



AMSRO

EPA – ILLEGAL DUMPING RESEARCH REPORT

Report prepared for the NSW Environment Protection
Authority (EPA)

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1 Executive summary

Introduction

Background and objectives

This report presents a summary of the second round of NSW illegal dumping research, undertaken in 2019. The first wave was completed in 2014.

This research provides a benchmark for monitoring changes in attitudes, behaviours and experiences relating to illegal dumping. The overriding objective of the 2019 research was to update the 2014 study and explore changes over time.

Methodology

The methodology for the 2019 research was designed to replicate that of the 2014 study, with a reduced number of stakeholder in-depth interviews and more community focus groups. The fieldwork consisted of the components shown in the table below, undertaken in NSW only.

Research component	2014	2019
Qualitative in-depth-interviews with stakeholders	n=44 participant	n=16 participants
Focus groups with residents	2	4
Online survey of councils	n=64 participants	n=42 participants
Online survey of residents	n=1009 participants	n=1000 participants
Online survey of businesses	n=100 participants	n=100 participants

Key findings

The key findings of the research are outlined below.

Behaviour

- Overall, the behavioural landscape in relation to illegal dumping in NSW is similar in 2019 to 2014.
- Measures taken to reduce illegal dumping in the past five years appear to be having a positive, but limited, impact.
- Types of waste and disposal locations reported by both residents and businesses in the online survey have fallen significantly since 2014. This may reflect an actual change in dumping behaviour, social

acceptability biases or other factors are impacting self-reporting or a change in the way participants interacted with the questionnaire.

- While those over the age of 40 remain the largest group who admit to kerbside dumping, those under the age of 40 are more likely to have undertaken kerbside dumping in 2019 than in 2014.
- Dumping of asbestos appears to have decreased.

Motivation

- Among residents, the profile of enforcement activities has increased, with the result of increasing concern around being caught and fined for dumping.
- Among businesses, the profile of enforcement activities has increased but perceived costs of fines have dropped.

Social opportunity

- The perceived acceptability of kerbside dumping has increased slightly among residents since 2014.

Physical opportunity

- Awareness and use of council kerbside collections for bulky waste have increased since 2014.

Detailed findings

Experiences and perceptions of LGAs and other land managers

This section outlines important findings from the research with Councils and land managers.

Perceptions of the extent of illegal dumping among councils and land managers

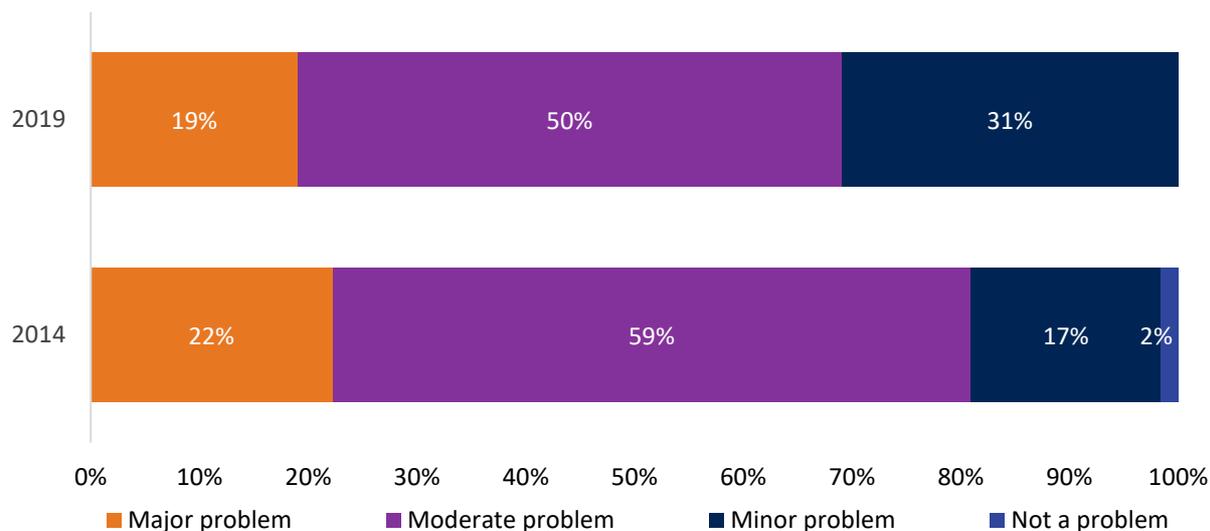
The qualitative and quantitative research indicate that illegal dumping remains a significant issue for councils and land managers in NSW.

However, the findings show the extent of illegal dumping has decreased in some local government areas. The proportion of councils that consider illegal dumping a *minor problem* has increased from 17% in 2014 to 31% in 2019, indicating that some councils have seen reductions in dumping in their areas.

This aligns with the findings of qualitative interviews with land managers (i.e. councils and other government land managers). Many indicated that targeted campaigns run in dumping hotspots, often with the support of the EPA, have been effective in reducing local dumping rates. Some noted that the impacts of such programs are limited to the periods during which they run, and don't have a lasting impact on behaviour.

Despite the positive steps reported by some councils, illegal dumping still presents a challenge in many LGAs. The proportion considering illegal dumping a *major problem* is consistent with the first round of the study at 19% in 2019 (compared to 22% in 2014). In addition to this, the proportion indicating that dumping is not a problem at all has fallen from 2% to 0% in 2019.

Figure 1. Extent of the problem of illegal dumping



Base: Total LGA sample | 2019 LGA sample (n=42), 2014 LGA sample (n=63)
 Q4. To what extent is illegal dumping a problem in your council area? Illegal dumping

Overall, the findings of the survey of LGA managers shows that the pattern of dumping has not changed in the past five years. The types and locations of dumped materials the managers deal with is very consistent with 2014.

Asbestos dumping has been reduced since 2014

The one area that stands out for its improvement over time is asbestos. One in five LGA managers (19%) indicate that there has been a reduction in asbestos dumping in the past five years (compared to just 6% in 2014). In addition to this, 33% of councils now report that asbestos dumping is typical on roadsides in their area, compared to 59% in 2014.

Costs associated with illegal dumping

As in 2014, council managers (as well as other land managers) identified the cost and effort invested in cleaning up, monitoring and preventing illegal dumping as the most significant impact of illegal dumping to them.

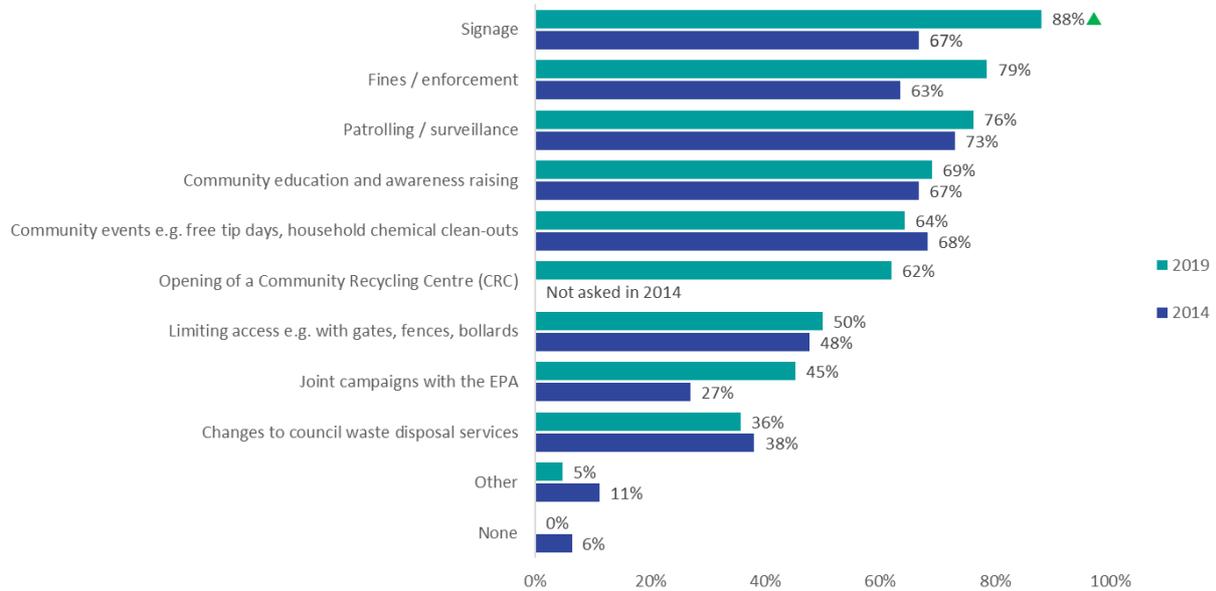
Both councils and other land managers expressed concerns about their reliance on grants and external funding to maintain clean-up budgets. Many indicated that their organisations' budgets are not large enough to properly address the extent of dumping in areas they are responsible for. The responsibility for funding clean-up on private land can be a challenge to negotiate. Private land managers are, at times, reticent to spend money on rectifying dumping as it takes funds directly from budget allocated to other amenities. Some stated that, while they bear the financial cost of illegal dumping on their properties, they see dumping as a public issue and feel that LGAs should pay for clean-up.

Also consistent with 2014, the reported cost of managing illegal dumping for LGAs varied widely. The reported total cost of illegal dumping per year ranged from less than \$20,000 to more than \$750,000.

Initiatives and strategies undertaken to reduce illegal dumping

Survey findings show upwards trends in the use of most interventions by councils to reduce illegal dumping compared to 2014. The use of signage has increased significantly.

Figure 2: Initiatives and strategies undertaken by councils to reduce illegal dumping



Base: Total LGA sample | 2019 LGA sample (n=42), 2014 LGA sample (n= 63)

Q21: What initiatives or strategies, if any, has your council used to reduce illegal dumping and/or illegal landfilling?

Note: Types of documentation ranked in descending order based on 2019 results. Opening of a Community Recycling Centre (CRC) is a new code added in 2019, was not asked in 2014.

Overall, patrolling and surveillance, and changes to council waste services were perceived as the most effective strategies to combat illegal dumping with a large majority of LGAs indicating these are somewhat or very effective (94% and 93% respectively).

Community and industry findings

This section outlines important findings from the research with residents and businesses.

Behavioural trends over time

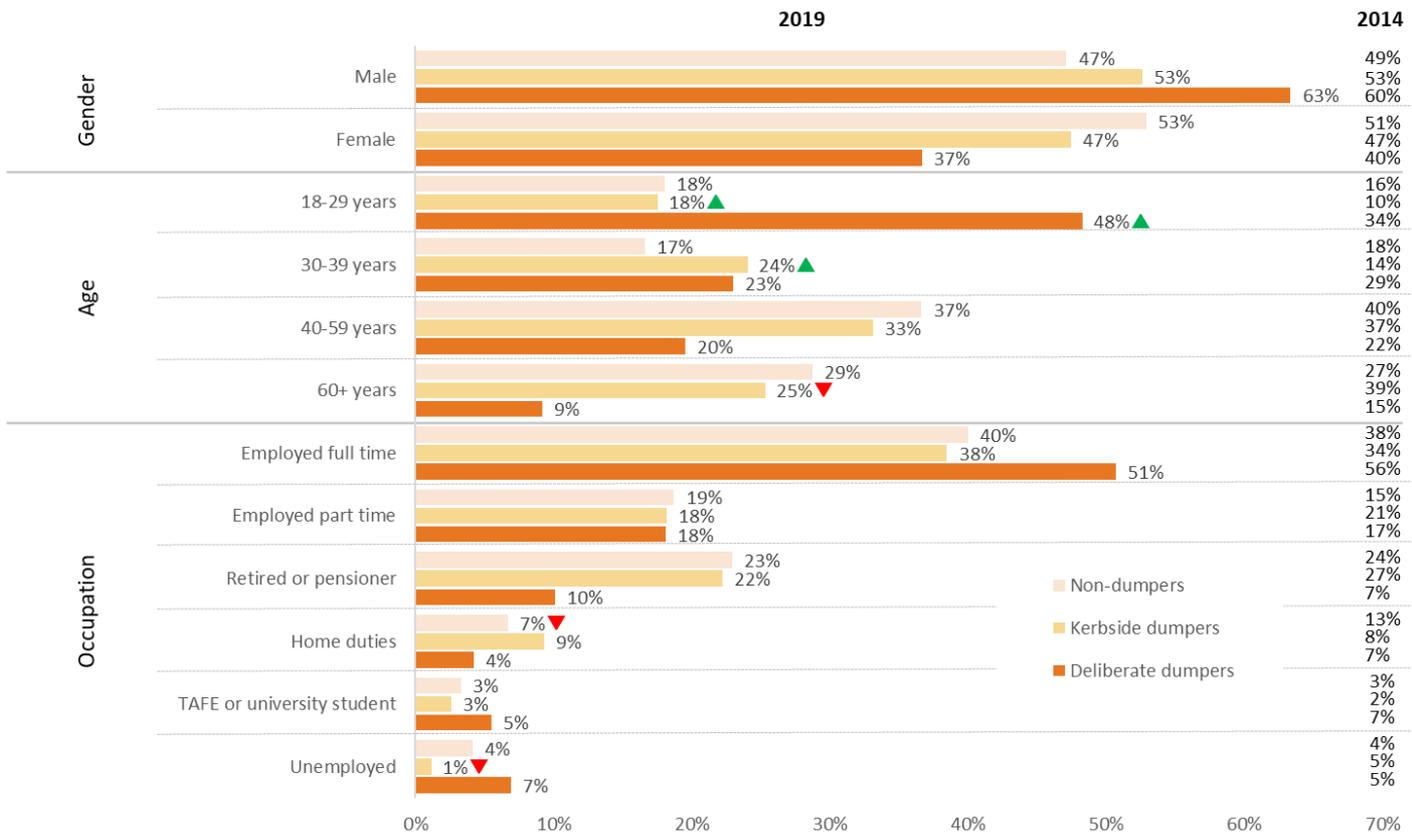
Who is dumping waste?

Demographics of residents who admit to disposing of items illegally are broadly similar to 2014. While deliberate dumpers come from a range of backgrounds, they are most likely to be male and in the 18-29 age group. Indeed, those under 30 are more likely in 2019 to report deliberate dumping than in 2014.

A key change since 2014 is that those aged under 40 are more likely to indicate they have undertaken kerbside dumping. In addition to this, younger age groups (18-29 years old) tend to indicate lower levels of awareness of legitimate means of disposal and are less likely to correctly identify dumping behaviours as illegal compared to those aged 50 and above.

Those aged 40-59 are still the most likely age group to undertake kerbside dumping.

Figure 3. Demographics by dumper profile - Community



Base: 2019 | Non-dumper (n=759), Kerbside dumper (n=154), Deliberate dumper (n=87). 2014 | Non-dumper (n=621), Kerbside dumper (n=231), Deliberate dumper (n=157).

SQ1 Are you...?

SQ2 What is your approximate age?

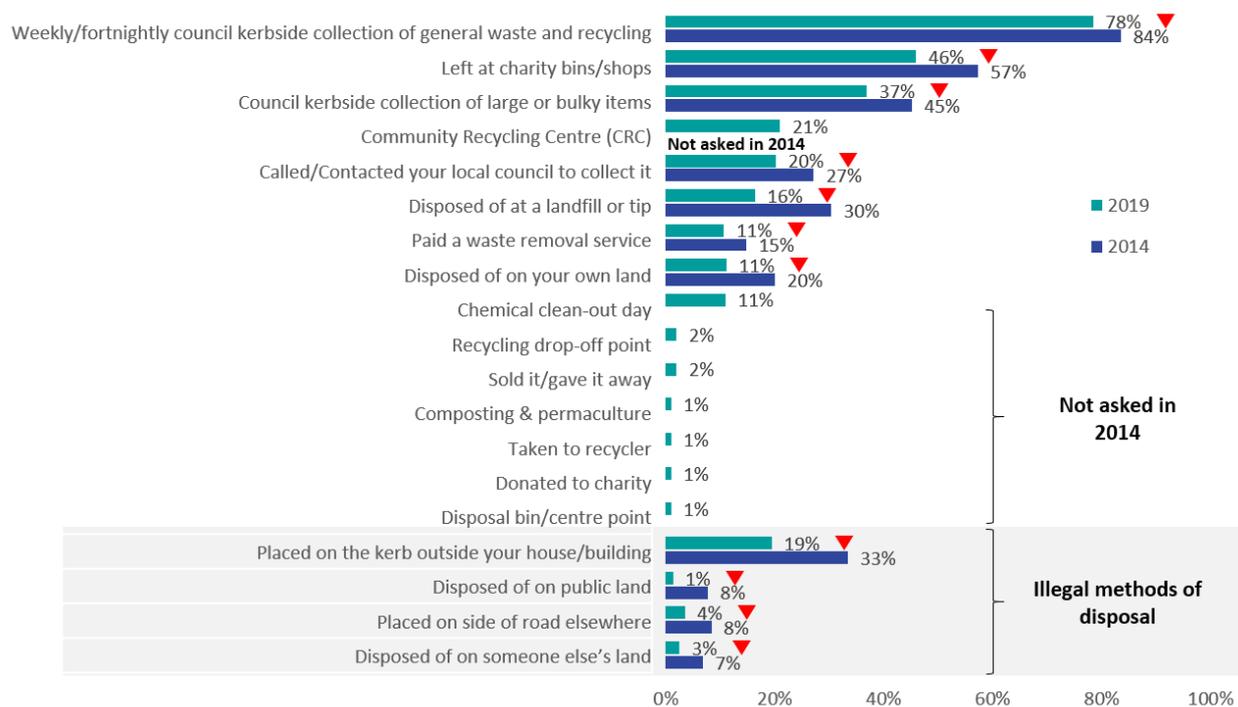
Q18 Which of the following best describes you?

How residents are disposing of waste

Types and locations of waste dumping reported by both residents and businesses in the online survey have reduced significantly since 2014. This may be a reflection of an actual change in dumping behaviour or in the way participant interacted with the questionnaire (for example, greater reticence to admit to dumping behaviours). As such, the response options provided for this question changed in 2019 to include more disposal locations (e.g. chemical clean-out day, recycling drop-off point).

Among residents, self-reported rates of illegal disposal are down significantly in all locations (see Figure 4). However, reporting of legitimate disposal methods has also decreased. Compared to 2014, the reported level of illegal dumping has also decreased for most types of waste.

Figure 4: Disposal location - community



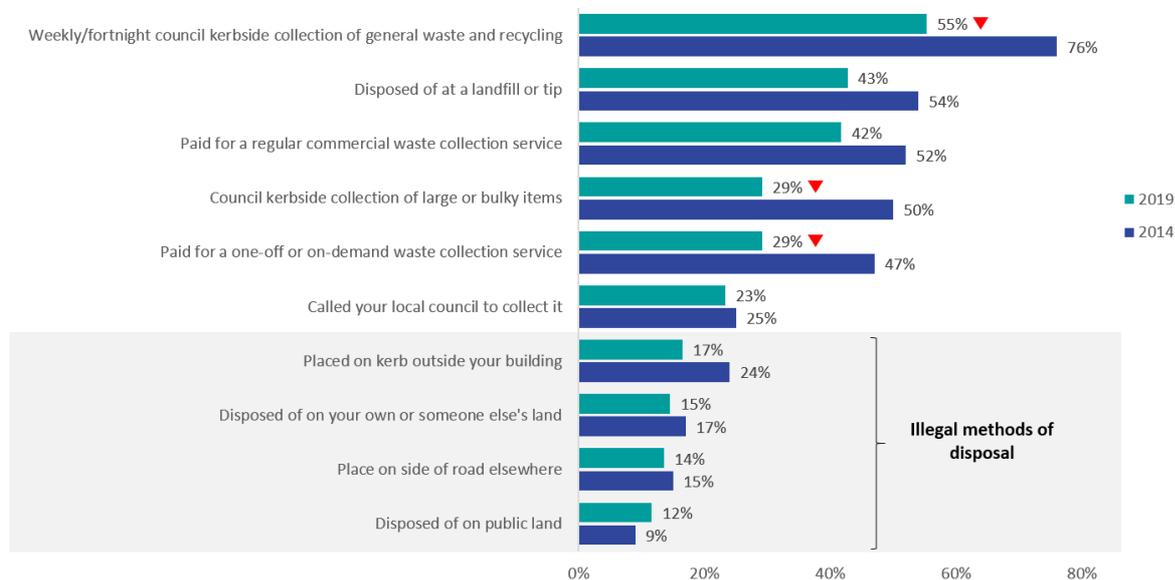
Base: Total Community sample | 2019 Community sample (n=1,000), 2014 Community sample (n=1,009)
 Q4 And which of the following methods have you used to dispose of each of these things in the last 12 months?
 Note: Responses have been re-coded for location. Dumping locations ranked in descending order based on 2019 results.

Overall, there is a positive trend of residents using correct disposal methods in 2019, compared to 2014. For example, hazardous waste illegally disposed of in weekly/fortnightly collection has declined from 21% in 2014 to 12% in 2019.

- Encouragingly, illegal dumping of several waste types appears to have decreased.
- For majority of waste types, taking items to landfill has declined. While 33% of residents still disposed of construction and demolition waste at landfill in 2019, this is a significant decline from 48% in 2014.
- Weekly/fortnightly collection is most commonly used for general waste (82%), household recyclables (76%) and garden waste (74%). Compared to 2014, significantly less people are putting these items into bulky waste collections.
- Similar to 2014, almost half of the respondents dispose of furniture and white goods using the bulky waste collection service in 2019 (47% compared to 51% in 2014).
- Leaving old clothing and bedding at charity stores and bins has significantly declined (67% compared to 76% in 2014). However, significantly more residents (22%) are using their weekly/fortnightly collection for these items compared to 2014 (16%).
- Whilst not asked in 2014, Community Recycling Centres are being utilised as a disposal option with 18% of residents taking hazardous chemicals, 17% taking car parts and 11% taking household recyclables.

Self-reporting of illegal disposal has trended down among businesses, although not significantly. However, reported rates of disposal via legitimate channels have dropped significantly.

Figure 5: Disposal location - businesses



Base: Total Industry sample | 2019 Industry sample (n=103), 2014 Industry sample (n=100)
 Q5 And which of the following methods have you used to dispose of waste from your business in the last 12 months?
 Note: Responses ranked in descending order based on 2019 results.

Self-reporting of all waste disposal behaviours is down among residents in 2019. It is therefore likely that there are other factors influencing self-reporting of dumping behaviour.

Reduced self-reporting of dumping behaviours may indicate that these audiences are now more self-conscious about them, and therefore less willing to admit to disposing of materials via illegal methods. Evidence supporting this hypothesis is mixed. Awareness of illegality has not changed since 2014, although the perceived likelihood of being caught dumping has increased. Improved disposal services may also have influenced these changes.

Alternatively, this reduction may be due to lower engagement in the survey process by participants in 2019, or to changes in survey mode with more participants completing the survey via mobile phone. The fact that rates of legitimate disposal reported have also reduced indicates that survey engagement or mode may have influenced responses. For residents in particular, the addition of six new categories in the response frame may have impacted responses.

Motivations and barriers for illegal dumping behaviour

As we would expect, the overall context, barriers and motivations for illegal dumping behaviour remain very similar in 2019 to those observed in 2014.

- Capability
 - Awareness of legal disposal methods is high. Lack of correct waste disposal knowledge is not a driver of illegal dumping.

- Residents and businesses understand that dumping behaviours are illegal
- Opportunity
 - Social norms play an important role in influencing waste disposal behaviour.
 - Both the quantitative and qualitative phases indicated that perceived social acceptability of dumping behaviours is very similar to 2014.
 - The distance to waste disposal facilities may contribute to decisions to dump illegally
- Motivation
 - Cost avoidance is a key driver for businesses to dump illegally
 - Low awareness or consideration of the consequences of dumping illegally was a factor

Important changes observed are summarised below, with details in the following sections.

Community:

- Concerns about being caught and/or fined have increased among residents
- Bulky waste collection services are becoming more ubiquitous, with trips to the tip continuing to decrease
- The acceptability of kerbside dumping has increased slightly
- Awareness of illegal dumping by other people in certain locations has increased
- Perceived travel time to the tip has increased

Businesses:

- Perceptions of the likelihood of being caught and/or fined have trended up (i.e. increased but not to a statistically significant degree) among businesses
- The perceived acceptability of dumping behaviours appears to have increased among businesses, along with a drop in the recognition of dumping behaviours as illegal.

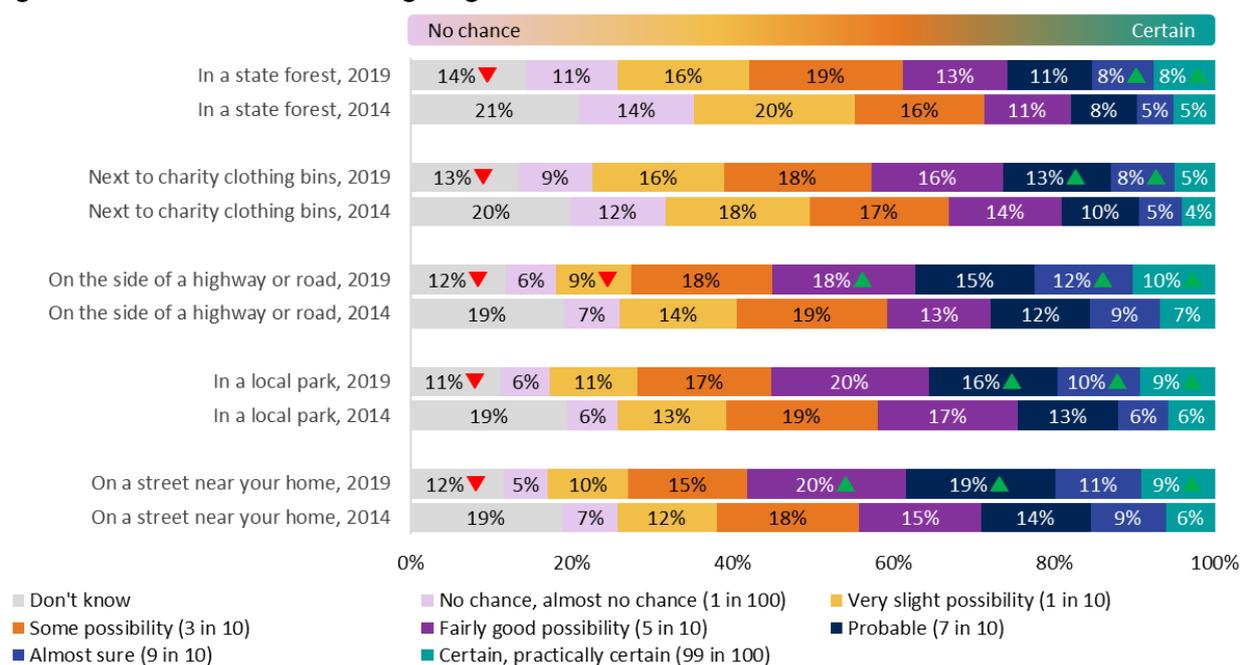
Community

Concerns about being caught and/or fined have increased among residents

The clearest area of improvement over the past five years among residents is in the profile of illegal dumping enforcement.

Higher proportions of residents believe that it is *probable*, *almost sure* or *certain* that they would be caught and fined across a range of locations in 2019.

Figure 6: Perceived chance of being caught and fined

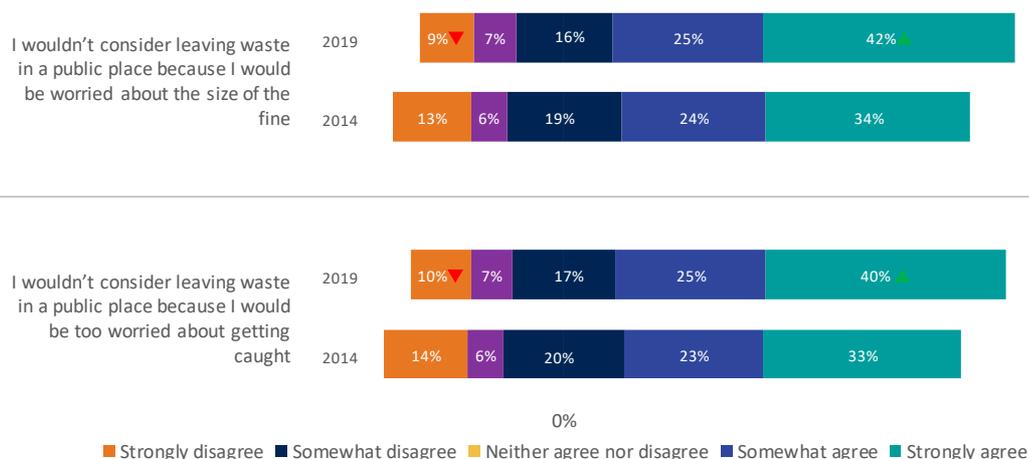


Base: Total Community sample | 2019 Community sample (n=1,000), 2014 Community sample (n=1,009)
Q17 How likely do you think it is that you would be caught and fined if you were leaving waste in the following locations?

The knock-on effect of this is that 40% of residents *strongly agree* that they are concerned about being caught and fined and would therefore choose not to leave waste in a public place (compared to 33% in 2014).

The improvement has also flowed through to concern about the size of the fine, which is also a more of a deterrent to dumping in 2019. Four in ten (42%) *strongly agree* that they wouldn't consider leaving waste in a public place due to the size of the fine, compared to 34% in 2014.

Figure 7: Agreement with statements relating to the consequences of illegal dumping



Base: Total Community sample | 2019 Community sample (n=1,000), 2014 Community sample (n=1,009)

Q14 For each of the following statements, please indicate whether you strongly agree, tend to agree, neither agree nor disagree, tend to disagree or strongly disagree

Perceptions of the value of fines for dumping most materials have not changed since 2014. However, 23% now believe that the fine for dumping construction and demolition waste is over \$5000, compared to 16% in 2014. This aligns with an actual increase in the value of fines in late 2014.

Bulky waste collection services are becoming more ubiquitous, with trips to the tip continuing to fall

Efforts by councils to provide easy-to-access waste services are being reflected in changes in awareness and behaviour among residents.

While awareness of regular council bulky waste collections remains steady (59% compared to 62% in 2014), awareness among non-users has increased (23% compared to 17% in 2014). Use of bulky waste collections which can be ordered from the council is up, however (57% compared to 46%).

In line with this, the proportion of residents making trips to the tip has fallen from 39% in 2014 to 14% in 2019. This continues an anecdotal trend identified in the 2014 qualitative research.

Residents who have been living in their home for less than a year are more likely to be unaware of council kerbside collections for bulky items and collection or drop-off services for chemicals in their area. They are also less likely to be aware of the frequency of council collections (45% compared to 66% overall).

Kerbside dumping is slightly less unacceptable

Overall, kerbside dumping is seen as slightly less unacceptable by some residents now than it was five years ago.

Well under two-thirds (61%) now judge leaving household waste at the kerbside outside the home as *very unacceptable*, compared to 68% in 2014. Higher proportions now rate it as merely *unacceptable* (20%, up from 16%) or *somewhat unacceptable* (9%, up from 6%). A similar pattern emerges in relation to leaving furniture at the kerbside. Just 17% judge it to be *very unacceptable*, compared 25% in 2014.

At the other end of the acceptability spectrum, the small proportions of residents who rate kerbside dumping behaviours as *very acceptable* have dropped in 2019. Leaving furniture on the kerbside is now seen as very acceptable by 2% of residents; down from 6% in 2014. This indicates that progress is being made among those who previously felt that the kerbside was an entirely legitimate location to dispose of unwanted items.

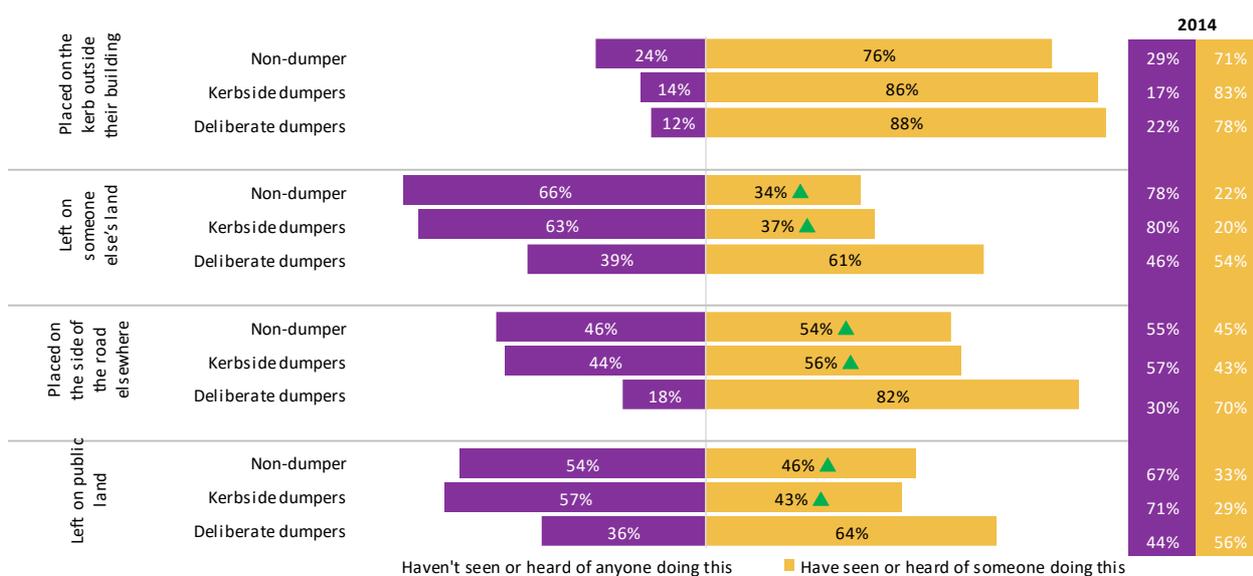
Younger residents (aged 18-29), CALD residents and those defined as deliberate dumpers (i.e. those dumping at locations other than the kerbside) are less likely than other audiences to feel that deliberate and kerbside dumping of a range of materials are unacceptable (between 50% and 70%).

Interestingly, non-dumpers and kerbside dumpers tend to say that their family, friends, neighbours and colleagues have less influence on their household waste disposal decisions in 2019 than in 2014.

Awareness of illegal dumping by others

Most residents are aware of illegal dumping on the kerbside outside their building (trending up compared to 2014). Non-dumpers and kerbside dumpers are also more likely to say they have seen or heard of items deliberately dumped on someone's land, public land or on the side of the road than in 2014.

Figure 8: Seen or heard of illegal dumping – residents



Base: 2019 non-dumper (n=759), 2019 kerbside dumper (n=154), 2019 deliberate dumper (n=87)

Q8 Have you seen or heard of items or materials being disposed of in the following ways by your family, friends, neighbours, colleagues or others?

Perceived travel time to the tip

Perceptions of travel time to the nearest tip appears to have increased, with more participants indicating that it takes 31 minutes to an hour in 2019 (20% compared to 16% in 2014).

No significant changes are observed in perceptions of the ease of getting to the nearest tip, but there is a non-significant increase (from 24% to 28%) in the proportion of participants who indicate that they the tip location is a reason for difficulty taking waste there.

Demographic differences

A range of differences were observed between demographic groups in the residents survey. A summary of findings for groups where consistent differences exist across a range of measures are shown below.

Younger age groups (18-29 years old)

As noted above, younger people (those aged 18-29) display a range of behaviours and attitudes that stand out from older groups which make them more prone to dumping, including:

- Being more likely to be deliberate dumpers than those in other age groups (48%)
- Indicating lower levels of awareness of waste disposal services compared older age groups (50-59 and 60+ years old)
- Being more likely to identify dumping behaviours as legal compared to older age groups (50-59 and 60+ years old)

In addition to this:

- Younger age groups (18-29) were less likely to find leaving household waste in a bushland 'very unacceptable' (53%) compared to all other older age groups;
- Younger age groups (18-29) were less likely to find leaving household waste in a park 'very unacceptable' (56%) compared to all other older age groups;
- Younger age groups (18-29) were more likely to find leaving furniture on the kerb outside of their home 'somewhat acceptable' (25%) than 50-59 years old (13%) and 60+ years old (11%);
- Younger age groups (18-29 years old) were less likely than older age groups (50-59 and 60+ years old) to be aware of what the legal behaviours are:
 - Leaving household waste on the side of the road (11% incorrectly thought this is legal);
 - Leaving household waste in a park (7% incorrectly thought this is legal);
 - Leaving garden waste in a park (8% incorrectly thought this is legal and 18% don't know).
- Younger age groups (18-29 years old) were more likely than older age groups (50-59 and 60+ years old) to agree (19% tend to agree); that they would consider leaving certain types of waste in a public place, but only if I knew that it wouldn't damage the environment
- I would consider leaving waste in a public place because of the cost of taking it to the tip
 - Younger age groups (18-29 years old) were not as strongly opposed to this idea as older age groups (60+ years old) with 27% of younger respondents who 'tend to disagree' compared to 10% among older respondents. While older respondents were more likely to 'strongly disagreed' than younger respondents (83% and 41% respectively);
- Younger age groups (18-29 years old) tend to indicate lower levels of awareness compared to older age groups (50-59 and 60+ years old).

Those living in their home less than a year

- Residents who have been living in their home for less than a year were more likely to be 'unaware of this service in their area' including:

- Regular council collection of large or bulky items from the kerb (21%);
 - Council collection of large or bulky items from the kerb which you can ring up to order (22%);
 - Collection or drop off service for chemicals (47%).
- Respondents who had been living in their house for less than a year were less likely to be aware of the frequency of council bulky waste collections (45%);

Culturally and linguistically diverse (CALD) audiences vs English-only households

- Respondents who mainly speak English at home were more likely to find leaving household waste in a bushland 'very unacceptable' (80%) than those who speak another language (61%);
- Respondents who mainly speak a language other than English at home were less likely to find leaving household waste in a park 'very unacceptable' (63%) than those who speak English (77%);
- Respondents who mainly speak a language other than English at home were less likely to find leaving garden waste in a park 'very unacceptable' (53%) than those who mainly speak English (66%);
- Respondents who mainly spoke a language other than English at home were less likely to find leaving household waste on the side of the road 'very unacceptable' (52%) than those who mainly speak English (63%);
- Respondents who mainly speak English at home were more likely to find leaving furniture on the kerb outside of their home 'acceptable' (12%) than those who speak a language other than English at home (7%);
- Respondents who speak a language other than English at home were more likely than others to agree (14% tend to agree); that they would consider leaving certain types of waste in a public place, but only if I knew that it wouldn't damage the environment

Regional vs metro residents

- Regional residents were more likely to find leaving garden waste in a park 'very unacceptable' (70%) than metro residents (59%);
- 30% of metro residents are unaware of this service (landfills) compared to 11% in regional.
- Regional residents were more likely than metro residents to misunderstand that leaving furniture on the kerb outside their home is legal (36% and 25% respectively)
- Metro residents were more likely than regional residents to agree (11% tend to agree) that they would consider leaving certain types of waste in a public place, but only if I knew that it wouldn't damage the environment
- Regional residents were more likely to indicate cost as being the reason why they find taking waste to the tip difficult (21% compared to 10% for metro residents).

Renters

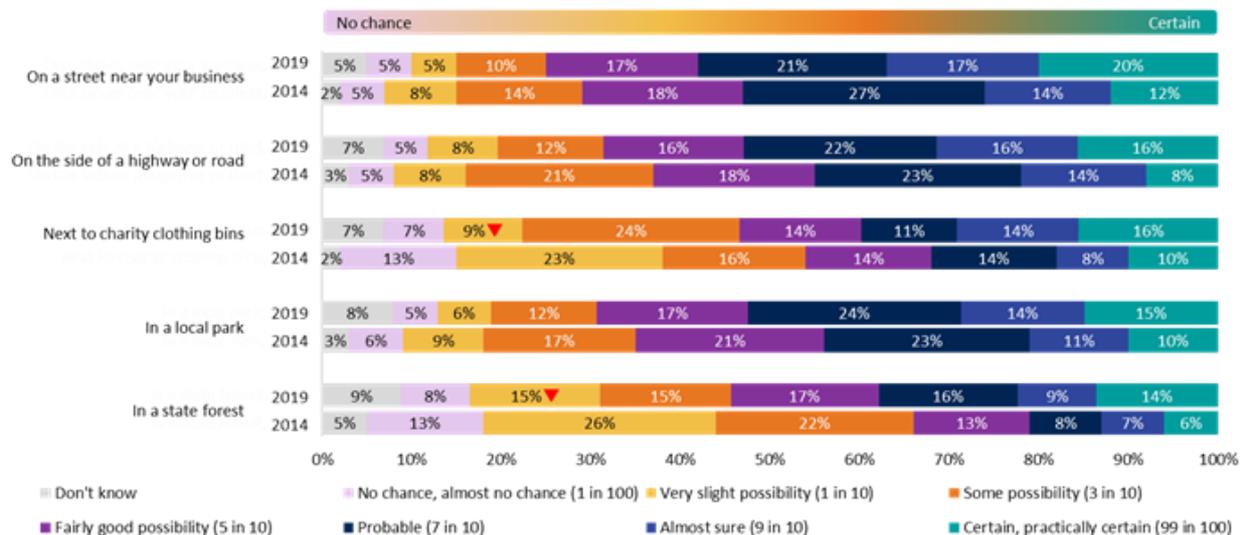
- Renters were more likely than homeowners to find it 'fairly difficult' (25% and 16% respectively) to get to the tip.

Businesses

Perceptions of the likelihood of being caught and/or fined have trended up among businesses

Across all locations tested (state forests, next to charity bins, on the side of a highway or road, in a park or on the kerb near the home), perceptions of the likelihood of being caught and fined for dumping have trended upwards (although not significantly – see Figure 9).

Figure 9: Perception of the chance of being caught and fined - Industry



Base: Total Industry sample | 2019 Industry sample (n=103), 2014 Industry sample (n=100)
 Q16 How likely do you think it is that you would be caught and fined if you were leaving waste in the following locations?
 Note: Responses 2% and below not shown for ease of reading.

However, unlike among residents, these changes have not translated into a lower likelihood to dump due to perceptions of the consequences.

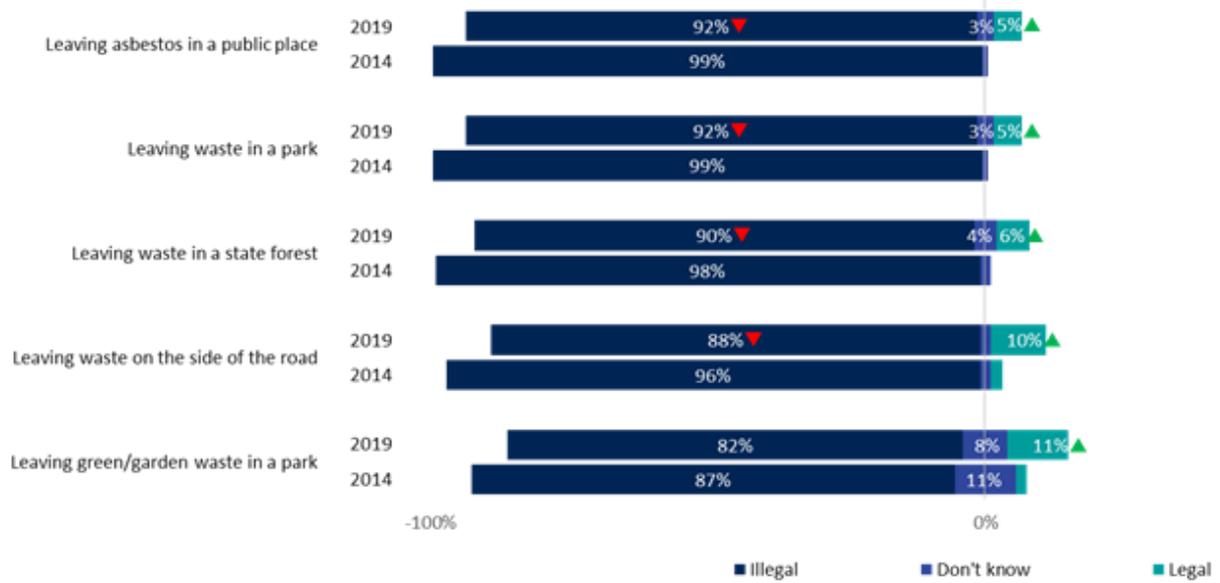
In a second point of difference compared to residents, higher proportions of businesses say that they don't know the values of fines for dumping asbestos (27% up from 14% in 2014), hazardous chemicals (32% up from 15%), construction and demolition waste (32% up from 19%) and garden waste (39% up from 23%).

Perceptions of legality and acceptability of dumping

The perceived acceptability of dumping behaviours appears to have increased among businesses, along with a drop in the recognition of dumping behaviours as illegal.

While most businesses correctly identified illegal behaviours, the proportion identifying each scenario presented as illegal has declined (Figure 10).

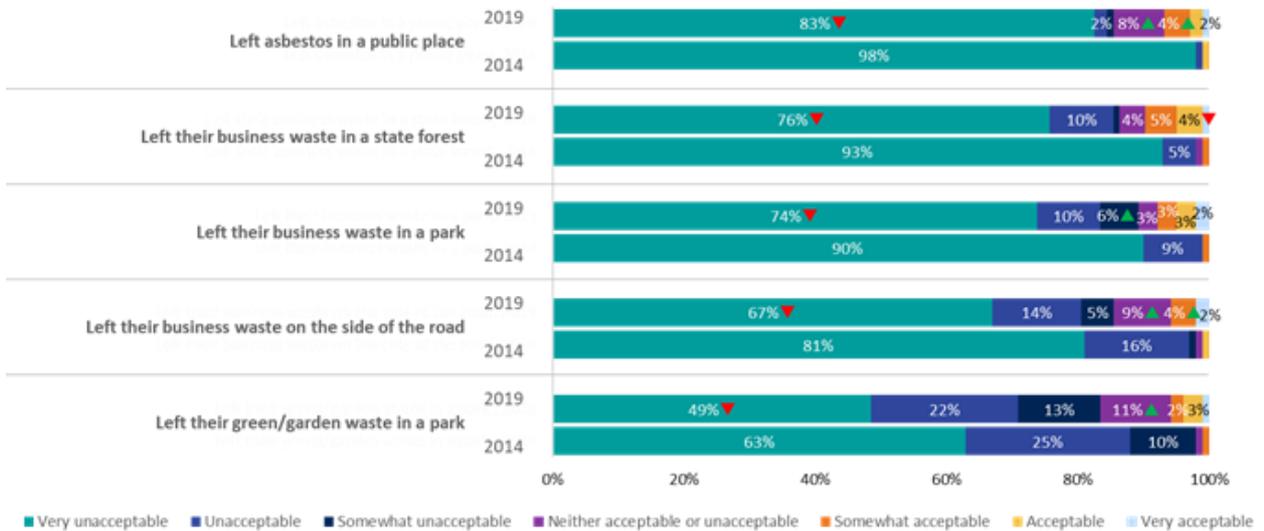
Figure 10: Perceptions of legality of dumping behaviours - industry



Base: Total Industry sample | 2019 Industry sample (n=103), 2014 Industry sample (n=100)
 Q14 Please indicate whether you think the following are legal or illegal
 Note: Responses 2% and below not shown for ease of reading.

Businesses interviewed in 2019 were also more accepting of dumping behaviours. Fewer respondents reported that leaving asbestos in a public place is ‘very unacceptable’ (83% in 2019, down from 98%). Similar reported increases are seen across other dumping scenarios (Figure 11).

Figure 11: Social acceptability of dumping behaviours - industry



Base: Total Industry sample | 2019 Industry sample (n=103), 2014 Industry sample (n=100)
 Q9 How would you judge another person or their business’s behaviour if they...
 Note: Responses 2% and below not shown for ease of reading. Reasons ranked in descending order based on 2019 results for ‘Very unacceptable’.

Recommendations

The table below outlines the important findings of the research and recommendations aligned with each.

COM-B domain		#	Audience	Finding overview	Recommendation
Behaviours	Behaviours	1	Land managers and LGAs	According to council managers, the patterns of dumping are broadly similar to 2014. The locations and types of materials disposed of are very consistent.	The strategies are specific to the audience and do not need changes.
	Behaviours	2	Residents	The demographics of residents who admit to disposing of items illegally are broadly the same as in 2014.	Strategies are likely to be improved.
	Behaviours	3	Residents	While those over the age of 40 remain the largest group that admits to kerbside dumping, those under the age of 40 report are more likely to have undertaken kerbside dumping in 2019 than in 2014.	Strategies required to change behaviour among the younger group.
	Behaviours	4	Younger residents	Younger people (aged 18 to 29) are more likely than others to be deliberate dumpers. They have less knowledge of correct disposal methods and the illegal status of dumping behaviours.	The EPA should target younger people to ensure disposal actions are correct.
	Behaviours - types of waste dumped	5	Land managers and LGAs	Councils report that dumping of asbestos on roadsides has decreased.	Continue to reduce the amount of waste dumped.
	Behaviours and interventions	6	Land managers and LGAs	<p>According to stakeholders, targeted campaigns by the councils and the EPA appear to be having a positive impact on dumping in some places.</p> <p>However, a few participants noted that these results are only maintained while the program is ongoing, and that they may not be sustained when activities cease.</p>	<p>The EPA should continue to intervene in targeted areas.</p> <p>Dumping measures should be evaluated for their impacts.</p>
Motivation	Motivation - perceptions of enforcement	7	Residents	<p>The profile of illegal dumping enforcement appears to have increased, and more residents indicate that concern about being caught and fined is a reason that they would choose not to leave waste in a public place.</p> <p>The perceived value of fines has also increased since 2014 (in line with increased penalty amounts).</p>	Continue to increase enforcement and the severity of fines.
	Motivation - perceptions of enforcement	8	Businesses	<p>Businesses' perceptions of the likelihood of being caught and fined for dumping have trended upwards.</p> <p>However, unlike for residents, these changes have not translated to lower likelihoods to dump due to perceptions of the consequences.</p>	Intensify enforcement profile of businesses in relation to dumping.
	Motivation - perceptions of enforcement	9	Businesses	Among businesses, the perceived value of fines has decreased, and a significantly higher proportion of businesses indicate that they don't know what the maximum fine value is.	Intensify enforcement profile of businesses in relation to dumping.
Opportunity	Opportunity - social	10	Residents	Overall, kerbside dumping is seen as slightly more acceptable by residents now than it was five years ago.	More widely target kerbside dumping.

COM-B domain		#	Audience	Finding overview	Recomm
	Opportunity - physical	11	Residents	<p>Younger residents (aged 18-29), CALD residents and deliberate dumpers are <u>least</u> likely to feel that deliberate and kerbside dumping of a range of materials are unacceptable.</p> <p>Awareness and use of Council kerbside collections for bulky waste have increased since 2014. While reported use of these services has dropped, this may not reflect actual changes in use.</p>	<p>It is possi kerbside kerbside the grow the kerbs</p> <p>Continue norms ar consider</p>
	Opportunity - social	12	Businesses	<p>The perceived acceptability of dumping behaviours appears to have increased among businesses, along with a drop in the recognition of dumping behaviours as illegal.</p>	<p>Intensifie profile of in relatio</p>
Interventions	Cost of dumping	13	Land managers and councils	<p>Many land managers stated that their organisations' budgets are not large enough to properly address the extent of dumping it areas they are responsible for.</p> <p>Public land managers indicated that they do their best with what they have. However, Councils sometimes have to use threats of enforcement to encourage clean-up activities due to the lack of resourcing.</p>	<p>Continue provided on their l</p> <p>The EPA providing extensive</p>

2 Background and objectives

2.1 Background

Role of the NSW Environment Protection Authority

The NSW Environment Protection Authority (EPA) is NSW's principal environmental regulator and leads the state's response to regulating activities that can impact on the health of the NSW environment and its people. The EPA uses a range of activities including education, partnerships, licensing and approvals, audit, and enforcement and economic tools to achieve better environmental outcomes. It also works with other regulatory authorities, government agencies and local councils responsible for this work.

The EPA was established in February 2012 as a statutory authority with an independent governing Board. The Board is not subject to the control and direction of the Minister in any of its functions.

Illegal dumping

Illegal dumping of waste is an ongoing and highly visible problem in NSW. The definition of illegal dumping in NSW and for the purposes of this study is (as defined by the NSW EPA):

Waste materials that have been dumped, tipped or otherwise deposited onto land where no licence or approval exists to accept such waste. Illegal dumping varies from small bags of rubbish in an urban environment to larger scale dumping of waste materials in isolated areas, such as bush land.

The Protection of the Environment Operations Act 1997 (POEO Act) provides a tiered range of illegal dumping offence provisions/fines, ranging from spot-fines to maximum penalties for individuals of fines up to \$1,000,000 and/or seven years in jail in cases where there is harm to the environment.

Illegal dumping has been prioritised by the NSW Government. Under the Waste Less, Recycle More program, \$65 million has been allocated to support illegal dumping prevention and waste enforcement between 2017 and 2021. The NSW Illegal Dumping Strategy 2017–21 continues to use a multifaceted approach to combat illegal dumping, building on the 2014-16 strategy. Building an evidence base is a key plank of the strategy, helping direct and prioritise action against illegal dumping. This research contributes to this aspect of the strategy.

2.2 Objectives

The aims of this research program are to update the earlier study conducted in 2014 that explored illegal dumping and to explore how opinions, attitudes and behaviours have changed over time.

Specifically, the objectives include:

- To understand the community's knowledge, attitudes and behaviours around different forms of illegal dumping.

- To explore motivations for dumping and what prevents people from changing their current behaviour.
- To measure changes in behaviours since the 2014 benchmarking research, understand where change has occurred and where more work needs to be done.
- To identify the groups that have the greatest potential to improve their waste disposal behaviours and who the EPA should target their programs at.

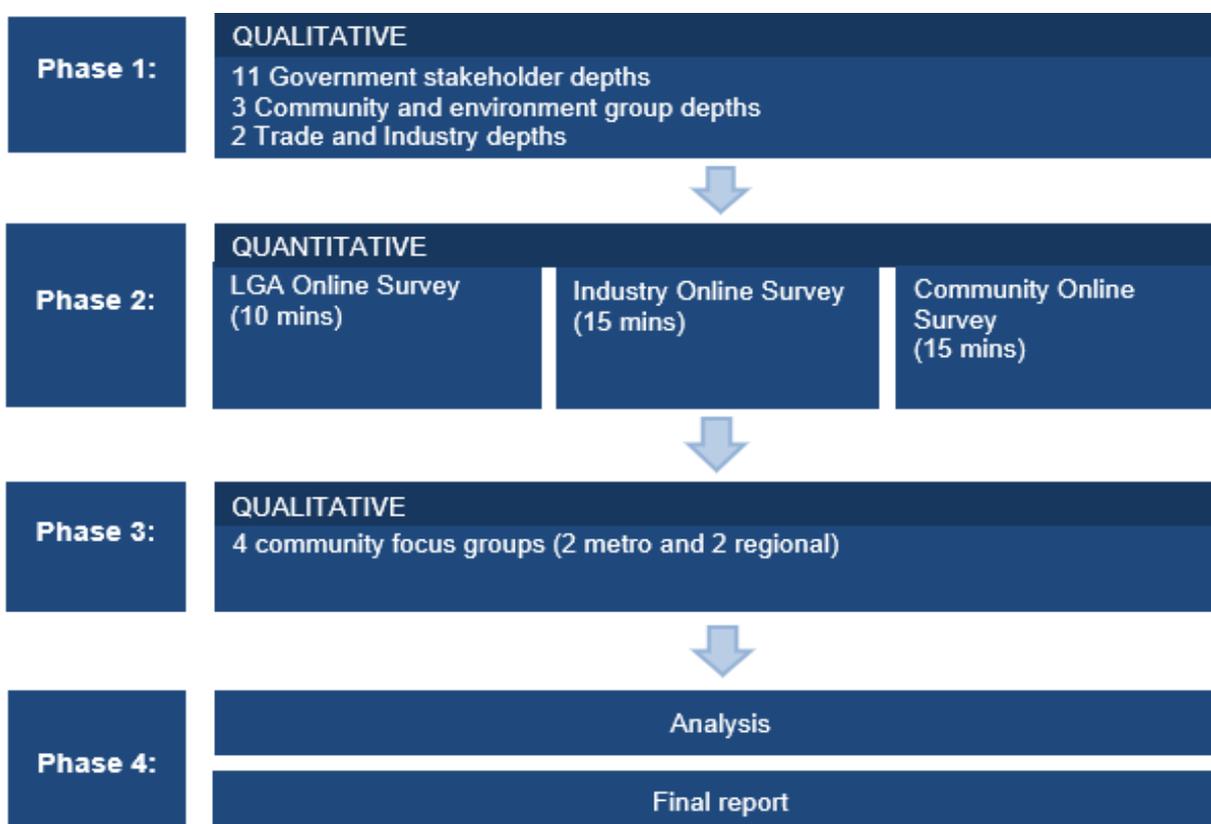
2.3 Research design

2.3.1 Methodology

The research included the following components:

- **Qualitative depth interviews** with government stakeholders, community and environment groups and trade and industry representatives
- **Quantitative online surveys** with local governments, trade and industry and the wider community
- **Qualitative group discussions** with community members.

Figure 12. Research design



2.3.2 Qualitative phase

The qualitative phase of the research involved 16 depth interviews with government stakeholders, community and environment groups and industry representatives as shown below. Four group discussions were also conducted with community members. A more detailed methodology is outlined in the qualitative research section.

Profile	Depth interviews	Discussion groups
Local government	8	-
State government	3	-
Industry – peak bodies	1	-
Industry – businesses	1	-
Community and environment groups	3	-
Wider community	-	4
TOTAL	16	4

2.3.3 Quantitative phase

The quantitative phase consisted of three online surveys:

- Community (n=1,000)
- Industry (n=103)
- Local Governments (n=42)

The design of each survey is described in more detail in the relevant sections.

2.3.4 Interpreting the findings

Analysis and reporting of differences

Analysis of survey data was carried out using SPSS and Q data analysis software (software packages used for statistical analyses in social research).

Significance testing was undertaken by testing the proportion of respondents from a particular group who gave a particular response, against the proportion of all other respondents who gave that same response. Where there are **two sub-groups** (e.g. for gender) we can say that the sub-groups **are significantly different from each other**. Where there are **more than two sub-groups** (e.g. for age), a group reported in the findings as ‘different’ is significantly different from the **average for all other groups** for that question.

Significance testing was between:

- 2014 and 2019 results
- 2019 subgroups of interest (e.g. age groups, metro/regional).

Any significant differences are annotated in the following ways throughout the report:

- Significant differences between 2014 and 2019 are labelled on charts (using green and red arrows)
- Significant differences between 2019 subgroups of interest they are outlined in the accompanying text.

Rounding in charts

In some charts, response categories shown may not sum to 100% due to rounding of the numbers displayed. It should also be noted that for questions where multiple responses were allowed response categories may sum to more than 100%.

Anonymity of responses

All responses by respondents in all phases of the research were provided in a confidential context. Respondents were assured before interviews, discussions and surveys that:

- responses would not be attributed directly to them or their organisation;
- no identifying information would be published or provided to the EPA, and
- responses would be aggregated.

This helped ensure that candid responses were elicited from respondents in order to provide the EPA with accurate, unbiased feedback.

Quotes as statements of fact

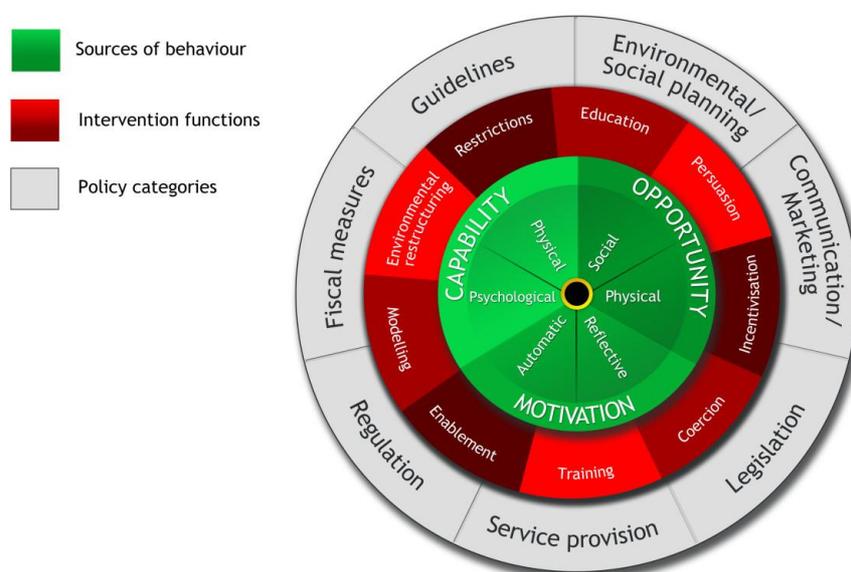
Quotes in this report **represent the opinions** of those interviewed. Many are perceptions based on experience, and **not necessarily statements of fact**. Some quotes in the report do, however, read as if they were statements of fact. While commentary and context are provided in text surrounding the quotes, readers should keep in mind that **views expressed are based on individuals' perceptions of the issue**.

2.3.5 The COM-B behavioural framework

The analysis and reporting approach for this research utilises the COM-B behavioural framework. Ipsos Social Research Institute (Ipsos SRI) uses this framework to better understand why people behave as they do, and how to best go about changing their behaviour.

The basis of this approach is the ‘Behaviour Change Wheel’, shown in Figure 13 below. This wheel connects the sources of behaviour with the intervention types and policies that are likely to be effective in changing the behaviour. It provides comprehensive coverage of possible influences on behaviour and components are mutually exclusive, fitting into three complementary categories: sources of behaviour; intervention functions; and policy approaches.

Figure 13: The COM-B Behaviour Change Wheel¹



¹ Michie et al, 2011

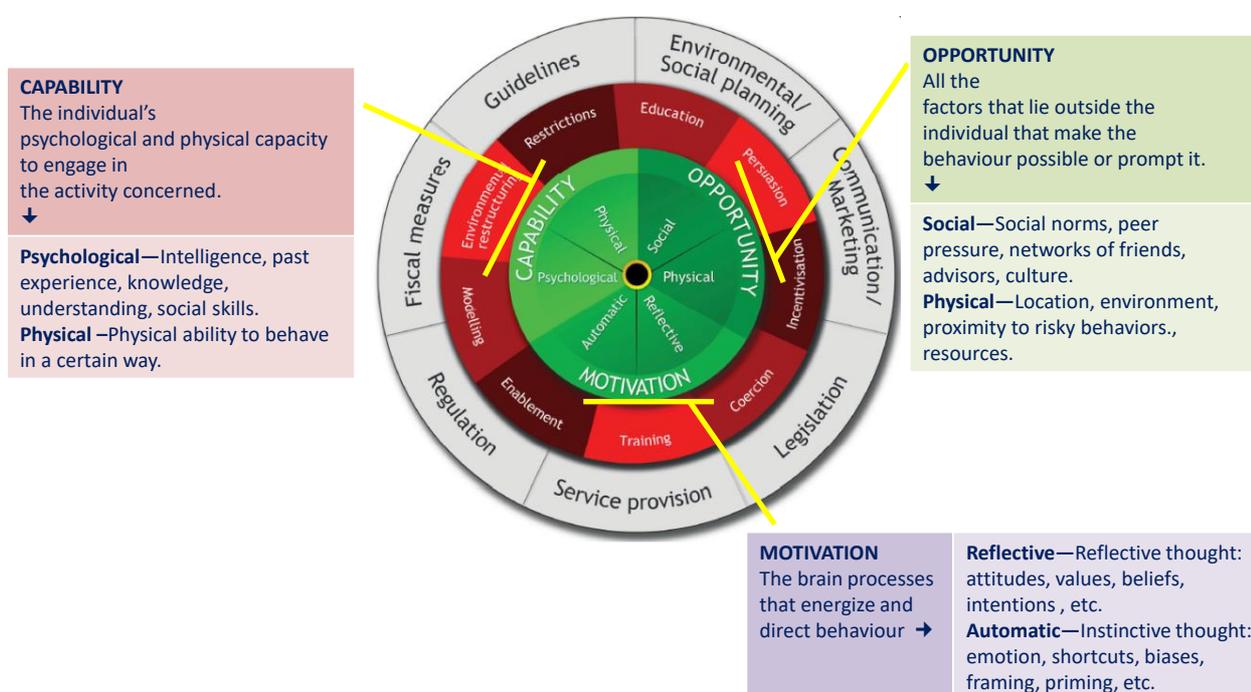
2.3.5.1 Capability, Opportunity and Motivation

At the heart of the Behaviour Change Wheel is the COM-B model, which identifies three fundamental factors of any behaviour:

- Capability;
- Opportunity; and
- Motivation.

Each section of this report is structured according to these factors. Each factor is detailed in Figure 14 below and in the following paragraphs.

Figure 14: Capability, Opportunity and Motivation



Capability

Capability represents the individual's capacity to engage in the activity concerned, both psychologically and physically. Psychological capability could include one's intelligence, past experience, knowledge, understanding and social skills. Physical capability refers to one's physical ability to behave in a certain way.

Opportunity

Opportunity refers to all of the factors that lie outside the individual that make the behaviour possible or prompt it. These factors can be either social or physical. Social factors could include social norms, peer pressure, network of friends, advisors, and culture. Physical factors could include location, environment, proximity to risky behaviours, and resources.

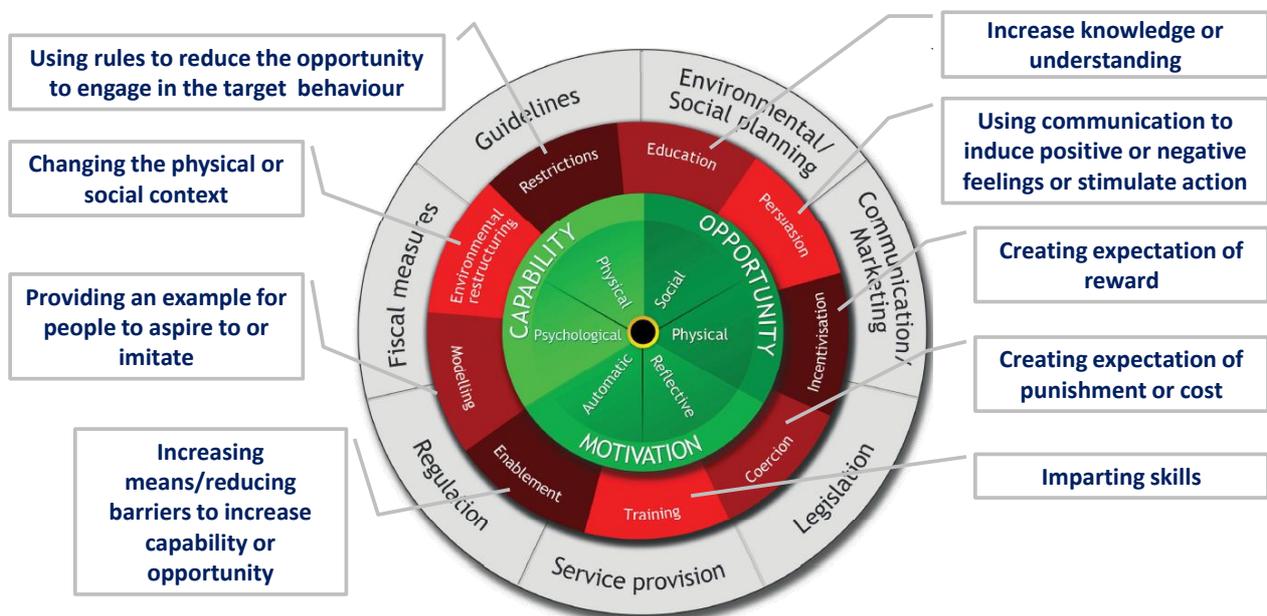
Motivation

Motivation refers to the brain processes that energise and direct behaviour. These processes can be either reflective or automatic. Reflective processes could include attitudes, values, beliefs, and intentions. Automatic processes – or instinctive thought – could include emotions, shortcuts, biases, framing, and priming.

2.3.5.2 Interventions

For each of the factors of behaviour, the Behaviour Change Wheel identifies the most effective potential intervention types. Each is detailed in Figure 15 below and in the following paragraphs.

Figure 15: Intervention types



Capability interventions

The most effective interventions to address capability factors include:

- **Modelling** – providing an example for people to aspire to or imitate;
- **Environmental restructuring** – changing the physical or social context; and
- **Restrictions** – using rules to reduce the opportunity for the behaviour.

Opportunity interventions

The most effective interventions to address opportunity factors include:

- **Education** – increasing knowledge or understanding;
- **Persuasion** – using communication to induce positive or negative feelings or stimulate action; and
- **Incentivisation** – creating expectation of reward.

Motivation interventions

The most effective interventions to address motivation factors include:

- **Coercion** – creating expectation of punishment or cost;
- **Training** – imparting skills; and
- **Enablement** – increasing means/reducing barriers to increase capability or opportunity.

2.4 Qualitative phase: stakeholder depth interviews

2.4.1 Objectives

Qualitative research was carried out with organisations effected by illegal dumping, to explore their perceptions and experiences of the nature, extent and impact of the problem.

The specific objectives for the qualitative research with **Government stakeholders (including local and state government organisations)** were to:

- Explore the extent and nature of the problem, including the impacts of illegal dumping.
- Explore measures being taken to monitor and reduce illegal dumping in their jurisdiction (including identifying the extent and nature of any data being collected by the organisation).
- Explore views on the most effective strategies and what is needed to combat the problem

*The specific objectives for the qualitative research with **community and environment groups** were to:*

- Explore the extent and nature of the problem, including the impacts of illegal dumping on their organisation and on the community.
- Explore measures being taken to monitor and minimise illegal dumping.
- Explore their understanding of and willingness to adopt measures to reduce illegal dumping on any land they own/manage.
- Explore views on the most effective strategies and what is needed to combat the problem.

The specific objectives of the qualitative research with organisations in the waste industry (including peak bodies and businesses) were to:

- Explore the extent and nature of the problem, including the perceived impacts of illegal dumping.
- Explore perceived characteristics of people/industries that dump illegally, and participants' opinion of them.
- Explore motivations to dump illegally, and the barriers to and incentives of disposing of waste legally (from their own perspective and their views of their industry in general)
- Explore views on the most effective strategies and what is needed to combat the problem.

2.4.2 Methodology

A total of 16 depth interviews were carried out over the telephone.

Government stakeholders

The eleven government stakeholders represented in this research include local and state government stakeholders; RID squads; and public land managers and others dealing with the impacts of illegal dumping.

The government stakeholders interviewed came from a range of locations throughout both metro and regional NSW. Their experiences specific to illegal dumping varied based on their role. For some, matters

relating to illegal dumping constituted a major component of their job. This was particularly common for participants from more populous local government areas, where there were often roles devoted to managing illegal dumping. For others, matters relating to illegal dumping formed a minor component of their role.

Community and environmental groups

The three community and environmental groups sample from across NSW included a charity, a community action campaign group and an environmental action group.

Trade and industry participants

Research carried out with trade and industry bodies was limited for the qualitative component in 2019. This was due to a smaller and less engaged sample.

Two interviews were conducted; one with a waste industry business and one with an industry association.

Interviews with Arabic speakers were not conducted in 2019.

2.4.3 Findings

Perceptions of the extent and nature of illegal dumping

The following section outlines findings from qualitative research conducted with NSW EPA stakeholder groups in 2019 (see table below). The focus is on 2019 findings, while also drawing relevant comparisons to the previous wave of research undertaken with NSW EPA stakeholders in 2014.

Stakeholder group	Perceptions
Government stakeholders	The perspectives of government stakeholders varied depending on their exposure and amount of time dedicated to illegal dumping in their role. It also varied according to the prevalence in their area. Local government stakeholders' primary concern was kerbside dumping, while public land managers had more experience addressing deliberate dumping in locations such as bushland.
Community and environmental groups	Community and environment group continue to perceive the impact of illegal dumping as being a serious one. While strategies and initiatives had been actioned by these groups to reduce this impact, it was described as a slow process of improvement.
Trade and industry participants	Illegal dumping was mostly thought to be committed by smaller businesses, non-contracted businesses and unlicensed businesses. It was believed the rate of illegal dumping by these groups has not slowed down over the past 5 years, and that illegal dumping is still common.

Extent of illegal dumping over time

Stakeholders interviewed in 2019 had varying views on the changing level of illegal dumping over time.

Participants from a range of professional backgrounds believed that there has been a reduction in the incidence and volume of illegal dumping in their jurisdiction over the last 5 years. Despite reports of positive change, many participants still reported dumping levels had not changed despite their best efforts, or that they had still seen a slight increase. While some participants did note dumping statistics that indicate the incidence and volume of dumping has decreased, the overwhelming message was that illegal dumping remained a significant issue.

"I would say in the high-density areas, Wollongong, Shellharbour, and to an extent Kiama and Shoalhaven...the problem has reduced by a percentage over the last couple of years, but it will obviously never go away" - Government Stakeholder

"I think it is better than what it used to be before, but it is still a major issue" - Community group participant

Others noted that the introduction of targeted programs and campaigns or funding from EPA grants had led to some decrease in dumping activity. The rise in community education and publicity as part of the campaign or program was thought to be the reason for the decrease. However, some noted that these improvements tend to be focused only during the time period of the program or grant, and that rates rebounded when programs finished.

"There wasn't a sustained change with the program." - Government stakeholder

Government stakeholders frequently made these assertions based on their own data, while public land managers based their views on personal observation of illegal dumping incidents. Occasionally, participants' organisations had only begun recording incidents recently so were unable to comment on any changes over time.

Types of waste illegally dumped

The most common types of waste illegally dumped were those types that were difficult and/or expensive to dispose of legally. In comparison to 2014, household waste was thought to be more prevalent and was the most frequently mentioned waste type. Unlike in 2014, cooking oil was not mentioned by any participants as a waste type that is typically dumped.

The types of waste typically seen as being dumped (in broad order of perceived prevalence) included:

- Household waste, particularly bulky items such as furniture and mattresses;
- Construction and demolition waste;
- Cars and car parts, including tyres;
- Hazardous waste, such as asbestos;
- Green waste, mulch and soil.

Asbestos

Perceptions of the seriousness of asbestos dumping have not changed over the past five years for the majority of participants. Public land managers noted this was still a serious issue on their land (for example in State and National Parks). Councils stakeholders less often mentioned this. One business participant mentioned that undisclosed asbestos (such as asbestos contaminated soil) was still commonly found in waste given to them for processing – however detection was possible with the help of an asbestos-identifying gun.

Some stakeholders reported that asbestos dumping was a minor problem compared with other issues they managed. Others thought that asbestos dumping had decreased in their area since 2014. However, reports from public land managers about the effort some people will make to hide their asbestos dumping (e.g. wrapping in multiple plastic bags, dumping it remotely) imply some stakeholders may be unaware of the full extent of dumping taking place because it is largely hidden from view.

A few government stakeholders noted that they had provided public education materials and testing kits in their LGA, which suggests this has been helping to reduce the prevalence in their areas.

“A big one for us is asbestos” – Government stakeholder (public land manager).

[Asbestos] “Double bagged and taped on the side of the road.” – Government stakeholder (public land manager).

Green waste

In some areas, a decrease in green waste dumping was reported. The rise in FOGO bins provided to residents was thought by some to have helped create this decrease, while some councils had run successful awareness campaigns focused just on green waste.

“A little bit of a reduction in green waste, because we’ve been working with our bush regeneration team”- Government stakeholder.

Chemical and e-waste

Dumping of chemical waste such as paints was seen to have decreased significantly, as this type of waste can be disposed of for free at Community Recycling Centres.

E-waste was very rarely mentioned as a type of waste typically dumped for the same reason.

“Less and less electronic waste, because it is accepted for free”- Government stakeholder.

The impacts of illegal dumping

The impacts of illegal dumping mentioned by participants fell into the following three categories:

- Cost and effort impacts;
- Environmental impacts; and

- Visual and social impacts.

Cost and effort impacts

In 2014, cost and effort associated with dealing with and preventing illegal dumping were commonly viewed as the most significant impacts. Again this year, almost all participants identified the cost and effort invested in cleaning up, monitoring and preventing illegal dumping as the most significant impact. This view was prevalent among both local government stakeholders and public land managers as actual figures were regularly mentioned. Both stakeholder groups expressed concerns regarding budgets and their reliance on grants and external funding.

The majority of these stakeholders reported that their organisation's budgets were insufficient to address the extent of illegal dumping on their land. For many, the majority of their budget went towards other expenses such as roads and management of waste (not including illegally dumped waste). Many also expressed the concern that the cost of staff hours required to successfully monitor their area would not be affordable with their current budget. For some councils currently participating in the EPA Waste Less Recycle More grant program, costs were said to have reduced by between 40% and 50%.

"...what I'm hearing from our contractors is that they're having to pay more for removing larger items which are not covered in our standard rate for removal. That's a sign that it is getting worse." - Government stakeholder (Public land manager).

"I don't think we've ever had a regular, established budget to cover what we need to...obviously we did a lot more when we had a grant budget, that gave us a lot of capacity to follow up and address these things properly because we used contractors to carry out the clean ups...in general day to day, we don't have the staff we need to cover these dumping issues." - Government stakeholder

It was also noted by some local government stakeholders, that other organisations such as land managers and charities expected Council to pay for clean up on their own land where they could not afford to do so themselves, by granting subsidies or waving disposal levies. This came at a high cost to council budgets.

Funding for clean-ups

In 2014, government stakeholders felt that the time involved in clean up, surveillance and investigation was taking them away from other important aspects of their roles. This contrasts with 2019. Now, rather than being given more time to address illegal dumping issues, councils with the least time resource reported that illegal dumping had been pushed to the bottom of their agenda.

Some public land managers also cited a lack of council support. An example of this was a public land manager who didn't believe it was fair for his council to expect his organisation to pay for waste disposal of goods dumped illegally by the council's ratepayers. External pressure from the community to clean up dumping sites was cited as a catalyst for these situations. Councils didn't want to appear to be letting their community down.

"If we get a number of complaints from the public, then we're kind of forced to do something about it." - Government stakeholder (public land manager).

Further, waste industry and association participants noted that dumping was financially detrimental to their industry. A waste facility participant noted that dumping takes business away from them. He noted that the increase in tip levy over the last 5 years made illegal waste disposal a more attractive option for some than paying for legal disposal. The participant did not provide an estimate of revenue lost due to illegal dumping.

Large-scale dumping sites

While clean-up was noted as a large burden on organisational resources by stakeholders in 2014, clean-up costs for large-scale dumping sites were viewed as carrying the heaviest cost impact for government stakeholders in 2019.

“That dump...happened two weeks into the financial year, it cost \$40,000 to get rid of it. Their budget for 12 months was \$30,000. So that one dump put them over budget by \$10,000, two weeks into the financial year.” - Government stakeholders (Public land manager).

These deliberate dumping incidents often occurred in difficult to access bushland rather than in urban settings. For one organisation, just one very large-scale dump in a difficult to access location had cost more than one million dollars to clean up due to the time, specialised staff and heavy machinery required.

“The large scale ones are significant, and when I say large scale, they are on maps that can be seen from google earth and they are impossible to clean up because the cost is horrendous... we needed a crane, we needed specialised abseilers to go down and do it, it was going to take 2-3 weeks to clean it up. We’re talking in the millions and millions of dollars.” - Government stakeholder (Public land manager).

Asbestos dumping removal costs

Compared to dumping for other types of materials, government stakeholders reported that asbestos was on a much smaller scale, therefore takes up fewer resources. Some noted that the overall cost of managing asbestos dumping had not increased in recent years despite rising removal and disposal costs due to a lower asbestos dumping rate. However, public land managers continue to face high costs for clean-up.

“There was one where it was nearly 70,80 thousand dollars that needed to be paid to remove that dumped material because it did contain asbestos.” - Government stakeholder (Public land manager).

Costs to charities

While research with charities was limited in 2019, it was noted that the interventions undertaken in recent years had led to a reduction in cost associated with dumping at charity bin sites. However, the cost of clean-up and disposal is still a major budgetary concern for charities and takes time and resources away from core charity operations.

“It stops them doing their good work in the community.” - Community group participant (NGO)

Applying for EPA grants

Where councils were not currently participating in the EPA grant program, this was sometimes due to lack of the collected data needed for proper application for the grant. It was also noted by a few councils that the staff hours required to put together a successful grant application would exceed the hours they had available, either due to understaffing or budgetary constraints.

Visual and social impacts

The visual impact of dumping, particularly on the kerbside, was viewed as the main social impact by participants. It was referred to as “*visual pollution*” by one government stakeholder. Participants from all stakeholder groups noted the way illegal dumping negatively affected the feel of neighbourhoods in their area.

As in 2014 findings, participants believed the visual impact of illegally dumped waste led to a range of social challenges:

- Reduced local pride;

“...less sense of pride for where they live...because it turns where they live into a bit of a dumping ground” - Community group participant (NGO)

- Normalisation of illegal dumping through social norming;

“...in a lot of suburbs, it now has become normalised.” - Government stakeholder

“We don't want our properties to be known as a dumping ground or encourage our tenants to participate in dumping.” - Government stakeholder (Public land manager)

- Reduced wellbeing, particularly the mental wellbeing of public housing tenants;

“We have a lot of disabled tenants or tenants with mental health issues, you don't necessarily want dumped items to cause more angst.” - Government stakeholder (Public land manager)

- Reduced value of housing in neighbourhood;
- Safety risks to pedestrians (from kerbside waste) and bush walkers (generally from hidden asbestos and construction & demolition waste);
- Damage to reputation, and reduced confidence in councils, e.g. dumping underneath council signage.
- Misunderstanding between Indigenous and non-Indigenous communities;

“...there's a perception that it's the [Indigenous] community that's illegally dumping but it's not...it's people coming in and because it's remote...dumping stuff there.” – Government stakeholder

Councils also noted that if dumping sites were not cleaned up quickly, they would receive public complaints or backlash. In general, councils prioritised any dumping that created unsafe communities such as waste obstructing roadways.

Tourism concerns were not voiced by participants in 2019, and Industry and peak body participants did not report social issues being as prevalent, in strong comparison to cost and environmental impacts.

Environmental impacts

Compared to 2014, participants in 2019 expressed more concern about the environmental impacts of illegal dumping, in equal measure to concern regarding social impacts. Several 2019 participants cited an increase in bushland dumping and mentioned a range of concerning incidents. On the other hand, 2014 participants had less concern about the environmental impacts than they did the cost and social impacts and saw the main environmental concern as hazardous material contamination.

Participants from regional areas expressed the most concern, most often due to the higher prevalence of bushland in their areas compared to those in urban areas. Dumping of construction and demolition waste, cars and car parts including tyres in bushland was the most commonly reported form of dumping. These incidents were often large in scale and occurred regularly in a high quantity. In addition, the environmental impacts of dumped green waste, and in particular asbestos, were key concerns as they were not always reported immediately due to being hidden, increasing the likelihood of environmental damage to flora and fauna. The risk of contamination from dumping in environmentally sensitive areas such as creeks, gullies and ocean was a major issue for a small number of councils areas.

The environmental impacts reported included:

1. Damage to the ecosystem, including water contamination, soil contamination by asbestos, encouragement of noxious weeds by dumping of green waste, airborne pollution and general pollution of the land;
2. Degradation of plant life; and
3. Damage to threatened flora and fauna species, such as rare native orchids.

Concern was also raised about the potential for historically difficult-to-address hot spots, known as “legacy waste”, to be a risk factor for bushfires.

“That one there is a ticking time bomb...you’ve got burnt out vehicles...you’ve got intact vehicles... it could be the spot that starts the fire” – Government stakeholder (Public land manager).

The environmental impact on Crown land, such as National Parks, State Forests and the Catchment Authority, was noted to be larger than that on Council land. Lack of funding, staff resources and time were the most commonly cited factors preventing rapid clean up. This was a key contributing factor to environmental damage.

“Council areas, they’re very good...but on other agencies’ land...they don’t have the funds or the ability to get there and clean it up quickly. So, it starts to attract things, mattresses start to break down, so there’s more impact on their land than on council land”. - Government stakeholder (Public land manager).

Where and when?

In line with 2014 findings, illegal dumping continues to occur most frequently in locations that are not easily visible by the public. Stakeholders believed that it is undertaken most often at night-time to avoid attention and detection.

Bushland

National parks and bushland continue to be identified as illegal dumping hot spot areas. This is thought to be due to the difficulty of monitoring vast hectares of bushland, and the large number of potential access points available to dumpers. Public land managers note that most of these locations were within a short distance of populated areas, with easy vehicle access.

“Anywhere that’s in close proximity to development...and that allows access into the park where they can drive out of sight...a firetail, close to the main road and they can drive out of sight”. - Government stakeholder (Public land manager).

“As soon as you get out of the township, the first roads or tracks that are unlit and not well used are the first places that they’ll dump”. - Government stakeholder (Public land manager).

“We’ve got camera footage of people being in the park at 11:30 on Friday night cutting gates and cutting their way in and leaving again at 2 or 3 in the morning”. - Government stakeholder (Public land manager).

Some participants also noted these hot spots were often strategically located in difficult access areas such as the bottom of cliffs, and dense bushland.

“So, there’s a spot up near Wollongong where you can pull off to the side of the road and its almost a cliff...so they can throw stuff off there, they can throw cars off there...”- Government stakeholder (Public land manager).

“They get them into tricky areas, so they have to be removed by a machine that can pick them up and bring them out to an area where we can put them on a truck.” - Government stakeholder (Public land manager).

Some participants thought these hotspots had remained similar over the last years.

“They move, but we definitely have hot spot areas” - Government stakeholder (Public land manager).

Transfer stations

Tips and transfer stations also continue to experience illegal dumping at the gate after hours.

“Where we’re located is on a dead-end road, off a main road and with no streetlights and regularly we’ll come to work and find that people have you know dropped a boot load of rubbish, a box trailer of rubbish”-Business participant

Illegal dumping continues to occur in publicly visible places as well. These included:

- In front of multi-unit dwellings such as apartment complexes;

- On the street in front of houses, as well as the alleyway behind;
- Around charity donation bins and outside charity store fronts;
- Car parks; and
- Public spaces like parks, netball courts and soccer fields.

Illegal dumping around charity bins was felt to be more likely to occur on weekends, when the bin would be at full capacity, encouraging the public to leave items next to the bin. It was thought that malicious dumping of goods not intended for donation was more likely to occur when the bins were overflowing as it was easier to dump if a pile of dumped items was already present.

"...what happens is the bin is full by 6pm Friday night...by Saturday afternoon there's a huge pile..."
 - Government stakeholder (Public land manager).

Who?

An undefined minority

Most participants had their own views on the types of people that illegally dump. In line with 2014 findings, the overwhelming consensus was dumpers come from a range of backgrounds.

"The reality is, it could be anyone." - Community group participant (NGO)

"Average everyday people." - Government stakeholder (Public land manager)

"People who illegal dump come from all walks of life." - Charity participant

Nevertheless, theories around criminality, gender, language-spoken at home, socio-economic status and age were also common. These theories were sometimes based on individual incidents in the participant's local area, and some appeared to be based on speculation.

"Low class criminal types." - Environmental Group participant

"Predominantly males." – Government Stakeholder (Council)

"...boys being boofheads." - Government stakeholder (Public land manager)

"...only 20% speak good English at home." – Government Stakeholder (Council)

"There's an odd percentage of people who come from places where dumping rubbish is not really a big issue in some Asian countries for example." – Business participant

"Some of it is probably Socio-economically driven. Probably those members of the community that probably don't have the money to dispose of waste." - Government stakeholder (Public land manager)

"Sort of between, 18 and 35, because even the older 20s...they're more calculated around the financial side of it. Under 25, its more about the convenience." – Government stakeholder (Public land manager).

"Older people who can't get to the tip and dump in front of their house." – Government Stakeholder (Council)

Most participants did not believe that demographics played a large role in determining dumpers from non-dumpers, or any role at all.

"In the last couple of years, we've investigated and prosecuted unemployed people, drug addicts, teachers, politicians, local govt councillor, lawyers, doctors, university lecturers, NRL player on a multi-million-dollar contract who was seen illegally dumping, single mums, married people. Every class of people dumps." – Government Stakeholder (Council)

"...demographics really vary." – Government Stakeholder (Council)

Less concrete examples reported included an idea that those who choose to illegally dump held a hostile attitude towards regulations and 'doing the right thing'.

"...it's an attitude, it's a challenge, it's a "you can't lock me out" sort of attitude...it's a bit of excitement". - Government stakeholder (Public land manager)

"...members of the public who really don't care like a lot of people perceive that council gate fees are too high and so they justify the fact that they go and throw their old fridge in the bushes...so it's not your average person." - Government Stakeholder (Council)

More practical observations were based on first-hand experience with illegal dumping from attending dumping sites and viewing surveillance footage. Some public land managers thought that those with access to a vehicle were much more likely to dump.

"People who have got four-wheel drives... and obviously those who can afford cordless power tools." - Government stakeholder (Public land manager)

"There are a whole range of people that are doing it...coming in cars, coming in box trailers, utilities, small trucks." - Business participant

"They've definitely got to have a car" - Business participant

Residents

Illegal dumping by householders remains a serious issue, particularly for local government stakeholders who address kerbside dumping more frequently than other stakeholders.

In contrast to 2014 findings, illegal dumping by tenants was more commonly reported by participants than illegal dumping by homeowners. Participants from all stakeholder groups thought tenants were more likely to dump illegally. Short-term tenants such as students and travellers were also noted to be at risk of resorting to illegal dumping, the latter perhaps due to their lack of familiarity with local services and council restrictions.

“Especially renters because they’re very difficult to trace down...we don’t have identification on where they’re going to...they’re very smart.” - Government stakeholder (Public land manager).

“There is a high transient turnover of people, younger people visiting that’s a big [group of illegal dumpers].” - Government Stakeholder (Council)

While kerbside dumping of household waste was the most commonly reported type of incident by participants across stakeholder groups, public land managers also reported that household waste, presumably dumped by householders, was frequently appearing in their reserves. In a large proportion of cases, it was thought that much of the waste dumped would be dumped by residents who were moving between homes. The typical types of waste, such as furniture and packaging, led some participants to come to this conclusion with a high degree of certainty.

“We do find there is an issue with tenants moving out.” - Government stakeholder (Public land manager)

“The other ones, who are renting, that have been told they’ve got to be out in 2 weeks, ring up for a bulky waste pick up, the bulky waste pick up can’t be done for 3 weeks, they put all the stuff out early...” - Government stakeholder (Public land manager).

“You’d be amazed how many times we’ve come up and it’s five boxes of cardboard. Which is free to drop off...they scream of what they are...they are boxes where it’s a new table, new tv, flat pack boxes. You know they’ve either moved in or moved out.” - Government stakeholder (Public land manager).

Additionally, the majority of government stakeholders believed house renovation waste and green waste were more likely to have been dumped by contractors that were employed by householders, shifting the responsibility to businesses.

Businesses

The general perception of participants across stakeholder groups that small businesses were the most likely business group to illegally dump appears to have become a more strongly held view since 2014.

Small businesses, particularly sub-contracting excavators, other construction and demolition workers, arborists and waste collectors were the types of Industry dumpers most commonly mentioned. Sub-contractors were thought to be more likely than other businesses to dump because the paper trail would be more difficult to follow in the case that they were investigated. While some of these reports were from word-of-mouth or speculation, they were also drawn from personal observation of dumping incidents, and experiences of cleaning up large-scale dumping of construction & demolition waste and green waste.

Stakeholders also emphasised that smaller businesses, including individual contractors, are much more likely to be unlicensed and therefore less likely to be audited or asked to provide evidence of legal disposal by regulators. This included smaller, unlicensed waste processing facilities that were taking advantage of this by not adhering to the resource recovery order in relation to sorting their waste. Facilities where waste sorting did not form a core part of their business were also viewed as less likely to meet legal requirements.

"Then you've got the really calculated ones and these are the large dumps and they are a lot of the C&D waste....an excavating company..." - Government stakeholder (Public land manager).

Small operators. The sub-contracting side of it is so difficult. The chain of responsibility is so difficult to prove." - Government stakeholder (Public land manager).

"And we actually had...tell us, "we have trucks that disappear for days, we don't know where they are". They can't keep an eye on them because it's a sub-contractor to a contractor who contracts to another sub-contractor." - Government stakeholder (Public land manager).

"Clearly, top of the list-waste collectors who want to avoid the waste levy." - Community group participant

"Smaller, privatised organisations." - Business participant

"...a lot of the dumping is done by the individual contractor...or it's a small bin guy who's not licenced...so the EPA's not really on their radar and then he will make stuff disappear." - Business participant

"Particularly in regional areas...small facilities, and those that aren't licenced." - Industry association participant

"It's the facilities...where it's not their core business...are less likely to be meeting those orders." - Industry association participant

Capability factors influencing illegal dumping behaviour

In the COM-B behavior change wheel, capability represents an individual's capacity to engage in the activity concerned, both psychologically and physically. Psychological capability could include one's intelligence, past experience, knowledge, understanding and social skills. Physical capability refers to one's physical ability to behave in a certain way.

The 2019 stakeholder interviews suggest that psychological capability factors continue to be more influential on dumping behaviour than physical capability. Psychological capability is seen as being impacted by:

- Awareness of waste collection and disposal processes generally, as well as awareness of the services available, including council collection dates, tips and transfer stations, and types of waste accepted;
- Knowledge of how and where to dump illegally without incurring consequences;
- Awareness that dumping waste is illegal; and
- Awareness that dumping waste impacts the environment (newly mentioned in 2019).

Physical capability was also a factor in relation to financial ability to pay for services, and time.

Psychological capability

Awareness of waste collection and disposal processes

Most stakeholders reported a low awareness in relation to council waste collections. Knowledge gaps fell into two main categories:

- Costs involved; and
- Types of waste accepted.

In contrast to 2014 findings, public knowledge of collection dates and the availability of council pick up services was not mentioned as a major issue in 2019. In addition, lack of awareness in relation to disposal sites and opening hours was not raised by stakeholders as an issue in 2019.

Perceptions of pick up and disposal costs

Many government stakeholders stated that the public assumed council pick-ups incurred high costs, and that many people were still not aware free, on demand council services were available. They felt that, when residents were unsure about collected service details, dumping on the kerb (or less frequently on someone else's land) was a more likely outcome than electing to look up a council website, partly because the assumptions made about associated costs.

"...sometimes people just don't understand...there's just an assumption that it's going to be expensive." – Government stakeholder (Council)

Types of waste accepted

This reported tendency to not research or consider alternatives to dumping was also thought to determine the types of waste dumped. It appeared that some waste types that are free to dispose of via drop off, regular weekly collection or pick up, such as white goods and bottles, were being dumped regardless. Some felt the fact that that materials some councils have included in expanded waste-acceptance offerings (for example, types of green waste such as palm tree mulch) were still being dumped, indicated that messaging about the new services has failed to get through on a wider community level.

"They're not sure what the other methods are, it's just easier" –Community group participant (NGO)

"I don't understand why residents have the need to dump things in the park when they have these free pick-ups"–Government stakeholder (public land manager)

"We are finding materials that are free to drop off at these dump sites...like white goods...and bags of bottles...there's an element of not checking." – Government stakeholder (council)

"A lot of people still don't understand what councils will accept." – Government stakeholder (public land manager)

Knowledge of how and where to dump waste illegally, making it easier

As in 2014, participants across stakeholder groups thought that illegal dumpers have specific knowledge of locations where they can dump waste without being immediately detected. Remote, industrial sites and unlit roads near bushland or on the outskirts of Sydney, were all viewed by the majority of participants as typical locations that businesses in particular tended to dump. It was also speculated that those businesses that use illegal dumping regularly as a cost cutting technique knew where the most dumping-friendly sites are located.

Some participants also thought that the public came to rely on regular clean ups of illegally dumped waste, such as waste dumped at charity bins. The view was that this incorrect disposal may not be due to lack of awareness, but that these locations were merely seen as convenient and reliable places to leave their waste.

“In the industrial area, just past the tip...it’s not well lit, not well used and it becomes the easy dumping ground.” - Government stakeholder (public land manager)

“The reason they dump stuff at these remote sites is because they don’t want to get caught.” - Government stakeholder (council)

“...unlit roads used by yahoos, and it’s easy to stop there.” - Government stakeholder (public land manager)

“You see Vinnies drop off points, you know there’s a lot of overflow around those bins and stuff, so people might have this opinion that if they appear at the tip out of hours then they can just dump it near the gate and it’ll be cleaned up.” – Business participant

Awareness that dumping waste is illegal

There was a broad consensus by participants across all stakeholder groups that, while some residents who dump on the kerb may not always be aware it is illegal, overall the majority of the community are aware. Stakeholders thought that businesses are even more likely to know the legalities. This view was held by participants across all stakeholder groups.

“I think on the whole people do know that it’s illegal” - Government stakeholder (council)

“I think people know it’s illegal for sure but they find ways to justify it’ - Community group participant (NGO)

“The asbestos guys and the C&D guys know” - Government stakeholder (Public land manager)

“[Asbestos dumpers] They’re aware, we have them on billboards everywhere...I think people are aware it’s wrong, I think they’re aware that if they caught, they’ll be fined.” - Government stakeholder (Council)

It was reported by some government stakeholders and community groups that some residents appeared to believe kerbside dumping was legal if they indicated they had left it out for donation by placing a sign

on the item or only leaving the item on the kerb for a short period of time (for example or for a day or two).

“There’s a real perception that that’s not illegal dumping... I think people think they’re doing the right thing when they do that.” - Government stakeholder (Council)

“They think ‘I only leave it out for a day, so it’s okay’... somehow by putting that sign on it, that stops it becoming illegal dumping in their mind.” - Community group participant (NGO)

Some residents were not aware putting their waste on the kerbside was illegal because it was treated like legal waste by the council. For example, it was noted by a government stakeholder that their council had experienced issues if they cleaned up illegal dumping sites at a regular weekly time, as this had led the public to believe it was potentially another regular council collection, and not illegal dumping.

“...the truck comes every Tuesday...they probably thought it was a free service” -Government stakeholder (Council).

Some stakeholders felt that, since 2014, awareness of illegality has decreased the most among specific groups. A public land manager who had more exposure to dumping by residents of multi-unit dwellings reported very low awareness of illegality among the residents, based on a recent survey conducted which cited awareness of illegality as just one in ten residents

“Only 10 % knew it was illegal” - Government stakeholder (public land manager)

Awareness that dumping waste impacts the environment

While a common concern was that dumpers just didn’t care about the environment, it is not clear whether these members of the public were actually aware of the environmental impacts. This was particularly noted in relation to green waste dumping, where there was a lack of understanding regarding environmental processes.

“I think sometimes that can be due to a lack of education, not realising that certain things can pollute the environment” -Government stakeholder (council)

“They think they are returning it [green waste] to the bush.” -Government stakeholder (council)

Physical capability

Lack of financial resources

Lack of financial resource to legally dispose of waste came up less often as a concern in 2019. While stakeholders did acknowledge there were members of the community who would not have the ability to pay for disposal fees or fines (in the case of an illegal dumping conviction), some note that the number of free service has increased since 2014.

“Some of it is probably socio-economically driven. Probably those members of the community that probably don’t have the money to dispose of waste.” - Government stakeholder (public land manager)

[If fined]" They are unlikely to pay it in any case." - Government stakeholder (public land manager)

Lack of time

Lack of time was seen by government stakeholders as a key factor in kerbside dumping, particularly for tenants moving between homes. Views were divided as to whether this was due to lack of awareness of the planning time needed, or if this was a lack of willingness to put in the extra effort planning would involve. Tenants who are given a short amount of time to vacate their premises were seen as being easily compromised by this situation.

"Plenty of solutions but they don't have the time or the extra effort to arrange someone to come and collect it." -Community group participant (NGO)

"A lot of it is to do with lack of time, and lack of willingness to invest the extra time."-Community group participant (NGO)

"...they're under stress, they're under strain, they've got to get out." -Government stakeholder (public land manager)

"The other ones, who are renting, that have been told they've got to be out in 2 weeks, ring up for a bulky waste pick up, the bulky waste pick up can't be done for 3 weeks, they put all the stuff out early because they're not going to be there ..."- Government stakeholder (public land manager)

Opportunity factors influencing illegal dumping behaviour

In the COM-B behavior change wheel, opportunity refers to all of the factors that lie outside the individual that make the behaviour possible or prompt it. These factors can be either social or physical. Social factors could include social norms, peer pressure, network of friends, advisors, and culture. Physical factors could include location, environment, proximity to risky behaviours, and resources.

Opportunities presented to dump waste illegally remain a significant barrier to correct legal disposal in 2019.

Social opportunities included:

- Social norms and culture;
- Reputation of Business; and to a lesser extent
- Social norms in other parts of the world; and
- Not wanting to 'dob' on others

Physical opportunities included:

- Access to a legal disposal site;
- Lack of financial resources;
- Lack of time; and to a lesser extent
- Lack of means to dispose of waste

Social opportunity

Social norms and culture opportunity are still seen by stakeholders as being a major influence on decisions to dispose of waste illegally. Most stakeholders tended to base their observations at a general population level in 2019 rather than within social groups, as was the case in 2014.

Social norms and culture

Social norms and culture are still seen as having a large influence on waste disposal practice. Stakeholders were more confident making these assertions in relation to residents, as the perspectives of businesses were more difficult for them to find out about.

In areas where dumping was prevalent, participants were of the opinion that this visible dumping as an enabler to others in the community. In these cases, high acceptability was thought to make illegal dumping less uncomfortable on a social level as everybody is responsible for it. Where dumping was said by a participant to have become a norm for a community, this was also thought to lead to acceleration of dumping as leaving one item of waste amid large piles could be seen as reasonable in that context.

"What's one more thing added to a street where there's already sixty dumpings...they're following the social norm in that suburb or that street." - Government stakeholder (Council)

"In reality, once one person is doing it, then it's okay for other people to do it. It starts to become something that's socially acceptable." - Community group participant (NGO)

As a result, among government stakeholders, there was a firmly held view that their efforts to clean up waste on the streets and in bushland as rapidly as possible prevented normalisation of illegal dumping behaviour through minimising the visibility of it.

"Rapid clean-up is also something that contributes to success.....if you get rid of it quick, people won't associate an area with being somewhere they can dump waste illegally." -Government stakeholder (council)

Reticence of residents and businesses to 'dob' on neighbours and associates who dump illegally was not raised as a perceived barrier by stakeholders in 2019.

Reputation of businesses

Industry participants emphasised that the damage to reputation, as a result of an illegal dumping conviction, would deter any large businesses from this behaviour as the financial incentive could never outweigh the potential losses caused by a conviction. For this reason, businesses that do non-contracted work were seen as less likely to be deterred by convictions. Industry participants also perceived that smaller, unlicensed facilities were more likely to break regulations, as they were never audited due to being below the licence threshold. Due to unlikely nature of a conviction they were thought to be less likely to worry about losing their reputation.

"I don't think any multi-nationals or companies as big as ours ever get involved in that because there's too much at stake..." -Business participant

"A big business probably can't and won't do that..." - Business participant

"Those with looser commercial arrangements, that don't have contracts behind them."-less likely to do right thing." - Industry association participant

"We seem to attract a lot of attention as opposed to someone who is doing it illegally down the road and continues to do so." - Industry association participant

Social norms in other parts of the world

A few participants in 2019 perceived that immigrants to Australia sometimes acted in ways that aligned with waste disposal culture from their previous country, where it might have been more acceptable to dump waste. This was raised less frequently in 2019 than in 2014.

As in 2014, this perception was most prevalent among stakeholders in areas where there are large migrant populations. Stakeholders hypothesised that residents in these areas were unaware that dumping was relatively social unacceptable and illegal, although one participant felt that some residents didn't care about negative impacts. Overall, participants felt that the majority of dumpers were not from other countries.

"There's an odd percentage of people who come from places where dumping rubbish is not really a big issue in some Asian countries for example." - Business participant

"There's no culture there of leaving things out for councils to collect...there's entitlement there, that it's just something we can leave out and the council will deal with." - Community group participant (NGO)

Proving intent to dump at charity bins

One public land manager noted that they had difficulty convicting dumpers in certain contexts, particularly when the individuals may not have been aware they were dumping illegally. This was reported in the context of a charity dumping conviction.

"We've had legal advice saying that to prove something's illegally dumped outside of a charity you have to show intent...so if mother of three comes up with garbage bags, she pulls up to the charity bin, the charity bin's full she then places them at the bottom of the charity bin....the mother of three, who had the whole good intentions of doing it, do you hit her with a \$2000 fine for putting three garbage bags out the front of a charity bin?" - Government stakeholder (public land manager)

Physical opportunity

The 2019 research suggests that physical opportunity to dispose of waste legally, or to dump it illegally, remains an enabler for dumping. Stakeholders believe that lack of infrastructure prompts individuals to see them as justifications for their behaviour, while access to vehicles and trailers provide access to dumping sites.

Access to a legal waste disposal site

Most stakeholders were of the view that access to waste infrastructure such as legal waste disposal sites is adequate in most locations. Their main considerations were proximity to towns and available disposal options for each type of waste.

Most stakeholders noted there were plenty of available facilities to take to waste within a reasonable distance by vehicle. This was the case for both metro and regional areas. However, participants also felt that industry dumpers, in particular, were likely to save time and money by dumping at a location closer and more convenient than the tip. Some speculated that this was not necessarily always planned, and the decision to dump would be made on route to the tip if this journey took longer than expected for instance. This was seen to be more likely to occur when industry workers were travelling long distances between worksites and tips as part of their jobs.

"It's a long way to drive, 45 mins, to drop off \$50's worth of rubbish. So anywhere along the highway will be fine" - Government stakeholder (public land manager)

"It's what's convenient for them. If I'm a tip truck collecting bricks, it's easier for me to dump it on the side of the road than driving all the way to the tip." - Community group participant

Lack of means to transport waste

In addition, residents who lived in multi-unit dwellings without access to a vehicle at the time of moving were seen as being highly likely to dump their unwanted items on the kerb. Minimal time in addition to lack of waste transportation was seen a combination that presented an obvious barrier to choosing a form of legal disposal in this context.

"...they don't necessarily have the capacity to take stuff to the tip...when they move out they just would leave things out on the kerb" -Government stakeholder (Council)

Motivation factors influencing illegal dumping behaviour

Motivation refers to the brain processes that energise and direct behavior. Both automatic motivations and reflective motivations influence an individuals' propensity to behave in a certain way. Reflective motivations include reflective thought, attitudes, values, beliefs, and intentions. Automatic motivations include instinctive thought, emotion, shortcuts, biases, framing, and priming.

The 2019 research indicates that an individual's motivations relating to dumping decision are predominantly reflective (rather than reflexive or automatic) in nature. They fell into the following broad categories:

- Cost factors;
- Consequences;
- Values; and
- Attitudes.

Cost factors

Almost all stakeholders interviewed saw the cost of legal waste disposal as the number one motivator for illegal dumping. Cost motives raised by participants included:

- Illegally dumping to save money;
- Objecting to disposal costs; and
- Illegal Dumping as a business model.

Dumping illegally to save money

The choice to dump illegally was thought by most participants to be driven by cost-cutting strategies by residents and businesses. Stakeholders highlighted this by weighing up the difference between the tip and the bush if they were both the same distance – the implication being that dumping in the bush has almost no cost associated with it (assuming being caught is unlikely) allowing dumpers to save up to a few hundred dollars. In line with 2014, many participants said that the increase in tipping costs and levies in recent years was a major contributing factor to the increased prevalence of illegal dumping.

“Finance has to be the first-without a doubt.” - Government stakeholder (public land manager)

“Then you’ve got the really calculated ones and these are the large dumps and they are a lot of the C&D waste...an excavating company and he knows it’s going to cost him \$10, 000 a go...and then it ends up in the bush. That’s purely a financial driven situation.” - Government stakeholder (public land manager)

“If you’re in the car driving to the bush to get rid of it, why wouldn’t you drive to a transfer station? So, I think it comes down to cost” - Government stakeholder (council)

“Anyone can ring up and get a skip bin delivered...so it’s really a financial decision” - Business participant

“The boss gives the apprentice \$100 bucks of material at the tip, the apprentice has \$100 in his hand, he’ll go and just throw it in the bush.” - Government stakeholder (public land manager)

“In order to meet those regulations, it’s a big investment.” - Industry Association participant

“Their key driver is economic and it’s to avoid residual material going to landfill, it’s expensive” - Industry Association participant

Waste types such as asbestos or construction and demolition waste were typically seen by government stakeholders and industry participants as the types that are typically dumped for cost cutting reasons. Assumptions that disposal for these waste types are always expensive were thought to be common. Waste service providers that are not equipped to dispose of asbestos raised the concern that when the substance was detected, and the load turned away, that this can prompt a last-minute decision to dump it illegally.

“...people perceive that the cost of asbestos disposal is incredibly expensive, when really it’s not that bad...” - Government stakeholder (council)

"If we detect asbestos in a load of waste...we're obligated to reject that load of waste...He has a bigger incentive now to perhaps try and unlawfully dispose of it somewhere." - Business participant

Some waste-sorting facilities were also perceived by industry participants as being likely to save money by disposing of certain types of waste in illegal ways. At least one participant highlighted the fact that correct separation of waste types could be very expensive, and at times some providers will fail to do so. He speculated that some facilities pass off mixed or contaminated materials as being separated or sourced from a single waste stream. This is then disposed inappropriately.

Objecting to disposal costs

Residents and businesses objecting to the price of disposal, pick up or gate fees was a key observation noted by participants across stakeholder groups. As reported in 2014, many government stakeholders sensed there was a vein of negative public sentiment around having to spend money on waste disposal. It was noted that this sentiment may be driven by comparisons to waste disposal practices of past decades when some council-run tips were free of charge and there was no state-wide waste levy in place. Indeed, a lack of awareness surrounding levies and fees was still thought to be contributing to these public attitudes.

"...it's a purely financial driven thing. I've got to pay \$200 bucks for this? Nope." - Government stakeholder (public land manager)

"...construction, demolition tradies that don't want to pay gate fees... and they have a lot of that sort of waste...and members of the public who really don't care like a lot of people perceive that council gate fees are too high and so they justify the fact that they go and throw their old fridge in the bushes..." - Government stakeholder (council)

"...tenants are vacating and they don't want to cover the cost for removing their household items." -Government stakeholder (public land manager)

"They just object to paying us to take their rubbish whereas in the old days ...a lot of tips were free when the councils ran a lot of the tips around Sydney." -Business participant

"I'm sure it would be a big motivator for lots of people." -Community group participant (NGO)

"...someone who cleaned up their shelves and dumped a whole lot of rubbish because they were too lazy or they didn't want to pay Council to clean it up." - Community group participant

Illegal dumping as a business model

The incentives obtained by illegal dumping when it was done on a regular basis, as part of a financial strategy, was seen by most participants as a tough barrier for them to overcome. The financial incentives involved in illegal dumping were often perceived as being large enough to outweigh the burden of a fine, as the fine for one case of dumping would be easily covered by the vast amounts saved on tip fees prior. As the profits made could be so high, it was suggested that this enabled a more sophisticated operation, such as paying truck drivers to drive at night.

Compared to 2014 many participants, including those from the waste industry, felt that there were no excuses for those in industry to be dumping. While profit margins may be tighter than they were in 2014, many participants were very critical of industry dumpers.

"We rarely get a domestic second offender. But we often get a second, third, fourth and fifth commercial offenders because they regard it as the cost of doing business. Because their business model, even in their heads, involves illegal dumping. So if they get away with it 10 times and only get caught once, they're still in front financially." - Government stakeholder (council)

"...to them rather than pay \$3000, they only have to get rid of 1 load a day and they'll have made more money than they ever will trying to demolish a house, so the financial incentives are quite significant." - Business participant

"There's a lot of money involved...so they can afford to cover their tracks pretty well" - Business participant

"Corporations or contractors their main reason is that they're trying to make an extra profit. They are imposing waste removal fees on their customers but they're pocketing that and dumping on the side of the road." - Government Stakeholder (council)

Consequences of illegal dumping

Being caught and punished

In line with 2014 findings, participants held the view that the consequences for illegal dumping were not acting as enough of a deterrent to be effective in reducing incidence.

In 2019, stakeholders are still of the view that dumpers think being caught is an unlikely outcome. Successful convictions that drew publicity were mentioned, such as the story of serial asbestos dumper being picked up by the media, but these were in the minority. There was also a perception that residents in multi-unit dwellings could evade conviction more easily due to the more anonymous nature of apartment blocks.

Participants with more exposure to illegal dumping noted the difficulty of providing evidence for successful convictions. One example provided was a large-scale commercial dumping incident which was strongly believed to be linked to a house renovation nearby but was not able to be proven.

Unlicensed waste facilities were generally seen as being able to avoid scrutiny afforded larger businesses. It was alleged that, by being unlicensed (or in some cases forging documentation to appear to be below the licence threshold), smaller practices were avoid being audited by regulatory bodies like the EPA. Some stakeholders expressed frustration that larger, licenced facilities were audited regularly while smaller facilities, which they perceived to be more likely to be breaking the law, were not monitored.

"At the moment, there's a pretty high chance you won't get caught." - Government stakeholder (council)

"More likely to get away with it if you sneak it out of your apartment block...much harder to be identified." - Community group participant (NGO)

"Even if they get caught dropping it off...we had a dump...that was 4 truckloads of building materials that came from a house in Helensburgh. We knew where it came from, we just couldn't prove it. That was a whole house. He would have paid them \$30,000, \$40,000 to get rid of it." - Government stakeholder (public land manager)

"If you're not a licensed facility, and you're under a threshold then you can be doing whatever you want." - Industry association participant

"They can't regulate every single cubic metre. So, I'm sure all those that are licenced and operating in a very visible facility are a lot more conscientious of their obligations than someone who is less obvious to the EPA." - Industry association participant

Fines

Low public awareness of fines was reported by participants in 2019.

Awareness of the size of fines was seen as being particularly low. Both the general public and business were thought to underestimate the extent of the illegal dumping fine with some dumpers reported to have estimated the fine as less than \$300. Most stakeholders who had convicted dumpers personally noted that the individuals were almost always shocked to learn the value their fines.

"People certainly are surprised...most people almost fall of their chair when you tell them they're going to receive a \$2000 ticket." - Government stakeholder (council)

"They thought it was between \$200 and \$250"- Government stakeholder (council)

"Some people think they're only going to get a tap on the wrist and that's it." – Community group participant

"They knew there was a fine, however most of them didn't know what the amount was..." - Government Stakeholder (public land manager)

"Yes, they are aware, but maybe not asbestos [\$7000]." - Government stakeholder (council)

"I'm not sure your average Joe is aware of it." - Community group participant (NGO)

There was also a sentiment that businesses were likely to be more aware overall, but less likely to know of the larger fine for asbestos dumping. Overall, the increase in fines was thought to be having an impact, but many dumpers are still unaware of the fine prior to being caught.

"This last year, it went from \$400 to \$2000...before they'd cop a \$400 fine on the chin. Now that it's \$2000, they sort of go, 'Oh... poo'." – Government stakeholder (public land manager)

Values

Stakeholders in 2019 were critical of those who illegally dump; it was universally viewed as highly unacceptable behaviour and felt that community values were lacking among those who dump illegally.

Generally, stakeholders perceived dumpers as people who lack consideration for others and the environment, or as those who just don't care about 'doing the right thing' and lack the conscience to

change. Public land managers explained that some dumpers will go to the length of cutting locks to access bushland.

"I don't think they care." - Government stakeholder (council)

"...here are a proportion of people who don't really care and think they're just dodging a cost..." - Government stakeholder (council)

"They don't care enough to change their behaviour" - Business participant

"They don't care, it doesn't matter what they do. They're going to dump it no matter what." - Community group participant

"The illegal access here is unbelievable. We can lock a gate up today, and the gates will be cut by tonight or tomorrow to gain access...there's no consideration for signage or gates or what the park is set aside for...so there's a lack of care I guess." - Government stakeholder (public land manager)

"It's not the dumping fee that's the problem...It's a social conscience thing, there're a lot of cowboys out there." - Community group participant

"To be quite honest with you, in my experience, people don't really care about the environmental impacts all that much, they're more worried about their hip pocket." - Government Stakeholder (council).

"Illegal dumping is probably the last thing on their mind, they are dealing with a lot of other social and economic pressures." - Government Stakeholder (public land manager)

However, some participants noted that most residents do care about illegal dumping, with the negative impact on community pride and aesthetic causing the most concern. While participants were strongly disapproving on the whole, it was also recognised that more disadvantaged individuals such as those on welfare had a multitude of daily concerns; leaving less time and energy to think about how they are dealing with their waste.

"That's always one of the top five concerns of our residents. When we do our customer satisfaction survey, it usually ranks one of two." - Government Stakeholder (council)

"The largest response from our survey was that the tenants thought [illegal dumping] was unsightly and degrades their neighbourhood, which is a positive sign to show that the residents there wasn't happy about it." -Government Stakeholder (public land manager)

Attitudes

Industry dumpers were seen as having a difficult attitude to change due to their financial motivations. Among the general public, ignorance was once again seen as a cause of a negative attitude as it was in 2014. Convenience was viewed as a factor in kerbside dumping, while cost was seen as far more influential for industry dumpers.

Attitudes regarding one's community

Participants reported misunderstandings in relation to disposal fees charged. Specifically, government stakeholders were frustrated with the misconception that the council enjoys the funds collected from

these charges. Stakeholders sensed this misconception was creating animosity towards councils and encouraging the evasion of fees when it was used as a mental justification.

“There’s a lot of animosity in that community towards council disposal charges. I’ve found a real lack of awareness, people say “well the council charges \$300 a tonne” and you think “well yeah but most of that goes to the state government”... there’s a real lack of awareness around that, it’s not the council ripping them off, their council’s actually trying to provide a service.” - Government stakeholder (council)

Convenience of illegal dumping

Kerbside dumpers were seen to be influenced mostly by convenience. Deliberate dumping and dumping by businesses, was thought to be much less about convenience than cost-cutting.

“A lot of our dumpers...have actually come through from other shires so I don’t believe convenience is the case here.”-Government stakeholder (council)

“It’s what’s convenient for them.”-Community group participant

Interventions

Strides appear to have been made in the implementation of interventions to address illegal dumping. In contrast to 2014, the majority of strategies are now in action. In 2014 many were in the planning phase. These interventions fall into the following intervention functions (as identified in the COM-B framework):

- Environmental restructuring;
- Enablement;
- Coercion;
- Education;
- Persuasion (new for 2019); and
- Restriction (labelled *Regulation* in 2014).

Environmental restructuring

Physically changing the environment to prevent opportunities for illegal dumping, or improve opportunities to dispose of waste legally

Current interventions included:

- Locking access points to restricted land, such as locking gates to fire trail;
- Installing lighting around dumping hot spots;
- ‘Directing’ dumpers towards surveillance;
- Removal of donation bins.

Locking access points to restricted land

Public land managers saw blocking access via gates as a key initiative. However, this was also seen as redundant in some areas where they had observed an increase in the use of power tools to cut through locks.

"The cordless power tools at the moment are causing us all amounts of pain as they can just carry an angle grinder or other implements and just cut through in no time"-Government stakeholder (public land manager)

Installing lighting around dumping hotspots

Lighting has been installed in many hot spots, particularly in areas of bushland prone to dumping. While a decline in dumping is typical, the observation from public land managers was that dumpers will persist and find a less exposed spot nearby instead.

"We improve lighting in that area...we've seen the drop off...huge"-Government stakeholder (public land manager)

'Directing' dumpers

A new strategy was implemented in bushland by a RID squad: this involved a combination of blocked access and multiple hidden surveillance cameras. This was said to be very effective as dumpers were unaware of the set-up.

"Or what we tend to do is direct them...we had a really big clean up and prevention grant there, and we were blocking off 11 areas of access to the areas where they were dumping. So, we said, "let's leave one open" ...we'll steer them down that one and that's where they'll drive past 15 cameras...and we caught heaps of people."- Government stakeholder (public land manager)

Removal of donation bins

One charity reported that their Sydney donation bins had all been removed in order to take away the opportunity to dump. The newly designated place to donate was at the shopfronts (at various locations) and this had been easier to monitor, therefore reducing the incidence of illegal dumping as the anonymity that charity bins provided has been removed.

"We don't do charity bins anymore because we find it attracts illegal dumping, so we use our front store instead for people to drop their donations." - Community group participant (charity)

Suggested interventions included:

- Continuation of the 'direction' strategy with the assistance of grant funding.
- Due to the frustration caused by break ins, gates and blocked access were not viewed as an effective strategy when used in isolation.

Enablement

Enhancing the ability of individuals to dispose of waste legally by increasing means/reducing barriers.

Interventions for enhancing the ability of individuals to comply with the law related to improving the services offered.

Current interventions included:

- Greater access to disposal facilities;
- Technological solutions; and
- Reducing the cost impact generally.

Greater access to disposal facilities

While available infrastructure, such as tips and council collections and pickups, was seen as more than adequate, research in 2019 brought to light new initiatives centred around making disposal convenient that were making a positive difference.

One participant noted that the introduction of the Garage Sale Trail has provided residents with a new avenue for their unwanted goods that also reduces the amount of waste requiring disposal, legally or illegally.

Charities reported that they had started free pick up services for donated goods, with a fleet of 25 trucks currently collecting items for donation across NSW.

“How can we provide really convenient services to people to avoid them leaving them on the streets?”-Community Group participant (NGO)

Technological solutions

As suggested in 2014, a new and easy way of reporting illegal dumping has been made available with the RIDonline system. Individuals can access this tool through their phone at any time, so allows faster identification and clean-up of dumping sites. Across the board, the RIDonline tool was seen as very useful. The map function, allowing sites to be viewed geographically, was well received. However, RIDonline was often promoted alongside individual councils' own reporting system.

It was commonly noted that councils didn't deactivate their own systems once RIDonline was introduced; the majority had two reporting systems in place. Some councils expressed a preference for their own system, seeing the upkeep of RIDonline as an unnecessary burden on limited time and staff. However, the majority noted that they encouraged all large-scale commercial dumping incidents to be reported through RIDonline at minimum.

“The biggest problem...the fact is that not all council have good reporting mechanisms.”- – Government Stakeholder (council)

"...they all promote that there is a one stop place where people can report." - Government Stakeholder (public land manager)

"It's a duplication of a system...each council has their own unique system...they have to use this system...and then they've got this additional layer of RID online that they have to do as well. It's an administration burden to do RID online as well as their own council systems." - Government Stakeholder (council)

"RID online is just not advertised the way "report littering from vehicles" is. It hasn't had the communications and education in the community at the same level...so there hasn't been as high of an uptake." -Government Stakeholder (council)

Additionally, participants reported that surveys had been undertaken as part of their organisation's campaign with the desire to understand the community's perspectives and measure awareness levels.

"...we use it to improve the campaign for the next year, what the community needs educating on, how to make program more impactful or effective." - Community Group participant (NGO)

Reducing the cost of legal disposal

Since cost was perceived as the number one motivation for illegal dumping, councils were offering free services and promoting these to their community. In particular, smaller loads of asbestos were now being made available for a free disposal service.

Pick up services provided by charities were also free of charge.

"[for] householders who do remove it [asbestos] we provide information of how they can dispose of 10 sq. m for free." - Government stakeholder (council)

Coercion

Interventions designed to create the expectation of punishment or cost.

Interventions for creating a greater sense of punishment or cost were explored.

Current interventions included:

- Increasing the perceived chance of being caught;
- Increasing the severity of available punishments; and
- Empowering and expanding RID squads.

Increasing the perceived chance of being caught

To increase the perceived chance of being caught, participants felt there needed to be:

- Increased prominence of surveillance; and
- Greater promotion of successful prosecutions.

The combination of signage and security cameras was noted by councils as being an effective deterrent to dumping, however as a whole, the council hadn't seen a return on the investment of the cameras yet. While cameras and signage were noted as effective prevention tools, they were less effective at capturing the right information needed for a conviction when dumping did occur. Finding the best placement for cameras was not always easy.

"...usually the dumping stops straight away" - Government stakeholder (council)

"Publicity has been the most effective combat to Illegal Dumping." - Community Group participant (environmental group)

"It's notoriously hard to catch someone, even if you've got cameras there, you kind of need...to get a glimpse of a number plate...it remains complicated despite having some of that equipment in place." - Government stakeholder (council)

"It's easy to say someone's dropped off ten bags, but whether its bags of clothing or illegal dumping it's very difficult." - Community group participant (charity)

"Why can't you put rangers across the road on Saturday and Sunday when we're not open to stop people illegally dumping here? That's never going to happen, they have enough trouble dealing with their own land let alone sitting out the front of Vinnies on \$40 an hour ,2 people, that's \$100 an hour, sitting there for 16 hours over the weekend to try and stop it" - Government Stakeholder (public land manager)

In addition to this, some local council stakeholders had been approached by a charity with the suggestion of council security of donation bins on weekends. This was not seen as practical solution though, as the council resources required would not be available.

Increasing the severity of available punishments

There was strong sentiment that the legal ramifications of illegal dumping, especially jail terms, had to be publicised more widely in order to maximise their power as a deterrent.

Stakeholders from councils and environmental community groups felt that these legal implications could even sway commercial dumpers if councils could fine dumpers the same amounts as the EPA. It was conveyed that these council-level fines were not heavy-duty enough to discourage illegal commercial operations, but that the EPA-level fines would be more effective.

"...make sure they have the legal implication in front of them." - Community Group participant (environmental group)

"Local government needs to be able to issue the same level of fine, the amount equivalent to the EPA. At the moment we have a two-tiered system. The EPA can issue larger fines than councils. The council level fines do not discourage or prevent rogue operators from illegally dumping. The penalties should be identical." - Government Stakeholder (council)

"...publicising successful prosecutions including jail terms would go some way..." - Community Group participant (environmental group)

Empowering and expanding RID squads

The new RID squad program has seen a rise in successful convictions and clean ups, and ultimately a gradual reduction in illegal dumping. A number of participants were RID Squad leaders or coordinators, and the majority emphasised the importance of clean up and prevention grants- some dedicating much of their time to application for these as they were crucial to the success of the squads. In particular, better funding enabled more rapid clean-up of dumping sites, which was known to have a large positive influence in preventing further dumping.

“With the introduction of the program, I think we’ve seen a 10-15% reduction over the past 2 or 3 years” - Government Stakeholder (public land manager)

“A lot of my work is getting clean up and prevention grants...” - Government Stakeholder (public land manager)

“One thing we learnt in the RID squad is that “waste attracts waste” so the quicker you get rid of it the less likely it is that you’re going to get more.” - Government stakeholder (council)

Suggested interventions included:

- Continuation of surveillance instalment;
- Promotion of illegal dumping incidents and subsequent outcomes of investigations to local residents.
- Raising council fines to be level with EPA-administered fines; and
- A greater range of available grants, in particular, one that would be suitable to fund smaller RID squads at a regional level.

Education

Increasing knowledge or understanding with public education campaigns could help change the culture of illegal dumping

Public education was the intervention of choice for most government stakeholders. The education strategies were often drawn from concepts of behaviour change; this being the ultimate goal.

“...perhaps if there was a bit more education people would make wiser choices...” - Government stakeholder (council)

Education strategies

Current interventions included:

- Leaflets;
- Community events, such as meet and greet sessions in strategic locations like hardware stores;
- Education materials for residents;
- Marquees;
- Providing information and testing kits for asbestos;
- Handing out notebooks and pencils with instructions on how to book council pickups, or with reporting websites like RIDonline;
- Collaborating with real estate agents to enable easier waste disposal for those moving house; and

- Working with Aboriginal land councils (ALCs) and their communities on prevention and clean-up, including collaboration with organisations like Waste Aid.

Issues targeted by education campaigns included:

- Correct asbestos disposal;
- Free services available;
- The impact of illegal dumping on charities;
- Correct green waste disposal;
- Kerbside dumping; and
- Dumping in Aboriginal communities, including waste dumped by others.

Priority groups for education campaigns included:

- Residents;
- Workers in the construction and demolition industry;
- Workers in the gardening industry, such as landscape designers; and
- ALCs and their communities.

Education campaigns were focused on awareness and engagement. In some cases education was preferred over penalties as lack of awareness was often a key issue for certain groups, such as those in public housing.

"[On fines] I don't think it's the best way forward and likewise we prefer to work with the RID squad to do education and to make sure tenants are aware of the right thing to do, not necessarily make examples out of them." – Government Stakeholder (public land manager)

Consistent, long-term plans for education were seen as the best kind; ad hoc campaigns were not seen as being effective beyond the short-term, perhaps only for a month or two. Even simple initiatives like getting out into the community and speaking to people was helpful, as this could lead to intelligence in relation to a hot spot or new dumping.

"We try to educate people, we push that hard, that's why I think it has improved. But again it goes back to continually educating people." -Community group participant (charity)

"it goes down and then give it another 6 weeks and you see an increase again." -Community group participant (charity)

"Targeting Bunnings Warehouses across the region and the rangers are giving out tradie pencils and on the pencil its got "report illegal dumping" and the rid online website address...and so what we'll do is we'll be in Bunnings and we'll just talk to people...it's a communication tool...you might get some intelligence as well." - Government Stakeholder (public land manager)

"The councils that are doing it well are you know have great education campaigns targeting hot spots." -Community group participant (NGO)

Being proactive instead of waiting for the next dumping to take place was also seen as the most successful approach. More engaged participants thought that moving rapidly from the dumping, through the reporting and conviction stages, to the end result of a media release was important to achieve.

“With the good work done by our rangers we have definitely got a reduction in incidence because we pride ourselves on being a proactive program not a reactive program. So we get out there we do education, we try to talk with our residents and when things are discovered and people are fined we then get there and put it on the media. So we’re very proactive and I believe that makes a difference.” - Government Stakeholder (public land manager)

Sharing educational resources between councils was also effective, as this allowed the distribution of a clear and cohesive message.

Importantly, education within councils and land management organisations was seen as a vital element of educational campaigns. This ranged from training in investigative interviewing to de-brief meeting attended by Park Rangers where advice and incidents are shared.

“...everyone is doing their part. If I reach out to another Council they're happy to share resources.” -Community Group participant (environmental group)

“I also hold ranger group meetings...a really integral part of the program.” - Government Stakeholder (public land manager)

A few regional councils had worked with Aboriginal Land Councils on clean-up and prevention work such as removing buildings with asbestos and abandoned car bodies, in the process carrying out education campaigns. The members of the ALC as well community members such as elders and aunties helped facilitate this, as did organisations like Waste Aid.

“We’ve worked in aboriginal communities a fair bit and cleaned up their illegal dumping like car bodies and old landfills that aren’t legal and that’s lead to great involvement by those communities and a shift in attitudes around how to dispose of stuff...so that’s been positive...that’s a positive social change.”

Suggested interventions included:

- Continuation of a consistent, proactive approach;
- Continued focus on priority groups; and
- Continuation of internal training and education for organisations.

Persuasion

Using communication to induce positive or negative feelings or stimulate action

Education-based interventions discussed in 2019 at times crossed over with communication-based interventions.

Current interventions included:

1. Advertising with corporate media partners and private sector organisations to distribute messages to a wide audience demographic;
2. Advertising with local papers to target communities and residential areas;
3. Social media posts e.g. Facebook; and
4. TV advertising on major networks.

Visually engaging graphics have been well-received, while it was the consensus that negative messaging that focuses on the 'wrong' behaviour or the problem could be a risky approach, for example, it could discourage people from donating to charity shops. Positive messaging was universally seen as a smarter approach, which was also reflected in the success of a community engagement campaign that utilised a fun, eye-catching graphic design.

"...rather than hitting people hard with a "you're going to get fined, you're being watched" - Community group participant (NGO)

"One of the biggest issues is how you get it out there in the media but without using a negative message. Because this is where you need to be careful. If you run a campaign like 'Don't dump on us!' people can misinterpret what is being said and will stop charitable recyclers because they think we don't want their stuff and just dump in their general waste at home. It needs to be a positive message to a negative problem."-Community group participant (charity)

Social media channels such as Facebook were viewed as very difficult spaces to spread a story, as the desired meaning can be easily manipulated through comments and other posts, potentially enabling a negative message to be broadcast as well.

"...whenever we go to the media, it tends to get hijacked...by "the tip prices are too much" ...2-3 days later you've got 200-300 comments and the meaning has been completely lost." - Government Stakeholder (public land manager)

Ensuring the messages reach the mainstream was also seen as important, rather than choosing media sources such as environment focused sources, such as the EPA website, whose audience would actually be less likely to dump illegally and therefore a lower priority audience.

"I really don't think the EPA can assume that if they put out a press release, or if it's on their website or their social media that the people who are likely to do this are actually watching or reading it...clearly it has to filter into the mainstream space and media."-Community Group participant (environmental group)

Additionally, it was felt that a campaign similar in scale to 'Hey Tosser' could be a straightforward way to reach a wide audience and add more visibility to the often-hidden nature of illegal dumping. TV advertising on major networks that cover large regions were said to be effective, as well as generic awareness advertising that can be re-used as well as shared with other councils.

"Could be need or a more coordinated state-wide approach, like "hey tosser" which would maybe highlight it more visibly." -Community group participant (NGO)

“We’ve run ads on major networks for 5 or 6 years, we ran a residential waste ad, we ran a green waste ad, we’ve got social media posts that are generic for the region that councils can use at any time. So no matter where you are in the region, the message is getting through.” - Government Stakeholder (public land manager)

Suggested interventions included:

1. Campaigns with emphasis on positive messaging and engaging visuals;
2. Coordinated state-wide campaign; and
3. Variety of media outlets for communications.

Restrictions

Using rules to reduce the opportunity to engage in illegal dumping.

Suggestions for restriction-based interventions were prominent in 2019. A paperwork trail was strongly recommended by many participants from all three groups; government stakeholders, community groups and industry.

Views on legislation and required certification were strongly held as participants felt this strategy would prevent illegal dumping; namely as it would not depend on whether or not individuals cared or wanted to pay. It was suggested that industry workers such as truck and ute drivers would have to carry certificates to prove waste source and destination, as well as a certificate of legal disposal after waste was dropped off.

“And that’s why we’ve lobbied the EPA....and they are doing that...a procurement strategy for state and federal governments...but if that driver had to have paper work on him that came from the site where he was, and if he didn’t carry that paperwork we could infringe him...the paperwork says where it’s come from, what it is, where it’s going to and if it’s not abiding by that we could infringe him...a lot of this would be fixed up. But at the moment you say to them what’s in the back, he goes “I turned up to the truck, I drove.” Because they’re pre-loaded.” - Government Stakeholder (public land manager)

“The paper trail -that would go a long way to minimising the big scale stuff.” - Business participant

“One thing that we’re pushing for as an industry is more tracking of materials from building sites.” - Business participant

“Someone being accountable for the flow through of that waste to ensure it ends up at a lawful facility.” - Business participant

“You need certificate of waste disposal to prove it was done illegally” - Community Group participant (environmental group)

Additionally, there was frustration that drivers couldn't legally be stopped if they were carrying suspicious goods or questioned as to what they were doing in the area. It was explained that having to wait for the dumping to take place before infringement is permitted gives dumpers a much better chance of getting away with it.

"We need legislation changed. There is no specific illegal dumping fine. Illegal dumping, we have to prove that we've taken it from a location, to a location and you've transported it to an unauthorised or licensed facility...So we need a specific illegal dumping infringement which we don't have."- Government Stakeholder (public land manager)

"...until the truck stops and puts the load on the ground wherever it be, that's when we can infringe it. Where it remains in the truck, we cannot touch them...we need the laws to be on our side and at the moment we are struggling with what we've got"- Government Stakeholder (public land manager)

Similarly, it was suggested that waste facilities that were unlicensed needed some level of auditing or monitoring.

"The people that aren't licensed and aren't approved don't seem to get the same regulatory attention as people who are doing the right thing are."-Industry Association participant

"I think it's easier for the EPA to regulate the guys that are already licenced because its in a box, its clearly defined...the ones that are unregulated, it's a lot harder to bring them in line." -Industry Association participant

The perceived role of the EPA

Research in 2019 highlighted areas that government stakeholders, community groups and businesses looked to the EPA for support and consultation.

Participants found that overall there was a lack of organisation and coordination between various groups working towards reducing illegal dumping. This was emphasised by the current absence of a state-wide illegal dumping campaign; there was a call for the NSW EPA to step in and create an education campaign that could be run across the state and encourage groups to work together.

"I do know councils and the EPA do co-sign for the RID squad and we don't put any money into them but in order to justify putting any money into a proactive programme like that we would need to see some evidence of return. If we put a hundred thousand dollars we'd need to see an equivalent drop of a hundred thousand dollars or more in dumped items that we don't need to pick up ourselves...and you can't do it on your own, it does require cooperation between councils and contractors, other stakeholders and tenants. I think that level of engagement which is needed, we just can't sustain it with the amount of resourcing we have." - Government stakeholder (public land manager)

"[Councils] they'll only be educating in their own boundaries and I guess that's where we rely on the EPA a little bit more to perhaps increase education for the community of NSW as a whole. " - Community group participant (charity)

"...better coordination with the RID squad to be able to assist landowners and have a more proactive for education. It seems like everyone is doing their own thing without much coordination or learning or support." - Government stakeholder (public land manager)

One industry respondent noted that the rejected loads register for waste at disposal facilities would be an effective way to keep track of potential dumpers. However, they believed that this was monitored infrequently by the EPA. If there was sufficient resource to inspect this register regularly, commercial asbestos dumpers (asbestos being the most common type of rejected load) could be convicted or followed up on before they decide to dump (if they do so).

"[The EPA]...once every 2 years ask us for those details...but it's pointless asking someone what they did with a load of rubbish two weeks after its happened let alone two years after it's happened...so the timely response from the EPA is critical to catching the repeat offenders." - Business participant

Councils stakeholders also expressed a desire for a resolution to the cost shifting taking place in difficult situations where a waste is dumped illegally on non-council land, and landowners turn to council to take responsibility for clean-up. This was said to be intensified by community pressure to clean it up in instances where the dumping had received publicity.

"The cost shifting onto councils from other land managers, needs to be resolved. They're pressured by the community to clean up, regardless of who is the landowner. They're not reimbursed in any way shape or form by the other land managers." - Government Stakeholder (council)

It was also suggested that the addition of smaller grant options to the EPA Waste Less Recycle More grant program would allow more organisations to participate in the program. Currently, councils that are under-resourced and smaller RID Squads in regional areas find aspects of the grant application process requires more time and staff than they have available, but thought a less-extensive process that allowed application for smaller grants might give them a better chance of participating in the program and as a result, providing the resources they need to better combat illegal dumping in their area.

A public land manager thought more work could be done by the EPA to standardise how waste collection services are managed across councils, in particular for multi-unit dwellings. They expressed concern that the different systems in place across councils made effective communication with their tenants, such as simple, clear messaging, more difficult to achieve.

There was also interest around more simplified campaigns and information that stakeholders can provide to their communities, and how their feedback to the EPA via reporting and correspondence was feeding back to the community and improvement of state-wide programs.

"At least now there is some consistency with recycling with the bin colours and size and pick up services but unfortunately for multi-unit dwellings each council has slightly different rules or ways that they do it, and that just makes it ever more complicated for us and our tenants in terms of being able to assist them...I have to admit, I think the EPA should have more of a leadership role in trying to look at what is the best way that they can assist and support councils in providing better collection services..." -Government Stakeholder (Public land manager)

"I guess I would like to see some consistency and methodology about what does work and how can we have more cleaner messages...we need to learn from what we have done. The EPA has a lot of the research there that they have commissioned, they have a lot of the grants that they have funded, what are they doing with that information to help inform better programs to support councils and landowners like ourselves?" -Government Stakeholder (Public land manager)

2.5 Quantitative phase: Local Government Survey

This section describes the 2019 findings and how they compare to the 2014 results of the survey of local government authorities in NSW.

2.5.1 Objectives

A quantitative survey of members of NSW local government authorities (LGAs) was conducted to explore the nature and extent of the issue of illegal dumping in their remit, and the measures and strategies in place (or planned for the future) to combat illegal dumping. Specifically, the survey was designed to:

- measure the amount of illegal dumping that NSW LGAs are dealing with
- identify the nature of the illegal dumping being dealt with by NSW LGAs, i.e. what is being dumped, when, and where
- identify the views of LGA officers about who is dumping different types of waste, and why they are dumping it
- identify perceived changes to all of the above in the past five years
- measure the impact of illegal dumping on NSW LGAs, in terms of financial and other costs
- identify documentation and monitoring of illegal dumping within LGAs, and availability of any data held
- identify any activities or strategies in place, or planned in the future, to minimise illegal dumping, and the perceived effectiveness of these.

A similar survey of NSW LGAs was conducted in 2014. Where possible the analysis compares the findings overtime. Comparisons are made in highlighted text boxes throughout this section.

2.5.2 Methodology

All NSW local councils were invited to take part in an online survey. The survey was completed by representatives of 42 councils, a 34 per cent response rate. The survey period was 6 August to 8 September 2019.

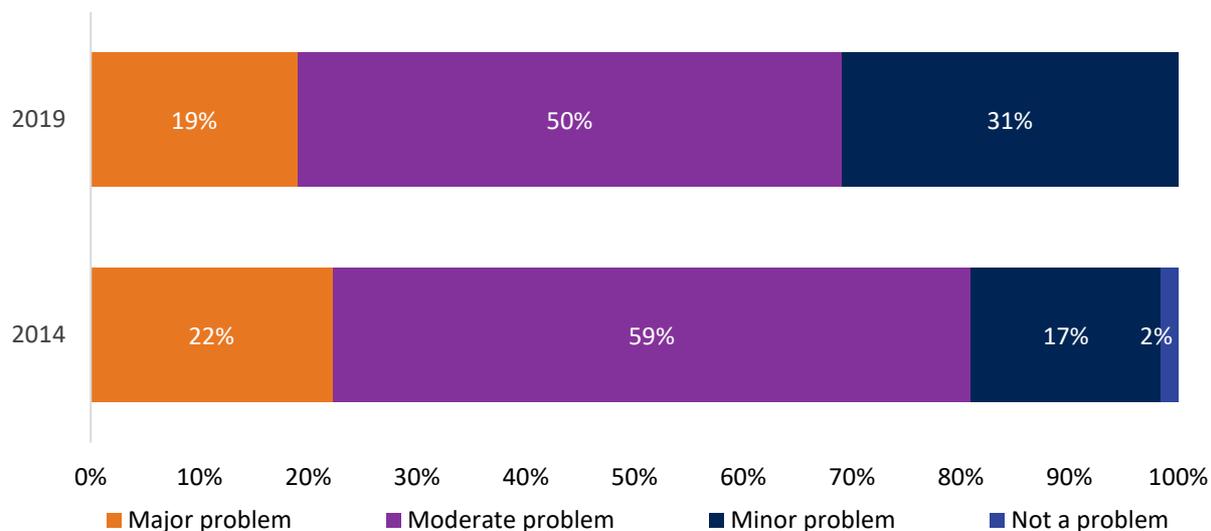
2.5.3 Findings

2.5.3.1 Extent of illegal dumping in NSW

Most NSW LGAs (69%) reported illegal dumping as being a moderate to major problem in their area. One in five LGAs (19%) considered illegal dumping to be a 'major problem' and half (50%) see it as a 'moderate problem'.

In 2014 a wider proportion of LGAs reported illegal dumping as a major (22%) or as a moderate (59%) issue, compared to 2019, although this is not significantly different.

Figure 16. Extent of the problem of illegal dumping



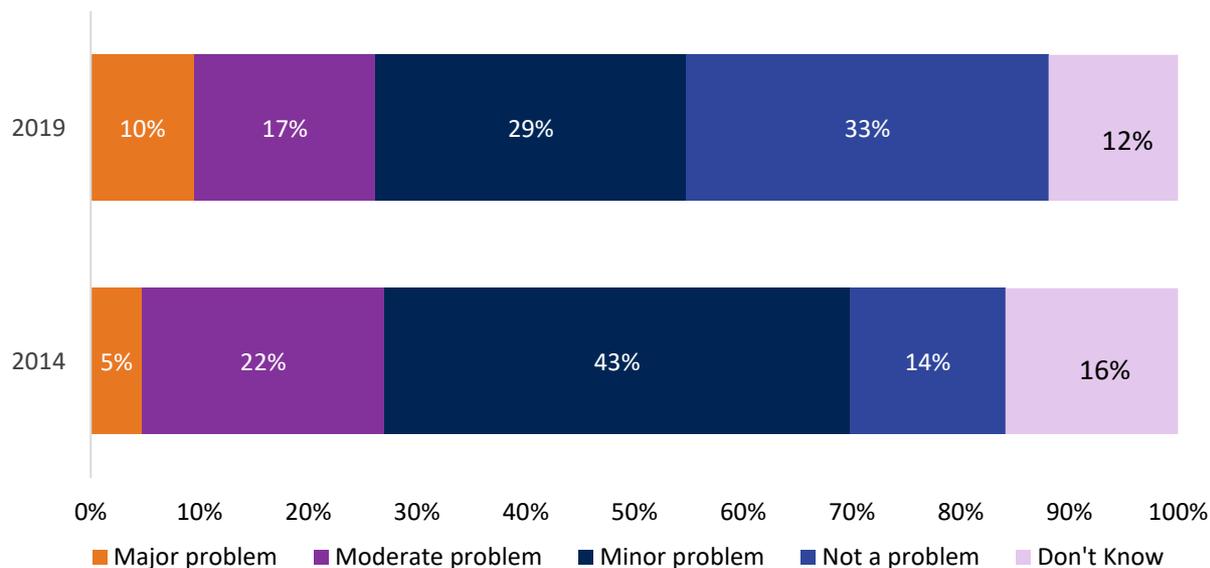
Base: Total LGA sample | 2019 LGA sample (n=42), 2014 LGA sample (n=63)
 Q4. To what extent is illegal dumping a problem in your council area? Illegal dumping

Extent of the problem of illegal landfilling

Fewer LGAs saw illegal landfilling as a moderate issue than illegal dumping with a little over one in four (27%) considering it as a ‘major’ or ‘moderate problem’.

The problem of illegal landfilling appears to have become more severe since 2014 with more LGAs indicating it is a ‘major problem’ (increased by 5 percentage points). However, the proportion of LGAs who do not see illegal landfilling as a problem has more than doubled (from 14% in 2014 to 33% in 2019).

Figure 17. Extent of illegal landfilling



Base: Total LGA sample | 2019 LGA sample (n=42), 2014 LGA sample (n=63)
 Q4. To what extent is illegal dumping a problem in your council area? Illegal landfilling

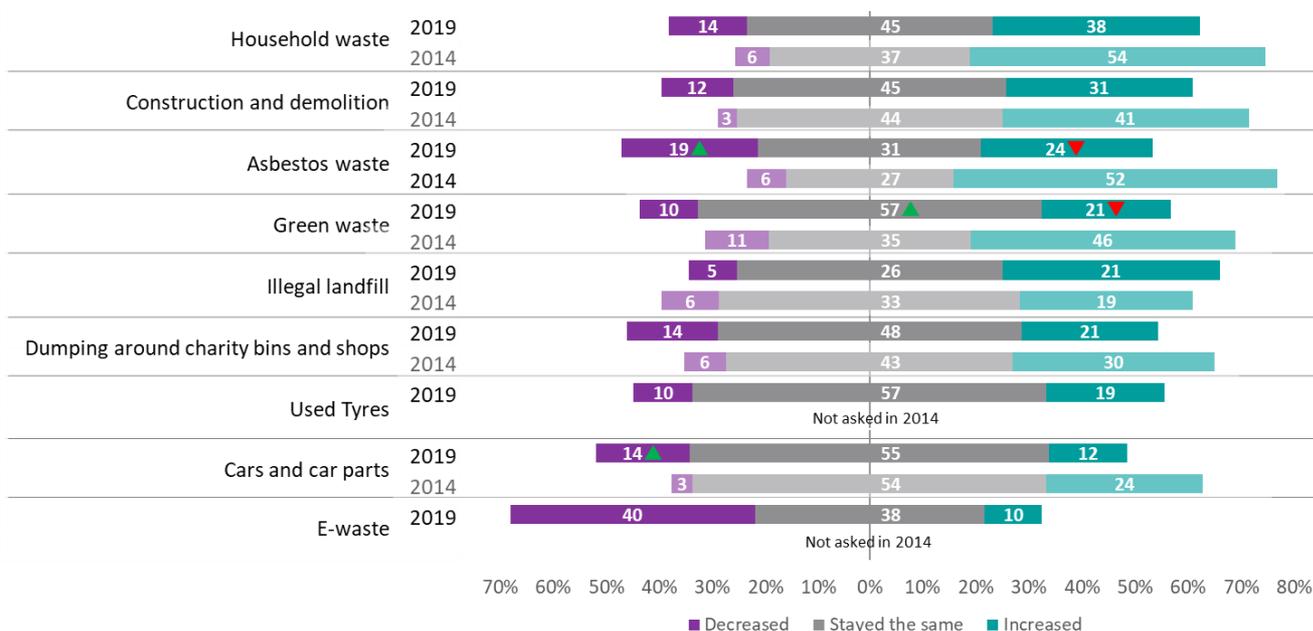
2.5.3.2 Types of waste dumped

Changes over time

Nearly two in five (38%) LGAs thought the levels of household waste have increased. This is followed by construction and demolition waste (31%) and asbestos (24%). In general, most LGAs (at least 38%) believed the levels of waste have stayed the same, to the exception of illegal landfilling and asbestos.

In 2019 more LGAs think the levels of asbestos waste have decreased (19%) compared to 2014 (6%). Similarly, fewer LGAs believed the proportion of green waste have increased (21% v 46% in 2019) instead LGAs mostly thought it stayed the same (57%).

Figure 18. Change in frequency of dumping



Base: Total LGA sample | 2019 LGA sample (n=42), 2014 LGA sample (n=63)

Q5. For each waste type, have you noticed that levels of illegal dumping have increased, stayed the same, or decreased in your council area over the past 5 years?

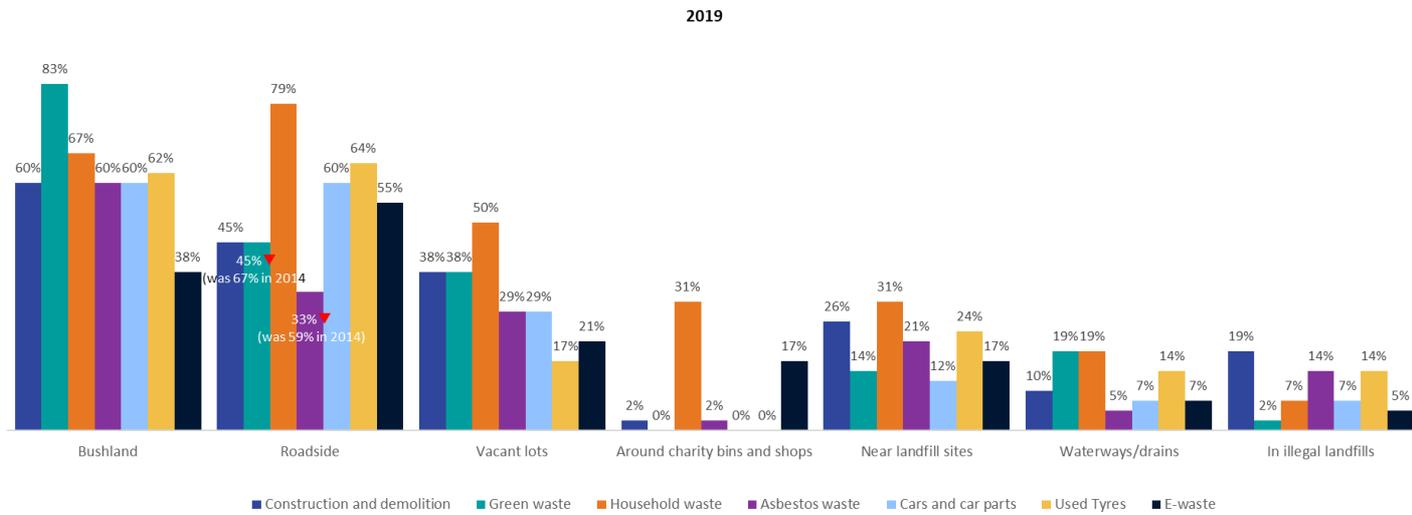
Note: Waste type ranked in descending order based on 'Increased' results. 'Used tyres' and 'e-waste' are new codes added in the 2019 questionnaire. 'I have not noticed/don't know' results not shown.

Location of dumping

Bushland was thought to be the most common place for illegal dumping, followed by the roadside and vacant lots. Majority of LGAs believed green waste is mainly dumped in bushland (83%) and household waste on the roadside (79%). Charity bins and shops were predominantly seen as being a common place for household waste (31%). Illegal landfilling mainly consisted of construction and demolition (19%), asbestos (14%) and used tyres (14%).

In 2019, fewer LGAs thought green waste and asbestos are being dumped on the roadside (45% and 33% respectively).

Figure 19. Location of illegally dumped waste



Base: Total LGA sample | 2019 LGA sample (n=42), 2014 LGA sample (n=63)

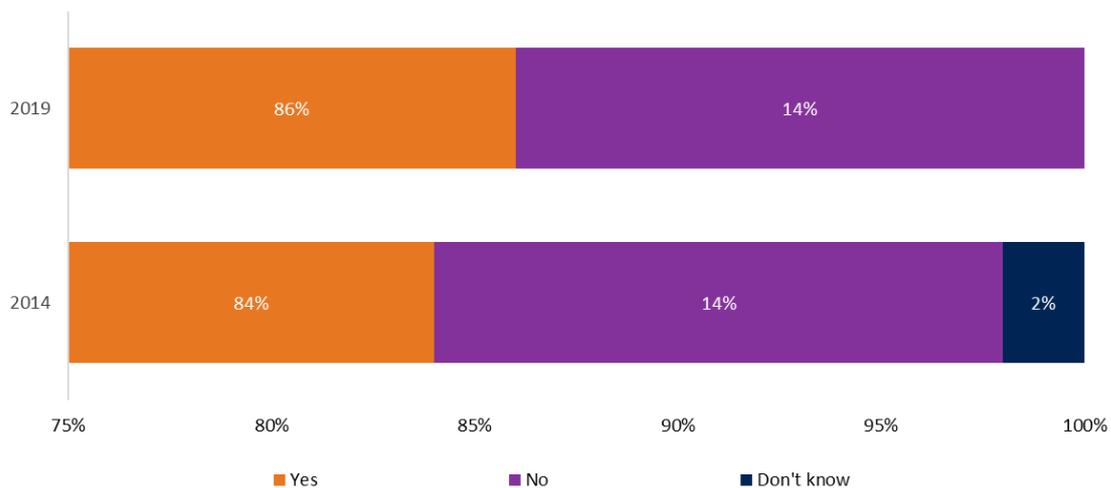
Q7. Thinking about illegal dumping in your council area, where is each waste type typically dumped?

Note: 'Used tyres' and 'e-waste' are new codes added in the 2019 questionnaire.

The majority (86%) of LGAs indicated the presence of illegal dumping 'hot spots' in their Council area.

The level of awareness of any illegal dumping 'hot spots' reported by LGAs has remained high over the last 5 years.

Figure 20. Knowledge of illegal dumping 'hot spots'



Base: Total LGA sample | 2019 LGA sample (n=42), 2014 LGA sample (n=63)

Q8. Are there any known illegal dumping 'hot spots' in your Council area, i.e. locations that are frequently used to illegally dump waste?

Who dumps the waste?

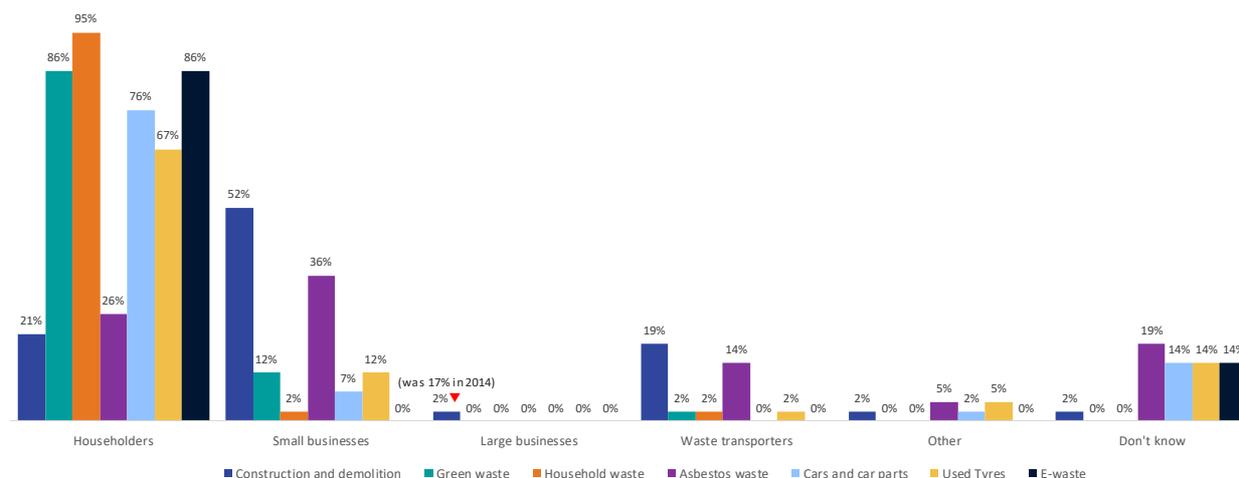
All groups, including householders, businesses and waste transporters, have been identified as dumping waste illegally. Householders were considered to be the largest dumpers more specifically in terms of:

- household waste (95%)
- dumping around charity bins and shops (90%)
- green waste (86%)
- e-waste (86%)
- cars and car parts (76%)
- used tyres (67%).

Construction and demolition waste and asbestos were thought be more commonly dumped by small businesses (52% and 36% respectively). While large businesses were perceived to dump the least amount of waste (2% for construction and demolition).

Large businesses are thought to be less likely to dump construction or demolition waste in 2019.

Figure 21. Groups dumping each waste type



Base: Total LGA sample | 2019 LGA sample (n=42), 2014 LGA sample (n=63)

Q9. Still thinking about illegal dumping in your council area, which groups of people or organisations are perceived as most likely to dump each waste type? Note: 'Used tyres' and 'e-waste' are new codes added in the 2019 questionnaire.

Majority (67%) of LGAs did not know how organised illegal dumping networks had evolved in the past five years. Under one in five (17%) LGAs believed these networks had increased, while one in ten (10%) thought it had remained the same.

The perception of how these organised networks has evolved is consistent with 2014.

2.5.3.3 Reasons for dumping

According to LGAs, the two main reasons for dumping illegally were:

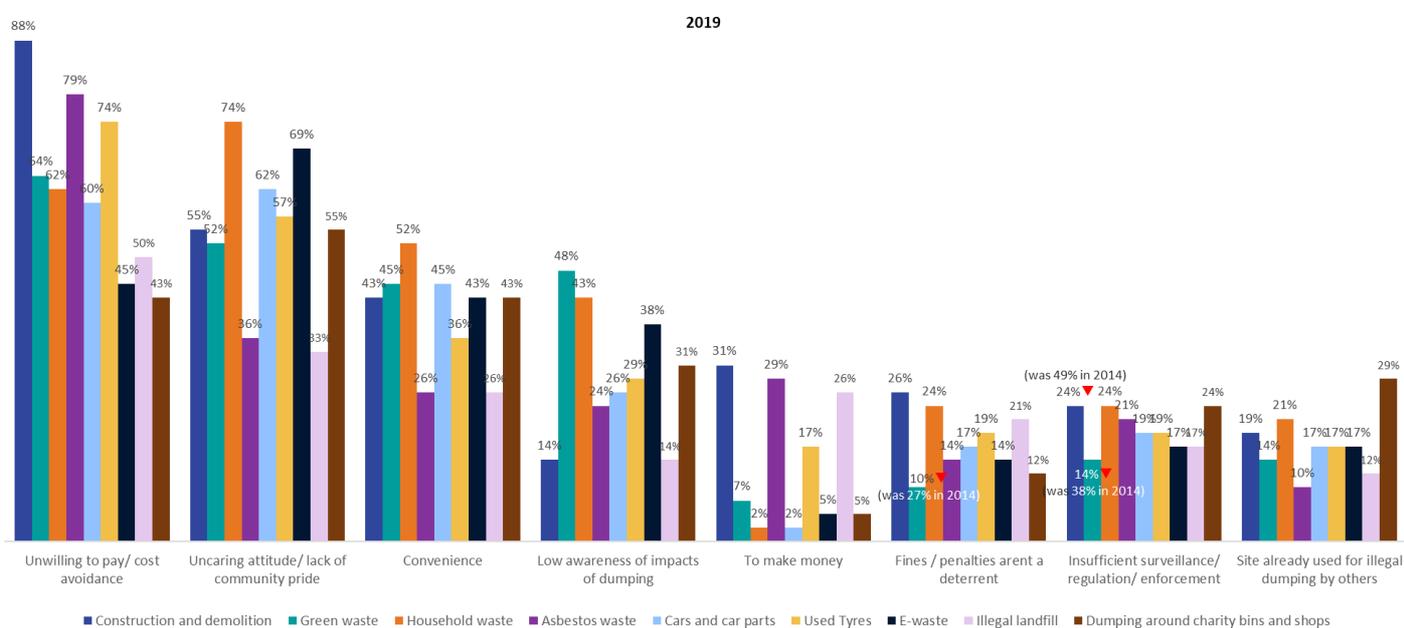
- Unwilling to pay / cost avoidance
More specifically when it comes to construction and demolition waste (88%), asbestos (79%) and used tyres (74%).
- Uncaring attitude / lack of community pride
More specifically when it comes to household waste (74%), e-waste (69%) and cars and car parts (62%).

Secondary motivations were believed to involve convenience and low awareness of impacts of dumping.

Dumping around charity bins and shops was thought to be mainly driven by a lack of community pride (55%).

Compared to 2014, LGAs were less likely to believe insufficient levels of surveillance, regulation and enforcement are driving illegal dumping of construction and demolition, and green waste. Similarly, fines and penalties are believed to play a stronger role as a deterrent for green waste.

Figure 22. Reasons for dumping waste



Base: Total LGA sample | 2019 LGA sample (n=42), 2014 LGA sample (n=63)
 Q10 For each type of waste, why do you think it is dumped illegally in your council area?
 Note: 'Used tyres' and 'e-waste' are new codes added in the 2019 questionnaire.

2.5.3.4 The cost of illegal dumping to LGAs

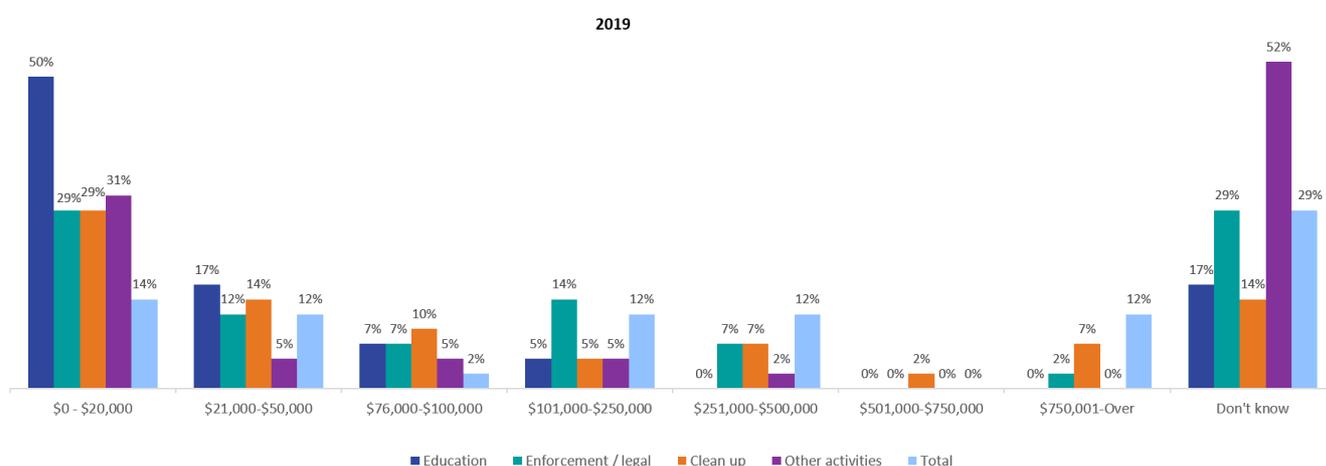
The total cost of illegal dumping and landfilling per year varied between LGAs ranging from up to \$20,000 to \$750,001 and over. Half (50%) of councils spend up to \$20,000 on education activities.

Around three in ten spent a similar amount in:

- Enforcement/legal (29%)
- Clean up (29%)
- Other activities (31%)

A relatively high proportion of participants were unsure how much was spent on illegal dumping activities. In particular, 52% were unsure how much was spent on activities other than education, enforcement and clean up.

Figure 23. Cost of illegal dumping - by activity type



Base: Total LGA sample | 2019 LGA sample (n=42), 2014 LGA sample (n=63)

Q11A. Please provide the approximate cost per year to your council from illegal dumping and illegal landfilling, by activity. If the cost per activity is unknown, please just provide the total cost. Please select one answer per activity (per row)?

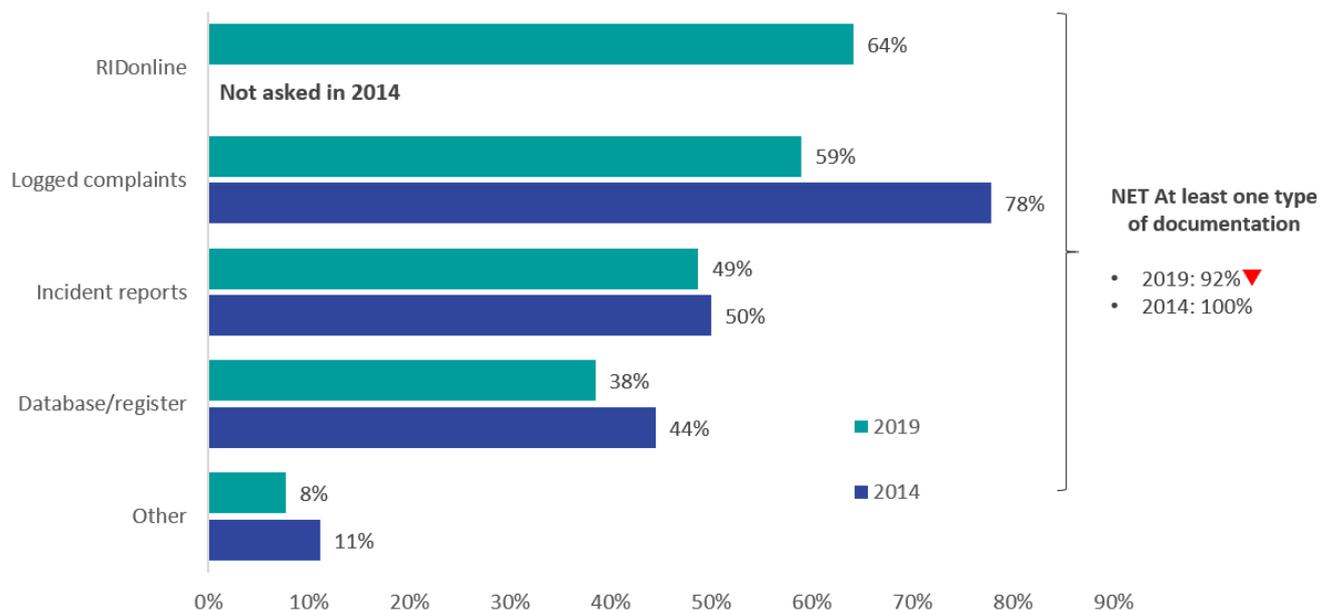
Note: The 2014 questionnaire allowed for Q11A to be skipped by respondents (i.e. non-mandatory question), while in 2019 the question became mandatory. Therefore, significance testing was not conducted as differences between 2014 and 2019 may be linked to the change in questionnaire design rather than actual change.

2.5.3.5 Monitoring illegal dumping

Majority of LGAs recorded the incidence of illegal dumping or landfilling (92%). RIDonline (64%) was the most commonly used documentation to record these cases, closely followed by logged complaints (59%).

The introduction of RIDonline has proven to be useful for the LGAs as it has become the first source of documentation. Conversely, in 2019 fewer LGAs used logged complaints and database/register as forms of documentation (92% compared to 100% in 2014).

Figure 24. Documentation of illegal dumping



Base: Councils that document incidences of illegal dumping in some way | 2019 sample (n=39), 2014 sample (n=54)
 Q14. How are incidences of illegal dumping or illegal landfilling documented by your council?

Note: Types of documentation ranked in descending order based on 2019 results. RID online is a new code added in 2019, was not asked in 2014.

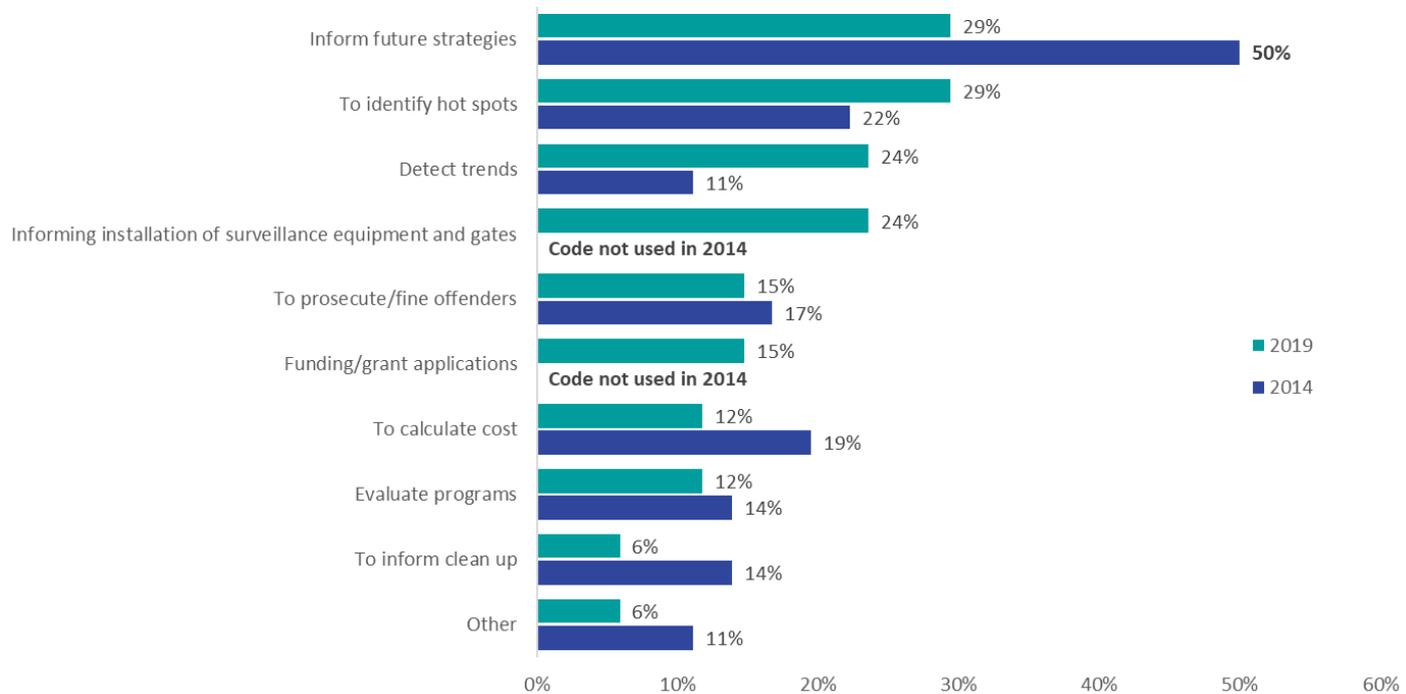
Illegal dumping monitoring data was mainly used to inform strategies and surveillance plan and to better understand where these incidences take place:

- Inform future strategies (29%)
- Identify hot spots (29%)
- Detect trends (24%)
- Inform installation of surveillance equipment and gates (24%)

To a lesser extent this data was also used for enforcement purposes (15%) and funding/grant applications (15%).

Although fewer LGAs indicated they use the monitoring data to inform future strategies, a notable proportion reported this year they used it to inform the deployment of surveillance infrastructure. Encouragingly, the amount of LGAs using monitoring data to better understand illegal dumping hotspots and trends has increased. This may be linked to the introduction of RIDonline enabling LGAs to conduct more analysis.

Figure 25. Uses of data collected



Base: Councils that use their illegal dumping incidence data in some way, or who plan to use it in the future | 2019 sample (n=34), 2014 sample (n=36)

Q16. How is data about incidences of illegal dumping or illegal landfilling used by your council, or how do you plan to use it?

Note: Responses ranked in descending order based on 2019 results. This was an open-ended question-verbatim were coded into the appropriate categories. Informing installation of surveillance equipment and gates and Funding/grant applications are new codes created for 2019, were not in the 2014 code frame.

Overall, LGAs believed the funding of prevention measures, enforcement and clean up is more effective to combat illegal dumping compared to communication and education campaigns.

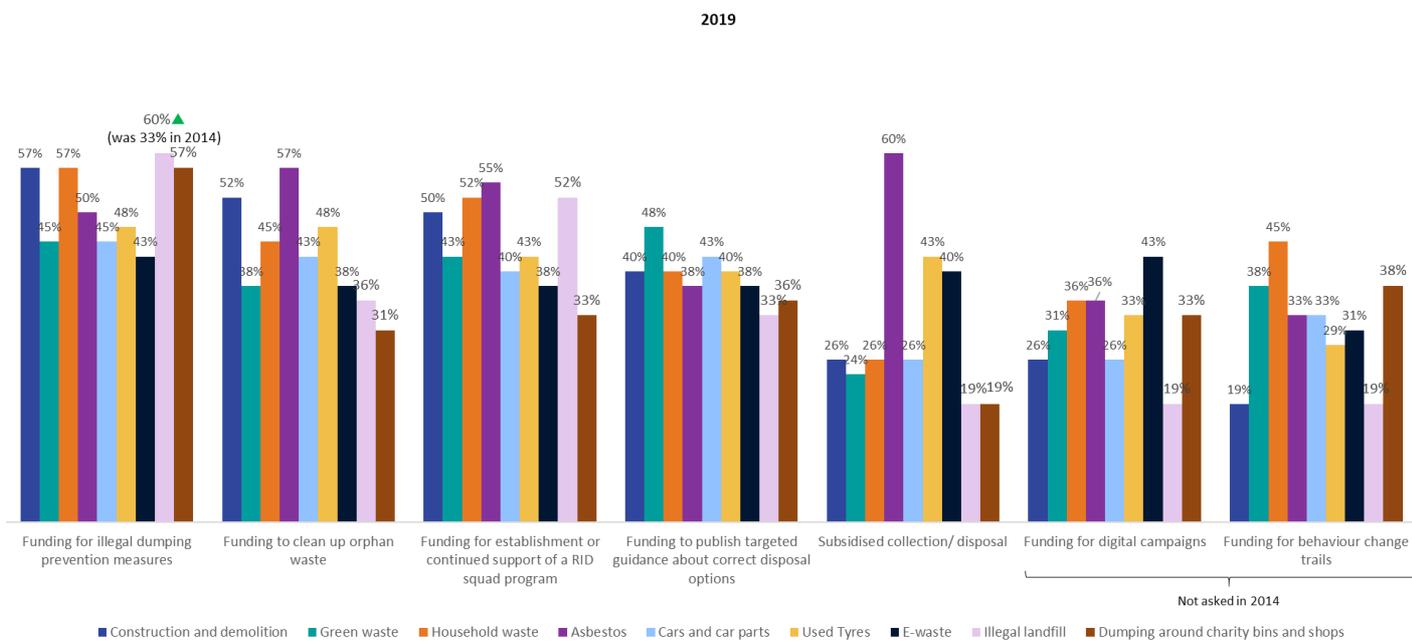
However, depending on the type of waste targeted LGAs had a different opinion as to what would be the most effective use of funding:

- Construction and demolition waste is thought to be better tackled by funding prevention measures (57%), the clean up of orphan asbestos waste (52%) and a RID squad program (50%);
- Green waste is likely to benefit more from targeted educational messages with nearly half (48%) supporting ‘funding to publish targeted guidance about correct disposal options’;
- Household waste is considered to need more investment in prevention measures (57%);
- Asbestos appears to require more subsidised collection or disposal (60%);
- Cars and car parts would benefit more from funding for illegal dumping prevention measures (45%);
- Used tyres are thought to require more prevention measures (45%) and clean up of orphan waste (45%);
- E-waste would benefit more from a combination of prevention measures (43%) and digital campaigns (43%);
- Illegal landfilling is considered to need more prevention measures (60%) and RID squad program (52%);

- Dumping around charity bins and shops appear to need more prevention measures (57%).

An interesting finding when comparing to 2014 is the larger proportion of LGAs seeing illegal landfilling as needing more prevention measures (33% in 2014 and 60% in 2019).

Figure 26. Effective use of funding to combat illegal dumping



Base: Total LGA sample | 2019 LGA sample (n=42), 2014 LGA sample (n= 63)

Q23. In your view and based on your experiences, for each waste type, which types of funding would be most effective for your council in reducing illegal dumping?

Note: Responses ranked in descending order.

2.5.3.6 Strategies to prevent illegal dumping

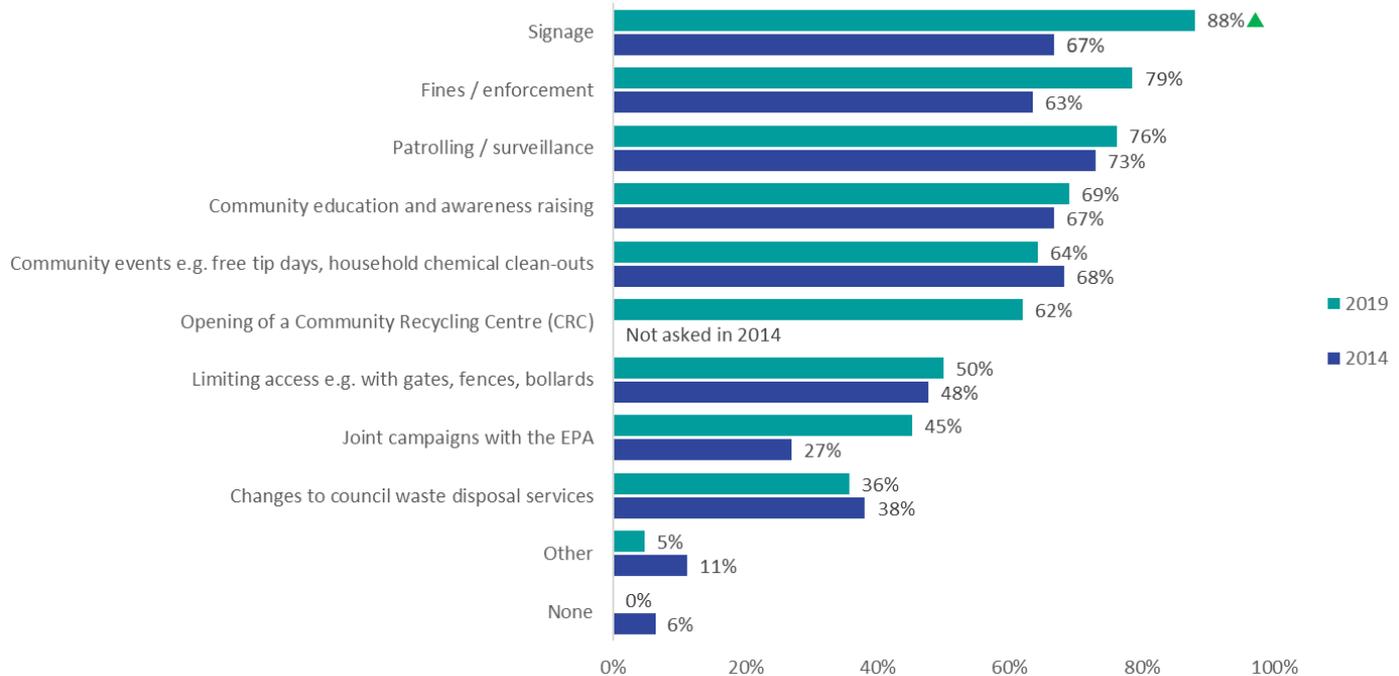
Majority of LGAs have undertaken some initiatives to combat illegal dumping with the most common strategies including:

- signage (88%);
- fines and enforcement (79%);
- patrolling and surveillance (76%).

Education, awareness and community engagement activities were also widely conducted but to a lesser extent with nearly seven in ten LGAs indicating they invested in some community education and awareness raising (69%) and ran some community events (64%).

In 2019 it appears illegal dumping signage has become more prevalent with a higher number of LGAs reporting this as one of their initiatives. Interestingly, the results suggest the EPA has been more involved with nearly half (45%) of LGAs indicating they have conducted joint campaigns with the environmental regulator compared to 27% in 2014.

Figure 27. Initiatives and strategies undertaken



Base: Total LGA sample | 2019 LGA sample (n=42), 2014 LGA sample (n= 63)

Q21: What initiatives or strategies, if any, has your council used to reduce illegal dumping and/or illegal landfilling?

Note: Types of documentation ranked in descending order based on 2019 results. Opening of a Community Recycling Centre (CRC) is a new code added in 2019, was not asked in 2014.

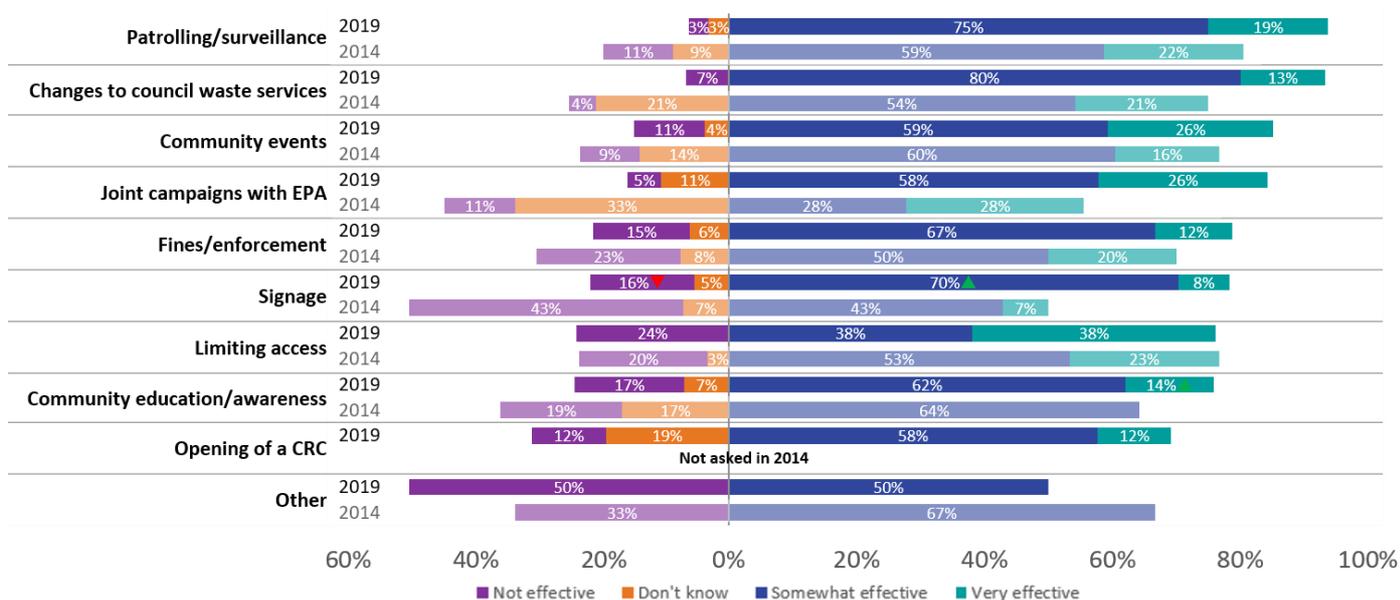
Overall, patrolling and surveillance and changes to council waste services were perceived as the most effective strategies to combat illegal dumping with the majority of LGAs indicating these are somewhat or very effective (94% and 93% respectively).

Encouragingly, a noticeable proportion of around a quarter of LGAs believed that community events (26%) and joint campaigns with the EPA (26%) were particularly ‘very effective’.

Some activities such as limiting access appear to be more polarising with a marginally high proportion (38%) thinking it is ‘very effective’ and an equally large number (24%) who considered it ‘not effective’.

Community education and awareness appear to be more impactful with a larger proportion of LGAs reporting this activity as being ‘very effective’ (14%). Similarly, signage generates stronger endorsement this year with seven in ten (70%) LGAs rating this initiative as ‘somewhat effective’.

Figure 28. Perceived effectiveness of initiatives



Base: Councils who have used strategies or initiatives to reduce illegal dumping and/or illegal landfilling | 2019 sample (n=42), 2014 sample (n= 63)
 Q22 How effective have each of these initiatives or strategies been in reducing illegal dumping and/or illegal landfilling?

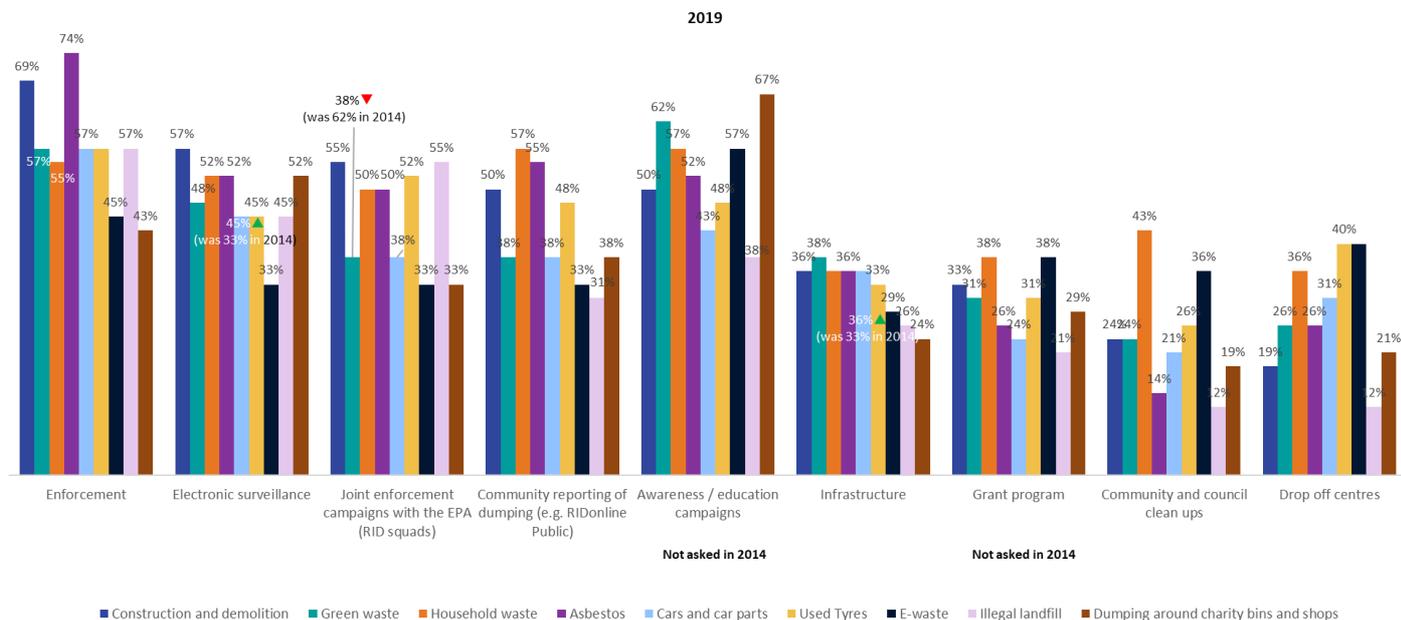
Overall, enforcement was seen as the most effective approach to combat the more critical forms of illegal dumping including:

- construction and demolition (69%);
- asbestos (74%);
- cars and car parts (57%);
- used tyres (57%);
- illegal landfilling (57%).

Conversely, awareness and education campaigns were considered more effective to tackle dumping most likely generated by households such as green waste (62%), household waste (57%), e-waste (57%) and dumping around charity bins and shops (67%).

The joint enforcement campaigns with the EPA were seen as less effective in addressing green waste this year (38% compared to 62% in 2014). While electronic surveillance and infrastructure were thought to be more impactful on cars and car parts dumping.

Figure 29. Perceived effectiveness of prevention measures



Base: Total LGA sample | 2019 LGA sample (n=42), 2014 LGA sample (n= 63)

Q24. In your view and based on your experiences, for each waste type, which prevention measures would be most effective in reducing illegal dumping?

2.6 Quantitative phase: Community and industry surveys

2.6.1 Objectives

The main objective of the quantitative research with the community and trade and industry was to measure and compare to 2014 results the prevalence of illegal dumping behaviour among community and industry (as reported by them), and of various attitudes and perceptions about waste disposal.

The specific objectives of the community and industry surveys were to assess:

- Reported behaviour in relation to legal waste disposal and illegal dumping;
- Awareness of ways to legally dispose of waste;
- Awareness and understanding of illegal dumping;
- Perceptions of the acceptability of illegal dumping; and
- Willingness to ensure waste is disposed of legally.

2.6.2 Methodology

Two separate online surveys were carried out in August 2019 with households and businesses across NSW. Details of each are outlined below.

Community survey

The community survey was conducted online with 1,000 residents of NSW aged 18 years and over. Fieldwork was conducted in August 2019. Age, gender, and location (i.e. Sydney/regional NSW) quotas were applied to ensure that the sample was broadly representative and was weighted so it was reflective of the NSW population.

The full demographic profile of the sample is outlined in Appendix B.

Analysis of findings

Waste disposal behaviours were analysed and the respondents were allocated to one of three groups based on their self-reported waste disposal behaviours. The three groups were as follows:

- Non dumpers (n=759, 76%)
 - Respondents who did not report disposing of any waste illegally.
- Kerbside dumpers (n=154, 16%)
 - Respondents who reported disposing of waste (excluding hazardous chemicals and asbestos) by placing on the kerb outside their house (outside of council collection periods), but who had not undertaken any other illegal dumping behaviour.

- Deliberate dumpers (n=87, 8%)
 - Respondents who had disposed of either hazardous chemicals or asbestos in any place, or any waste on side of the road elsewhere, in a public place, on someone else's land.

Statistical analysis of differences in survey responses between these groups was undertaken. Analysis of differences in responses between demographic groups was also undertaken. Demographic variables included in this analysis were:

- Age (four categories)
- Gender (male/female)
- Location (Sydney/other NSW)
- Culturally and linguistically diversion populations (language other than English spoken at home/English only spoken at home)
- Ownership of property (rent or board/own)
- Tenure duration (lived in home than a year/more than a year)

Industry survey

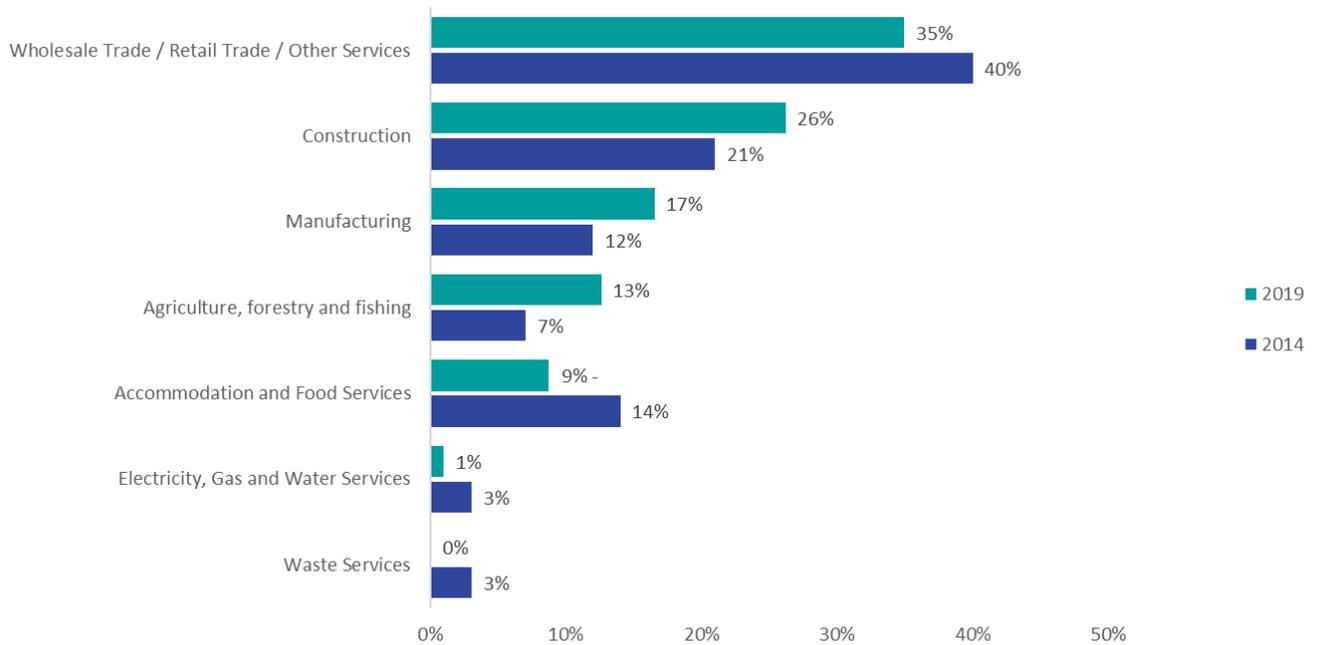
The industry survey was conducted online with 103 people responsible for the management of waste and recycling in their businesses. Fieldwork was conducted in August 2019.

The majority of businesses (60%) were small (under 20 employees) and 40% were medium sized (21-200 employees).

Sample characteristics – Industry

Respondents were recruited from industries which were likely to produce waste as part of their operations. Around one third (35%) of respondents worked in the wholesale/retail trade or other services, and one quarter (26%) working in the construction industry. The sample profile aligned with the 2014 study.

Figure 30. Industry breakdown



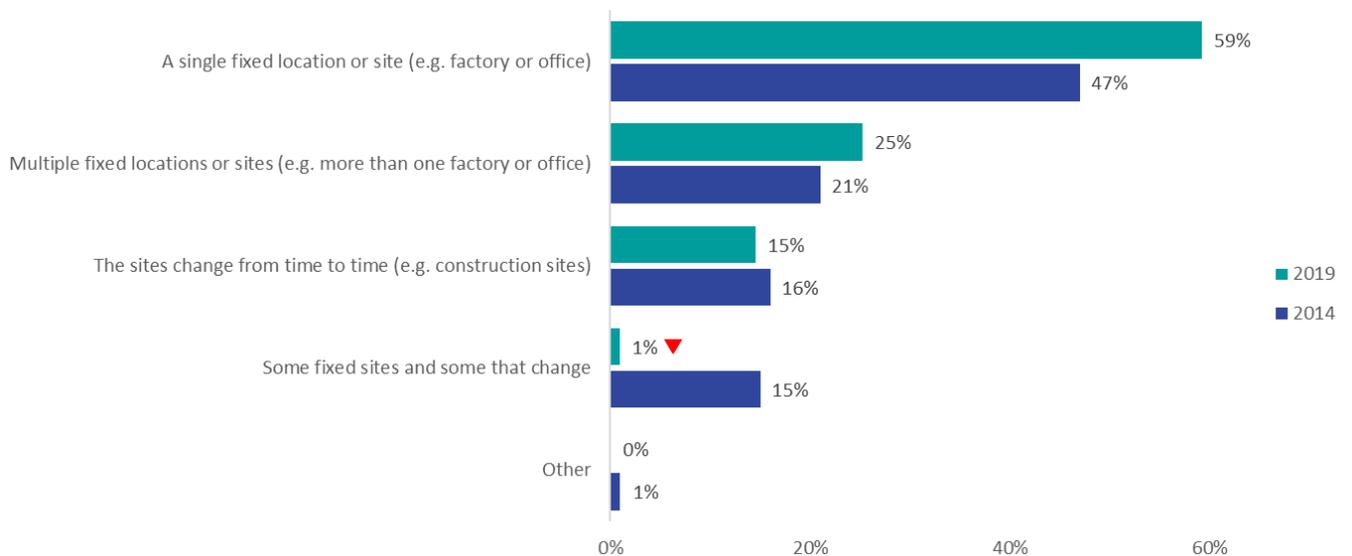
Base: Total Industry sample | 2019 Industry sample (n=103), 2014 Industry sample (n=100)

Q1 What industry does your business operate in?

Note: Sample characteristics ranked in descending order based on 2019.

Majority (59%) of the businesses interviewed produced waste in a single fixed location, with a further one quarter (25%) operating from multiple fixed locations. Compared to the 2014 study, this year’s sample is less likely to have a mix of fixed and multiple sites (15% in 2014 and 1% in 2019).

Figure 31. Waste location



Base: Total Industry sample | 2019 Industry sample (n=103), 2014 Industry sample (n=100)

Q2 Which of the following best describes where waste is generated by your business?

Note: Waste locations ranked in descending order based on 2019 results.

More than half of the sample (59%) was based in Sydney, with the remaining 41% based elsewhere in NSW. The vast majority (94%) operated in the waste levy area, with the remaining (6%) in non-levy areas which broadly aligns with the 2014 sample.

The full profile of the sample is provided in Appendix C.

Analysis of findings

Waste disposal behaviours were analysed and the respondents were allocated to one of two groups based on their self-reported waste disposal behaviours. The two groups were as follows:

- Non-dumpers (n=80, 78%)
 - Respondents who did not report disposing of waste illegally.
- Dumpers (n=23, 22%)
 - Respondents who reported disposing of waste by placing it on the kerb, on public land, on their own or someone else's land or on the side of the road elsewhere.

2.6.3 Findings

2.6.3.1 Waste management behaviours

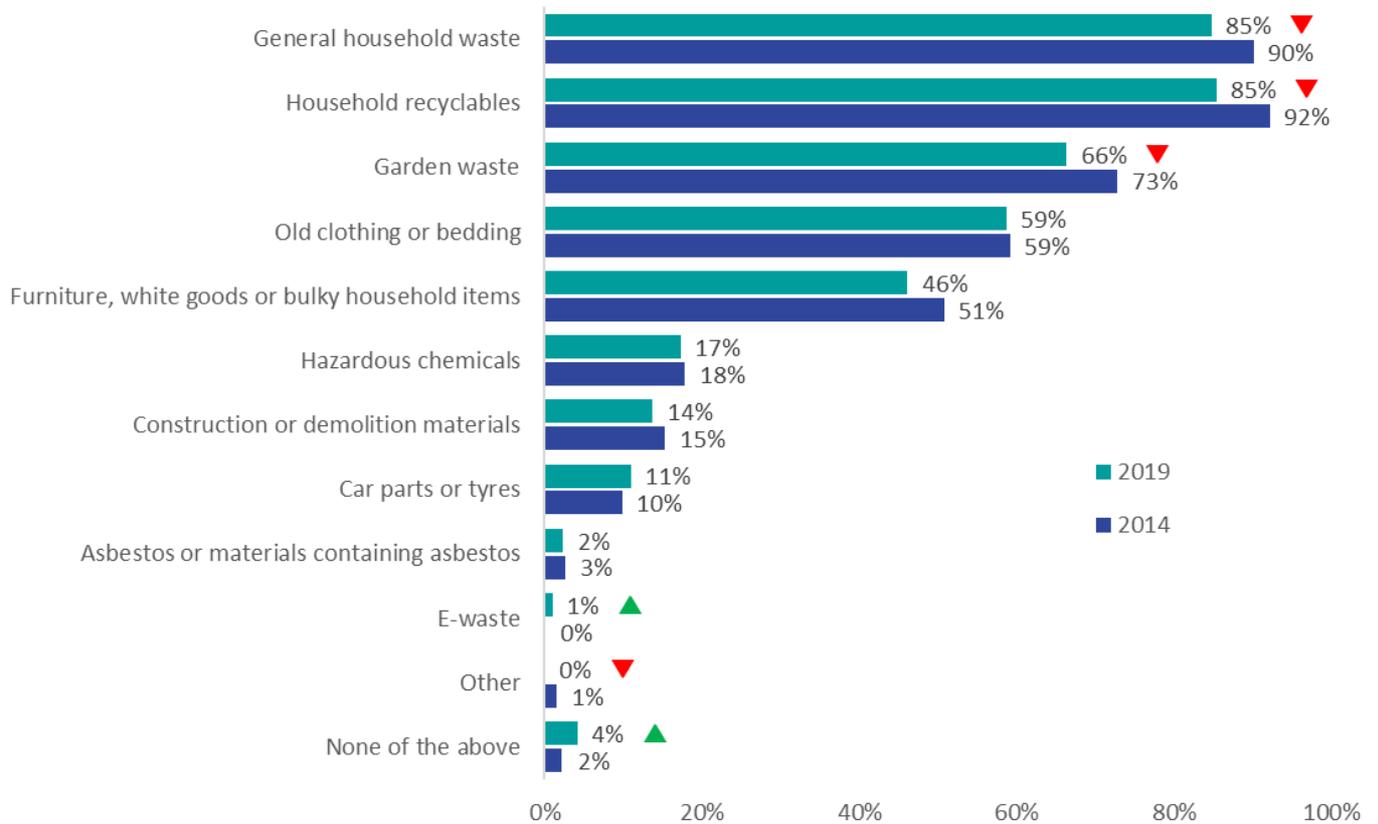
Community

General waste and recyclables were the most common types of waste disposed by households (85% for both). Secondary types of waste included garden waste (66%) and old clothing or bedding (59%)

Nearly half (46%) of the interviewed householders indicated they have disposed bulky items such as furniture or white goods.

Fewer people have disposed of more toxic items including hazardous chemicals, construction and demolition materials, car parts or tyres, asbestos and e-waste.

Figure 32. Types of waste disposed of in the last 12 months by householders



Base: Total Community sample | 2019 Community sample (n=1,000), 2014 Community sample (n=1,009)
 Q3 Which of the following materials or items have you disposed of from your household in the last 12 months?
 Note: Types of waste ranked in descending order based on 2019 results.

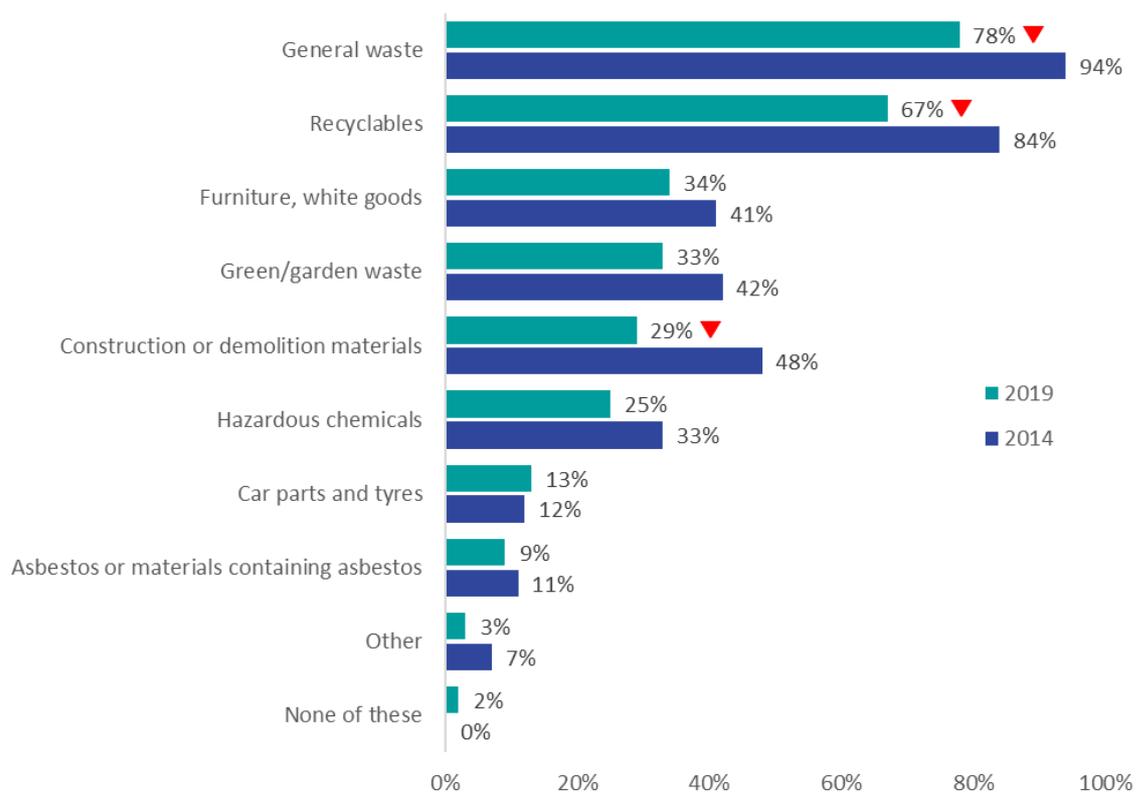
Industry

In line with the community results, businesses have mainly disposed of general waste (78%) and recyclables (67%). Secondary items included furniture and white goods (34%) and garden waste (33%).

A noticeable proportion of around one quarter of businesses indicated they have disposed of construction materials (29%) and hazardous chemicals (25%) and one in ten reported disposing of asbestos (10%).

Fewer businesses in the 2019 study indicated they have disposed of general waste and recyclables in the last 12 months. Similarly, the number of businesses indicating they have disposed of construction and demolition materials is lower.

Figure 33. Types of waste disposed of in the last 12 months by businesses



Base: Total Industry sample | 2019 Industry sample (n=103), 2014 Industry sample (n=100)

Q4 Which of the following materials or items have you disposed of from your business in the last 12 months?

Note: Waste locations ranked in descending order based on 2019 results.

Location of disposal

Community

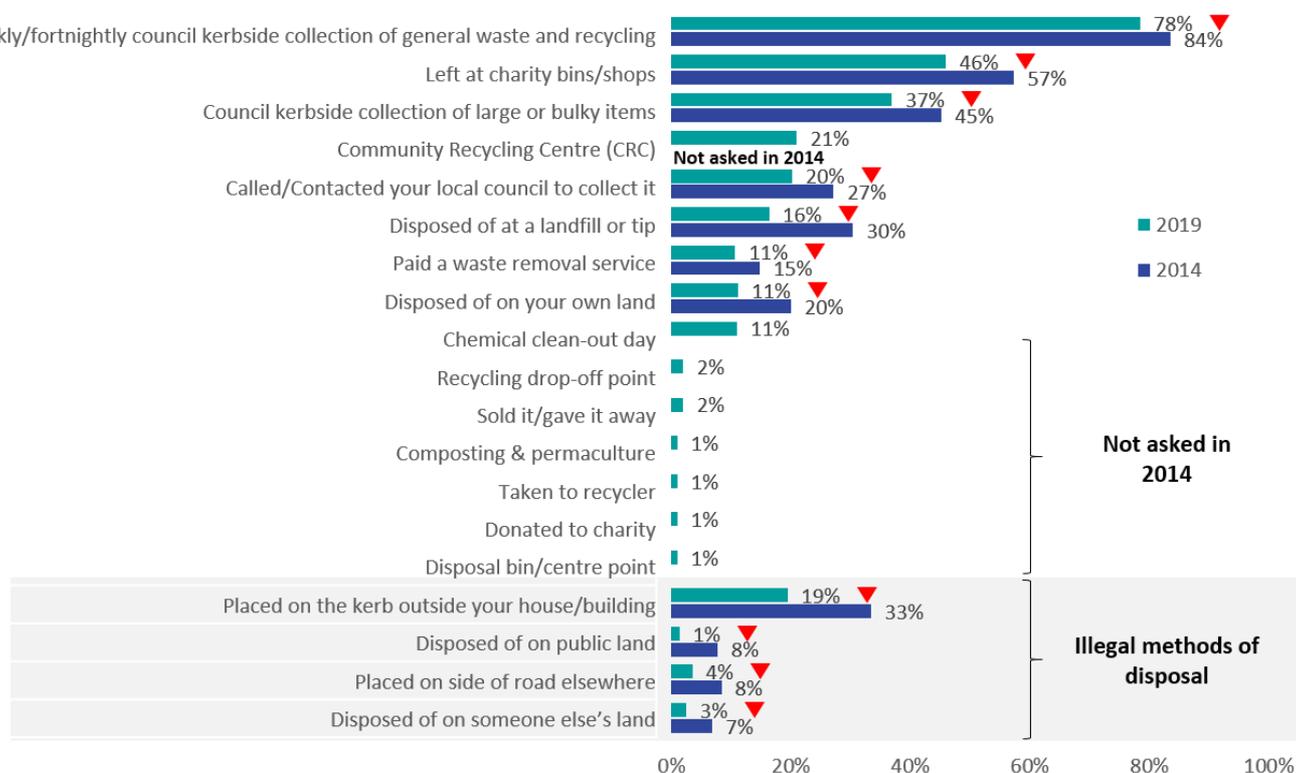
Most residents indicated they have recently used council services including:

- weekly/fortnightly kerbside collection of general waste and recyclables (78%);
- large or bulky items (37%);
- scheduled collection (20%).

Charity shops/bins were also a common disposal location for residents with nearly half of those (46%) using this location.

At least one in five residents (19%) have illegally disposed of waste in the last 12 months which predominantly comprises of kerbside dumping.

Figure 34. Disposal location - Community



Base: Total Community sample | 2019 Community sample (n=1,000), 2014 Community sample (n=1,009)
 Q4 And which of the following methods have you used to dispose of each of these things in the last 12 months?
 Note: Responses have been re-coded for location. Dumping locations ranked in descending order based on 2019 results.

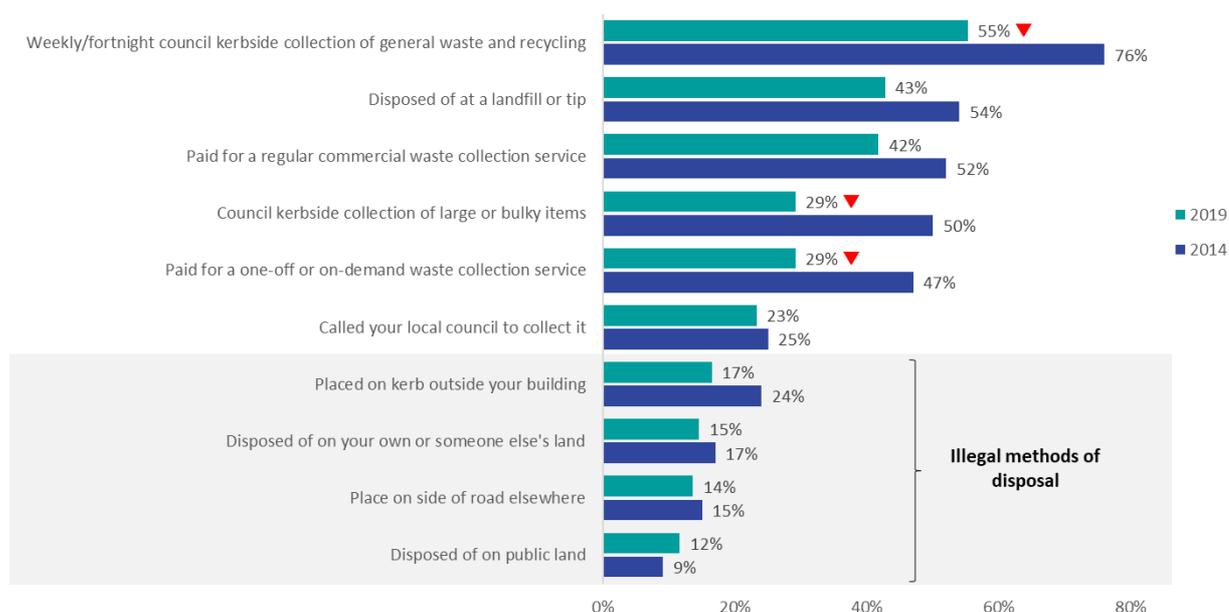
Industry

Around half (55%) of the businesses interviewed have used the council collection services. Secondary disposal locations included disposing at a landfill or tip (43%) or paying a commercial collection service (42%).

One in six (17%) businesses have illegally disposed of waste on the kerb, a similar proportion (15%) have placed it on their own or someone else's land.

In line with the community results, this year fewer businesses have been using the council kerbside collection for general waste, recycling or bulky items. Conversely the level of illegal dumping appears to have remained broadly stable with similar proportions of businesses indicating they have disposed of waste on private land, on the side of the road or on public land.

Figure 35. Dumping location - Industry



Base: Total Industry sample | 2019 Industry sample (n=103), 2014 Industry sample (n=100)

Q5 And which of the following methods have you used to dispose of waste from your business in the last 12 months?

Note: Responses ranked in descending order based on 2019 results.

2.6.3.2 Illegal dumping behaviours

Materials disposed of illegally

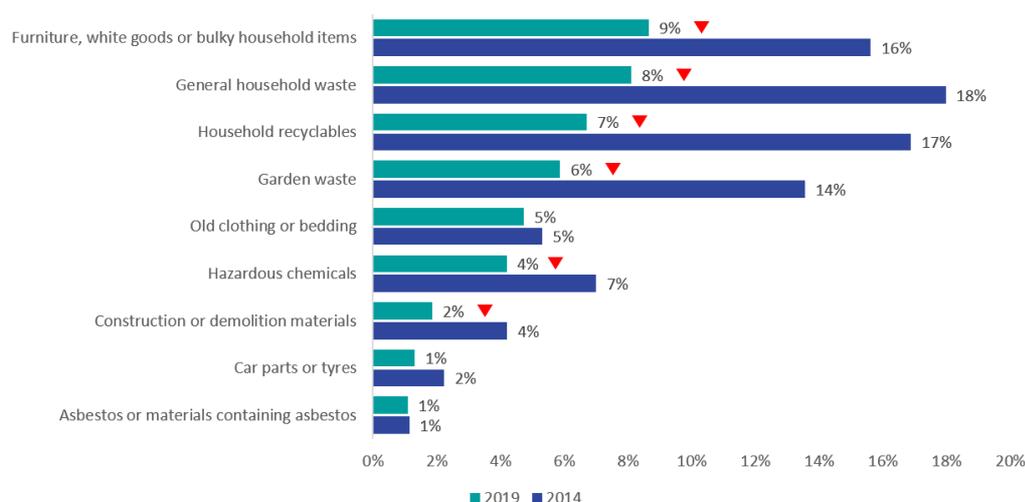
Community

One quarter (24%) of the respondents had disposed of at least one type of waste illegally. These respondents had dumped either on the kerb (outside of a council collection period), on the side of the road elsewhere, on public land or on their own or private land.

Around one in ten (9%) of those illegal dumps consisted of furniture, white good or bulky items, general household waste (8%) and household recyclables (7%).

Compared to 2014, the level of illegal dumping has decreased across most types apart from one notable type of waste that is old clothing or bedding which has remained at 5%.

Figure 36. Types of waste illegally dumped - Community



Disposed v. Illegally dumped

This figure shows the type of waste illegally dumped in the last 12 months. To be identified as being 'illegally dumped' an item must have been disposed of in one of the following specific location:

- kerb outside building/house
- side of road elsewhere
- own/someone else's land
- public land.

Base: Total Community sample | 2019 Community sample (n=1,000), 2014 Community sample (n=1,009)
 Q3 Which of the following materials or items have you disposed of from your household in the last 12 months?
 Note: Responses have been re-coded for illegally dumped waste based on Q4
 Note: Types of waste ranked in descending order based on 2019 results.

A number of significant differences were identified in illegal dumping behaviours by different demographic groups:

- General household waste
 - Younger age groups (18-29 years old) were less likely to dispose of general household waste using the weekly council collection (71%) compared to older age groups (84% of 40-49 years old, 87% of 50-59 and 89% of 60+)
 - Younger age groups (18-29 years old) were more likely to dispose of general household waste by paying a waste removal service (9%) compared to older age groups (1% of 40-49 years old, 2% of 50-59 and 1% of 60+)
 - Respondent living with their parents or guardian were more likely to dispose of general household waste on their own land (10% compared to 2% of renters and 3% of homeowners)
 - Respondents who mainly speak English at home were more likely to dispose of general household waste by using the weekly council collection (85% compared to 74% of those who mainly speak another language than English) and less likely to dispose it at charity bins (10% compared to 4%)
 - Regional residents were more likely to dispose of general household waste in a landfill (10% compared to 3% of metropolitan residents)
- Household recyclables
 - Older age groups (60+ years old) were more likely to dispose of household recyclables using their weekly council collection (85% compared to 68% of 18-29 years old and 70% of 30-39 years old)
 - Respondents who have been living in their house for more than 10 years were more likely to dispose of household recyclables using their council collection (83% compared to those who had

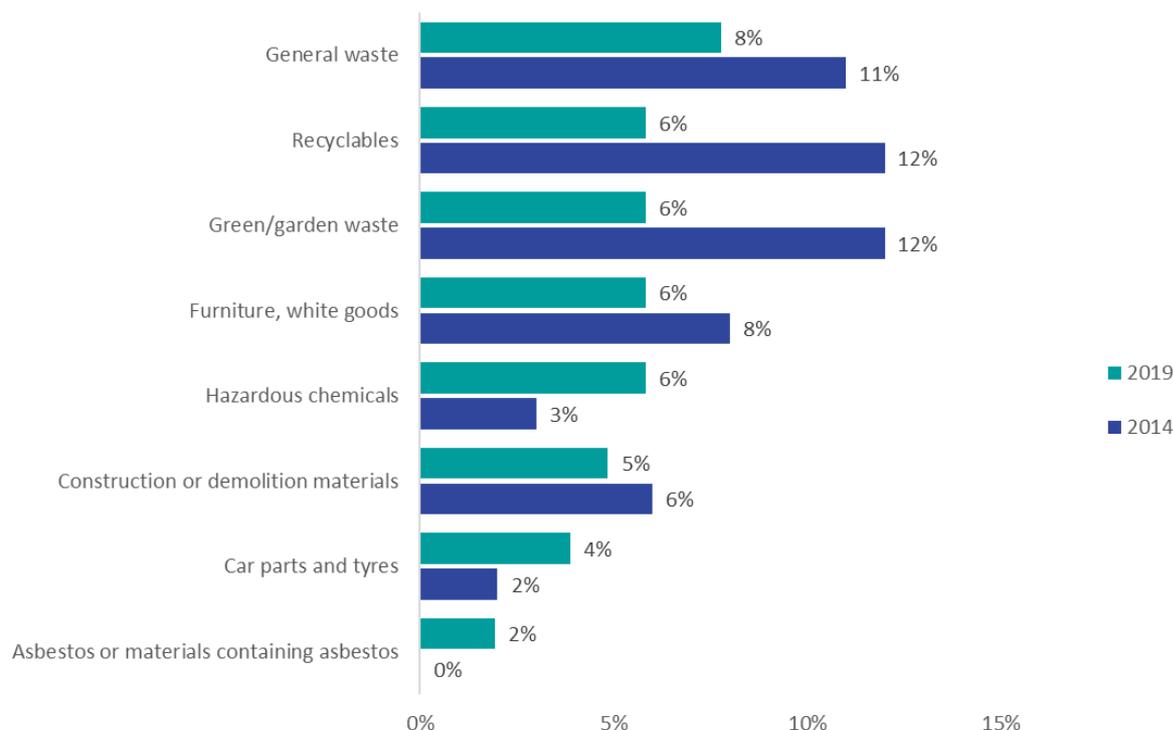
been living in their house for a shorter period of time that is 69% of those between 1-2 years and 70% of those between 3-5 years)

- Respondents who mainly speak another language than English at home were less likely to dispose of household recyclables by using their weekly council collection (65% compared to 79% for those who mainly speak English) and were more likely to call the council to collect (10% compared to 10%)
- Regional residents were more likely to dispose of household recyclables at their community recycling centre (CRC) (15% compared to 9% of metropolitan residents)
- Furniture/white goods
 - Respondents living with their parents or guardians were more likely to dispose of furniture/white goods at a landfill (27% compared to 10% of renters and 10% of homeowners)
 - Respondents who mainly speak another language than English at home were more likely to dispose of furniture/white goods by placing it on the kerb (23% compared to 13% of those who mainly speak English) and were less likely to dispose of it in a landfill (5% compared to 14%)
 - Regional residents were more likely to dispose of furniture/white goods at a landfill (17% compared to 8% of metropolitan residents)
- Old clothing/bedding
 - Younger age groups (18-29 years old) were more likely to dispose of old clothing/bedding by paying a waste removal service (12% compared to all other age groups varying between 0% and 3%)
 - Older age groups (50-59 years old and 60+ years old) were less likely to dispose of old clothing/bedding by using a landfill (0% and 1% respectively compared to most younger age groups varying between 8% and 10%)
 - Respondents who have been living in their house for less than a year were more likely to dispose of old clothing/bedding by calling their council to collect it (18% compared to other groups who have been living in their house for longer period of time varying between 5% and 7%)
 - Respondents living with their parents or guardians were more likely to dispose of old clothing/bedding at a landfill (16% compared to 4% of renters and 4% of homeowners)
 - Respondents living with their parents or guardians were more likely to dispose of old clothing/bedding at a landfill (16% compared to 4% of renters and 4% of homeowners)
- Garden waste
 - Home owners were more likely to dispose of garden waste using their weekly council collection (78% compared to 67% for renters and 60% for homeowners)
 - Respondents who mainly speak English at home were more likely to dispose of garden waste by using their weekly council collection (77% compared to 59% of those who speak mainly another language)
 - Regional residents were more likely to dispose of garden waste in a landfill (14% compared to 5% of metropolitan residents)

Industry

Under one in ten (8%) businesses have illegally dumped general waste. Secondary types of waste being dumped illegally by industry include recyclables, green/garden waste, furniture, white goods and hazardous chemicals (6%).

Figure 37. Types of waste illegally dumped - Industry



Base: Total Industry sample | 2019 Industry sample (n=103), 2014 Industry sample (n=100)
 Q5 And which of the following methods have you used to dispose of waste from your business in the last 12 months?
 Note: Responses have been recoded for illegally dumped waste.
 Note: Responses ranked in descending order based on 2019 results.

Dumping around charity shops and bins

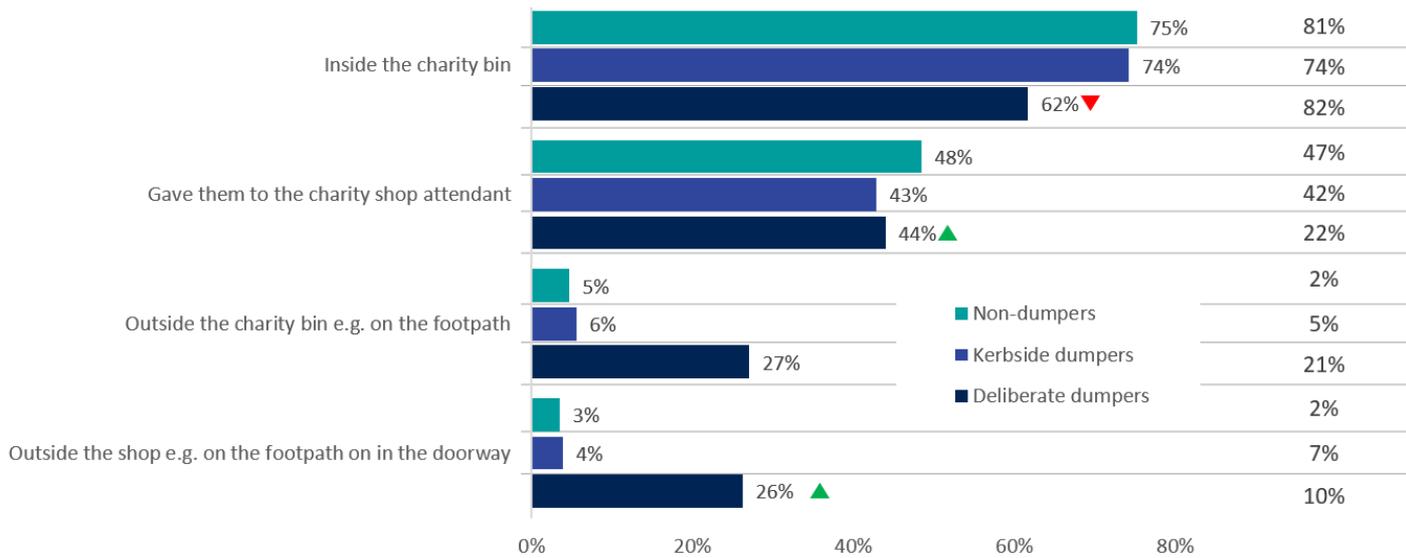
Community

Nearly half (46%) of residents interviewed had disposed of some waste items at charity shops or bins. Of those three quarters (74%) had taken their items inside the charity bin and nearly half (47%) had given them to the charity shops attendant.

Under one in ten of those who used charity shops or bins had left their items on the footpath outside the bin (7%) or the shop (6%).

Behaviours of those who have disposed of items at charity shops or bins have broadly remained similar apart from deliberate dumpers who were more likely this year to have given them to charity shop attendant or left them outside the shop on the footpath.

Figure 38. Dumping around charity bins and shops



Base: Those who had left materials at a charity bin/shop | 2019 sample (n=460); 2014 sample (n=541)

Q5 In the past, when you have taken items to charity bins or shops, where did you leave them?

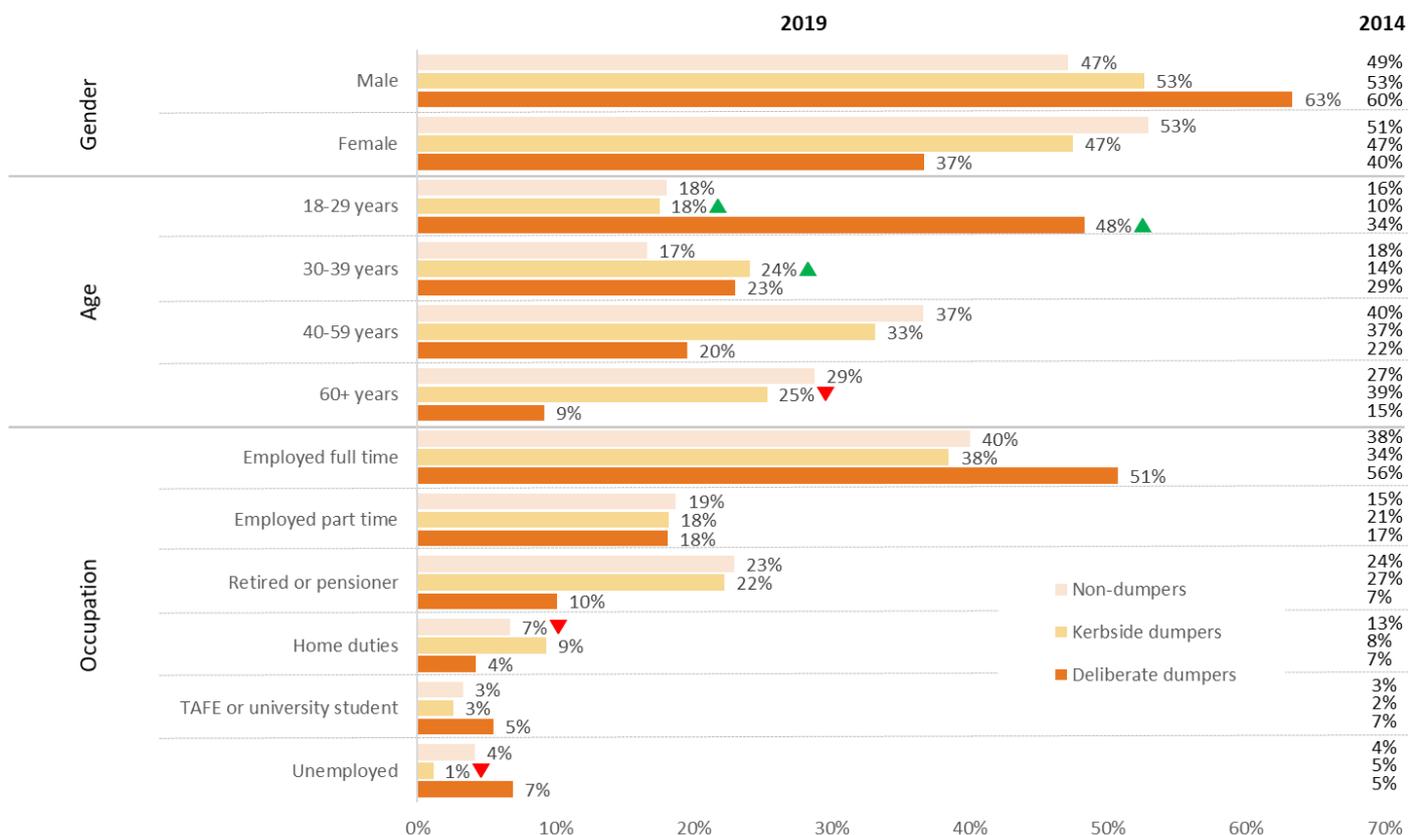
Note: Responses ranked in descending order based on 2019 results.

2.6.3.3 Who is dumping waste?

Community

Interestingly, the proportion of younger dumpers has increased since 2014 with more deliberate and kerbside dumpers aged between 18 and 29 years old. Similarly, those aged 30 to 39 years old are more likely to be kerbside dumpers. While the number of older, 60+ years old, kerbside dumpers has decreased.

Figure 39. Demographics by dumper profile - Community



Base: 2019 | Non-dumper (n=759), Kerbside dumper (n=154), Deliberate dumper (n=87). 2014 | Non-dumper (n=621), Kerbside dumper (n=231), Deliberate dumper (n=157).

SQ1 Are you...?

SQ2 What is your approximate age?

Q18 Which of the following best describes you?

Industry

Under a quarter (22%) of industry were identified as illegal dumpers compared to 27% in 2014. Dumpers in the industry survey have not been defined as kerbside or deliberate dumpers due to small sample size (n=23).

2.6.3.4 Opportunity

Opportunity refers to all of the factors that lie outside the individual that make the behaviour possible or prompt it. These factors can be either social or physical. Social factors could include: social norms; peer pressure; network of friends; advisors; and culture. Physical factors could include: location; environment; proximity to risky behaviours; and resources

Physical opportunity

Community

Vast majority of community had access to a vehicle including:

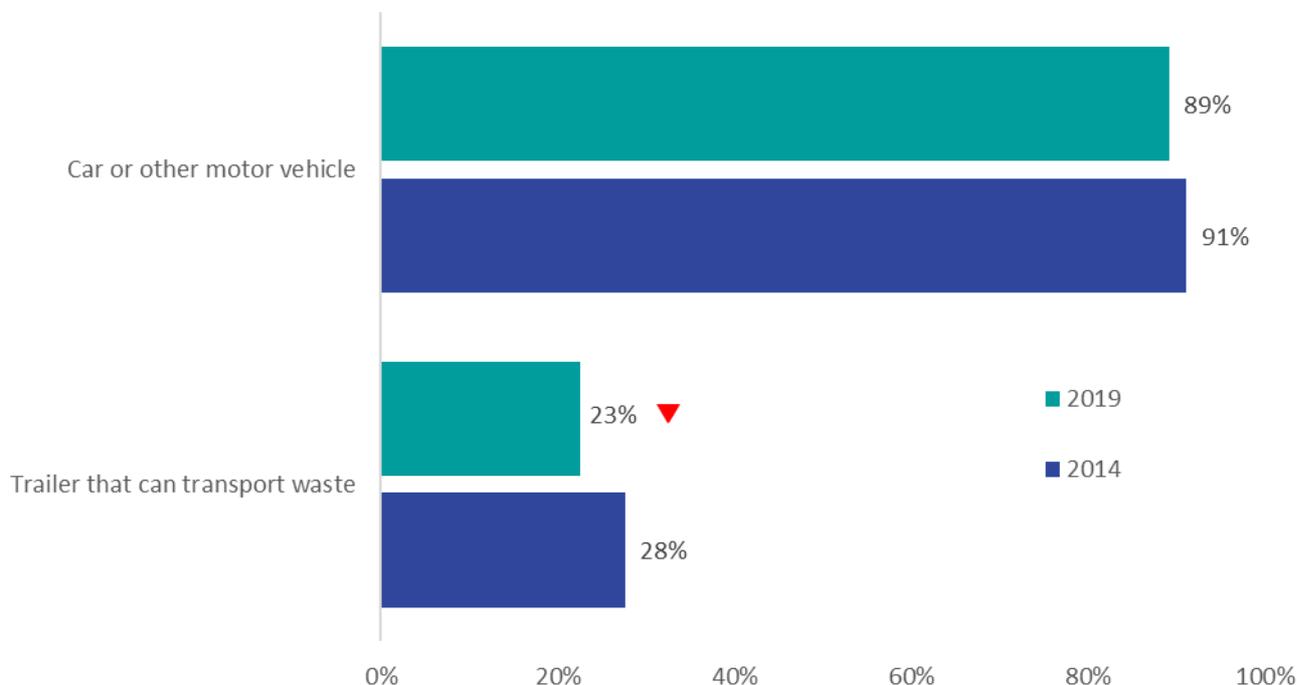
- Nine in ten (89%) respondents to a car
- Nearly one in five (23%) respondents to a trailer that can transport waste.

Those living in Sydney were less likely than regional residents to have access to a trailer (16%). Similarly, renters recorded lower levels of access to either a car (80%) or trailer (16%) compared to house owners.

Deliberate dumpers were more likely to have access to a trailer that can transport waste (38%) than both non-dumpers and kerbside dumpers.

Over the past 5 years, fewer residents have access to a trailer (23% in 2019 compared to 28% in 2014).

Figure 40. Access to vehicles and trailers



Base: Total Community sample | 2019 Community sample (n=1,000), 2014 Community sample (n=1,009)

Q2 Does anyone in your household own or have access to?

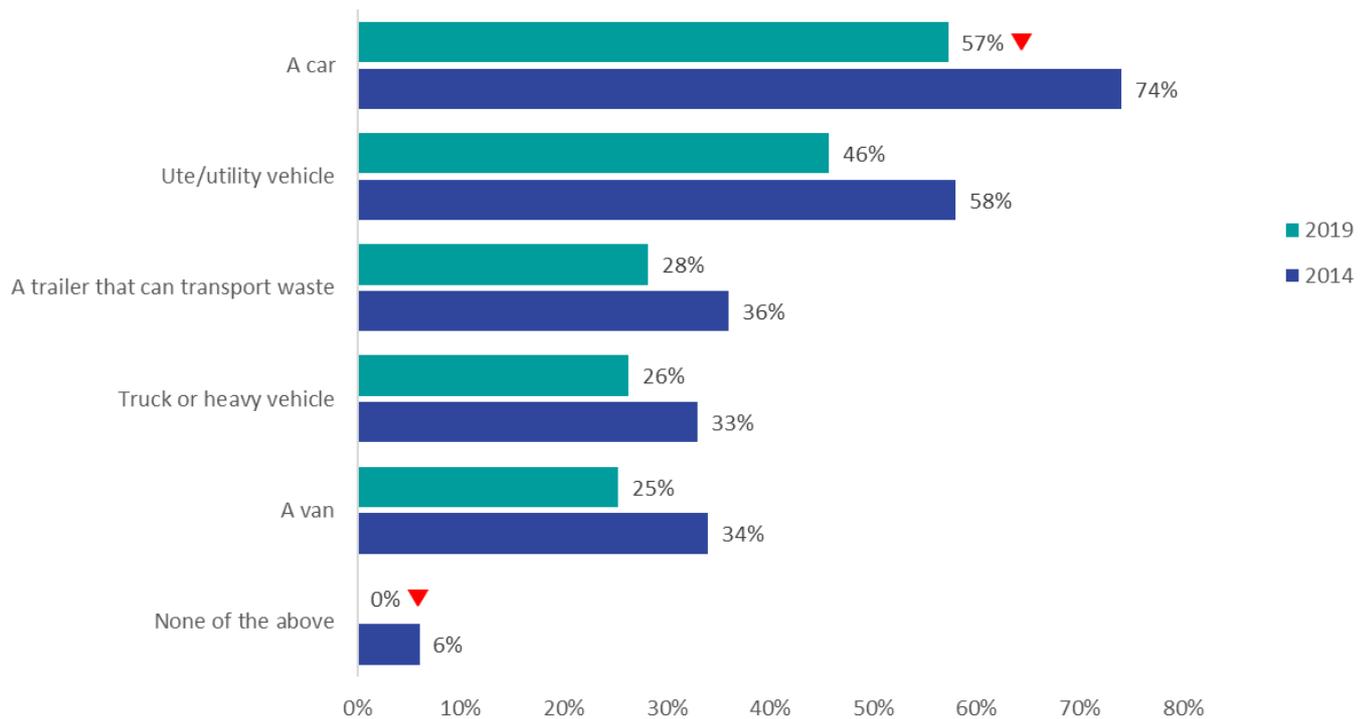
Note: Vehicles ranked in descending order based on 2019 results.

Industry

In line with community respondents, most businesses (92%) had access to a vehicle. Nearly three in five (57%) had access to a car and nearly half (46%) to a ute or utility vehicle.

Fewer businesses interviewed in 2019 indicated they had access to a car (57%).

Figure 41. Access to vehicles



Base: Total Industry sample | 2019 Industry sample (n=103), 2014 Industry sample (n=100)

Q3 Does your business own or have access to:

Note: Responses ranked in descending order based on 2019 results.

Time taken to travel to the nearest tip

Community

Nearly half (47%) of the residents interviewed travelled up to 30 minutes to get to their nearest tip. A minority (6%) travelled more than an hour.

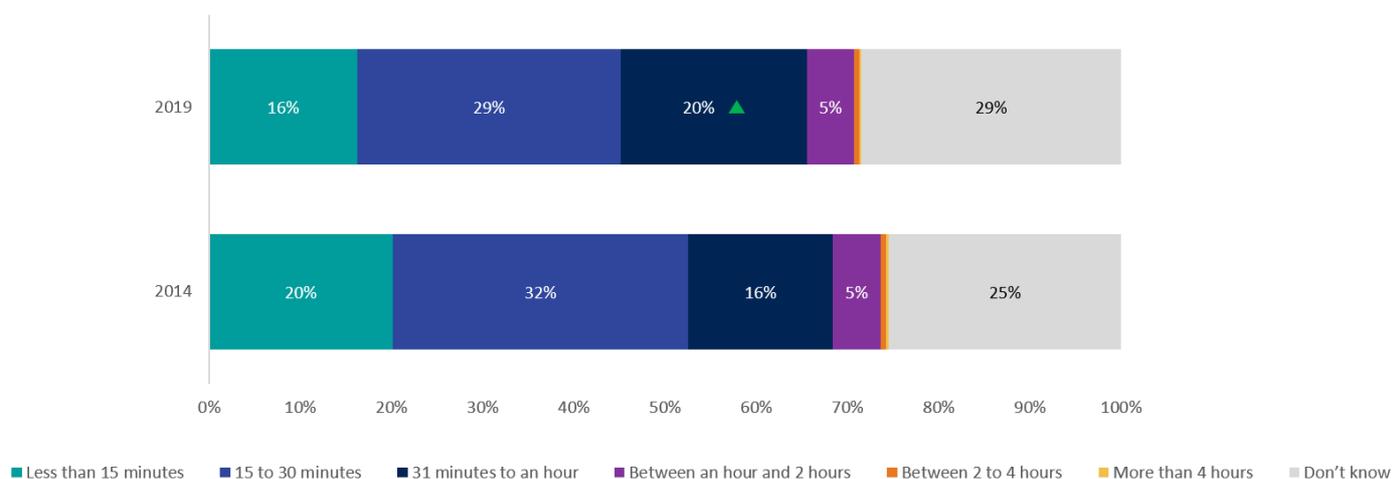
Residents living in Sydney generally travelled longer to get to their nearest tip than those living in regional areas of NSW. As such, over one third (37%) of regional residents travelled between 15 to 30 minutes. While Sydney residents were more likely to travel 31 minutes to an hour (24%) or between 1 hour and 2

hours (7%). A noticeable proportion of Sydney residents (36%) were more likely than regional residents (16%) to indicate they didn't know how far their nearest tip is.

Proximity to a tip appears to be a factor in the severity of dumping profiles with deliberate dumpers more likely to report longer travel times. Compared to non-dumpers, deliberate dumpers were less likely to travel under 15 minutes (18% and 6% respectively). Deliberate dumpers were more likely than both non-dumpers and kerbside dumpers to travel between 31 minutes to an hour (38% compared to 18% and 21% respectively)

In 2019, more residents travelled between 31 minutes to an hour to get to their nearest tip (20% compared to 16% in 2014).

Figure 42. Distance to tip - Community



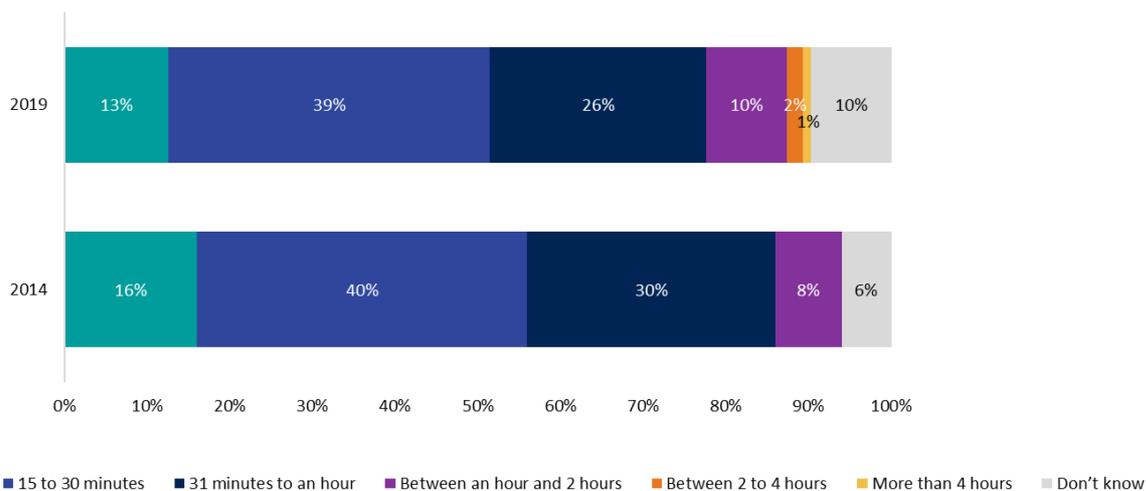
Base: Total Community sample | 2019 Community sample (n=1,000), 2014 Community sample (n=1,009)
 Q11 How long would you usually travel to your nearest tip?
 Note: Responses 2% and below not shown for ease of reading.

Industry

Consistent with community, most businesses travelled half an hour or less to get to a landfill or tip (52%). One in ten (10%) of respondents indicated they travelled between one and two hours.

Businesses based in metro NSW tend to be located further away from a landfill or tip with around one in four (18%) of those who travelled at least an hour or more. While only a small minority (3%) of regional businesses travelled this far.

Figure 43. Distance to tip - Industry



Base: Total Industry sample | 2019 Industry sample (n=103), 2014 Industry sample (n=100)
 Q10 How long would you usually travel to get to a landfill or tip?

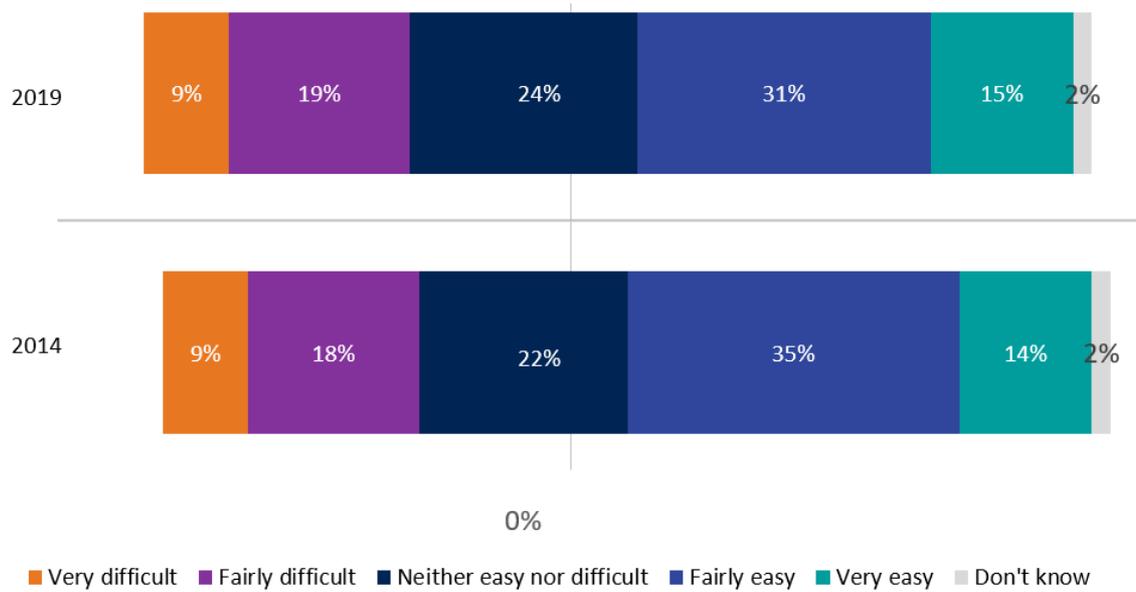
Ease of getting to the landfill or tip

Community

Nearly half of the Community (46%) find it easy to get to the nearest tip, while a smaller proportion (28%) rated it as difficult.

- Respondents from metropolitan NSW were more likely to indicate it was ‘fairly difficult’ to get to the nearest tip (23%) compared to regional NSW residents (14%);
- Renters were more likely than home owners to find it ‘fairly difficult’ (25% and 16% respectively).

Figure 44. Ease of getting to the nearest tip - Community

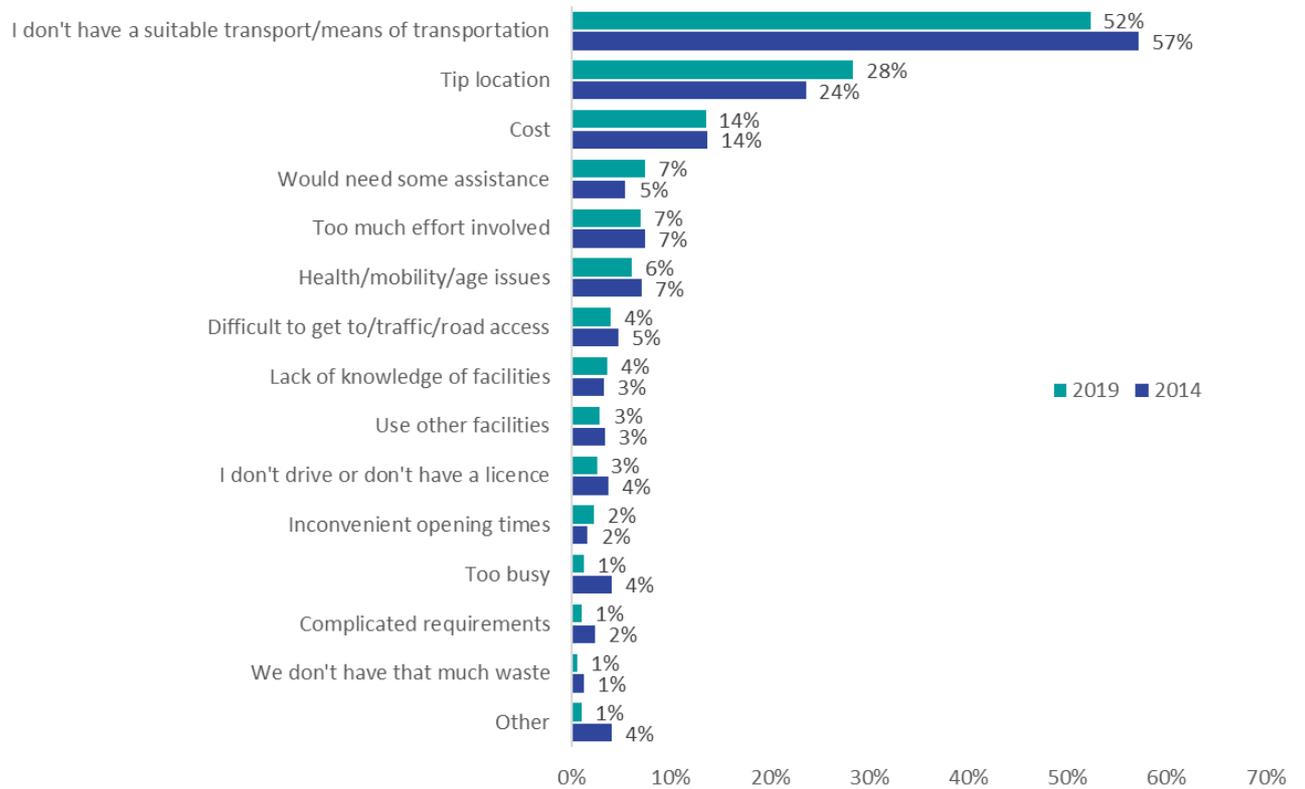


Base: Those who know how long it takes to get to their nearest tip | 2019 sample (n=712), 2014 sample (n=732)
 Q12 And how easy or difficult would you say it is for you to take waste to your nearest tip?
 Note: Responses 2% and below not shown for ease of reading.

The main reason for residents to find it difficult taking waste to the tip was the lack of a suitable vehicle (52%). To a lesser extent the tip location was also a noticeable barrier with nearly one third (28%) residents indicating this as a reason for difficulty followed by cost (14%).

- Regional residents were more likely to indicate cost as being the reason why they find taking waste to the tip difficult (21% compared to 10% for metro residents).

Figure 45. Reason for difficulty taking waste to the tip - Community



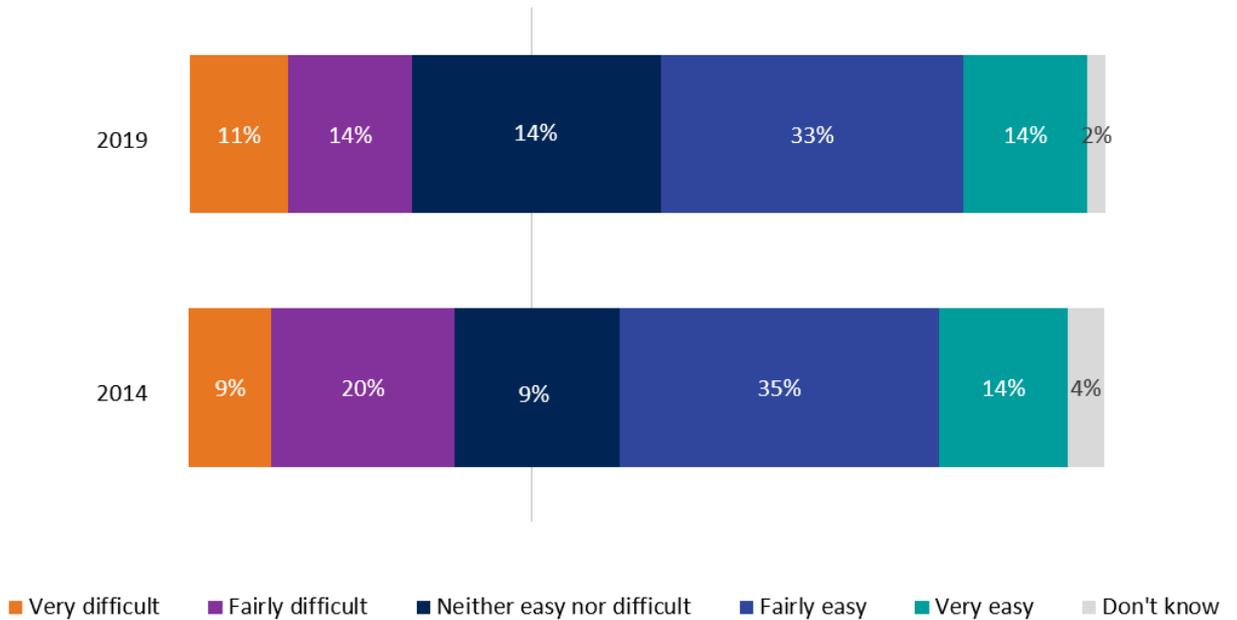
Base: Those who find it difficult to take waste to the tip | 2019 sample (n=205), 2014 sample (n=216)
 Q13 You said earlier that you find it very/fairly difficult to take waste to the landfill or tip. Why is that? (coded open response)
 Note: Reasons ranked in descending order based on 2019 results.

Industry

Taking waste to a landfill or tip was equally easy for businesses with nearly half (47%) indicating it is easy. However, one quarter (25%) considered it to be difficult.

- In line with Community, businesses located in regional areas tend to find it easier than those located in metro areas. As such, regional businesses were more likely than metro to rate it as 'very easy' (28% and 6% respectively)

Figure 46. Ease of getting to the nearest tip - Industry

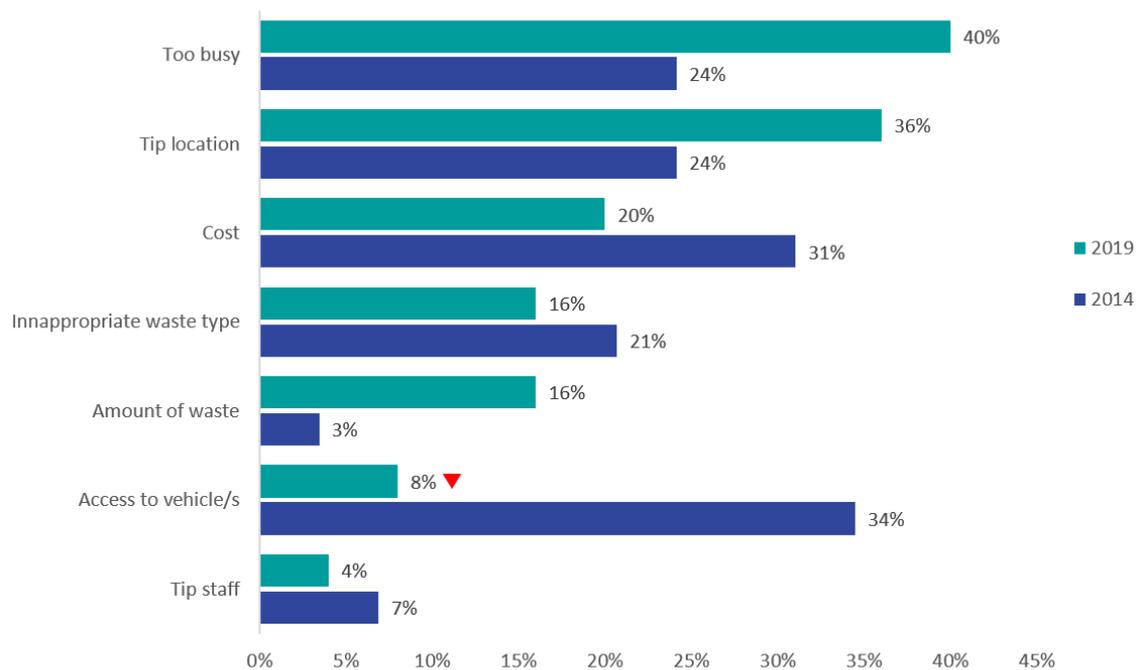


Base: Total Industry sample | 2019 Industry sample (n=103), 2014 Industry sample (n=100)
 Q11 And how easy or difficult would you say it is for you to take business waste to a landfill or tip?

Lack of time was the primary barrier for businesses with two in five (40%) of those who indicated 'too busy' as the reason why they find it difficult to take waste to a landfill or tip. The location of the tip was also an important barrier (36%) followed by cost (20%).

Fewer businesses interviewed in 2019 reported 'access to vehicles' as a reason for difficulty (8% compared to 34% in 2014).

Figure 47. Reason for difficulty taking waste to the tip - Industry



Base: Total respondents who said that it was difficult for them to take waste to the landfill or tip | 2019 sample n=25, 2014 sample n=29

Q12 You said earlier that you find it very/fairly difficult to take waste to the landfill or tip. Why is that? (coded open response)

Note: Responses ranked in descending order based on 2019 results.

2.6.3.5 Social opportunity

Social acceptability

Community

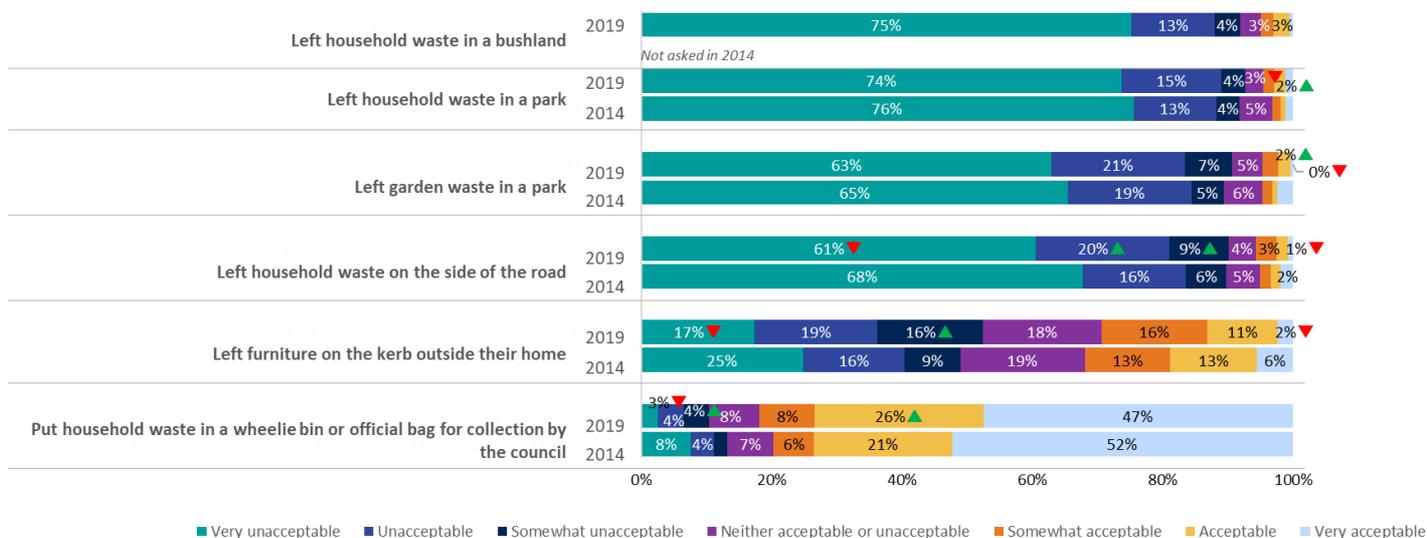
Any type of waste or disposal location which directly impact nature tend to be less accepted compared to other forms of illegal dumping. As such, around three quarters of residents thought it is 'very unacceptable' to leave household waste in a:

- Bushland (75%);
- Park (74%).

Conversely, disposal of furnitures on the kerb outside their home was considered 'very unacceptable' by a small proportion (17%) of residents. While three in ten (29%) residents thought this is 'acceptable' suggesting a lack of awareness of the illegality of this behaviour.

Compared to 2014, fewer residents think it is 'very unacceptable' to dispose of household waste dumping on the side of the road (61% compared to 68% in 2014) and furniture on the kerb (17% compared to 25% in 2014). However, a larger proportion believed these are 'unacceptable' or 'somewhat unacceptable' indicating the level of opposition to these forms of illegal dumping is slightly less strong.

Figure 48. Social acceptability of illegal dumping



Base: Total Community sample | 2019 Community sample (n=1,000), 2014 Community sample (n=1,009)

Q10 How would you judge another persons behaviour if they...

Note: Responses 2% and below not shown for ease of reading. Reasons ranked in descending order based on 2019 results for 'Very unacceptable'.

Overall, younger age groups (18-29 years old) and respondents who spoke another language than English at home were less likely to find most forms of illegal dumping unacceptable.

Three quarters (75%) of respondents saw leaving household waste in a bushland as 'very unacceptable':

- Younger age groups (18-29) were less likely to find leaving household waste in a bushland 'very unacceptable' (53%) compared to all other older age groups;
- Respondents who have been living in their house for more than 10 years were more likely to rate leaving household waste in a bushland as 'very unacceptable' (83%) than more recent residents (less than a year, 1-2 years and 3-5 years);
- Respondents who mainly speak English at home were more likely to find leaving household waste in a bushland 'very unacceptable' (80%) than those who speak another language (61%);
- Regional residents were more likely to consider leaving household waste in a bushland 'very unacceptable' (81%) compared to metro residents (72%);
- Deliberate dumpers were more likely to find leaving household waste in a bushland 'somewhat acceptable' (13%) or 'acceptable' (14%) compared to non-dumpers or kerbside dumpers.

A similarly high proportion (74%) of residents thought leaving household waste in a park is 'very unacceptable':

- Younger age groups (18-29) were less likely to find leaving household waste in a park 'very unacceptable' (56%) compared to all other older age groups;
- Respondents who mainly speak another language than English at home were less likely to find leaving household waste in a park 'very unacceptable' (63%) than those who speak English (77%);

- Deliberate dumpers were less likely to find leaving household waste in a park ‘very unacceptable’ (46%) compared to non-dumpers or kerbside dumpers (78% and 69% respectively).

Nearly two thirds (63%) of residents rated leaving garden waste in a park as ‘very unacceptable’:

- Older residents (60+) were more likely than any other age groups to consider leaving garden waste in a park ‘very unacceptable’ (79%);
- Respondents who live with their parents or guardian were less likely to find leaving garden waste in a park ‘very unacceptable’ (39%) than renters (61%) or homeowners (68%);
- Respondents who mainly speak another language than English at home were less likely to find leaving garden waste in a park ‘very unacceptable’ (53%) than those who mainly speak English (66%);
- Regional residents were more likely to find leaving garden waste in a park ‘very unacceptable’ (70%) than metro residents (59%);
- Deliberate dumpers were less likely to find leaving garden waste in a park ‘very unacceptable’ (33%) than non-dumpers (66%) and kerbside dumpers (63%).

Three in five (61%) of residents thought leaving household waste on the side of the road was ‘very unacceptable’:

- Older residents (60+) were more likely than any other age groups to consider leaving household waste on the side of the road ‘very unacceptable’ (75%);
- Respondents who mainly spoke another language than English at home were less likely to find leaving household waste on the side of the road ‘very unacceptable’ (52%) than those who mainly speak English (63%);
- Deliberate dumpers were less likely to find leaving household waste on the side of the road ‘very unacceptable’ (36%) than non-dumpers (64%) and kerbside dumpers (57%).

Under two in five (17%) of residents rated leaving furniture on the kerb outside of their home ‘very unacceptable’. Overall, 52% thought this is unacceptable while a further 29% believed it is acceptable. Interestingly, this form of illegal dumping was the least dividing type of behaviour in terms of social acceptability with fewer significant differences within demographic subgroups (e.g. age groups, residents location) and dumper profiles. However, there were some minor differences including:

- Younger age groups (18-29) were more likely to find leaving furniture on the kerb outside of their home ‘somewhat acceptable’ (25%) than 50-59 years old (13%) and 60+ years old (11%);
- Respondents who mainly speak English at home were more likely to find leaving furniture on the kerb outside of their home ‘acceptable’ (12%) than those who speak another language than English at home (7%);
- Deliberate dumpers were less likely to find leaving furniture on the kerb outside of their home ‘very unacceptable’ (7%) than non-dumpers (20%).

Nearly half (47%) of residents considered it was ‘very acceptable’ to put household waste in a wheelie bin or official bag for collection by the council:

- Respondents who mainly speak English at home were more likely to find putting household waste in a wheelie bin or official bag for collection by the council 'very acceptable' (52%) than those who speak another language than English at home (31%);
- Deliberate dumpers were less likely to find putting household waste in a wheelie bin or official bag for collection by the council 'very acceptable' (21%) than non-dumpers (50%) and kerbside dumpers (49%).

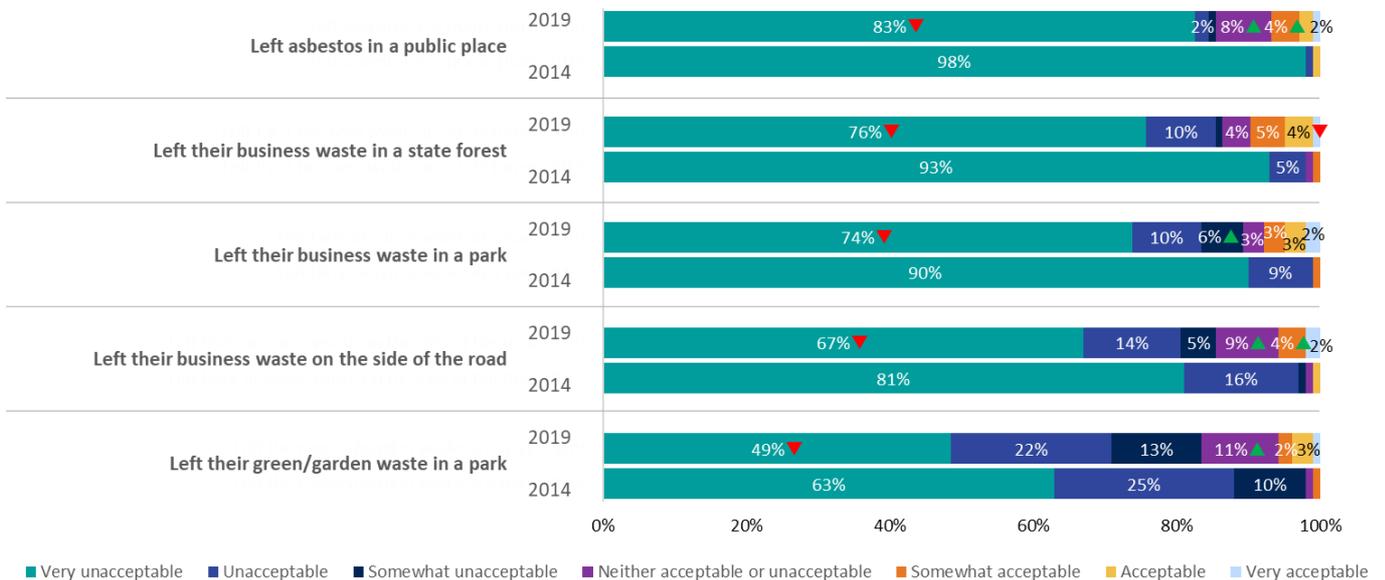
Industry

Among industry respondents, leaving asbestos in a public place was perceived as the least acceptable (83% 'very unacceptable') of all illegal dumping behaviours. It was followed by leaving business waste in nature including a state forest (76%) and a park (76%).

Leaving green or garden waste in a park was the least rejected behaviour with fewer businesses rating this as 'very unacceptable' (49%).

Businesses interviewed in 2019 were more accepting of illegal dumping behaviours. As such, fewer respondents considered leaving asbestos 'very unacceptable' (98% in 2014 down to 83% in 2019) and the level of acceptability increased with a higher proportion of businesses indicating it is 'neither acceptable or unacceptable' (0% in 2014 up to 8% in 2019) or 'somewhat acceptable' (0% in 2014 up to 4% in 2019).

Figure 49. Social acceptability of illegal dumping - Industry



Base: Total Industry sample | 2019 Industry sample (n=103), 2014 Industry sample (n=100)

Q9 How would you judge another persons behaviour if they...

Note: Responses 2% and below not shown for ease of reading. Reasons ranked in descending order based on 2019 results for 'Very unacceptable'.

Social norms

Community

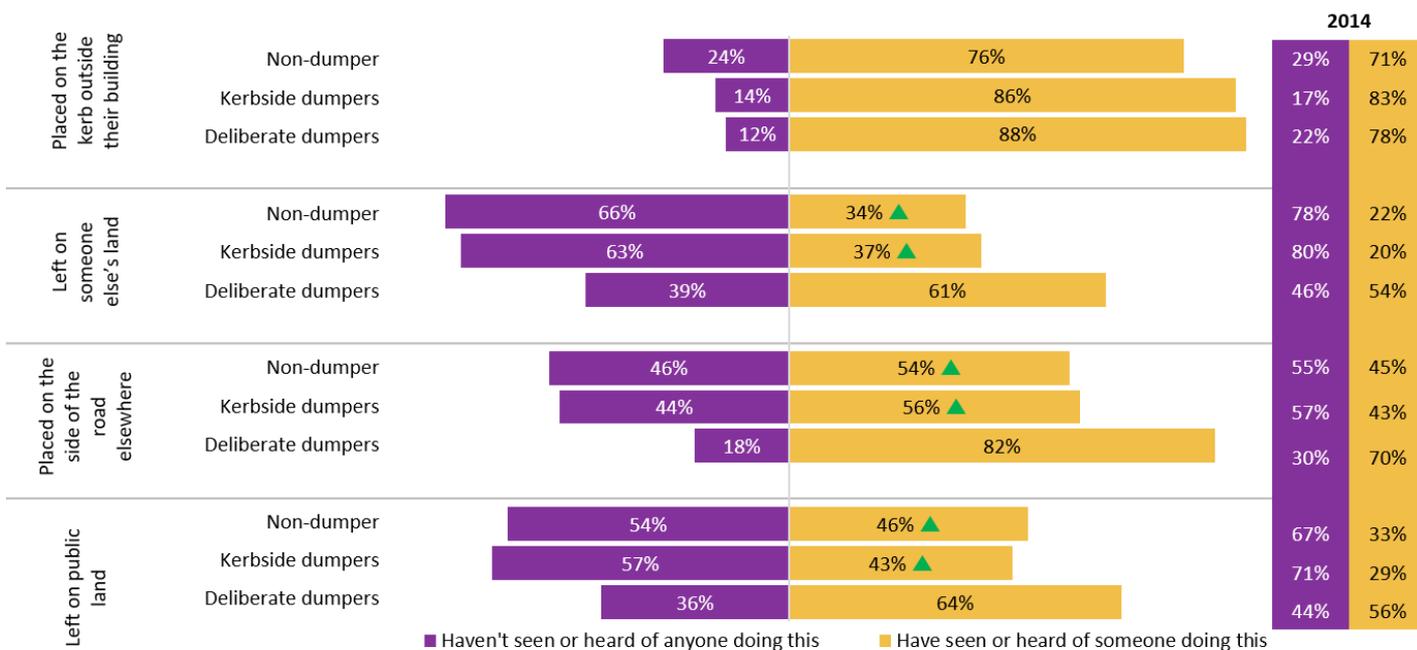
Overall, residents are more likely to have seen or heard about dumping in some locations than in 2019:

- 79% have seen or heard about items placed on the kerb outside their home (no significant change compared to 2014)
- 36% have seen or heard about items left on someone else’s land (up from to 26% in 2014)
- 57% have seen or heard about items placed in the side of the road elsewhere (up from to 48% in 2014)
- 47% have seen or heard about items left on public land (up from to 36% in 2014)

A larger proportion of deliberate dumpers have witnessed illegal dumping on someone else’s land (61%), on the side of the road (82%) or on public land (64%). Fewer non-dumper and kerbside dumpers have seen or heard someone else disposing of items or materials in these locations.

The number of non-dumpers and kerbside dumpers who have witnessed illegal dumping on someone else’s land, public land or on the side of the road elsewhere has increased since 2014.

Figure 50. Seen or heard of others dumping illegally - Community



Base: 2019 non-dumper (n=759), 2019 kerbside dumper (n=154), 2019 deliberate dumper (n=87)

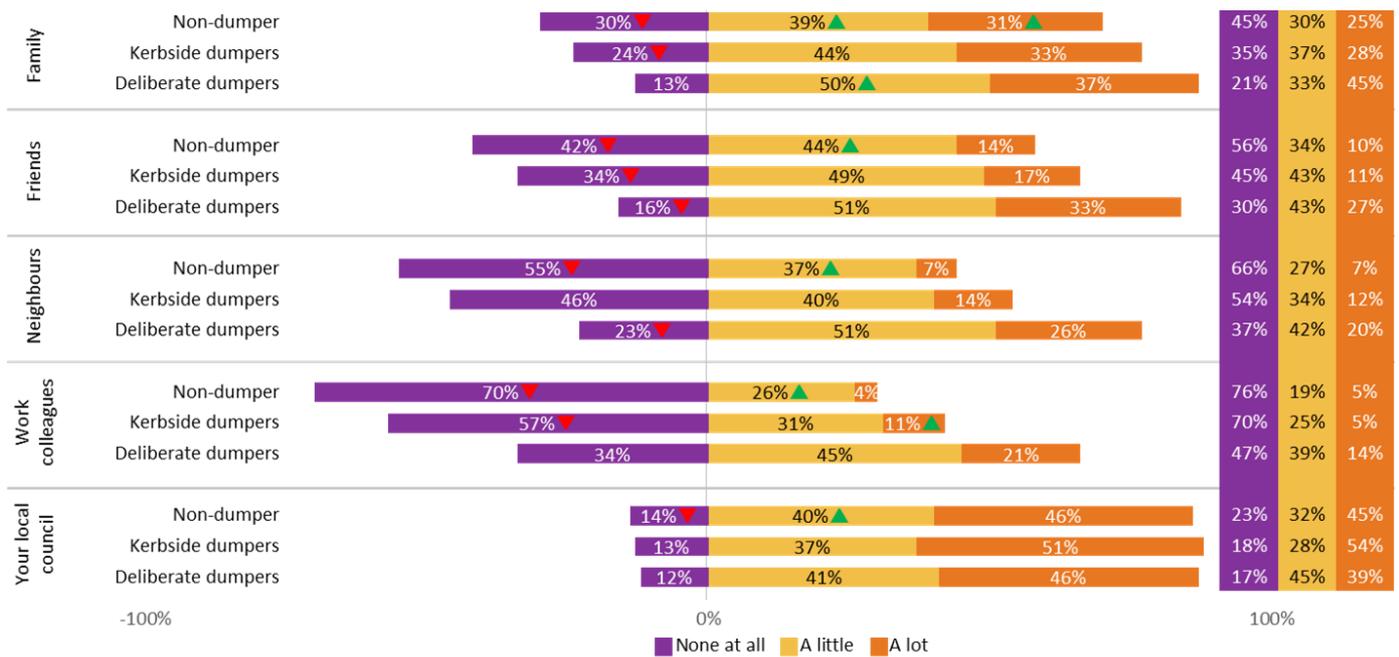
Q8 Have you seen or heard of items or materials being disposed of in the following ways by your family, friends, neighbours, colleagues or others?

Overall, local council appeared to have the most influence on residents waste disposal behaviour (47% indicated local council has ‘a lot’ of influence). While neighbours and work colleagues were the least influential people (10% and 6% respectively).

Influence of others on waste disposal decisions seems to have increased overtime, particularly among non-dumpers.

Deliberate dumpers were more likely to indicate family has 'a little' influence this year (50%) than in 2014 (33%). While work colleagues were more likely to influence 'a lot' kerbside dumpers decisions (11% compared to 5% in 2014).

Figure 51. Influence of others on waste disposal decisions

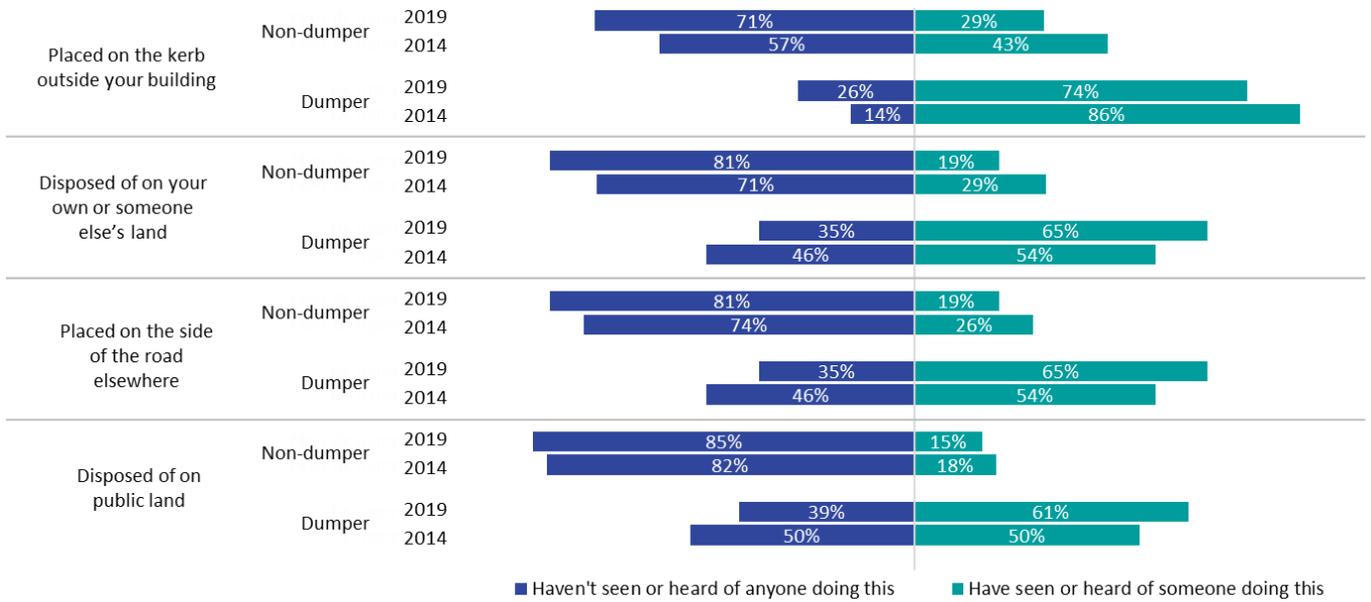


Base: 2019 non-dumper (n=759), 2019 kerbside dumper (n=154), 2019 deliberate dumper (n=87)
 Q9 How much do the following people influence the decisions you make about how to dispose of your waste?

Industry

In line with the Community results, business dumpers tend to indicate high levels of witnessing someone else's dumping illegally. As such, three quarters (74%) of dumpers have seen others illegally disposing items or materials on the kerb outside their building compared to three in ten (29%) of non-dumpers.

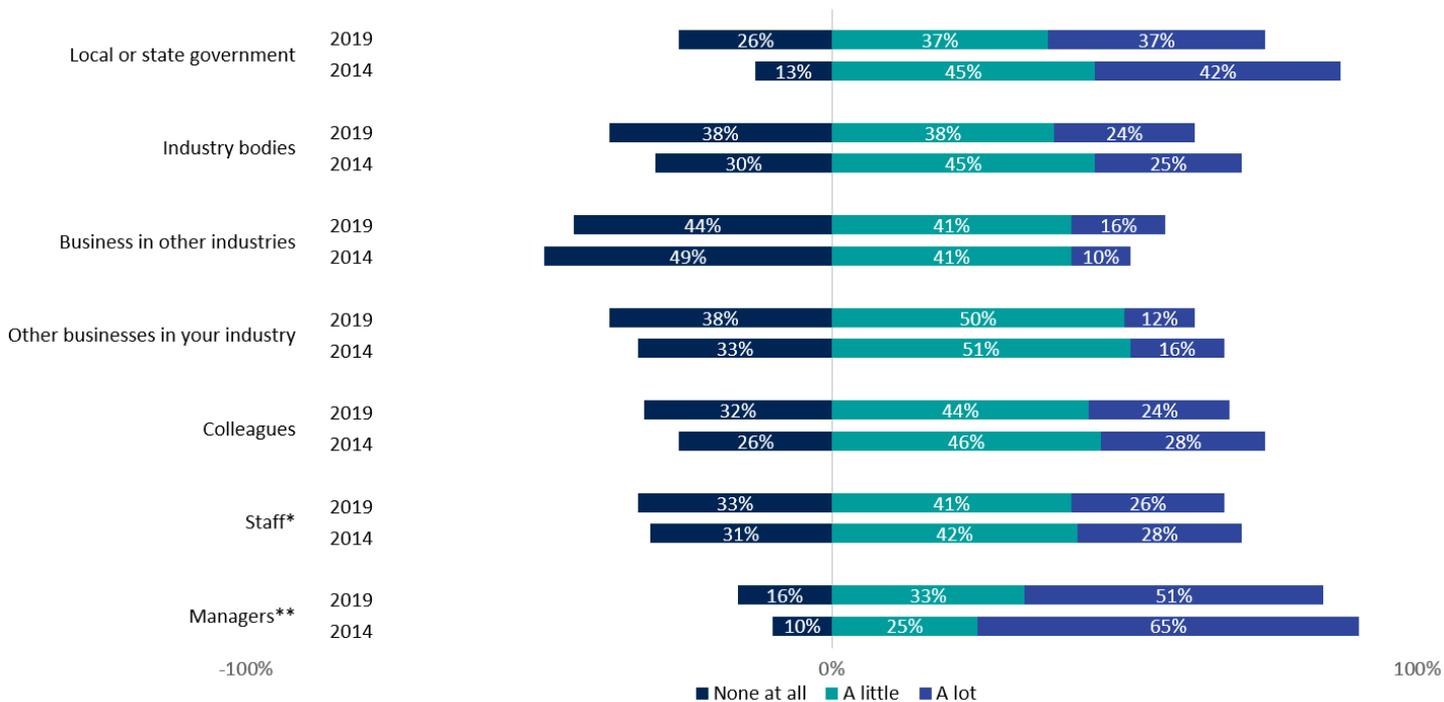
Figure 52. Seen or heard of others dumping illegally



Base: Total Industry sample | Non-dumper 2019 n=80, 2014 n=73, Dumper 2019 n=23, 2014 n=27
 Q7 Have you seen or heard of items or materials being disposed of in the following ways by your business or other businesses?

Businesses interviewed felt managers and local or state government most influenced their waste disposal behaviours (51% and 37% 'a lot' respectively).

Figure 53. Influence of others on waste disposal decisions



Base: Total sample (n=203); *Staff (2019: n=69, 2014: n=72), **Managers (2019: n=49, 2014: n=48)
 Q8 How much do the following people influence the decisions you make about how to dispose of your waste in your business?

2.6.3.6 Capability

Capability represents the individual's capacity to engage in the activity concerned, both psychologically and physically. Psychological capability could include: one's intelligence; past experience; knowledge; understanding and social skills. Physical capability refers to one's physical ability to behave in a certain way.

Awareness of services

Community

Majority of residents were aware of council collection of bulky items from the kerb whether it is the regular or scheduled service:

- 82% aware of regular council collection
- 86% aware of council collection which you can ring up to order.

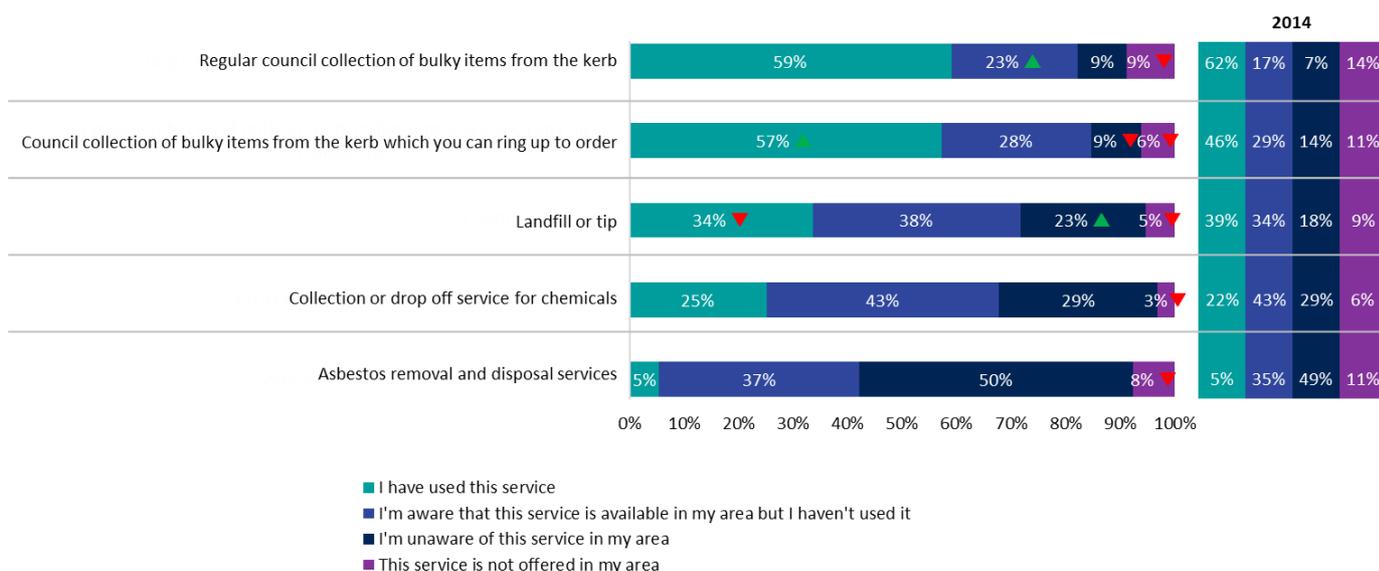
Around one quarter have used these services (23% and 28% respectively). It is notable that many participants indicate that both of these services are available in their council area, indicating that residents may find it difficult to distinguish between the two service types.

Fewer residents have heard of landfill or tip (72%), chemical collection service (68%) and asbestos removal service (42%). Residents who have lived in an area for less than a year are more likely than others to be unaware of this service in the services offered in their area.

Encouragingly, usage of scheduled council collection of bulky items from the kerb has increased between 2014 and 2019 (from 46% to 57% respectively). More residents are aware of the regular council collection in 2019 (23%).

However, usage and awareness of landfill or tip have decreased overtime and awareness of asbestos removal and disposal services remains low.

Figure 54. Awareness and use of waste disposal services



Base: Total Community sample | 2019 Community sample (n=1,000), 2014 Community sample (n=1,009)
 Q6 Are you aware of the following waste services in your area, and have you used them?

Levels of awareness of the different services varied between residents profile:

- Residents who have been living in their home for less than a year were more likely to be 'unaware of this service in their area' including:
 - Regular council collection of large or bulky items from the kerb (21%);
 - Council collection of large or bulky items from the kerb which you can ring up to order (22%);
 - Collection or drop off service for chemicals (47%).
- Deliberate dumpers were more likely than non-dumpers and kerbside dumpers to be aware of some services but did not use them:
 - Regular council collection of large or bulky items from the kerb (37%).
- Deliberate dumpers were more likely than non-dumpers and kerbside dumpers to have used asbestos removal and disposal services (15%)
- Respondents who mainly speak English at home were more likely to indicate the council collection services are not offered in their area:
 - Regular council collection of large or bulky items from the kerb (10% compared to 3% of CALD residents);
 - Council collection of large or bulky items from the kerb which you can ring up to order (7% compared to 2% of CALD residents).
- Awareness and usage of landfill or tip were higher within regional residents than metro residents:
 - 48% of regional residents have used this service compared to 25% in metro;

- 30% of metro residents are unaware of this service compared to 11% in regional.
- Younger age groups (18-29 years old) tend to indicate lower levels of awareness compared to older age groups (50-59 and 60+ years old).

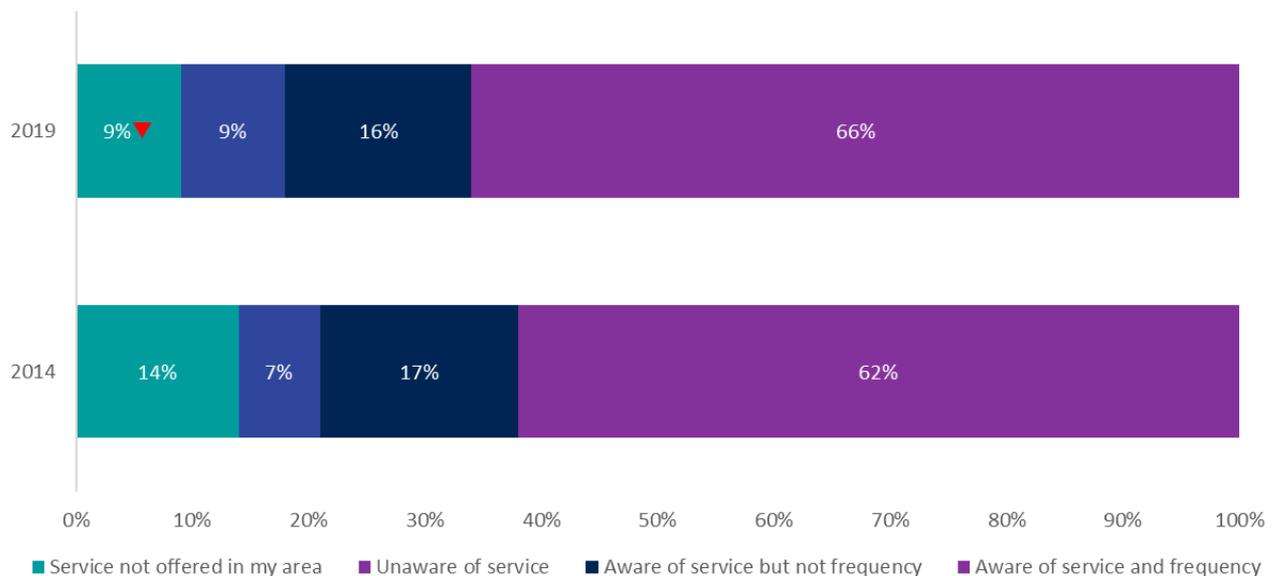
Awareness of frequency of services

Community

Two thirds (66%) of community respondents were aware of the frequency of waste services in their area. However, a noticeable proportion (16%) knew of these services but did not know how often the collection is happening.

Fewer community respondents indicated these services are not offered in their area (9% in 2019 compared to 14% in 2014).

Figure 55. Frequency of council collection



Base: Total Community sample | 2019 Community sample (n=1,000), 2014 Community sample (n=1,009)
 Q6 Are you aware of the following waste services in your area, and have you used them?
 Q7. How often are council collections of large or bulky items in your area?

Knowledge of frequency of collection services varied between residents' profile:

- Respondents who had been living in their house for less than a year were less likely to be aware of the frequency of council collections (45%);
- Metropolitan residents were more likely to be aware the frequency of these services (73%) than regional residents (53%);
- Non-dumpers were less likely to be aware of the frequency of these services (62%) than kerbside dumpers (74%) and deliberate dumpers (83%);

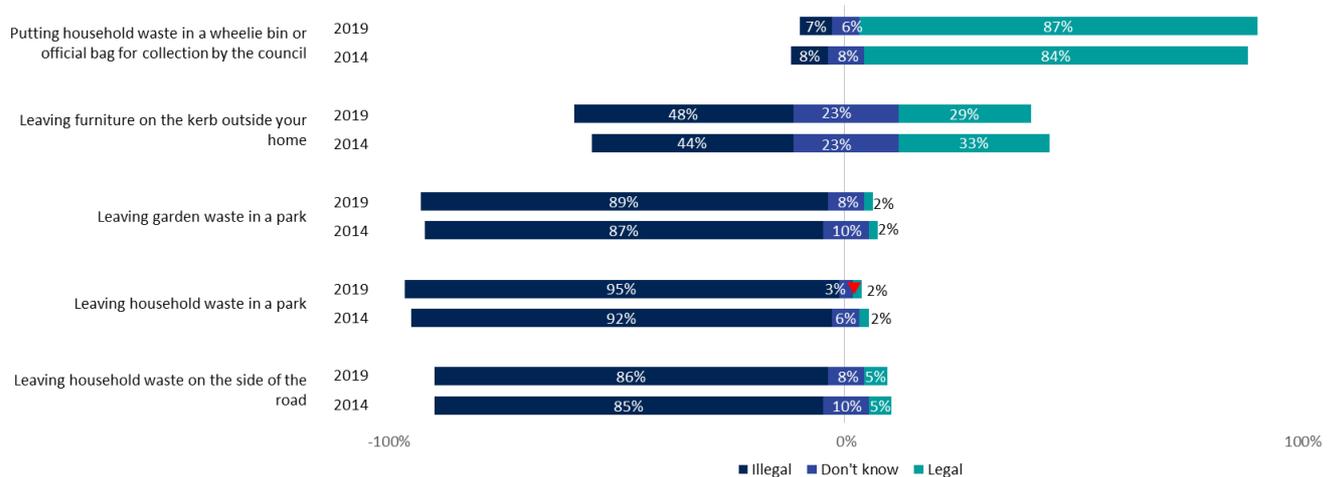
Legality

Community

Overall, awareness of legality around waste disposal was high except for ‘leaving furniture on the kerb outside your home’ with one in three (29%) respondents who mistakenly believed this is legal. A noticeable proportion, around one quarter (23%) admitted they ‘don’t know’ whether it is legal or not and nearly half (48%) correctly recognised this behaviour as illegal.

Compared to 2014, levels of understanding of legality have broadly remained stable. It has improved for household waste disposal in a park with fewer respondents indicating they ‘don’t know’ whether it is legal or not (6% in 2014 to 3% in 2019).

Figure 56. Perception of legality



Base: Total Community sample | 2019 Community sample (n=1,000), 2014 Community sample (n=1,009)

Q15 Please indicate whether you think the following are legal or illegal

Note: Responses 2% and below not shown for ease of reading.

Awareness of legality varied depending on respondents’ profile:

- Younger age groups (18-29 years old) were less likely than older age groups (50-59 and 60+ years old) to be aware of what the legal behaviours are:
 - Leaving household waste on the side of the road (11% incorrectly thought this is legal);
 - Leaving household waste in a park (7% incorrectly thought this is legal);
 - Leaving garden waste in a park (8% incorrectly thought this is legal and 18% don’t know).
- Homeowners were more likely than renters and those who live with their parents or guardian to have higher levels of awareness of legal behaviours:
 - Leaving household waste on the side of the road (90% correctly thought this is illegal);

- Leaving garden waste in a park (94% correctly thought this is illegal).
- Deliberate dumpers showed lower awareness of legality than non-dumpers and kerbside dumpers:
 - Leaving household waste on the side of the road (15% incorrectly thought this is legal);
 - Leaving household waste in a park (14% incorrectly thought this is legal);
 - Leaving garden waste in a park (18% incorrectly thought this is legal).
- Regional residents were more likely than metro residents to misunderstand that leaving furniture on the kerb outside their home is legal (36% and 25% respectively)

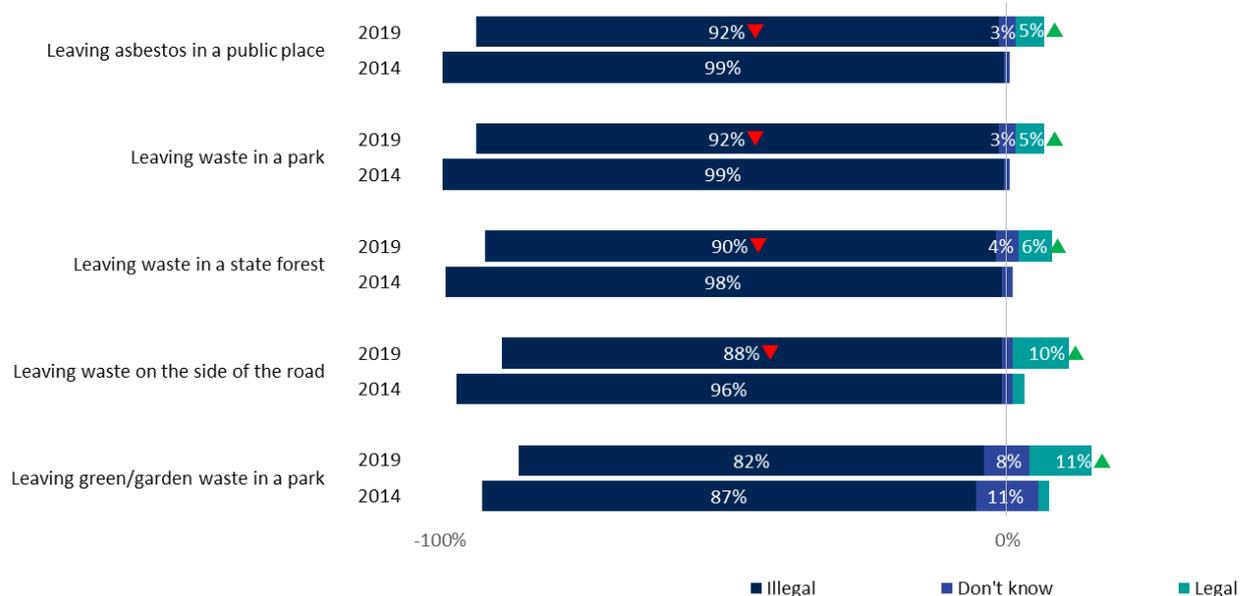
Industry

Vast majority of businesses were aware of legal waste disposal behaviours including asbestos (92% correctly thought it is illegal). However, a minority believed most of these illegal dumping behaviours are legal with 5% of businesses indicating 'leaving asbestos in a public place' is legal.

Leaving green/garden waste in a park was the most misunderstood behaviour with nearly one in ten (8%) businesses who did not know whether this is legal or illegal.

While majority of businesses correctly identified illegal behaviours, awareness of legality around waste disposal has declined with an increasing minority who think these behaviours are legal. As such 5% of interviewed businesses in 2019 thought leaving asbestos in a public place is legal.

Figure 57. Perception of legality - Industry



Base: Total Industry sample | 2019 Industry sample (n=103), 2014 Industry sample (n=100)

Q14 Please indicate whether you think the following are legal or illegal

Note: Responses 2% and below not shown for ease of reading.

2.6.3.7 Motivation

Motivation refers to the brain processes that energise and direct behaviour. These processes can be either reflective or automatic. Reflective processes could include: attitudes; values; beliefs; and intentions. Automatic processes – or instinctive indicated – could include: emotion; shortcuts; biases; framing; and priming.

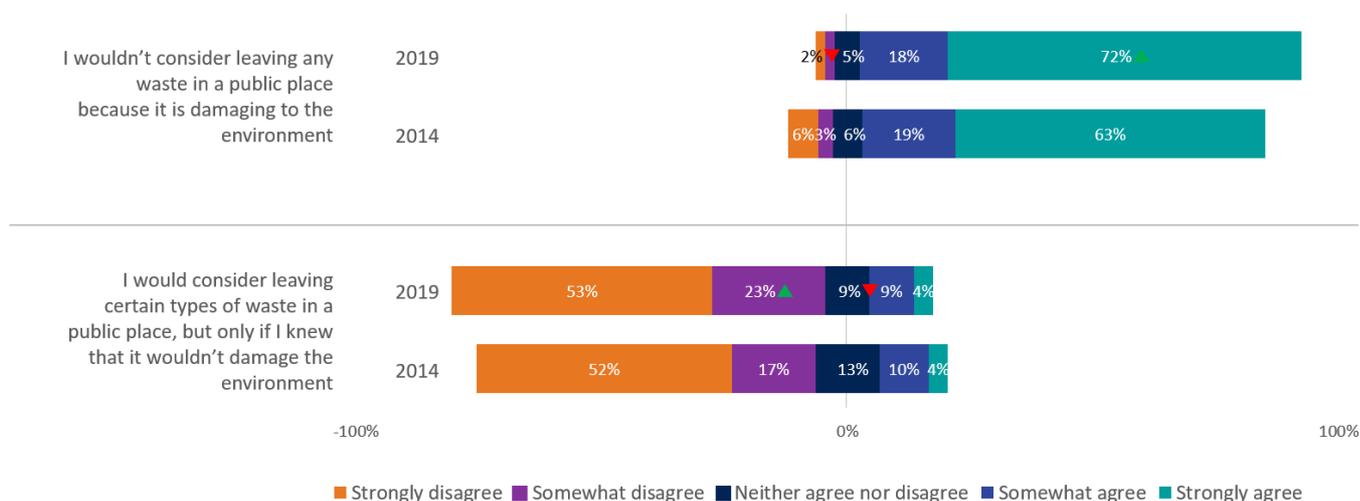
Consideration in decisions to dump/not to dump

Community

Nearly three quarters (72%) of residents ‘strongly agreed’ they wouldn’t consider disposing of any waste in a public place because it is damaging to the environment. Similarly, disposing waste in a public place regardless of its impact on the environment generated strong levels of opposition (53% ‘strongly disagree’).

Fewer respondents in 2019 would consider disposing waste in a public place with an increase in the proportion of people who ‘strongly agreed’ they would not consider it because it is damaging to the environment (72% in 2019 compared to 63% in 2014).

Figure 58. Agreement statements relating to waste disposal and the environment



Base: Total Community sample | 2019 Community sample (n=1,000), 2014 Community sample (n=1,009)

Q14 For each of the following statements, please indicate whether you strongly agree, tend to agree, neither agree nor disagree, tend to disagree or strongly disagree

Note: Responses 2% and below not shown for ease of reading.

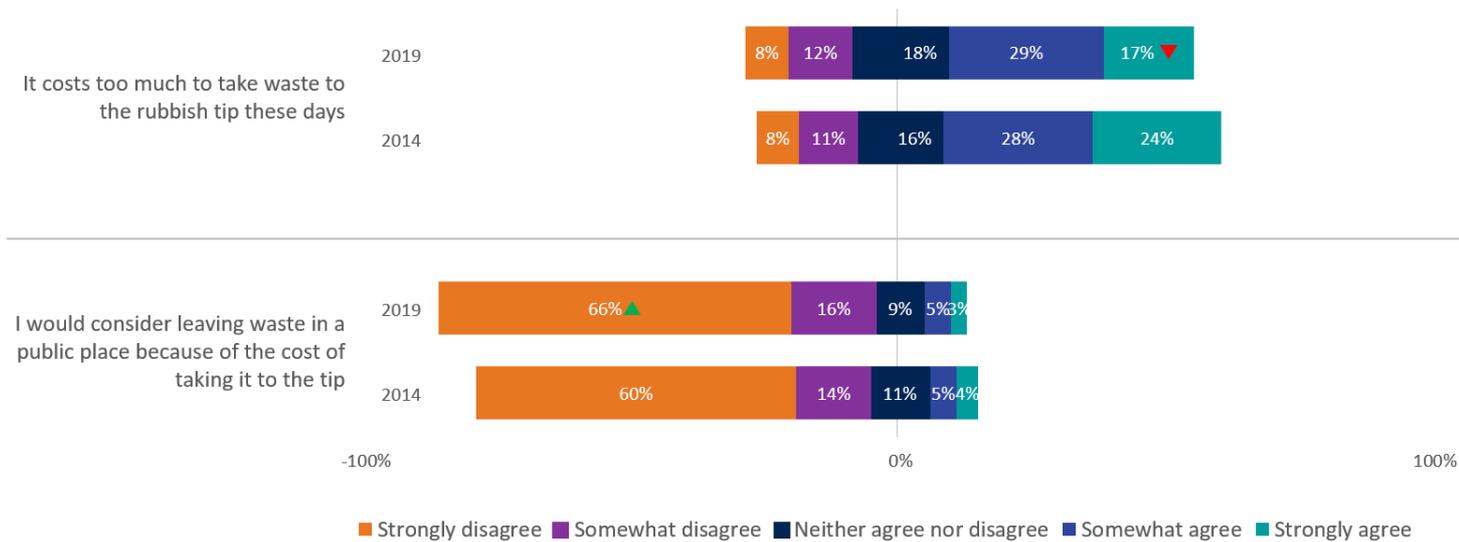
Considerations about the disposal of waste in public places and its environmental impact varied based on demographic profile:

- I would consider leaving certain types of waste in a public place, but only if I knew that it wouldn't damage the environment
 - Younger age groups (18-29 years old) were more likely than older age groups (50-59 and 60+ years old) to agree (19% tend to agree);
 - Metro residents were more likely than regional residents to agree (11% tend to agree);
 - Respondents who speak another language than English at home were more likely than others to agree (14% tend to agree);
 - Deliberate dumpers are more likely than non-dumpers and kerbside dumpers to agree (25% tend to agree);
 - Conversely, home owners were more likely than renters or those who live with parents or guardian to strongly disagree (58%);
 - Respondents who have been living in their house for 6-10 years and more than 10 years were likely than more recent residents to strongly disagree (63% and 61% respectively).
- I wouldn't consider leaving any waste in a public place because it is damaging to the environment
 - Deliberate dumpers were less likely than non-dumpers and kerbside dumpers to strongly agree (47%).

Nearly half (46%) of respondents agreed 'it costs too much to take waste to the rubbish tip these days'. However, the cost of the tip only seemed to be a motivation to leave waste in a public place for a minority with under one in ten (8%) respondents agreeing they 'would consider leaving waste in a public place because of the cost of taking it to the tip'.

Overtime, the cost of the rubbish tip is less of a motivation to dump illegally with fewer residents in 2019 who 'strongly' agreed with the statement 'it costs too much to take waste to the rubbish tip these days' (17% in 2019 compared to 24% in 2014). Consistently, a higher proportion of residents 'strongly' disagreed they 'would consider leaving waste in a public place because of the cost of taking it to the tip' (66% in 2019 compared to 60% in 2014).

Figure 59. Agreement with statements relating to the cost of waste disposal



Base: Total Community sample | 2019 Community sample (n=1,000), 2014 Community sample (n=1,009)

Q14 For each of the following statements, please indicate whether you strongly agree, tend to agree, neither agree nor disagree, tend to disagree or strongly disagree

- It costs too much to take waste to the rubbish tip these days
 - Regional residents were more likely to strongly agree than metropolitan residents (22% and 14% respectively)
 - Metropolitan residents were more likely to not have an opinion with 19% indicating they did not know compared to 10% within regional residents
- I would consider leaving waste in a public place because of the cost of taking it to the tip
 - Younger age groups (18-29 years old) were not as strongly opposed to this idea as older age groups (60+ years old) with 27% of younger respondents who ‘tend to disagree’ compared to 10% among older respondents. While older respondents were more likely to ‘strongly disagreed’ than younger respondents (83% and 41% respectively);
 - Residents who are established in their house were more likely to be opposed with 74% of those who have been living in their house for more than 10 years and 73% of home owners who ‘strongly disagreed’
 - Similarly, respondents who mainly speak English at home and regional residents were more likely to ‘strongly disagree (71% and 73% respectively);
 - Deliberate dumpers were more likely to ‘strongly agree’ and ‘somewhat agree’ (14% and 18% respectively) than non-dumpers and kerbside dumpers.

A majority of respondents indicated the penalty fine and the concern of getting caught would stop them from dumping illegally. As such nearly seven in ten (67%) residents who agreed they ‘wouldn’t consider leaving waste in a public place because they would be worried about the size of the fine’ and a further 65% agreed they ‘wouldn’t consider leaving waste in a public place because they would be too worried about getting caught’.

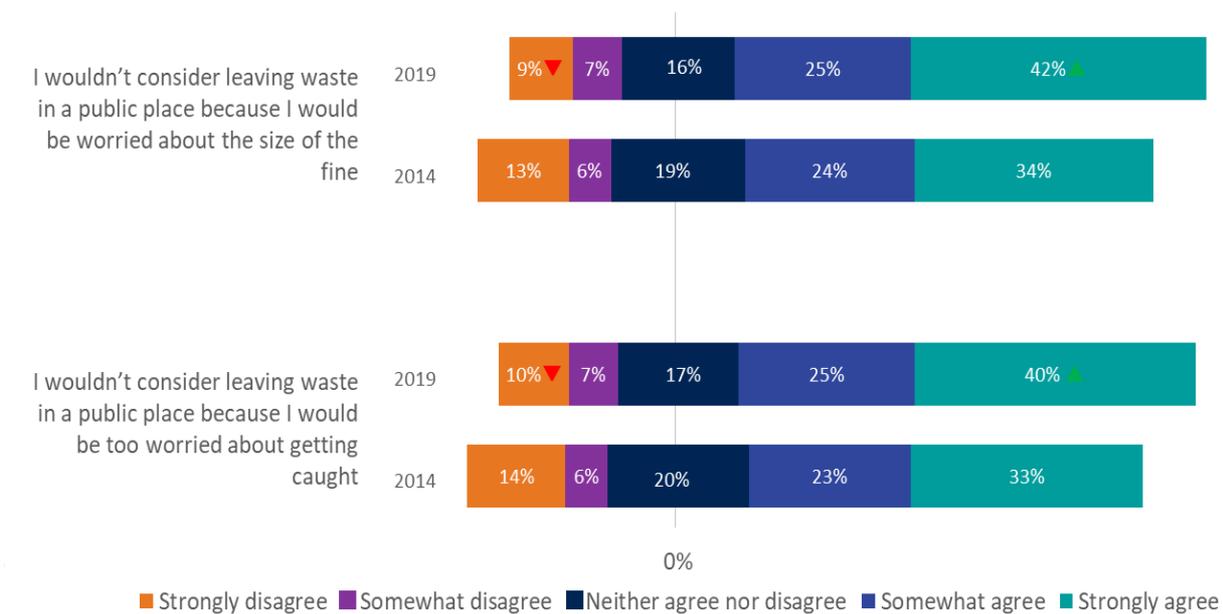
Since 2014, illegal dumping enforcement appears to have become more effective as the proportion of residents who would not consider leaving waste in a public place because of some of these enforcement rules has increased. While in 2014 around three in ten (34%) of respondent ‘strongly agreed’ they wouldn’t consider this behaviour because they would be ‘too worried about the size of the fine’, this proportion increased to around four in ten (42%) in 2019.

This finding is reinforced by a drop in the proportion of respondents who ‘strongly disagreed’ (13% in 2014 to 9% in 2019).

Figure 60. Agreement with statements relating to the consequences of illegal dumping

Base: Total Community sample | 2019 Community sample (n=1,000), 2014 Community sample (n=1,009)

Q14 For each of the following statements, please indicate whether you strongly agree, tend to agree, neither agree nor disagree, tend to disagree or strongly disagree



tend to disagree or strongly disagree

- I wouldn't consider leaving waste in a public place because I would be worried about the size of the fine

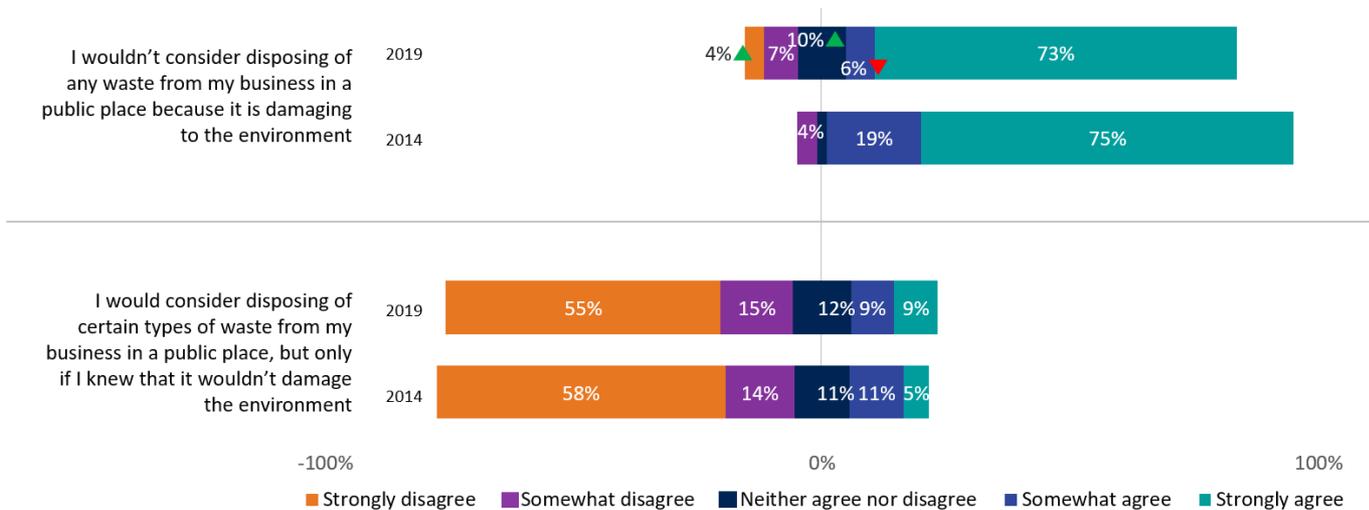
- Regional residents were more likely to 'strongly agree' than metropolitan residents (48% and 38% respectively);
- Deliberate dumpers were more likely to indicate they 'tend to disagree' (14%) than non-dumpers (7%) and kerbside dumpers (8%);
- I wouldn't consider leaving waste in a public place because I would be too worried about getting caught
 - Home owners were less likely to indicate they 'tend to disagree' (5%) than renters (%) and those who live with their parents or guardian (9% and 13% respectively).

Industry

Majority of businesses indicated the environment was a motivating factor to dispose of waste legally. As such, nearly eight in ten (79%) businesses agreed they 'wouldn't consider disposing of any waste from their business in a public place because it is damaging to the environment'.

Compared to the businesses interviewed in 2014, more respondents in 2019 indicated they 'strongly disagreed' they would not dump illegally because 'it is damaging to the environment'. However, this group of respondents remains a minority (4%).

Figure 61. Agreement statements relating to waste disposal and the environment



Base: Total Industry sample | 2019 Industry sample (n=103), 2014 Industry sample (n=100)

Q13 For each of the following statements, please indicate whether you strongly agree, tend to agree, neither agree nor disagree, tend to disagree or strongly disagree

Note: Responses 2% and below not shown for ease of reading.

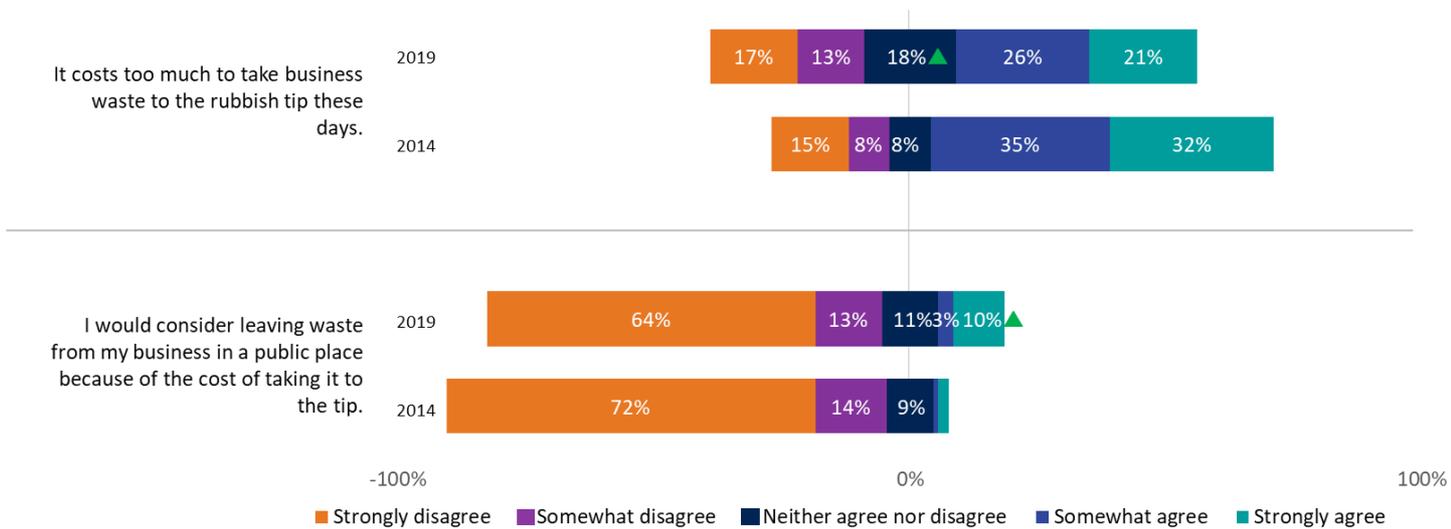
- I would consider leaving certain types of waste in a public place, but only if I knew that it wouldn't damage the environment
 - Dumpers were more likely to indicate they 'tend to agree' (26%) than non-dumpers (4%);

- I wouldn't consider leaving any waste in a public place because it is damaging to the environment
 - Dumpers were less likely to 'strongly agree' (57%) than non-dumpers (78%).

Nearly half (47%) of businesses believed it 'costs too much to take business waste to the rubbish tip these days'. However, only a minority indicated the cost of taking waste to the tip is as a barrier to dispose legally with around one in ten (13%) businesses who agreed they would 'consider leaving waste from their business in a public place because of the cost of taking it to the tip'.

In 2019, more businesses suggested the cost of the tip is a barrier to disposing of waste legally. As such one in ten (10%) businesses interviewed in 2019 'strongly agreed' they would consider illegal dumping because of the cost of taking waste to the tip compared to 2% in 2014.

Figure 62. Agreement statements relating to the cost of waste disposal



Base: Total Industry sample | 2019 Industry sample (n=103), 2014 Industry sample (n=100)

Q13 For each of the following statements, please indicate whether you strongly agree, tend to agree, neither agree nor disagree, tend to disagree or strongly disagree

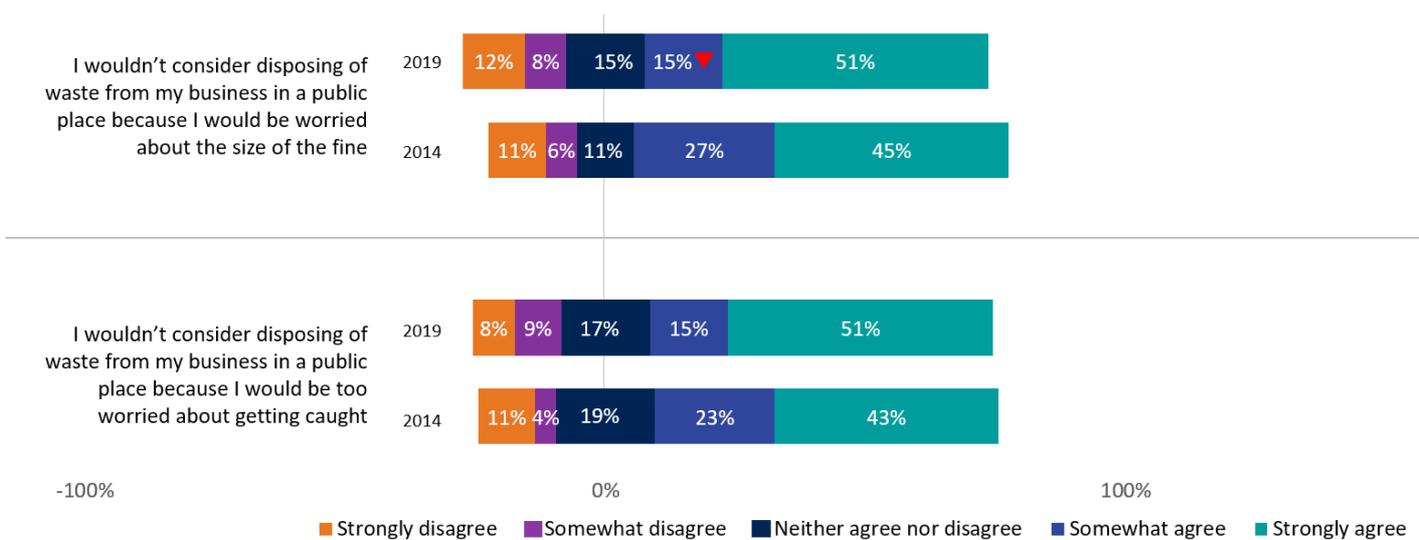
Note: Responses 2% and below not shown for ease of reading.

- I would consider leaving waste from my business in a public place because of the cost of taking it to the tip
 - Dumpers were less likely to 'strongly disagree' (30%) than non-dumpers (74%).

A large proportion of businesses would dispose of waste legally because of illegal dumping enforcement with two thirds (66%) who agreed they 'wouldn't consider disposing of waste from their business in a public place because they would be worried about the size of the fine'.

Overall, attitudes towards consequences of illegal dumping within businesses have remained broadly similar between 2014 and 2019 except for a decrease in the proportion of respondents who indicated they 'tend to agree' they would not illegally dump because they would be 'worried about the size of the fine'.

Figure 63. Agreement statements relating to the consequences of illegal dumping



Base: Total Industry sample | 2019 Industry sample(n=103), 2014 Industry sample(n=100)

Q13 For each of the following statements, please indicate whether you strongly agree, tend to agree, neither agree nor disagree, tend to disagree or strongly disagree

Note: Responses 2% and below not shown for ease of reading.

There were no significant difference between dumpers and non-dumpers.

2.6.3.8 Perceptions of the likelihood of being caught dumping

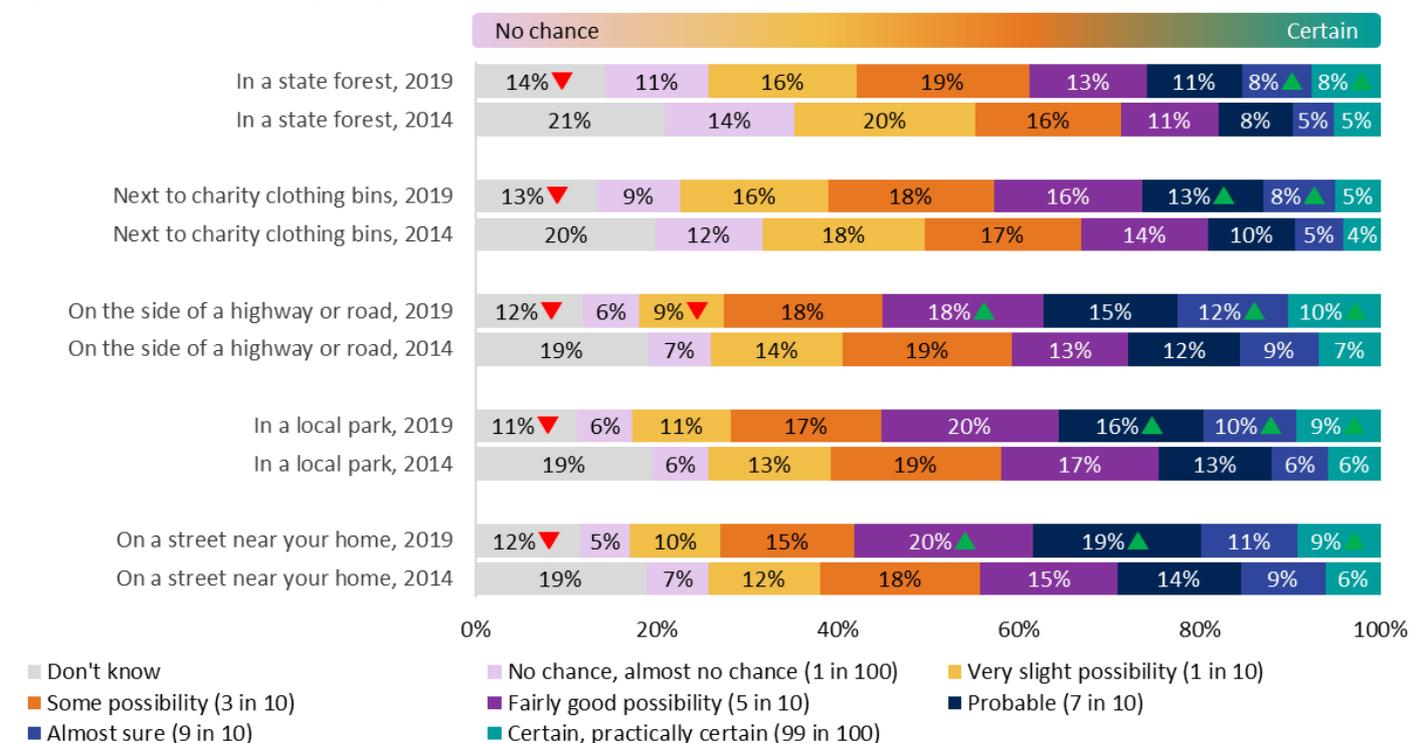
Community

A little under half of residents believed there was less than 50% chance of getting caught and fined dumping waste in a state forest or next to charity bins (46% and 45% respectively indicated there was 'No chance, almost no chance' 1 in 100 to 'some possibility' 3 in 10).

Respondents indicated the risk of getting caught dumping on the side of a highway or road and in a local park is higher with around one third (35% and 34% respectively) who thought there was less than 50% chance of getting caught and fined for these behaviours.

In 2019, the perceived risk of getting caught illegally dumping within residents was higher than in 2014. As such more respondents indicated it is 'certain, practically certain' they would get caught in most scenarios. A decrease in the proportion of respondents indicating they 'don't know' suggest awareness and understanding of illegal dumping enforcement has improved since 2014.

Figure 64. Chance of being caught and fined



Base: Total Community sample | 2019 Community sample (n=1,000), 2014 Community sample (n=1,009)
 Q17 How likely do you think it is that you would be caught and fined if you were leaving waste in the following locations?

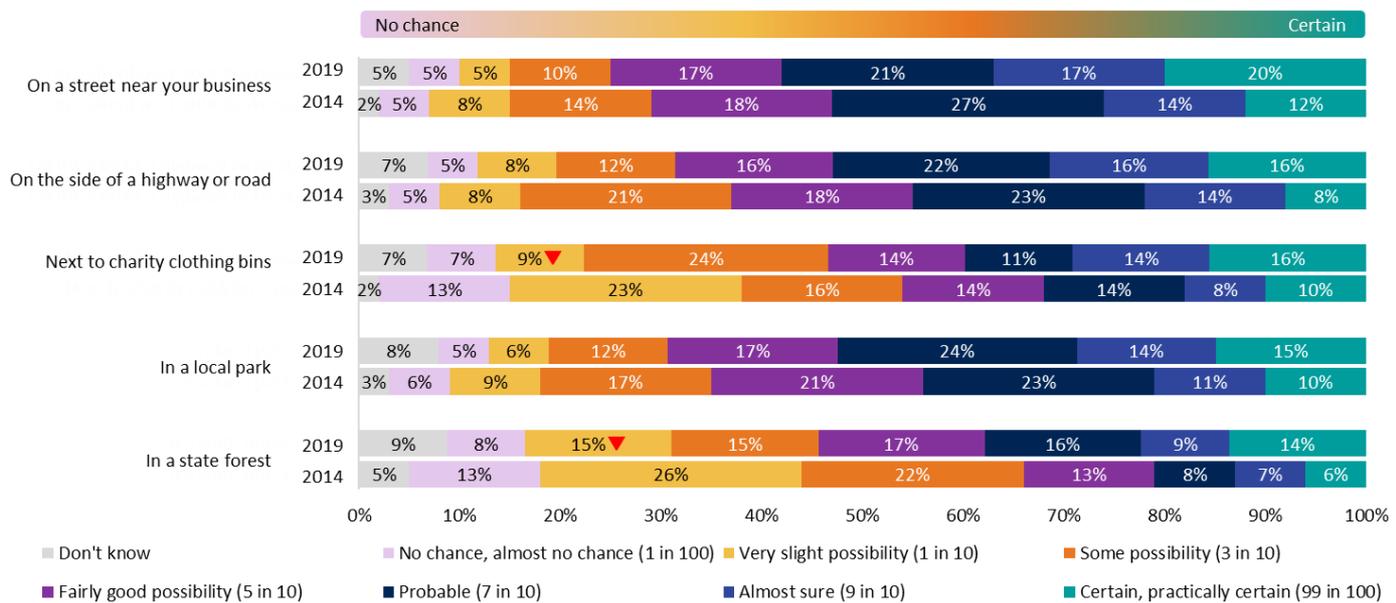
Industry

Overall, businesses tend to believe there is a higher risk of getting caught and fined dumping 'on a street near their business', 'on the side of a highway or road' or 'in a local park' rather than 'next to charity clothing bins' or 'in a state forest'.

One in four (20%) businesses thought there is less than 50% chance of getting caught illegally disposing waste 'on a street near their business'. While around four in five believed there is a similarly low chance of getting caught dumping 'in a state forest' (38%) or 'next to charity clothing bins'.

Overall, the perceived risk of getting caught dumping illegally has remained stable across most places. Although it tends to have increased in some locations such as 'next to charity clothing bins' and 'in a state forest' with fewer businesses indicating there is a low chance ('some possibility' 3 in 10) compared to 2014 (9% compared to 23% and 15% compared to 26% respectively). This indicates that among the industry illegal dumping enforcement in these locations tends to be perceived as more effective since 2014.

Figure 65. Chance of being caught and fined by Industry



Base: Total Industry sample | 2019 Industry sample(n=103), 2014 Industry sample(n=100)

Q16 How likely do you think it is that you would be caught and fined if you were leaving waste in the following locations?

Note: Responses 2% and below not shown for ease of reading.

2.6.3.9 Perceptions of fines

Community

Knowledge of illegal dumping fines was low within community members. Nearly half of respondents did not know what the maximum on-the-spot-fine was for dumping each waste.

Hazardous chemicals and construction or demolition waste, were perceived as incurring the most expensive fines with a noticeable proportion who thought it attracts a fine of more than \$5,000:

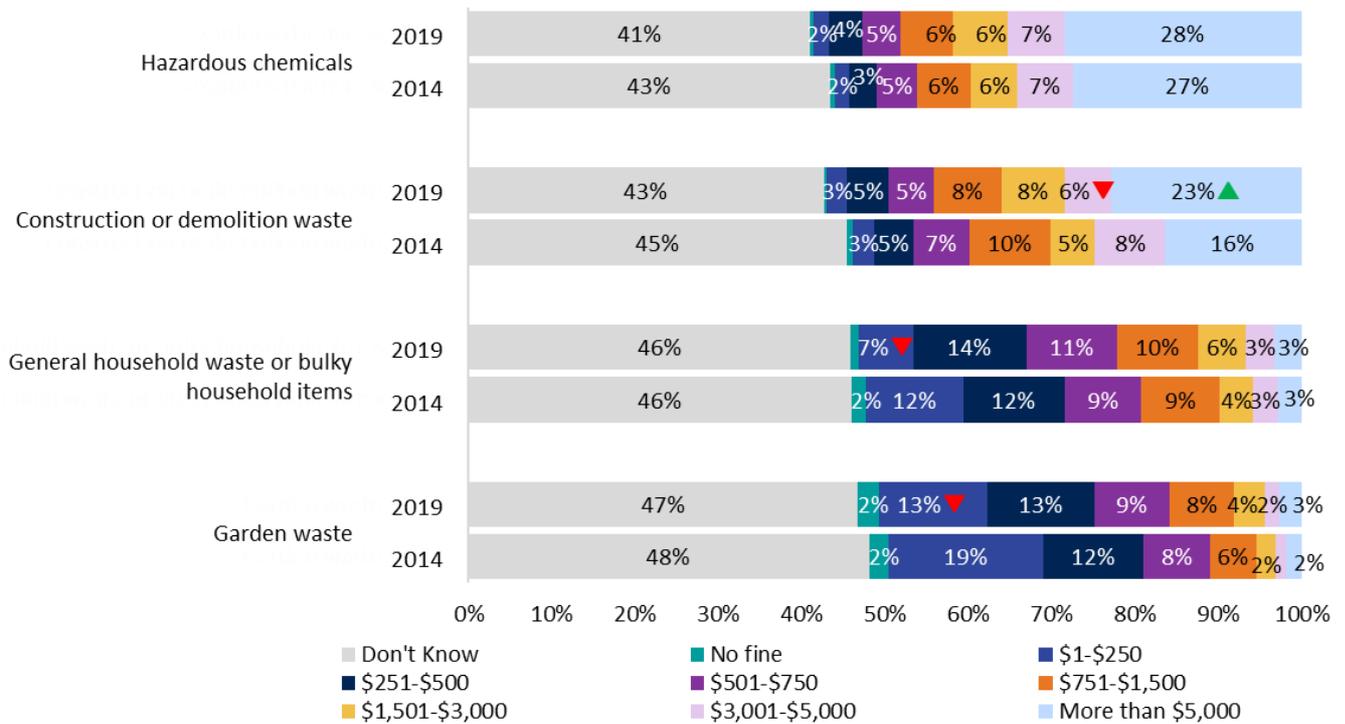
- Nearly three in ten (28%) residents for hazardous chemicals
- Nearly one quarter (23%) for construction or demolition waste.

Residents thought general house waste or bulky household items and garden attract similar fine amount with 7% and 13% respectively who estimated it to be less than \$250.

Compared to 2014, more residents perceived the fine for illegally dumping construction or demolition waste to be higher with an increase in the proportion who believed it is more than \$5,000 (23% in 2019 compared to 16% in 2014). This may reflect the fact that fines were increased in 2014.

Overall, the level of knowledge has not improved with a similar proportion of respondents who indicated they 'don't know' the fine value consistently across all types of waste.

Figure 66. Estimate of fine value



Base: Total Community sample | 2019 Community sample (n=1,000), 2014 Community sample (n=1,009)

Q16 How much do you think the maximum on-the-spot-fine, if any, would be for leaving the following types of waste in a public place?

Note: Responses 2% and below not shown for ease of reading.

There were a number of significant differences depending on respondents' profile including:

- General household waste or bulky household items

- Homeowners were less likely to think that the fine would be less than \$251 (4% compared to 9% of renters and 10% of those living with parents or guardians)
- Deliberate dumpers were more likely to think that there is no fine (4% compared to 1% of non-dumpers and 0% of kerbside dumpers) or that the fine would be between \$251 and \$500 (25% compared to 12% of non-dumpers and 13% of kerbside dumpers)
- Garden waste
 - Younger ages groups (18-29 years old) were less likely to indicate they 'didn't know' what the fine would be (36% compared to 52% of 40-49 years old, 56% of 50-59 and 48% of 60+)
 - Homeowners were less likely to think that the fine would be less than \$251 (10% compared to 17% of renters and 20% of those living with parents or guardians)
 - Deliberate dumpers were more likely to think that the fine would be between \$501-\$750 (21% compared to 8% of non-dumpers and 10% of kerbside dumpers)
 - Non-dumpers were more likely to indicate they 'didn't know' what the fine would (50% compared to 39% of kerbside dumpers and 29% of deliberate dumpers)
- Hazardous chemicals
 - Younger ages groups (18-29 years old) were less likely to think that the fine would be more than \$5,000 (18% compared to 32% of 40-49 years old, 34% of 50-59 and 32% of 60+)
 - Respondent living with their parents or guardian were more likely to think that the fine would be between \$501-\$750 (11% compared to 4% of renters and 4% of homeowners)
 - Respondents who speak another language than English at home were less likely to think that the fine would be more than \$5,000 (20% compared to 31% of those who mainly speak English at home)
 - Metropolitan residents were more likely to indicate they 'didn't know' what the fine would be (44% compared to 36% of regional residents)
 - Deliberate dumpers were less likely to think that the fine would be more than \$5,000 (7% compared to 29% of non-dumpers and 36% of kerbside dumpers)
 - Non-dumpers were more likely to indicate they 'didn't know' what the fine would (44% compared to 31% of kerbside dumpers and 32% of deliberate dumpers)
- Construction and demolition waste
 - Younger ages groups (18-29 years old) were more likely to think that the fine would be between \$501-\$750 (12% compared to 3% of 30-39 years old, 3% of 50-59 and 3% of 60+)
 - Respondents who mainly speak English at home were more likely to think that the fine would be more than \$5,000 (26% compared to 14% of those who mainly speak another language than English at home)
 - Regional residents were more likely to think that the fine would be more than \$5,000 (28% compared to 20% of metro residents)
 - Deliberate dumpers were less likely to think that the fine would be more than \$5,000 (5% compared to 24% of non-dumpers and 27% of kerbside dumpers)
 - Non-dumpers were more likely to indicate they 'didn't know' what the fine would be (45% compared to 35% of kerbside dumpers and 31% of deliberate dumpers)

Industry

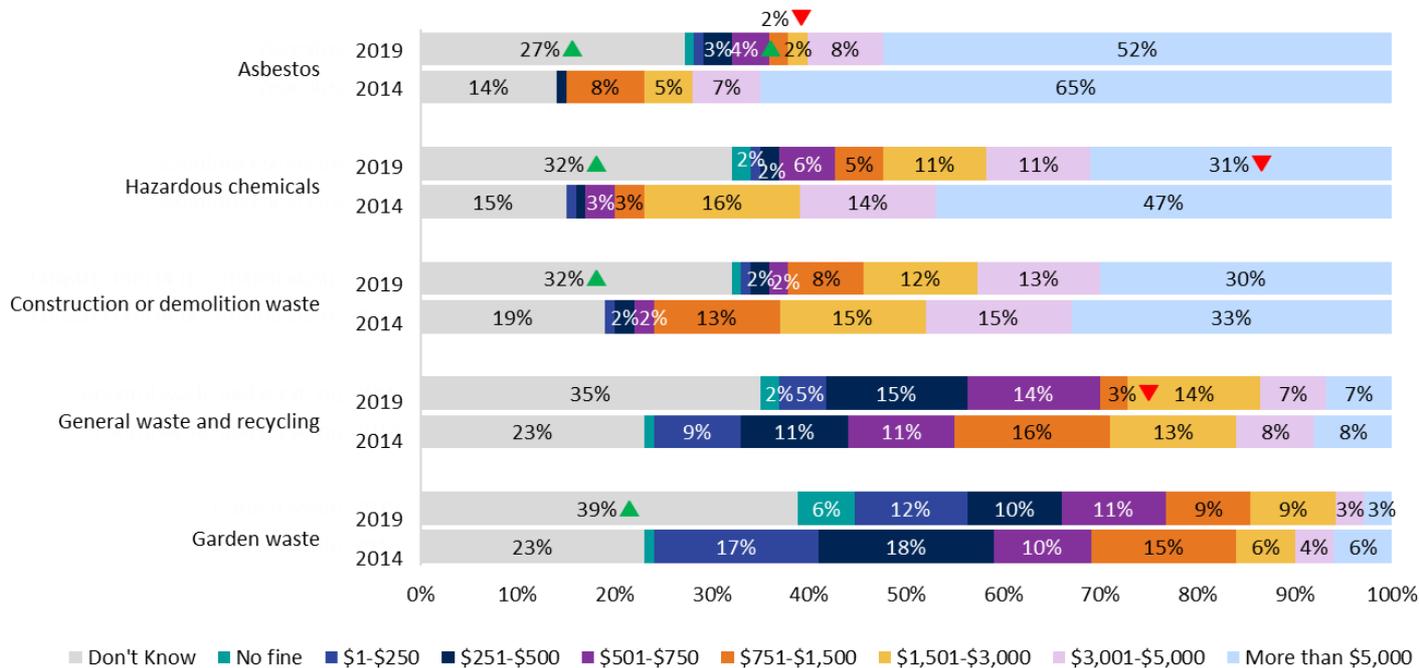
Industry showed high levels of knowledge of fine value than community respondents with a lower proportion of business respondents who indicated 'don't know' (between 27% and 39%).

Asbestos dumping was perceived to attract the most expensive fine with a little over half (52%) of businesses who thought it is over \$5,000. Hazardous chemicals and construction or demolition waste were considered to attract similar fine value with three in ten businesses who thought it is over \$5,000.

The lowest fine value were associated with general waste and recycling and garden waste.

In general, fewer businesses interviewed in 2019 were aware of the fine value with an increase in the proportion of respondents who indicated they 'don't know' the amount of that fine for asbestos (27% in 2019 compared to 14% in 2014), hazardous chemicals (32% compared to 15%), construction or demolition waste (32% compared to 19%) and garden waste (39% compared to 23%).

Figure 67. Estimate of fine value - Industry



Base: Total Industry sample | 2019 Industry sample (n=103), 2014 Industry sample (n=100)

Q15 How much do you think the maximum on-the-spot-fine, if any, would be for leaving the following types of waste in a public place?

Note: Responses 2% and below not shown for ease of reading.

2.7 Qualitative phase: community group discussions

2.7.1 Objectives

The community group qualitative research explored the following objectives:

- to understand the community's knowledge, attitudes and behaviours around different forms of illegal dumping.
- to explore motivations for dumping and what prevents people from changing their current behaviour.
- to gain insight into how, if at all, behaviour has changed over the last five years, since the 2014 research.
- to test a range of illegal dumping communication materials.

2.7.2 Methodology

Four focus groups with members of the public who had undertaken some type of illegal dumping behaviour were held in Sydney, Newcastle and Wollongong. Group participants were recruited from both the community quantitative survey, and also through ad hoc recruitment.

The design of each group is specified below:

Group	Location	Type	Date
Group 1	Sydney CBD	Kerbside dumpers	25 th September 2019
Group 2	Sydney CBD	Deliberate dumpers	25 th September 2019
Group 3	Newcastle	Mixed kerbside and deliberate dumpers	6 th November 2019
Group 4	Wollongong	Mixed kerbside and deliberate dumpers	7 th November 2019

Potential participants were asked if they had disposed of a range of household materials or items in the last twelve months. These included:

- General household waste (e.g. food scraps, non-recyclable packing)
- Household recyclables (e.g. paper, cardboard, plastic containers, bottles)
- Furniture, white goods or bulky household items
- Old clothing or bedding (e.g. sheets and blankets)
- Hazardous chemicals (e.g. paint, motor oil, batteries or pesticide)
- Construction or demolition materials

- Asbestos or materials containing asbestos
- Garden waste
- Car parts or tyres

Kerbside dumpers were defined as having disposed of at least one of the above items on the kerbside over the last year. Deliberate dumpers were defined as having disposed of at least one of the above items on the side of the road elsewhere, on someone else's land, on public land or having disposed of hazardous chemicals or asbestos anywhere.

2.7.3 Findings

2.7.3.1 Waste disposal behaviours

Types of waste produced

In each of the discussion groups participants were quick to recall the broad range of items and materials that they needed to dispose of. This included day-to-day rubbish such as food waste, green waste, nappies, batteries, glass, plastic bottles, bags and hard and soft plastics, and also larger, less frequently discarded items such as furniture, white goods, scrap metal, bike and car parts and construction or building waste. Most groups also mentioned items they considered more difficult to get rid of such as paints, chemicals, larger plastic items (such as children's toys or fitness equipment) and dead animals.

*"Chinese shit ... Kmart, plastic crap. Highly produced, low quality garbage."
Mixed kerbside and deliberate dumpers, Newcastle*

The range of waste produced was in keeping with the types of items mentioned in the earlier research and did not particularly vary by whether participants were kerbside or deliberate dumpers.

Disposal methods used by participants

Having identified the broad range of waste items and materials that they commonly needed to dispose of, participants were readily able to identify a very broad range of disposal methods available in their neighbourhood. The range of council collections are most frequently mentioned and used.

- **Red bin (weekly council collection).** This is the front of mind option for disposing of a wide range of waste and is the fallback disposal option when participants are unsure whether or not an item is suitable for the yellow recycling bin or green bin.

*The oil in my deep-fryer ... I put it in the red bin. I think it's illegal to dump it down your drain.
Mixed kerbside and deliberate dumpers, Newcastle*

*Usually I just throw it in the red bin 'cos I've got no idea ... I don't want to get in trouble for getting it wrong in the yellow bin. My neighbour got a fine (for putting the wrong thing in the yellow bin).
Mixed kerbside and deliberate dumpers, Newcastle*

- **Yellow bin (weekly council collection).** All participants know the yellow bin is for recyclables and have a solid, broad understanding of what they could put in this bin. Some regional participants felt that their fortnightly collection was insufficient for their needs.

We only get our recycling going out every second week. Our recycling is absolutely chockers. Mixed kerbside and deliberate dumpers, Newcastle

When pushed to discuss in greater detail, there remained confusion and concern over the disposal of plastics, which types could be placed in the yellow bin, and how they could tell whether or not a plastic item is recyclable. When unsure some participants preferred caution, and rather than ‘contaminate’ their recycling with an inappropriate item, or risk a fine, they placed these plastics in their red bin.

The yellow bin’s easy to be caught out. Not the red bin...you wouldn’t get caught out ...Council said, ‘if you’re not sure, put it in the red bin’. Kerbside dumpers, Sydney

Yellow bin, recyclables ... well, isn’t that the question, hard plastics, not soft plastics. If it’s a piece of meat packaging, not the sleeve that goes over it, but the tray underneath? Mixed kerbside and deliberate dumpers, Newcastle

If I see the triangle (recycling sign) it goes in the yellow. If there’s a number ... but some people say yes, some people say no. Mixed kerbside and deliberate dumpers, Newcastle

There was also uncertainty as to whether or not waste items need to be washed before they are placed in the yellow bin. This was too much effort for some.

- **Green bin (council collection).** There was also widespread knowledge concerning the range of items that can be placed in the green bin. However, participants had less knowledge and confidence on how to deal with food waste. A minority were actively managing food waste, using counter-top containers, but most participants did not.

I haven’t got in the habit of putting food scraps in the green bin, it still goes in my red bin. Mixed kerbside and deliberate dumpers, Newcastle

We have a compost bin that I don’t use, because I don’t want to lift the lid and see what’s in there! I’m too scared. Mixed kerbside and deliberate dumpers, Newcastle

- **Council clean-ups or kerbside collection of bulky items.** Participants knew of, and made use of, council kerbside collections of bulky items. While valued, some of those living in multi-unit dwellings found the value of this service diminished as their property gave them nowhere to store items in preparation for the bulky item collection. The frequency of this service varied, depending on which local council area a participant lived in, with regional participants tending to report less frequent service.

- **Can drop-off centres.** A small number of participants specifically mentioned the container deposit scheme, and that it is now possible to get a small refund on your recyclables.

Can drop off centres, where you get 10c back. Return and earn. Mixed kerbside and deliberate dumpers, Newcastle

- **Tips (waste depots or landfill).** Taking items to the tip was raised by all participants, especially those in regional locations. However, relatively few had actually made use of their local waste depot.

Those who had, were concerned by the cost and also deterred by complying with the different ways in which the depot could receive waste.

I've had a heap of car parts that an old boyfriend left me ... I currently have four tyres I need to pay to dispose of ... I had eight litres of motor oil, I put it in a container to take to the recycling centre and they said 'No, it needs to be in those bottles with the lid', I said 'Oh, crap', so I had to source bottles.

Mixed kerbside and deliberate dumpers, Newcastle

- **Charity bins and shops.** All participants are aware of the possibility of disposing of unwanted items at charity bins and shops. There was greater awareness than in the earlier research that charities are selective about what they take, and that they cannot make use of, or resell, all of the items that are left with them.

Charity bins, people were dumping heaps of stuff. They're pretty picky as well. And people were dumping rubbish and stuff and it was getting pretty gross.

Mixed kerbside and deliberate dumpers, Newcastle

- **Scrap metal dealers.** While Sydney participants were aware that scrap metal dealers may remove items left on the kerbside, there were less likely than regional participants to specifically contact a scrap metal dealer to dispose of their metal waste. In Newcastle there was relatively high awareness of a local dealer, and the service was seen as relatively efficient and convenient, earning money from some waste and at a minimum, free or cost-effective removal of metal waste.

And we've got Matthews Metal Management. If you've got metal or metal rubbish, they'll come and get it if you put it out the front. Sometimes they pay, sometimes you want it gone and they grab it.

Mixed kerbside and deliberate dumpers, Newcastle

- **Free-cycling, eBay and marketplace.** There was widespread use of various platforms and methods for selling, or giving away, unwanted items. Knowledge and use of these disposal methods was high. This mainly referred to a range of online platforms, such as ebay and marketplace, but also to local markets where second-hand items could be sold in-person. Many participants, both kerbside and deliberate dumpers, were making use of these methods. They were seen as effective and generally quick means of getting rid of unwanted items that were still usable. This method was seen as the first means of disposing of items that still retained some value or use, and if they failed to get rid of the item this way, they tended to then resort to kerbside dumping as another means of reaching a wider audience who might have interest in the item.

Try swap and sell first (with large plastic items like toys or highchairs), put it on for \$5 or \$10 ... but I get frustrated with the people who don't turn up ... I'd rather just put it out for free. Kids mattress, chairs, shelves, they've all gone in ten minutes.

Mixed kerbside and deliberate dumpers, Newcastle

These methods were more likely to be mentioned, and actively used (both for disposal and acquisition) by lower income or financially stressed participants.

- **Battery collection points.** Many people knew that they could recycle batteries, but there was less specific knowledge of how to do this.

*I'll dispose of (batteries) differently depending on the size. The little one I can probably get away with throwing it in the bin. With the big one, I can't.
Mixed kerbside and deliberate dumpers, Wollongong*

*I put (batteries) in the red bin, I don't know where else to take them. Are we supposed to put them somewhere else?
Mixed kerbside and deliberate dumpers, Newcastle*

- The post office, Battery World, Aldi and Woolworths were all mentioned as locations where used batteries could be recycled.

*Apparently Aldi does small batteries now. My daughter told me that, so we separate small batteries now in a small container.
Mixed kerbside and deliberate dumpers, Wollongong*

*Battery world used to do collection ... It'd be better if there was stuff like that at the shops, I'm going to do the grocery shop and 'oh, I'll take my batteries and dump them'.
Mixed kerbside and deliberate dumpers, Newcastle*

- **Chem collect.** Again, many participants were aware that their council offered a service for disposal of chemicals, paints and hazardous materials. While awareness of this disposal method was relatively high, many spoke of not dealing with this type of waste, and simply leaving it at the back of their garage, for another day. A small number of participants were aware that specific retail outlets would take waste materials.

*Not everyday but certain days you can drop off some chemicals like paint (at Bunnings).
Mixed kerbside and deliberate dumpers, Wollongong*

Illegal dumping behaviour

Participants were able to list a range of dumping behaviours, most of which they knew were illegal.

- **Kerbside dumping.** Many participants discussed having placed items on their kerbside at some point in the past; roughly half tended to know this was illegal, and the remaining half were uncertain as to the legality of this behaviour.

*(Is it okay to put old furniture on kerb outside of council collection timeframe?) Maybe if you made an effort to tell someone it was free, with a sign on it making it clear.
Kerbside dumpers, Sydney*

- **Burning.** A small number of regional participants spoke of burning waste in their backyard, as an option for getting rid of larger items. They were aware that this was illegal, but implied that they had previously done this.

*You can get an infringement notice for that if someone rings up and complains about the smoke and that. You can get into serious trouble.
Mixed kerbside and deliberate dumpers, Newcastle*

- **Dumping in parks or public spaces.** Among participants the vast majority were aware of illegal dumping taking place in parks or public spaces, with specific locations generally known as locations that were regularly used for this purpose.

My balcony is above one of these piles, it's a bit gross to look at, but it's not really rotting waste ... the council comes every three days, they stop their route, it disappears every three days, then it restarts.

Deliberate dumpers, Sydney

- **Dumping in bushland.** Dumping in the bush was known to be illegal, but also recognised as being very easy, with a low chance of being caught.

I live in the middle of the woods, so everyone just dumps their stuff in the bush.

Mixed kerbside and deliberate dumpers, Newcastle

Participants were aware that surveillance cameras and signs were placed at the high frequency spots, but perceived this as a losing battle, as illegal dumpers could so easily just drive to another location without surveillance.

Just go onto a dirt road in the back of nowhere.

Mixed kerbside and deliberate dumpers, Newcastle

- **Gutter and storm drains.** A minority of participants were aware of building contractors illegally washing out concrete residue in the street, and others mentioned using the gutter to wash away loose green waste that would otherwise go in the green bin.

I've seen a truck, pull up in front of a work site and just start spraying concrete out onto the road...I've seen a lot of that ... It is actually a \$5,000 fine.

Kerbside dumpers, Sydney

Storm drains ... just hose your grass clippings in the storm drains.

Mixed kerbside and deliberate dumpers, Newcastle

Capability

2.7.3.2 Psychological

Searching for information

As in the previous qualitative research, participants were well informed about the range of disposal options available to them for getting rid of waste items and materials. This was existing knowledge, and they did not articulate a need for more information. Local councils are perceived as the primary source of information on waste and recycling, with the internet resolving any information gap they wanted to fill. That said, the participants (all of whom had either dumped on their kerbside or further afield) were not motivated to fill any gaps in their knowledge. For example, many were unsure which plastics could be put in the yellow bin but did not speak of using the internet to clarify the position.

Understanding of legality

Participants understand that dumping waste in the bush, in parks, green spaces or public spaces is illegal. In contrast, some remain uncertain as to the legality of kerbside dumping. The perception of whether or not kerbside dumping is illegal, or problematic, relates to how long it remains on the kerb. There is an expectation that this is a quick method of getting rid of waste, with many participants reporting items 'disappearing' within minutes. However, participants believed that the waste items became a problem if they remained on the kerb for more than four or five days. Most participants recognised that after this longer period they would need to take action to dispose of the waste another way, such as taking them to the tip.

Recycling is super important to me, so I probably wouldn't dump that much stuff on the kerb and I never put anything broken ... one was a working fridge and it was picked up in two days, so personally I found that better than taking it to the tip. And it was still out there after a week, I would have driven to the tip.

Mixed kerbside and deliberate dumpers, Wollongong

Many participants had not given thought to who enforces illegal dumping laws. A minority were aware, through their jobs, that the cost of enforcement and clean-up is borne by local councils, and that these costs are very high. A further minority were aware because they had either received or been threatened with an infringement notice.

Same as throwing a cigarette out a window or bit of paper out the window...you're doing the same sort of thing...you are littering...I believe it's a state law.

Kerbside dumpers, Sydney

There was a general perception among both kerbside and deliberate dumpers that they were unlikely to be caught. This relates to several factors. Kerbside dumpers are generally optimistic that their waste will be rapidly removed by someone else who wants the items. Those dumping elsewhere discuss dumping at night, and in locations without surveillance, meaning that they believed their chances of being identified as responsible are small.

How do they know they did unless they saw you? Because I would go at night.

Deliberate dumpers, Sydney

Authorities not supplying appropriate services

Participants shared stories of recycled waste not being dealt with appropriately by the approved disposal services. These hearsay or media stories were used to reduce their sense of obligation and mitigate their guilt at not complying with recycling guidelines or legal dumping requirements.

Most of the stuff in the recycling bin gets chuck in the rivers - that was very depressing.

Mixed kerbside and deliberate dumpers, Wollongong

You think you're doing the right thing by doing what they ask you to do, but then you find out they're not doing what they're supposed to.

Mixed kerbside and deliberate dumpers, Wollongong

*I've been down the tip but the recycling bin actually goes into general waste.
Mixed kerbside and deliberate dumpers, Wollongong*

*I think immediately about the journalist report who puts a tracker in his plastic bag, threw it in
Woollies recycling bin and followed it to land waste.
Mixed kerbside and deliberate dumpers, Wollongong*

Physical capability

Physical barriers were only a challenge for a small number of participants, who were dealing with heavy metal items (car or motorbike parts) and were living in a household without an adult male. They described finding it difficult to move some of these heavy items around their property.

A more frequent problem was the issue of a tenancy finishing at relatively short notice and, despite good intentions, residents lacking the time and resources to deal with larger items they did not want to take with them to their next property.

*If it's an individual moving house, that's kind of forgivable ... but if that's their business and they
could have planned ahead ... if you're doing it day in, day out, then work out a system to do it
legally.
Deliberate dumpers, Sydney*

*A lot of units in Drummoyn ... more renters, more transient, don't have the room for anything.
Deliberate dumpers, Sydney*

2.7.3.3 Opportunity

Social opportunity and the acceptability of dumping

Attitudes towards the prevalence and acceptability of illegal dumping were very consistent with the views found in the earlier qualitative research. Illegal dumping is viewed as a widespread activity, with participants aware of it happening regularly in their neighbourhood.

*As before, the acceptability of dumping relates to the type of material and the location of the its
disposal. Participants remain wedded to the idea that if an item has potential future use for
someone else, they are doing a 'good thing' by placing it on the kerbside where someone else may
be able to take it away. There is far greater acceptance of dumping organic matter (be that green
waste, or items manufactured from wood, cotton or paper) as there is an assumption that these
will biodegrade, leaving no long-lasting negative impact on the environment. The less organic the
waste item, the less acceptable participants felt it was to be dumped. This meant that dumping
plastics, chemicals and hazardous waste (i.e. asbestos) are seen as unacceptable.*

*You've heard of cases where they've dumped (asbestos) next to childcare centres, it's disrespectful.
Deliberate dumpers, Sydney*

Kerbside dumping

Among participants (those both aware that kerbside dumping is illegal and those unaware), there were several ways in which they resisted the fact that kerbside dumping is illegal. They saw value and/or use in the items they were getting rid of and were motivated to provide an opportunity for others to make use of the items. This was seen as a positive community act, supporting others with limited funds in their

neighbourhood, and also one that is good for the environment. This was also seen as a victim-free offense, i.e. it was not perceived to cause any harm to anyone. Furthermore, as discussed later in this section, they thought they were unlikely to be caught and fined.

I actually put stuff out for council pick up, put out an old bike, I kid you not, fifteen minutes later, I hear this 'clunk clunk', someone pulls up in a ute (to take it away).

Kerbside dumpers, Sydney

We had a trampoline, but it out and within five minutes neighbours across the road had it.

Mixed kerbside and deliberate dumpers, Newcastle

When we lived in Newtown in a terrace, we'd do that on the pavement, and it would go like that (clicks fingers). Because ... students, transient people, it would go straight away.

Deliberate dumpers, Sydney

I like to give the opportunity for it to be re-used' 'It's in front of the house, like everyone knows it is from you. It's not like it was sneaky.

Mixed kerbside and deliberate dumpers, Wollongong

Some stuff people put out is still good and reusable. We live on a corner and whatever's reusable I present on the picket fence and it's gone in a half hour period.

Mixed kerbside and deliberate dumpers, Newcastle

Dumping in parks and open spaces

Some of these locations are seen as more acceptable, such as making use of bins or dumping in areas around shopping centres or industrial areas. Participants admitting doing this, generally dump in this way after dark or overtly took steps to avoid being seen.

At our last property we ended up doing a massive clean-up ... and there was huge amounts of green waste, so we ended up just dumping it, car loads after car loads, about five station wagons full. It was all bio-degradable, no nasty stuff in it, but way too much for us to get rid of. It wasn't the bush, it was a disused site in Newcastle. We spread it around a bit. We bagged it up, got to the site and knifed the bag, spread it around as if it was mulch ... the BHP site in Mayfield. It's a huge site. In my mind, that's not offensive.

Mixed kerbside and deliberate dumpers, Newcastle

A participant in the Sydney group described a specific alleyway that was used as a regular dumping site, that was regularly cleaned by the council. Residents dumped here so frequently that they described this location as being seen as 'almost acceptable' as a place to leave unwanted items.

When I was living in Glebe recently, there's this alleyway, people just put stuff in this alleyway, piles of stuff from all apartments around, mattresses whatever, and then it just magically disappears, so when we moved out, we just did that, and it disappeared ... somebody comes and picks it up but we don't know who ... I'm assuming it's the council ... it's the spot ... and the council knows, I assume, that people just leave stuff there ... the council comes every week...so that's why people put it there. You see what I mean, you don't feel guilty because you know it's going to go.

Deliberate dumpers, Sydney

In contrast, while participants were aware of illegal dumping repeatedly taking place in specific parks or green spaces, they did not tend to admit to this. The few that did say they'd done this were quick to explain the items left were reusable and quickly picked up by others.

Where I live there's surveillance areas because people have been dumping their rubbish in suburban areas. They've got hidden cameras in the trees that you wouldn't see, you wouldn't know ... the bypass near Jesmond... There's a lot of grubs around Jesmond who can't fit it in the bins and just dump it.

Mixed kerbside and deliberate dumpers, Newcastle

Dumping in bushland

Deliberate dumpers were more likely to acknowledge that they had illegally dumped in the bush. They generally described dumping green waste and perceived this as acceptable as the waste would biodegrade. Participants were more critical of those dumping larger items such as furniture, and items such as white goods or chemicals were seen as unacceptable to dump. The judgement for these participants on the degree to which this type of dumping is acceptable relates to whether or not the items are made of natural materials and are likely to compost.

We back onto bush land. On Sunday afternoon you see them all, they've run out of room in their green bins ... dead branches, palm leaves ... People dumping lounges in the middle of the night, tyres they can't get rid of. But organic material's not a huge problem.

Mixed kerbside and deliberate dumpers, Newcastle

Oh yeah, if you drive up to (location) you always see a pile of dumping stuff ... if it's not in front of your house, it's bush dumping.

Mixed kerbside and deliberate dumpers, Wollongong

Dumping at charity bins and stores

Participants were more likely than in the previous research to be aware that leaving a bag of items outside a charity shop is illegal.

They're not re-sellable items. It's a cop-out for dumping really. People use it as a free place to dump their rubbish.

Mixed kerbside and deliberate dumpers, Wollongong

2.7.3.4 Physical opportunity

Broadly, participants (both kerbside dumpers and deliberate dumpers) felt well provided for with disposal services. There was minority concern across both types of participants that their bins were too small, or their collection was too infrequent (fortnightly, not weekly). To get around this, many participants made use of spare capacity in neighbours bins rather than dumping.

I wouldn't mind if someone puts stuff in my bin as long as it's where it's supposed to be.

Mixed kerbside and deliberate dumpers, Wollongong

Red bin, its reduced in size, but not as reduced as in Sydney.

Mixed kerbside and deliberate dumpers, Newcastle

For those living in regional locations, who tended to have properties with larger gardens or land, many described the green bin as being inadequate for their needs. These participants spoke of having large amounts of green waste at particular times of year or following specific weather events. On these occasions, some participants would stockpile the green waste, and slowly get rid of this backlog of green waste, by filling their green bin for each collection. Others were less willing to do so, and these were trigger points for illegal dumping.

Motivation

Time

A minority of participants either directly or indirectly commented that their behaviour was influenced by time pressures. This was mentioned in relation to needing to wash recyclable items, determine which plastics could be recycled or to take materials to the tip. These extra steps of cleaning and searching information around recycling are considered additional time.

*Those meat containers ... they tell you to rinse it all out, but I'm not rinsing every meat tray!
Mixed kerbside and deliberate dumpers, Newcastle*

*(Sorting plastics) To be honest, I don't have the time. I've got little kids, my husband works late.
Mixed kerbside and deliberate dumpers, Newcastle*

*Your time is valuable – why do I want to spend half of my weekend dealing with rubbish?
Mixed kerbside and deliberate dumpers, Newcastle*

Cost of disposal

As in the previous qualitative research, the cost of taking waste items to the tip was seen as a significant barrier for those who had larger items to dispose of. Many were aware of the price of taking items to the tips; others had no experience of the tip and did not know the likely cost.

*If they asked me to pay \$200 at the tip I would say like 'I don't have that'. You're kind of forcing me to go somewhere else.
Deliberate dumpers, Sydney*

*I've got stuff that can't be handed on, its broken, I don't have a shed, its piling up on my driveway. I've got to organise a trailer to be able to take this stuff to the tip ... I only get one free tip voucher so I've really got to wait till it piles up ... so I'm going to end up spending \$50 to hire a trailer.
Mixed kerbside and deliberate dumpers, Newcastle*

*Some things are just expensive to dump and so some people just can't. My husband and I just went to (location). We had to dump like wooden type of stuff from our renovation and I think it is \$360 a tonne, so it costs us around \$190 and some people just don't have that to spend so they just put it where they can.
Mixed kerbside and deliberate dumpers, Wollongong*

Cost was also seen as a part of the problem with illegal dumping that occurs when a tenancy comes to an end. This was seen as a specific life moment when you are potentially getting rid of numerous large items and usually lack time and money. Participants discussed putting down the bond for their next property, without yet receiving the bond back from the property they are leaving. Combined with the inherent expenses incurred when you move house, finding money to pay for appropriate waste disposal, when you

are usually stressed and time-poor, meant this was a specific situation where participants were more likely to illegally dump.

*If people have the means, they'll do the right thing, but often they have no option.
Mixed kerbside and deliberate dumpers, Newcastle*

*They're not necessarily thinking – they just want it gone.
Mixed kerbside and deliberate dumpers, Newcastle*

Cost was also raised as a broader concern; that many people have limited resources, that waste disposal is a competing priority with basic necessities and that they cannot afford the costs necessary to dispose of large waste items legally.

*Sutherland Shire, used to be really expensive, a small boot full was about \$20. I reckon hide as much as you can in the yellow bin.
Kerbside dumpers, Sydney*

*It's a lot of money to get rid of your waste and I don't think people realise they haven't got that when they're trying to buy food and run a house.
Mixed kerbside and deliberate dumpers, Newcastle*

Fines

Awareness of the fines that could be incurred for illegal dumping varied. A minority of both kerbside and deliberate dumpers had either been threatened with a fine or knew others who had received a fine.

*I got together a whole heap of metal for Matthews (Metal Management) to come get, it'd taken me a week to get it all together ... the ranger turned up ... he said 'No worries'. I got held up 'cos I was sick. He came back and told me both times someone had complained. I was facing a \$2,000 fine. I asked, 'How is that possible? It's outside my house, that I own. It's between the footpath and the road. It's not in anyone's way'. He said, 'Four metres from the road is council property'.
Mixed kerbside and deliberate dumpers, Newcastle*

Participants who were unaware of the fines were surprised at the scale of fines mentioned by others and found this a motivating factor. This motivation was tempered by the fact that they believe they are unlikely to be caught for either kerbside dumping or dumping in green spaces or the bush.

*'We're watching you', but no cameras? How can you put the signs up if there are no cameras? I'm always looking, but I never see anyone get fined.
Deliberate dumpers, Sydney*

2.7.3.5 Impacts of dumping

The environmental impact of dumping is not well understood by participants. While they are quick to appreciate that dumping chemicals or asbestos is highly dangerous and has a negative impact on the environment, there is far less appreciation of the impact of dumping more common items (such as mattresses or tyres). Dumping of green waste is generally perceived as a low-level aesthetic concern, rather than one that damages the natural environment.

There is some awareness of the cost to local councils in cleaning up illegal dumping.

Communication materials

At the end of each discussion group, participants were presented with a range of communication materials and asked for their response. Broadly, the materials were well received and seen as effective.

The range of RID materials were liked by all participants. The overall colour scheme was seen as attention grabbing and authoritative. The use of red and yellow edging was seen as reflecting the same design used in police materials, which drew attention and gave the material credibility. The size and font of the text was clear, simple and easy to read.

*It's similar to the one's the police use, so it has authority.
Mixed kerbside and deliberate dumpers, Newcastle*

EPA Kerbside follow-after dump message



NO!

THIS IS ILLEGAL!
INVESTIGATORS ARE IN YOUR AREA TO CATCH PEOPLE WHO DO THE WRONG THING.
You can help by reporting people who dump.

HAVE AN ITEM TO GET RID OF?
PLACING ITEMS IN THE STREET IS ILLEGAL

THE RIGHT THING TO DO IS:

- 1 Book a **FREE** clean-up service with Council **online** or on **1300 580 811**
- 2 Put your bulky waste out for collection **the night before your booked date.**

For multi-lingual support, call the Translating and Interpreting Service on 131 450 and ask to be connected to the City of Parramatta Waste Hotline on 9806 5544 Monday to Friday 8:30am - 4:30pm.

REPORT ILLEGAL DUMPING ONLINE ridonline.epa.nsw.gov.au

REPORT ILLEGAL DUMPING Contact Council on: **9806 5544**

Participants liked the clarity and lack of ambiguity of the message – that dumping materials such as this, on the kerbside, was illegal. For a minority, this was new information. They also liked that the communication material went on to provide concise, easy-to-digest instructions on the correct way to get rid of waste items. The prominence of the council phone number and the presence of the web addresses were also noted and appreciated.

*That's awesome, I wish I'd seen that one. 'Placing items in the street is illegal', I didn't know that. And then it gives you options for what you can do, instead of doing that.
Mixed kerbside and deliberate dumpers, Newcastle*

The subheading that there are investigators in the local area was not well received by a minority of participants, particularly those who were deliberate dumpers. This text prompted disbelief; they were aware of council resourcing pressures and were incredulous that this statement was actually true. They also felt the word 'investigators' was disproportionate to the problem of illegal dumping.

If it's something like ... a chair, no. Or a chest of drawers, no ... but if it's something where someone could get hurt, a fridge, TV, yeah. Also, where it's dumped If it's on the kerbside, and you're thinking other people will take it but if it's somewhere in the National Park, on the side of

*a highway, I probably would call them.
Kerbside dumpers, Sydney*

A minority of participants did not respond well to the text suggesting that people report others who illegally dump. They disliked the idea of ‘betraying’ their neighbours – or neighbours ‘dobbing’ on them – and did not feel this was an appropriate way to handle this situation.

EPA Kerbside positive (before dump)

KEEP OUR STREET CLEAN
PLACING ITEMS OUTSIDE YOUR PROPERTY IS ILLEGAL
You can help by reporting people who dump.

REPORT ILLEGAL DUMPING ONLINE
ridonline.epa.nsw.gov.au

REPORT ILLEGAL DUMPING Contact Council on: **8757 9000**

HAVE AN ITEM TO GET RID OF?
PLACING ITEMS IN THE STREET IS ILLEGAL

THE RIGHT THING TO DO IS:

- 1 Don't risk an \$8,000 fine! Organise a free Council Clean Up, two weeks in advance.
- 2 To book a free waste pick up, call Cumberland Council on 8757 9000, or book online at www.cumberland.nsw.gov.au.
- 3 You can use this service up to four times a year for free. Bookings are essential.

For multi-lingual support, call the Translating and Interpreting Service on 131 450 and ask to be connected to Cumberland Council on 8757 9000.

This second material was preferred to the previous material. It retained all of the positive design elements that participant liked – namely the colour scheme, font, clarity of message and proactive instructions on how to dispose of waste correctly. They preferred the positivity of the message, with the focus on ‘keep our street clean’, without reference to the possibility of investigators.

While, on balance, they favoured a positive approach, they recognised the power of including information about the scale of the fine and acknowledged that this would both get their attention and motivate them to act.

*I think the fine is perfect. I don't want to lose money.
Deliberate dumpers, Sydney*

A small number of participants were concerned that the size of the fine mentioned would be frightening to financially insecure, or more vulnerable, residents.

*Bit extreme. I'm just thinking of the nice little old lady, who's now shit scared that she's going to get a fine.
Mixed kerbside and deliberate dumpers, Newcastle*

Waverley Council Message 1 (placed on dump)



While this material was recognised as serving a specific purpose, being placed on illegally dumped items, it was rated as less useful because of the limited information it delivered, compared to the previous materials.

Waverley Council Message 2 (awareness)



This version of the communication materials was less well received. ‘Dumping is illegal’ was simple and well understood, but the message that ‘you can help us nab the offender’ did not engage participants. A minority do not like the idea of residents reporting neighbours for this type of behaviour.

*It makes me think ‘no shit sherlock’. Who’s going out putting silly signs like that? I don’t think naming and shaming is the right way to go. Why make them a criminal when they’re just ignorant?
Mixed kerbside and deliberate dumpers, Newcastle*

I think it's getting more and more comedic. 'Help us nab the offender and take them to jail or something'. It's going to be some tiny old lady that calls every five minutes with nothing better to do that everyone hates. I think a bit of information on what you can do, how you can do the right thing, would be far more persuasive than this ... Feels very nanny state. Deliberate dumpers, Sydney

*Oooh scary.
Deliberate dumpers, Sydney*

*Melodramatic ... some information would be better than 'Don't do this' ... Looks like a joke to me.
Kerbside dumpers, Sydney*

A small number also queried the use of the word 'nab', as they also used this word as an acronym for the National Australia Bank.

Waverley Council Message 3 (awareness)



This material was moderately well received; it was seen as attractive, the picture of waste items was seen as helpful and a comprehensive representation of the types of waste people are generally getting rid of, and the highlighting of the fact that the service is free was welcomed. That said, the tone was felt to be very different, less demanding but appropriate for an information campaign delivered via household flyers.

*I think black on yellow is a great colour scheme, and it stands out very clearly. I think this is a little bit wishy washy. The white writing on the orange background ... it tells you what to do, it's not ambiguous ... no confusion, no excuse.
Kerbside dumpers, Sydney*

The poster for the NSW garage sale trail was attractive to all participants; nobody disliked it. The picture was intriguing – participants were prompted to engage with it but found it a little frustrating trying to extract the meaningful information from which to determine what was happening, when, and whether or not they'd want to participate. They liked the soft tone of the imagery, and that it offered a new way to reuse and recycle.

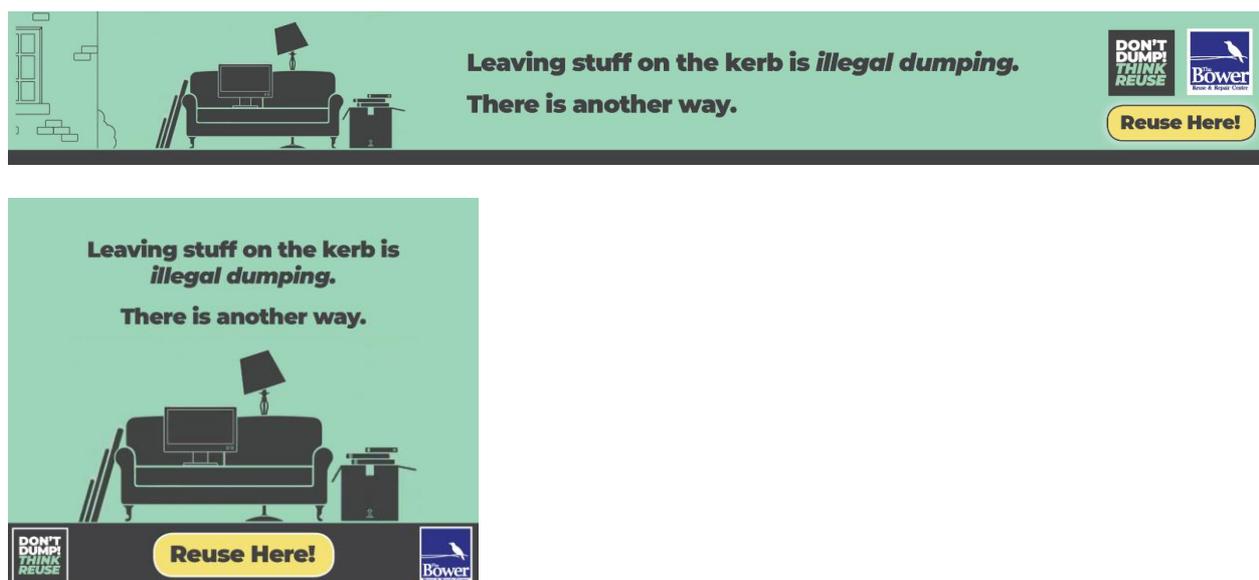
Garage Sale trail flyer NSW



The flyer for the garage sale trail was very well received. It retained all the positive elements of the garage sale trail poster – the attractive and engaging artwork and friendly design – but this was supplemented by the detailed information on how to take part that participants were interested in.

I might make a bit of money ... Fun to look at ... It's got the date, it's got the number, it's got the website. It sends the message. Kerbside dumpers, Sydney

The Bower



Participants queried the second image, which they did not feel was clearly depicting kerbside dumping.

*Doesn't look like kerbside dumping, looks like a setting in a lounge room.
Mixed kerbside and deliberate dumpers, Wollongong*

Charities YouTube link

The charities YouTube link was very well received. Participants liked the friendly, positive tone, that it was straight to the point, easy to understand, informative, while simultaneously delivering a substantial amount of information in a light-hearted way.