9% were overfull. The green organics bins seem to be fuller on presentation than previous audits.

Table 30: Incidence of visible contamination in the green organics bin

	Benchmark 2010		2012 Audits		2014 Audits		2019 Audits	
	n	%	n	%	n	%	n	%
No contaminants visible	41	75	53	85	57	93	72	80
Contaminant visible	14	25	9	15	4	7	18	20
Total	55	100	62	100	61	100	90	100

The rate of contamination in audited green organics bins was less than that seen in recycling bins (58% for recycling bins and 20% for green organics bins), suggesting that householders find it easier to distinguish between items that can or cannot go in the green organics bin than they can between items that can and cannot go in the recycling bin.

In the 2019 audits, less than a quarter of green bins audited contained items that were not green waste (20%). This result is lower than the 2010 audits (25%) but higher than the 2012 and 2014 audits (15% and 7% respectively).

Contaminants seen in green organics bins included items such as non-compostable plastic bags (10%), other plastics (6%), clothing/textiles (4%), metal (3%), soil, dirt or sand (1%) and “other” contaminants (1%). This has not really changed over time.

Table 31: Contaminants and poor practice observed in green organics bins

	Benchmark 2010		2012 Audits		2014 Audits		2019 Audits	
	n	%	n	%	n	%	n	%
None	41	75	53	85	57	93	72	80
Plastic bag	1	2	5	8	3	5	9	10
Other plastics	1	2	5	8	0	0	5	6
Other	4	7	2	3	2	2	1	1
Soil, dirt or sand	0	0	1	2	1	2	1	1
Any metal	2	4	0	0	0	0	3	3
Clothing / textiles	-	-	-	-	-	-	4	4
Total	55	NA	62	NA	63	NA	90	NA

Best Practice in Green Organics Bin

The green bins were inspected for best practice of having food discards in them and also examined for pizza boxes (which are also appropriate for this waste stream if they have food in them). There was only one pizza box seen in the audited bins. Food discards were in nearly a quarter of bins.

Table 32: Best practices

	2019 Audits	
	n	%
Pizza boxes	1	1
Food discards	22	24
Total	90	NA

Landfill bins

Of the landfill bins audited, only 15% were less than one quarter full and only 17% were between a quarter and half full. There were 23% that were half to three quarters full, with 34% three quarters or more full. An additional 10% of bins were more than 100% full. The landfill bins appear to be presenting in a fuller state more often than in previous audits.

Table 33: How full were the waste bins

	2012 Audits		2014 Audits		2019 Audits	
	n	%	n	%	n	%
0-25% Full	18	18	76	27	31	15
26-50% Full	27	27	79	28	36	17
51-75% Full	32	32	29	10	47	23
76-100% Full	19	19	95	34	71	34
Overfull	5	5	2	1	21	10
Total	101	100	281	100	206	100

Over three quarters of the waste bins (81%) contained items that should have gone in the recycling or green organics bins. This is an increase again on 2014. That said, the items that can go into other waste streams have changed across the course of the research and there are now more of them (e.g. soft plastics).

The results show that some households do not make the full effort to separate items that could be reused. Only a few of the households audited did not have green bins, or their green organics/recycling bin was observed to be overfull, which only partially explains this behaviour of ‘lost opportunity’ in the landfill bin. This highlights the importance of the “Which Bin” campaign and its. messages.

Table 34: Incidence of recycling or organics present in waste bin

	2012 Audits		2014 Audits		2019 Audits	
	n	%	n	%	n	%
Recycling or organics visible	33	33	137	51	167	81
No recycling or organics visible	68	67	144	49	39	19
Food scraps and garden organics	-	-	-	-	65	32
Food scraps, garden organics, or compostables	-	-	-	-	108	52
Total	101	100	281	100	206	100

Of these items, recyclables (70%), were the most prominent, followed by compostable paper (33%), food scraps (21%), and garden organics (13%). An additional category of soft plastics, not included in the categories or tables listed above, was added and coded as “other”, to address changes in recycling practices due to the emergence of RedCycle soft plastics collection at supermarkets and other places. Despite these new initiatives, soft plastics were visible in 77% of landfill bins, making them the most common recyclable item that appeared in the landfill bins audited.

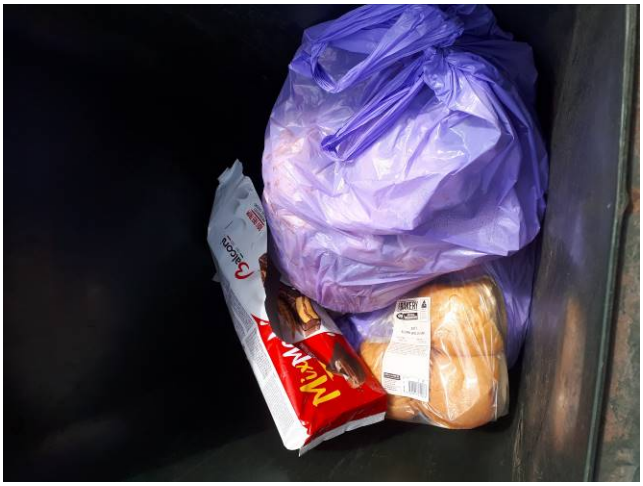


Figure 3: Soft plastics lost opportunity and food waste in landfill bin.

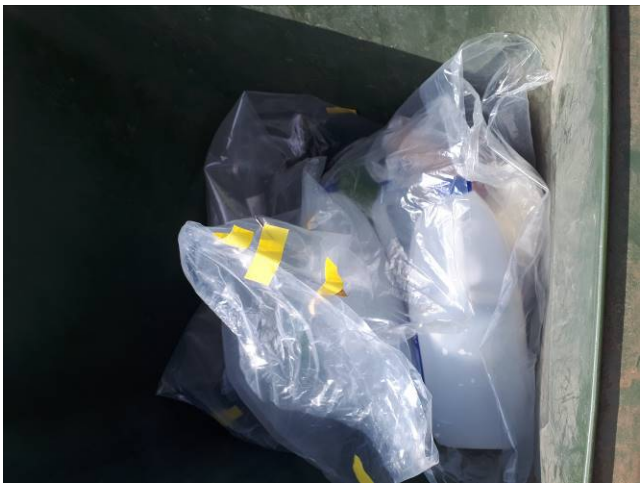


Figure 4: Soft plastics and recyclables in landfill bin – missed chance to recycle

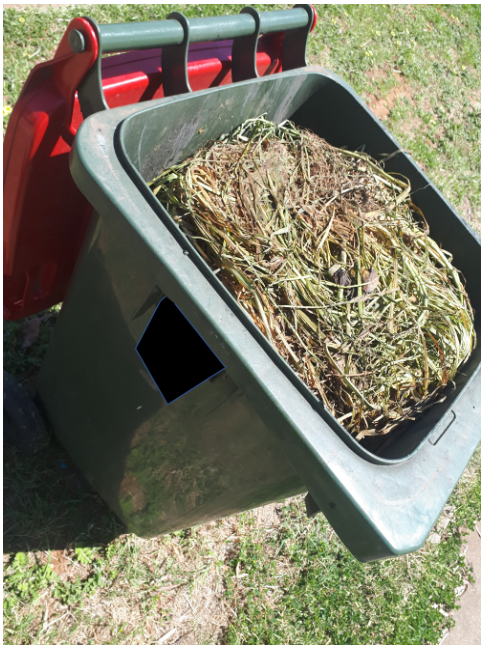


Figure 5: Organics in landfill bin.

COUNCILS & WASTE EDUCATOR FINDINGS

This section reports on depth interviews with a cross section of ten waste educators and councils who are users and potential users of the Which Bin campaign materials. The findings report on a number of issues including:

- Key issues faced in recycling and recycling education in general;
- Perceived resources needed to address these issues;
- Resources that are seen to be working well and that educators/councils will continue to use;
- Any waste education evaluation findings they have collected that can be shared;
- Messages most wanted by waste educators and councils in recycling education efforts;
- Unprompted awareness of the Which Bin campaign materials, media recall and message take-out;
- Overall perceptions of campaign effectiveness and likeability;
- Which Bin website evaluation;
- Experience using Which Bin materials to-date and future usage intentions; and
- The perceived best thing about Which Bin and any changes they would like

Respondent Profile

The sample was purposively chosen to have a diversity of experience, ability and opinion amongst the respondents.

Respondents held a variety of jobs within councils. Respondents varied from being focused solely on waste education, to having other waste and sustainability responsibilities, through to having waste and waste education as only a minor part of their job. Several respondents mentioned their councils wanting to further invest in the area of waste education, with recent introduction of waste educator roles or future plans to introduce waste educator roles.

The greatest difference in experiences and responses between respondents was between those in metro and regional councils. Respondents in regional councils were more likely to hold more responsibilities beyond waste and to also have differing access to resources such as the full kerbside infrastructure of three bins.

“We’re obviously limited because we don’t have a dedicated waste person”

Current Waste Education

The current waste education activities undertaken were fairly similar between councils. Most respondents mentioned the following activities:

- Disseminating flyers/brochures with waste and recycling education (either mailing these to households or during face-to-face communication with householders);

- Waste education presentations at community events, schools, nursing homes or businesses;
- Bin tagging;
- Social media postings of infographics/ waste information; and
- Education to pre-schools and primary schools through KESAB programs.

Other education campaigns include going door-to-door with information, getting households to make commitments/ pledges related to recycling, or programs targeting individual consistently highly contaminated bins. Highly contaminated bins were tagged and residents provided with recycling information. Many of these were then followed-up to track their progress or take further educational steps. One respondent mentioned this was successful for those who had been given information but had only been done on a small scale due to lack of resources. This similarity in educational efforts in part reflects a legacy from when waste education had considerable funding from Zero Waste SA and hence there was a state-wide common focus and resources. That so much similarity remains is a positive finding when considering the *Which Bin* campaign. Demand for resources will be very similar across the councils and waste educators meaning there can be focus on creating fewer better, resources rather than a huge diversity.

The biggest difference in waste education activities undertaken was between metro and regional councils. Respondents from regional councils were more likely to note a lack of resources for waste education and also engaged in fewer waste education activities. This lesser activity was partly due to a perceived lack of resources but also because respondents were more likely to hold a range of responsibilities beyond waste.

"I don't get to be proactive in waste education."

"There are a lot of metro councils which are doing more and have the facilities to do that."

"Because we're regional it's not an easy process. The logistics are much harder."

Perceived key issues in waste education

Overall, the waste education area is still seen as one in which significant efforts need to be made. The two main areas for improvement are lost opportunity from things being in the landfill bin that should not be, and contamination in recycling and organics bins. It was commonly cited that that half of the waste bins contained lost opportunity were items could instead be placed in the recycling or organics bins.

"*People are recycling but there's more that could be done with the red bin."*

"There's still a lot of stuff to do. There's still a lot of stuff going into landfill."

"There's still work to be done."

The need for a central, co-ordinated approach was recognised by many respondents. This included the importance of campaign consistency and messaging consistency. Two respondents mentioned the need for consistency specifically as people rarely

spend their whole lives in one council area. People move between council areas or work in areas outside of where they live. Consistency within a campaign and messaging was noted as important for these reasons. The need for consistency between what each council accepts in each bin was also seen as important.

"We're trying to make the branding consistent so when people see it, they know it's a reliable piece of information for the local community."

"If you change the look about it, you'll lose people."

Continuity in messaging presence was also highlighted.

"I'm a big believer that you need to keep at it. You can't just give them information once a year and think that's going to be enough."

"If you're going to start it, you've got to keep doing it."

These findings on the need for consistency and continuity of messaging show a receptive and, at least in part, educated audience for effective waste education. The limited central waste education over three last few years has led to fragmentation of efforts and yet consistency and continuity and broad reach are essential to grow awareness and change behaviours.

While consistency was seen as very important, adapting resources to relevant audiences was also noted. Once such adaptation would be with language, as this was noted as a barrier for some residents who have English as a second language and thus may find waste and recycling education difficult to understand. One respondent, however, noted councils cannot afford to tailor messages to different demographics, but some still stated they wanted this option.

The diversion of food waste from waste bins to the green bin was a common priority for messaging focus. It was noted that food waste made up 40-60% (weight) of bin waste. The desire to divert food waste to green organics bin was noted as a priority for two reasons. Firstly, this reduces the amount of waste which ends up in landfill which has positive environmental benefits, and secondly this reduces weight of waste bins which in turn reduces costs for council. This economic imperative was clearly top of mind given the recent increase in the waste levy.

"If we get it out of the landfill bin, we'll pay less as it goes over the weigh bridge and it's better going into the green organics matter."

"People are using green bins for garden waste no problem. It's getting food waste in there that we're really trying to promote."

"We are going back to [focusing on] green because of the landfill levy and that we know food and organic matter in the landfill bin is sitting at around 37%."

Respondents noted while there has been an increase in awareness of the ability to place food waste in organics bins, barriers to behaviour change remain. The most common barrier was the fortnightly collection of organics bins. Some residents do not

want to put food waste into the organics bin due to the belief that this would smell and attract pests, far more than a weekly bin collection. In addressing this, respondents were informing people to use compostable liners, newspaper or in-between vegetation as ways to mitigate these potential issues.

"The biggest hurdle I have is finding ways for people to accept they have to wait two weeks for collection."

"People's willingness to have their food scraps collected fortnightly is still a major barrier."

"When you tell people to put food waste in the green bin, they don't want to because we have a fortnightly collection."

As a response to the issue with fortnightly organics bin collection, one respondent noted their council wanted to conduct a trial of weekly organic bin collection on a sample of 500 households with the hope that this would overcome the barrier of people not wanting to wait two weeks for their food waste to be collected. It was also noted another council had conducted a similar trial. Other respondents provide households with household caddies and liners to improve food waste diversion.

Several respondents noted issues interstate regarding the China National Sword Policy and negative media surrounding recycling as an issue, which was not present 12 months ago. While this issue does not affect South Australian recycling, the media attention surrounding this was believed to make residents sceptical about recycling. Media releases and social media posts have been used to counter this negative information, but their reach is seen as low.

"Post China Sword it's not as good [recycling levels]. Contamination results are a lot higher."

"People are hearing bad stories from the eastern states and assume that is happening here."

Two respondents also noted issues with recycling information on packaging and greenwashing. Companies may make claims about their packaging which appear to be environmentally friendly, and members of the general public often do not know the difference between biodegradable and compostable.

"There is a lot of confusion around labelling."

"The general consumer would have a difficult time differentiating between compostable and biodegradable."

Another key issue mentioned by several respondents is waste and recycling behaviours of businesses/commercial properties. Many businesses have the same number of bins as residential properties, however, they produce much more waste. Here, excess waste is often placed in other bins (predominantly recycling bins). Respondents noted wanting to provide businesses with an organics bin for food

waste, or more frequent bin collections, but were concerned this would be also filled with waste and recyclable items.

"That's what businesses end up doing, they end up filling it with whatever they want."

"Generally, businesses have quite a bit more waste than allowed but there hasn't been a system in place to manage that."

"Results of the program are typically less successful in the commercial space than in the residential space."

Resources needed to address the perceived issues

Respondents noted providing information to residents is the best way to tackle these issues. However, many householders are busy and do not take in a large number of messages. Therefore, messaging should be clear, consistent and focus on a small number of key messages. Education campaigns should focus on addressing barriers to improve recycling. One respondent noted the best way to provide people information was face-to-face, either through community events and presentations or visiting people in their homes. This, however, was noted as incredibly costly and time consuming and not necessary for the bulk of householders. Resources and infrastructure which make it easy for people to manage their waste better were also noted as important, such as caddies for food waste.

"Providing resources is probably the best way to get the message out."

Some councils have moved away from the printed materials that once had such a heavy emphasis as the main communication vehicle for residents. This is due to these materials increasing household waste, as well as the large cost associated with distributing information to residents. Some councils noted that they have sent out recycling information with rates notices but there are issues with this information going to the owner of the property but not necessarily the residents.

"We didn't think it was a good waste strategy to be printing all this paper and giving it to residents when they didn't particularly want it."

"As a council we have cut back on the print media contribution."

Several respondents noted interactive resources achieve higher levels of engagement than static resources. This included gifs/videos for use on social media, Which Bin quizzes on social media, or board games which can be placed in libraries or community centres. One respondent noted KESAB produced some board games which they have used. Board games or mini games with visual cues can be useful in showing people items as people may not understand terms (such as soft plastic).

"Anything with props to make it fun, particularly when educating children, is of great benefit."

While this may be true, it is important to note that such efforts are low reach and tend to attract those who are already knowledgeable and committed to using their three-bin kerbside system effectively. It is the disengaged householders who will make the

biggest impact of behaviour change is achieved amongst them and also those who are doing some, but not complete, correct waste diversion. There are so many of these people while there are only a few of the committed and educated in the householder population. This is not to say that talking to the heavily engaged householders is not important. But it is far easier to do as they already have given their attention and there are only modest improvements that they can make to their efforts.

Tips most needed

There is a need to not have an overwhelming array of messages for waste educators to use and also not too many messages in the market overwhelming people. Many respondents noted they would only stick to a few key messages. One council nominated just three (with the first being far more important than the other two);

1. Food scraps go in the green bin;
2. If your bin isn't full, don't put it out; and
3. Reduce amount of waste when shopping

"We wouldn't go to such an exhaustive list if those things aren't showing up in our yellow bins"

A belief held by many respondents was the need to reframe tips/messages of the campaign away from negative framing. Messages telling people items do not go into a certain bin doesn't solve the issue about which bin the item goes in. Many people will not seek out further information to uncover where the item goes. Here people may default to putting the item in the waste bin, despite the item potentially going into the recycling or organics bin. Several respondents also noted the issue of linking an item to a bin as people may forget about the 'not in this bin' and instead associate the item with the given bin.

"If you want someone to do something with it, tell them where they can put it."

"If you're going to tell someone where they can't put it also tell them what they can do with it."

"You tell someone where to put it, not where to not put it."

"They think if it doesn't go in there it must go in the red bin."

This consistency in positive-only framing of messages is an interesting one and should be considered when thinking about what memory structures the Which Bin campaign is seeking to create.

Respondents noted messages needed for their council were those which related to common contaminants. These varied a little between councils, but common contaminants were noted as hazardous and e-waste (particularly for regional councils who have fewer/ no depos), foam, soft plastics and textiles.

"Foam is always the confusing one."

“I like being able to have specific, targeted messages so you can use messages which are most problematic for your area.”

Several respondents noted the “War on Waste” program has led to an increase in the number of enquiries and residents concerned with waste and recycling. Understanding how much waste we are creating and what happens to it is helping drive change within the community. While outside the control of GISA, this demonstrates discussions surrounding waste increases awareness among households and their general willingness to then engage.

“*I think the War on Waste program has changed people thoughts a lot more.”*

“War on Waste documentary and national media has played a huge part in driving more interest.”

Current perceived performance in waste education
Most respondents believed that while their council area is performing well and residents are interested in recycling, they could be doing better. This reflects council and waste educator willingness to engage with the Which Bin campaign as there is still a perceived problem. This is a positive finding.

Claimed current contamination levels in recycling bins varied between councils and ranged from 12% to 30%. Two key recycling bin contaminants were noted as soft plastics and textiles.

Householders were recognised as varying in their level of engagement and performance in waste management, where some people are motivated and others are not. Several respondents grouped householders by this. One taxonomy was given as:

1. Passionate. These people are highly engaged and doing all the right things already. They are moving toward waste and resource management rather than just waste management. These people are actively interested in, and seek out waste and recycling information. It was believed there are a small number of people in this group.

“You’ve got some who are really passionate, very informed people.”

2. Receptive but Busy. This group have the potential to be interested but they are busy doing life, busy at work, with kids etc. It is believed most people fall into this groups. This is where the focus needs to be for waste education efforts. This group need clear consistent and simple messages.

“They might see messages, but they just don’t go out of their way to implement good resource management.”

“We aren’t trying to reach receptive people, instead we are trying to reach those who are busy and understand but don’t go out of their way to access information.”

"A lot people think they're doing the right thing so they don't seek to improve their knowledge."

3. Disengaged. There are a (hopefully) small number of people who are not interested, do not care and do not think it is important. Several respondents noted they have had community members tell them '*it's a bin and they'll put whatever they want in it*'. A lot of work and very effective strategies would be needed to change the minds/habits of these people. These people need to be looked at after everyone else and change may come through social norms.

"I want to focus on that receptive but busy group. I think that's where we can make the most change"

"Some people are keen to do it but there are a heap of lazy people. And it doesn't matter what message you give them unfortunately."

"We need a way to target those which have unacceptable contamination."

The importance of waste educators needing to be educated themselves as to how to do effective waste education was raised. There is a need for them to understand the importance of consistent and simple messaging, how memory structures are built and refreshed and to have some understanding of the social science of behaviour change.

Resources to share
Councils were asked if they had any evaluation resources that they could share with GISA to help inform the findings in this report. Many councils noted they had conducted kerbside audits several years ago, with several conducting audits at the time of interviews and had not yet finalised results.

Burnside council referred to their 2014 kerbside audit which is available on their website. This found 14.5% contamination in the recycling bin. The landfill bin had (by weight) 14% recyclables, 52% organic materials (most of which was food). The organics bin showed a 1 kg/hh diversion rate for food. They also have developed a waste flow chart for their residents. They are scheduled to conduct audits again this year. They are also trialing bin tagging and door knocking. Burnside are ahead of many others in the RFID in their bins giving the ability to have weight data on bins and visual contamination identification.

"Which Bin" Campaign

"I've been really impressed with the campaign. I really like the TV ads. I like the approach. It's a little bit fun."

Unpromoted recall of executions, messages and media
All respondents were able to recall the TV adverts, generally being the first media recalled. This is evidence if the media's high reach and cut-through. Respondents noted that householders in their area had mentioned the campaign to them, demonstrating cut through within the community. Messages relating to diverting food waste into the green bin and recycling lids off and loose were most commonly

recalled. A number mentioned they had also come across the campaign in waste related groups on social media.

“People have brought up in conversation with me that they’ve seen the ads on TV and have commented on the content.”

“TV commercials were great.”

The Unley Road banner using the Which Bin materials was liked and recalled unprompted, reflecting high cut-through.

It was noted the many different campaign messages should all be on the web site, but that only a few key messages should be on the mass reach medium like TV. This allows people to seek out further information if they are interested but does not overload people with information, making it difficult to take in key messages. We would strongly support this view. A few key messages, repeated to refresh memory structures, is what is needed.

Overall effectiveness and likeability
Most respondents believed the campaign was effective at getting the recycling message across to households. Many respondents commented on how residents they had come into contact with had noticed and liked the campaign. So for many, they did not give a personal evaluation of the effectiveness but rather how much cut-through it has had with householders. The use of TV commercials was noted as a good way to achieve high levels of reach and increase awareness.

“Using mixed media is a really effective way of reaching the majority of the community.”

“Getting information across with the TV is the best method.”

“You can say the phrase (Which Bin) and people recognise it.”

“We’ve had people calling us and querying the newsletters so I think it has been effective and got people talking”

“*I think it has been effective and the message has gotten out there”*

“I like the adverts. People seem to really like them”

It was noted, however, that while they had members of their community comment on this campaign, these people would be highly engaged and may not be reflective of the wider community.

Media recall
Respondents noted the TV commercials as the first exposure many had with the campaign.

“Seeing it on TV helps people go ‘I’ll check that website out’.”

"It's mainly on TV that I've seen it."

Other media recalled included social media, online display advertising, the Unley Road banner and signs on bus shelters/outdoor advertising. A number of respondents noted they did not watch or own a television and thus did not see these advertisements. Here, they believed radio or social media adverts would be a good addition for those who don't watch television. This shows the atypical nature of waste educators, as TV is by far the largest consumed media and people with no TV viewing behaviour are rare. This highlights how decisions should be made to fit with the householder's behaviour rather than that of waste educators' who tend to be atypical in media consumption habits and certainly have far more awareness, knowledge and involvement with the issues. One respondent recognised this:

"I've seen them all [on Youtube] but only because I looked them up. If I was a consumer I would have no idea they were out there."

All respondents had visited the website at some point throughout the campaign. Some respondents had only visited once, while others regularly looked for information through the website. Half of all respondents had also looked up the Which Bin Facebook page. These are very positive findings for a relatively new campaign that had limited involvement with waste educators in its development and which is coming at a time when centralised education campaigns have been very limited for some years, with councils focusing on their own efforts.

Web site evaluation

Overall, the site is seen to be slow, but easy to navigate. Several respondents noted the long load time for the website and issues with links which did not go anywhere, though this may have only been at the initial launch. The issues with web site slowness have since been addressed. The simplicity of the website was seen as a strength, as was the easy-to-find phone number.

"They've kept website nice and simple with bold blocky colours. It's not overwhelming with information."

"I think you've just got to keep it simple."

All respondents had visited the website with the A-Z listing being the page most commonly visited. This was noted as a valuable resource for both residents and council staff. Several respondents commented that they had enquiries from residents about specific items where they could not find information on the website, but all noted these were odd, random items which would not come up more in the future and is not a need to add these to the website.

"I think the website is great in how it's searchable. Definitely more interaction and more informative than the previous edition of it."

"It's got a really good range of information on the website."

"I've probably visited it more for information verification."

It was recommended by several respondents that the website should be clearer about who to contact if they are unable to answer their query through the website. There was a concern that residents may think it is too difficult and give up (or create more work for council with their questions). This was noted by one respondent as important as if people cannot find information about where to place an item, it will end up in the landfill bin.

Additional information respondents suggested for the website was a section or link to another website with information about recycling such as how much waste in South Australia gets recycled, what happens once recycling is collected, and what is produced from recycled items. It was believed this information would positively affect recycling rates. It is a way to counteract some of the negative publicity from stockpiling and China Sword. This information could be on a different website as it may not align with the goals of the Which Bin campaign.

Hotline

The hotline was seen as a valuable tool, particularly for those householders who want to speak with someone rather than visit a website. A small number of respondents had passed people onto the hotline, while a small number of respondents were unaware of the hotline.

"Having the hotline is amazing. Some people don't want to scroll through a website, they just want a number to ring."

An online chat feature was also suggested for those who don't want to call, to speak with someone.

Potential use of materials and site

The Which Bin web site has been used to refer householders to, when they contact the council, and this was seen as a very useful resources to direct work away from councils. The A-Z is seen as a helpful resource. Almost all respondents mentioned using this resource for community enquiries and to ensure council information aligns with what is said on the website. Some concern was raised that the messages might not be relevant/correct for all councils. This was of particular concern for regional councils who do not accept food waste in the green organics bin. However, the campaign is about signalling best practice behaviour and so it is appropriate to signal food discards into the organics bin, even if not every council is yet offering this service.

"Part of this is self-interest because if they can look it up themselves that's less work for us."

"If you want people to know all of these things it's important to have a website like Which Bin where people can go to look it up if they're interested but the key messages out there are the important ones – can go to which bin website if they want further information and are receptive."

"*I was really surprised with that campaign because I just thought the different stakeholders would be able to tell GISA that they should know that [some councils don't accept food waste in organics bin]"*

Several respondents were unaware they had access to resources/materials related to the campaign but would use these in the future now that they were aware. It is important in the work done with councils to make them aware of the full battery of resources they have available as knowledge is still incomplete.

Council materials site

Several respondents independently brought up the idea of having a section of the website where waste educators could go to get materials for their council. This was suggested as it is mutually beneficial for waste educators and GISA, making it easier and saving time for both parties. One respondent noted this feature was previously available on the Which Bin website run by East Waste and that they used this feature regularly.

"I didn't have to contact East Waste every time, we could just download that. That was really easy and convenient and that is the one thing I miss."

This is a positive finding as it shows a receptive audience for this next resource GISA wish to develop.

Most respondents wanted access to campaign materials to use within their own education activities. This was to ensure there is consistency between councils and the state-wide campaign, and it would help with the limited resources some councils have to produce their own materials. Materials which look consistent were also noted as important for precincts which are run by two separate entities but present as one, such as the Central Markets and Central Market arcades. It seems councils are ready for GISA to take a central co-ordination role in waste education.

"Consistency is key,"

"It would help with our limited resources."

"Consistency across the board, particularly council to council."

The materials/resources most requested by councils to have access to include posters/infographics (particularly those which can be used on social media or in local papers), posters (particularly for bus shelters), signage for entertainment precincts, bin stickers, calendars, fridge magnets and flyers/brochures with information about what goes in each bin (to be used to mail out to residents or give out at community events/presentations). Materials which can be placed inside people's homes (such as fridge magnets or calendars) were counted as most useful as it is often too late to sort waste when people reach their outdoor bins.

"You're not separating once you go out to the bin."

"A printed guide inside their house is useful for people."

Respondents liked the idea of both ready-made and ready-to-brand resources which would allow them to add their council logo. This would ensure community members could identify that this information was relevant to their local area. The ability to come to GISA to create branded materials with specific, tailored information was also

mentioned. It was noted by one respondent they had been provided posters from Boomerang with information regarding green waste in the organics bin and posters from Clean Away with information regarding food waste in the green bin but wanted both messages on one entity.

"Would use them if we could brand them with our own branding."

"All resources are useful and would be taken up and used."

"It would be good if there were resources you could co-brand or information you can pick or choose."

Several respondents noted their council/organisation had created their own waste education materials. This was primarily done as councils had access to their own graphic design teams to create materials or were created in conjunction with other councils in the same area to ensure consistency. These respondents did not rule out using Which Bin materials but felt they were less likely to need them as they had developed their own. This is potentially a problem as they create a fragmented message as well as "look and feel" to a state-wide message.

While it is a very positive finding that councils and waste educators wish to use the Which Bin materials, their strong desire to tailer and co-brand the materials will mean that clear guidelines must be articulated and enforced to ensure the consistent look and feel is maintained.

Like most about Which Bin

Respondents enjoyed the fun, humorous elements of the campaign the most. The campaign was seen as likeable and attractive. It was believed the characters in the adverts could have been any family, and the situations would be relevant to many households.

"It's informative but has a fun element to it."

"It's not just a boring infomercial, it's a comedy act with a message."

"The fact that it's quirky, a bit of an accent – he could be anybody. It's not whitewashed and I think that was a really good move."

"I like the quirkiness of the ads. I think the hook has been really well executed."

"I like it. The actors they've got in it are quite good because it gives an array of a regular family."

"The character of Vin was cheesy enough to work but not be overbearing. He was relatable."

"It wasn't a talking down to you message, more of get involved."

The fact it was funded by "someone else" was a great strength. There was clear recognition of GISA's efforts to help in the waste education challenge. That the

message was consistent across the state was seen as very helpful to householders who may move between council areas and so will now not need to learn new behaviours/rules.

"It's a bit of fun at someone else's expense."

"Sharing the cost would be wonderful. That's the biggest problem is the cost in distribution."

Change one thing about Which Bin

It was suggested that the campaign could be linked to "My Local Services" app many councils use to communicate with their residents. One respondent suggested the introduction of a Which Bin app which includes the A-Z listing. Linking this information to a pre-existing app (such as My Local Services) would be useful so people do not have to download multiple apps.

"I would rather an app on my phone. Go to the app and type in cellophane and it can tell me straight away, then and there."

Message simplification was wanted. Too many and too complex messages were seen to overwhelm people and dilute the overall message. Respondents also wanted simplified messages on posters/infographics. Again, too much information and too many messages are believed to overwhelm people. Messages within the campaign should focus on key issues. The additional message of 'if a bin isn't full, don't put it out' is needed. There is not much talk of this to householders currently, but was noted as important as this costs councils money.

"There are so many messages we could put out there and there are so many intricacies to waste management. Waste promotion materials tend to be cluttered and I think that's negative – you lose the message. Promotional materials need to be decluttered."

"There are a lot of people trying to do the right thing but when you get into that level of detail you just start to muddle the system"

"Strip it down to just the message and make it digestible"

Shredded paper was given as an example from one respondent who believed they would not use it as it would dilute the overall message. Shredded paper, however, was seen as a key message for another respondent where this was a common contaminant in their recycling bins.

"Should it be a focus? We won't use the shredded paper messaging as it isn't a focus and don't want to dilute the message."

"They [council residents] seem to think it's paper, put it in the yellow bin."

"We get a lot of calls about shredded paper, where to put it and does it go in the yellow bin."

One respondent noted Which Bin infographics are too busy with eyes drawn to the image of Vin or the four- bin logo. These infographics should contain images which directly relate to the message (the item and which bin it goes in).

Many respondents noted the campaign messages are negative, e.g. no this in the bin. The focus should instead be positive by telling people where the item goes or what items should be placed in each bin. This was for two main reasons. Firstly, if people are told items don't go in an organics bin (such as plastic pots) they will then assume these go into the waste bin rather than recycling. Further, these messages may cause people to relate the item to the bin, forgetting about the 'not'.

"You've got to give people a solution, not just tell them what they can't do. Give a positive message. Build knowledge structures about best practice."

"It's a bit concerning that they're all no and negative"

It was noted by several (predominantly regional) councils some messages within the campaign were not applicable to their council area. Of particular concern was the messaging surrounding food waste in the organics bin. Residents saw this messaging as part of the campaign and began ringing council for additional information, or diverted food waste into their organics bin, leading to contamination. These respondents noted it was important to tailor messaging to each council area so community members are given accurate information. One respondent noted associations within their council area had noticed this and placed further information in their newsletter encouraging people to place food waste in the organics bin. Here, the council had to take steps to remove this information from newsletters.

"I found the initial campaign didn't suit our area. I got a lot of calls about the food waste going in the green bin."

"Because we're regional, they target it at metro areas but not all councils are doing it."

"We have a green bin but we only do mulching so we can't have any food waste, the pizza boxes or shredded paper."

"We're not a council that does it [food waste in green bin] but the TV and Which Bin are advertising that you can do it."

"*It's a bit disappointing and surprising that they sent that universal message out."*

Councils who do not allow food waste in the green bin mentioned themselves and the council has looked into introducing this. This would, however, require building of a composting facility or transporting organic waste to Adelaide, both of which are costly and currently not feasible for the council. But again, this campaign is about communicating best practice even if all services are not offered across the state consistently yet.

Other Comments

The best way GISA was seen to be able to help was via this direct messaging to householders as an independent credible source. Messages can be distributed to a large audience via mass media then reinforced by more targeted council efforts. One respondent noted it was important recycling and waste messages come from GISA and the state government rather than just councils as this provides additional authority to the message.

"People will say 'oh well it's not just the council'."

Waste educators were recognised as a difficult group to work with as they have a much higher level of knowledge than the average householder, and most commonly engage with people who are highly motivated or interested in recycling education. The work by GISA helps form a bridge to the wider community and typical levels of understanding and behaviour around waste and recycling.

"I think the people who are waste educators are the people who are into the nitty gritty of waste management. But getting into that nitty gritty misses the big points."

"It's sometimes hard to understand the broader community."

"All of us wasties would know that but whether the regular punter would."

The need for ongoing conversations between GISA, councils and residents was seen as a critical area. Communication between GISA and councils needs to be clearer and better. Several respondents noted they became aware of the campaign through other people, rather than through GISA but would have liked to have been given a "heads up" before the campaign launched.

"I felt the communication was very lacking about that program."

"There was a lost opportunity to coordinate better together."

Others also noted they had heard materials/ resources related to the campaign would be made available to them but had not been given any further information. These respondents believed they would be told what materials are available to them and how to implement the campaign as part of their waste education strategies and also what constraints there are on the use of Which Bin materials.

"I feel like we need some guidance if we wanted to do a campaign, how does that work or what are the rules around the whole campaign."

One respondent noted when the website first went live there was information which was not congruent with their waste collection. Here, communication with councils and relevant stakeholders could avoid these errors.

"An ongoing conversation would be useful, so everyone is comfortable. Ongoing group which involves councils and potentially residents. I have heard rumours that people are finding it hard to make contact [with GISA]."

Our Recommendations for Waste Educators and Councils

The *Which Bin* Campaign is well liked by councils and waste educators. They are a receptive audience and have clearly signalled their willingness and keenness to use the campaign and supporting materials in their own waste education efforts through the research findings. There is growing recognition that a centralised, consistent and continuous approach to waste education is needed to affect change and that this will never be achieved while councils work in a disparate way. That said, some still insist on the development of their own materials, creating the potential for market confusion and mixed messages. To address this, there is a real opportunity for GISA to run workshops with councils and waste educators on the principles of effective waste and recycling communication and education for behaviour change and to use the results of this research to illustrate that and to bring people “into the fold”. This will result in better collaboration moving forward.

GISA is seen as a natural choice to take the leadership role in the waste education of householders, but they need to further improve their communication channels with councils and waste educators to work even more effectively in this space.

The needs of waste educators and councils are summarised well in this quote.

“I want simple messaging and a way to deliver it in multiple ways.”

We would recommend as the campaign is refined, that there are just a few central messages. While respondents believed that many householders want to do the right thing in terms of waste and recycling, many people are busy or underinformed. Having a few key messages within a campaign ensures key messages are clear to these people and does not over complicate the campaign. Materials with more and different messages or more information can be made available for councils but not delivered via mass media. These materials can then be used by councils who feel these messages are appropriate for their community members or are available for members of the community who are passionate and engaged with waste education/reduction.

The feedback to householders on incorrect practice and contamination is not needed for everyone as only a few are doing the wrong thing. With technology now allowing contamination identification, the focus of something like a *Which Bin* campaign should therefore be on just general messaging and the delivery of individual feedback can be done to the household directly by council rather than through a mass medium like advertising.

As previously noted, many respondents believed a focus should be the diversion of food waste to the organics bin. This was a prominent message of the *Which Bin* campaign which was recalled by many respondents. It is recommended GISA continue with this message as this is a large area for opportunity, but tailoring messaging for regional councils.

There was consensus that negative messages (i.e. saying not what not to do) should be avoided. The focus should be about where things go rather than where they should not.

Better communication between GISA and waste educators, contractors, and councils is needed. The Which Bin campaign, while very well liked, was seen as a surprise that people would have preferred to know about. This meant that reception of it was not as positive as it could have been. Future campaigns should alert councils and relevant stakeholders prior to campaign launch, as well as informing waste educators as to which materials have been developed and available for use by councils, and how these materials can be accessed.

Further, several respondents noted they would have liked to be involved with the campaign development to provide advice and guidance on which messages to include in the campaign, and to help develop resources for the campaign. This was echoed by councils whose recycling and waste practices did not align with messages in the campaign, such as food waste not being able to be placed in the green organics bin. This, while not really feasible, does show the territorial nature of waste education by these critical gatekeepers and the need for them to feel involved in processes.

APPENDIX 1: QUESTIONNAIRE

Screeners

Q21. Your gender?

( ) Female
( ) Male
( ) Non-binary

Qs2. What is your current age?

( ) Under 18 years
( ) 18-24
( ) 26-34
( ) 36-44
( ) 46-54
( ) 56-64
( ) 56 years and older

Qs3. Where do you live ?

(state)

Introduction

Thank you for choosing to do this survey. Our research is about your thoughts and experiences with recycling and your kerbside bins. The findings will be used to help improve recycling services. We really value your thoughts and experiences. There are no “right” or “wrong” answers, we are just interested in your thoughts and experiences.

Q1. First, may I please check that you have three bins at your household - a red/blue lid bin for general waste, a yellow one for recycling and a green one for organic waste?


Yellow Lid Bin


Green Lid Bin


Red/Blue bin

[ ] Yes - I have all three bins
[ ] No - no organics (green) bin
[ ] No- no recycling (yellow) bin
[ ] No- no organics or recycling bins
[ ] No- I have something else (please specify)

Q2. Do you live in metropolitan Adelaide or in the regional/rural/remote areas of SA?

( ) Metro Adelaide
( ) Regional/rural/remote area

If metro
Q3a. Which Council area do you live in?

( ) Adelaide City
( ) Adelaide Hills
( ) Adelaide Plains
( ) Burnside
( ) Charles Sturt
( ) Campbelltown
( ) Gawler
( ) Holdfast Bay
( ) Marion
( ) Mitcham
( ) Murray Bridge
( ) Mount Barker
( ) Norwood Payneham St Peters
( ) Northern areas
( ) Onkaparinga
( ) Pt Adelaide Enfield
( ) Playford
( ) Prospect
( ) Salisbury
( ) Tea Tree Gully
( ) Unley
( ) Walkerville
( ) Wakefield
( ) West Torrens
( ) Yankalillia
( ) Other/I don't know (please write in your postcode):
_____*

If regional/rural
Q3b. Which Council area do you live in?

( ) Adelaide Hills
( ) Alexandrina
( ) Anangu Pitjantjatjara Yankunytjatjara
( ) The Barossa
( ) Berri Barmera

( ) Barunga West
( ) Ceduna
( ) Clare & Gilbert Valleys
( ) Cleve
( ) Coober Pedy
( ) Copper Coast/Yorke Peninsula
( ) Coorong
( ) Elliston
( ) Flinders Ranges
( ) Franklin Harbour
( ) Gerard
( ) Goyder
( ) Grant
( ) kangaroo Island
( ) Karoonda East Murray
( ) Kimba
( ) Kingston
( ) Light Regional
( ) Lower Eyre
( ) Loxton/Waikerie
( ) Mallala
( ) Maralinga Tjarutja
( ) Mid Murray
( ) Mount Gambier
( ) Mount Remarkable
( ) Murray Bridge
( ) Naracoorte Lucindale
( ) Nepabunna
( ) Orroroo Carrieton
( ) Outback communities
( ) Peterborough
( ) Port Augusta
( ) Port Pirie
( ) Port Lincoln
( ) Renmark Paringa
( ) Robe
( ) Roxby Downs
( ) Southern Mallee
( ) Streaky Bay
( ) Tatiara
( ) Tumby Bay
( ) Victor Harbor
( ) Wattle Range
( ) Whyalla
( ) Wudinna
( ) Yalata
( ) Yorke Peninsula

Q4. What level of responsibility do you have in managing your household's waste and recycling?

( ) Other people in my home are mostly responsible
( ) It is an evenly shared responsibility between me and other household members
( ) I am mostly responsible

Q5. How important is recycling to you personally?

( ) Very important
( ) Fairly important
( ) Not very important
( ) Not at all important
( ) I don't know

Q6. How well do you understand what items can be placed in each of the bins in your household? We are just looking for an overall estimate. Would you say you understand…

( ) Very well
( ) Fairly well
( ) Not very well
( ) Not at all
( ) Don't know

Q7. Which of your bins are typically full before they're due to be collected? (ie you run out of capacity). Please select all that apply

[ ] Recycling (yellow lid) bin
[ ] Organic (green lid) bin
[ ] General waste (red or blue lid) bin
[ ] None, I have room left in them all
[ ] Varies too much to say
[ ] Don't know

Q8. Do you put your bins out at every council collection, even if they are not full?
[ ] Yes, every collection
[ ] no, only when full|
[ ] It varies by bin
[ ] Unsure/refused
[ ] Other (specify) «»

Campaign awareness

Q9. Thinking back over the past four months, that is since May, have you seen/heard any advertising or received any information about your recycling, organics or general waste bins?
( ) Yes
( ) No
( ) Don't know

IF YES
Q10. Where did you see or hear this advertising or information?
( ) Information provided by my Local Council, e.g. leaflets, letters, brochures, posters etc.
( ) Information my kids brought home from school
( ) Message or instructions on packaging
( ) Bin stickers
( ) Council website(s)
( ) Friends/family
( ) Sides of Waste Collection Trucks
( ) Bus shelters/outdoor advertising
( ) On street bins
( ) Neighbours
( ) Social media sites, e.g. Facebook
( ) Internet search engines, e.g. Google
( ) Other websites (please specify)
( ) Local newspapers, e.g. Messenger
( ) TV
( ) Radio
( ) The Advertiser or Sunday Mail
( ) Don’t know/can't recall
( ) Other (please specify) _____*

If yes

Q11. Please describe the recycling campaign(s) you have seen/heard explaining and/or promoting recycling?

If yes

Q12. What were the messages of this information/campaign? (unprompted)

_____

Q12b. As a result of the information you have seen, have you disposed of any items differently to how you did before?

[ ] Yes (please specify what). _____
[ ] No

Ask all prompted awareness

Q13. Have you seen or heard the ‘Which Bin” campaign?

[ ] Yes
[ ] No

If yes only

Q14. Can you name the main character in the campaign?

[ ] No

Ask all – show ads

Q15a. Do you now recall having seen this TV advertisement before this survey?

[ ] Yes
[ ] No

Show print material to all

Q15b. Do you recall having seen these print advertisements before this survey?

[ ] Yes
[ ] No

Ask all (in table format)

Q16. Thinking about the "Which Bin" campaign overall, to what extent do you agree or disagree with the following statements? I’d like you to answer on a “0” to “10” scale where”0” is “completely disagree”/ and “10” is “completely agree”. You can also choose any number in between.

a. This campaign motivates me to recycle more
b. This campaign makes it easier to recycle correctly
c. This taught me things I did not know
d. Recycling is an important enough issue to warrant a TV campaign
e. I like this campaign

Q18. Have you ever visited the “Which Bin” website?

[ ] Yes
[ ] No
[ ] Unsure

Q19. Have you visited the “Which Bin” facebook page?

[ ] Yes
[ ] No
[ ] Unsure

Q20. Have you called the “Which Bin” 1300 number?

[ ] Yes
[ ] No
[ ] Unsure

Q21. How do you rate the campaign for overall likeability? Please use a scale from “0’ to “5” where “0” is “I do not like it all” and “5” is “has a look and feel that is just right”. You can also choose any number in between. So, your rating for look and feel would be…

Q22. The thing you like MOST about the “Which Bin” campaign is…

_____

Q23. If you could change one thing about the Which Bin campaign, it would be…

_____

Q24. Is there any waste-related information you like to receive but don’t currently?

[ ] Yes (please specify what). _____
[ ] No

Knowledge tests

I'd now like to ask about items that your household might dispose of. I would like you to tell me where you would place each item. For example, would you place it in the general waste bin with the red or blue lid, the recycling bin with the yellow lid, the green organics bin with the green lid, or somewhere else. It doesn't matter whether you have thrown out these items or not, we are just interested in where you would put them if you had to. It is not a test, we just want to know where people put things...

Q25. How would you dispose of used clothing? Please select all that apply

[ ] Put in the general waste (red or blue lid) bin
[ ] Put in the recycling (yellow lid) bin
[ ] Put in the organic (green lid) bin
[ ] Drop off to charity or second-hand retailer
[ ] I don't know
[ ] Other (please specify)
_____

Q26. How would you dispose of plastic bags, e.g. bread bag, shopping bag? Please select all that apply

[ ] Put in the general waste (red or blue lid) bin
[ ] Put in the recycling (yellow lid) bin
[ ] Put in the organic (green lid) bin
[ ] Drop off to supermarket
[ ] I don't know
[ ] Other (please specify):
_____

Q27. How would you dispose of used, disposable nappies? Please select all that apply

[ ] Put in the general waste (red or blue lid) bin
[ ] Put in the recycling (yellow lid) bin
[ ] Put in the organic (green lid) bin
[ ] Put in the compost
[ ] I don't know
[ ] Other (please specify)
_____

Q28. How would you dispose of electronic items, e.g. broken kettle, old heater? Please select all that apply

[ ] Put in the general waste (red or blue lid) bin
[ ] Put in the recycling (yellow lid) bin
[ ] Put in the organic (green lid) bin
[ ] Drop off to e-waste depot/collector or council collection
[ ] Drop off to charity or second-hand retailer for repair and resale

[ ] I don't know
[ ] Other - Specify: _____

Q29. How would you dispose of shredded paper? Please select all that apply

[ ] Put in the general waste (red or blue lid) bin
[ ] Put in the recycling (yellow lid) bin
[ ] Put in the organic (green lid) bin
[ ] Put in the compost
[ ] I don't know
[ ] Other - Specify _____

Q30. How would you dispose of food scraps? Please select all that apply

[ ] Put in the general waste (red or blue lid) bin
[ ] Put in the recycling (yellow lid) bin
[ ] Put in the organic (green lid) bin
[ ] Put in the compost
[ ] I don't know
[ ] Other - specify _____

Q31. How would you dispose of pizza boxes that are quite clean?

[ ] Put in the general waste (red or blue lid) bin
[ ] Put in the recycling (yellow lid) bin
[ ] Put in the organic (green lid) bin
[ ] Put in the compost
[ ] I don't know
[ ] Other - specify _____

Q32. How would you dispose of pizza boxes with food in them still?

[ ] Put in the general waste (red or blue lid) bin
[ ] Put in the recycling (yellow lid) bin
[ ] Put in the organic (green lid) bin
[ ] Put in the compost
[ ] I don't know
[ ] Other - specify _____

Q33. When you're not sure about how something should be disposed, who or what would you consult to work out which bin it should go in? Please select all that apply
[ ] Information provided by my Local Council, e.g. leaflets, letters, brochures, posters etc.
[ ] Package labelling
[ ] Bin stickers
[ ] Council website
[ ] Department of Environment & Planning
[ ] KESAB
[ ] Manufacturer’s website/phone
[ ] Waste collectors, e.g East Waste,

[ ] Ask friends/partner
[ ] Ask my kids
[ ] Ask my neighbour(s)
[ ] Social media sites, e.g. Facebook
[ ] Internet search engines, e.g. Google
[ ] Other websites (please specify)
[ ] Local newspapers, e.g. Messenger
[ ] TV
[ ] Radio
[ ] The Advertiser or Sunday Mail
[ ] Community groups
[ ] I wouldn't find out. Just pop it in the general waste (red/blue lid) bin
[ ] Don't know
[ ] Other - specify _____

Q34. When you are not sure if something can be recycled, are you more likely to…
[ ] Put in the waste bin to not risk contamination
[ ] Put in the recycling to not miss an opportunity to recycle.

Practices

Q35. Do you use a plastic bag to hold your recyclables together when you put them in the recycling bin?

[ ] Always
[ ] Sometimes
[ ] Never
[ ] Unsure

Q36. When you dispose of food containers, cartons and plastic bottles, do you rinse them out first?

[ ] Always
[ ] Sometimes
[ ] Never
[ ] Unsure

Q37. I'd like to know how you manage recycling. Do you …..

[ ] have a separate bin for recyclables inside your home
[ ] take them out to the recycling bin as you go
[ ] separate them out of a general inside collection bin, once you are outside at the bins
[ ] Don't recycle
Other (please specify) _____

Q38. How do you dispose of food discards in your house?
[ ] I have a separate bin/bucket then take to the green bin

[ ] I have a separate bin/bucket then take to the compost
[ ] I have a benchtop bio bin/caddy then take to the green bin
[ ] I have a benchtop bio bin/caddy then take to the compost
[ ] Take to the worm farm
[ ] Feed to animals
[ ] Have a garbage sink disposal eg SinkErator/Sink Grind
[ ] It varies
[ ] I don't separate – food discards go in the waste bin
[ ] Other (please specify)

Q39. Have you ever taken your soft plastics back to a supermarket for recycling?

[ ] Yes
[ ] No

If yes

Q40. Thinking about how much of your household's soft plastics are recycled, compared to this time last year, are you recycling …

[ ] More soft plastics
[ ] The same amount
[ ] Less soft plastics

Q41. Overall, what percentage of all your household's soft plastics do you think are being recycled back through the supermarket? Please write a number from 0 to 100.

Q42. Do you collect bottles and cans to redeem at the depot?

[ ] Yes
[ ] No

Q43. To what extent do you agree or disagree with the following statements? I'd like you to answer on a "0" to "10" scale where"0" is "completely disagree"/ and "10" is "completely agree". You can also choose any number in between.

f. Recycling makes me happy to be doing my bit for the environment
g. b. I often have other things on my mind which are more important than worrying about recycling
h. When I don't recycle, I feel guilty that I haven't done the right thing
i. Rules about what can and can't be placed in your bins makes recycling all too complicated

j. I would like to recycle more of my/our household waste
k. I feel I have been given sufficient information about how to use my kerb side bin system in the best way possible
l. I feel my recycling efforts are worthwhile
m. It doesn't matter whether I place items in the recycling bin or the waste bin because everything ends up getting mixed together anyway
n. I place organic waste in the green bin, even if it takes extra effort on my part.

Q44. Thinking about your household overall, which of the following statements best describes how much of your household waste is recycled? Please select one
( ) Almost every item that can be recycled is (over 90%)
( ) A lot is recycled but not every item that can be recycled (70-90%)
( ) Some items are recycled (between 30-70%)
( ) Not very much at all is recycled (less than 30%)

Q45. Are you aware the media coverage currently of recycling being stockpiled by waste collection businesses?

( ) Yes
( ) No

Q45b. (*if yes to 45)*

Has the negative media coverage of recycling stockpiles lead to you reducing your own recycling efforts?

( ) Yes
( ) No

Q46. Is there anything that is stopping you recycling as much as you would like to?

[ ] Green bin gets too full
[ ] Recycling bin gets too full
[ ] Too busy
[ ] Other household members don't participate
[ ] Unsure
[ ] No
[ ] Other (please specify) _____

Demographics

Q47. Which of the following best describes your household?
( ) I live alone
( ) Me and child/children aged 17 or below living at home
( ) Me and child/children aged 18 or older living at home
( ) Couple
( ) Couple living with child/children aged 17 or below at home
( ) Couple living with child/children aged 18 or older at home
( ) Shared household
( ) Other

Q48. How many people usually live in your home? Include yourself in the count
_____

Q49. How many of these people are actively involved in recycling for the household?

_____

Q50. What is the total of all income (i.e. wages, salaries, benefits, pensions, allowances, super etc.) that your household usually receives in a year?
( ) Less than $20,000 pa
( ) $20,000 to less than $40,000 pa
( ) $40,000 to less than $60,000 pa
( ) $60,000 to less than $80,000 pa
( ) $80,000 to less than $100,000 pa
( ) $100,000 to less than $125,000 pa
( ) $125,000 to less than $150,000 pa
( ) $150,000 to less than $200,000 pa
( ) $200,000 and over pa
( ) I don't know
( ) I prefer not to say

Q51. What type of property do you live in?*
( ) Separate/detached house
( ) Semi-detached house, terrace or townhouse
( ) Flat, unit, apartment in a 1-2 storey building
( ) Flat, unit, apartment in a 3 storey building/block
( ) Flat, unit, apartment in a 4+ storey building/block
( ) Flat, unit, apartment attached to a house
( ) Other – (please specify)_____*

Q52. What is the main language usually spoken at home?

( ) English
( ) Italian
( ) Mandarin
( ) Greek

( ) Vietnamese
( ) Persian/Dari
( ) Cantonese
( ) Filipino/Tagalog
( ) Punjabi
( ) Arabic
( ) Hindi
( ) Other (please specify):