



RESEARCH REPORT

Butt Litter Index 2024

Research on Cigarette Disposal Behaviour for the NSW EPA

March 2025



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1. EXECUTIVE SUMMARY

Cigarette butts are consistently the most-littered item in NSW. It is estimated that each year 1.32 billion butts are littered in NSW.

The NSW Government, through the Environment Protection Authority (EPA), employs a range of programs designed to reduce butt litter. These include working with and funding councils, organisations and businesses to provide improved cigarette butt disposal infrastructure (bins, signage etc.), and identifying the behavioural and attitudinal characteristics of smokers that lead to butt littering.

As part of its efforts to measure and track butt litter, smoker attitudes and smoker behaviour, the EPA has developed a tool called the Butt Litter Check (or BLC). The agency is now using this tool to deliver a Butt Litter Index (BLI), to provide robust evidence of longitudinal (i.e., time-based) changes in smoker, behaviour, attitudes, and butt littering rates.

In July 2024, the EPA commissioned Taverner Research to conduct a BLI evaluation of sites across 20 NSW local government areas (LGAs). The 2024 BLI was designed to provide benchmark data against similar studies conducted in 2020 and 2022.

Taverner Research observed smoker behaviour and site characteristics across 149 sites in 20 different metropolitan and regional LGAs. For the first time, this year's study also included observations at 16 sites at Sydney Airport.

Across the 149 sites, researchers observed 4,423 incidents of smokers binning or littering cigarette butts (against 3,107 in 2022). They also conducted site inspections (including assessment of the site using 20 different criteria), interviewed 442 smokers about their perceptions of their smoking area, and conducted butt litter counts.

Among the key conclusions for the 2024 research:

- **There has been a material improvement in cigarette binning rates in public places.** Excluding 16 Sydney Airport sites (included for the first time in 2024, and where littering rates proved much lower than historical norms) **butt littering rates fell from 62% in 2022 to 56% in 2024 – a statistically significant change.**
- Littering rates fell across all age groups.
- The improvement was particularly pronounced in regional areas, where littering rates fell from 69% to 58% - putting regional and metro littering rates on par for the first time.
- As in previous years, littering rates were highest:
 - Where there were no butt bins
 - In so-called “hotspots” - i.e., areas not catering to the needs of smokers
 - When smokers were in groups
 - When bins were more than 2 metres away from where smokers stood
 - Outside health facilities, transport hubs and entertainment venues (and lowest outside office blocks)
- Group size continues to be a contributor to butt litter – i.e. the larger the group, the more likely littering is to occur
- Apart from the sharp improvement in binning rates, this latest research strongly backs up conclusions from previous waves around the existence of a “social compact” –showing the correlation between sites with adequate butt bins, higher Area Inspection scores, and lower littering rates.
- In particular, the existence of butt bins in a smoking area (i.e., as opposed to more



1. EXECUTIVE SUMMARY

general waste bins) continues to send a strong message of it being “smoker-friendly” sites.

- However the larger proportional fall in hotspot littering rates suggests that it is not only the social compact driving improvements – other contributing factors appear to be at play as well.
- Cigarette butt counts were significantly lower in 2024 than in 2022. While this may be at least partially due to external factors (e.g. cleaning schedules, weather) it does appear to back up other findings around higher binning rates.



2. RECOMMENDATIONS

Based on this year's Butt Litter Index, we offer the following recommendations:

1. Based on an understanding of high butt littering rates at industrial sites, an effort was made to include such sites in this year's BLI. While 46 sites across southern and western Sydney were initially identified, a range of factors prevented us achieving "critical mass" (i.e. a minimum of 30 disposals over a 4-hour observation period) at the vast majority of these locations. Should industrial sites remain a potential focus for future BLIs, new strategies will be required to create a successful BLI measurement tool for these areas.
2. The 2024 BLI incorporated 16 sites at Sydney Airport for the first time. Subject to continued co-operation with airport management, we would recommend returning to these sites in any future BLIs.
3. A proportionately larger decline in the littering rates at hotspots than at streamlined sites suggests there are factors other than the social compact that are positively impacting smoker behaviour in relation to butt littering. Future BLIs should perhaps seek to determine a methodology designed to explore this issue further.
4. To assist with identifying sites for future BLIs, it would be ideal if the EPA could create and provide to the research provider a comprehensive database of successful Grant Sites.
5. Within the case studies, it was noted that some (private) sites make smokers feel *welcome* – as opposed to just accepted or allowed – and that this markedly increases the notion of a social compact. It may be worthwhile for the EPA to consider similar language if it wishes to utilise this concept within streamlined smoking areas.
6. Conversely, some smokers within the case studies appeared to have a mentality that if there's no bin adjacent, littering their butt is "the only option". This view needs to be changed, either through greater enforcement, or promoting other means for temporarily disposing of butts (e.g. empty mint tins.) Some form of "No bin? No excuse!" message may assist in changing smoker apathy to littering in public areas without a bin in close proximity.
7. (Unchanged from 2022) Butt bins remain the key defining feature of a "smoker-friendly" site. And as a highly visible sign that an area is welcoming to smokers, they also play a symbolic role in providing "ownership" of the site by smokers. The ongoing rollout of butt bins should remain a key component of butt litter reduction strategies going forward.
8. However, there was also some confusion expressed by smokers as to the presence of butt bins in non-smoking areas. This created mixed messaging, and potentially undermined the social compact influence of such bins. While a complex issue, it may be worth considering how this paradox can be better explained to reduce misunderstandings.
9. (Unchanged from 2022) The social compact remains an effective way to increase binning. Demonstrating a commitment to provide adequate bins (and, in particular, butt bins) for smokers builds a social compact with smokers and appears to encourage smokers to respond positively in kind. Identifying additional ways to engage smokers in the social compact will continue to drive positive disposal behaviour.



3. PROJECT BACKGROUND AND METHODOLOGY

3.1. INTRODUCTION

As the NSW Environmental Protection Agency (EPA) website notes¹, “The National Litter Index shows that cigarette butts are consistently the most-littered item in NSW. It is estimated that each year 1.32 billion cigarette butts are littered in NSW. Cigarette butts are unsightly, toxic, and harmful to the environment. They are easily carried in stormwater runoff through drainage systems and eventually to local streams, rivers, and waterways. Cigarette filters contain cellulose acetate, a form of plastic that does not readily biodegrade and can persist in the environment.”

The NSW EPA has set a target to reduce cigarette butt litter across the state. Working collaboratively with NSW councils and land managers, the EPA is delivering a program to reduce observed butt littering behaviour² by 50% by 2030.

3.2. PROGRAM CONTEXT

To better understand smokers' cigarette disposal behaviour, the Butt Litter Check (BLC) was developed to measure littering behaviour and assess the contextual factors in outdoor smoking areas that influence this behaviour. The BLC was then used to undertake extensive quantitative research around NSW.

The Butt litter check

The Butt Litter Check (BLC) is a location-based methodology, combining information from the inspection and grading of a location's features with insights from community conversations (individual surveys), counts of litter on the ground, and importantly from observing how smokers discard their cigarette butts (disposal behaviour).

Information related to butt littering in each smoking area is measured in four ways.

1. Area Inspection (AI): an indicator of the likelihood that the smoking area provides a context for supporting cigarette butt litter prevention and encouraging smokers to use bins. The AI assessment is based on either a true or false grading for specific attributes and features of the smoking area. A total AI score out of 20 (then converted to 100) for a smoking area is based on adding together those positively scored attributes. The AI grading approach groups attributes into five sub-scales and each sub-scale can be scored to provide detailed guidance on strengths and gaps in smoking areas for preventing butt litter.
2. Behavioural observation: recording a minimum of 30 butt disposal actions as they occur and noting key features of smokers associated with either using bins or littering.
3. Litter count: standardised measure of the number of butts and other litter in the location.
4. Survey: structured conversations with people in smoking areas to gain insights into smokers' views on the key features of the location and their disposal actions.

Guidelines for using the BLC, including descriptions of the full approach for conducting all four research stages can be found in the Butt Litter Check Guidelines at: <https://www.epa.nsw.gov.au/->

¹ <https://www.epa.nsw.gov.au/your-environment/litter/targeted-programs/reducing-cigarette-butt-litter>

² Based on the Butt Litter Index scores



3. PROJECT BACKGROUND AND METHODOLOGY

[/media/epa/corporate-site/resources/litter/21p3199-butt-litter-kit-part-4.pdf?la=en&hash=42DCF158A216A048C542219B425ACDD91DC346C8](https://www.epa.nsw.gov.au/-/media/epa/corporate-site/resources/litter/21p3199-butt-litter-kit-part-4.pdf?la=en&hash=42DCF158A216A048C542219B425ACDD91DC346C8) .

(The four BLC data collection forms are included as Appendix 1 to this report.)

Quantitative Research³

In 2017, research was conducted to assess disposal behaviour using the BLC. This included:

- Providing a contrast between subjectively classified streamlined and hotspot smoking areas.
- Validating the BLC area grading system to characterise litter prevention in smoking areas and contrasting with previous baseline findings.
- Establishing a cigarette butt-littering baseline specifically for NSW that could be used as a benchmark to set behavioural targets and monitor progress towards reduced butt litter.
- Comparing the effects on smokers' littering behaviour across different site types (retail, transport, car parks and office work break), and population centres (CBD, urban, rural).
- Providing insights into factors underlying smokers' habitual disposal of butts.

Qualitative Research

The EPA conducted primary research among smokers to help inform development of the new Cigarette Butt Reduction Program. The research aimed to provide a deeper understanding of barriers and drivers to appropriate cigarette butt disposal. The project reported behaviour in relation to cigarette butt disposal from a target audience of NSW smokers aged 18 years and over. The report assessed participants in terms of their capability to appropriately dispose of cigarette butts; observed whether they had the opportunity to appropriately dispose of cigarette butts and evaluated their motivation to appropriately dispose of cigarette butts.

The results were analysed and further categorised by typical disposal moments and smoker typologies and suggested implications of the research findings for intervention design.

³ Rob Curnow & Karen Spehr, Butt-littering behaviour in context, The Butt Litter Check: A foundation for the NSW EPA cigarette butt litter reduction program, August 2017. <https://www.epa.nsw.gov.au/-/media/epa/corporate-site/resources/litter/cigarette-butt-littering-behaviour-in-nsw-quantitative-research-and-baseline-report-community-change.pdf?la=en&hash=29E1703A1F364B2C8A336BB0D6B4061A97E1C288>



3. PROJECT BACKGROUND AND METHODOLOGY

Findings from the NSW EPA-led Cigarette Butt Litter Prevention Trial⁴

In 2017, the EPA began working with 16 NSW councils to develop and lead a partnership program, guided by social scientists to identify ways to positively influence smokers' cigarette butt disposal behaviour. In 2018, as a key part of this partnership program, the EPA led a practical quasi-experimental trial to test strategies to reduce cigarette butt litter by influencing smokers' cigarette butt-littering behaviour in NSW.

The purpose of the Trial was to guide the EPA to develop an evidence-based program to support local land managers to prevent cigarette butt litter.

The Trial aimed to identify:

- The most effective strategies for reducing smokers' cigarette butt litter behaviour.
- Councils' experiences as project partners trained to use tools to co-deliver the interventions and assess impacts.
- The features of the relationship between place managers and smokers for keeping locations free of butt littering.

The Butt Litter Prevention Trial found that land managers who objectively review the way smokers interact with a smoking area can identify needed improvements, understand the '**social compact**' operating in the area and can design and implement projects that respond to local challenges.

Guide to prevent cigarette butt littering⁵

Based on the extensive research and Trial, the NSW EPA developed a Guide to prevent cigarette butt littering, which provides 13 detailed steps for land managers, local government, businesses, and community groups to prevent cigarette butts from being littered. It is a key document in designing the locally tailored butt litter prevention projects.

The Butt Litter Index Report

In 2020 and 2022, the NSW EPA commissioned Taverner Research to conduct an audit of butt littering behaviour and attitudes in 20 local government areas across the state. The final 2022 report, delivered in March 2023, can be found here: <https://www.epa.nsw.gov.au/-/media/epa/corporate-site/resources/litter/butt-litter-index-2022.pdf>

This latest report, using the same methodology (and wherever possible the same sites) employed in 2022, seeks to track progress in butt littering behaviours and attitudes over the intervening two years. This latest wave of research covered 149 sites – including for the first time 16 sites at Sydney Airport.

⁴ Identifying effective strategies to reduce cigarette butt litter Findings from the NSW EPA-led Cigarette Butt Litter Prevention Trial 2019. <https://www.epa.nsw.gov.au/-/media/epa/corporate-site/resources/litter/19p1840-butt-litter-trial-report.pdf?la=en&hash=D28C9E091A7082F33942BD278C8F8D258637A7C6>

⁵ <https://www.epa.nsw.gov.au/-/media/epa/corporate-site/resources/litter/19p1840-butt-litter-trial-report.pdf?la=en&hash=D28C9E091A7082F33942BD278C8F8D258637A7C6>



3. PROJECT BACKGROUND AND METHODOLOGY

3.3. RESEARCH METHODOLOGY

In 2024, the BLI expanded the number of sites, site types, observations and extended observations times into the evening. This has further enhanced the validity of the ensuing data.

Table 1, below, shows the LGAs selected for 2024, and the numbers of sites per LGA visited during the seven-week research program. Total number of sites in 2024 was 149, against 117 in 2022 (up 27%). Likewise, the number of observations rose 36%, from 3,682 in 2022 to 5,021 in 2024.

Table 1 Smoking areas

Region	LGA	# Sites visited	Streamlined ⁶	Hotspot	Observations ⁷
Sydney & East	City of Sydney	23	3	20	952
	Waverley	8	7	1	269
	Bayside	10	4	6	316
	Randwick	4	0	4	70
Western Sydney	Parramatta	7	1	6	282
	Blacktown	8	5	3	264
	Cumberland	7	1	6	195
	Canterbury-Bankstown	2	0	2	37
Other Sydney	North Sydney	1	1	0	30
	Ku-ring-gai	3	2	1	146
	Northern Beaches	2	0	2	34
	Canada Bay	1	1	0	98
	Inner West	2	1	1	49
Newcastle	Newcastle	12	0	12	456
Wollongong	Wollongong	15	5	10	344
Central Coast	Central Coast	8	2	6	251
Inland	Tamworth	12	4	8	329
	Walgett	0	0	0	0
Coastal	Coffs Harbour	4	1	3	134
	Port Stephens	4	0	4	147
Airport	Sydney Airport	16	12	4	618
TOTAL		149	50	99	5021

⁶ See page 14 for explanation of “streamlined” and “hotspot” smoking locations.

⁷ Includes “carried away” cigarettes – i.e., those for which a binning or littering behaviour could not be determined. These “carried away” observations have been removed from the observation dataset prior to analysis.



3. PROJECT BACKGROUND AND METHODOLOGY

The cigarette butt litter prevention methodology includes seven site types⁸, described in the BLC Guidelines as:

1. **Transport** (an interchange, hub or thoroughfare near a train station, bus stop, bus interchange or car park).
2. **Shops** including retail strips, outdoor malls and outside shopping centres.
3. **Office buildings** including office blocks, landmark buildings, courts, adult education centres and tertiary institutions.
4. **Venues** – outside pubs, clubs, or hotels or other licensed venues, and outdoor eating areas.
5. **Health facilities** including outside hospitals, or medical centres.
6. **Recreational parks**, outdoor markets, and waterways.
7. **Roadside stops** or rest areas

The breakdown of disposals by location type is shown in **Table 2**, below.

With the Australian Litter Measure still showing a high proportion cigarette butts across its survey areas, particularly in industrial areas, this BLI has broadened its scope to investigate this trend. Industrial areas form 2% of observations in this report.

Table 2 Breakdown of disposals by location type 2020 vs. 2022 vs 2024

LOCATION TYPE	2020	2022	2024
Transport	25%	23%	31%
Shops	37%	41%	32%
Office Buildings	22%	23%	17%
Venues	16%	9%	14%
Health Facilities	0%	2%	4%
Recreational Parks ⁹	0%	2%	2%
Industrial	-	-	2%

⁸ Note that the 2020 study focussed mainly on transport, shops offices and venues. As we attempted to replicate as many 2020 sites as possible in this latest research, these four venue types will remain dominant.

⁹ Results for recreational parks and industrial sites should be treated with caution due to small sample sizes of observations



3. PROJECT BACKGROUND AND METHODOLOGY

There was an enhanced focus in 2024 on observations conducted post-5pm. Constituting 10% of all observations (against 1% in 2022) these were predominantly conducted outside pubs, clubs and other entertainment venues (see **Table 3** below).

Table 3 Observations breakdown of time of day by location type 2022 vs. 2024

	Up to 10:59am		11am to 1:59pm		2pm to 4:59pm		5pm onwards	
	2022	2024	2022	2024	2022	2024	2022	2024
Transport	318	1066	225	335	89	147	14	0
Shops	466	541	619	892	189	140	0	21
Office buildings	254	262	328	447	137	121	0	9
Venues	65	106	170	119	46	10	12	445
Health facilities	5	55	56	109	10	15	0	0
Recreational parks	38	12	23	44	0	27	0	0
Industrial	0	27	0	37	0	3	0	31
TOTAL	1146 (37%)	2069 (41%)	1421 (46%)	1983 (40%)	471 (15%)	463 (9%)	26 (1%)	506 (10%)

Researchers were also asked to designate areas as either “streamlined” or “hotspots” These are again defined in the BLC Guidelines as such:

- **Streamlined smoking areas** are places where the expectations of the correct disposal of butts is obvious and clear. Typically, these areas are clean, well prepared for capturing butts, relatively free of butt litter, may have clear signage on where to smoke and dispose of butts and have places for smokers to meet out of the weather.
- **Hotspot smoking areas** are where expectations of correct butt disposal are unclear, butt littering is a problem and there are inadequate butt bin facilities available.

(These terms are referenced throughout the Results section of this report.)

In 2024, 33% of observations were conducted in streamlined sites. This compares with 32% in 2020 and 30% in 2022.

In all, 149 sites were eventually measured – up from 117 in 2022. This encompassed 5,021 observations¹⁰ (against 3,682 in 2022 and 3,484 in 2020). In addition, researchers conducted butt litter counts at a designated 48 m² zone within each of the 149 sites and conducted 442 brief interviews with smokers to understand their perceptions of each smoking area.

¹⁰ This includes 598 observations where the cigarette was carried away from the smoking area.



3. PROJECT BACKGROUND AND METHODOLOGY

In 2024 (as in 2022), Steps 1, 3 and 4 were programmed onto tablet computers. However, data for Step 2 remained captured in paper format. Results from the Step 2 paper forms were manually data-entered into an Excel spreadsheet by trained Taverner staff. This data was audited for quality control purposes.

Once the 598 “carried away” and inadequately recorded observations were removed, the final number of observations analysed was n=4,423 (against n=3,107 in 2022).

The Excel-based results were then converted to SPSS and Q formats for analysis.

Sampling error

Random sampling error for the sample of 4,423 smoker observations is +/- 1.47% at the 95% confidence level. This means that (in effect) results from this study should be representative of the overall target population (i.e., “adult smokers in NSW who smoke and dispose of their cigarette butts in public”) to within +/- 1.47% in 95 of any 100 research studies conducted.

Sampling error will be higher for specific sub-samples – such as by site, site type or smoker demographic.

Caution should hence be taken in extrapolating results to specific sub-segments of the overall target population.

Case studies

In addition to the quantitative research, this year’s report includes five smoker case studies. These smokers were initially interviewed during the main fieldwork phase and asked at the end if they would be interested in taking part in follow-up discussions.

Follow-up interviews were conducted by telephone, lasted 15-20 minutes, and participants were provided with a \$40 gift card to thank them for their time.

Five case studies are included within this report. While the insights are anecdotal, they do provide a different perspective on the issue of butt littering, smoker behaviour and issues surrounding the smoker compact.

Note that the names of smokers have been changed to protect their anonymity.

4. SURVEY RESULTS



This section details survey results for observations, smoking area inspections, smoker interviews, and the links between these different steps. See METHODOLOGY section for details of how the survey was conducted, and APPENDIX 1 for examples of the four different survey forms used.

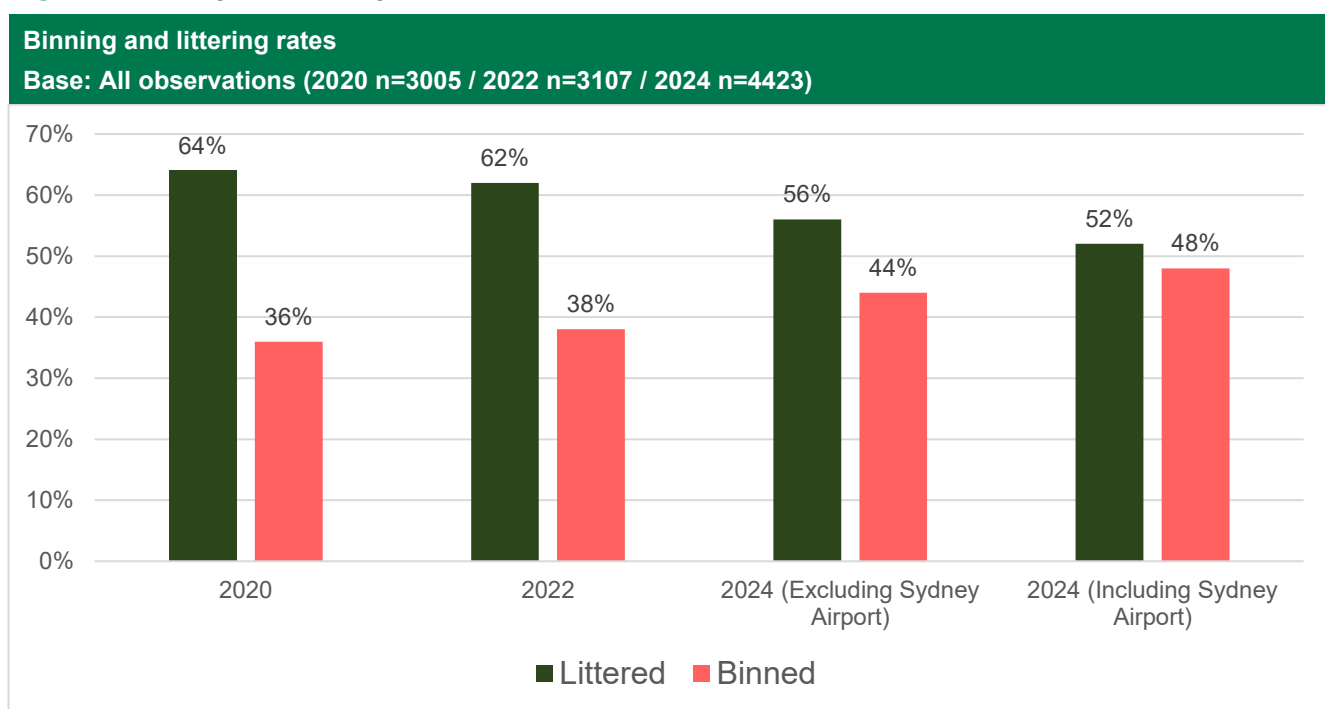
For all observations, researchers noted whether the smoker being observed: (a) binned their cigarette; (b) littered their butt; or (c) carried the butt away from the observation area. **Observations where the cigarette was carried away have been excluded from this analysis**, meaning that the binned and littered rate will always (unless advised otherwise) add to 100%. Hence where only a binned rate is provided, the littered rate will be 100% less this binned rate – and vice versa.

For the first time, this year's survey included 16 sites at Sydney Airport (across all three terminals). Because the littering rate was significantly lower at these sites (compared to historical averages), binning rate results have been reported both including and excluding the airport sites.

4.1. OBSERVED BEHAVIOUR

Excluding instances where smokers carried their cigarette butt away from the smoking area, there were 4,423 observations made in 149 sites across NSW in 2024.

Figure 1 Binning and littering rates



Littering rates fell from 62% in 2022 to 52% in 2024 – a statistically significant difference. **Even excluding the airport sites, the littering rate fell from 64% in 2020 and 62% in 2022 to 56% in 2024 – again a statistically significant decline.**

Key Finding 1:

Cigarette butt littering behaviour has improved since 2020 and 2022, with a significantly higher rate of butt binning observed.



4. SURVEY RESULTS

Table 4 Littering rates by different smoker or site characteristics

Factor	Characteristics	2022 Littering rate	2024 Littering rate	Statistically significant difference between categories (2024)?
Region	Metro	56%	55%	NO
	Regional	69%	58%	
Group size	One	60%	49%	YES
	Two	63%	59%	
	Three or more	74%	61%	
Age (approx.)	Under 25	62%	56%	NO
	25-34	60%	53%	
	35-44	61%	52%	
	45-54	63%	52%	
	55+	66%	51%	
Distance to nearest bin	0.5 metres or less	30%	11%	YES
	1-1.5 metres	36%	48%	
	2-5 metres	59%	53%	
	6-10 metres	74%	66%	
	11-20 metres	81%	74%	
	21+ metres	88%	91%	
Location Type (1)	Hotspot	71%	61%	YES
	Streamlined	42%	39%	
Location Type (2) ¹¹	Transport	75%	49%	YES
	Shops	64%	61%	
	Office block	39%	44%	
	Entertainment venue	71%	48%	
	Health facility	94%	71%	
	Recreational parks	84%	37%	
	Industrial		31%	

(N.B. Figures in red or green, above, show statistically significant improvements or deteriorations in binning behaviour from 2022 to 2024.)

¹¹ Note that health facilities and recreational parks accounted for only 2% each of total observations. These figures should hence be treated with caution.



4. SURVEY RESULTS

The 2024 littering rates have shown improvements across most characteristics since 2022. In particular, the proportion of littering observations in regional areas fell from 69% to 58%, putting it broadly on par with metro areas for the first time.

Littering rates also fell across all age groups. However, in 2024 there were no discernible differences in littering rates between different age groups.

While results improved across most “distances to bin” categories, this (logically) continues to be a key determinant of likelihood to litter.

Group size remained an important determinant of littering likelihood, with rates increasing as group sizes got larger.

As one would expect, streamlined sites enjoyed much lower littering rates than hotspots. However, the much larger proportional fall in hotspot littering rates suggests that smoker binning behaviour is improving *above and beyond* the “social compact” dimension (as this applies mainly to streamlined sites.)

While butt littering behaviour has improved across most venue types, there continue to be major differences in behaviour between them – with health facilities the worst performers¹².

Key Finding 2:

- Littering rates have fallen across most categories.
- Regional areas have shown the largest improvement in binning behaviour.
- Group size continues to be a major contributor to butt litter – i.e. the larger the group, the more likely littering is to occur
- Age no longer appears to be a major determinant of littering behaviour – and improvements have occurred across all age categories.
- The larger proportional fall in hotspot littering rates suggests that it is not only the social compact driving improvements – other factors appear to be at play as well.

¹² Albeit off a very low base of n=4 sites



4. SURVEY RESULTS

Case Study 1: Chris (Neutral Bay and Sydney CBD)

Chris lives in Greenwich and works in Neutral Bay. He smokes in a shopping centre car park off Military Road that he was told “is a designated (smoking) area” although there is no signage and no bins of any type – suggesting it is a hotspot. “But I mean, everybody goes there. So, anybody that you see around the car park area, they all seem to gravitate towards that particular part of it.” He smokes at a nearby under cover car park (with a red-lidded general waste bin) when it’s raining.



Chris doesn’t feel the need to seek out a bin, as he feels smokers are shamed and victimised. “It is still kind of weird to be almost seen like you’re doing something illegal when the government is making so much money out of it.” While he says he’s not opposed to binning his butts, nor does he go out of his way. In the case of his car parks, “(My butt) literally goes on the ground because there’s nowhere for it to go.” (This feeling of alienation is exacerbated by Chris having been recently banned from smoking on his apartment’s balcony.)

Likewise, Chris litters his butts outside a pub he frequents, The Republic (on the corner of Pitt and Bridge Streets in Sydney) – also a hotspot. “You can smoke outside, but it’s technically not at the pub because there are two benches, like pedestrian benches about three or four metres away from the last table. There’s no bins, there’s nothing (so it’s) cigarette butts on the ground.”

He says he has never seen a ranger fine anyone, in either Neutral Bay or Sydney.

Chris does feel some pubs are making an effort to ensure smokers feel more welcome. He singles out the Tea Gardens in Bondi, the Orchard in Chatswood and the Belroy in St Leonards as three pubs he enjoys visiting because they make an effort to keep smokers happy. In particular, they include signage that specifies smoking is allowed, and provide bins. “I’m not expecting any kind of welcome mat ...as long as it’s an official designated area, then that’s all I’m worried about.”

“If I were to be really good about it, I could carry my own jar or wash tray or something, but I don’t, so invariably this goes on the ground.”

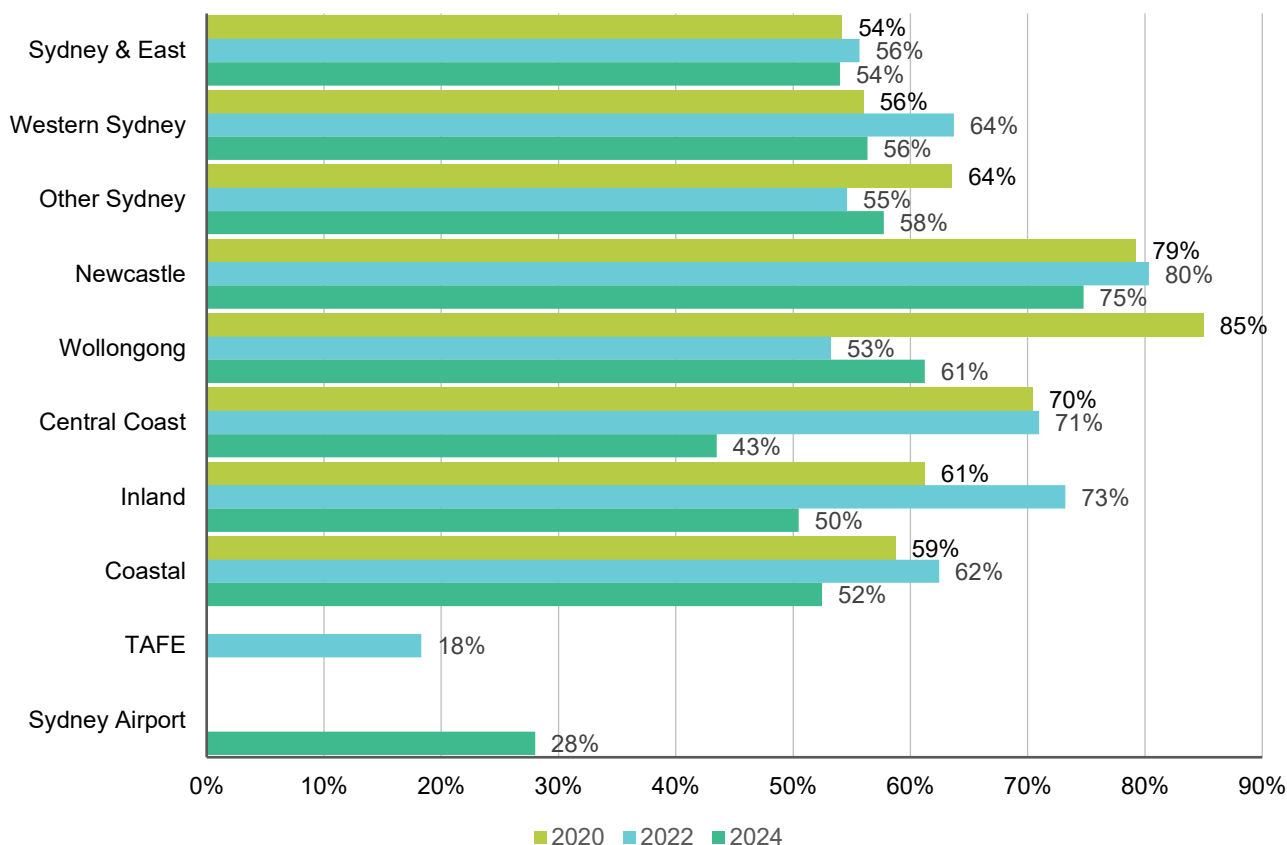
He says he rarely sees butt bins anymore. But he agrees that the presence of butt bins would confirm in his mind that it was within a smoking zone.

Chris says that while he is not opposed to binning his butts, any bins would need to be super-convenient. And he is not prepared to go out of his way to either find a bin, or deliberately smoke near one. “If I were to be really good about it, I could carry my own jar or ashtray or something, but I don’t, so invariably this goes on the ground.”



4. SURVEY RESULTS

Figure 2 Littering rate by region 2020-2024



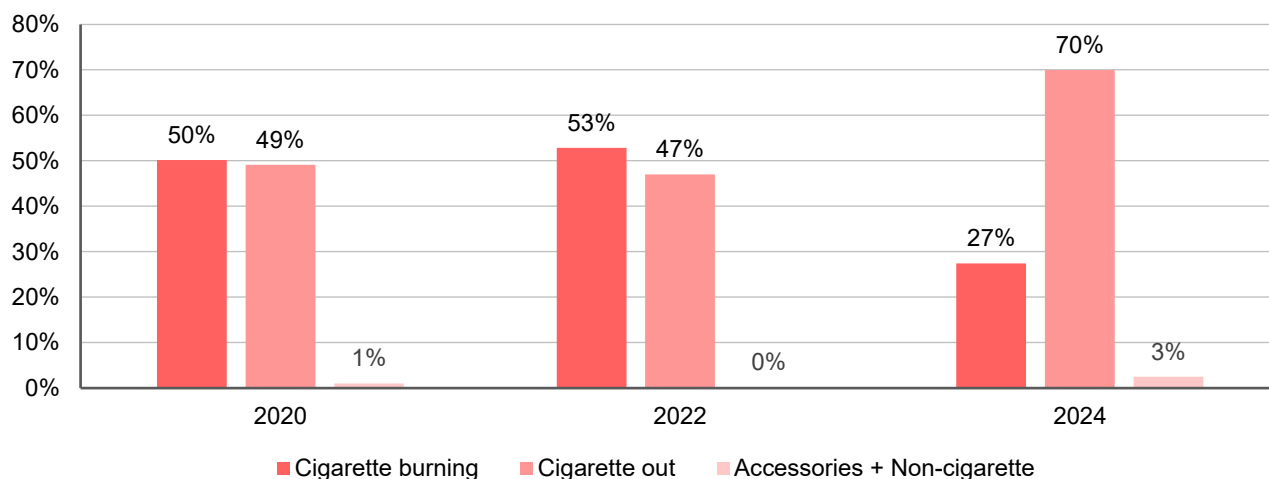
As shown in **Figure 2**, above, the largest falls in littering occurred in regional areas: Central Coast (71% in 2022 to 43% in 2024), inland NSW (73% to 50%) and coastal NSW (62% to 52%). Note that Sydney Airport was added for the first time in 2024, and its 16 sites (across all three terminals) exhibited much lower littering rates than other regions.

“There's not enough butt bins. That's why people just flick them.”



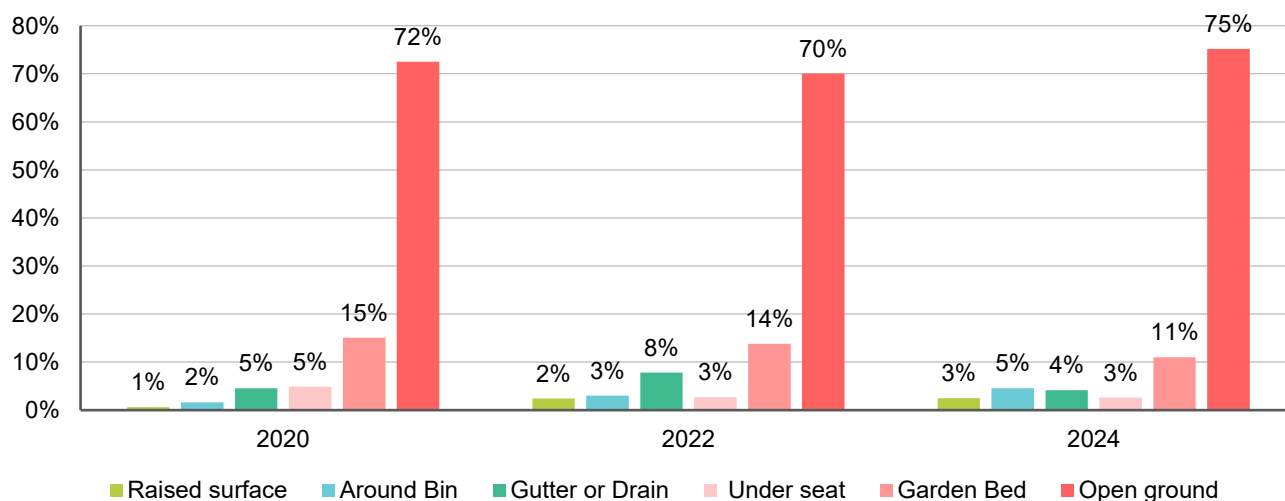
4. SURVEY RESULTS

Figure 3 Item littered 2024



As shown in **Figure 3**, above, the proportion of burning cigarettes littered fell significantly, from 53% of the total in 2022 to just 27%. So whereas in 2022 the proportions of lit to extinguished cigarettes was almost equal, this time 2.5 times as many smokers littered extinguished butts.

Figure 4 Where item was littered 2024



The proportion of items littered into gutters or drains halved (8% to 4%) in this latest survey. This *may* indicate smokers are becoming more sensitive to the environmental damage caused by butts in waterways.

Other littering locations were broadly unchanged on 2022.

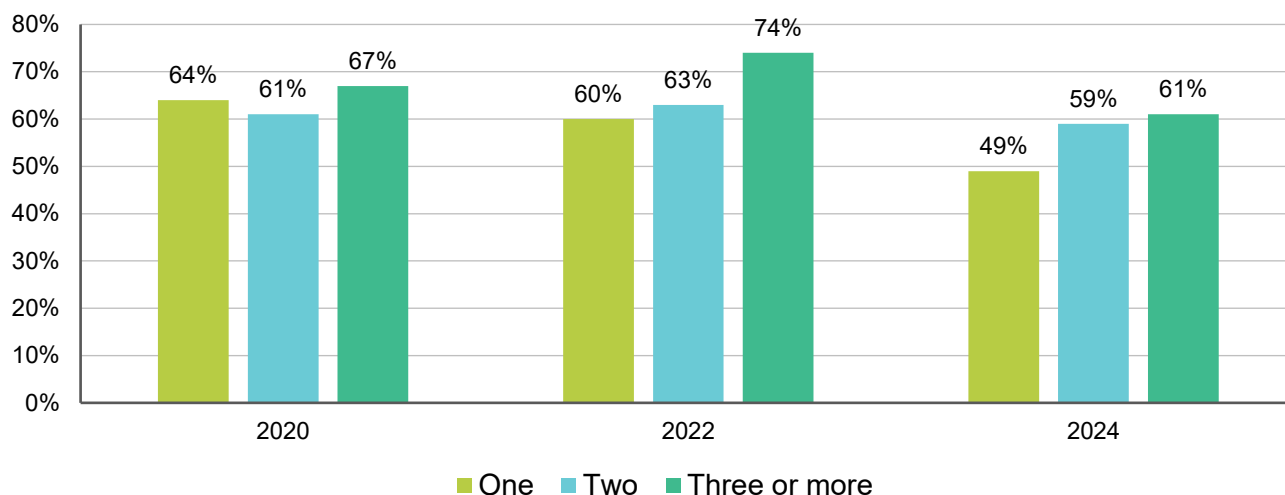


4. SURVEY RESULTS

Figure 5 Littering rates by group size

Littering rates by group size

Base: All observations (2020 n=3005 / 2022 n=3107 / 2024 N=4423=)

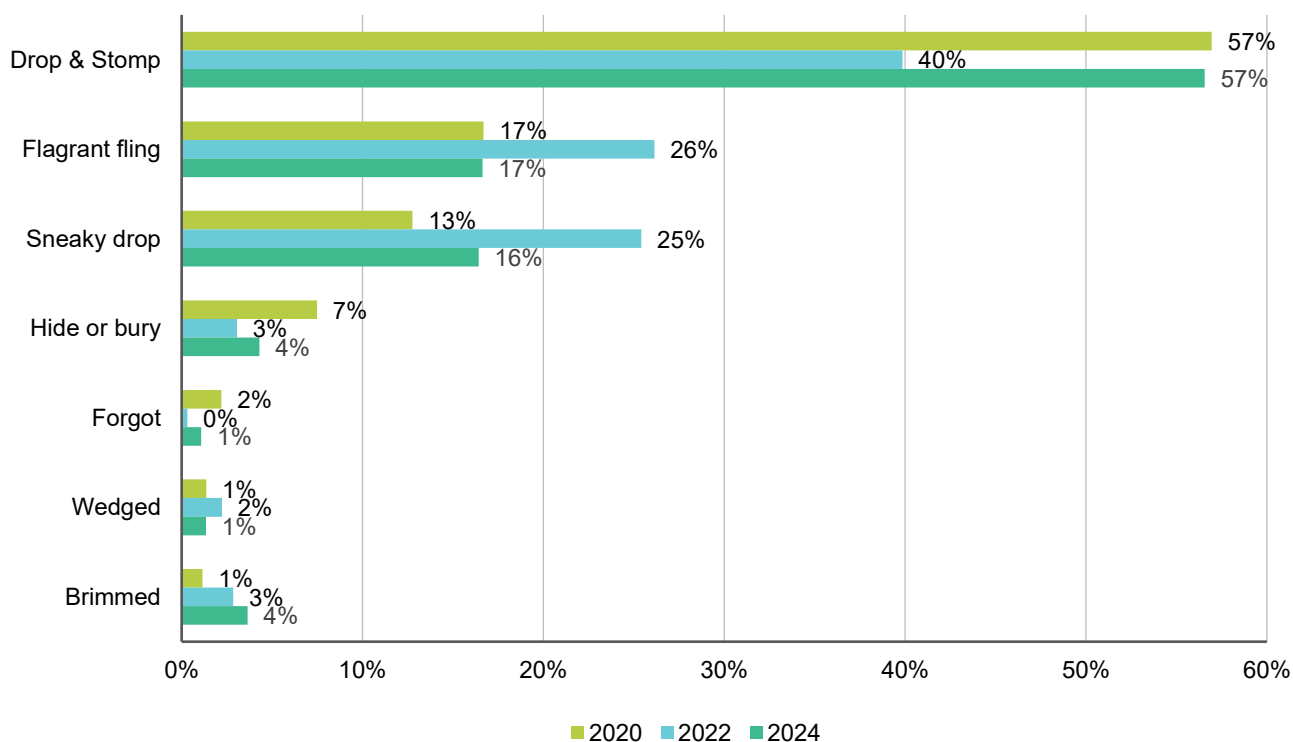


Data for 2024 (and 2022) suggests that smokers in groups are more likely to litter than those smoking alone (**Figure 5**, above).

Figure 6 How item was littered 2020-2024

How item littered

Base: All littering observations (2020 n=1912 / 2022 n=1932/ 2024 N=2302)





4. SURVEY RESULTS

The littering method has exhibited sharp gyrations from survey-to-survey, with methods in 2024 returning to 2020 levels. Drop and stomp remains the main method of littering disposal (57% in 2024), followed by flagrant fling and sneaky drop (17% and 16% respectively).

Table 5 Method of littering disposal 2024, by site type

Method	Transport	Shops	Office block	Venue	Hospital	Recreational parks	Industrial
Brimmed on bin	6%	4%	4%	1%	0%	0%	0%
Drop and stomp	57%	53%	58%	64%	49%	78%	50%
Forgot	0%	2%	2%	0%	0%	11%	0%
Flagrant fling	19%	16%	13%	20%	15%	0%	50%
Hide or bury	2%	6%	7%	2%	2%	6%	0%
Sneaky drop	15%	17%	15%	12%	32%	6%	0%
Wedged	1%	1%	2%	1%	3%	0%	0%

As shown in **Table 5**, above, hospitals (32%) saw significantly more sneaky drops than other areas. (While flagrant flings made up 50% of the littering observations on industrial sites, this is from a small sample size of n=19 and hence results should be treated with extreme caution.)

“There should be more smoker sites designated away from the public. I’ve noticed in some places they have a bench away from a park. It has a (butt) bin in there so everybody knows that’s where smokers are.”

Key Finding 3:

- “Flagrant fling” and “sneaky drop” disposal methods have declined sharply, with “drop and stomp” now representing almost three in five littering disposals.
- Smokers in groups remain more likely to litter than those smoking alone

There’s one in Kiama. It’s a beautiful spot. It’s right out of nowhere, a little seat, and it’s got a butt bin. As long as everyone knows it’s a designated smoking area, everyone can be happy.”

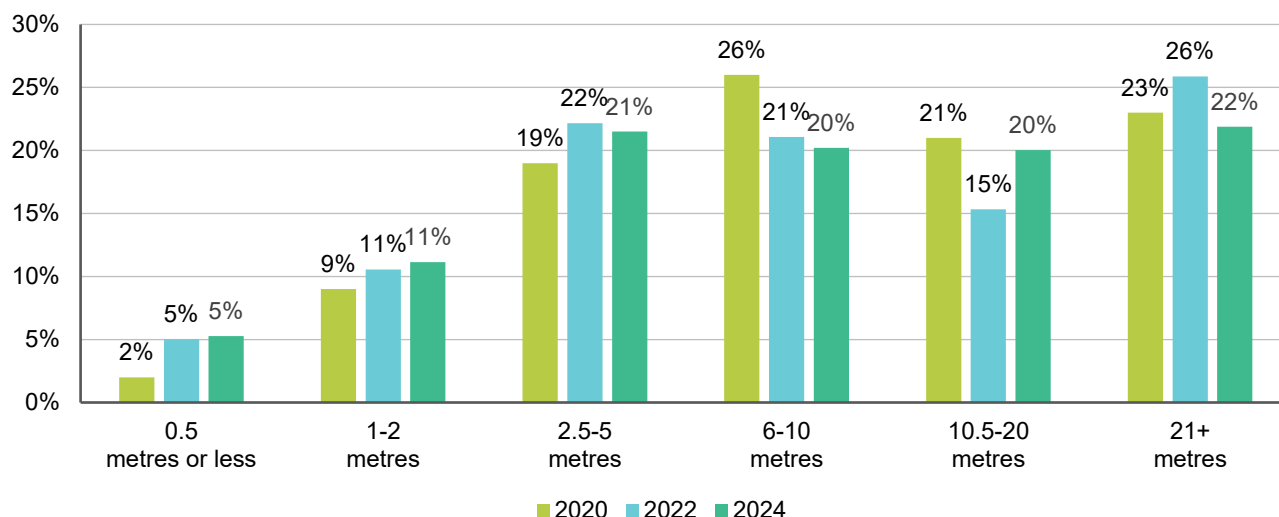


4. SURVEY RESULTS

Figure 7 Distance littered from nearest bin step 2020-2024

Distance from bin

Base: All littering observations (2020 n=1912 / 2022 n=1932/ 2024 N=2317)



As shown in **Figure 7** above, littering behaviour by distance from bin was almost unchanged in the zero to 10m categories for 2024. As in 2022, five metres from a bin seems to be key dividing line - as shown in **Table 6** (below), littering rates increase significantly once the bin is more than five metres away.

Table 6 Disposal act, by distance from nearest bin 2024

Distance from bin	Littered	Binned
0.5 metres or less	11%	89%
1-2 metres	51%	49%
2.5-5 metres	53%	47%
6-10 metres	66%	34%
10.5-20 metres	74%	26%
21+ metres	91%	9%

As shown in **Figure 8**, next page, method of littering disposal was relatively consistent by group size.

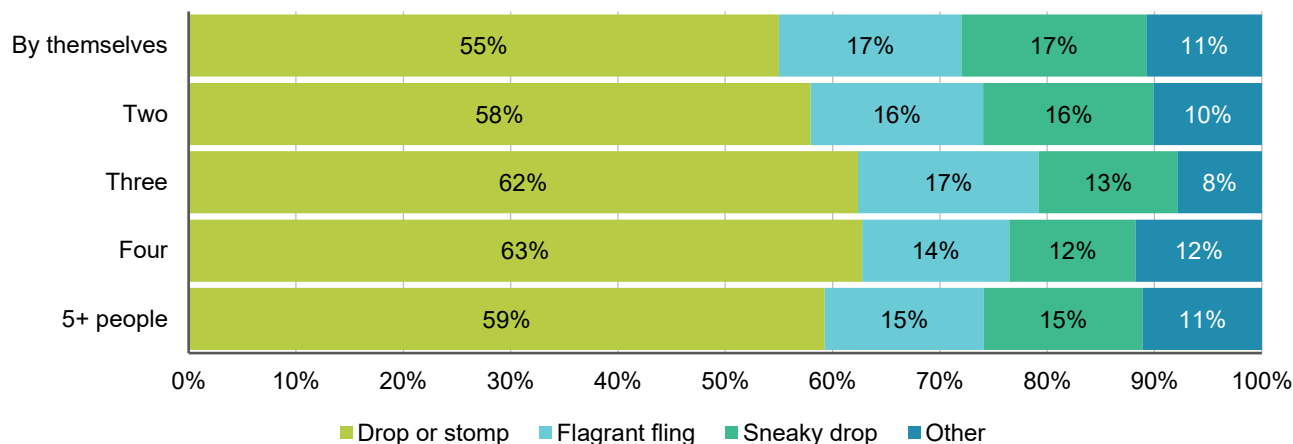


4. SURVEY RESULTS

Figure 8 How item was littered compared to size of group 2024

How item littered by size of group

Base: All littering observations 2024 (n=2300)



Key Finding 4:

- Five metres proximity to smoker appears to be an important dividing line between “intend to bin” and “intend to litter”.
- While group size plays an important and direct role in likelihood to litter (i.e. the larger the group, the more likely to litter) it does not appear to play an important role in *how* cigarettes are littered.

“You don't want it to be an ugly street with that sort of stuff, but I think these bins here should just be used for rubbish and they should have separate, butt bins.”



4. SURVEY RESULTS

Case Study 2: Aaron (Parramatta)

Aaron, 24, is an international student who travels to and from university via Parramatta train station twice a week. He smokes while waiting for a bus, near the bus stop on Fitzwilliam Street outside the station entrance (designated a streamlined site).

There is a butt bin around 10 metres away from the tree where he says most smokers stand. Aaron says there are generally quite a few butts on the footpath, “because I would say every five minutes someone’s smoking there. People normally just smoke there, dump it there, cross the road, if they need to go to the train station or the bus stop nearby so they don’t walk back to that bin, I’d say.”



He feels the littering problem is particularly prevalent around bus stops, as people won’t want to potentially miss a bus by walking to and from the nearest bin. “I just cross the road when I see the bus because I can see my bus directly across the road. If I see it there I’ll just toss it and go.”

Aaron doesn’t buy the argument that people smoking in groups are more likely to litter than those smoking alone. He strongly believes it’s laziness that stops smokers walking to even a nearby bin.

That said, Aaron is a big supporter of butt bins as a means of signifying that an area is smoker-friendly. “I should say it gives the message it’s a smoking zone if there’s a cigarette butt bin there.” (This is partially because he has never seen signage designating a public space is smoker-friendly, and doesn’t expect to.)

On the question of enforcement, he says he has been smoking regularly at this site for more than a year and has never seen a ranger. While there are plenty of police around (as there is a station nearby) he hasn’t seen police approach littering smokers – “I don’t think they’re bothered about the small things.”

He feels it is inevitable people will smoke around transport hubs, and believes authorities should accept this and signpost shady, smoker-friendly spots that are close to bus stops and train entrances. “If they put a smoking zone and bins there, I think it would reduce (butt littering), especially bus stops...where the train stations are nearby, people normally wait for their train or bus, say for 15 minutes. They’ll say, ‘okay, I’ll just light up a cigarette’ (if it’s) only a two minute walk across the road to get to their station or bus.”

“It gives the message it’s a smoking zone if there’s a cigarette butt bin there



4. SURVEY RESULTS

Table 7 Breakdown of littering rates by time of day and location type 2022 vs. 2024

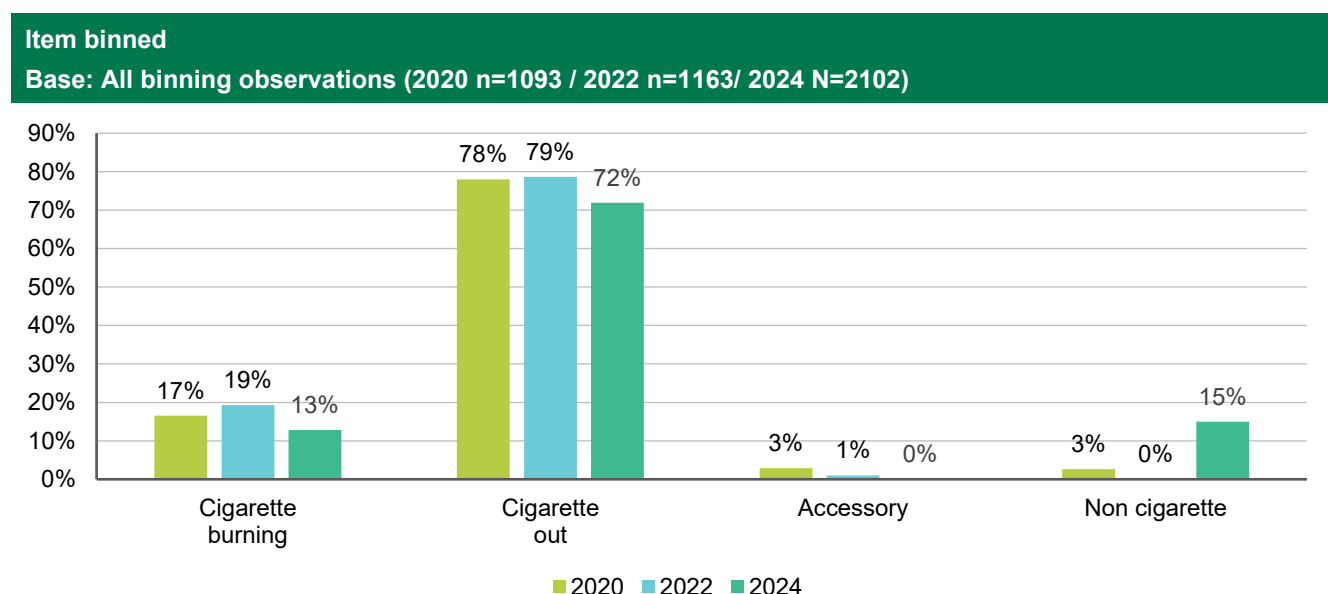
	Up to 10:59am		11am to 1:59pm		2pm to 4:59pm		5pm onwards	
	2022	2024	2022	2024	2022	2024	2022	2024
Transport	67%	47%	83%	51%	80%	61%	93%	
Shops	65%	60%	65%	63%	68%	54%	-	38%
Office buildings	54%	44%	29%	39%	35%	55%	-	100%*
Venues	54%	39%	77%	44%	72%	40%	67%*	52%
Health facilities	100%	71%	93%	72%	100%	69%	-	
Recreational	79%	50%	91%	32%	-	39%*	-	
Industrial	-	12%	-	33%	-	33%	-	56%*

* Caution should be taken due to extremely small sample sizes

Table 7, above, shows that (broadly speaking) littering rates appear to increase later in the day. (For example, at transport hubs littering rates increased from 47% prior to 11am up to 61% from 2-5pm. And outside offices it increased from 44% to 55%.) This is likely to be due to increased butt litter on the ground as the day progresses – in turn reducing the “social compact” to keep an area clean.

As might be expected, littering rates around venues (e.g. pubs and clubs) rises significantly after 5pm. In this case we would anticipate alcohol and/or group behaviour being important factors.

Figure 9 Item binned



As shown in **Figure 9**, above, the pattern of binning behaviour between burning and extinguished cigarettes has changed slightly from survey to survey. The proportion of cigarettes (burning or out) has fallen significantly, with other (i.e. non-cigarette) items jumping from 0% to 15%.

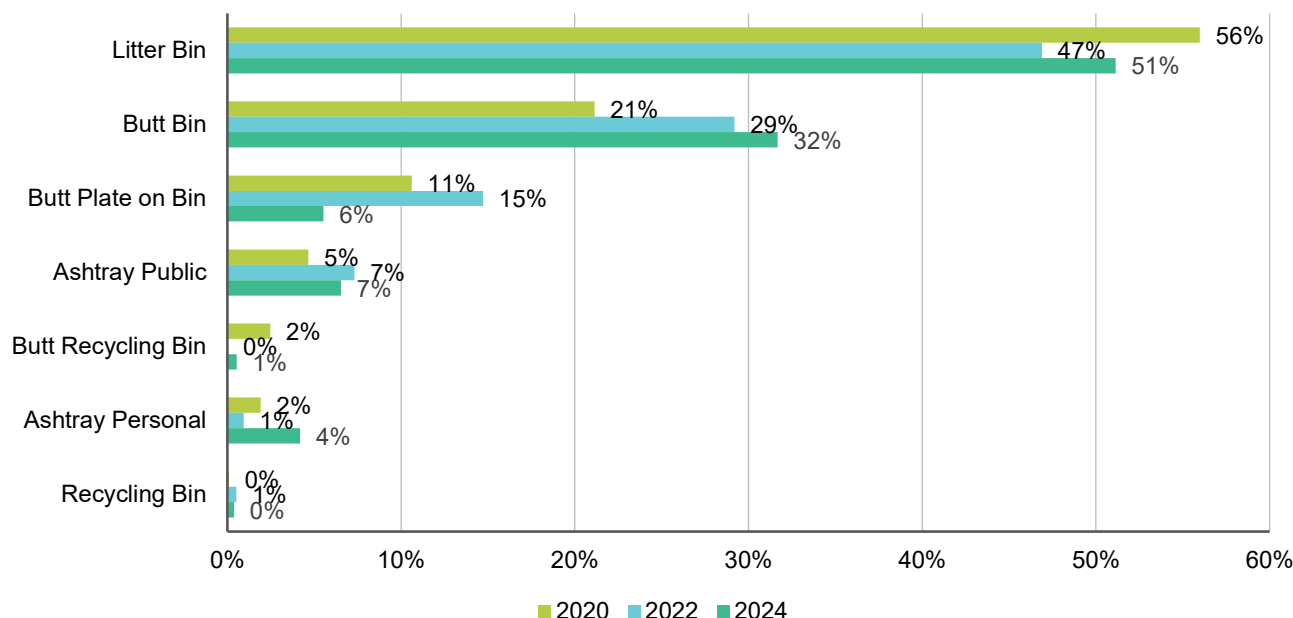


4. SURVEY RESULTS

Figure 10 Where item was binned

Where item was binned

Base: All binning observations (2020 n=1093 / 2022 n=1163/ 2024 N=2077)



As shown in **Figure 10** above, the use of butt bins continues to rise from survey to survey. Butt bins now constitute 32% of bin disposals, against 21% in 2020. This may be due to an increase in access to butt bins – now at 36% of sites (against just 21% in 2020). However, it might also reflect the conscious or unconscious belief that butt bins indicate a smoker-friendly environment – hence triggering the social compact motivation not to litter.

“We pay good money for councils. I think they should provide bins everywhere.”

Key Finding 4:

- Butt bins are becoming more common in smoking sites.
- The presence of butt bins appears to be having a significant and favourable impact on littering rates.



4. SURVEY RESULTS

Case Study 3: Gary (Bondi Junction)

Gary, 49, works at Westfield Bondi Junction and smokes outside in the Oxford Street mall (a hotspot) on his breaks. He has a half hour lunch break and enjoys reading and having lunch in the mall while also having a cigarette or two.

He finds the distinction between smoking and non-smoking areas irritating and poorly devised. In particular, he hates the fact that the designated smoking area has no shade. This means that during the heat of summer or when it's raining, he needs to find an (illegal) undercover smoking area, making him feel a "criminal".



Gary also feels that bins should always be in clear line of sight, to give smokers less excuse to litter.

And butt bins, while welcome, should be cleaned more often – especially as (he claims) they are often filled with non-butt litter. "Half the time you can't put a cigarette out because there's paper, plastic, and rubbish shoved in the ashtrays."

While he generally smokes alone, Gary definitely believes that smokers in groups are far more likely to litter. But rather than being an act of defiance or rebellion, he says this is merely because smokers don't want to interrupt their conversations or looking at their phone to find or even walk over to a bin. "The focus of the person's mind is on the conversation, not what they're doing with the cigarette. "

That said, he admits that he often litters his butts – which he blames on laziness or convenience. This is despite being very aware of the environmental damage caused by littered butts. "Unfortunately, they go through the sewers, wash out the sea, then become pollutants in the ocean and the waterways and the rivers."

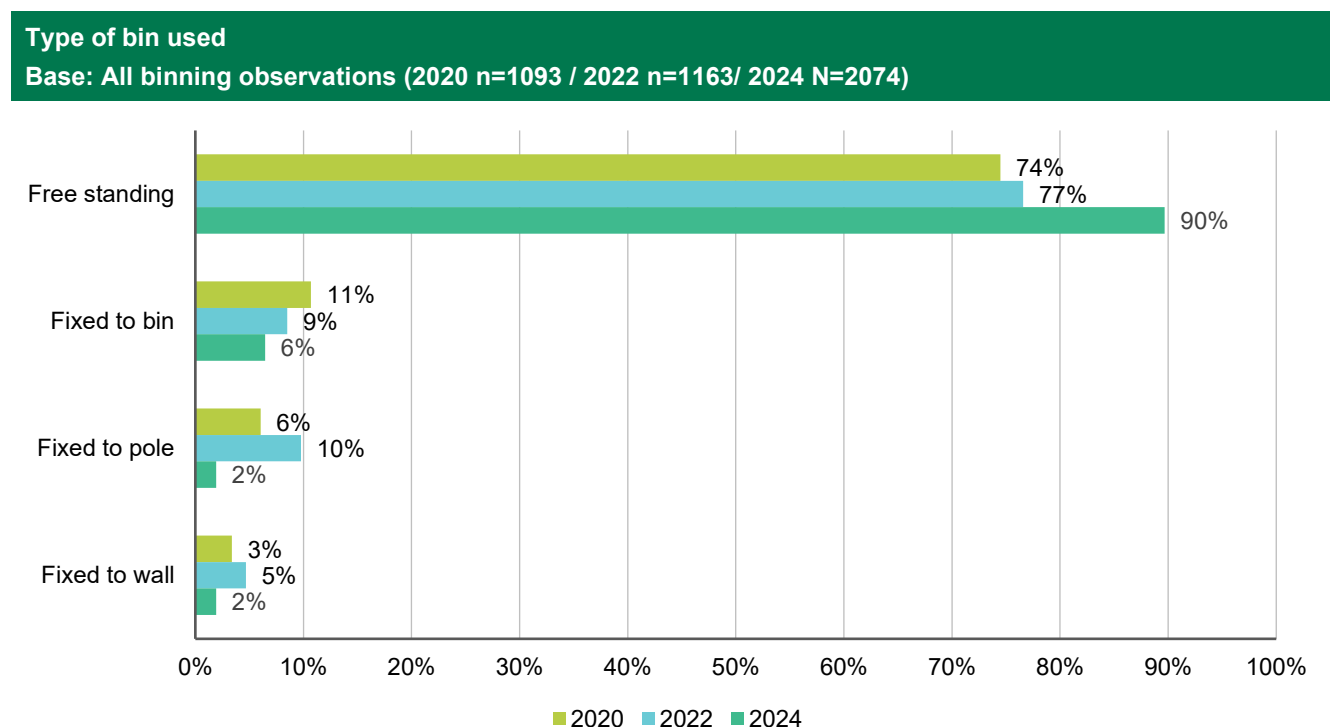
Gary believes better signage, more strategically placed disposal bins, and clearer designated smoking areas could help reduce littering in the area. In particular he finds some signage confusing, and not aligned with bin placement. "There's signage somewhere within 15 metres of the bollard saying this is non-smoking area. So you are guessing that on the left hand side, which is a footpath, it's smoking, but on the right hand side of that sign it's not smoking. But then the rubbish bin is 15 metres in on the non-smoking side.... most of the (butt) bins on the mall are in the non-smoking area, and yet that's where the butt bins are."

"The focus of the person's mind is on the conversation, not what they're doing with the cigarette. "



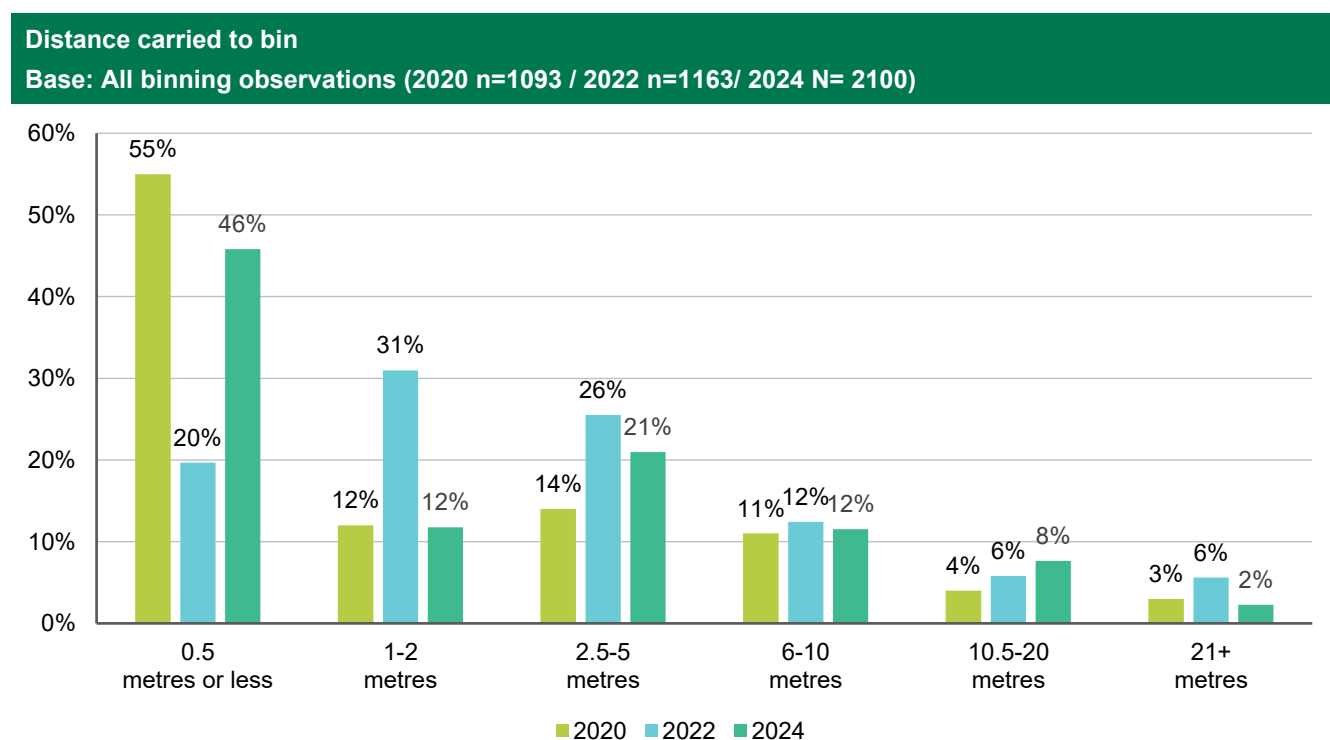
4. SURVEY RESULTS

Figure 11 Type of bin used



The proportion of free-standing bins continues to increase, perhaps suggesting a move by Councils away from attached butt bins to freestanding versions.

Figure 12 Distance carried to bin





4. SURVEY RESULTS

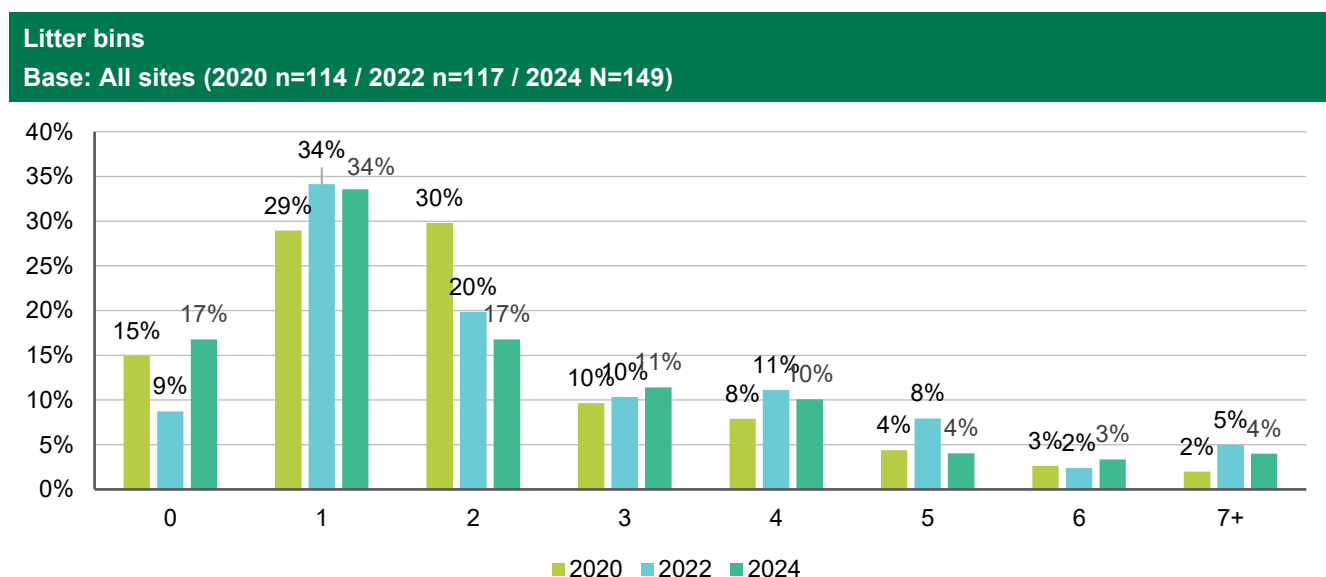
The highest proportion of disposals (46%) came from within 0.5 metres (see **Figure 12**, above). This likely suggests that smokers are positioning themselves near bins.

4.2. SMOKING AREA INSPECTION SCORES

The Area Inspection (AI) rates the features of the smoking area to provide insights into the context for encouraging smokers to use bins. This includes specific attributes, and features that relate to known influences of littering behaviour, including presence of bins, site cleanliness amongst other factors. A location is scored against 20 statements that provide a total AI score out of 100 for those positively scored attributes in the area.

Comparing observed disposal behaviour (section 4.1 above) against the AI scores gives insight into which contextual factors may influence binning behaviour.

Figure 13 Number of litter bins



The number of sites without any bins rose significantly in 2024, from 9 to 17%. This coincided with a decline in the proportion of sites with two bins (20% to 17%).

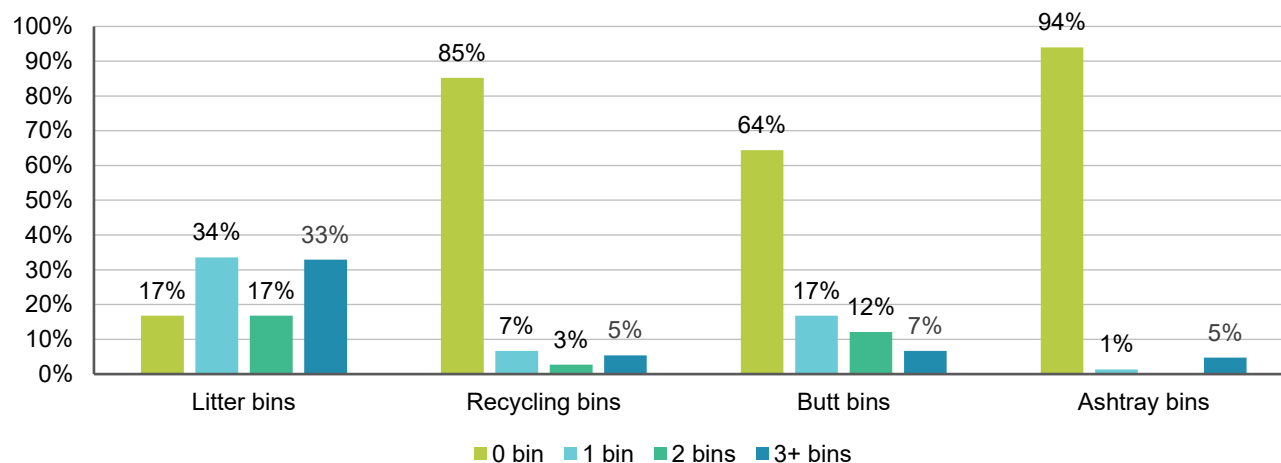


4. SURVEY RESULTS

Figure 14 Frequency of bins, by bin type

Frequency of bins, by bin type

Base: All sites 2024 (n=149)



Butt bins grew from being present in 21% of sites in 2020 to 34% of sites in 2022 and 36% of sites in 2024. As previously noted, littering rates were significantly lower at sites with butt bins.

Of the 149 sites, 18% were described by researchers as “very busy” (against 15% in 2022), with 56% moderately busy (vs. 55%) and 26% classed as quiet (vs. 30%).

Ninety five percent (95%) of sites contained litter (“some” 85% and “lots” 10%) against 91% in 2022. This was broadly consistent between hotspots and streamlined sites.

The Smoking Area Inspection included a 20-question “True/False” scoring system for cleanliness (0-2 inclusive), butt bins and infrastructure (0-6), information (0-4), surveillance (0-4) and involvement (0-4). In each case, the higher the score (i.e., the more statements marked as “True”), the more favourable.

Figures 14-18 on next pages show how binning/littering rates vary under each measure, while Figure 19 shows how littering rates relate to the total score.

“There needs to be designated bins for cigarette butts. I mean, it's simple. There's people who smoke. I'm here right now, I'm looking 300 metres down that way, 300 metres down that way. I don't see a bin in sight, which is ridiculous.”



4. SURVEY RESULTS

Case Study 4: Rebecca (Newcastle)

Rebecca, 39, lives and works in Newcastle. She works on the corner of Hunter and Darby Steets, close to the local Courthouse. She says that whole the area is technically non-smoking, there are some undercover awnings near the courthouse where people smoke, and also under umbrellas outside the nearby Subway food outlet (both hotspots). She says Subway used to have an ashtray outside the store entrance but removed it some months ago – presumably to deter smokers like her. “So unfortunately, we have to chuck our butts into the gutter.”



Rebecca dislikes smoking near the courthouse, saying she is constantly being hassled by people coming out and asking her for a cigarette. “So yeah, I wouldn't say it's a good place to smoke, it's just convenient because it's just outside the office.”

One thing she does like about the site is it's generally clean, because the courthouse cleaner sweeps the area regularly. But nearby garden beds are a problem, as they also act as a “magnet”

for discarded butts. She says she's uncomfortable littering but justifies it by saying that “we've been left with no choice because someone took (our) bin away and that's what I used to use.”

There is a bin, with butt bin attached, across the road from her office. But she doesn't use it because “I don't want to wait on traffic to go have a dart”. Rebecca says she rarely sees butt bins in and around Newcastle, and hence doesn't make any connection between them and smoking-friendly sites.

Rebecca says she has never seen a ranger in the CBD, nor been hassled for smoking by court officials.

Rebecca would love to see more signage to denote smoking areas, and ashtrays or butt bins within close proximity. Believing smokers (including herself) are basically lazy, she believes multiple and conveniently placed butt bins are the only solution to littering. However, she does acknowledge that increased visibility of, and enforcement of rangers would also make a difference to smoker behaviour.

*“Unfortunately,
we have to
chuck our butts
into the gutter.”*

“I'm not proud of having to dump my smokes in the gutter”, she says. “I don't want to. At home I've got a coffee jar full of water that I use to put my ciggy butts in and then when it's full I just empty this into a shopping bag and chuck it in the bin.” This highlights the double-standards of smokers (or people more generally?) in their littering behaviour between public and private spaces.



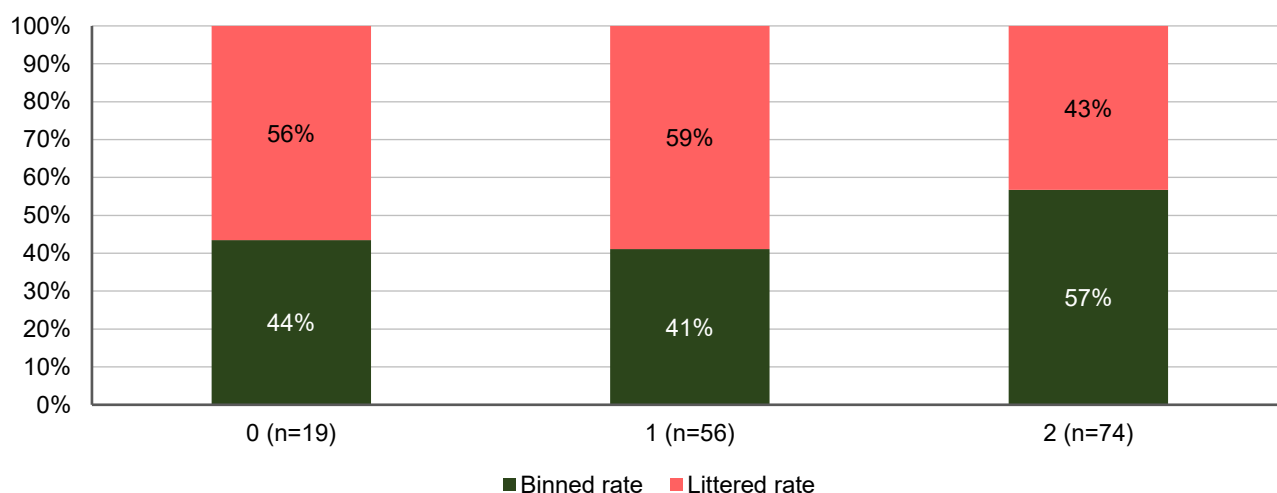
4. SURVEY RESULTS

As shown in **Figure 15**, below, the clean score appears to have a significant impact on binning rates. Though not unexpected, it does suggest (for the first time in this series) that cleanliness is having either a conscious or subminimal impact on smokers' binning behaviour.

Figure 15 Binning/littering by 'clean' score

Binning and littering rates by clean score

Base: All sites 2024 (n=149)

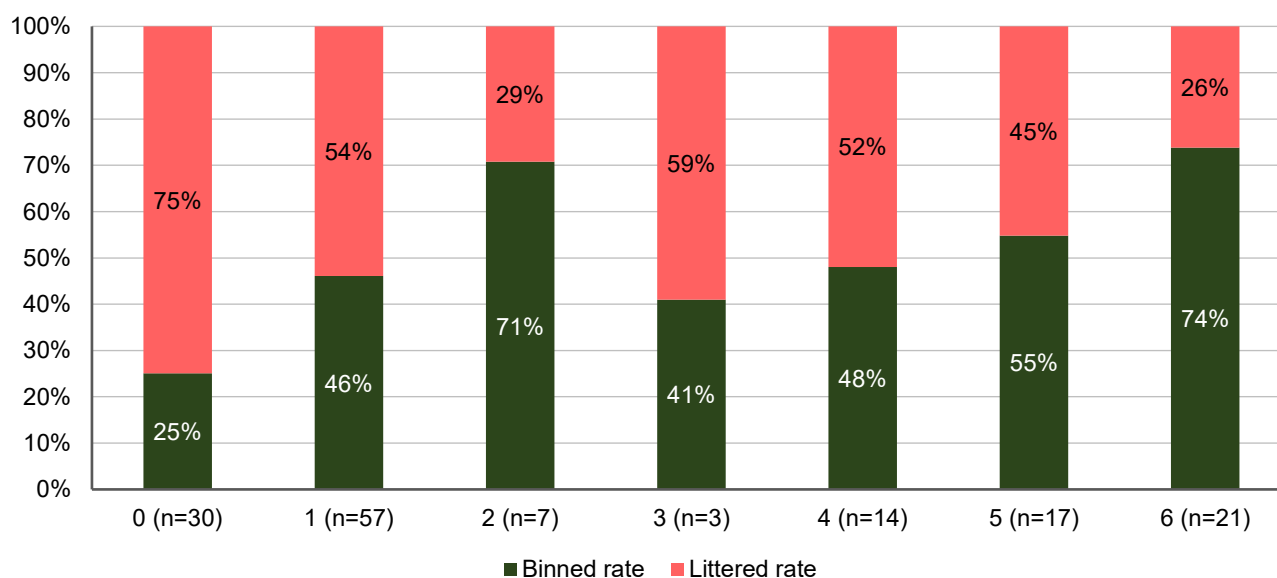


Likewise, there is a large (and statistically significant) difference in binning rates based on butt bin and infrastructure scores (see **Figure 16** below). This suggests (as in 2022) that butt bins and related infrastructure are key influences in smoker behaviour.

Figure 16 Binning/littering by 'butt bins and infrastructure' score

Binning and littering rates by butt bins and infrastructure score

Base: All sites 2024 (n=149)



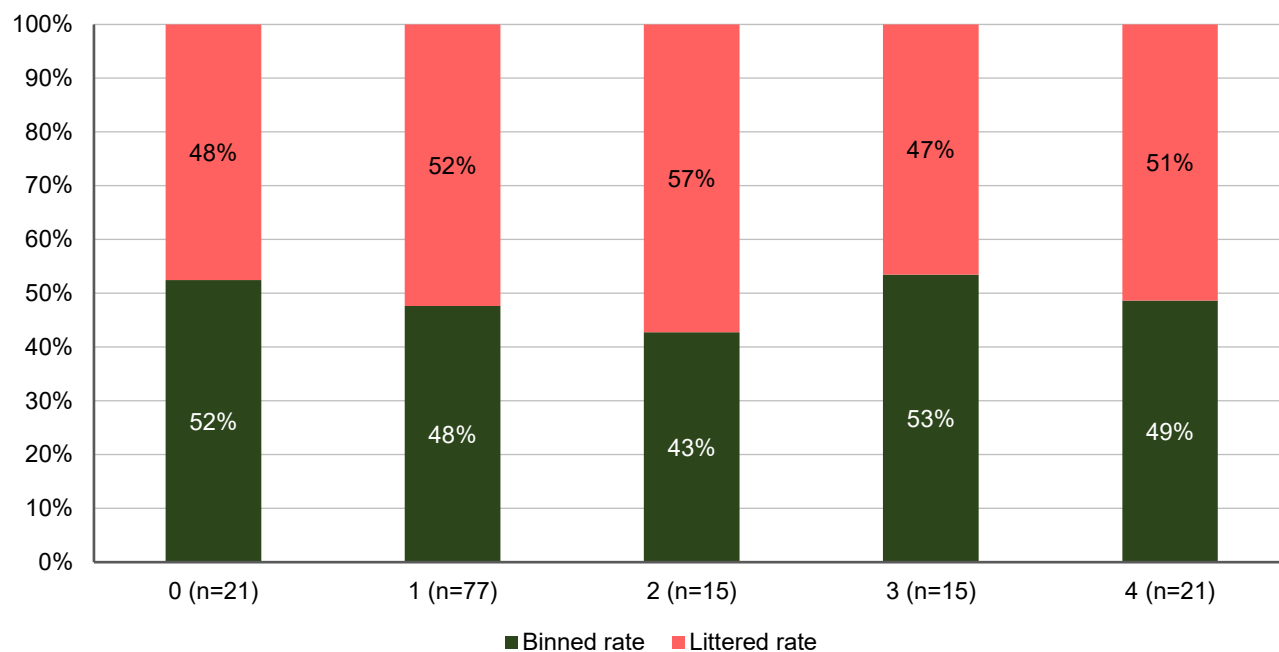


4. SURVEY RESULTS

Figure 17 Binning/littering by 'information' score

Binning and littering rates by information score

Base: All sites 2024 (n=149)

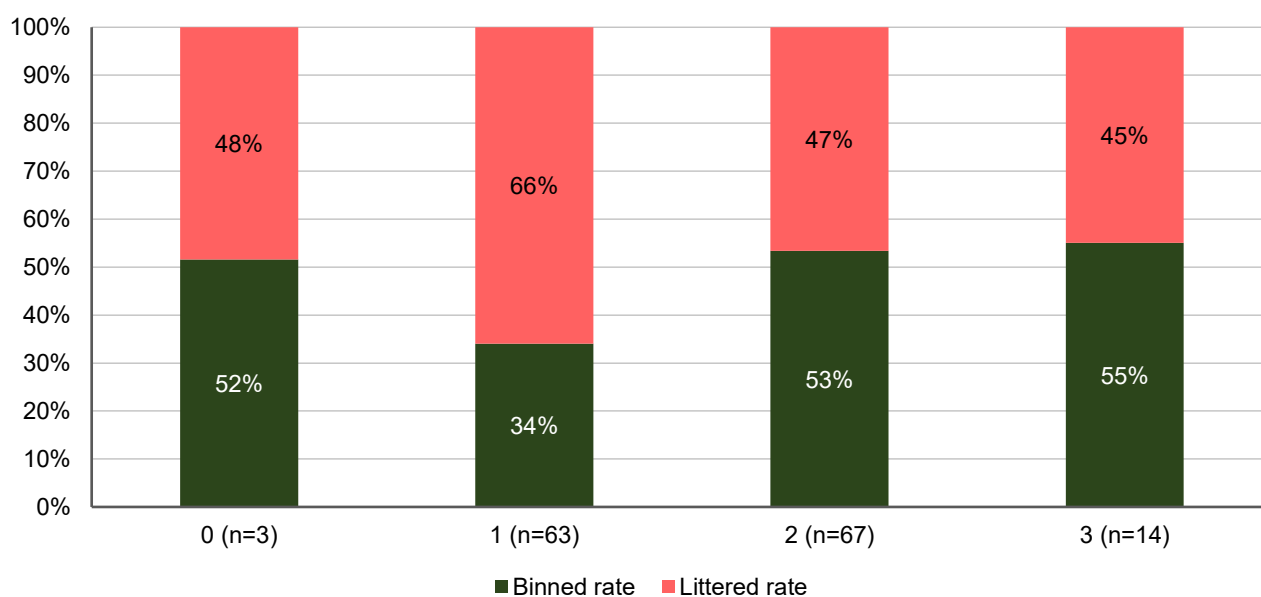


Similar to previous years, there was no increase in binned rate as information (**Figure 17** above) or surveillance (**Figure 18** below) scores increased.

Figure 18 Binning/littering by 'surveillance' score

Binning and littering rates by surveillance score

Base: All sites 2024 (n=149)



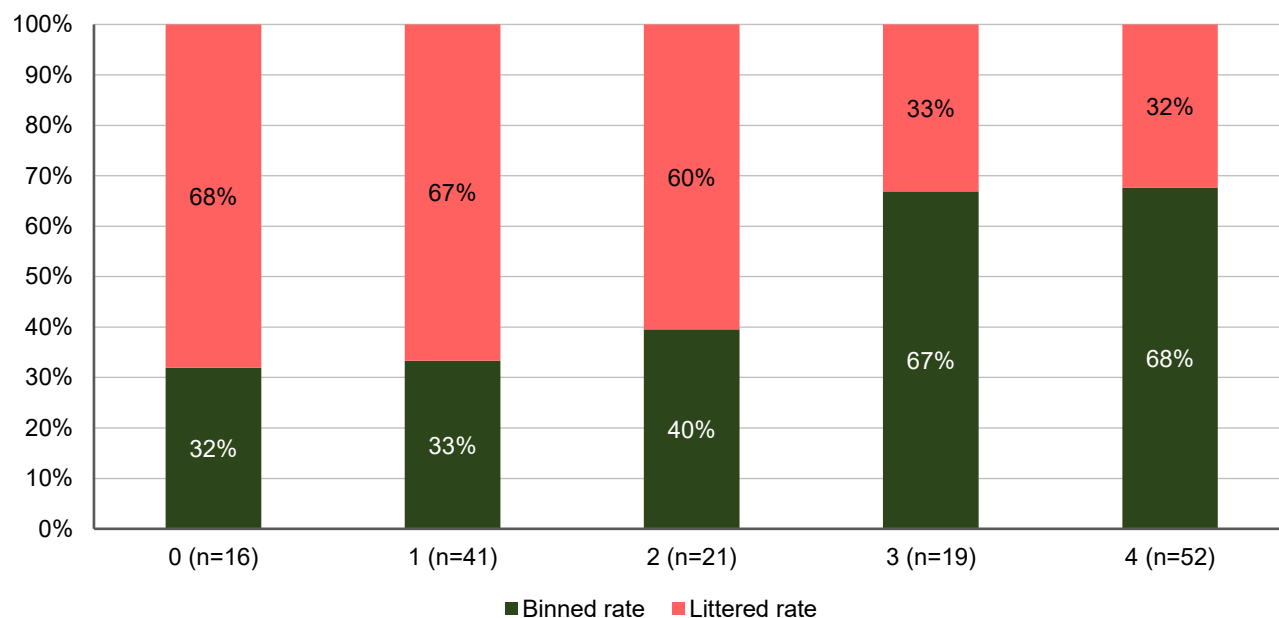


4. SURVEY RESULTS

Figure 19 Binning/littering by 'involvement' score

Binning and littering rates by involvement score

Base: All sites 2024 (n=149)

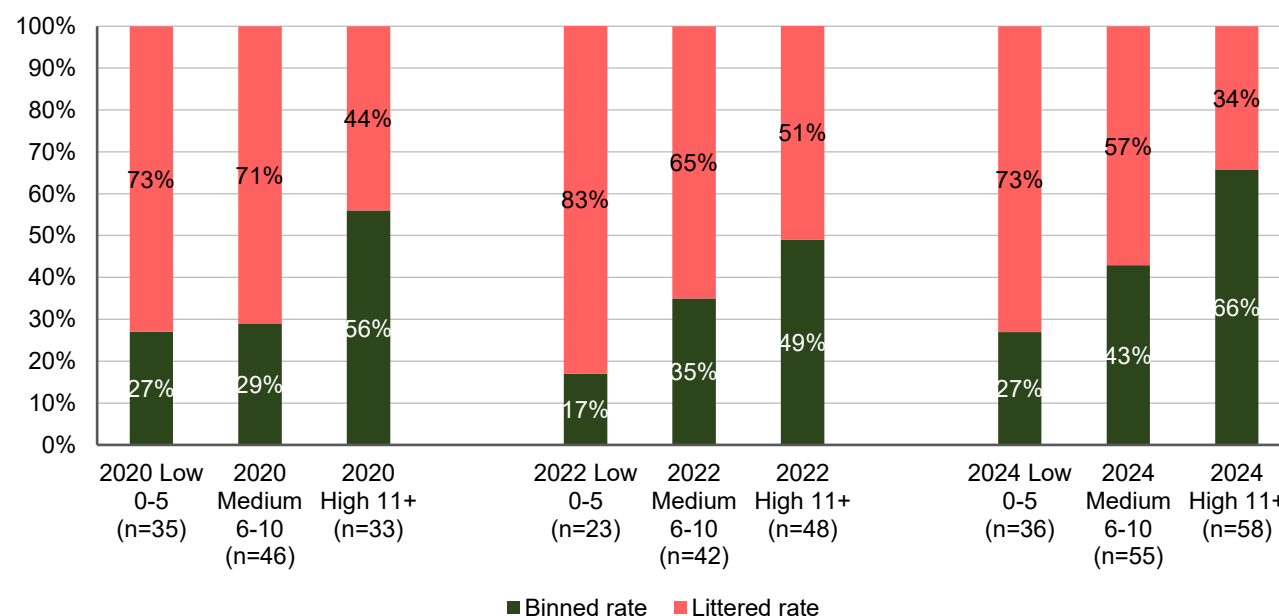


As shown in **Figure 19** above, and replicating findings from 2020 and 2022, a tipping point occurred where three conditions were met (binning rate of 67%, double the rate of zero or one.)

Figure 20 Binning/littering rate by total score

Binning and littering rates by total score

Base: All sites (2020 n=114 / 2022 n=117/ 2024 N=149)





4. SURVEY RESULTS

As shown in **Figure 20**, previous page, binning rates rise significantly as total scores increase. This finding is consistent across all three surveys, and backs up assumptions around cleaner, better signposted and more “welcoming” sites increasing the likelihood to bin rather than litter.

Table 8 Area Inspection scores by region, site type and streamlined/hotspot

Factor	Characteristics	AI score 2024	AI score 2022	Change in AI score (%)	Binning rate 2024	Binning rate 2022
Region	Sydney & East	48.0	52.8	-9%	46%	47%
	Western Sydney	47.7	49.6	-4%	44%	29%
	Other Sydney	50.6	48.9	3%	42%	20%
	Central Coast	48.1	66.1	-27%	57%	38%
	Newcastle	26.7	32.7	-18%	25%	46%
	Wollongong	43.7	41.8	4%	39%	27%
	Coastal	31.9	49.4	-35%	48%	44%
	Inland	41.7	40.4	3%	50%	36%
	Sydney Airport	61.9	N/A	N/A	72%	N/A
Area	Streamlined	61.6	69.0	-11%	64%	58%
	Hotspot	38.5	39.5	-3%	48%	29%
Site Type	Transport	46.4	46.5	0%	51%	25%
	Shops	43.7	45.6	-4%	39%	36%
	Office Block	52.8	61.0	-13%	56%	61%
	Venue	42.6	49.4	-14%	52%	29%
Total AI score		46.1	48.7	-5%	54%	38%

Table 8 above, provides an interesting perspective on the relationship between AI scores and binning rates. Because while AI scores mainly fell from survey to survey across both regions and site types, binning rates **increased significantly** in most regions (exceptions being Newcastle and at office blocks).

This suggests that other factors than cleanliness, signage, bins etc are at play in changing smoker behaviours.

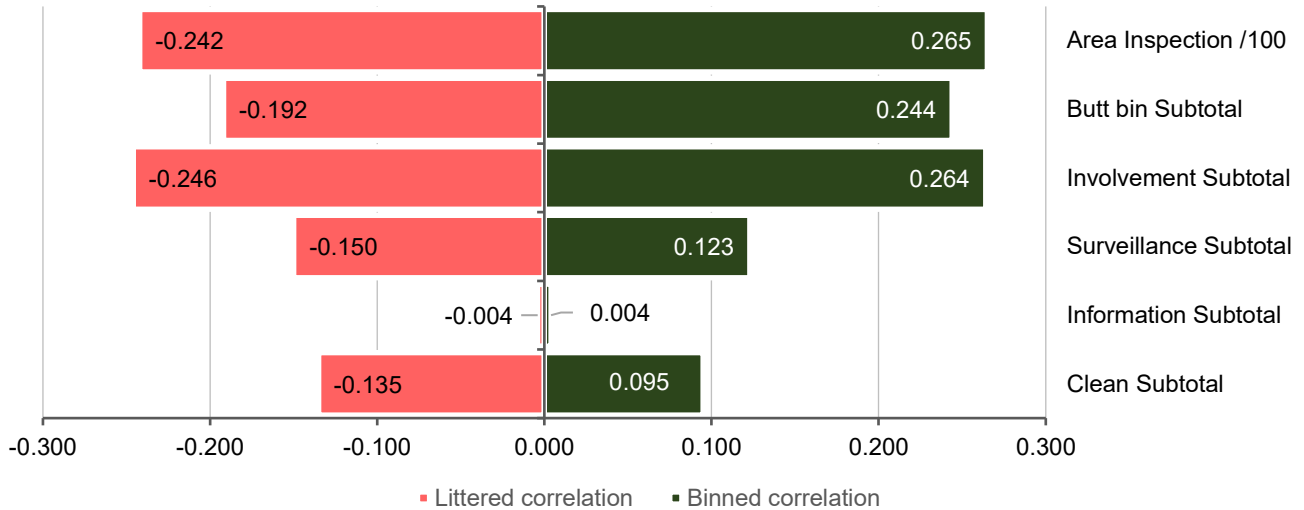


4. SURVEY RESULTS

Figure 21 Strength of relationship between different factors and binning/littering rate

Strength of relationship for different factors

Base: All sites 2024 (n=149)



As per 2020 and 2022 findings, **Figure 21** (above) indicates that there was a relatively high correlation between the AI scores for (a) butt bins and (b) involvement, and subsequent binning rates. This reinforces the 2020 finding that these factors are critical for encouraging increased binning rates.

More generally, and as one would expect, there is a reasonably high degree of correlation between total AI scores and binning rates.

Key Finding 5:

As in 2022, Area Inspection scores suggest that:

- Smokers are more likely to bin their cigarettes in areas with convenient litter or butt bins, and where they feel a greater sense of involvement and/or ownership
- Signage, surveillance, and fear of fines appear to play lesser roles in lowering littering rates
- Perceived cleanliness does not rate highly as a differentiating factor in creating lower littering rates
- Binning rates rise significantly as total Area Inspection scores increase



4. SURVEY RESULTS

Table 9 Statement correlations to AI 2024

Statement	Correlation to AI
Butts cannot escape from butt bins	0.668
Smokers seem to look after this area	0.666
Butt bins are easy to use	0.647
Butt bins can be easily seen in the area	0.640
The area is a good example of smokers doing the right thing	0.622
There are enough butt bins in the area	0.615
Butt bins are clean (free of dirt, graffiti, damage)	0.591
Butt litter seems to be under control	0.590
I am satisfied with how clean this area is today	0.589
This area looks cared for (e.g. seats, garden, paths)	0.552
Most butt litter seems to be new	0.548
Signs tell smokers what to do with butts	0.494
Signs are easy to understand	0.447
Litter is from smokers ignoring signs	0.417
Finding graffiti or damage to things in the area requires considerable effort	0.220
Cleaning up the butt litter would be easy to do	0.198
Smokers are aware of potential fines for littering	0.170
Rangers seen patrolling in this area	0.094
Butt litter and the problems it causes are easily seen	0.051
Smokers littering butts will be easily seen	0.046

As shown in **Table 9** above, three of the top four correlations (and six of the top eight) were positive statements about butt bins. “Smokers seem to look after this area” was the second most highly correlated statement, suggesting again its importance in influencing smoker behaviour.

Collectively, as in 2022, this indicates that butt bins are having a powerful impact on smokers’ perceptions of sites, and hence their willingness to bin their butts.

Key Finding 6:

The presence of butt bins continues to have a major impact on perceptions that a site is “smoker-friendly”. This, combined with the associated sense of “ownership”, seems to have the greatest positive impact on a smoker’s tendency to bin their butts.



4. SURVEY RESULTS

Case Study 5 – Abril

Abril, 25, is a Spanish citizen currently on a two-year working holiday in Sydney. A ‘social smoker’, she has been shocked both by how few people smoke here, and how much *less* likely smokers are to litter their butts than in her home city of Barcelona. “In Spain it’s a very social and cultural thing (to smoke) – and cheaper too.”



While she likes the fact that fewer people smoke in Australia, she does find it frustrating that she can’t smoke while having a drink (like she did at home). “Sometimes if I’m inside the bar because there’s no terrace or anything and I have to go outside to smoke, but I cannot even drink my drink, for example, when you smoke drinking, you really like having a drink. That’s really something unattractive for me. And I always try to find bars where you can do that, smoke and drink at the same time.”

She takes smoking breaks outside her work, on the corner of George and King Streets in the Sydney CBD. Although there is a general waste bin nearby (see picture), Abril says she normally litters on the ground. “I’m used to (doing that), I’m from Spain – we don’t have butt bins (there)”.

Abril agrees that butts shouldn’t be thrown on the ground, and says she actually avoids pubs and other venues that have too many butts littered outside because they look “sketchy”. But she also believes there aren’t enough butt bins in the CBD. “Basically, here in the city there’s not a lot of butt bins and bins at all, so it’s very difficult sometimes to throw it out somewhere that’s not the floor.”

She feels that smokers in groups are more likely to litter than those smoking on their own. “Maybe when you’re in a group you feel more comfortable to do these kinds of actions that they are not morally correct because they feel that they have the support (of their fellow smokers).”

Abril is trying to give up cigarettes, because fewer people smoke here (and due to the expense). “It’s time for me to quit and easier here because nobody smokes as much as in Spain, it’s not a social thing. In most bars you cannot smoke, so it’s easier to smoke less.”

In terms of what could be done to minimise litter, she points to an initiative at home whereby the Council supplies small plastic cones positioned at local beaches. Smokers are encouraged to take an empty one when they enter the beach, half bury them in the sand, and return them to the rack when they leave.





4. SURVEY RESULTS

4.3. BUTT LITTER COUNTS

Researchers counted the number of cigarette butts within a 48 m² zone of each smoking area¹³. The results, with outliers removed, are shown below:

Table 10 Butt litter count

	2020 count	2022 count	2024 count
Mean number of butts	42.11	54.48	45.39
5% Trimmed Mean	35.66	42.84	34.93
Median	25	29	23
Mode (most popular frequency)	25	14	7
Std. Deviation	50.08	74.46	66.78
Minimum	0	0	0
Maximum	326	500	456
Range	326	500	456

The trimmed mean number of cigarette butts decreased by eight butts between 2022 and 2024, and the median (a more reliable measure in this instance¹⁴) decreased by six. Although there were fewer butts per streamlined spot than at hotspots (with average counts of 41.5 against 52.1 respectively), the difference is not statistically significant.

“I have been homeless and literally lived on the street... And when you're homeless, you've got no money and you're fully addicted to smokes, you come and pick up the butts in the morning, especially from bus stops because people throw away ones with bits of tobacco in and you get a bit of tobacco. They make one cigarette that you roll yourself.”

¹³ The Butt Litter Check Guidelines stipulate that “The 48-square metre butt litter count space should not be the most or least littered part of the smoking area. Ideally the amount of butt litter in the count space should be about the same as the rest of the area. If the area has seats, tables, litter bins and butt bins then try to include them in the count space.” It needs to be noted that figures will be largely dependent on-site cleaning schedules.

¹⁴ Due to one site with +/- 456 butts heavily impacting the average.

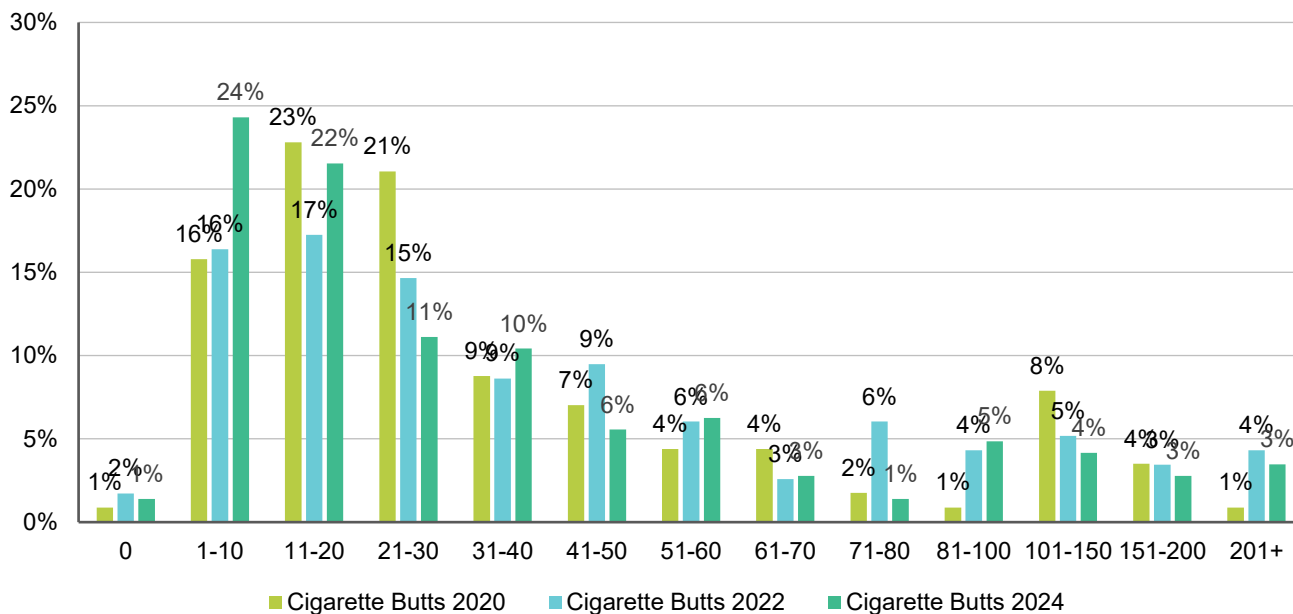


4. SURVEY RESULTS

Figure 22 Butt litter counts

Butt litter counts

Base: All sites (2020 n=114 / 2022 n=117 / 2024 N=149)



As shown in **Figure 22** (above), the proportion of sites with 1-20 butts rose sharply in 2024. There was a commensurate decrease in the proportion of sites with 21-30 butts and all of the groupings from 71+ butts onwards.

Importantly, it needs to be acknowledged that a variety of factors can affect butt litter counts – principally time since site was last cleaned, and recent rainfall. As our researchers did not have this information, butt counts should be treated with caution.

Key Finding 7:

- Butt litter per site decreased significantly in 2024.

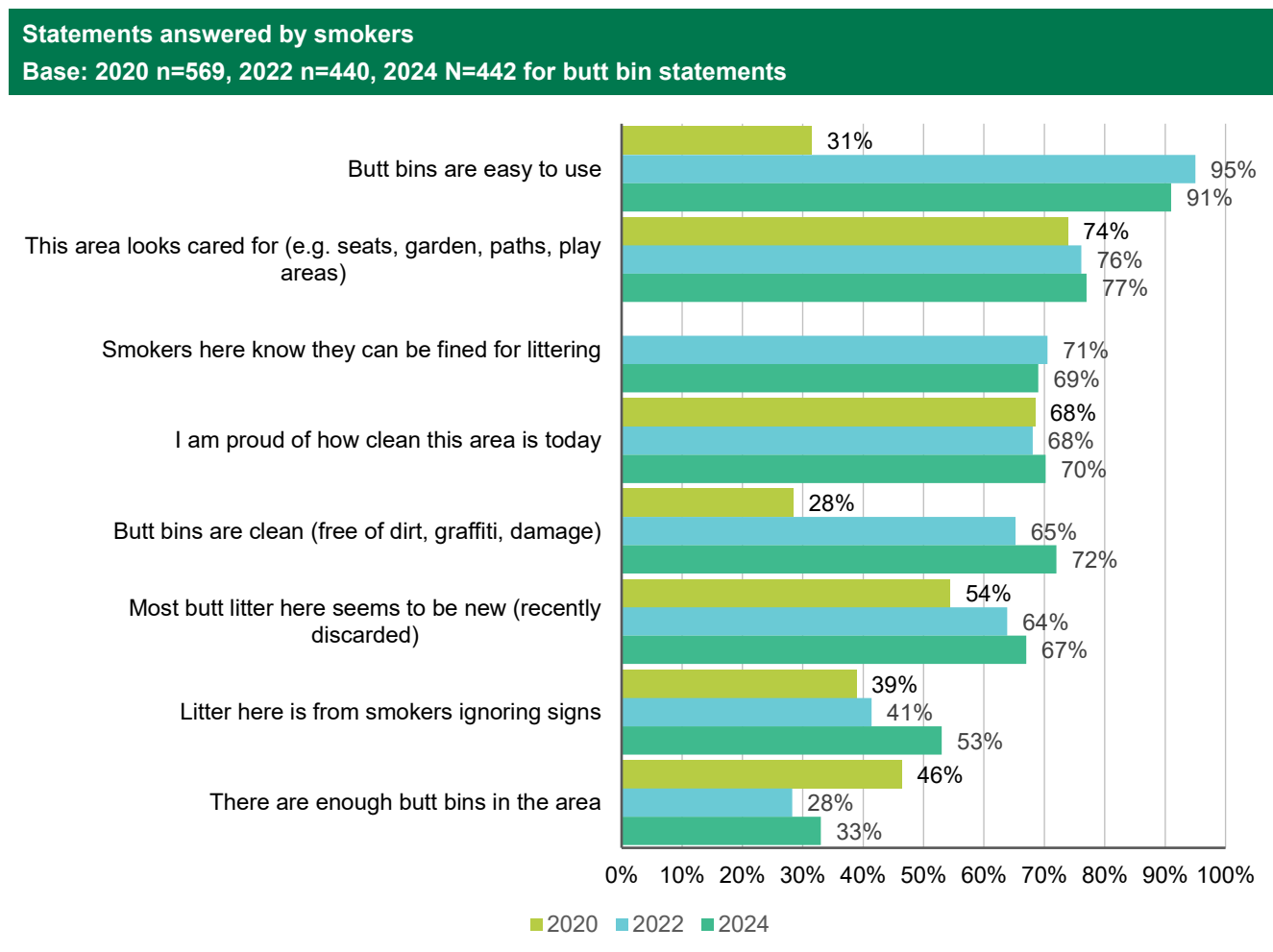


4. SURVEY RESULTS

4.4. SMOKER PERCEPTIONS

As in previous surveys, researchers interviewed smokers at each site with a range of “True/False” questions about the site. These questions broadly correlate with the items listed in the Area Inspection.

Figure 23 Smoker statements (% saying this was true)



As shown in **Figure 23** above, there has been a significant increase in enthusiasm for butt bins over the past four years. Those saying they are easy to use more than tripled, while those saying they are clean has more than doubled.

However, only one-third of smokers felt there were enough butt bins in the area, suggesting they see the value and are keen to use them when available.

Key finding 8:

- Smokers are noticing the increased presence of butt bins and are enthusiastic about their role in signifying an area is “smoker-friendly”.



4. SURVEY RESULTS

Table 11 Smoker statements 2024, by streamlined or hotspot

Column %	Total	Streamlined	Hotspot
Butt bins are easy to use	91%	92%	89%
This area looks cared for (e.g. seats, garden, paths, play areas)	78%	80%	76%
Smokers here know they can be fined for littering	69%	70%	68%
I am proud of how clean this area is today	70%	76%	67%
Butt bins are clean (free of dirt, graffiti, damage)	72%	78%	66%
Most butt litter here seems to be new (recently discarded)	67%	61%	70%
Litter here is from smokers ignoring signs	53%	62%	49%
There are enough butt bins in the area	33%	44%	28%

Not surprisingly, those smokers in streamlined sites were more likely to agree with most statements. And in the case of 'Butt bins are clean', 'Litter here is from smokers ignoring signs' and 'There are enough butt bins in the area' the difference is statistically significant.

4.5. CORRELATION BETWEEN AREA INSPECTION AND SMOKER INTERVIEWS

Eight of the statements in the smoker interviews (Step 4 of the BLC) mirror researcher notes in the Area Inspection Score (Step 1). As in 2022, we thought it might be relevant to understand to what extent perceptions differed between interviewers and smokers at each site.

In order to understand this, we conducted two types of analysis:

- A correlation between the mean agreement score (on a scale of 1=true and 2=false) of researchers and smokers for the eight common statements across each of the 117 sites
- The mean difference (again using the 1-2 scale) for the interviewer and average of smoker scores across the 149 sites as a whole.



4. SURVEY RESULTS

Results for both tests are shown in **Table 12**, below.

Table 12 Correlation between researchers and smokers

STATEMENT	CORRELATION	DIFF IN MEAN AGREEMENT	MORE LIKELY TO AGREE
Most butt litter here seems to be new (recently discarded)	0.123	8%	Smokers
There are enough butt bins in the area	0.215	6%	Smokers
Butt bins are easy to use	0.099	34%	Smokers
Butt bins are clean (free of dirt, graffiti, damage)	0.214	23%	Smokers
This area looks cared for (e.g. seats, garden, paths, play areas)	0.188	2%	Smokers
Litter here is from smokers ignoring signs	0.161	12%	Smokers
Smokers here know they can be fined for littering	-0.04	25%	Neither
I am proud of how clean this area is today	0.259	7%	Smokers

(Correlation is based on a -1 to +1 scale, where -1 = a perfect negative correlation, 0= no correlation, and +1 = a perfect positive correlation.)

Mirroring the findings from 2022:

- There is essentially no correlation between the views of smokers and researchers
- In seven of the eight cases, smokers were more likely to agree with the statements than researchers (with researchers and smokers equally likely to agree that 'Smokers here know they can be fined for littering'.)

This would again seem to indicate that smokers viewed the selected sites more positively than the researchers. This might be because:

1. They visit the sites more often and are more "immune" to its deficiencies, and/or
2. Their expectations are lower.

Key finding 9:

- **As in 2022, researchers were generally more critical of the cleanliness and condition of smoking areas than smokers – perhaps suggesting that smokers have lower expectations?**



5. APPENDIX 1 – SURVEY FORMS



5. APPENDIX 1 – SURVEY FORMS

Step 1: Smoking area inspection

Butt Litter Check



Organisation name _____

Contact name _____ Phone _____

Date		Time		Area name and description			
Streamlined		Hotspot					
Stage of butt litter prevention activities				Before		During	
				After		Long after	

Site type (around area) ¹	Sketch (aerial view)							
					Number of bins			
					Litter		Recycling	
					Butt		Ashtray	
					Number of full bins?			
					How busy is the area?			
					Quiet		Moderate	Very
					How much litter is in this area?			
					None		Some	Lots
					How much protection for weather is there?			
					None		Some	Lots
					Butt litter cause			
					Littering		Bin design	Weather
					Brimming		Scavengers	Spills
					How much graffiti is in the area?			
None		Some	Lots					
How damaged infrastructure is in the area?								
None		Some	Lots					
Photos?	Yes		No					
Sketch the inspection area include corners, bins and features								

1. Transport, shops; office block; venue (pubs; clubs, outdoor eating); recreational parks, roadside stops or rest areas.



5. APPENDIX 1 – SURVEY FORMS

In this area, write down whether you think the statement is True or False

Only statements about features that are True for the area are counted.

		Area Inspection – True or False	T/F	Notes
Tips	Clean			
Walk around the area, record impressions about whether each statement is True or False.	1	Most butt litter seems to be new (recently discarded)		What is or isn't working well? e.g. the area is very clean. Note suggestions to improve clean features.
	2	Cleaning up the butt litter would be easy to do		
	Clean subtotal (add only True responses)		/2	

Tips	Butt bins and Infrastructure			
Q3. If no butt bins, but the area is free of butt litter, answer 'T'. Q. 4,5,6. If no butt bins answer 'F'. If there is more than one butt bin in the area, if the statement is 'False' for one bin then answer 'F' for all.	3	There are enough butt bins in the area		Examples: Butt bins effectively capture and hold butts. Repair or improve bins and/or furniture. Area needs more bins.
	4	Butt bins can be easily seen in the area		
	5	Butt bins are easy to use		
	6	Butt bins are clean (free of dirt, graffiti, damage)		
	7	Butts cannot escape from butt bins		
If the answer is 'False' for any one amenity, e.g. furniture, answer 'F'.	8	This area looks cared for (e.g. seats, garden, paths)		
	Butt bins and infrastructure subtotal (add only True responses)		/6	

Tips	Information			
Look at all signs, focusing on litter signs.	9	Signs tell smokers what to do with butts		Examples: There are butt litter prevention signs and the signs are undamaged and clear. There are no litter prevention signs.
	10	Signs are easy to understand		
	11	Litter is from smokers ignoring signs		
	12	Butt litter and the problems it causes are easily seen		
	Information subtotal (add only True responses)		/4	



5. APPENDIX 1 – SURVEY FORMS

Tips	Surveillance (visibility of disposals)		
	13	Butt litter seems to be under control	
	14	Smokers littering butts will be easily seen	
	15	Smokers are aware of potential fines for littering	
	16	Rangers seen patrolling this area	
	Surveillance subtotal (add only True responses)		/4
Examples: Consider giving more warnings to smokers caught littering.			

Tips	Involvement		
	17	The area is a good example of smokers doing the right thing	
If vandalism or damage is evident, answer 'F'.	18	Finding graffiti or damage to things in the area requires considerable effort	
	19	Smokers seem to look after this area	
	20	I am satisfied with how clean this area is today	
	Involvement subtotal (add only True responses)		/4
Examples: Smokers seem comfortable and proud of the area.			

Add the totals for each subsection to get a total out of 20. Multiply this score by 5 for a score out of 100 and insert it in the box on far right.	Area inspection total (add all True responses)	/20	/100
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5. APPENDIX 1 – SURVEY FORMS

Step 2: Observation

Butt Litter Check



Organisation name _____

Contact name _____ Phone _____

Area name and description				Area	
Site type	office block? retail? car park? etc.		Date	Streamlined	Hotspot
Session #	Start time	Number of people in area	Number of people smoking	Tips: Note the start time for each session and record the number of people and % of smokers. In the data table below rule a line across the observations at the end of a session.	
1					
2					
3					
4					
5					
6					

Disposal act	Item disposed	Where	How
Littered (L)	Cigarette burning	CB	Around bin
	Cigarette out	CO	Garden bed
	Accessory (cigarette)	A	Gutter or drain
	Non-cigarette	N	Open ground
			Raised surface
			Under seat
			Wedge

Disposal act	Item disposed	Bin type	Bin fixture
Binned (B)	Cigarette burning	CB	Ashtray
	Cigarette out	CO	Ashtray personal
	Accessory (cigarette)	A	Butt bin
	Non-cigarette	N	Butt recycling bin
			Litter bin
			Butt plate on bin
			Recycling bin

Disposal act	Item disposed	Demographics
Carried away (CA)	Cigarette burning	Age
	Cigarette out	Years
	Accessory (cigarette)	Group size
	Non-cigarette	Number 1–9

Obs.	Disposal act			Item disposed				Littered		Binned		Distance	Demographics			
#	L	B	CA	CB	CO	A	N	Where	How	Type	Fixture	From bin	Age	Size	✓	Conv
1																
2																
3																
4																
5																
6																



5. APPENDIX 1 – SURVEY FORMS

Obs.	Disposal act			Item disposed				Littered		Binned		Distance	Demographic		
#	L	B	CA	CB	CO	A	N	Where	How	Type	Fixture	From bin	Age	Size	✓ Conv.
7															
8															
9															
10															
11															
12															
13															
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39															
40															
41															

Summary of impressions (one sentence only)



5. APPENDIX 1 – SURVEY FORMS

Step 3: Cigarette butt litter count

Butt Litter Check



Organisation name _____

Contact name _____ Phone _____

Area type (tick 4)		Area name	Date
Streamlined	☐	Hotspot	☐

Item category	Small item tally: Cigarette butts All cigarette butts are considered to be small items – up to thumb size	Total
Cigarette butts	Butts (all small)	

Item category	Small item tally	Sum	Medium item tally	Sum	Large item	Sum	TOTAL
Cigarette accessories	Matches, foil, plastic wrap, lighters		Cigarette packet, cigarette pouch, matchbox		Cigarette carton		

Cigarette items total	Cigarette butts + Cigarette accessories						
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Item category	Small item tally	Sum	Medium item tally	Sum	Large item	Sum	TOTAL
Non-cigarette items All other items	Up to thumb size		Fist size		Bigger		

Total: All items (3)							
Total: All items	Small items (includes butts)		Medium items		Large items		TOTAL
Percentage: All items	Small items %		Medium items %		Large items %		Total = 100%



5. APPENDIX 1 – SURVEY FORMS

Step 4: Conversations with smokers

Butt Litter Check



Organisation name _____

Contact name _____ Phone _____

Area Name			
Date (write in)	Area type	Conversation #	
	Streamlined	Hotspot	Enter the number

In the conversation with smokers ask if they think the statements below are true for the area.

The conversations are all about the smoking area where the survey is conducted. Make sure each aspect of the smoking area is covered in the conversation. **Write in T for TRUE or F for FALSE.**

Clean	True/False	Comments
1 Most butt litter here seems to be new (recently discarded)		

Bins and infrastructure	True/False	Comments
2 There are enough butt bins in this area		

If there are no bins in the area ask Q2A and if True then enter a T for Qs 2A, 3 and 4. If false insert F for Q2A, 3 and 4.

2A Butt bins aren't needed in this area		
3 Butt bins are easy to use		
4 Bins are clean (free of dirt, graffiti, damage)		
5 This area looks cared for (e.g. seats, garden, paths, play areas)		

Information	True/False	Comments
6 Litter here is from smokers ignoring signs		

Surveillance (visibility of disposals)	True/False	Comments
7 Smokers here know they can be fined for littering		

Involvement	True/False	Comments
8 I am proud of how clean this area is today		

Count all the True responses to give the total score: 4/8	/8	Multiply total out of 8 by 12.5 to give a score out of 100: 50/100	/100
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Additional comments and stories

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