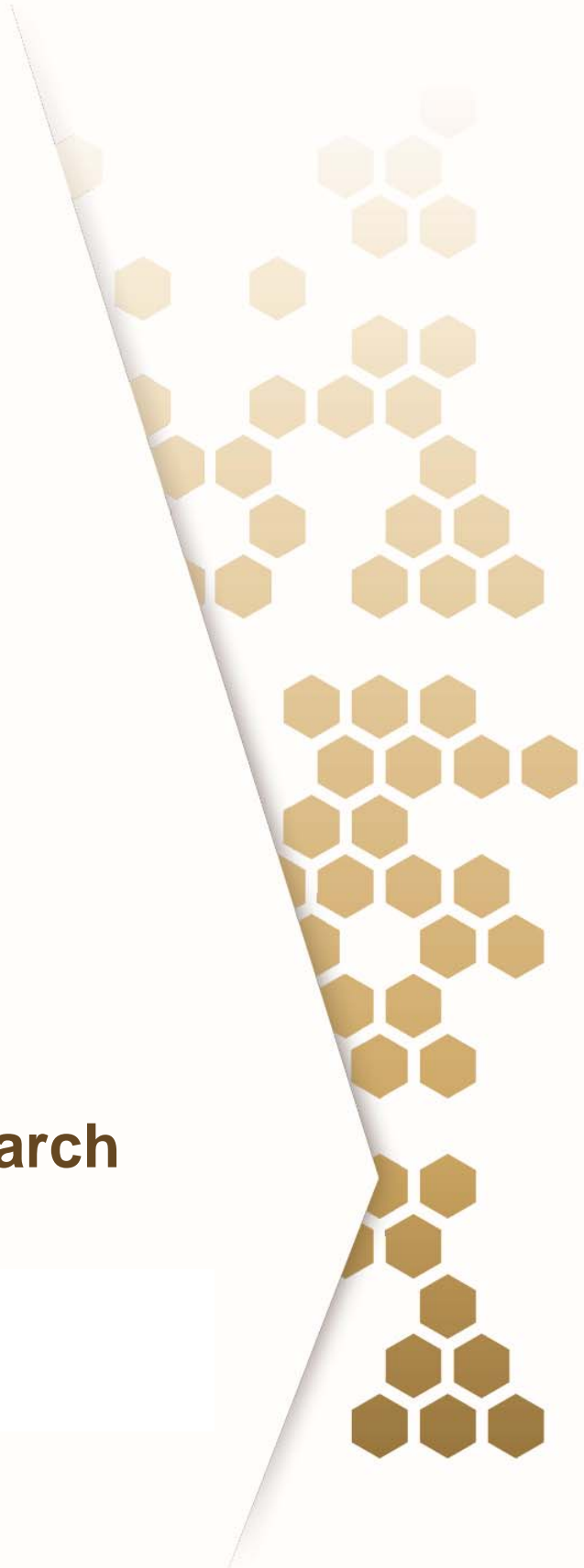


Illegal Dumping Research Report

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Executive summary

Background and objectives

Illegal dumping has been prioritised by the NSW Government. Goal 22 (Protect our Natural Environment) in the NSW 2021 plan identifies the reduction of illegal dumping as a priority, with a target of reducing illegal dumping in Sydney, the Illawarra, Hunter and Central Coast by 30 per cent by 2016.

The overriding objective of this research was to explore the motivations of people who dump waste illegally, and the influential factors which may bring about a change in behaviour among these groups of people. This research provides a benchmark for monitoring changes in attitudes, behaviours and experiences relating to illegal dumping.

Methodology

The research included both qualitative and quantitative components:

- qualitative depth interviews with government stakeholders, trade and industry representatives (n=44), and two group discussions with community members (n=18)
- quantitative online surveys with NSW local government authorities (n=63), trade and industry (n=100), and the wider community (n=1009).

Experiences and perceptions of land managers

Illegal dumping is a significant issue for NSW LGAs, charitable recyclers, and other land managers, particularly (but not exclusively) in metropolitan NSW. The general perception was that illegal dumping had become more prevalent in recent years. The main problem caused by illegal dumping, for land managers, is the cost of dealing with dumped waste, with over one in 10 LGAs (11 per cent) spending more than half a million dollars a year on activities relating to the prevention, monitoring and enforcement of illegal dumping. Most of this is spent on staff time and contractors.

LGAs are most commonly dealing with household waste dumped by the roadside or kerbside (and this has remained unchanged since 2004). Despite forming only a minority of illegal dumping incidents (8 per cent), illegally dumped asbestos was thought to be on the rise and was commonly cited as being the most problematic for land managers, due to the health and safety risks and the high cost of cleaning it up.

The general view was that perpetrators formed a small minority of the population. Both tenants and house owners were thought to be responsible, along with small businesses. It was thought that the community were generally unaware of the impacts of illegal dumping.

Cost was seen as one of the main drivers in dictating waste disposal behaviour. Many respondents thought reducing the cost of legal waste disposal (particularly of asbestos) would help reduce illegal dumping. Many also thought that a major contributor was a lack of concern for the local community.

The consensus was that the possibility of being caught needed to be made more of a reality for illegal dumpers. Increased surveillance and patrolling were seen as effective, but not a viable solution, given the number of locations where it would be required; however it was thought that even if there was not a real increased chance of being caught, it needed to appear to be a genuine risk. It was commonly believed that the penalties for dumping illegally were too lenient.

There was a view that public education campaigns could help change the culture of illegal dumping, and a desire for greater regulation of waste producers, applicable to both householders and businesses.

Community and industry findings

A third (35 per cent) of the community and over a quarter (27 per cent) of waste producing businesses had dumped waste illegally in the last year, most of which was on the kerbside. One in 10 (11 per cent) in the community had illegally dumped waste elsewhere.

Householders and businesses most commonly admitted to illegally dumping household waste and recyclables (among householders) and general waste (among businesses).

Contrary to the perceptions of land managers, the research with the community demonstrated that illegal dumping is not confined to any particular demographic group. People who dump at the kerbside cannot be characterised by their demographics. Young people, males and those in full-time employment are among the most likely to illegally dump waste elsewhere (other than or in addition to the kerbside). The survey showed that illegal dumpers are not characterised as having low incomes, a lower level of formal education, or as culturally and linguistically diverse (CALD).

The COM-B behavioural framework¹ has been used in the analysis and reporting of this research. This identifies three fundamental factors influencing any behaviour: Capability, Opportunity, and Motivation. The research findings are structured according to these factors.

Capability

Low awareness of legal methods does not appear to be driving illegal dumping. The research showed that people who were aware of legal disposal methods were no less likely to dump waste illegally; in fact those who were most aware of and most likely to have used the services available were also most likely to have dumped waste illegally. The qualitative research suggested that this is due to these people most needing to know about legal disposal methods because they frequently have waste to dispose of, whereas those who do not generally dispose of waste are less aware of all methods.

People understand that (most) dumping is illegal. The research showed that there is a good understanding among the general community and industry of the illegal status of dumping waste; however, there is some confusion in the community about the legality of leaving household waste on the kerbside (outside of council collection dates), with a third believing it to be legal (33 per cent) and nearly a quarter not knowing either way.

Opportunity

Social norms around dumping play an important role in influencing waste disposal behaviour. Illegal dumping (other than kerbside dumping) was viewed by the vast majority of the community and businesses as very unacceptable. Householders who dumped waste elsewhere or in addition to the kerbside were more likely to see illegal dumping as acceptable, indicating that perceived acceptability of dumping waste does impact on a person's likelihood of doing it. In addition, illegal dumping was more prevalent among people who viewed it as a social norm.

Widespread disapproval of illegal dumping was a major deterrent to businesses to dump waste illegally, given the importance of the reputation of their business to them and their livelihood.

The distance to waste disposal facilities may contribute to decisions to dump illegally. Most in the community and in industry did not experience difficulties accessing

¹ Michie, S, van Stralen, M and West, R 2011, 'The behaviour change wheel: A new method for characterising and designing behaviour change interventions', *Implementation Science* 6:42, available at www.implementationscience.com/content/6/1/42.

waste disposal facilities; however, householders who had further to travel to landfills were more likely to dump waste illegally (in places other than or in addition to the kerbside).

Motivation

Cost avoidance is a key driver for businesses to dump illegally. The majority of the general community also found waste disposal very expensive; however, for most this did not drive them to dump their waste illegally. Those who do dump waste illegally (in places other than or in addition to the kerbside) said they do so in part to save money, but the research shows that other factors are influencing their decisions.

Low awareness or consideration of the consequences of dumping illegally was a factor. The research found that the majority in the community and industry thought that there was some chance of being caught (which varied by location), and that perceptions of the likelihood of being caught did not vary between those who do dump waste illegally and those who do not. This suggests that a higher perceived likelihood of being caught is not in itself a strong deterrent.

Knowledge of the magnitude of the fines applicable was fairly low among the community, and higher among industry.

Concern for the environmental impacts of dumping was fairly low, and appears to be lowest among the householders and businesses who are dumping illegally (in places other than or in addition to the kerbside).

Recommendations

Based on the findings of this research, future strategies and interventions to reduce illegal dumping ought to:

- capitalise on businesses' concern for their reputation
- reinforce the social norm that illegal dumping is unacceptable
- create a social norm around reporting illegal dumping
- increase the perceived likelihood of being caught dumping in state forests and at charity bins
- raise the profile of the personal consequences (i.e. magnitude of fines, prison sentences), and ensure fines are more than the savings made by dumping illegally
- educate householders to request evidence of legal disposal from any contractors used
- share best practice relating to strategies to minimise, enforcement, and clean-up among LGAs and other land managers.

1. Background and objectives

1.1 Background

Role of the NSW Environment Protection Authority

The NSW Environment Protection Authority (EPA) is the state's principal environmental regulator and leads the response to 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:

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 bushland.'

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. Goal 22 (Protect our Natural Environment) in the NSW 2021 plan identifies the reduction of illegal dumping as a priority, with a target of reducing illegal dumping in Sydney, the Illawarra, Hunter and Central Coast by 30 per cent by 2016. To support this goal, \$58 million of funding over five years has been allocated to combat illegal dumping under the \$465.7 million *Waste Less, Recycle More* initiative. The strategy will use a multifaceted approach to combat illegal dumping. A new illegal dumping fund will be established to support initiatives across NSW, including a pilot program to trial a levy rebate and education package to home renovators disposing of small, non-commercial quantities of asbestos. The fund will also be used to enhance the EPA's ability to detect and prosecute illegal waste operators.

1.2 Objectives

The overriding objective of this research was to explore the motivations of people who dump waste illegally, and the influential factors which may bring about a change in behaviour among these groups of people.

Specifically, the program of research explored and measured:

- awareness and understanding of illegal dumping among trade and industry and in the community
- perceptions of the acceptability of illegal dumping among trade and industry and in the community, including whether dumping near sensitive receptors (e.g. schools, pristine areas) is perceived differently from dumping in other locations
- awareness and understanding among households and businesses of ways to legally dispose of waste

Illegal Dumping Research Report

- willingness of households and businesses to ensure waste is disposed of legally
- understanding among land owners of measures to be taken to prevent illegal dumping on their land, and willingness to take these measures
- behaviour of households, businesses, and those in the waste industry, in relation to legal waste disposal and illegal dumping
- measures being taken by the authorities, the waste disposal industry, and interest groups to monitor and reduce illegal dumping in their jurisdictions
- knowledge about the types of land on which dumping occurs and locations of any known dumping (e.g. hotspots).

This research provides a benchmark for monitoring changes in attitudes, behaviours and experiences relating to illegal dumping.

2. Research design

2.1 Methodology

The research included the following components:

- **qualitative group discussions and depth interviews** with government stakeholders, trade and industry representatives and community members
- **quantitative online surveys** with local governments, trade and industry and the wider community.

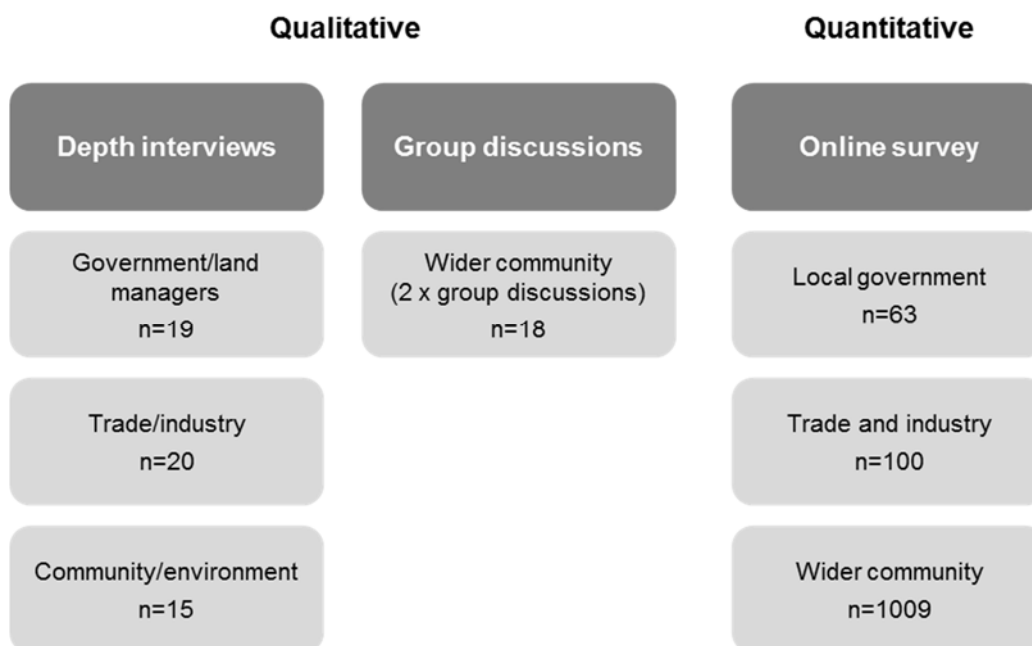


Figure 1: Research design

2.2 Qualitative phase

The qualitative phase of the research involved 44 depth interviews with government stakeholders, and industry representatives as shown below. Two group discussions were also conducted with community members. A more detailed methodology is outlined in the qualitative research section.

Table 1: Qualitative sample structure

| Group | Depth interviews | Discussion groups |
|----------------------------------|------------------|-------------------|
| Local government | 10 | – |
| State government | 9 | – |
| Industry – peak bodies | 5 | – |
| Industry – Arabic speakers | 5 | – |
| Industry – businesses | 10 | – |
| Community and environment groups | 5 | – |
| Wider community | – | 2 |
| Total | 44 | 2 |

2.3 Quantitative phase

The quantitative phase consisted of three online surveys:

- Community (n=1009)
- Industry (n=100)
- Local governments (n=63).

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

2.4 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.

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

- Significant differences between sub-groups of respondents are labelled on charts (using orange arrows).
- In cases where there are too many significant differences to show on a chart, they are outlined in the accompanying text.

Rounding in charts

In some charts, response categories shown may not sum to 100 per cent 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 per cent.

Anonymity of responses

All responses 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 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**.

3. The COM-B behavioural framework

The analysis and reporting approach for this research utilises the COM-B behavioural framework developed by Michie, van Stralen and West². Ipsos Social Research Institute (Ipsos SRI) uses this framework to better understand why people behave as they do, and how best to go about changing their behaviour. The contents of this section are based on the description of the COM-B behavioural framework provided by Michie et al².

The basis of the COM-B system is the ‘behaviour change wheel’, shown in Figure 2. 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.

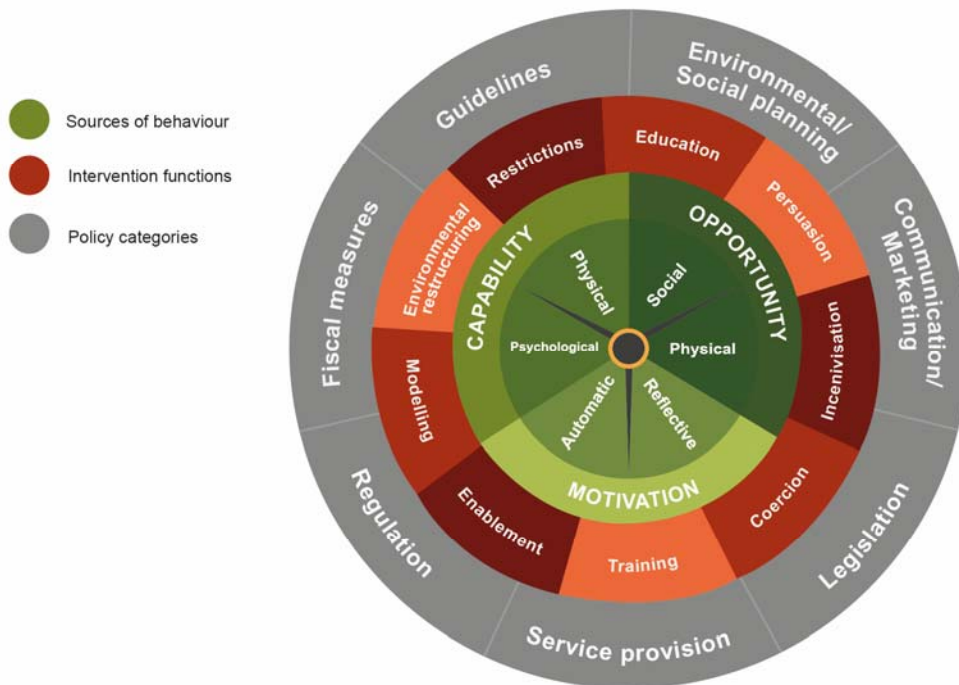


Figure 2: The COM-B behaviour change wheel²

² Adapted from Michie, S, van Stralen, M and West, R 2011, ‘The behaviour change wheel: A new method for characterising and designing behaviour change interventions’, *Implementation Science* 6:42, available at www.implementationscience.com/content/6/1/42.

3.1 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 explained further in Figure 3 and in the following paragraphs.

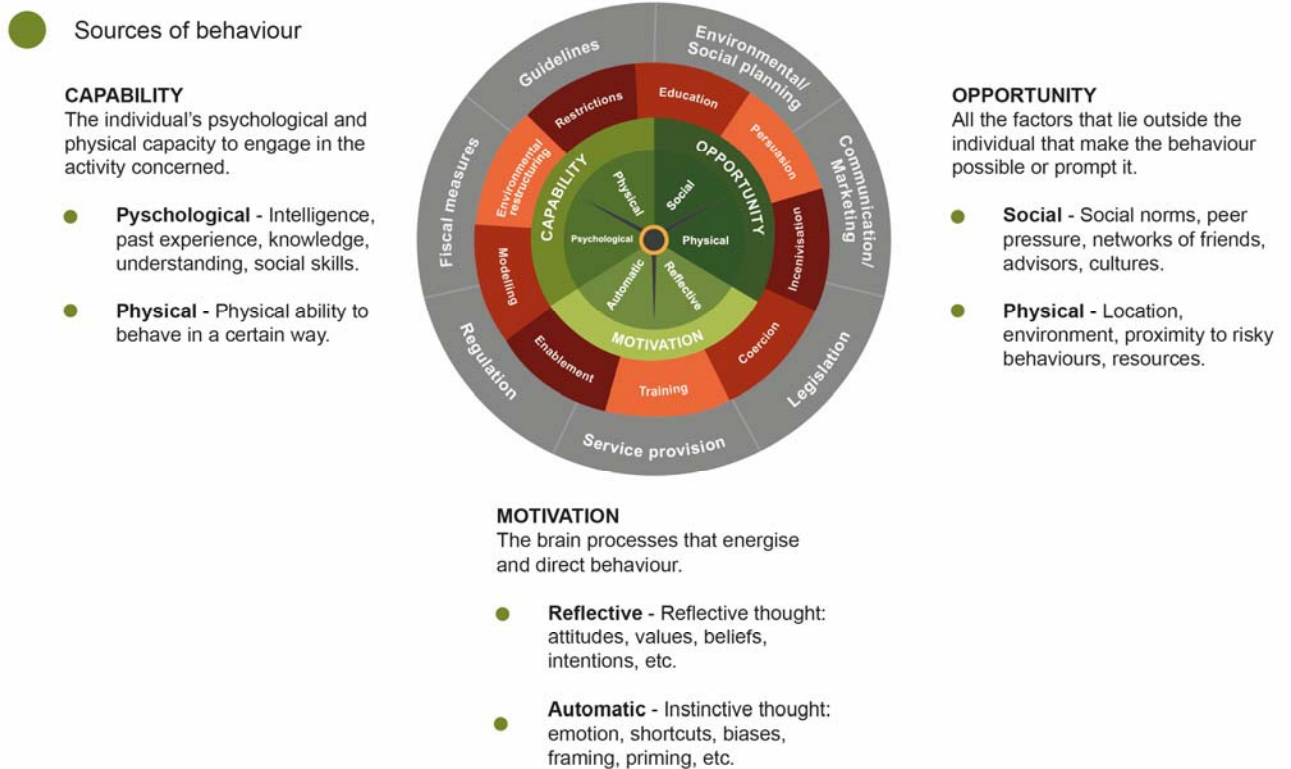


Figure 3: Capability, opportunity and motivation³

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.

³ Adapted from Michie, S, van Stralen, M and West, R 2011, 'The behaviour change wheel: A new method for characterising and designing behaviour change interventions', *Implementation Science* 6:42, available at www.implementationscience.com/content/6/1/42.

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: emotion; shortcuts; biases; framing; and priming.

3.2 Interventions

For each of the factors of behaviour, the behaviour change wheel identifies the most effective potential intervention types. Each is detailed in Figure 4 and in the following paragraphs.



Figure 4: Intervention types⁴

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.

⁴ Adapted from Michie, S, van Stralen, M and West, R 2011, 'The behaviour change wheel: A new method for characterising and designing behaviour change interventions', *Implementation Science* 6:42, available at www.implementationscience.com/content/6/1/42.

4. Qualitative research

4.1 Objectives

Qualitative research was carried out with organisations affected 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 land managers (including local and state government organisations) and community and environment groups were to:

- explore perceived awareness, understanding and behaviours of both the community and trade and industry, in relation to illegal dumping
- explore the impacts of illegal dumping on these organisations
- understand the measures being taken by the authorities and interest groups to monitor and reduce illegal dumping in their jurisdictions.

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

- explore awareness and understanding of illegal dumping among trade and industry
- explore perceptions of the acceptability of illegal dumping among trade and industry
- explore awareness and understanding among businesses of ways to legally dispose of waste
- explore willingness of businesses to ensure waste is disposed of legally
- understand the behaviours among businesses and the waste industry, in relation to legal waste disposal and illegal dumping.

4.2 Methodology

A total of 44 depth interviews were carried out either over the telephone or face-to-face⁵. Businesses were incentivised to take part in the research (in the form of a cash incentive), to encourage participation and thank them for their time.

Government stakeholders

The 19 government stakeholders represented in this research include local and state government stakeholders; regional illegal dumping (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 metropolitan 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 respondents 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 community and environmental groups sampled included charities, and recycling and waste disposal groups from across NSW.

Trade and industry respondents

The five peak bodies interviewed represented the waste, building, and construction industries.

⁵ See Table 1 in Section 2 for a full breakdown of interviews across each audience.

The owners or managers of 10 businesses in the waste collection, treatment and disposal industry were interviewed from across NSW. The businesses varied in size from sole traders to up to 50 employees; half were based in Sydney and half in regional NSW.

The interviews with Arabic speakers provided deeper insight into this particular cultural group, which has been compared with the feedback from other businesses. Much of the feedback from Arabic speaking business owners aligned with the responses from other (non-Arabic speaking) business owners, the findings have therefore been incorporated with the findings of the wider audience of business owners and managers. Where there was additional or different feedback from the Arabic speakers, this has been presented in highlighted text boxes throughout the findings.

4.3 Findings

4.3.1 Perceptions of the extent and nature of illegal dumping

Respondents differed in their views about the extent and nature of illegal dumping. This depended primarily on their role and exposure to the problem. In general, those for whom illegal dumping formed a core part of their role or impacted on their assets saw it as a more pressing issue than those for whom it formed only a minor component or was not closely related to their role at all. As such, it was more common for local government and community/environment group respondents to view illegal dumping as a major problem than trade and industry respondents.

'It's a severe problem. We have so many service requests and complaints about it each year.' – Government stakeholder

'[Illegal dumping is] not significant...it's always been there...the more you look, the more you find.' – Industry association participant

| Group | Perceptions |
|------------------------------------|---|
| Government stakeholders | The perspectives of government stakeholders varied depending on the prevalence of illegal dumping in their jurisdiction. For some local government stakeholders, illegal dumping was seen as rampant, while for others it was viewed as an insignificant issue in comparison to other elements of their role based on a low number of incidents. Those involved with RID squads tended to see illegal dumping as a prominent matter given their constant exposure to it. |
| Community and environmental groups | Community and environment group respondents generally viewed illegal dumping as prevalent. Charities in particular found they were dedicating significant resources and effort to dealing with the impacts of illegally dumped waste at their bins and shops. |
| Trade and industry respondents | Although viewed as a significant issue by many, especially the dumping of hazardous waste such as asbestos, it was viewed as a small minority of individuals and businesses who were dumping illegally, and not widespread. |

4.3.2 Extent of illegal dumping over time

The general perception was that illegal dumping had become more prevalent in recent years. This view was particularly common among those for whom illegal dumping formed a significant part of their role.

The general perception was that illegal dumping had become more prevalent in recent years.

‘Criminal illegal dumping has got to have increased by 500 per cent in the last 10–20 year window.’ – Community/environment group participant

‘The amount of crap on the ground around waste transfer stations and tips is substantially higher than it used to be.’ – Community/environment group participant

Generally, however, this perception was not based in hard evidence. In addition, some were not convinced there had been an increase over time.

4.3.3 Types of waste illegally dumped

The types of waste typically seen as being dumped included:

- construction and demolition
- household, including mattresses, carpet and bulky items
- green waste and mulch
- cars and car parts, including tyres
- cooking oil’ and
- hazardous waste such as asbestos and fibro.

4.4 The impacts

The impacts of illegal dumping fell into one of the following three categories:

- cost and effort impacts
- environmental impacts, and
- visual and social impacts.

4.4.1 Cost and effort impacts

The cost and effort associated with dealing with and preventing illegal dumping were commonly viewed as the most significant impacts.

The cost and effort associated with dealing with and preventing illegal dumping were commonly viewed as the most significant impacts of illegal dumping.

‘The scale in terms of cost is quite astronomical.’ – Community/environment group participant

This was particularly the case for government stakeholders, given their knowledge of the figures spent by councils in addressing illegal dumping. Costs were associated with removing illegally dumped waste, surveillance and investigating incidents. As well as the staff and equipment costs, these tasks also took staff away from other important aspects of their role. Further, illegal dumping was noted as subtracting revenue for legitimate landfills and waste contractors that would otherwise have been generated had the waste been disposed of legally.

‘I am sure the large, reputable companies would gain more revenue if these cowboys weren’t...disposing of it illegally at farms and things like that...The legitimate players would see an increase in volumes and revenues.’ – Industry association participant

Asbestos removal costs

The greatest cost impact mentioned by local government stakeholders was that of disposing of asbestos. In addition to the extra staffing and time required to seal and dispose of it appropriately, asbestos removal also often involved the expense of specialist contractors.

The stress associated with the process of dealing with such hazardous waste was also noted as an impact; for example, dealing with individual funding applications for each incident; long waiting periods to receive the funding; and ongoing complaints from the community while waiting for the material to be removed.

Costs to charities

The costs incurred by charities included the requirement for additional resources, including truck operators to collect the material, and staff to sort it and isolate genuine donations from waste. The total cost of illegal dumping to their organisation was cited by one charity as being upwards of a million dollars annually.

4.4.2 Visual and social impacts

The visual impact of waste in public areas was universally seen as one of the main negative impacts of illegal dumping.

The visual impact of waste in public areas was universally seen as one of the main negative impacts of illegal dumping. This was seen as a precursor to a range of social impacts:

- additional illegal dumping through creating social norms. This was a particular concern for charities, who thought that waste dumped outside charity shops or bins led others to think it is acceptable for them to do the same
- reduced community morale, and social stigma
- reduced house prices
- reduced tourism, such as discouraging visitors to national parks where illegal dumping had occurred
- damage to the reputation of councils and land managers if seen as being unable to effectively deal with illegally dumped waste
- health and safety risks for the community and for those charged with cleaning it up, especially if waste was hazardous or contained sharp materials.

'I imagine how it would feel if one of my kids was hurt because they walked into something sharp on the nature strip.' – Industry participant (Arabic speaker)

A number of industry respondents noted that their industry being associated with illegal dumping – in cases when the public are made aware of incidents – could potentially damage the reputations of all players within the industry, including their own. This was seen as particularly concerning for waste contractors, some of whom felt the general public may automatically assume they were responsible upon seeing illegally dumped waste.

'It's a black eye to the building industry.' – Industry participant

'It's all aesthetic. It can bring an area down in its quality and aesthetics.' – Government stakeholder

'The aesthetic appeal of the area...people tend to not look after an area if there is a large amount of consistent illegal dumping.' – Government stakeholder

'Rubbish breeds rubbish.' – Government stakeholder

4.4.3 Environmental impacts

Although environmental impacts were described by some respondents, there was generally less concern about these impacts than about cost and effort. In the experiences of those interviewed, illegal dumping in particularly environmentally sensitive areas, such as rivers, was fairly uncommon.

There was less concern about the environmental impacts of illegal dumping than about the financial cost.

There was concern for the environmental impacts of incidents where hazardous materials were involved. Local government stakeholders noted that priority was given to potentially hazardous materials in terms of removing illegal dumping. The environmental impacts were perceived as:

- damage to the ecosystem, such as: water pollution; risk of noxious weeds spreading; and contamination from liquid waste
- degradation of plant life, and
- harm to wildlife.

4.5 Where and when?

The outskirts of cities or towns were thought to be among the most common 'hotspots' for illegal dumping.

Illegal dumping was seen to occur in a wide range of locations depending on each participant's personal experience. Generally, however, it was thought to be most prevalent in locations which lack visibility, for example areas of low traffic (vehicle or foot) or lighting. The outskirts of cities or towns were thought to be among the most common 'hotspots'. These areas included bushland, and access points to national parks, as well as on private land beyond sight of public roads.

In addition, several publicly visible areas were identified where illegal dumping was thought to take place regularly. These included:

- around apartment complexes
- on the street in front of houses, and
- around charity donation bins and in front of stores.

Whilst higher population density (such as in the Sydney metropolitan area) was thought to generally result in a greater number of incidents, some saw illegal dumping as a greater problem in regional and remote areas given the higher prevalence of quiet, secluded places.

4.6 Who?

4.6.1 An undefined minority

Many respondents did not feel qualified to confidently comment on who was responsible for illegal dumping. This was particularly the case for industry respondents, who generally lacked direct exposure to illegal dumping incidents as part of their work. Government stakeholders typically had some form of data or anecdotal evidence, but even so, these respondents were limited to speculation.

The general view was that perpetrators formed a small minority of the population.

Although a range of characteristics were attributed to illegal dumpers, the general view was that perpetrators formed a small minority of the population, rather than the majority.

‘A very small proportion of recalcitrant people...a very small number, in the hundreds, across NSW.’ – Industry association participant

All respondents were of the opinion that both householders and businesses were responsible, but there was uncertainty about which of these groups was accountable for a greater proportion of illegal dumping activity.

Opinions were divided regarding whether certain demographics were more commonly involved in illegal dumping than others. Many were of the opinion that those of a lower socioeconomic status, and immigrants from certain parts of the world, were more likely to be responsible for illegal dumping. These included countries where attitudes and customs surrounding the dumping of waste vary to those of Australia.

‘You shouldn’t generalise I suppose, but I would say that it is probably low SES people.’ – Government stakeholder

‘Single mothers on the dole.’ – Industry participant

‘Shonky, probably illegal immigrants or something.’ – Industry participant

However some believed that illegal dumpers could be found in any part of the population, and could not be characterised by certain demographics.

‘Everybody, everybody. There is no discrimination between races, commercial, industrial, old or young...there is no one particular person.’ – Government stakeholder

4.6.2 Householders

Both tenants and house owners were thought to be responsible for illegal dumping. Tenants were generally seen as being responsible for the majority of illegal dumping of household items such as mattresses, furniture and other bulky items.

Both tenants and house owners were thought to be responsible for illegal dumping.

‘It is mainly household furniture items, when tenants move out that is when they are more likely to not want to take the material with them when they vacate a property.’ – Government stakeholder

House owners, on the other hand, were viewed as being most likely to dump green waste and waste from renovating.

Local government respondents were fairly confident in their assessment of which types of householders were responsible for dumping, as identifying information sometimes occurred in dumped waste. In comparison, businesses involved in illegal dumping were generally thought to be more diligent in avoiding leaving such a trail.

4.6.3 Businesses

As with illegal dumping by householders, it was generally believed that illegal dumping within industry was carried out by the minority, rather than the majority. There was a general perception that the businesses that were illegally dumping were in most cases small operators. Some also thought that certain ethnic groups were more likely to do it than others. The consensus among industry respondents was that illegal dumping was not widespread within their industry as a whole, and none of the respondents associated with or knew of anyone in their industry who were involved in illegal dumping.

There was a general perception that small operators were more likely to illegally dump waste than larger businesses.

4.7 Capability factors influencing illegal dumping behaviour

In the COM-B behaviour 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.⁶

The research suggested that a person's capability to dispose of their waste legally, or to dump it illegally, was almost entirely psychological as opposed to physical⁷, and appeared to be 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 their locations, opening hours and types of waste accepted
- knowledge of how and where to dump illegally without incurring consequences, and
- awareness that dumping waste is illegal.

4.7.1 Awareness of waste collection and disposal processes

It was widely thought that a contributing factor in illegal dumping was low awareness of how waste ought to be disposed of. This included knowledge of council services provided, such as the types of services offered, frequency, dates and potential costs involved. It was thought that the public were not necessarily aware that free on-demand collection services were offered in many areas. In addition, many felt that collection dates (i.e. council clean-up days) were not well enough publicised to make the public sufficiently aware of them. This was thought to be a particular problem for tenants who may not receive information from their landlords regarding services.

It was widely thought that a contributing factor in illegal dumping was low awareness of correct disposal methods disposed of.

'Even with the strategies the Council has got, I don't think there's a good community awareness of what is there for them.' – Community and environment group participant

⁶ Michie, S, van Stralen, M and West, R 2011, 'The behaviour change wheel: A new method for characterising and designing behaviour change interventions', *Implementation Science* 6:42, available at www.implementationscience.com/content/6/1/42.

⁷ Physical barriers to disposing of waste appropriately were identified, but relate to opportunity and motivation rather than capability, and so are discussed in later sections.

4.7.2 Awareness of disposal sites and opening hours

Awareness of disposal site opening hours was also identified as impacting illegal dumpers' capability to dispose of waste responsibly. While, generally, this was not thought to be a key contributing factor, some local government stakeholders noted that waste had been left outside disposal sites after opening hours, thought to be due to a lack of awareness of the opening hours for that site.

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

There was a view that some perpetrators were aware of specific locations at which to illegally dump without any chance of being caught, having built up experience in doing so. It was felt that, within industry, rogue traders used this technique together with not leaving behind a paper trail, to maximise their chances of getting away with illegal dumping.

4.7.4 Awareness that dumping waste is illegal

It was thought that people who dumped illegally generally do understand that it is illegal.

It was thought that people who dumped illegally generally do understand that it is illegal.

'Those people that are routinely carrying out illegal dumping know exactly what they're doing. They're doing it all very secretly.' – Government stakeholder

'I have no doubt they all know it's illegal, but there is a large amount of people out there with no conscience who think it's alright to do it.' – Government stakeholder

'They all know. They already know that it is illegal to even chuck chewing gum out of the car!' – Industry participant (Arabic speaker)

While this included the knowledge that penalties were applicable, it was thought that perpetrators may have been less knowledgeable about the extent of the fines and the range of other penalties.

Respondents generally contended that a small proportion of the population was not aware of the illegal status of dumping waste. Some felt this was particularly the case amongst migrants from countries where waste disposal practices and social norms differed. An example used was that some individuals may genuinely believe it is correct to leave waste on the kerbside. This belief could be reinforced if every time after doing so their waste had been taken away (even if was part of an illegal dumping clean-up).

4.8 Opportunity factors influencing illegal dumping behaviour

In the COM-B behaviour 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.⁸

⁸ Michie, S, van Stralen, M and West, R 2011, 'The behaviour change wheel: A new method for characterising and designing behaviour change interventions', *Implementation Science* 6:42, available at www.implementationscience.com/content/6/1/42.

4.8.1 Social opportunity

The social opportunity to dispose of waste legally, or to dump it illegally, was thought to be impacted by social norms and culture, both at a general population level and specifically in relation to extended and close social groups. This included the waste disposal activities of others, both householders and businesses.

Social norms and culture

Social norms and culture were seen as playing an important role in both householders' and businesses' behaviour in relation to waste disposal.

There was a general view that one of the greatest deterrents to illegal dumping was for it to be seen as socially unacceptable. It was thought that in communities where it was not visible and not prevalent, the mere fact that this was the case was in itself a deterrent. This was seen as being particularly relevant to businesses, which do not want to be seen as a business that dumps illegally or is associated with illegal dumping, and see illegal dumping as an unethical business practice.

Social norms and culture were seen as playing an important role in both householders' and businesses' behaviour in relation to waste disposal.

The impact of social norms on dumping behaviour was seen to work in the opposite direction as well: in communities where illegal dumping was more prevalent, the existence of dumping as a social norm was seen to encourage others to dump (whether perpetrators are aware of its illegality or not).

'Once someone dumps in an area other people seem to think it's alright to do the same thing.' – Government stakeholder

'It's got a bit of a flow on effect, if people see someone dumping stuff there, they'll think that's fine, it's allowed to be done, they'll do it again.' – Government stakeholder

Although industry respondents were confident that they did not know of anyone in their industry who dumped waste illegally, there was a perception among some local government stakeholders that illegal dumping was the social norm in certain industries. It was thought that this was used to justify illegal dumping among businesses.

'I talk to builders and contractors and they just say "everybody does it, so what's the problem?"' – Government stakeholder

Social norms in other parts of the world

Those who perceived immigrants to Australia as being more likely to dump waste illegally thought this was the case because customs and systems regarding waste disposal differed in other countries. As such, people from these countries who migrate to Australia were thought to continue to deal with waste in the same way as they had before.

'They don't know how to deal with stuff in the right way.' – Community/environment groups participant

This was seen as a greater issue when migrants lived together in the same communities, or where they dominated an industry in a particular area. It was believed that this fostered the social norm of dumping waste and made it less likely that they would be exposed to correct waste disposal practices.

Not wanting to 'dob'

Some respondents believed a culture exists whereby members of the public are unwilling to report illegal dumpers. This was attributed to the fear of being exposed, and an unwillingness to involve the authorities (not wanting to be a 'dobber'). Several local government stakeholders used this to account for a large proportion of illegal dumping going unreported.

'It's frustrating. The reluctance in the community to provide details that they know for fear of retribution...people aren't reluctant to report it, they are reluctant to be involved so visibly.' – Government stakeholder

'The public are not inclined to dob people in because it is such a small town and everyone knows each other, or they'll report that there is dumping but not who did it even if they know.' – Government stakeholder

Reputation of businesses

For industry respondents, reputation was often front-of-mind when discussing reasons for not illegally dumping.

For industry respondents, their reputation in the industry and among customers was often front-of-mind when discussing reasons for not illegally dumping. This was second only to illegal dumping being perceived as an unethical business practice. Respondents felt being exposed as an illegal dumper could potentially damage a business by reducing the willingness of customers to deal with them and be associated with illegal dumping.

'The businesses wouldn't do it, they've got too much to lose if they got caught... once people got the word about you doing that, people wouldn't want to have anything to do with you, you'd get a bad name in the industry.' – Industry participant

'There's a general distaste for it in the [building and construction] industry.' – Government stakeholder

This issue also arose regarding the types of businesses respondents felt were contributing the most to the illegal dumping problem. It was generally felt that larger businesses were less likely to be involved in illegal dumping as they essentially had more to lose in terms of reputation.

'Smaller one-man outfits are more likely to shirk the system rather than the big players as it's a risk to reputation for the big ones.' – Government stakeholder

'Good site management and well managed waste handling makes good business sense, reduces our costs and enhances our relations with our customers, as our reputation is at risk.' – Industry participant

4.8.2 Physical opportunity

One's physical opportunity to dispose of waste legally, or illegally dump it, appeared to be impacted by:

- the availability of council services, such as a disposal facility, bin collection and council clean-ups
- their opportunity to transport waste to a disposal facility, including:
 - the availability of such a facility

- the opening hours of the facility
- the time and travel distance required to travel there
- access to an appropriate vehicle, and
- capacity to finance the travel
- physical barriers to dumping such as fencing.

Access to a legal waste disposal site

Respondents speculated that those dumping illegally would argue that waste disposal facilities were too few and far between. It was thought that illegal dumpers would not devote the time and effort to get to appropriate waste disposal facilities. Instead, respondents contended, illegal dumpers would simply locate an area nearby in which they could dump their waste.

There was some appreciation of the difficulties that long distances and limited opening hours posed for businesses.

'Tips' opening hours are between 7:00 am to 1:00 pm. And this makes it harder especially when the distance to travel is too far....This makes it very inconvenient. I observe and hear out the complaints about the distance.'

'The trip to the waste depot causes most of the problems considering the locations of the waste depots. Seven Hills, Eastern Creek, Wetherill Park, they all are out of reach, a far distance.'

There was also a view that waste facility operators can make it difficult to dispose of waste legally, for example, by not accepting the delivered waste for what were perceived as minor reasons.

Lack of means to transport waste

In addition to this, respondents identified that some illegal dumpers did not have the physical means to transport their waste to a waste disposal site. For example, they may not have a vehicle or driver's licence, or have access to a friend or relative who did, or the financial resources to obtain transport or a contractor. In this case, respondents believed illegal dumpers may argue that they had no option but to dispose of their waste at a location within their travel distance.

Lack of financial resources

Lack of financial resources was identified as a factor for both householders and businesses. In the case of householders, this would include people without sufficient disposable income to pay for waste disposal.

'You don't factor it into your costs of doing something, it's a shock... people renovating their homes don't factor it in to their budget and then just can't physically afford it... it's either not put carpets down or blinds up [to pay for the tip] or dump it in the bush.' – Government stakeholder

For businesses involved in illegal dumping, it was thought that it was so difficult to make a profit that they felt they had no choice other than to illegally dump in order to run a viable operation. The decision to illegally dump for such businesses was generally seen as one made midway through a job due to spiralling costs in order to return a job to profitability. Tip fees as well as the costs associated with time and fuel getting to the waste disposal facility were considered to be factors.

4.9 Motivation factors influencing illegal dumping behaviour

Motivation refers to the brain processes that energise and direct behaviour. Both *automatic motivations* and *reflective motivations* influence an individual's 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.

4.9.1 Automatic motivations

The automatic motivations involved in choosing to dispose legally, or illegally dump, could include the habits and routines in relation to waste disposal, as well as the emotions associated with or experienced during illegal dumping, such as the feeling of fear and anxiety at being caught.

Habitual dumping

There was a view that some illegal dumpers did so habitually to the point where they repeatedly dump at the same location/s without actively contemplating the illegality or impacts of their actions. This was thought to be the case among householders who dumped at charity shops and bins. For example, members of the public had been donating unwanted items for so long in certain charity bins, when the bins were removed, they continued to leave their items there.

4.9.2 Reflective motivations

The reflective motivations thought to play a role in people's decisions around waste disposal and dumping included:

- understanding of issues around waste disposal, including:
 - that disposing of waste beyond licensed facilities is illegal
 - that costs are associated with waste disposal and approximately what these costs are, and
 - the impacts of illegal dumping
- motivation to benefit financially from illegal dumping, by:
 - saving money for themselves
 - maximising profits as part of a business model, or
 - avoiding financial hardship
- perception of the risks and consequences of being caught for illegal dumping
- how waste disposal practices fit within their values set, and how they reflect upon themselves, and
- attitudes, in particular towards:
 - the government
 - the environment
 - their community, and
 - illegal dumping generally.

Understanding of issues around leaving waste with charities

It was thought that the community believes it is free for charities to dispose of waste.

Respondents from charity organisations thought there was an attitude in the community that it is the role of charities to sort through anything donated to see if any of it is worth reusing or recycling, and therefore anything could be discarded there. They also believed that there was a perception in the community that charities could dispose of waste for free, therefore making it acceptable to offload waste to charities.

'There's a perception it's all free to charity, and that's what the perception is, so we can just wear the cost.' – Charity participant

4.9.3 Impacts of dumping

Government and community/environment group stakeholders thought that the public was generally unaware of the impacts of illegal dumping. In particular, they felt there was a lack of understanding of the costs for government involved in removing illegally dumped waste, and the environmental impacts of illegally dumping hazardous waste.

Stakeholders thought that the public was generally unaware of the impacts of illegal dumping.

4.9.4 Cost factors

Cost was seen as one of the main drivers in dictating waste disposal behaviour.

'It's money and access. Which comes down to money and money. Don't overcomplicate it, the motivation is money.' – Industry association participant

There was a view that the community was generally uneducated about waste and therefore did not understand that waste disposal had a cost associated with it. Householders in particular were thought to be unaware of the government levy driving tipping fees, instead feeling that the tips were trying to increase their profits by 'ripping them off', leading to dumping illegally out of spite.

'There are quite a few people who turn up at the weigh-bridge, are quoted the price for disposal, and say "I'm not paying that" and just turn around and go away...there is a high potential that they will do something with that waste rather than dispose of it correctly...you wonder whether they drive it around to the nearest quiet bushy road and dispose of it illegally.' – Industry association participant

'I think people go to the tip, realise how much it's going to cost them to dump that and turn around and leave and then they'll make a decision to dump it later.' – Community/environment group participant

'Everyone wants to get rid of their waste and the government wants everyone to get rid of their waste, but they want to charge them a fortune to do it, well no one's going to pay that. The tip fees are extraordinary.' – Government stakeholder

'Someone will think "I'm not paying \$56. I'm gonna stuff it in the bushes."' – Industry association participant

Cost was seen as one of the main drivers in dictating waste disposal behaviour. Many were of the opinion that tipping costs had increased substantially over recent years. They used this as support for what they saw as an increase in the prevalence of illegal dumping.

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'You could see it happen... 20 years ago you could dump for free and you never saw illegal dumping, and as the tips started to charge and they got more expensive, and now you've got these waste transfer stations which cost you an arm and a leg, people will factor that reality into their motivation costs.' – Government stakeholder

'As soon as the council started putting higher costs on taking those items to the tip, that's when it became a problem...and I think if those costs weren't there we wouldn't have the dumping problem.' – Community/environment group participant

'There has been a significant change since dumping [legally] has been chargeable. I remember when tips were free and you didn't have this level of dumping. And 99 per cent of people were happy to take it [to the tip].' – Government stakeholder

There was a view, particularly among those in government and community and environment groups, which illegal dumping activity had increased in recent years. In general, this was attributed mainly to levy increases. Some felt that, because profit margins on jobs were so tight, those in industry were having to make savings wherever they could, and for some this may have meant reducing or eliminating waste disposal costs. There was mention amongst industry respondents that this may have been particularly common amongst younger business owners, who realised only after setting up in the industry the level of impact waste disposal fees would have on their profitability.

'Certainly, if you have a truck load of waste that is going to cost you 500 bucks to get rid of, 500 dollars is a lot of money if you can tip it on the side of the road... it's a big saving.' – Industry participant

In the case of householders, on the other hand, it might have meant householders getting as far as the tip before realising the costs and turning around, potentially dumping their waste elsewhere.

'The average person just can't physically afford that [tip fees]. So the only way they can think of disposing of that is to find the nearest clothing bin, or wait until night time and find a charity shop and just push it all out the front.' – Community/environment group participant

Indeed, industry respondents typically bemoaned tip fees and their perceived exponential increases in recent years. Some were particularly upset at the lack of alternative options for disposal which meant they were forced to pay these costs or else dispose illegally.

There appeared to be a difference in cost impact between industry respondents in the metropolitan area and those elsewhere. Those in regional areas tended to have fewer options in terms of waste disposal facilities, meaning they were essentially locked into paying a certain price. As such, they also tended to increase their costs to the customer when tip fees increased.

'But I hate putting my prices up, I don't want to be a greedy person, I just want to make a living and look after my family and when I see a little business that I know is struggling, and I have to put their costs up by upping my fees, I hate doing that.' – Industry participant

Businesses in Sydney felt unable to increase prices when tip fees increased due to the competitive nature of their industry.

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Businesses in the Sydney metropolitan area felt that they were unable to increase their prices when tip fees increased due to the extremely competitive nature of their industry in Sydney, meaning they would simply lose work if they did so.

'The tip prices go up every year, but the small fish, the people like us, we can't really put our prices up every year or we just won't get the jobs.' – Industry participant

In addition, there was angst expressed by some industry respondents at those responsible for illegal dumping, as they felt this activity drove down the prices they themselves could charge because without having to account for tip fees, illegal dumpers could come in at a much lower price. This was particularly felt to be the case amongst building and construction/demolition companies, especially smaller businesses.

'My little company turns over \$400–500,000 a year, and my tip fees are \$150,000...if I could find somewhere cheaper to dump, then I could make more profit, more money for me.' – Industry participant

Cost would impact which facilities were used by industry to dispose of waste. They would generally use the cheapest facility wherever possible, unless the travel distance involved in doing so would end up costing more in transport and time costs.

For this reason, it appeared to be common amongst industry respondents, particularly if they dealt with waste on a regular basis, to have knowledge of all of the tips near their areas of common activity and the associated costs of disposing there. This included the varying costs at each facility for different types of waste. For example, it may have been cheaper for them to dispose of certain waste at one facility, and other types of waste at another facility.

For some (in and around Sydney), this extended to them travelling up to several hours at a time in order to get to the tip with the lowest fee, provided this was so low as to negate the additional travel and time costs incurred.

'You do have to drive a long way if you want to save yourself money...if you drive an hour it can save you \$400 in tipping a load.' – Industry participant

Sorting waste

Industry respondents were driven by cost saving. They generally sorted their waste wherever possible for the purpose of isolating recyclable materials and being charged tip fees at the rates for each material, rather than that for mixed waste.

'If we have multiple loads, the advantage to separating them is cost.' – Industry participant

Sorting waste was either conducted on site as they went or taken to another location beforehand, such as their warehouse. The priority here was typically to ensure that there were full loads of each type before taking them to be disposed of. Some industry respondents mentioned that they would also stockpile waste with the intention of utilising council clean-ups to avoid tip fees altogether.

'You can go out to the tip and pay to dispose of that stuff, but it's just too expensive. I'd be working for nothing if I paid to get rid of that stuff. So we stockpile it and when they have the free council thing every six months, we do a big run of stuff to there.' – Industry participant

Where waste was not sorted before being tipped, this was often for one of two reasons, both of which meant there was no perceived cost benefit in doing so:

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- waste contractors on regular pick up routes may have assumed that the waste they collected was the same each time and did not contain recyclables
- a lack of recycling facilities.

‘The geography of where you live will determine how much you can recycle.’ – Industry participant

Illegal dumping as a business model

It was generally felt that certain business owners ran their businesses in a way that involved illegal dumping for the purpose of saving money. This was typically seen as often being part of a business model, whereby the contractor might pre-plan to illegally dump their waste prior to taking on a job (thereby potentially undercutting their competitors).

While those in industry tended not to see illegal dumping as particularly widespread in their respective industries, there was belief amongst industry associations in particular that the model of illegally dumping for profitability was quite common (particularly in cases where a job had been underquoted).

‘Maybe they’ve underquoted and they decide to make it profitable again by disposing of the waste illegally.’ – Industry association participant

There was a view that some contractors may try to profit by disposing of asbestos for clients by charging the full tip fees for its removal but instead dumping it illegally.

‘They’re making a quick buck.’ – Government stakeholder

Illegally dumping asbestos to save money

Industry respondents thought asbestos was the most commonly illegally dumped material, due to the cost of disposing of it legally.

Industry respondents thought that asbestos was the most commonly illegally dumped material due primarily to the higher costs associated with disposing of asbestos than other materials. For them, this higher cost was partially the actual tip fees, but also the additional time requirement of having to ensure that the material was adequately safe for disposal or, alternatively, the cost of having to hire an asbestos removal specialist to carry this out for them. Although this cost would usually be passed on to their client, especially if the client had agreed to this in their contract, there was some mention that including asbestos removal costs in a quote may lead to lost business. Hence, of all the waste disposal costs they had to incur, that of asbestos could prove the most troublesome, and also the most beneficial to eliminate by illegally disposing of it.

‘Asbestos materials are regularly found dumped on public or vacant land, almost certainly due to the high cost of appropriately disposing of this material.’ – Community/environment group (additional material submitted)

4.9.5 Consequences

The perception was that those who understood dumping waste to be illegal also knew there would be consequences, but that they may not know specifically what those consequences are. There was a view that illegal dumpers were not adequately deterred, both because dumpers did not feel as though they would be caught; and because the punishments are not enough to act as a deterrent.

Being caught and punished

Respondents generally felt that being caught needed to be made more of a reality for illegal dumpers. They believed that not enough illegal dumpers were caught and punished (and that when they were, it was not publicised enough) so as to give them the impression there was a risk of them having the same happen to them.

The consensus was that being caught needed to be made more of a reality for illegal dumpers.

'They've got no fear because nothing ever happens to them...Very infrequently does anyone get prosecuted. Or they get a slap over the wrist and that's it.' – Industry association participant

'How many people can you think of who have been prosecuted or had any significant penalty applied? Not many.' – Industry association participant

Industry respondents however did tend to identify the legal consequences of illegally dumping as a key reason for their not doing so. Many felt that if they were to engage in illegal dumping, they would almost certainly be caught and punished (particularly in regional areas where 'everyone knows everyone' and would notice). The impact of this on the reputation of their business could cause irreparable damage to their ability to conduct their business.

'We all talk about buying a paddock out of town somewhere and getting our own bulldozer...but we'd never do it! Someone would see it...and would wonder what was going on and would report it and the Council would come and you'd be gone.' – Industry participant

It was thought that for apartment residents, fear of being caught was often not an adequate deterrent to illegally dumping in front of their building due to the anonymity offered by large apartment blocks. Unless witnessed and reported with identifying details, it was thought that there was little chance of identifying who was responsible.

Fines

It was commonly believed that the penalties for dumping illegally were too lenient. The size of fines applicable for illegal dumpers were thought to be too small and not discouraging illegal dumping amongst industry, because businesses were seen to potentially profit from dumping beyond the size of the fine.

It was commonly believed that the penalties for dumping illegally were too lenient.

'[The fine system is a] toothless tiger.' – Community/environment group participant

However, it was felt that the low likelihood of being caught led to repeat offending:

'They got away the first time...so they might be lucky the next time round.' –

4.9.6 Values

Illegal dumping was universally frowned upon by respondents. It was seen as something done by people lacking values and respect, and something that would bring shame to them if they were caught engaging in it. 'Doing the right thing', i.e. disposing of waste responsibly,

was viewed as reflecting positively on oneself. While this was seen as especially important for businesses, for whom maintaining a positive reputation was key, it was also seen to apply to householders.

Illegal dumping was frowned upon and seen as being done by people who lack respect.

'We don't treat someone's rubbish as rubbish. We respect their rubbish, therefore we respect our business by disposing of it in the correct manner.' – Industry participant

'They've just got no respect. That's basically what it comes down to. No respect for themselves, no respect for their own environment, no respect for the person whose rubbish they're doing the job for, no respect to anything really. Not for their business either.' – Industry participant

'We don't want to do anything illegal, we want to do the right thing' – Industry participant

'Firstly complying with the regulations of the company I work with, secondly WH&S regulations, especially when dealing with asbestos, thirdly having a clear conscience.' – Industry participant

4.9.7 Attitudes

Some felt that those within industry responsible for illegal dumping had different attitudes to the mainstream. It was thought that profitability was more important than anything else to those to dump and therefore they had the attitude that if something was good for business they did not care about anything else.

Beyond this, there was mention from several respondents of their belief that many Australians were not sufficiently aware of the extent of the financial, environmental and social impacts of illegal dumping. Hence they felt that attitudes reflecting a lack of concern about illegal dumping were often based on ignorance.

Attitudes regarding one's community

Many respondents felt that a major contributor to illegal dumping was a lack of concern for the local community. Such individuals, they believed, had no sense of social responsibility or pride in their area. Hence they felt no need to keep it beautiful, protect the environment or be mindful of how others around them would be impacted.

Many thought that a major contributor to illegal dumping was a lack of concern for the local community.

Respondents generally felt that this issue was more prevalent amongst tenants and transient people than owners. Tenants were seen as being less invested, both financially and emotionally, in their area and therefore having less motivation to maintain it.

Some respondents were also of the belief that the sense of community in regional and remote areas, in general, tended to be stronger than that in metropolitan and semi-rural areas, and therefore illegal dumping was more common in metropolitan and semi-rural areas.

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'People who believe that the government owe them a living and wouldn't even consider paying to get rid of their waste.' – Government stakeholder

'What is consistent is that people don't give a s***. Doesn't matter what we do or don't put on the front of our bins, if they'll dump they'll dump.' – Community/environment group participant

'The outright shonky dodgy guy who doesn't care.' – Community/environment group participant

'The view that it's not really wrong and it will get cleaned up and you're getting the government to pay to do it, but you're paying your taxes and so on, so it's like accessing your own money that you've already paid in taxes.' – Government stakeholder

'It's your mindset – you put it in the car and you bring it down and you think "well it's not my problem anymore, it's their problem, I've unloaded it, they can deal with it.'" – Community/environment group participant

Convenience of illegal dumping

A lack of willingness to expend the time and energy required to dispose of waste correctly was viewed as another factor in people's decisions to dump illegally. The view was that they were being driven by their desire to dispose of their waste in the quickest and most efficient way.

'Some people are just lazy, if they had everything, they still wouldn't do it. Even too lazy to put their wheelie bins out the front for the council to collect.' – Industry participant

'I think it's just easier for people [to illegally dump it]...if I can just put it out the front then that's great I don't have to do anything. I don't have to load it into my car, or if I don't have a car, find someone with a car and get it to the place.' – Government stakeholder

Those in industry, for example, could illegally dump their waste near a job site, or on their way to the next job site, rather than travel out of their way to a disposal facility.

'Builders or contractors for builders, it is a way of...getting rid of the waste quickly so they can move on to another job.' – Government stakeholder

4.10 Interventions

A range of potential strategies and activities to prevent illegal dumping were discussed, some of which were already being implemented by respondents. The strategies discussed fall into the following intervention functions (as identified in the COM-B framework):

- environmental restructuring
- coercion
- education, and
- regulation.

4.10.1 Environmental restructuring

Environmental restructuring would involve physically changing the environment to prevent opportunities for illegal dumping, or improve opportunities to dispose of waste legally.

Suggested interventions included:

- installing lighting around dumping hotspots and creating physical barriers, such as fencing, and
- changing charity and clothing bin placement.

Installing lighting around dumping hotspots and creating physical barriers

Lighting was mentioned by some respondents as a potential deterrent to illegal dumpers, to remove the opportunity to dump without people seeing.

Increased lighting and fencing was seen as effective, but not a viable solution.

Another method that had been trialled by local councils was to create physical boundaries around hotspots to prevent them from being accessed by would-be illegal dumpers. Some were of the opinion that this had some use. Others, however, did not see this as a viable solution. This was for two reasons:

- they felt it was not possible to entirely fence off an area and prevent people getting onto the land, and
- they believed that instead of encouraging the right behaviour amongst the targets, this could lead to the relocation of illegal dumping to somewhere else.

Charity and clothing bins

Charities recommended that bins be placed in locations where they are:

- highly visible, so that in order to use those bins, individuals would need to be comfortable being seen doing so, and
- well-kept, with bins being emptied frequently and any dumps removed, to avoid the issue of, once items have already been dumped around the bins, others joining in by dumping further waste.

‘Council’s answer is to push the bins out to the furthest corners to get rid of the eyesore, but I think what has to happen is...dedicate particular areas where all different charities’ bins are put side-by-side together, and actually starting to look at how we can actually become better at housing the bins, so they’re not on back roads in the middle of nowhere.’ – Community/environment group participant

4.10.2 Enablement

Suggestions for enhancing the ability of individuals to comply with the law related to:

- improving the services offered, including:
 - greater access to disposal facilities
 - more council clean-ups, and
 - technological solutions
- reducing the cost impact generally, and of asbestos disposal in particular.

Greater access to disposal facilities

The availability of tips and transfer stations was generally seen as adequate.

The availability of tips and transfer stations was generally seen as adequate and therefore not a major contributor to illegal dumping; however, some suggestions were made as to how to increase compliance amongst those for whom it appeared to be an issue. These included:

- placing charity bins in locations of high traffic or population, for example:
 - shopping centres, to prevent people from illegally dumping around them for fear of being seen, and
 - apartment complexes, to avoid residents having to transport unwanted items to charity bins/shops elsewhere
- increasing provisions for apartment complexes generally, especially those seen to be overrepresented in illegal dumping.

‘Certainly there could be options for organising pick up days and things like that for whole unit blocks where tenants get the opportunity to dispose of materials lawfully.’
– Government stakeholder

Technological solutions

In addition to an illegal dumping hotline, it was also suggested that a smartphone/tablet application (app) would help overcome the negative associations with reporting illegal dumping. Both of these would allow individuals to report illegally dumped waste by stating its location and, in the case of the app, providing photo documentation and being able to do so from anywhere (i.e. at the time of seeing the dumped waste).

Creation of an app was suggested, for reporting dumping and providing information about legal disposal.

In addition, it was suggested that the app could include features such as a calendar showing waste disposal-related dates including council clean-ups or reduced or free tipping days, and information regarding how to dispose of certain types of waste or helpful tips.

Note: Since this research was commissioned the EPA has developed a responsive web tool which can be accessed by smartphones to report illegal dumping (add link).

Reducing the cost of legal disposal

Many respondents were of the opinion that reducing the cost of legal waste disposal would help reduce illegal dumping. Respondents were not unanimous in this view; there was also the view that the behaviour of the very small proportion of people and industries with a propensity to dump illegally would not be influenced by a reduction in the cost of legal disposal.

Many respondents thought reducing the cost of legal waste disposal would help reduce illegal dumping.

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'Putting a levy on something as fundamental as waste tends to make people angry and make them think how they'll get around it, even law abiding people...Is paying for it and making a profit out of waste beneficial, or do the hidden costs of people trying to get around that levy outweigh the benefits?' – Government stakeholder

'They need to revisit the council tip fees. I think the general resident must be gobsmacked that it costs a couple of hundred dollars a tonne to dump your usual stuff. That's a massive thing.' – Government stakeholder

'If you could keep the price down of disposing things to landfill, the [illegal] dumping would diminish accordingly.' – Industry participant

'If the government didn't put all that money on top of it [tip fees], there would probably be less illegal dumping.' – Industry participant

'Make tips free.' – Community/environment group participant

Some felt smaller businesses should be charged at a lower rate than larger businesses, due to the greater impact of disposal costs on small businesses (and therefore greater propensity to dump waste illegally – as perceived by respondents). Some also thought lower costs should apply to householders than to businesses.

Reducing the cost of asbestos disposal

Many felt that the cost of legally disposing of asbestos in particular should be reduced. Some suggested the removal of the fee for disposing of asbestos altogether, the rationale being that the savings for government in clean-up costs would be greater than the loss incurred by not charging for its disposal.

Many felt that the cost of legally disposing of asbestos in particular should be reduced.

'The cost of even one tonne of asbestos that's dumped illegally, the money you save or don't give to state government for a tonne, pales into insignificance compared to the thousands of dollars it costs government to clean it up. And there's all the public health issues, all those sort of issues, I don't know if they've been balanced off correctly.' – Industry association participant

Suggestions included free or reduced cost asbestos removal for a limited time, in order to encourage individuals to dispose of any asbestos they may have been holding on to, or free disposal of small quantities, in order to reduce the burden on householders.

One council had trialed free asbestos disposal, with some success. In addition to allowing for stocked asbestos to be disposed of responsibly, this exercise was thought to have built community awareness and understanding of issues around asbestos disposal.

'Asbestos...because it's such a problem...and the risks are so real, it should be dumped for nothing. Then you'd have no dumping of asbestos in the forests at all...if you removed the cost of disposal no one would do it.' – Industry participant

4.10.3 Coercion

Interventions designed to create the expectation of punishment or cost were discussed, including:

- increasing the perceived chance of being caught (including publicising enforcement and exposing offenders)
- empowering and expanding regional illegal dumping (RID) squads.

Each of these is detailed in the sections below.

Increasing the perceived chance of being caught

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

- increased prominence of surveillance devices, including security cameras and regular patrols in areas of high illegal dumping frequency
- greater promotion of successful prosecutions, for example in local newspapers and other media.

There was a view that increasing surveillance was not feasible given the sheer number of locations where surveillance would potentially be required.

Increasing surveillance was thought to be impractical given the number of locations where it would be required.

‘You can’t have cameras in every single corner.’ – Community/environment group participant

‘It’s like pinning a tail on a donkey with such a large area. You can’t just pick a street and wait for illegal dumping.’ – Government stakeholder

Local government stakeholders also described difficulties experienced in attempting to identify and prosecute illegal dumpers, as in most cases illegally dumped material had not contained identifying details. In addition:

- police were often unwilling to spend time prosecuting for what they saw as a relatively trivial crime, and
- the costs involved in doing so were too high given the lack of potential severity of the punishment received by the illegal dumper were they to be found guilty.

‘Even if they are on camera, the council and the police don’t really want to get involved.’ – Community/environment group participant

‘There’s generally belief that you’ll get away with it, especially in rural areas. There’s not a high expectation of getting caught. Everyone understands how busy the police are, and property crime in the police force is very low on their agenda, they have people getting murdered to investigate.’ – Government stakeholder

‘For those people who won’t change their behaviour, once they get a fine, that will change their behaviour’ – Government stakeholder

Even if there was not a real increased chance of being caught, it needed to appear to be a genuine risk.

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It was thought that even if there was not a real increased chance of being caught, it needed to *appear* to be a genuine risk (for example by writing to all companies in the waste industry telling them about prosecutions made). Respondents generally felt that a greater level of exposure was required of:

- successful prosecutions, and
- enforcement operations.

A number of potential pathways for this exposure were identified. These included:

- mention or advertisement in local newspapers, and
- word of mouth within relevant industries (potentially instigated by RID squads).

'It has to make A Current Affair...to really get any attention' – Government stakeholder

'A few well publicised prosecutions, not only of individuals, but of some of the big players doing it on a grand scale.' – Government stakeholder

However, local government stakeholders felt that local newspapers were relatively uninterested in stories about illegal dumping investigations and prosecutions.

In relation to successful prosecutions, respondents believed it was important to 'name and shame' guilty businesses. This was due to the perceived value placed upon reputation by businesses, and the potential effect of showing reputational damage to be a realistic prospect if engaging in illegal dumping. It was thought that this naming and shaming could take the form of a publicly available database of businesses that had been convicted of illegal dumping, the idea being that customers would check this in the process of choosing a contractor.

'The reputation...it'd be the end of your life, you'd lose everything' – Industry participant

It was also thought that this naming and shaming would increase word of mouth within industries about the potential consequences of illegally dumping.

'There's nothing better than a public hanging for keeping people on the straight and narrow, you know. Exposing and publicly vilifying a dumper is never a bad thing.' – Government stakeholder

'Look what they do now with the health industry. They name and shame restaurants where they might go in and find a couple of cockroaches...every one of these people who gets caught with that sort of stuff [illegally dumping] should be named in the paper.' – Industry participant

Increasing the severity of available punishments

Many thought illegal dumpers were comfortable dumping even if they believed there was a chance of being caught, due to the perceived low severity of punishments. This was thought to be the case for industry in particular. Some believed industry illegal dumpers were often better off dumping illegally even if they were to be caught every now and then, because the fine would likely be less than the amount saved in not having to pay for disposal. Respondents generally advocated increasing the penalties for illegal dumping so that this would no longer be the case.

Punishments for illegal dumping were thought to be too small to be a true deterrent.

'The financial penalty should be enormous, so that there's no incentive. [At the moment] it doesn't pay to do the right thing.' – Industry association participant

There was some mention of a need for harsher punishments other than fines. This included longer jail sentences.

Note: The *Protection of the Environment Operations Act 1997* (POEO Act) provides a tiered range of on-the-spot fines and penalties for illegal dumping offences.

Tiers of offence

Tier 3 – Offences where an on-the-spot fine is issued

- \$7500 on-the-spot fine for individuals, if issued by the EPA (\$4000 otherwise)
- \$15,000 on-the-spot fine for corporations, if issued by the EPA (\$8000 otherwise)

Tier 2 – Strict liability waste dumping offences

- Maximum penalty for an individual: \$250,000 and, in the case of a continuing offence, a further daily penalty of \$60,000
- Maximum penalty for a corporation: \$1,000,000 and in the case of a continuing offence, a further daily penalty of \$120,000

Tier 1 – Wilful or negligent disposal of waste causing actual or likely harm to the environment

- Maximum penalty for an individual: \$1,000,000 and/or seven year prison sentence for wilful offences; \$500,000 and/or four year prison sentence for negligent offences
- Maximum penalty for a corporation: \$5,000,000 for wilful offences; \$2,000,000 for negligent offences

Empowering and expanding RID squads

There was a view among some industry association respondents that:

- RID squads were being underutilized, given the high level of effectiveness they perceived them to offer. It was thought that RID squads could have their remit expanded into areas beyond Council land, including state land, and
- the perpetrators of illegal dumping were in a minority; therefore the targeted investigations conducted by RID squads were of greater value than strategies targeting the mainstream (of which the vast majority was already opposed to illegal dumping).

Note: Since this report was commissioned two additional RID squads have been created – see current list of RID squads.

4.10.4 Education

There was a view that public education campaigns could help change the culture of illegal dumping in certain communities.

'There needs to be more education out there to get people to respect their rubbish, and more respect among whoever's getting rid of it to do it properly and do the right thing, it's a re-education thing.' – Industry participant

There was a view that public education campaigns could help change the culture of illegal dumping.

Suggested education strategies included:

- raising awareness of the impacts of illegal dumping, including cost, environmental and social
- educating the public that illegal dumping is socially unacceptable
- promoting the correct waste disposal methods
- raising awareness of the council services available for waste disposal, and
- raising awareness of what is and is not acceptable to leave at charity bins.

The kinds of education strategies mentioned by respondents included the following.

- public education campaigns. The 'Dumping is Dumb' campaign was repeatedly cited as an example of a good campaign. This was said to have enhanced awareness of the social unacceptability of illegally dumping, particularly around large apartment buildings. Anti-littering campaigns such as 'Don't be a Tosser' and 'Keep Australia Beautiful' were also perceived as effective demonstrations of how to positively change attitudes and behaviour in the area of littering, which could be drawn upon for illegal dumping.

'[There's] not enough in-your-face stuff about illegal dumping...If it's in your face and it's there regularly, you'll become more and more conscious of it, but the ways government in general do their advertising is very haphazard and it's a blitz and then it's gone and everyone forgets about it.' – Government stakeholder

Some respondents believed a combined approach to education campaigns (i.e. a statewide approach) would be beneficial and more efficient as it could ensure consistency and reduce costs.

There was also a view that community education campaigns were not sufficiently targeted to be effective, given that a small minority were responsible for illegal dumping. Targeted enforcement methods were thought to be more useful.

'You could spend hundreds of millions of dollars either trying to educate or clean up, whereas you could spend two million well targeted and put some people in jail and problem solved, or the bulk of it anyway.' – Industry association participant

- information targeting social housing tenants and those living in apartment complexes (perceived to be among the major household contributors), potentially distributed via Housing NSW and strata managers
- educating children at a young age in order to ingrain the desired message, by working with schools to educate school children. Many saw educating future generations to dispose of waste responsibly an important long-term strategy

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- face to face contact with residents, such as door knocking, in areas identified as hot-spots
- providing information in a range of appropriate languages in order to adequately address the minority groups perceived to be disproportionately responsible for illegal dumping
- educating householders to be vigilant. Given that irresponsible contractors were seen to be a major part of the illegal dumping problem, many respondents believed that householders could assist in reducing the prevalence by ensuring that they were using responsible contractors. This would mean educating residents not to pay contractors by 'cash in hand'; to request receipts for the work; and to question where the waste will be taken to ensure it is being disposed of legally.

'Illegal dumping is not yet considered as a serious crime by many in the industry' – Industry participant

'There is a high percentage of people doing illegal things in regards to dumping because they don't understand the system or read the laws and regulations, and to them dumping and littering waste is acceptable. They need to be educated.' – Industry participant

'People are aware that it is illegal but in general they are not aware enough of the specific regulations and levies, but they are not doing it because they are financially troubled, they do it because they can get away with it.' – Industry participant

4.10.5 Regulation

Respondents revealed a desire for greater regulation of waste producers, applicable to both householders and businesses.

Respondents revealed a desire for greater regulation of waste producers, applicable to both householders and businesses.

It was suggested that the burden of proof move from regulators to waste producers. While currently, regulators require evidence of a business's wrongdoing in order to prosecute, the alternative would be to require businesses to produce records showing they are using responsible contractors for waste disposal. It was suggested that penalties apply to businesses unable to produce records. Trials of such systems were cited, which were thought to have resulted in a significant number of businesses switching to become responsible waste disposers in a short period of time in order to avoid penalties.

Also suggested was the possibility of extending this system to householders, whereby they could be penalised if they were not able to produce evidence that waste had been taken to a legitimate disposal facility as part of their contract with the contractor. This was based on the belief that householders were often ignorant that they were using contractors who dumped waste illegally.

'It's too hard to do something on someone without burden of proof.' – Community/environment group participant

'We had a lady who had her entire home demolished. She didn't bother to ask them for licences or business identity details. We ended up finding her details out on a back road.' – Government stakeholder

This was seen as especially relevant for asbestos given the more severe impacts of it being dumped. There were suggestions that asbestos be required to be registered when disposed of, and for such waste disposers to have to retain receipts of its responsible disposal in the case of being audited.

Another suggestion, from local government respondents, was for RID squads to randomly audit building sites. In this way, RID squads could ensure that building businesses are disposing of waste legally and potentially penalise them otherwise.

4.11 The perceived role of the EPA

Government stakeholders and community and environment groups commonly felt that a greater level of support from the EPA in helping councils to combat illegal dumping would be of benefit. Suggestions for such support included:

- a collaborative approach including greater clarity around roles and responsibilities
- sharing best practice and providing educational resources, and
- financial support for asbestos removal and other resources.

4.11.1 A collaborative approach including greater clarity around roles and responsibilities

Respondents commonly felt a need for a 'whole of industry' approach. They saw this as potentially involving the EPA, councils, charities and industry working together.

In particular, respondents were supportive of a greater level of communication between the relevant parties, so as to mandate specific roles and responsibilities in relation to dealing with illegal dumping and allow greater sharing of information and innovations.

'There is a confusion of responsibility. Who's responsible for clean-up and maintenance and management? So I think stuff like that needs to be clearly identified.' – Government stakeholder

4.11.2 Sharing best practice and providing educational resources

Government stakeholders commonly felt they lacked awareness of what strategies were effective or ineffective.

'It is daunting to know where to start without guidance.' – Government stakeholder

'I'm certainly not sure what the answer is. I'm sure many councils don't know what the answer is.' – Government stakeholder

'If we knew [what worked], we would be doing it!' – Government stakeholder

Such respondents advocated the EPA providing tools and resources to help them with this, in addition to relaying the successful strategies used by other councils. The following were specifically identified:

- general guidelines for combating illegal dumping
- a template-based resource providing ideas for various strategies. Although not all strategies would work in all areas, councils could simply choose the relevant strategies for their areas. It would also give them a starting point from which to develop their own strategies and encourage more strategic thinking, and
- templates for reporting.

4.11.3 Financial support for asbestos removal and other resources

Some felt there should be a subsidy for councils needing to dispose of asbestos. It was suggested that section 88 of the POEO Act be nulled in the case of councils disposing of illegally dumped asbestos, in recognition of this being a public safety deed.

Other potential resources seen as useful included:

- resources for conducting evaluations of strategies and activities
- campaigns created by the EPA and distributed to be rolled out by councils
- EPA-sponsored rangers or RID squads in more areas for patrolling in lieu of resources held by councils, and
- a central database with data collected from all around the state to increase the EPA's understanding of and therefore response to illegal dumping.

5. Local government survey

This section describes the findings of the survey of local government authorities in NSW.

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 2004, and where possible this survey has been designed to enable findings to be compared with the 2004 findings. Comparisons are made in highlighted text boxes throughout this section.

5.2 Methodology

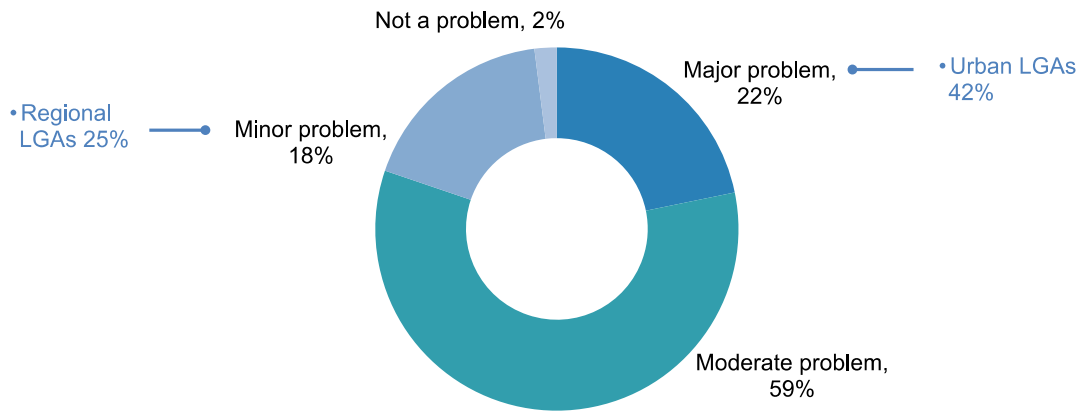
All NSW LGAs were invited to take part in an online survey. The survey was completed by representatives of 63 local governments, a 41 per cent response rate. The survey period was 28 October to 21 November 2013.

5.3 Findings

5.3.1 Nature and extent of illegal dumping in NSW

For most NSW LGAs (81 per cent), illegal dumping represents a moderate to major problem. One fifth of respondents (22 per cent, n=14) saw illegal dumping as a major problem in their council area. Those in urban areas were more likely to find that illegal dumping was a major problem (42 per cent, n=8), and those in regional areas were more likely to find illegal dumping a minor problem (25 per cent, n=16).

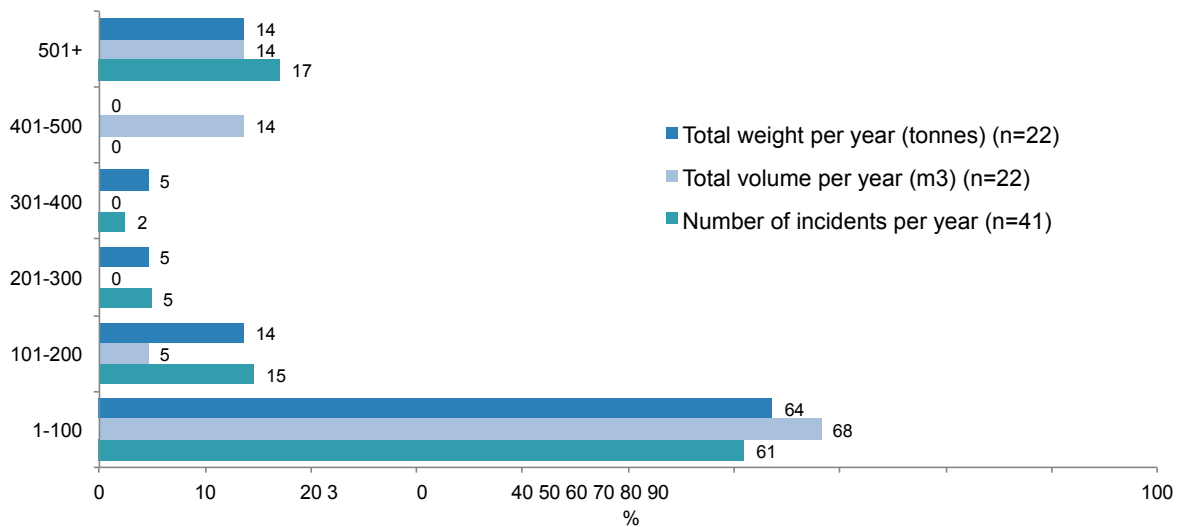
In 2004, a smaller proportion of LGAs indicated that illegal dumping was a major to moderate problem (58 per cent), than in 2013.



Base: n=63, all respondents
 Q4 To what extent is illegal dumping a problem in your council area?

Incidence of illegal dumping

All LGAs were asked about the incidence, weight and volume of the illegal dumping in their area each year. Of those who responded, 61 per cent dealt with 1–100 incidents of illegal dumping each year, 17 per cent dealt with over 500 incidents. Two thirds (64 per cent) dealt with less than 100 tonnes of illegal dumping each year, with 14 per cent dealing with over 500 tonnes.



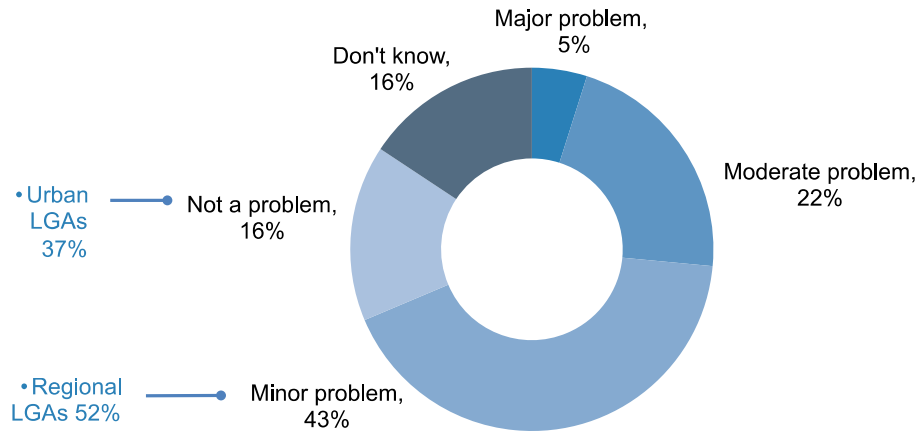
Q17 Please complete the table below, as far as you can, with approximate figures for illegal dumping for your council area per year

Figure 6: Incidence, weight and volume of illegal dumping

Extent of the problem of illegal landfilling

Illegal landfilling was seen as less of a problem than illegal dumping, with 27 per cent finding it a moderate to major problem, and only five per cent indicating it was a major problem in their council area. Whilst urban LGAs were more likely than rural LGAs to consider illegal dumping an issue, urban LGAs were less likely than others to find illegal landfilling problematic, with 37 per cent indicating it is not a problem at all (compared to five per cent of rural LGAs).

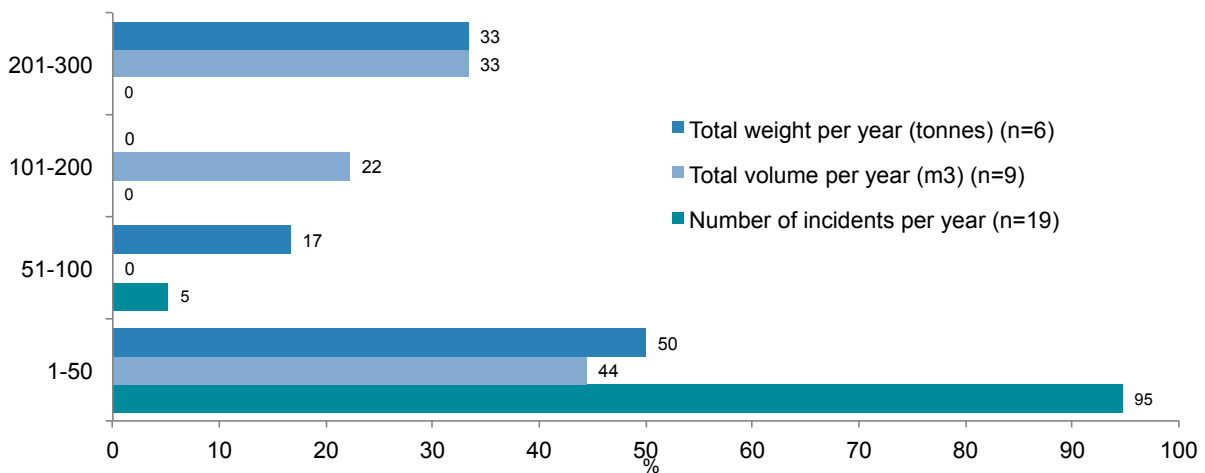
In 2004, one per cent of councils indicated that illegal landfilling was a major problem; a quarter (25 per cent) indicated that it was a moderate problem and 37 per cent a minor problem. The remaining 37 per cent did not see illegal landfilling as a problem at all. The higher proportion of councils indicating in 2013 that illegal landfilling is a minor or moderate problem (as opposed to not being a problem at



Base: n=63, all respondents
Q4 To what extent is illegal landfilling a problem in your council area?

Incidence of illegal landfilling

All LGAs were asked about the incidence, weight and volume of illegal landfilling in their area. Of those who responded, 95 per cent dealt with fewer than 50 incidents of illegal landfilling per year, with only one council dealing with more than 50 incidents.



Q17 Please complete the table below, as far you can, with approximate figures for illegal landfilling for your council area per year

Figure 8: Incidence, weight and volume of illegal landfilling

5.3.2 Type of waste dumped

Household furniture was the most common type of waste dumped, with up to 250 incidents per year (average of 35) in some councils, followed by household rubbish with up to 150 incidents (average of 28). Liquid and hazardous wastes were dumped least often, with an average of two to three times a year in each council area.

The pattern of waste dumped was essentially the same in 2004 and 2013. For example, household waste comprised 44 per cent of incidents in 2004, compared to 47 per cent being household furniture, rubbish and white goods in 2013.

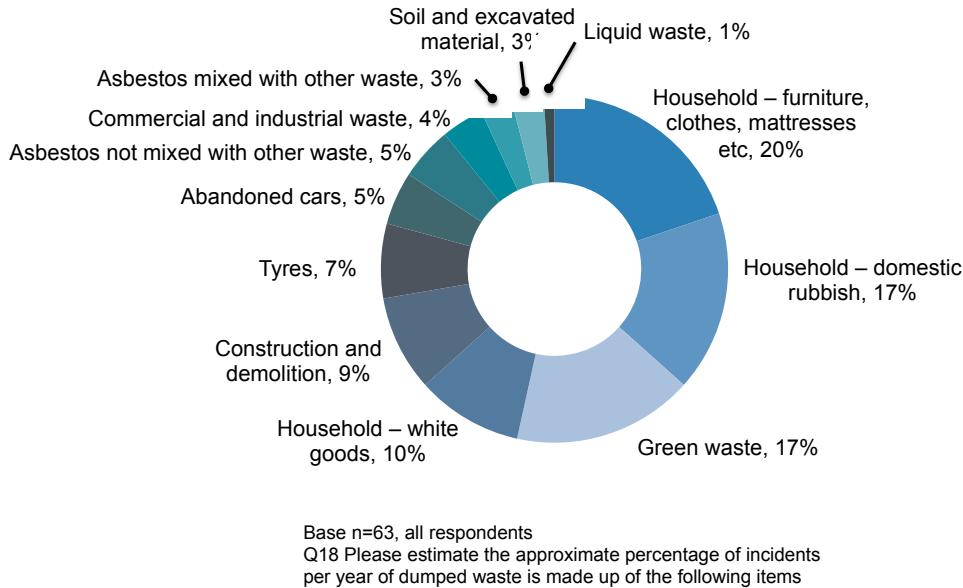


Figure 9: Types of waste dumped

Changes over time

More than half of the responding LGAs had noticed an increase in the illegal dumping of household waste (54 per cent) and asbestos (52 per cent) in the past five years. Many thought levels of dumping of most waste types had stayed the same.

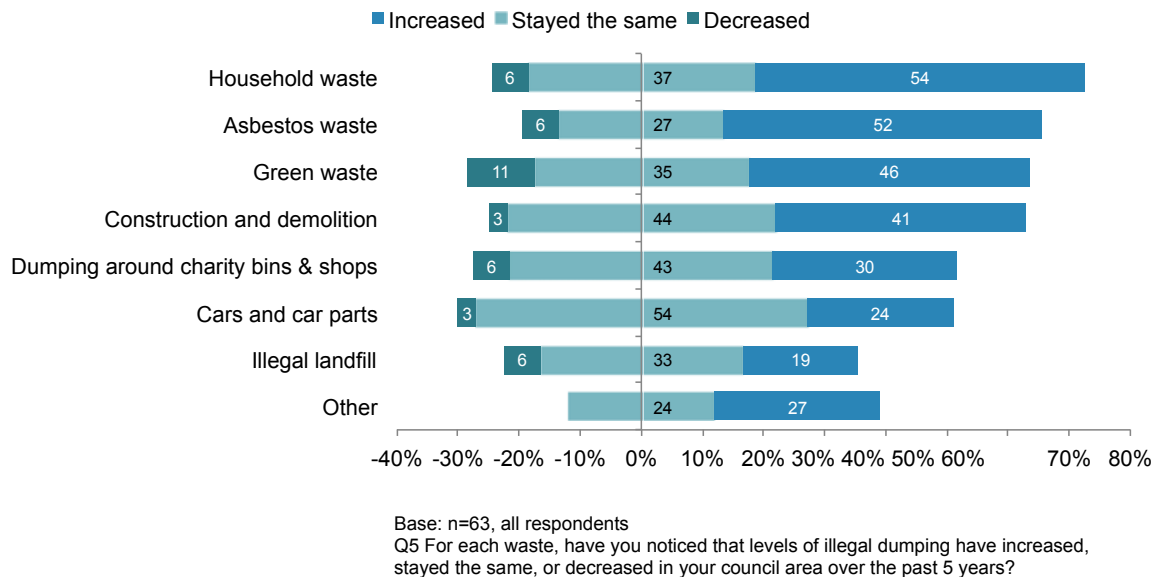
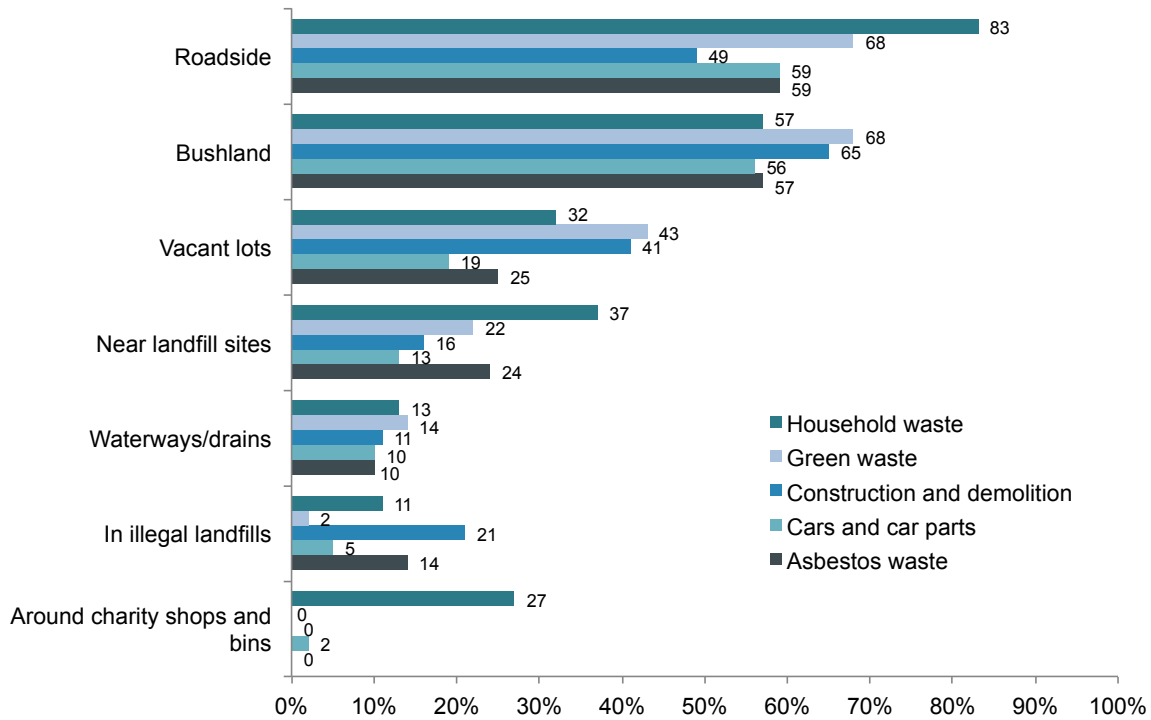


Figure 10: Change in the frequency of dumping

Location of dumping

Bushland, vacant lots and the roadside were thought to be the most common places for illegal dumping to occur. Household waste and car parts were the only waste types identified as being dumped around charity shops and bins (27 per cent and two per cent respectively). Construction and demolition waste as well as asbestos were seen as the most common types of waste to be dumped in illegal landfills (21 per cent and 14 per cent respectively).



Base n=63, all respondents
 Q7 Thinking about illegal dumping in your council area, where is each waste type typically dumped? (multiple response)

Figure 11: Location of illegally dumped waste

The majority of respondents (84 per cent, n=53) indicated that there are illegal dumping ‘hotspots’ in their council area.

Who dumps the waste?

Householders, small businesses and large businesses were all identified as dumping waste illegally. Overall, householders were seen as the most likely to dump almost all types of waste. Householders were seen as most likely to dump household waste (92 per cent), green waste (75 per cent), car parts (73 per cent) and around charity bins (75 per cent). Small businesses were seen to be most likely to dump construction and demolition waste (54 per cent) and asbestos (32 per cent). Large businesses were primarily perceived to dump construction and demolition waste (18 per cent).

There were some significant differences between metro and regional councils:

- Regional LGAs were more likely to indicate that **householders** are most likely to dump **green waste** (86 per cent).
- Urban LGAs were more likely to indicate that **small businesses** are most likely to dump **green waste** (42 per cent).
- Regional LGAs were more likely to indicate that **householders** are most likely to dump **asbestos** (48 per cent).

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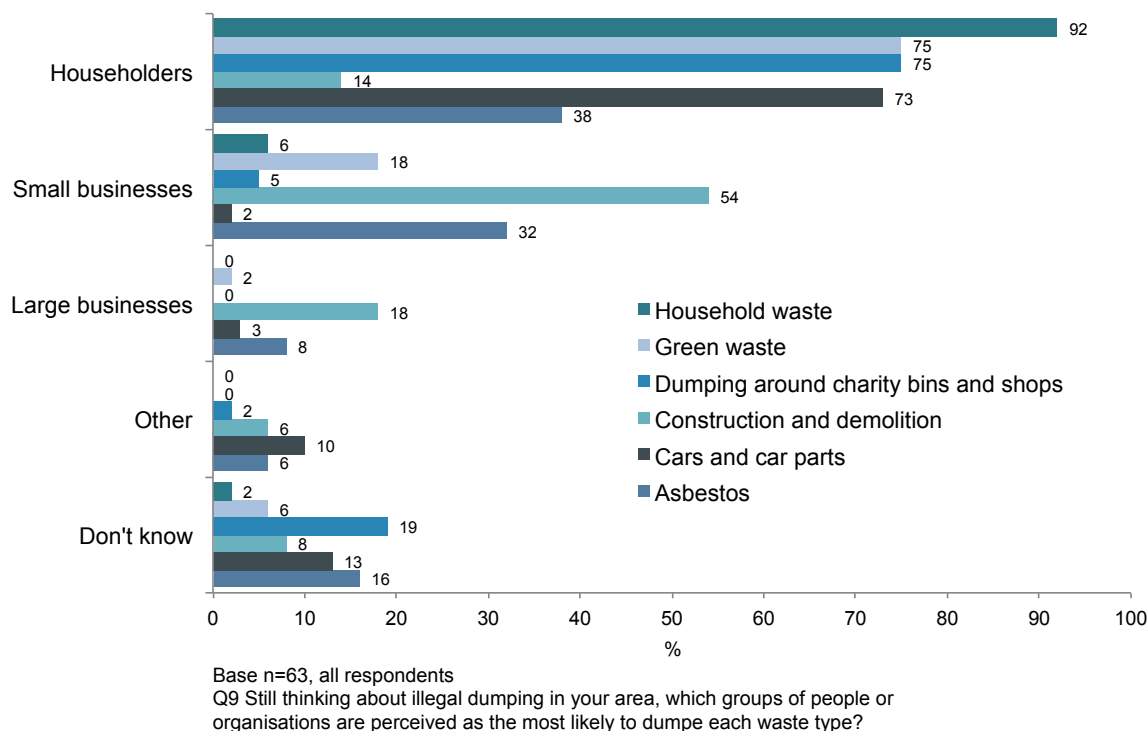


Figure 12: Groups dumping each waste type

Organised illegal dumping networks

Most LGAs surveyed did not know whether activity among illegal dumping networks had increased, decreased or stayed the same over the past five years (65 per cent, n=41). A quarter (24 per cent, n=15) of LGAs thought that activity among these networks had increased, with 10 per cent (n=6) indicating that levels had stayed the same. One respondent (2 per cent) indicated that this activity had decreased.

5.4 Reasons for dumping

LGAs were asked what they thought the reasons were for people dumping waste illegally in their area. The main reasons for dumping illegally, as perceived by LGAs, were cost avoidance and an uncaring attitude and lack of community pride. A full list of perceived reasons is provided in Appendix A.

A lack of community pride was seen at the main reason for the dumping of household waste (73 per cent), and related to this; sites already being used for dumping by others were thought to have an influence (40 per cent).

Cost avoidance was seen as the key reason for dumping of asbestos (78 per cent) and construction and demolition waste (81 per cent). Low awareness of the impacts of dumping was thought to be a key reason for dumping green waste in particular (44 per cent).

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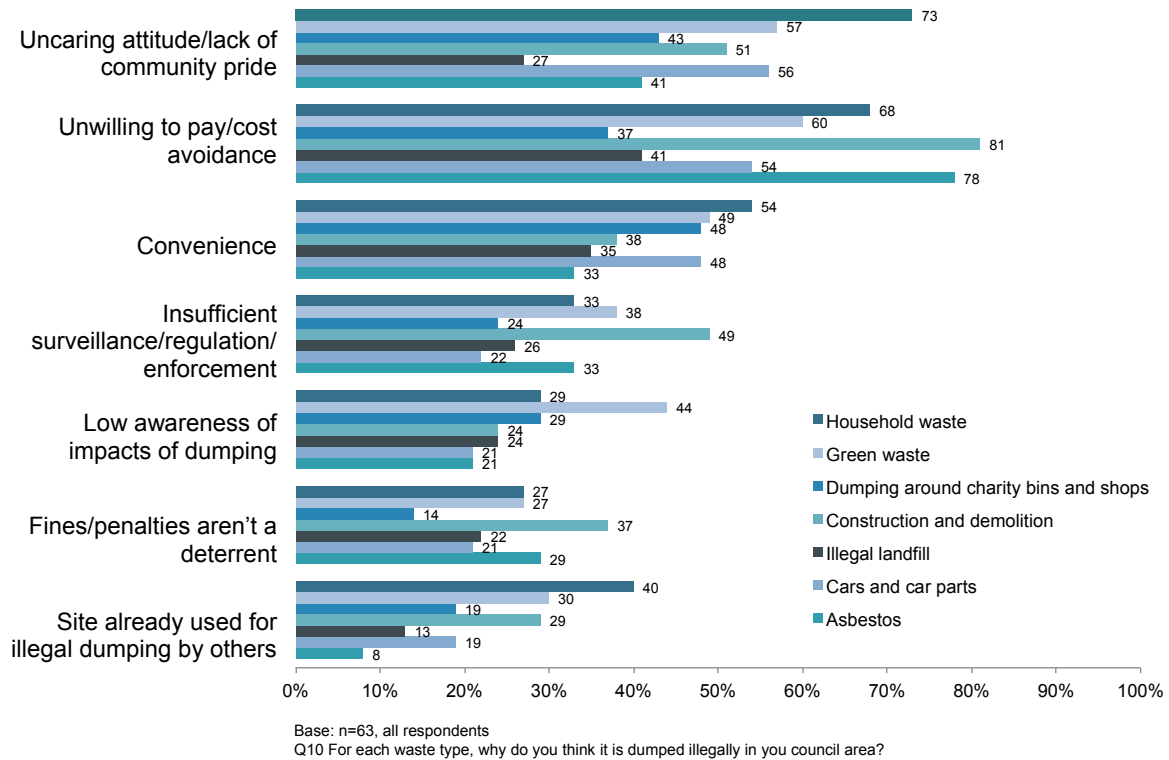


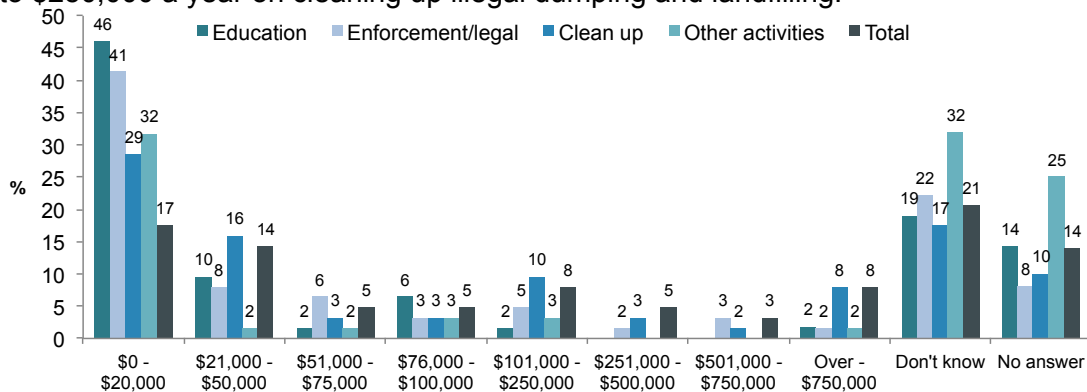
Figure 13: Reasons for dumping waste

5.5 The cost of illegal dumping to LGAs

LGAs were asked how much they spent each year on activities relating to the prevention, monitoring and enforcement of illegal dumping and illegal landfilling. Many councils (77 per cent, n=44) estimated the costs, a small proportion (five per cent, n=3) said their responses were based on council records and a quarter (25 per cent, n=16) said their responses were based on a combination of council records and estimates.

A third (31 per cent) of councils spent up to \$50,000 a year on activities around illegal dumping and landfilling; however, over one in 10 (11 per cent) spent more than half a million dollars a year, with most of these (8 per cent) spending over \$750,000 a year.

Most councils spent up to \$50,000 a year on education about illegal dumping and landfilling (56 per cent), and up to \$75,000 a year on enforcement and legal costs (55 per cent). The highest costs were associated with clean-up, with nearly two thirds of councils spending up to \$250,000 a year on cleaning up illegal dumping and landfilling.

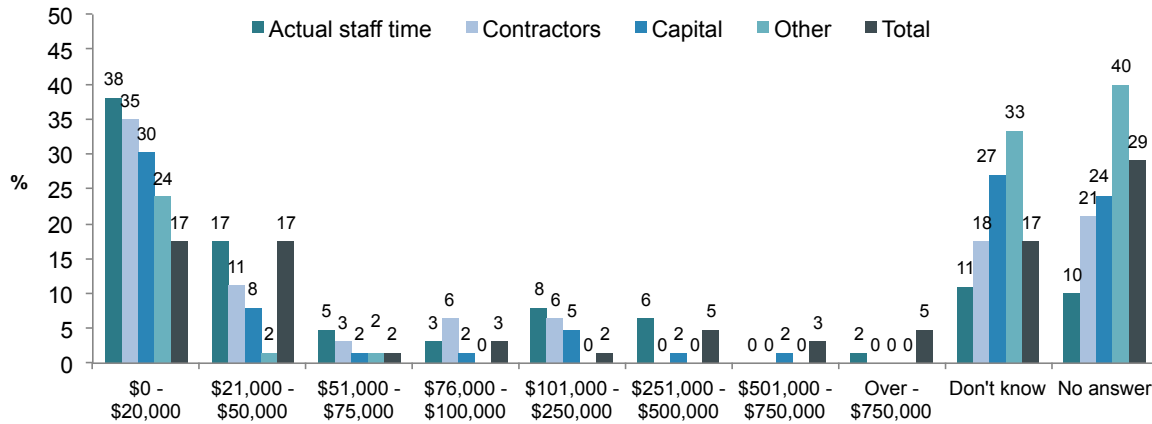


Base: n=63, all respondents
Q11 A Please provide the approximate cost per year to your council from illegal dumping and illegal landfilling, by activity. If the cost per activity is unknown, please just provide the total cost.

Figure 14: Cost of illegal dumping – by activity type

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The types of costs LGAs were facing in relation to illegal dumping and land filling centred on staff time and contractors. Nearly two thirds of councils (61 per cent) found they were spending up to \$250,000 a year on contractors in relation to illegal dumping and land filling.



Base: n=63, all respondents

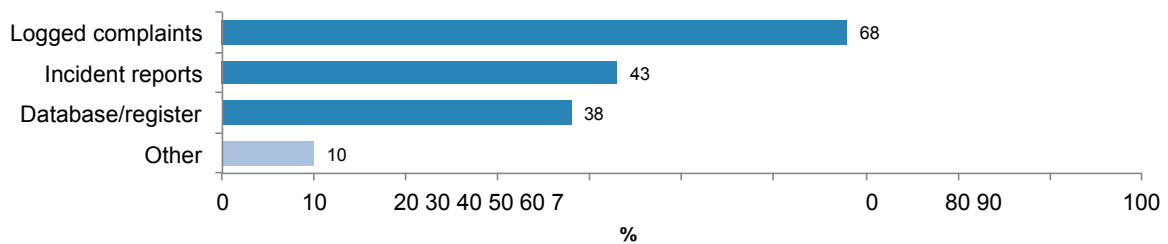
Q11. A. Please provide the approximate cost per year to your council from illegal dumping and illegal landfilling, by cost type. If the cost per cost type is unknown, please just provide the total cost.

Figure 15: Cost of illegal dumping – by cost type

5.6 Monitoring illegal dumping

Most LGAs indicated that they document the incidence of illegal dumping or landfilling in some way (86 per cent, n=54).

The most common documentation was logged complaints (68 per cent). Incident reports (43 per cent) and maintaining databases/registers (38 per cent) were other ways illegal dumping or landfilling was documented.



Base: n=54, respondents who indicated that their council documented incidences of illegal dumping.

Q14. How are incidences of illegal dumping or illegal landfilling documented by your council?

Figure 16: Documentation of illegal dumping

Over two fifths of LGAs (41 per cent, n=26) indicated that the information and data collected about the incidence of illegal dumping or land filling is used by the council, with a further 16 per cent (n=10) indicating that while data is not currently used there are plans to use it in the future. One fifth (21 per cent, n=13) did not use this information or data and eight per cent (n=5) did not know whether it was being used.

Among the LGAs who were using the information and data collected, almost a third indicated that it was being used to inform future strategies to combat illegal dumping (29 per cent).

Other key uses of the data collected included identification of hotspots (13 per cent), cost calculation (11 per cent), and prosecution and fining of offenders (10 per cent).

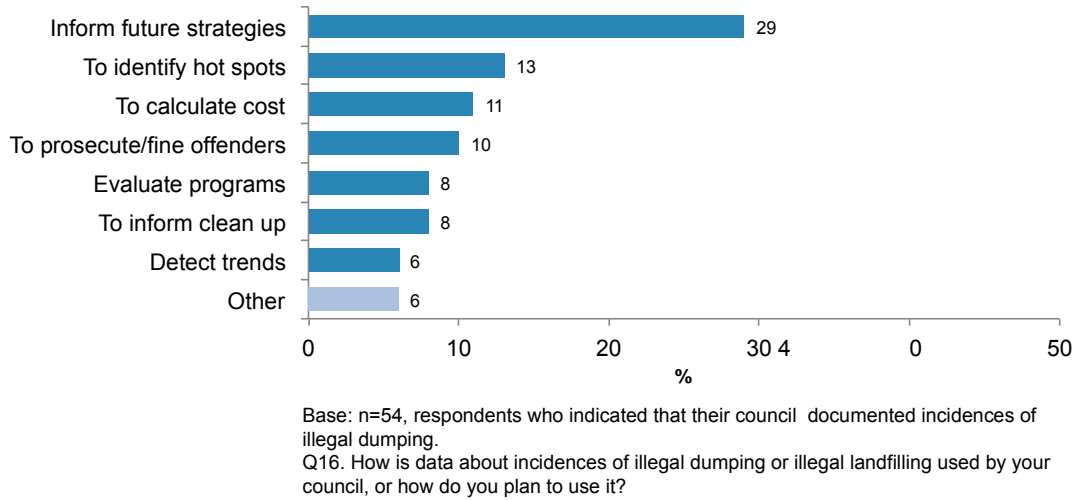


Figure 17: Uses of data collected

5.7 Effective use of funding to combat illegal dumping

LGAs expressed preferences for different types of funding depending on the type of waste dumped:

- Funding for illegal dumping prevention measures was seen as being effective for most waste types (household waste in particular, 67 per cent).
- Funding for the establishment or continued support of a RID squad program was seen as particularly effective for construction and demolition waste (56 per cent), asbestos (48 per cent), and illegal landfill (44 per cent).
- Funding to publish targeted guidance about correct disposal options was seen as particularly effective in reducing dumping around charity bins and shops (49 per cent), construction and demolition waste (48 per cent), green waste (46 per cent) and asbestos (46 per cent).
- Funding to clean up dumped waste was viewed as particularly relevant for asbestos dumping (51 per cent).
- Subsidised collection/disposal was seen as most effective for cars and car parts (43 per cent). Nearly two fifths (38 per cent) thought that this would be effective in reducing asbestos dumping.

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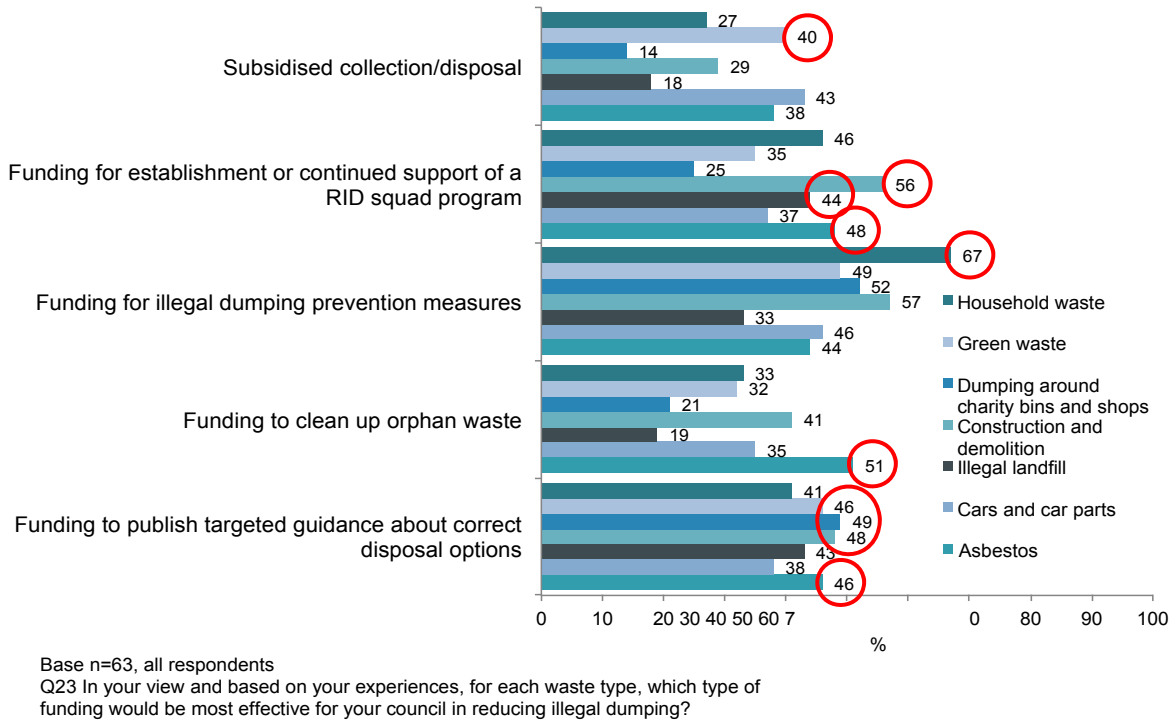


Figure 18: Effective use of funding to combat illegal dumping

5.8 Strategies to prevent illegal dumping

The vast majority of LGAs (94 per cent) had used some kinds of strategies or initiatives to reduce illegal dumping and/or illegal landfilling. Most councils have strategies involving:

- patrolling/surveillance (73 per cent)
- community events (68 per cent)
- community education and awareness raising (68 per cent)
- signage (67 per cent), and/or
- fines/enforcement (64 per cent).

Other strategies included limiting access to potential dumping sites (48 per cent), changing council waste disposal services (38 per cent), and joint campaigns with the EPA (27 per cent).

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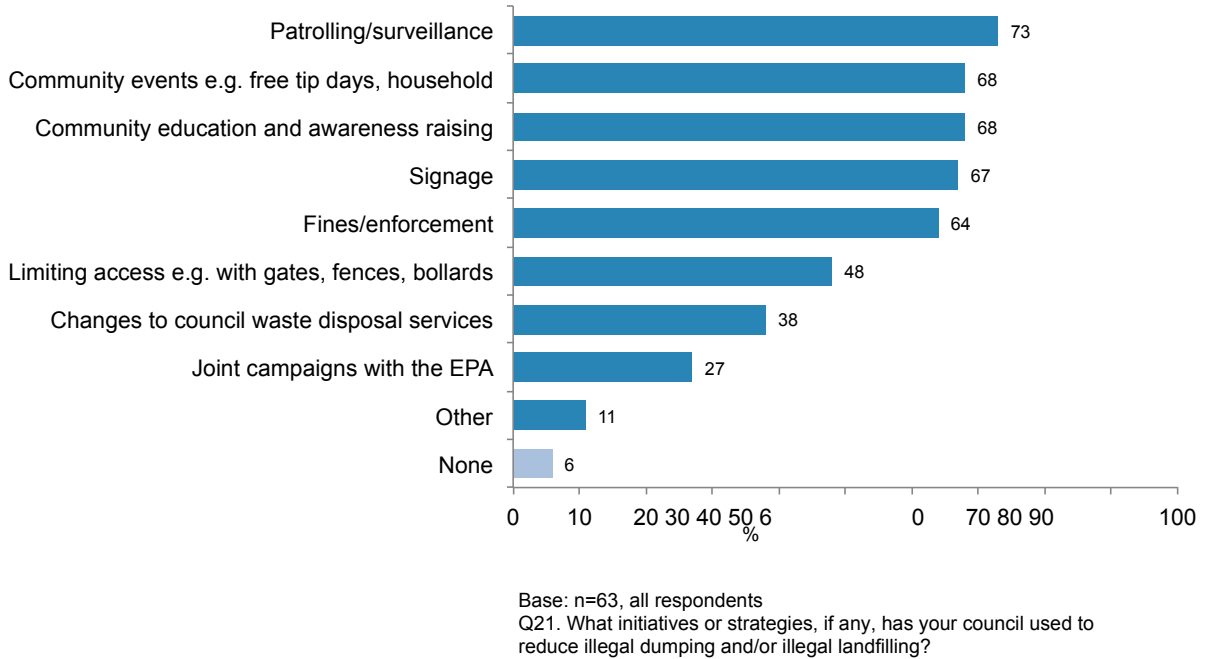


Figure 19: Initiatives and strategies undertaken

What are the most effective strategies?

Patrolling or surveillance was seen as the most effective strategy for reducing illegal dumping, with 81 per cent of respondents rating it as somewhat or very effective. Community events and community education and awareness were each seen as effective by 77 per cent of respondents and fines/enforcement by 70 per cent. Joint campaigns with the EPA (which over a quarter (27 per cent) of LGAs had undertaken) were seen to be somewhat or very effective by 56 per cent of LGAs. Signage was seen as the least effective (43 per cent believing that it was not effective).

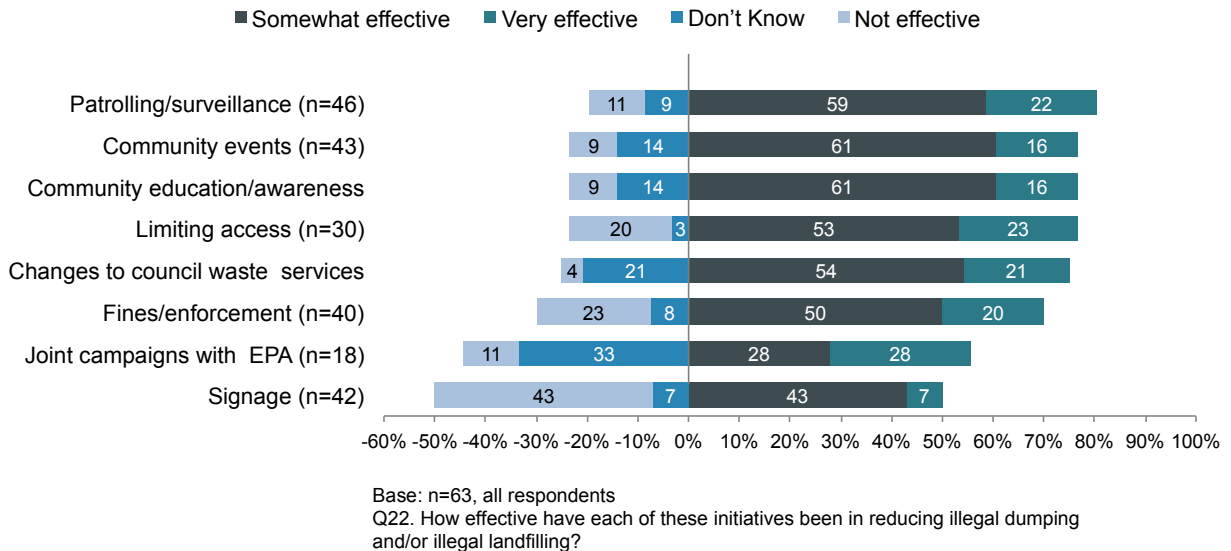


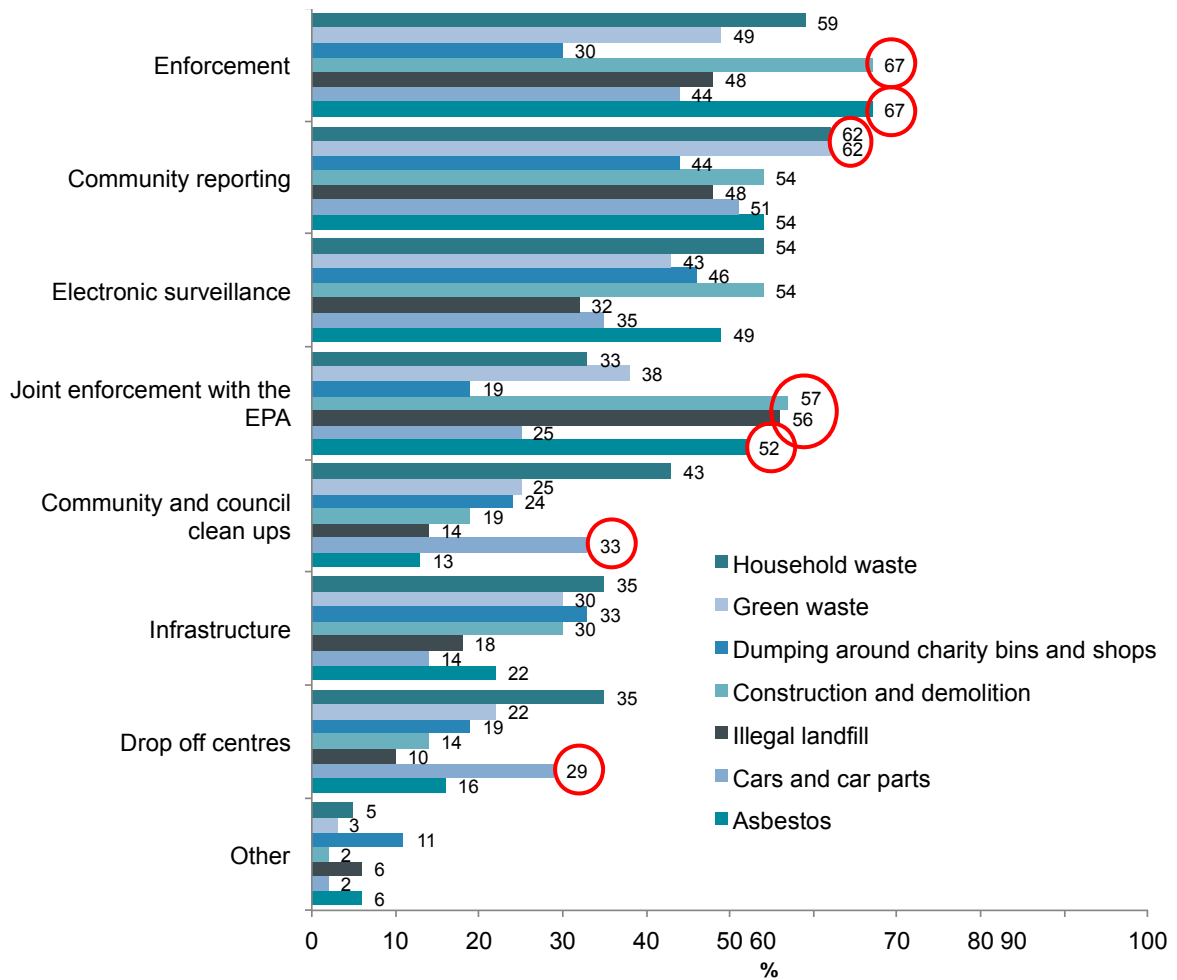
Figure 20: Perceived effectiveness of initiatives

Prevention measures

Enforcement and community reporting were generally seen as the most effective prevention measures for most types of waste.

Enforcement was seen as the most effective prevention measure for reducing dumping of construction and demolition waste and asbestos (both 67 per cent). Community reporting was seen as most effective for reducing dumping of household waste and green waste (both 62 per cent).

Joint enforcement with the EPA was seen as particularly effective for construction and demolition waste (57 per cent), illegal landfill (56 per cent), and asbestos (52 per cent). As well as being effective for household waste, community and council clean-ups and drop-off centres were thought to be particularly effective for cars/car parts (33 per cent and 29 per cent respectively).



Base n=63, all respondents
 Q24 In your view and based on your experience, for each waste type, which prevention measures would be most effective in reducing illegal dumping?

Figure 21: Perceived effectiveness of prevention measures

6. Community and industry surveys

6.1 Objectives

The main objective of the quantitative research with the community and trade and industry was to measure 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 benchmark and 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.

6.2 Methodology

Two separate online surveys were carried out in February 2014 with households and businesses across NSW. Details of each are outlined below.

6.2.1 Community survey

The community survey was conducted online with 1000 residents of NSW aged 18 years and over. Fieldwork was conducted from 6–24 February 2014. Quotas for age, gender and location (i.e. Sydney/regional NSW) were applied to ensure the sample was broadly representative and was weighted to be 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=647, 64 per cent) – respondents who did not report disposing of any waste illegally
- **kerbside dumpers** (n=245, 24 per cent) – respondents who reported disposing of waste by placing it on the kerb outside their house (outside of council collection periods), but who had not undertaken any other illegal dumping behaviour
- **deliberate dumpers** (n=116, 11 per cent) – respondents who had disposed of waste by dumping it in a public place, on someone else's land, on the side of the road, or on the kerb outside their house.

Statistical analysis was undertaken of differences in survey responses between these groups.

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

- age (four categories)
- gender (male/female)
- location (Sydney/other NSW)

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- levy status (resident in waste levy area/location outside the levy area)
- culturally and linguistically diverse populations (language other than English spoken at home/English only spoken at home)
- home ownership status (own home/rent or board)
- renovation of property (have renovated home since purchasing it/have not renovated home)
- tenure duration (lived in home less than a year up to more than 10 years).

6.2.2 Industry survey

The industry survey was conducted online with 100 people responsible for the management of waste and recycling in their businesses. Fieldwork was conducted from 10–20 February 2014.

The majority of businesses (66 per cent) were very small (up to 20 employees) and 34 per cent were small to medium sized (21–100 employees). No businesses surveyed had more than 100 employees.

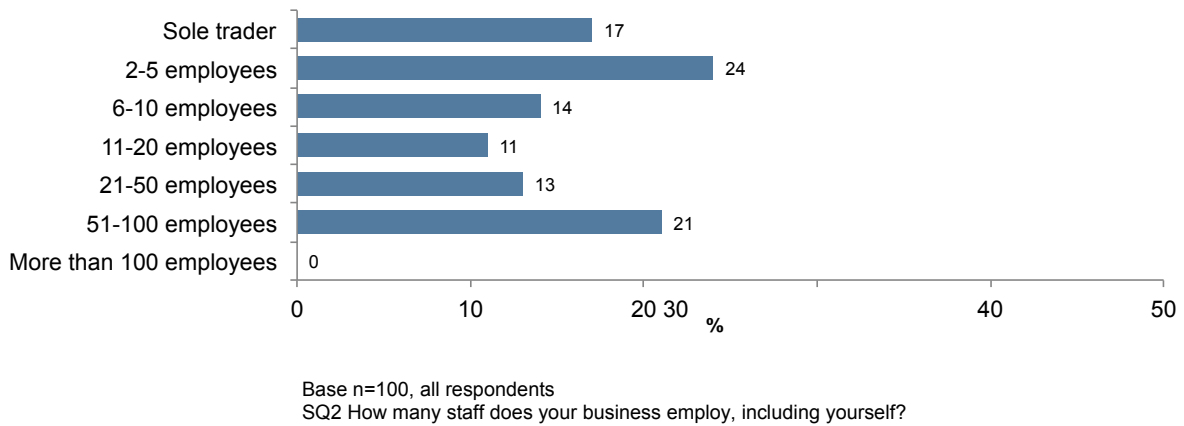


Figure 22: Business size

Sample characteristics – industry survey

Respondents were recruited from industries which were likely to produce waste as part of their operations. Forty per cent (40 per cent) of respondents worked in the wholesale/retail trade or other services, with a further fifth (21 per cent) working in the construction industry.

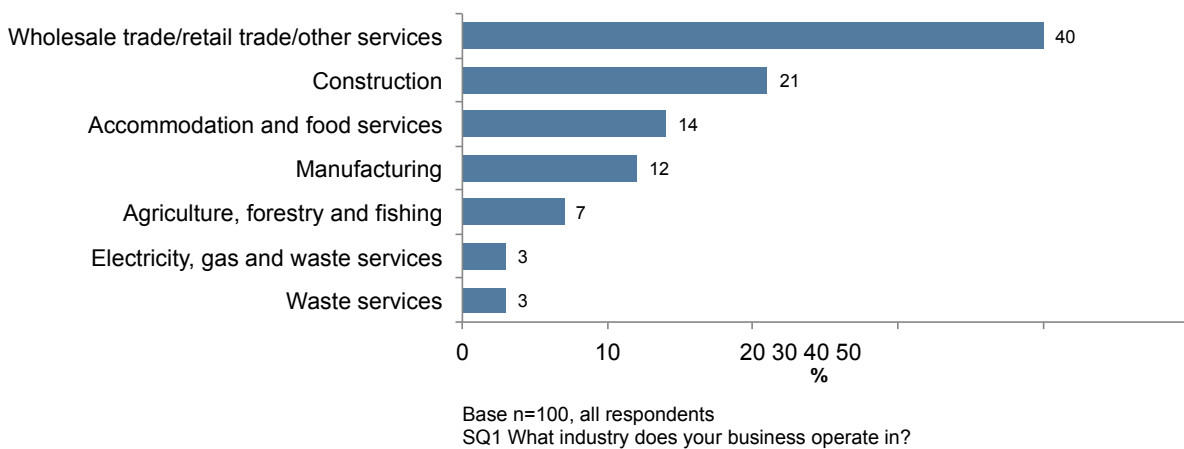
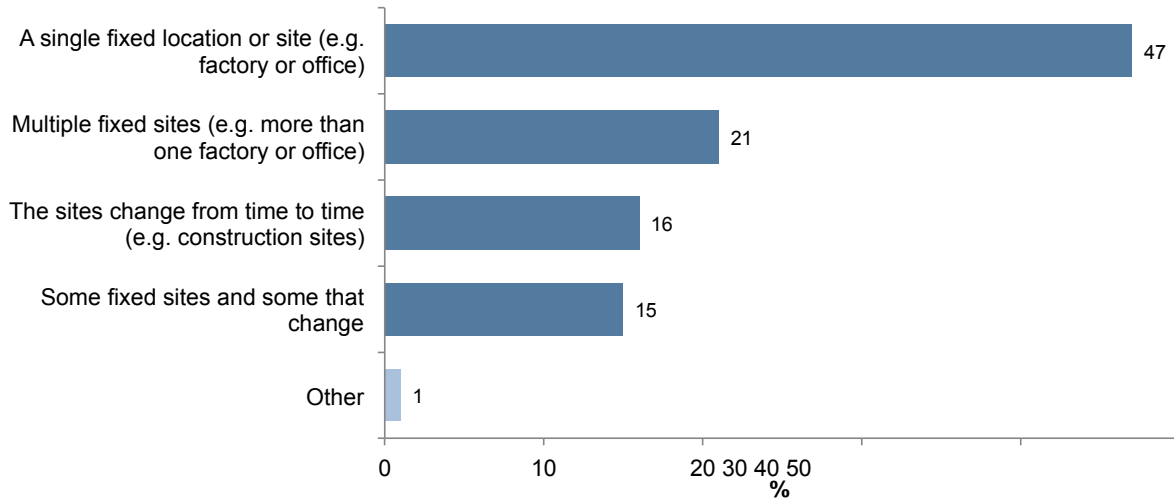


Figure 23: Industry breakdown

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Almost half of respondents (47 per cent) produced waste from a single fixed location, with a further 21 per cent operating from multiple fixed locations or sites.



Base n=100, all respondents
Q2 Which of the following best describes where waste is generated by your business?

Figure 24: Location of waste generation

More than half of the sample (59 per cent) was based in Sydney, with the remaining 41 per cent based elsewhere in NSW. Eighty six per cent (86 per cent) operated in the waste levy area, with the remaining 14 per cent in non-levy areas.

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

Analysis of findings

Differences in survey responses were analysed by industry, location, business size, waste location, and demographic variables.

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=73, 73 per cent) – respondents who did not report disposing of waste illegally
- **dumpers** (n=27, 27 per cent) – respondents who reporting 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.

6.3 Waste management behaviours

6.3.1 Types of waste disposed of

All respondents had disposed of materials or items in the previous 12 months. The materials most commonly disposed of by both households and businesses were general waste and recyclables.

Respondents in both the community and industry surveys were asked about the types of waste they had disposed of in the last year, and the methods they had used to dispose of each type (Figure 25).

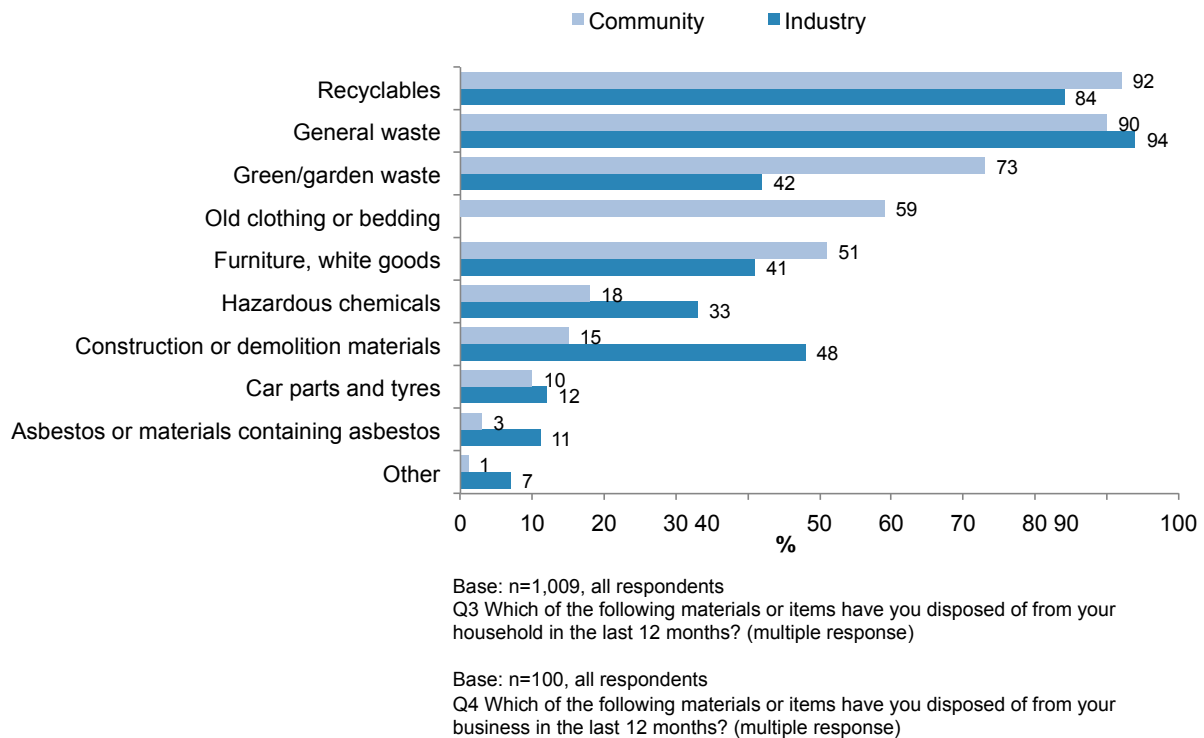


Figure 25: Types of waste disposed of in the last 12 months

Community

All respondents had disposed of at least one type of material. Over 90 per cent of community respondents had disposed of general household waste or recyclables and almost three quarters (73 per cent) had disposed of green waste.

The majority of respondents indicated that they disposed of waste in a legal manner, through council collections, organised commercial waste removal, or using a landfill or tip.

One per cent (1 per cent) of respondents had disposed of another waste type, these included electrical waste (n=8), books, and toys (n=4).

Industry

The most common materials disposed of were general waste (94 per cent) and recyclables (84 per cent). Half of the businesses dealt with construction and demolition waste (48 per cent).

Seven per cent (7 per cent) of respondents had disposed of other materials. These included electrical waste (n=3), metals (n=1), food (n=1), plastic offcuts (n=1) and biological material (n=1).

6.3.2 Location of disposal

Community

Recent use of council services was high, with most respondents having used regular weekly/fortnightly collections and half having used the council collection service for large and bulky items.

A third of respondents (35 per cent) had disposed of waste/items in an illegal way, with 33 per cent leaving waste or items on the kerb outside their house, outside of a council collection.

Most respondents had disposed of waste through the regular council collection (83 per cent) and 47 per cent had used the council kerbside collection of large and bulky items. Over a quarter (28 per cent) had called the council to collect their waste. Over half (57 per cent) of respondents had left items at a charity bin or shop and over a quarter had taken waste to the landfill or tip (28 per cent).

A third of respondents (33 per cent) had illegally dumped waste by leaving it on the kerb outside their house/building. Eight per cent (8 per cent) of respondents had dumped waste on public land, and a further eight per cent on the side of the road.

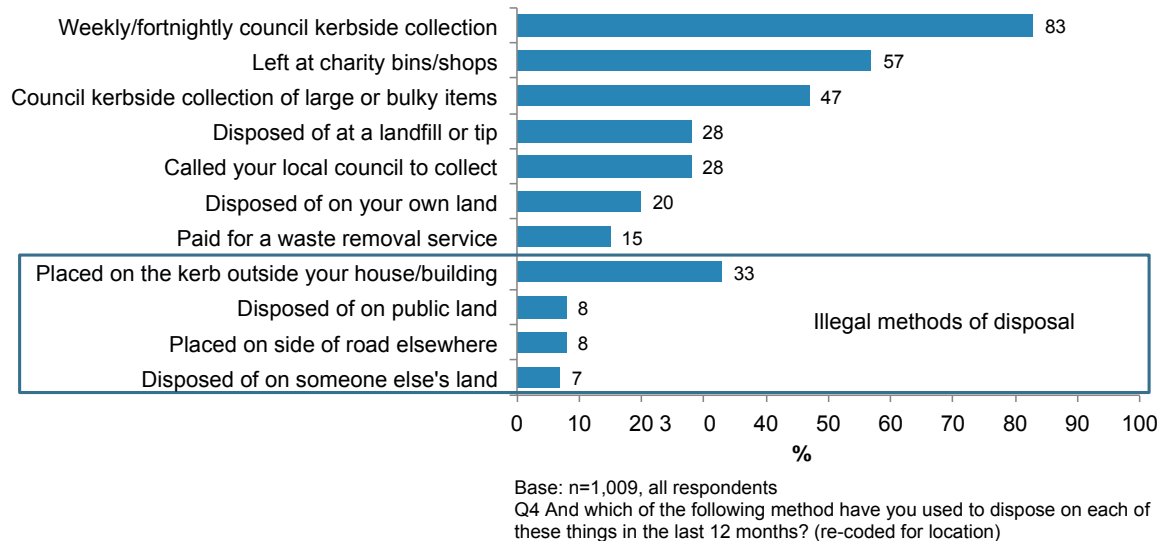


Figure 26: Disposal location – community

Industry

Most industry respondents had disposed of waste in a legal way, with 76 per cent using the weekly/fortnightly council collection, and half taking waste to the landfill or tip (54 per cent), paying for a commercial waste disposal service (52 per cent) or placing waste on the kerbside for a council collection (50 per cent).

A quarter of industry respondents had illegally dumped waste by placing it on the kerb outside their building. Fifteen per cent (15 per cent) of respondents had dumped waste on the side of the road elsewhere and the same proportion had dumped waste on private land.

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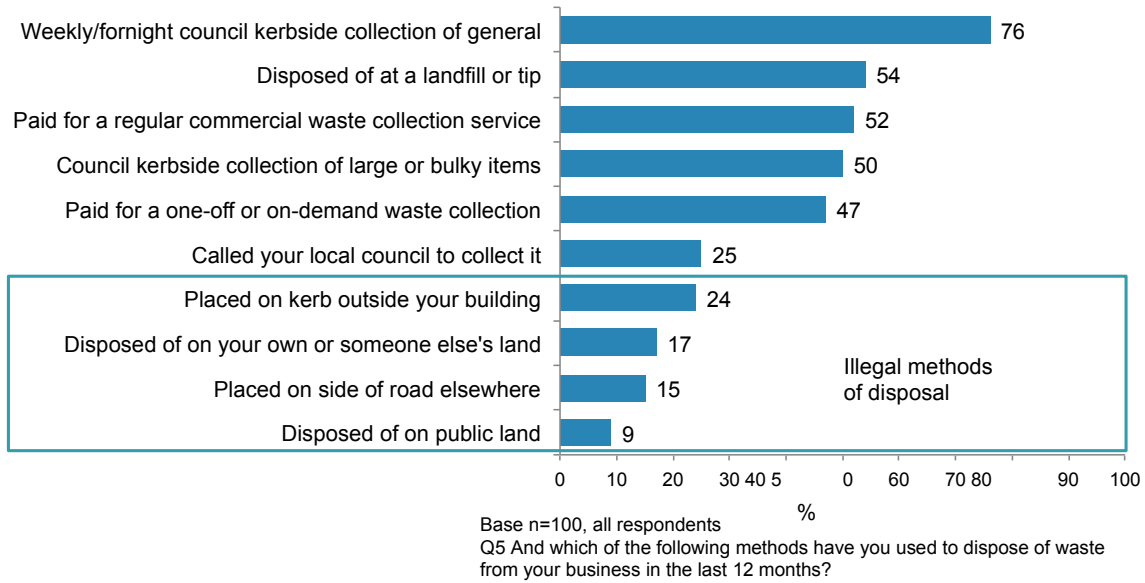


Figure 27: Disposal location – industry

Two thirds (67 per cent, n=11) of those who had disposed of waste on private land reported having authorisation from the EPA to do so.

6.4 Illegal dumping behaviours

6.4.1 Materials disposed of illegally

Community

A third of respondents (35 per cent) had disposed of at least one waste type illegally. One in six respondents had dumped general household waste (18 per cent), household recyclables (17 per cent) or furniture and white goods (16 per cent).

A third (35 per cent) of respondents in the community survey were identified as being illegal dumpers based on their disposal behaviour. These respondents had dumped at least one waste type 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.

Almost one fifth of respondents (18 per cent) had dumped general household waste illegally and 17 per cent had dumped household recyclables. Figure 28 shows what proportion of survey respondents had disposed of each waste type illegally.

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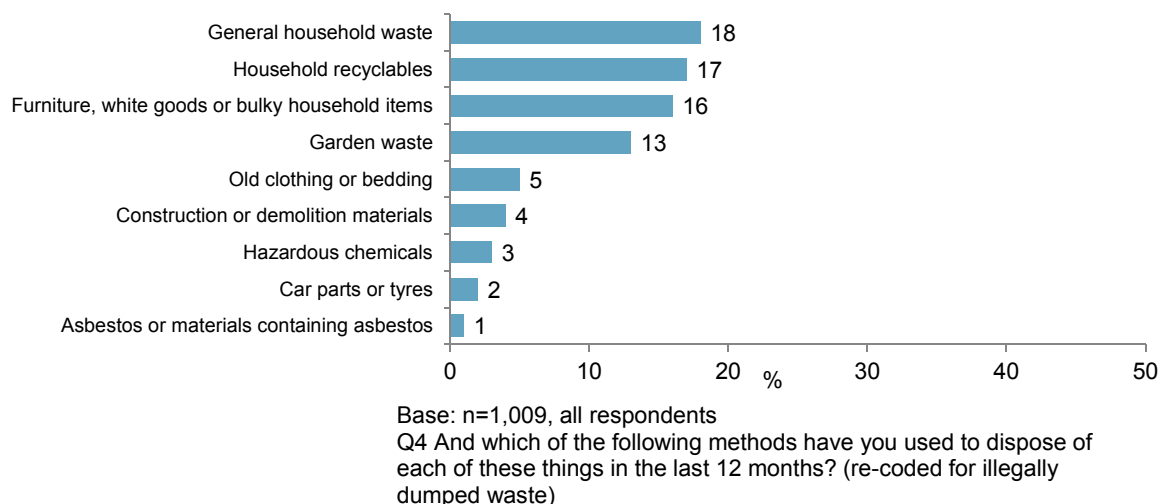


Figure 28: Types of waste illegally dumped – community

A number of differences were identified in the types dumped by different demographic groups:

- Household waste
 - Those aged 18–29 and 30–39 were more likely to dump household waste on the side of the road (6 per cent and 7 per cent respectively) than those aged over 60 (1 per cent).
 - Those who had been living in their current home for less than one year were more likely to dump household waste on the side of the road (11 per cent), on public land (12 per cent) and on their own land (10 per cent) than those who have lived in their home for over a year (3 per cent on the side of the road, 3 per cent on public land and 2 per cent on their own land).
- Household recyclables
 - Those who had been living in their home for less than a year were more likely to dump household recyclables on their own land (10 per cent) and on public land (9 per cent) compared to those who had lived in their home for more than one year (3 per cent on their own land and 1 per cent on public land).
 - Renters were more likely to dispose of household recyclables on public land (4 per cent) than those who owned their own home (1 per cent).
- Furniture, white goods or bulky household items
 - Those aged over 60 were more likely to dispose of bulky items by placing them on the kerb outside their building (34 per cent) compared to those aged 18–29 (16 per cent).
 - Younger respondents aged 18–29 were more likely to dispose of furniture and bulky items by placing them on the side of the road elsewhere (10 per cent) compared to older respondents aged 40–59 (2 per cent) and over 60 (1 per cent).
 - Those aged 30–39 were more likely to dispose of furniture and bulky household items on their own land (8 per cent) or someone else’s land (6 per cent) compared to older respondents aged 40–59 (1 per cent for both own land and someone else’s land) and over 60 (0 per cent for both own land and someone else’s land).

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- Respondents who spoke a language other than English at home were more likely to dispose of furniture and bulky household items on public land (7 per cent) than those who spoke only English (2 per cent).
- Old clothing and bedding
 - Those aged 30–39 were more likely to dispose of old clothing or bedding by placing it on the kerb outside their house (9 per cent) than those aged 40–59 (3 per cent).
- Garden waste
 - Respondents aged over 60 were more likely to dispose of garden waste by placing it on the side of the road outside their house (21 per cent) compared to those aged 40–59 (14 per cent).
 - Respondents aged 18–29 (5 per cent), 30–39 (5 per cent) and 40–59 (2 per cent) were all more likely than those aged over 60 to leave garden waste on the side of the road elsewhere (0 per cent).
 - Renters were more likely to leave garden waste in a public place (5 per cent) than those who owned their home (1 per cent).
 - Those living in Sydney were more likely to leave their garden waste in a public place (4 per cent) compared to those living in the rest of NSW (1 per cent).
 - Those aged 18–29 were more likely to leave their garden waste in a public place (6 per cent) than those aged 40–59 (1 per cent) and over 60 (1 per cent).

Industry

A quarter (27 per cent) of industry respondents had disposed of at least one waste type illegally. One in 10 respondents had dumped general waste or recyclables (both 11 per cent). No respondents indicated that they had dumped asbestos.

While the majority of respondents in the industry survey had disposed of their waste legally, 27 per cent of respondents had dumped at least one type of waste illegally, either on the kerb (outside of a council collection), on the side of the road elsewhere, on public or private land.

One in 10 industry respondents had illegally dumped general waste (11 per cent) and/or recycling (11 per cent). Figure 29 shows the proportion of survey respondents who had disposed of each waste type illegally.

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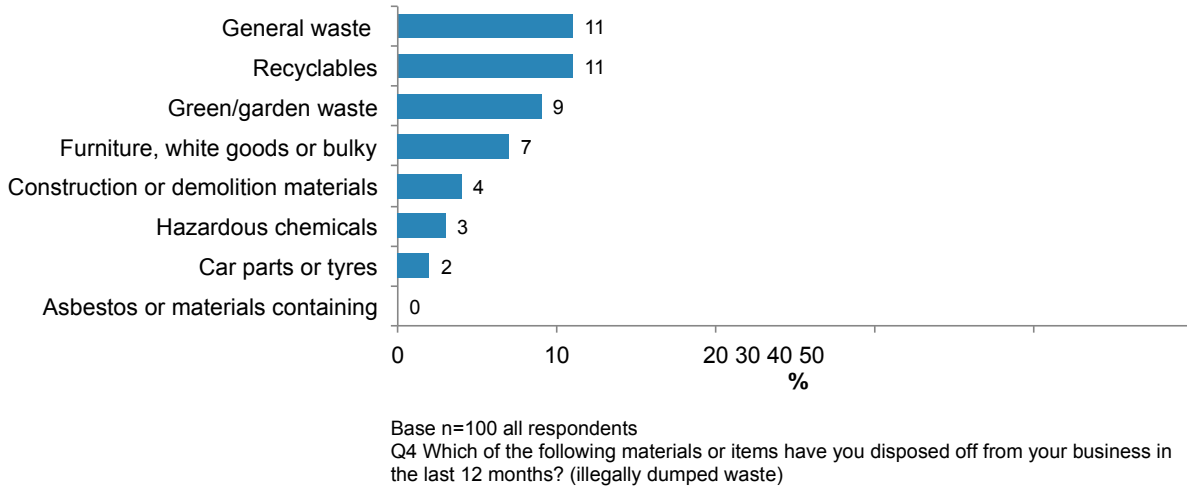


Figure 29: Types of waste illegally dumped – industry

6.4.2 Dumping around charity shops and bins

Over half (57 per cent) of respondents had taken items to a charity bin or shop. Eight in 10 (79 per cent) of these had left items inside the charity bin, and 40 per cent had given them to a charity shop attendant. Some of these respondents had left the waste on the footpath next to the bin (7 per cent) or in the doorway of the shop (5 per cent).

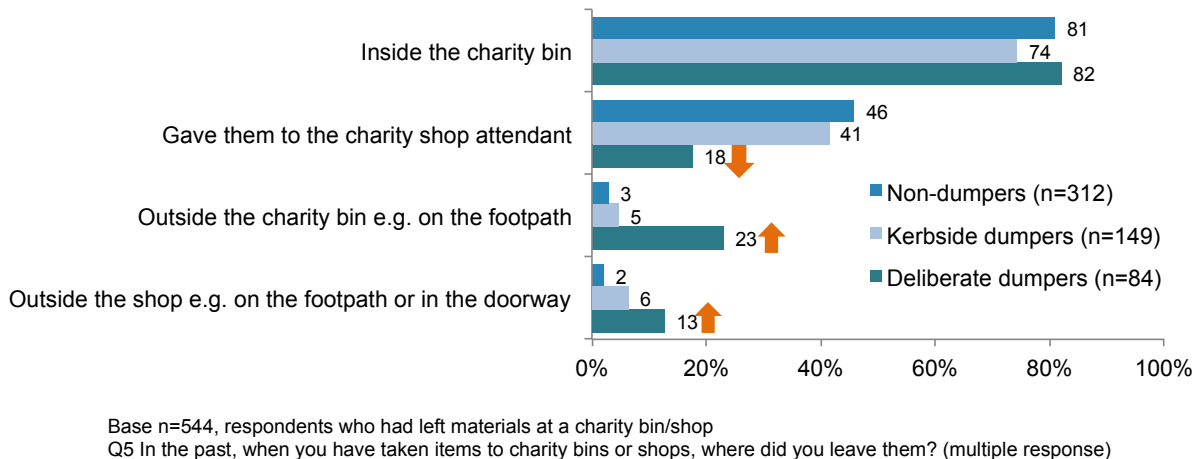


Figure 30: Dumping around charity bins and shops

As described earlier, community respondents were identified as non-dumpers, kerbside dumpers and deliberate dumpers based on waste disposal behaviours (see Section 6.2.1).

There were a number of significant differences in the way respondents left items at charity bins or shops:

- Deliberate dumpers were more likely to have left items on the footpath outside the bin (23 per cent) compared to kerbside dumpers (5 per cent) and non-dumpers (3 per cent).
- Deliberate dumpers were more likely to have left items on the footpath or in the doorway outside the shop (13 per cent) compared to kerbside dumpers (6 per cent) and non-dumpers (2 per cent).

- Deliberate dumpers were less likely to have given their items to the charity shop attendant (18 per cent) compared to kerbside dumpers (41 per cent) and non-dumpers (46 per cent).

6.5 Who is dumping waste?

Over a third of community respondents and over a quarter of industry respondents admitted to dumping waste illegally.

Community

Figure 31 shows the demographic differences between different types of illegal dumpers. Arrows indicate a significantly higher or lower figure when compared to the other two groups.

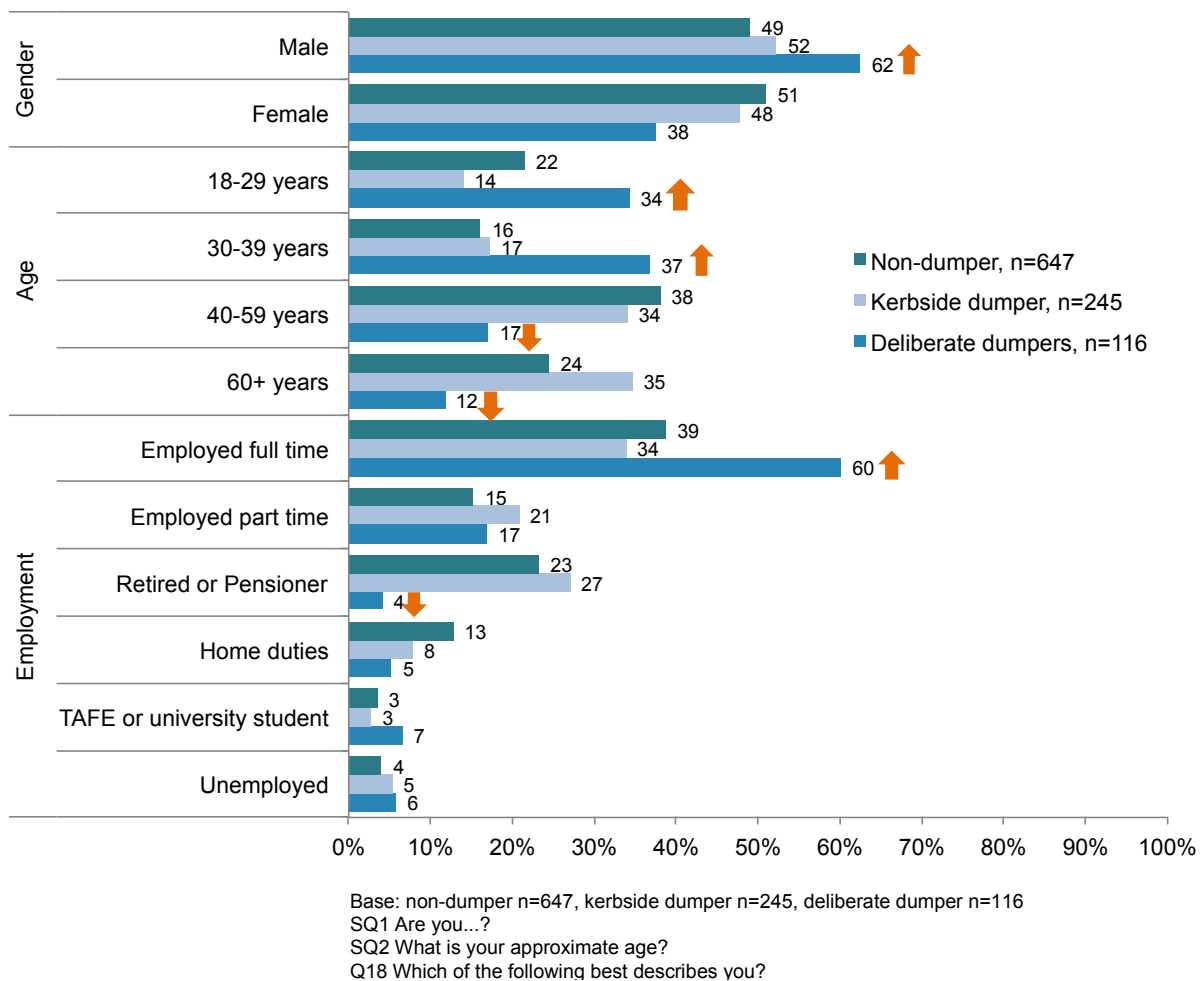


Figure 31: Demographic differences between dumpers – community

Kerbside dumpers did not display any demographic differences to non-dumpers. There were, however, several differences between deliberate dumpers and the other two groups:

- Deliberate dumpers were more likely to be male (62 per cent), compared to non-dumpers (49 per cent) and kerbside dumpers (52 per cent).

- Deliberate dumpers were more likely to be aged under 40 (34 per cent of 18–29 year olds and 37 per cent of 30–39 year olds).
- Deliberate dumpers were more likely to be employed full time (60 per cent) compared to non-dumpers (39 per cent) and kerbside dumpers (34 per cent). They were less likely to be retired or pensioners (4 per cent).

Industry

Over a quarter (27 per cent) of industry respondents were identified as illegal dumpers. Dumpers in the industry survey have not been defined as kerbside or deliberate dumpers due to the small sample size (n=27).

Industry illegal dumpers were more likely to work in businesses that employ 6–10 people (30 per cent) compared to non-dumpers (8 per cent).

6.6 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.

6.6.1 Awareness of services

The majority of respondents were aware of the council collection services in their area. They were less aware of the availability of services for disposal of chemicals and asbestos. Interestingly, dumpers were more likely to have used council waste disposal services.

Community

The majority of respondents (79 per cent) were aware of regular council collections of bulky goods from the kerb outside their home, and 62 per cent had used this service. Renters were more likely to be unaware of the services in their area, than those who owned their homes.

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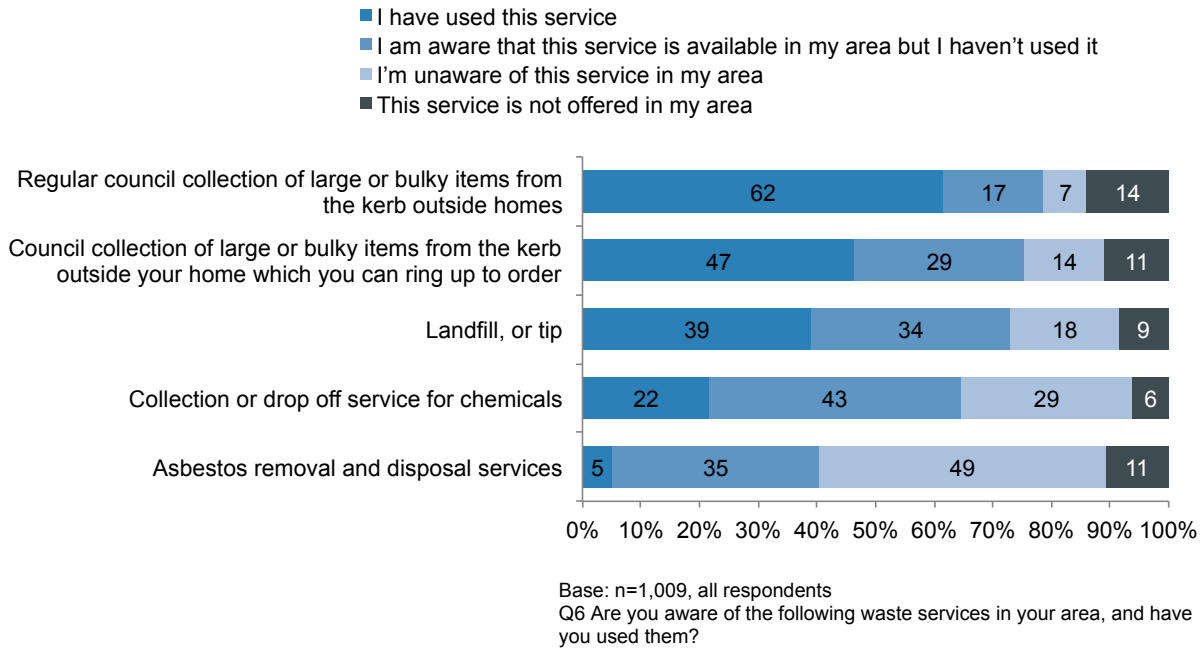
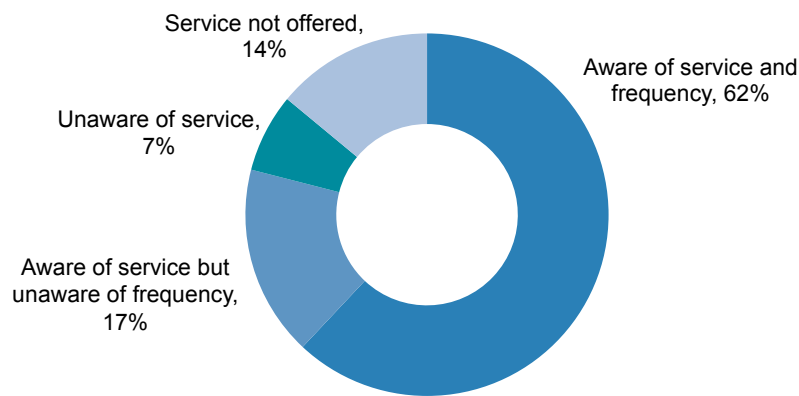


Figure 32: Awareness and use of waste disposal services

There were several significant differences between respondents who were aware of services and those who were not:

- Those living in non-levy areas were more likely to have been to the landfill or tip in their area (79 per cent vs. 34 per cent for levy areas).
- Respondents who spoke a language other than English at home were more likely to indicate that they were unaware of services in their area including tip or landfill (30 per cent compared to 15 per cent of those who did not speak another language) and collection or drop-off for chemicals (36 per cent compared to 28 per cent of those who did not speak another language).
- Kerbside and deliberate dumpers were more likely to have used regular council kerbside collection (both 71 per cent) compared to non-dumpers (56 per cent).
- Deliberate dumpers were more likely to have used asbestos removal and disposal services in their area (17 per cent) compared to non-dumpers (3 per cent) and kerbside dumpers (5 per cent).

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Base: n=1,009, all respondents

Q6 Are you aware of the following services in your area, and have you used them? Regular council collection of large or bulky items from the kerb outside homes in your neighbourhood

Base: n=795, respondents who were aware of council collections in their area

Q7 How often are council collections of large or bulky items in your area?

Figure 33: Awareness of council collections and their frequency

The majority of respondents (62 per cent) were both aware of services in their area and aware of the frequency of these services. One in six (17 per cent) of respondents, while aware of the service, did not know how often council collections were in their area. Seven per cent (7 per cent) of respondents did not know whether council collections of large and bulky items were offered in their area, and 14 per cent knew that this service was not offered.

- Renters, while aware of services, were more likely not to know how often council collection services are in their area (31 per cent) compared to 14 per cent of home owners.
- Deliberate dumpers were more likely to indicate that council collections in their area occurred more often, either monthly (20 per cent, compared to 6 per cent of non-dumpers) or every two or three months (37 per cent compared to 20 per cent of non-dumpers).

6.6.2 Perception of legality

The vast majority of community and industry respondents had a firm understanding of which behaviours were legal and which were illegal. The exception however, was leaving furniture on the kerb, where there was some confusion among householders.

Community

General awareness of legality was high, the one stand-out is leaving furniture on the kerb outside your home. A third of respondents (33 per cent) indicated that this was legal, and a further quarter (23 per cent) were unsure.

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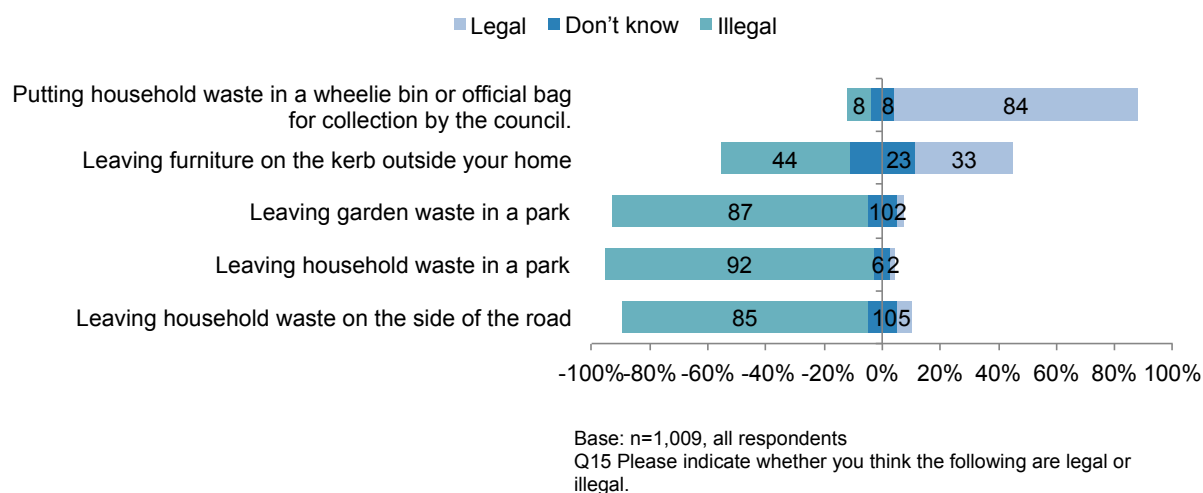


Figure 34: Perception of legality – community

There were a number of significant differences between those who saw the behaviours as illegal or legal:

- One in five (20 per cent) deliberate dumpers saw leaving household waste on the side of the road as legal, which is significantly higher than non-dumpers (4 per cent) and kerbside dumpers (3 per cent).
- One in 10 (10 per cent) deliberate dumpers saw leaving household waste in a park as legal compared to non-dumpers (1 per cent) and kerbside dumpers (0 per cent).
- Twelve per cent (12 per cent) of deliberate dumpers saw leaving garden waste in a park as legal compared to non-dumpers (1 per cent) and kerbside dumpers (1 per cent).
- With regard to leaving furniture on the kerb outside your home:
 - Renters were less likely to see this as illegal (35 per cent compared to 49 per cent of home owners) and more likely to be unsure of its legality (28 per cent compared to 20 per cent of home owners).
 - Both kerbside dumpers (43 per cent) and deliberate dumpers (48 per cent) were more likely to see this as legal than non-dumpers (27 per cent).

Industry

Almost all industry respondents were aware that leaving asbestos or business waste in public places is illegal. While still high, awareness of the illegality of leaving green/garden waste in a park was lower, with 13 per cent either being unsure or indicating that it is legal.

This shows that the vast majority of those who are illegally dumping are well aware that they are breaking the law. There is no issue with lack of knowledge.

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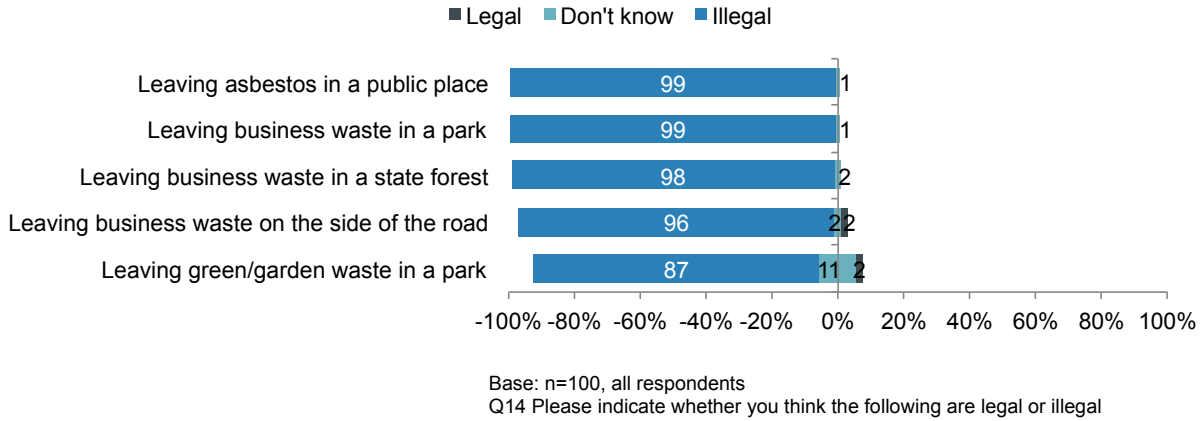


Figure 35: Perception of legality – industry

Respondents who spoke a language other than English were more likely to indicate that leaving business waste on the side of the road is legal (2 per cent) than those who did not speak another language (0 per cent).

6.7 Opportunity – Social opportunity

6.7.1 Social acceptability

Generally, disposal behaviours that are illegal were rated by respondents as socially unacceptable. The exception to this was leaving furniture on the kerb outside their home or business.

Community

Respondents in the community were asked to judge the acceptability of a range of waste disposal behaviours. Illegal dumping behaviours were generally seen as unacceptable by respondents, with over two thirds rating leaving household or garden waste in a park, or on the side of the road as *very unacceptable*; however, leaving furniture on the side of the road was seen by a third (31 per cent) of respondents as acceptable. This indicates a lack of knowledge or awareness of the illegality of doing so.

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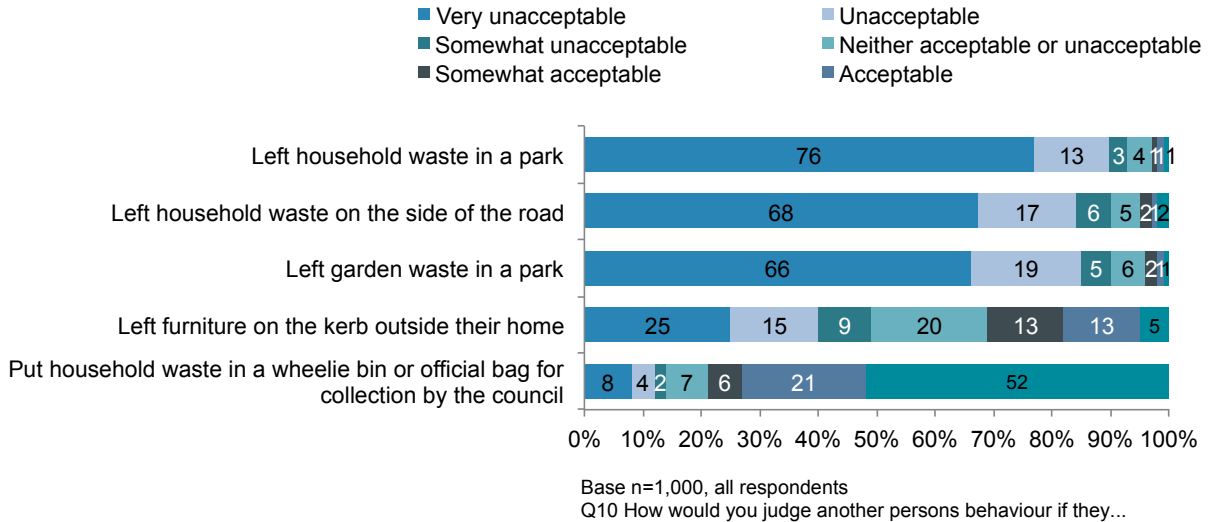


Figure 36: Social acceptability of illegal dumping – community

Older respondents aged over 60 were more likely to rate each of the following illegal activities as unacceptable (*very unacceptable* + *somewhat unacceptable* + *unacceptable*) than younger respondents. Conversely, younger respondents were more likely to rate these same activities as acceptable (*very acceptable* + *somewhat acceptable* + *acceptable*).

- Three quarters (76 per cent) of respondents saw **leaving household waste in a park** as *very unacceptable*, with a further 13 per cent of respondents seeing this as *unacceptable*.
 - Deliberate dumpers were more likely to rate leaving household waste in a park as acceptable (17 per cent) compared to non-dumpers (2 per cent) and kerbside dumpers (1 per cent).
 - Women were more likely to rate leaving household waste in a park as unacceptable (95 per cent) compared to men (88 per cent).
 - Older respondents aged over 60 were more likely to rate leaving household waste in a park as unacceptable (98 per cent) compared to younger respondents aged 18–29 (87 per cent) and 30–39 (83 per cent).
 - Younger respondents, aged 18–29 and 30–39, were more likely to rate leaving household waste in a park as acceptable (4 per cent and 8 per cent respectively) compared to those aged over 60 (0 per cent).
 - Respondents who spoke a language other than English at home were more likely to rate leaving household waste in a park as acceptable (7 per cent) than those who only spoke English (2 per cent).
- Two thirds (68 per cent) of respondents judged **leaving household waste on the side of the road** as *very unacceptable*, with a further 17 per cent indicating that this was *unacceptable*.
 - Deliberate dumpers were more likely to rate leaving household waste on the side of the road as acceptable (20 per cent) compared to non-dumpers (4 per cent) and kerbside dumpers (2 per cent).
 - Older respondents aged over 60 were more likely to indicate that leaving household waste on the side of the road was unacceptable (98 per cent) compared to those aged 18–29 (78 per cent) and 30–39 (86 per cent).

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- Younger respondents aged 18–29 and 30–39 were more likely rate leaving household waste on the side of the road as acceptable (9 per cent and 8 per cent respectively) compared to those aged over 60 (1 per cent).
- Two thirds of respondents rated **leaving garden waste in a park** as *very unacceptable*, with a further quarter (24 per cent) rating it as *unacceptable* or *somewhat unacceptable*.
 - Deliberate dumpers were more likely to rate leaving garden waste in a park as acceptable (19 per cent) than non-dumpers (3 per cent) and kerbside dumpers (2 per cent).
 - Older respondents aged over 60 were more likely to rate leaving garden waste in a park as unacceptable (98 per cent) compared to those aged 18–29 (79 per cent) or 30–39 (83 per cent).
 - Respondents who spoke a language other than English at home were more likely to rate leaving garden waste in a park as acceptable (7 per cent) compared to those who only spoke English (4 per cent).
 - Renters were more likely to rate leaving garden waste in a park as acceptable (7 per cent) compared to those who own their home (3 per cent).
 - Younger respondents aged 18–29 and 30–39 were more likely to rate leaving garden waste in a park as acceptable (10 per cent and 6 per cent respectively) than those aged over 60 (0 per cent).
- Half (49 per cent) of respondents judged **leaving furniture on the kerb outside their home** as unacceptable. A third (31 per cent) though that this was acceptable.
 - Deliberate dumpers and kerbside dumpers were more likely to rate leaving furniture on the kerb as acceptable (47 per cent and 40 per cent respectively) compared to non-dumpers (29 per cent).
 - Older respondents aged over 60 were more likely to rate leaving furniture on the kerb as unacceptable (57 per cent) compared to those aged 18–29 and 30–39 (both 43 per cent).
 - Respondents in regional areas were more likely to rate leaving furniture on the kerb as acceptable (38 per cent) compared to those living in Sydney (28 per cent).
- Eight in 10 respondents judged **leaving waste in a wheelie bin for collection** as acceptable (52 per cent very acceptable), 14 per cent seeing this as unacceptable.
 - Respondents who spoke a language other than English at home were more likely to rate leaving waste in a wheelie bin for collection as unacceptable (19 per cent) compared to those who only spoke English (12 per cent).
 - Deliberate dumpers were more likely to rate leaving waste in a wheelie bin for collection as unacceptable (24 per cent) than non-dumpers (11 per cent) and kerbside dumpers (14 per cent).

Industry

Respondents in the industry survey were also asked to judge the acceptability of a range of waste disposal behaviours. Each of the following illegal behaviours were seen by at least 98 per cent of the sample as unacceptable:

- Leaving green or garden waste in a park was seen as the least unacceptable behaviour, with 61 per cent rating this as *very unacceptable*. All other behaviours were rated as *unacceptable* or *very unacceptable* by at least 97 per cent of respondents.
- Dumping asbestos was seen as the most unacceptable behaviour with 98 per cent of respondents judging it *very unacceptable*.

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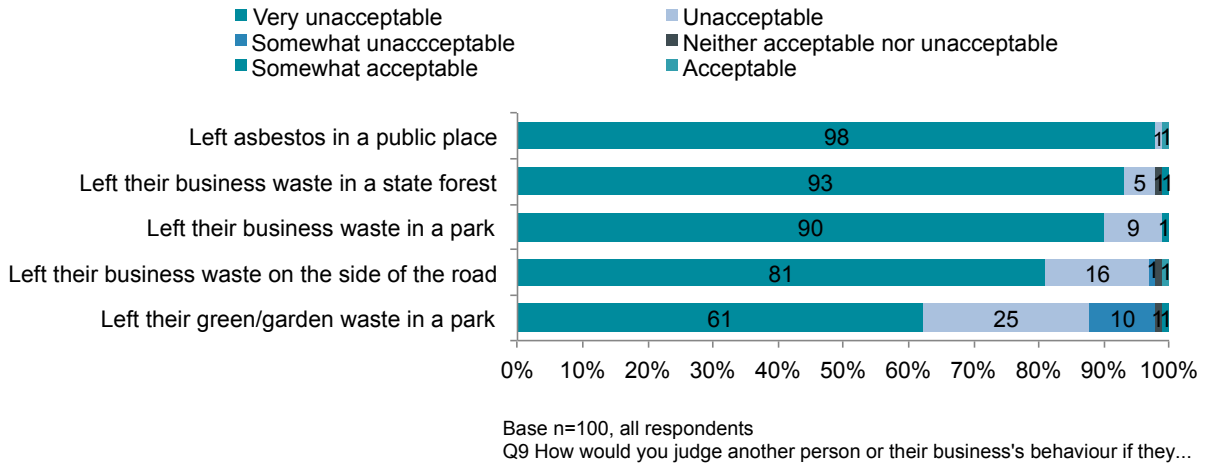


Figure 37: Social acceptability of illegal dumping – industry

6.7.2 Social norms

Dumpers were more likely to see others disposing of waste in illegal ways, and to indicate that they are influenced a lot by the behaviour of those around them.

Community

Respondents were asked if they had seen or heard of anyone around them disposing of waste in a variety of ways. Kerbside dumpers were more likely to have seen or heard of other people dumping waste on the kerb outside their home (83 per cent) compared to non-dumpers (71 per cent).

Deliberate dumpers were more likely to have seen or heard of others dumping on someone else's land, public land (both 62 per cent) or on the side of the road (73 per cent).

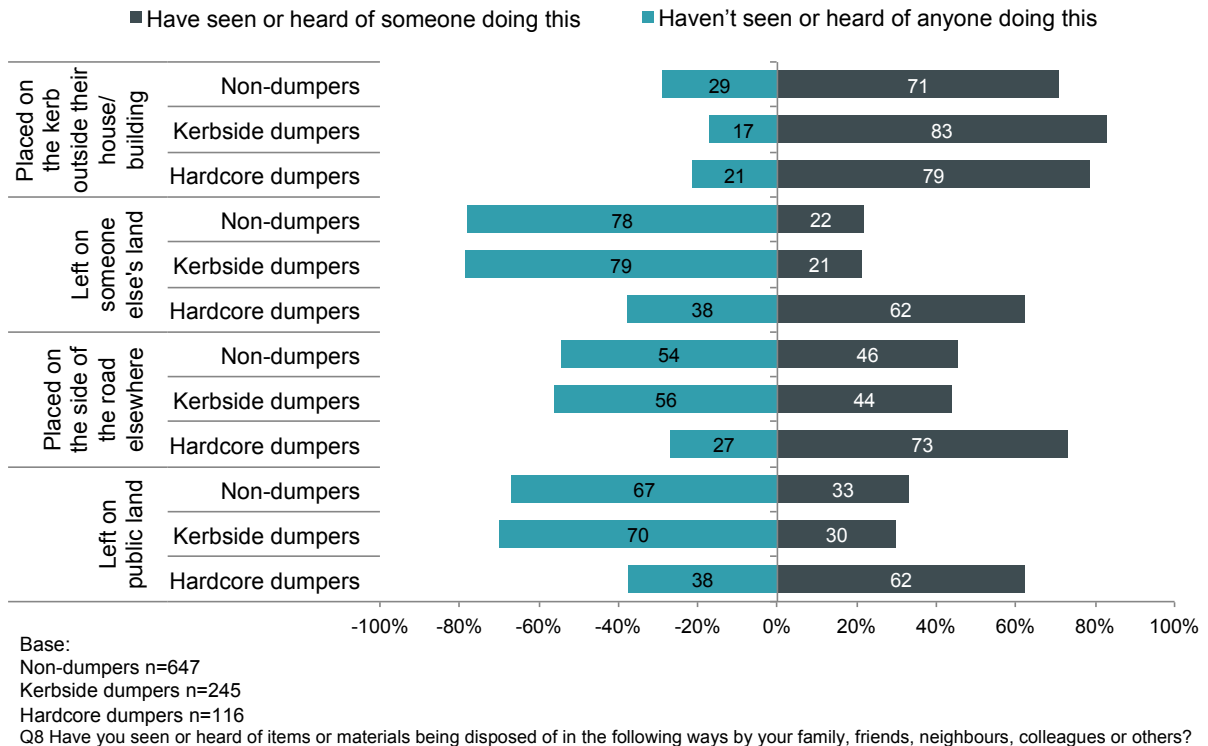


Figure 38: Seen or heard of others dumping illegally – community

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Overall, respondents indicated that they were influenced most heavily by their local council (79 per cent influenced *a lot* or *a little*) and least influenced by their work colleagues (30 per cent influenced *a lot* or *a little*).

Deliberate dumpers were more likely than kerbside dumpers or non-dumpers to indicate that they were influenced *a lot* by each of the groups of people listed, with the exception of their local council, by which they were more likely to indicate they were influenced only *a little*.

Respondents aged over 60 were more likely to indicate that they were *not at all* influenced by their family, friends or work colleagues than younger respondents. The opposite was the case for the local council with respondents aged over 60 more likely to indicate that they were influenced *a lot* by them.

Respondents who spoke a language other than English were more likely to indicate that they were influenced *a lot* or *a little* by their family, friends and work colleagues than those who spoke only English.

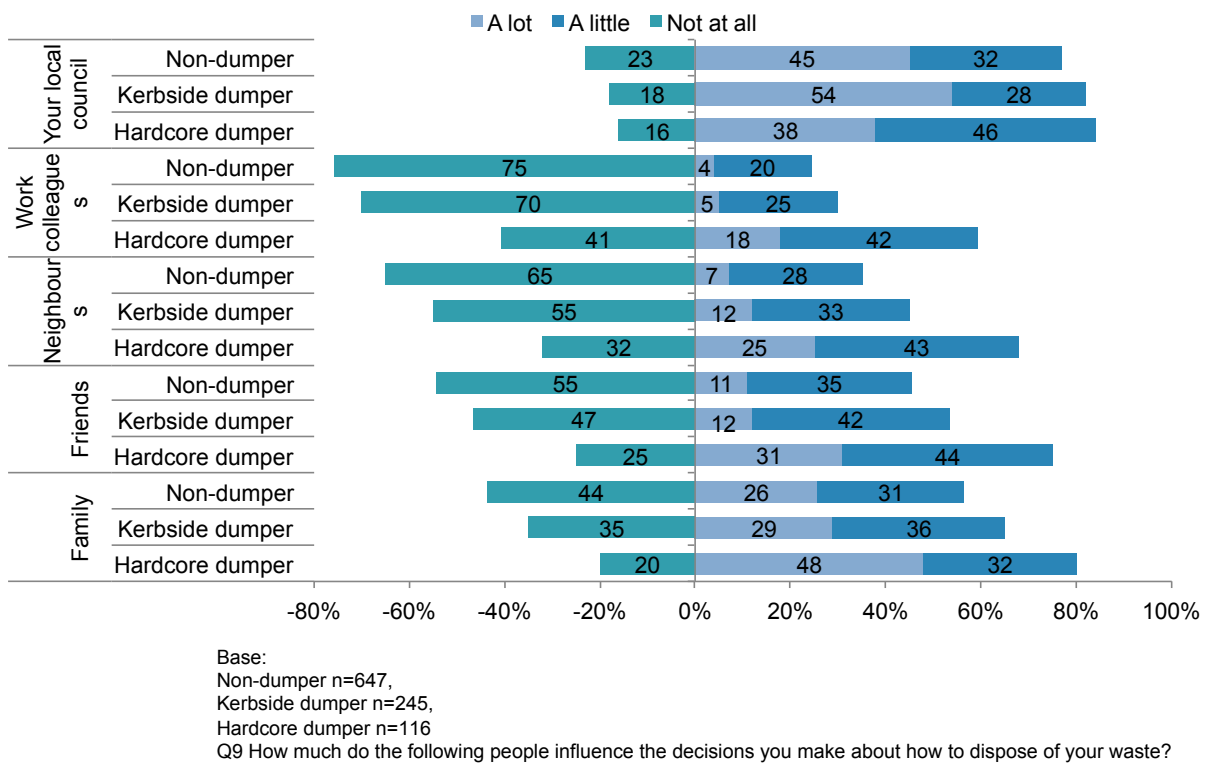


Figure 39: Influence of others on waste disposal decisions – community

Industry

The use of regular council waste collection services was most common with 87 per cent of respondents having seen or heard of someone doing this. Over 80 per cent of respondents also reported seeing or hearing of others using commercial waste collection, either regular (84 per cent) or one-off (81 per cent).

Illegal methods of waste disposal were less heard of; however, still roughly a third of respondents had seen or heard of someone disposing of waste in at least one of these ways (dumping on private land 36 per cent, public land 27 per cent or the side of the road 34 per cent).

Dumpers were significantly more likely to have seen or heard of other people disposing waste illegally.

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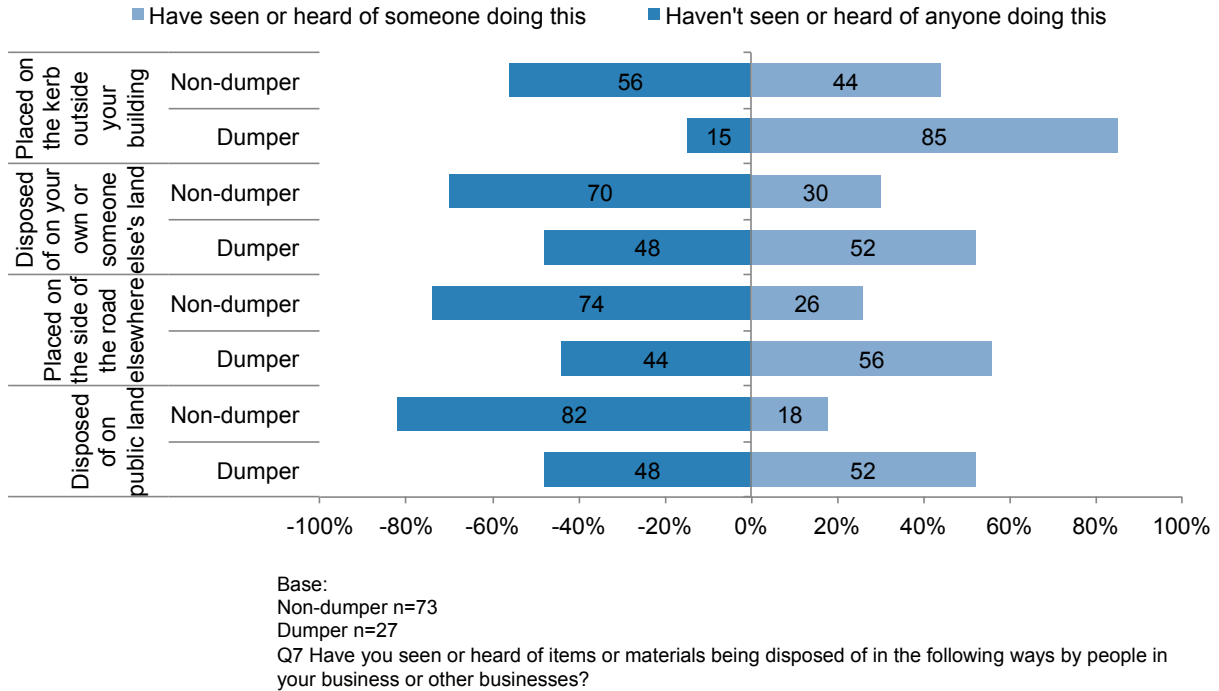


Figure 40: Seen or heard of others dumping illegally – industry

Industry respondents were also asked how much their waste disposal behaviours were influenced by the people around them. Respondents felt most influenced by their managers (92 per cent), local or state government (88 per cent), and their colleagues (74 per cent). Respondents were least likely to have seen their managers disposing of waste in illegal ways, compared to any other group.

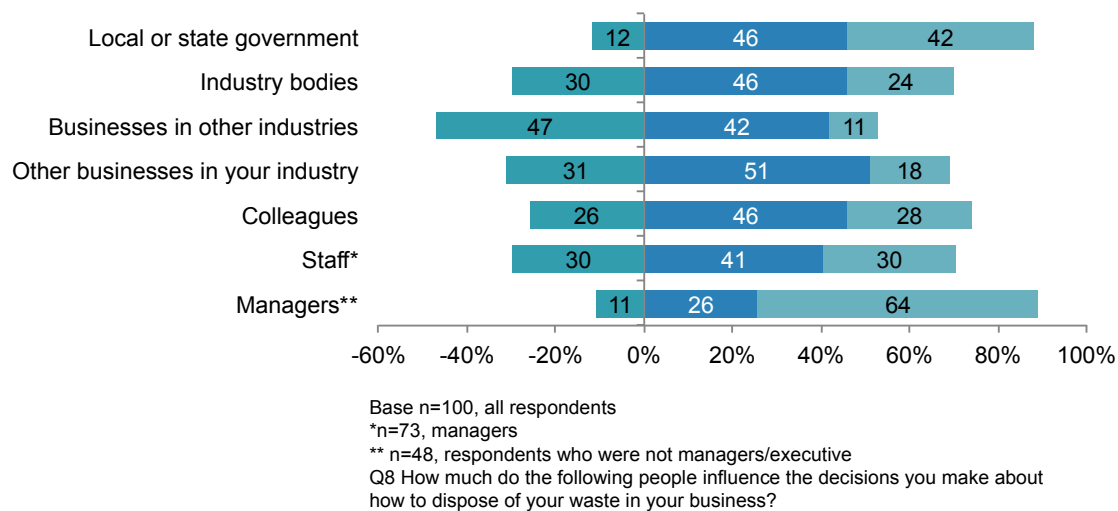


Figure 41: Influence of others on waste disposal decisions – industry

6.8 Opportunity – Physical opportunity

6.8.1 Access to vehicles

Almost all respondents had access to a vehicle that could transport waste, and lived or worked within driving distance of their nearest tip. There was no difference in access between dumpers and non-dumpers, suggesting that physical opportunity is not a barrier to legal methods of disposal.

Community

Almost all respondents had access to a vehicle. More than nine in 10 respondents (92 per cent) had access to a car or motor vehicle and almost a third (31 per cent) had access to a trailer that can transport waste. Respondents living in Sydney were less likely to have a car (89 per cent) or a trailer (18 per cent) compared to those living in other areas of NSW (94 per cent and 41 per cent respectively).

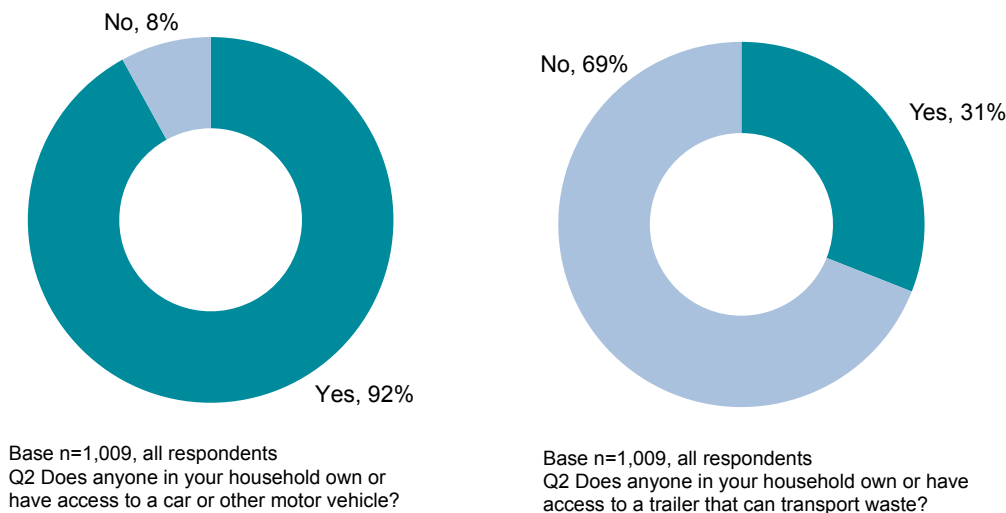


Figure 42: Access to vehicles and trailers – community

There was no difference between the dumping behaviours of respondents who did have access to a car and those who did not; however, respondents living in Sydney were less likely to have a car and more likely to find it difficult to take waste to a landfill or tip than those in regional areas.

Deliberate dumpers were more likely to have access to a trailer (39 per cent) than non-dumpers (24 per cent).

Industry

Similar to community respondents, almost all businesses (94 per cent) had access to at least one vehicle, a third had access to a truck or heavy vehicle (33 per cent), and three quarters had a car (74 per cent).

Vehicle access may be a barrier to correct waste disposal as those who did not have access to any vehicle were significantly more likely to find it very difficult to take waste to the tip.

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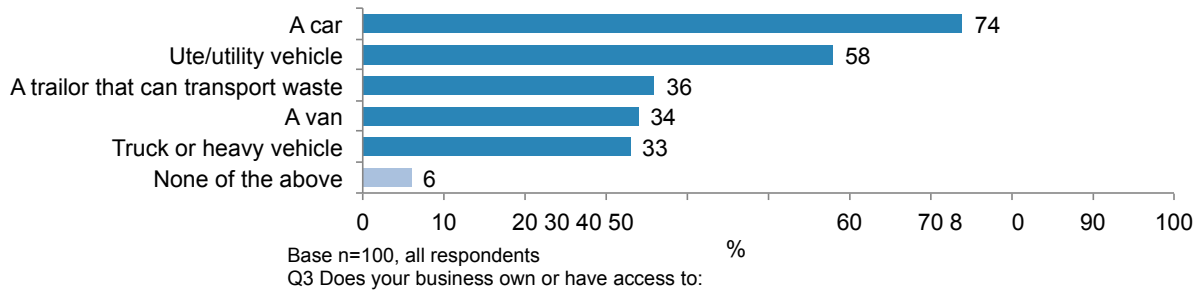


Figure 43: Access to vehicles – industry

6.8.2 Time taken to travel to nearest tip

The majority of community and industry respondents travelled fewer than 30 minutes to their nearest landfill or tip. Deliberate dumpers had further to travel to get to the tip, which may have influenced motivation to dump waste.

Community

Over half of respondents (52 per cent) travelled for less than 30 minutes to get to their nearest tip. Only 6 per cent travelled more than one hour. A quarter of respondents did not know how far their nearest tip was.

Respondents living in Sydney generally travelled longer to get to their nearest tip than those living in other areas of NSW. A third of respondents (33 per cent) living in other areas of NSW travelled for less than 15 minutes to their nearest tip, compared to only 11 per cent of Sydney residents. Similarly, while 40 per cent of regional respondents travelled for 15-30 minutes, a quarter (25 per cent) of Sydney respondents travelled this far.

Deliberate dumpers were more likely to indicate that they had to travel for longer to get to their nearest landfill or tip with 13 per cent of deliberate dumpers travelling more than one hour, compared to 4 per cent of non-dumpers. For this group, time taken travelling to the tip does seem to be a barrier to disposing of waste legally, as deliberate dumpers live further away from a tip or landfill.

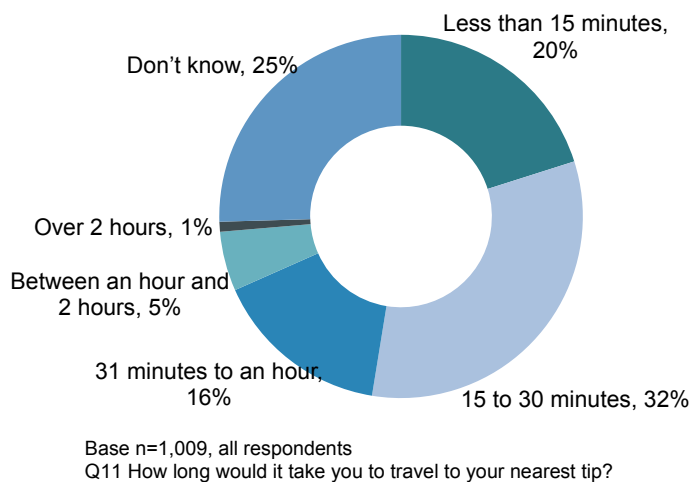


Figure 44: Distance to tip – community

Industry

The majority of industry respondents travelled for fewer than 30 minutes to a landfill or tip (56 per cent), with only eight per cent travelling for more than an hour. Respondents living in regional areas were more likely to be closer to the tip, and take only 15–30 minutes (56 per cent) compared to those living in Sydney.

Respondents in Sydney were more likely to indicate that it takes them over an hour to get to the nearest landfill or tip (7 per cent) than those in regional areas (3 per cent).

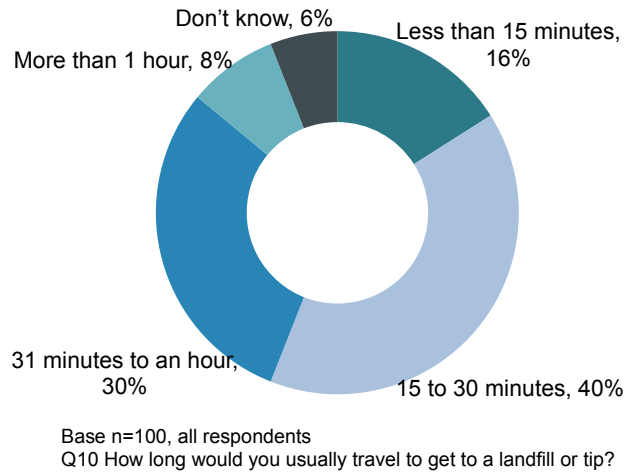


Figure 45: Distance to tip – industry

6.8.3 Ease of getting to the landfill or tip

Over half of respondents indicated that it was easy for them to take waste to the tip.

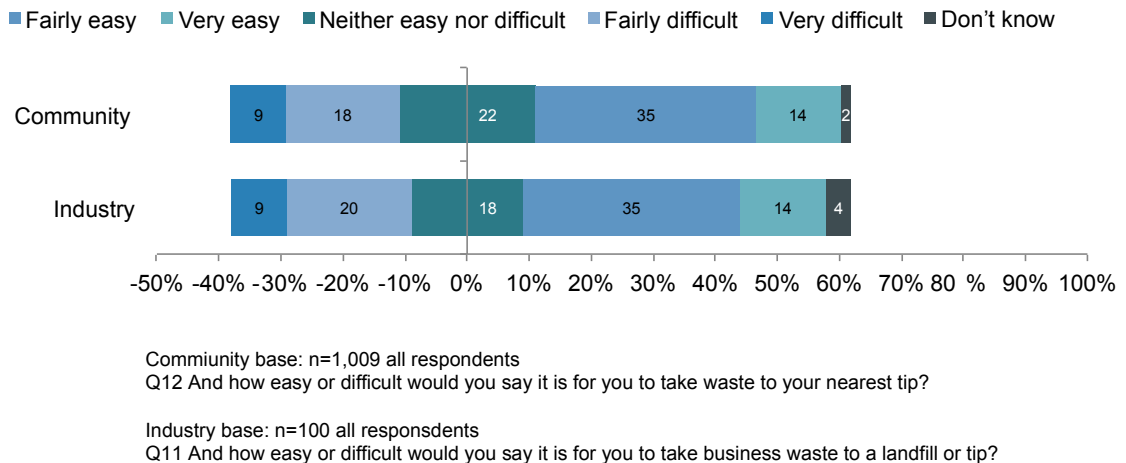


Figure 46: Ease of getting to the nearest tip – community and industry

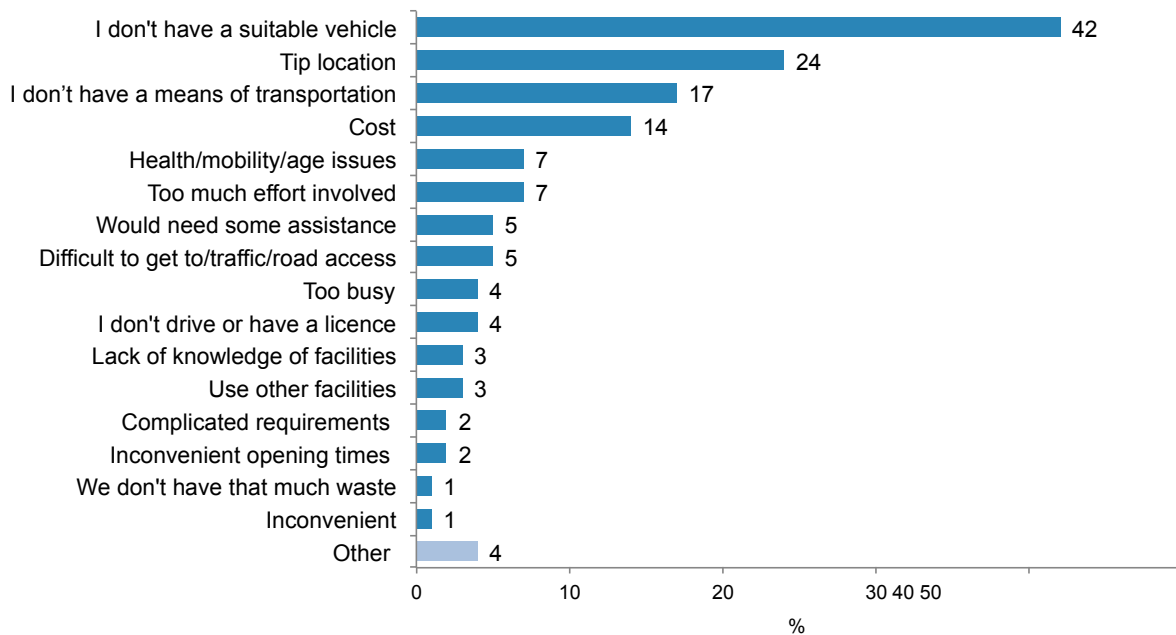
Community

Half of the community respondents (49 per cent) said that it was *easy* for them to rake waste to their nearest tip, with a quarter (27 per cent) indicating that this was *difficult* for them.

- Respondents in regional areas were more likely to indicate that it was *very easy* for them to take waste to the tip (20 per cent) compared to those living in Sydney (7 per cent).
- Younger respondents aged 18–29 (56 per cent), 30–39 (57 per cent) and 40–49 (51 per cent) were more likely to indicate that it was *easy* for them to take waste to the tip than respondents aged over 60 (35 per cent).
- Respondents living in non-levy areas were more likely to find it *easy* to take waste to the tip (78 per cent) than those in levy areas (48 per cent).

Respondents who indicated that it was *very* or *fairly difficult* for them to take waste to the tip were asked the reasons for this. Respondents aged 40–59 and over 60 were more likely to indicate that lack of a suitable vehicle made it *difficult* for them to take waste to the tip (both 49 per cent) than those aged 30–39 (26 per cent).

Women were more likely to indicate that they would need some assistance (9 per cent) compared to men (2 per cent).



Base n=216 respondents who said that it was difficult for them to take waste to the tip
 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)

Figure 47: Reason for difficulty taking waste to the tip – community

Industry

Industry respondents were also asked how difficult it is for them to take waste to the landfill or tip (see Figure 46). Half of respondents (49 per cent) said that it was either *very* or *fairly* easy; 29 per cent said this was *very* or *fairly* difficult.

Businesses in waste levy areas were more likely to find it *difficult* to take waste to a landfill or tip than those in non-levy areas. There was no difference between dumpers and non-dumpers.

Respondents who found it *fairly* or *very* difficult to take business waste to the tip or landfill were asked the reason for this (Figure 48). The most common reason given for this *difficulty* was logistical constraints (n=15) including access to vehicles, tip opening times and ease of access. Other responses included the high cost of tipping (n=9), distance to travel (n=8), time constraints (n=5) and difficulties regarding the type of waste.

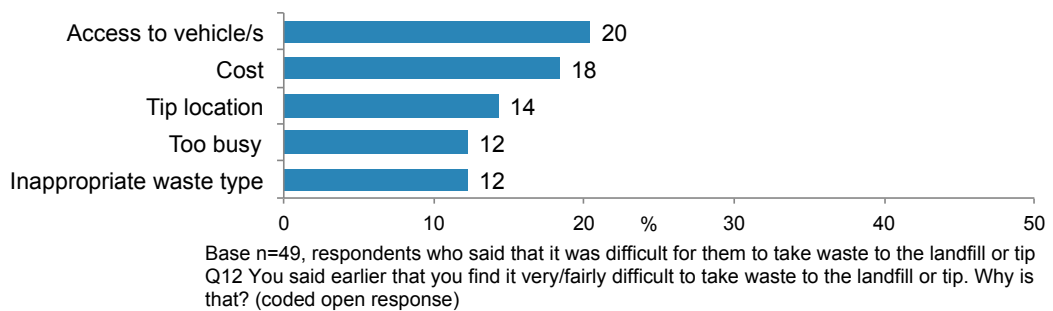


Figure 48: Reason for difficulty taking waste to the tip – industry

6.9 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: emotion; shortcuts; biases; framing; and priming.

6.9.1 Considerations in decisions to dump or not to dump

While the majority of respondents agreed that the cost of taking waste to the tip was too high, they would not consider dumping waste because of this. The environment was also a strong motivating factor to dispose of waste legally.

Community

Deliberate dumpers, and respondents who spoke a language other than English, were more likely to consider dumping their waste, with deliberate dumpers showing a lack of concern about the environmental consequences of dumping.

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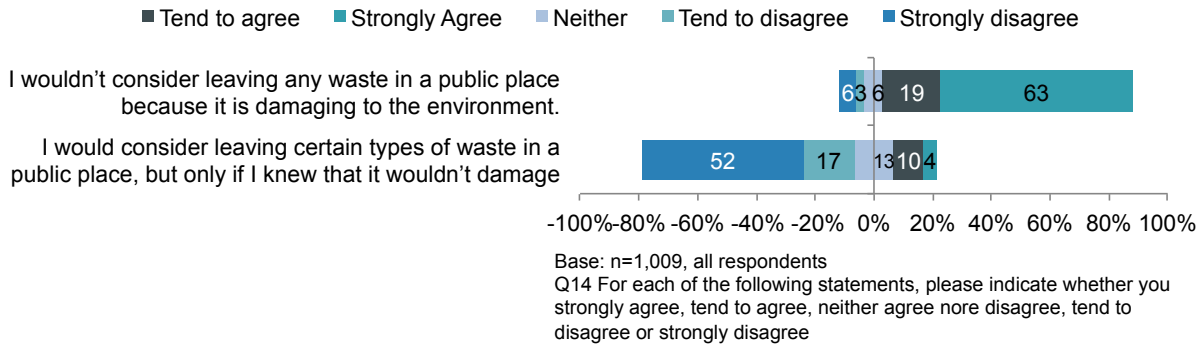


Figure 49: Agreement with statements relating to waste disposal and the environment – community

There were a number of significant differences between respondents who agreed (*strongly agree + tend to agree*) and disagreed (*strongly disagree + tend to disagree*):

- I wouldn't consider leaving any waste in a public place because it is damaging to the environment.
 - Deliberate dumpers were more likely to disagree (15 per cent) than non-dumpers (7 per cent) and kerbside dumpers (9 per cent).
 - Non-dumpers (83 per cent) and kerbside dumpers (88 per cent) were more likely to agree with this, compared to deliberate dumpers (60 per cent).
- I would consider leaving certain types of waste in a public place but only if I knew that it wouldn't damage the environment.
 - Deliberate dumpers were more likely to agree with this (41 per cent) than non-dumpers (12 per cent) and kerbside dumpers (7 per cent).
 - Non-dumpers (71 per cent) and kerbside dumpers (81 per cent) were more likely to disagree with this than hard core dumpers (30 per cent).
 - Renters were more likely to agree with this (18 per cent) than those who own their home (11 per cent).
 - Respondents who spoke a language other than English were more likely to agree with this (19 per cent) compared to those who did not speak another language (13 per cent).

While over half (52 per cent) of respondents agreed that it costs too much to take waste to the tip, only 9 per cent said that this would make them consider leaving waste in a public place.

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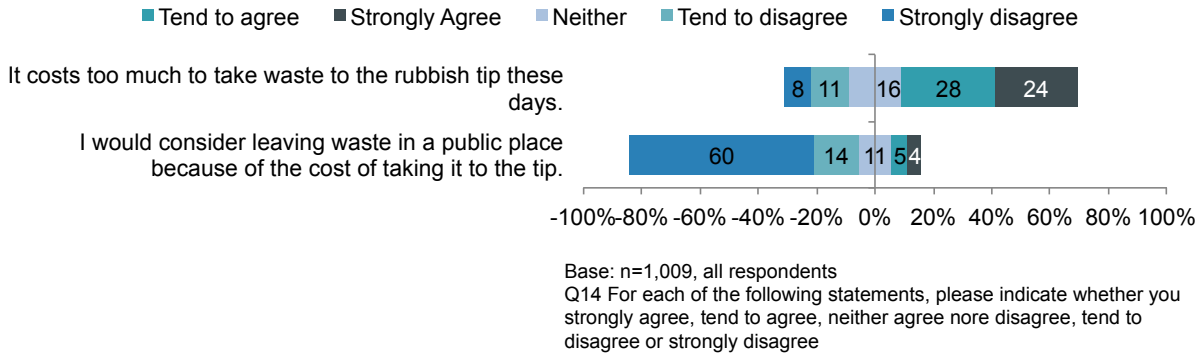


Figure 50: Agreement with statements relating to the cost of waste disposal – community

- I would consider leaving waste in a public place because of the cost of taking it to the tip.
 - Deliberate dumpers were more likely to agree with this (28 per cent) compared to kerbside dumpers (8 per cent) and non-dumpers (7 per cent).
 - Non-dumpers (79 per cent) and kerbside dumpers (81 per cent) were more likely to disagree with this than hard core dumpers (41 per cent).
 - Respondents who spoke a language other than English were more likely to agree with this (14 per cent) compared to those who did not speak another language (8 per cent).

Similar numbers of respondents indicated that they agreed that they would not consider dumping waste because of the size of the fine and because they were worried about getting caught. There were no significant differences between different groups of respondents.

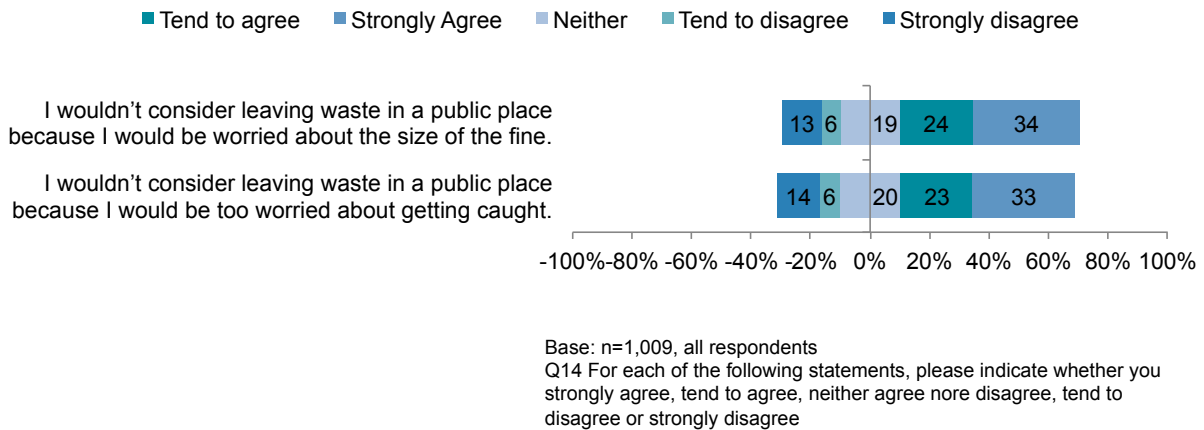


Figure 51: Agreement with statements relating to the consequences of illegal dumping – community

Industry

Similar to community respondents, while the majority of respondents agreed that the cost of taking waste to the tip was too high, they would not consider dumping waste because of this. The environment was also a motivating factor to dispose of waste legally.

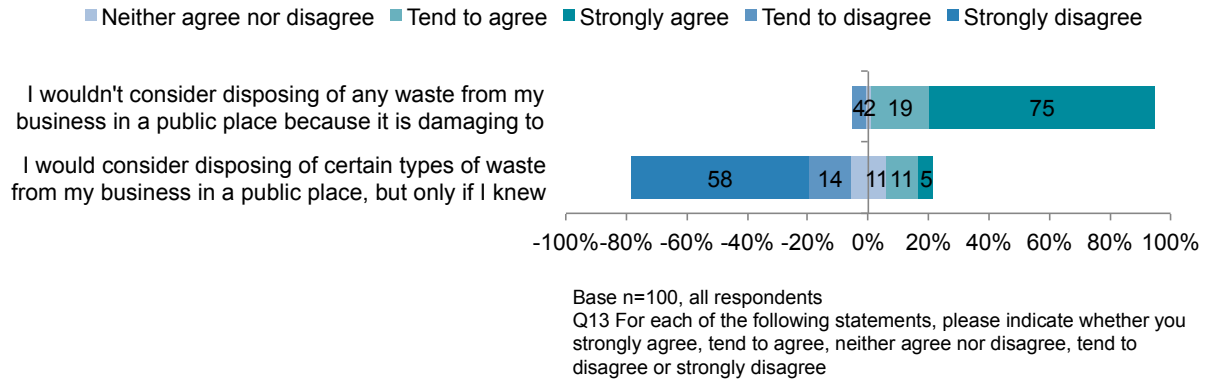


Figure 52: Agreement with statements relating to waste disposal and the environment – industry

There were a number of significant differences between respondents who agreed (*strongly agree + agree*) and disagreed (*strongly disagree + disagree*), in line with community results,

- I wouldn't consider disposing of any waste from my business in a public place because it is damaging to the environment.
 - Dumpers were less likely to agree with this (81 per cent) when compared to non-dumpers (99 per cent).
- I would consider disposing of certain types of waste from my business in a public place, but only if I knew that it wouldn't damage the environment.
 - Dumpers were more likely to agree with this (33 per cent) when compared to non-dumpers (10 per cent).

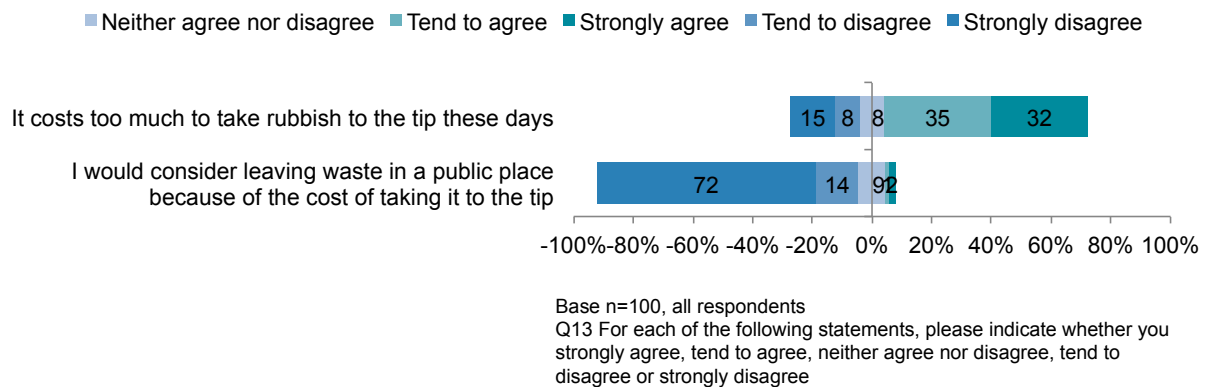


Figure 53: Agreement with statements relating to the cost of waste disposal – industry

While two thirds (67 per cent) of respondents agreed that it costs too much to take business waste to the tip, only five per cent agreed that this would make them consider leaving waste in a public place.

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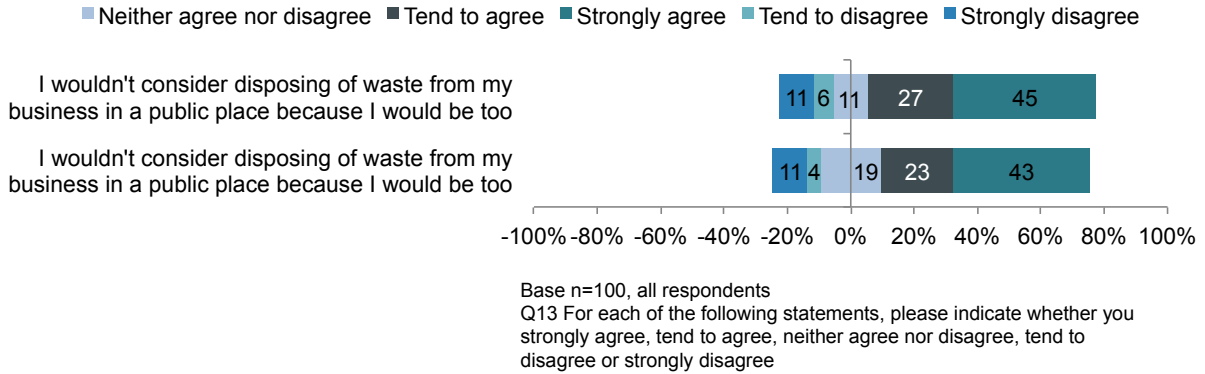


Figure 54: Agreement with statements relating to the consequences of illegal dumping – industry

Similar numbers of industry respondents indicated that they agreed that they would not consider dumping waste because of the size of the fine and because they were worried about getting caught.

6.9.2 Perceptions of the likelihood of being caught dumping

Most respondents indicated that there was a five in 10 chance or less of being caught dumping illegally.

Community

About half of respondents indicated that there was a less than five in 10 chance of getting caught and fined for dumping waste in a state forest or next to charity bins.

Respondents felt that they were more likely to get caught dumping on the side of the road near their home or on a highway.

Consistently, women were more likely than men to think that there is a high chance of being caught leaving waste in all of the locations. Home owners and respondents who only speak English were more likely to think that there is a low chance of being caught leaving waste in all the locations.

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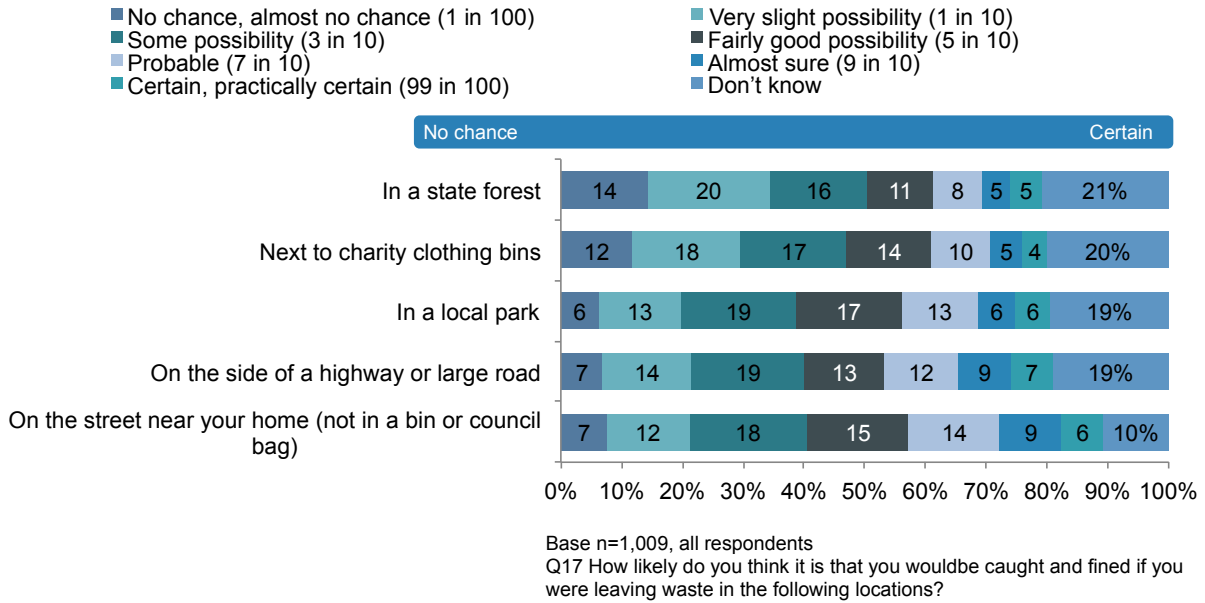


Figure 55: Perceptions of the chance of being caught and fined – community

There were a number of significant demographic differences between respondents:

- The likelihood of being caught leaving waste on the street near your home.
 - Respondents aged over 60 were more likely to think there was a high chance of being caught leaving waste on the street near your home (33 per cent) than those aged 18–29 (22 per cent).
 - Respondents in regional areas were more likely to think there was a higher chance of getting caught (36 per cent) than those living in Sydney (24 per cent).

There were no significant differences between dumpers and non-dumpers.

Industry

Respondents indicated that there was a low chance of being caught when dumping waste in a state forest or next to charity bins, and a high chance of being caught when dumping on the street, either on a major road or near their business.

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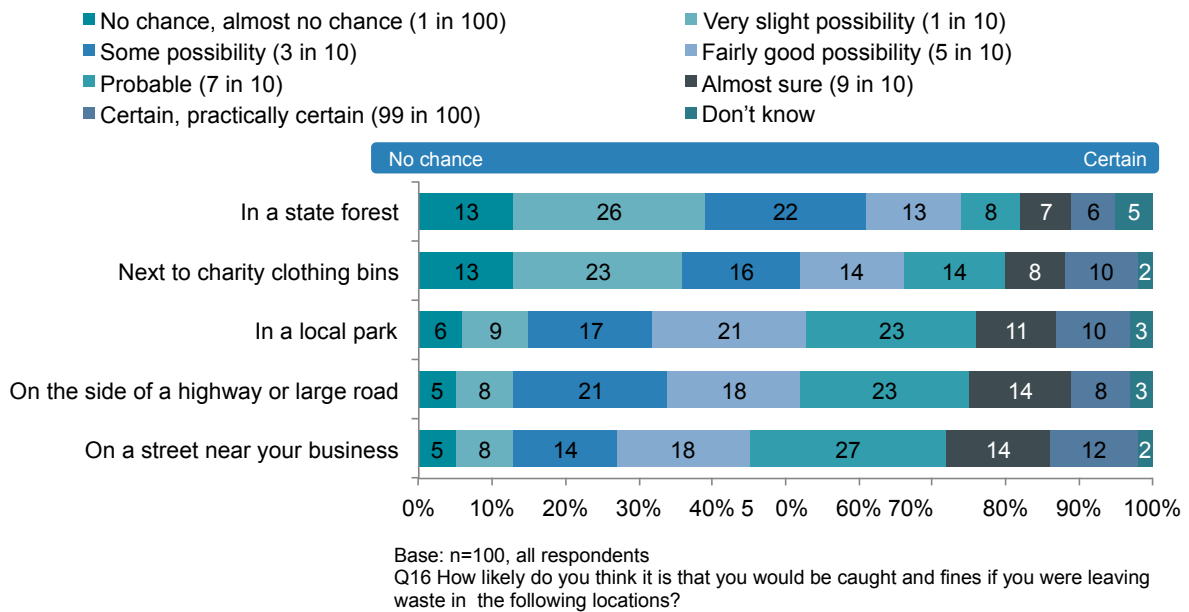


Figure 56: Perceptions of the chance of being caught and fined – industry

There were no significant differences between the various types of respondents.

6.9.3 Perceptions of fines

Almost half of community respondents did not know how much fines would be for illegally dumping waste; industry respondents were more aware, especially of the fines for dumping asbestos and hazardous chemicals.

The [Protection of the Environment Operations Act 1997](#) (POEO Act) provides a tiered range of on-the-spot fines and penalties for illegal dumping offences:

Tier 3 – Offences where an on-the-spot fine is issued

- \$7500 on-the-spot fine for individuals if issued by the EPA (\$4000 otherwise)
- \$15,000 on-the-spot fine for corporations if issued by the EPA (\$8000 otherwise)

Tier 2 – Strict liability waste dumping offences

- Maximum penalty for an individual: \$250,000 and, in the case of a continuing offence, a further daily penalty of \$60,000
- Maximum penalty for a corporation: \$1,000,000 and in the case of a continuing offence, a further daily penalty of \$120,000

Tier 1 – Wilful or negligent disposal of waste causing actual or likely harm to the environment

- Maximum penalty for an individual: \$1,000,000 and/or seven year prison sentence for wilful offences; \$500,000 and/or four year prison sentence for negligent offences
- Maximum penalty for a corporation: \$5,000,000 for wilful offences; \$2,000,000 for negligent offences

Community

Among community members, knowledge of fines was low, with almost half of respondents indicating that they did not know the fines for dumping each waste type. Of those who did know, dumping of hazardous waste was seen to attract the highest fines, with a quarter (27 per cent) indicating that the fine would be over \$5000. Fines for dumping garden waste were seen to be lower, with 21 per cent of respondents indicating the fine would be less than \$250.

Leaving garden waste or general waste in a public place was perceived to attract lower fines, while dumping asbestos or hazardous chemicals was perceived to involve a higher fine.

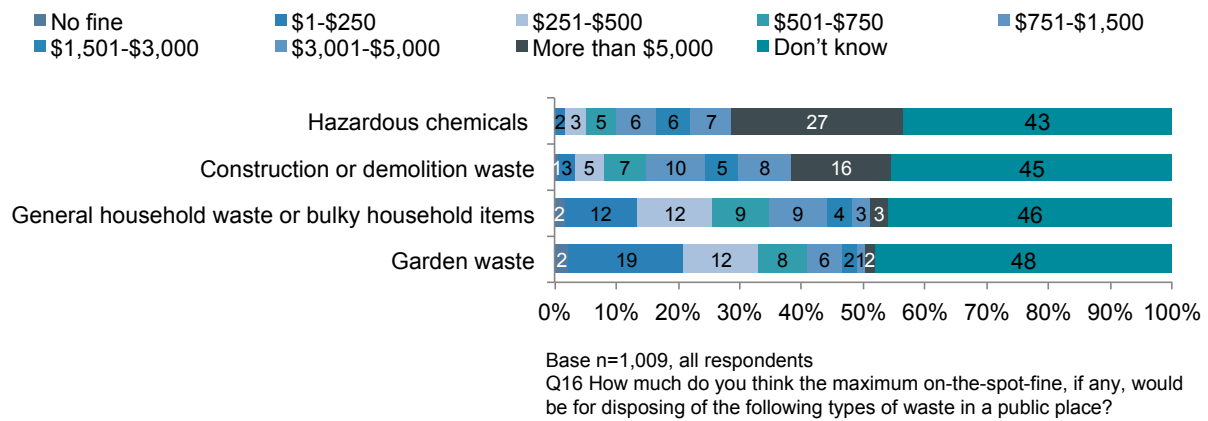


Figure 57: Estimates of fine value – community

There were a number of significant differences between groups of respondents:

- Hazardous chemicals
 - Deliberate dumpers were more likely to think there would be lower fines for dumping hazardous chemicals.
 - Nineteen per cent of deliberate dumpers indicated that the fine would be less than \$500 (compared to 3 per cent of non-dumpers and 6 per cent of kerbside dumpers).
- Construction and demolition waste
 - Deliberate dumpers were more likely to think there would be lower fines for dumping construction and demolition waste.
 - Twenty-three per cent of deliberate dumpers indicated that the fine would be less than \$500 (compared to 6 per cent of non-dumpers and kerbside dumpers).
 - Respondents aged 40–50 (19 per cent) and over 60 (22 per cent) were more likely to think that the fine would be over \$5000 compared to those aged 30–39 (8 per cent).
- General waste or bulky household items
 - Deliberate dumpers were more likely to think there would be no fine for dumping general waste (5 per cent), compared to non-dumpers and kerbside dumpers (both 1 per cent).
- Garden waste
 - Deliberate dumpers were more likely to think that dumping garden waste would incur no fine (7 per cent) compared to non-dumpers (2 per cent) and kerbside dumpers (1 per cent).

Illegal Dumping Research Report

Industry

Sixty-five per cent of respondents indicated that they thought the fine for dumping asbestos in a public place would be over \$5000, while only six per cent of respondents thought the fine would be this big for dumping garden waste.

While awareness of fines was higher among industry respondents than the community, there was still a significant proportion indicating that they did not know what the fine would be for dumping.

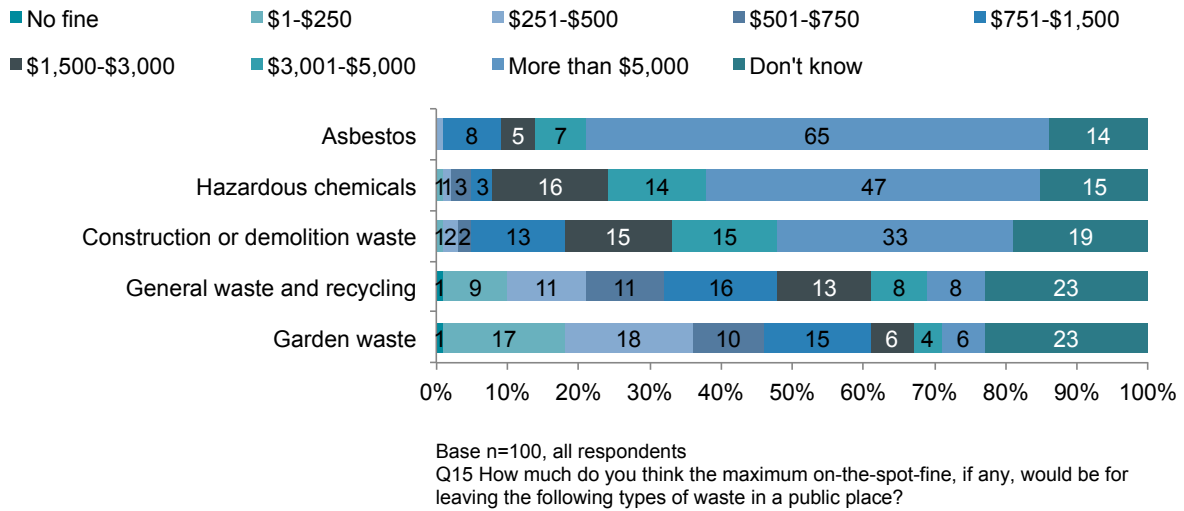


Figure 58: Estimates of fine value – industry

There were no significant differences between the various types of respondents.

7. Community group discussions

7.1 Objectives

The specific objectives of the qualitative research with the community were to explore and gain a better understanding of:

- the (reported) behaviour of householders in relation to legal waste disposal and illegal dumping
- awareness and understanding among householders of ways to legally dispose of waste
- awareness and understanding of illegal dumping in the community
- perceptions of the acceptability of illegal dumping in the community
- householders' capability, opportunity and motivation to dispose of waste legally
- any differences between *kerbside dumpers* and *deliberate dumpers*.

7.2 Methodology

Two group discussions with people who had admitted to illegal dumping behaviours were held in Western Sydney. Both groups were conducted on 1 April 2014.

Group participants had all taken part in the community quantitative survey. Survey participants were allocated to three groups based on their waste disposal behaviour⁹:

- non-dumpers
- kerbside dumpers
- deliberate dumpers.

Participants in the first focus group were identified as *kerbside dumpers*, while participants in the second were *deliberate dumpers* (i.e. they had dumped waste in places other than or in addition to the kerbside).

7.3 Findings

7.3.1 Waste disposal behaviours

Types of waste produced

Both groups of participants identified a wide range of waste types produced by their households. Materials that were disposed of most often, such as general waste and recyclables, kitchen waste, packaging and garden waste, were top-of-mind for both kerbside and deliberate dumpers. Old furniture featured prominently in discussions, including beds, and mattresses.

Other materials mentioned included old clothing and bedding, appliances, books, old toys, unused or broken electronics and computer equipment, batteries, motor oil, tyres, cleaning chemicals, herbicides, paint and thinners, building/renovation waste and asbestos.

No particular differences were noted in the types of waste produced by kerbside dumpers compared with deliberate dumpers.

⁹ See Section 6.2.1 for details of how participants were allocated to these categories.

Disposal methods used by participants

Participants were able to identify a wide range of disposal options for their household waste. Most had a firm grasp of the options available to them.

Weekly council collections of waste and recyclables were top of mind, and were used to dispose of the majority of household waste. **Council clean-ups or kerbside collection of bulky items** were mentioned early on in both groups. These services were commonly used to dispose of large or bulky items. Kerbside dumpers in particular reported high levels of use of council clean-ups and were well aware of the particular service provided by their council (be that regular collections or a call-for-pickup system).

Participants in the deliberate dumpers group were more willing than kerbside dumpers to admit leaving items such as televisions and furniture on the street outside their homes outside of council collection periods. Deliberate dumpers stated that the items could be reused by other people. Kerbside dumpers were less willing to accept this as a reason to leave waste on the kerb outside collection periods.

Tips (also referred to as **waste depots** or **landfills**) were mentioned by both groups. Almost all members of the kerbside dumping group stated that they had not had a need to go to the tip in recent years. Disposal of items that they might otherwise take to the tip was achieved via other methods, particularly council clean-ups.

Charity bins and shops were mentioned by both groups as an avenue for disposing of clothing, bedding and some household items. They were seen as a positive way to dispose of unwanted items, with the proceeds going to charity. Several participants in the deliberate dumpers group admitted to having left items outside charity bins when they had turned up and found them full. Most in the kerbside dumping group, on the other hand, felt that this was unacceptable, and stated that they had taken items home with them instead of leaving them outside.

Other disposal methods used by participants included **hiring a skip, auctions** and **scrap metal dealers**. Participants in both groups were aware that some retailers or schools accept phone batteries for recycling, while garages accept car batteries and oil.

Participants in the kerbside dumping group also mentioned several alternatives which involved the reuse of items. **Up-cycling** (repurposing/modifying an item for a different use) and **free-cycling** (advertising waste materials via a network allowing third parties to take them away for reuse or repurposing) were both mentioned. This focus on reuse was more prevalent within the kerbside dumping group than the deliberate dumping group. Deliberate dumpers did not mention these types of reuse or recycling options, but did mention that they would try to sell unwanted household items such as furniture if possible.

Participants in the deliberate dumpers group mentioned that they disposed of some materials or items through less conventional methods. One member of the deliberate dumpers group stated that he sometimes **burned unwanted items such as furniture** in his backyard if he was unable to sell it, although other group members believed that this was illegal. Another stated that she poured old motor oil **around the bottom of the fence** to keep the weeds down.

Participant 1: 'I've had a couple of bonfires in the backyard. Just a couple of old wooden chairs, things like that. If you can't sell them on ebay, burn them.'

Participant 2: 'You're not allowed to burn stuff' – Deliberate dumpers

Illegal dumping behaviour

Participants were also asked about methods of disposal they had seen other people using, but may not have used themselves. Participants in both groups reported seeing others

leaving items in public places on a regular basis, with locations including the side of the street and in parks.

'Constant dumping – everything! Lounge chairs to chemical waste.' – Deliberate dumper

Some in the deliberate dumping group admitted to having dumped items in public places after the discussion about other people's methods of waste disposal began. This included admitting to dumping green waste and household items on the street, and one participant admitted to dumping items in the park when he didn't know how to dispose of them. Some were aware that this behaviour was illegal, but saw it as justifiable because other people generally have use for the items and take them away.

'I think when you do dump your rubbish on the nature strip, it's against the law, but people do. A lot of people pick them up, and strip the wires, use the copper and things like that.' – Deliberate dumper

Some in the kerbside dumpers group also admitted to leaving items on the kerb outside their home outside council clean-up periods. Most, however, stated that they had only done so during council collection periods.

'Only for the collection, only for that, you leave it out a few days before...' – Kerbside dumper

'And we're not allowed to put it out until, I think, six hours prior, and you're fined if it's on the street' – Kerbside dumper

7.3.2 Capability

Psychological

Searching for information

Participants generally felt that, if they needed to, they could find information about how to legally dispose of their waste or unwanted items. Internet searches and local councils were cited as the best sources of this information, and both were seen as being easily accessible.

Information was sometimes provided proactively by councils, and this was a source of information for some participants, particularly kerbside dumpers. Information about timing of kerbside clean-ups, or call-up services available to residents, was seen as particularly useful.

'The council usually gives you a leaflet, in our area they come twice a year, so they just drop a leaflet in our letterbox' – Kerbside dumper

'They put it in a calendar that goes on your fridge that actually has it highlighted for your street and that worked' – Kerbside dumper

Understanding of legality

There was a good understanding of the illegality of leaving waste or other items in public places, although leaving waste on the kerbside was an area around which there was less certainty. There was recognition, even among those who had admitted to doing it, that leaving items on the kerb outside of council clean-up periods is illegal.

'You're not supposed to leave anything out on the kerb, it is illegal' – Deliberate dumper who admitted to kerbside dumping

'I'm assuming some of these are against the law, but I don't know for sure, I mean, putting household stuff on the side of the road – I don't know... I assume it I, putting stuff outside your house, I don't know' – Kerbside dumper

Councils were seen as tightly enforcing issues around waste disposal, and informing residents who had disposed of items inappropriately. Some reported having received information or warning letters when they had placed expanded polystyrene in their general waste collection (this was not allowed by the council).

Deliberate dumpers who admitted to leaving items on the kerb outside their homes appeared unworried about the prospects of being caught and prosecuted. They stated that it was often difficult to tell which household had left items on the street, and that it was even more difficult in front of multi-unit dwellings.

Physical capability

Few physical barriers to disposing of waste legally were identified by participants. One participant stated that she was unable to dispose of heavy electronic equipment because she couldn't carry it downstairs, and had no one to help her. This, however, had not led to illegal dumping behaviour, because she could not remove the items from her home.

'They are still in my lounge, I've got old computers, old TVs, and a microwave. I don't have the power to take them downstairs, they are heavy... I asked the Council and they said they don't take them, they suggested Salvos but they said no too, so I don't know' – Deliberate dumper

7.3.3 Opportunity

Social opportunity and the acceptability of dumping

Illegal dumping was seen as a widespread behaviour by both kerbside and deliberate dumpers.

'I think people are just dumping their stuff on the street, in the parks.' – Deliberate dumper

'I think illegal dumping in general is everywhere. Down our street, always on the side you know, in the park, everything, from lounge chairs to chemical waste.' – Deliberate dumper

The perceived acceptability of dumping varied by the type of materials dumped and the location of disposal.

In each group, participants were asked to rank, together, a list of different behaviours from very acceptable to very unacceptable. Several waste-related behaviours were included, alongside other behaviours of varying social acceptability.

The waste-related behaviours included were:

- put old clothes in the charity bin
- left a bookshelf on the kerb in front of their house
- left household rubbish on the side of the road
- threw recyclable goods in the bin instead of recycling them
- left materials containing asbestos on the side of the road.

The other behaviours were:

- volunteered in the local fire brigade
- gave money to a homeless person

- swore when stranger could hear them
- pushed in front of someone in a queue
- drove 110 km/h in a 100 km/h zone
- drove a car while their licence was suspended
- smoked cigarettes in their own home when a child was present
- gave an alcoholic drink to a 15 year old
- drove their car when they were drunk.

Risk to the health of others was a key determining factor in the acceptability of the behaviours. Both groups rated leaving materials containing asbestos on the side of the road as being at the lowest point of acceptability, equivalent to driving drunk and smoking in the presence of children. Participants felt that potential impacts of the asbestos on the health of members of the public meant that dumping asbestos was unacceptable.

Both groups also rated the acceptability of dumping **general waste in a public place** at around the same level. Leaving household rubbish on the side of the road was seen as being similar to driving while suspended; it was seen as being less acceptable than driving 110 km/h in a 100 km/h zone.

'I think they (dumpers) see it as acceptable, we don't... I don't think they care whether it is acceptable or not' – Kerbside dumper

Participants in both groups viewed people who dumped large amounts of waste as being lazy, lacking pride in their surroundings and uncaring of impacts on others. Deliberate dumpers tended to be slightly more forgiving in their characterisation of people who dumped large amounts of waste in public places, using words such as 'relaxed', 'immature', 'not family-minded' and 'happy-go-lucky'. Kerbside dumpers characterised them as 'poor', 'selfish', 'inconsiderate', 'cheap' and having a 'lack of pride' and 'low self-esteem'.

Kerbside dumping

There were differences in the perceived acceptability of leaving items such as furniture at the kerbside. Deliberate dumpers rated leaving a bookshelf in front of a house as being just as acceptable as putting old clothes in a charity bin, volunteering for the fire brigade or giving money to a homeless person – in other words, very acceptable. Kerbside dumpers, on the other hand, rated the acceptability slightly lower, placing it below the other behaviours.

This difference was reflected in general discussions about leaving items outside homes. **Kerbside dumpers**, while accepting that there was some potential value to others in leaving items on the kerb (and in a few cases admitting having done it), **saw those leaving items on the kerb as acting selfishly**. They generally stated that people who left items on the side of their street outside of council clean-up periods were only thinking about their own need to get rid of the items, and not about who would have to deal with them next.

'It's not in my place anymore, it's not my problem... selfish... because they've just dumped whole lot of rubbish' – Kerbside dumper

Deliberate dumpers tended to **justify leaving items at the kerbside by saying that other people could reuse them**. The items were seen as valuable, and therefore leaving them for people to pick up was seen as being similar to a public service. Deliberate dumpers reported seeing people pick up items left out, and in some cases had done so themselves.

'I just leave things on the nature strip and people just take what they want and leave what they don't want, and it's not there for long, one or two days and it's gone,

especially if it's metal, the scrap metal collectors come past and take it. Like barbecues, fridges, they take it and use it all for scrap metal, so it's recycling in a way.' – Deliberate dumper

'I've put out all my TVs. Three TVs, they all worked. And they all went. People take them.' – Deliberate dumper

Among deliberate dumpers, broken items were also seen as being acceptable by some, as they believed that others would fix them or find value in the scrap.

This contrasted with the stance of kerbside dumpers, who tended to be of the view that ensuring waste is properly recycled was one's own responsibility.

One participant in the deliberate dumping group spoke of how he had left some bicycles in front of his house, which were subsequently dumped in a creek. While he was comfortable leaving the items in front of his house for reuse, he was uncomfortable with the fact that they had been left in the creek, seeing this as less acceptable. The social repercussions of being seen dumping in the creek appeared to be at the root of this discomfort.

'I've put some kids bikes out the front and they went, but then I saw them down the creek, someone had dumped them there and I thought 'oh no, I hope I don't get the blame for that''. – Deliberate dumper

'You don't wanna go dumping it down the creek, if someone sees you...' – Deliberate dumper

Dumping at charity bins and stores

Participants were aware of dumping around charity bins and stores, with both kerbside and deliberate dumpers indicating that they had seen this behaviour.

'Charity bins get trashed' – Deliberate dumper

Physical opportunity

Most participants were aware of the range of services that are available for disposing of waste, and did not see that there was a lack of services to allow disposal of waste. Kerbside dumpers, in particular, found weekly collections and council clean-ups to be adequate for the majority of their waste disposal needs. The cost of using them was seen as a barrier by many. This is discussed in detail in the next section.

Some frustrations with services were mentioned, however. Participants identified physical barriers to disposing of items appropriately. In some cases, this had led them to dump, while in others it had not.

A great deal of frustration was expressed by some participants at the difficulty of disposing of garden waste in cases where the council did not provide a collection. The volume of garden clippings during some periods of the year meant that the capacity in the general waste collection bin was not always sufficient. Several strategies were used to surmount the problem. One kerbside dumper bagged up her grass clippings and then put them into their **general waste over the subsequent weeks** when there was space in the general waste wheelie bin.

Others reported using **spare capacity in neighbours' bins or public bins**. Some noted that there could be social consequences of being caught doing this, particularly if the other person was paying for the skip.

'I think it's quite common that people dump it in council bins, so they go for a walk and drop it off in the park bin or even so far as walking up the street and putting it in

this neighbour's and that neighbour's [bin]. I know my neighbours and us have an agreement – if anyone's got too much you can fill the neighbour's bin, but that's only the house on either side. It wouldn't go any further up the street.' – Kerbside dumper

'This is what you're not supposed to do... if someone has a big skip in their front yard, at midnight you go and dump your rubbish in their bin.' – Deliberate dumper

One deliberate dumper spoke of how he had decided to dump green waste because of frustration that the council did not provide the necessary infrastructure. It was seen as the council's responsibility to provide the infrastructure necessary to dispose of the waste.

'A couple of times, I've just felt you know, I didn't have a place to put them properly, so I just you know, dumped them. I thought it's not my problem, Council didn't put things in place for us to do the right things, that's what I felt... Like green waste, branches and leaves, left them on my street.' – Deliberate dumper

Some in the kerbside dumpers group mentioned that they composted their green waste, although others stated that lack of space on their property limited the opportunity to do this.

7.3.4 Motivation

Cost of disposal

Cost was mentioned throughout the discussions as a barrier to proper disposal of waste, particularly in the deliberate dumpers group. Some deliberate dumpers stated that the cost of taking items to the tip had driven them to find alternative methods of disposal such as burning or dumping.

'At my workplace, we had to get rid of some old computers, and I rang the recycle centre and they said I'd have to pay \$300 for it and carry it to them, they don't pick them up, so I just you know, dumped them on the street. It's quite a hassle to get rid of computers and TVs.' – Deliberate dumper

Many participants had not often taken waste to the landfill or tip, and therefore were unaware of the cost of doing so, but thought that the price is relatively high. One participant considered \$150–200 per tonne to be a 'rip off'. Some participants reported hiring a skip bin from a waste contractor, and considered this an expensive, but sometimes necessary, method of disposal.

Fines

Most participants were aware that there were fines for dumping illegally; however, there was low awareness of the size of fines and most regarded the chances of being caught for dumping, and subsequently fined, as being relatively low. Councils were seen as being somewhat powerless or unable to enforce fines against dumpers because of the difficulty of identifying offenders.

'Have we ever heard of council actually prosecuting anyone? I haven't.' – Kerbside dumper

'They say there are [fines], but they don't police it... councils don't have the financial will power to really, seriously go after these people.' – Kerbside dumper

Fines were therefore seen as a mild deterrent to dumping. Participants believed that being seen dumping by other members of the public was far more likely to happen than being caught and fined by the authorities. As such, they appeared to be more concerned about the social impacts of getting caught or being seen by neighbours than about being fined. It was

suggested that many people who dump do so at night, to avoid the attention of both other community members and the authorities. This was seen as a relatively effective measure to avoid detection.

While participants were aware of the existence of fines for illegal dumping, they were generally unable to talk specifically about the size of the fines. Most thought that the fines were a few hundred dollars, although some thought they may be higher.

'Like putting stuff in the charity bins – if you sit stuff outside it, it's illegal and you can get fined for it... and I thought, it was 200 or something dollars for one of the fines - to about \$2000.' – Kerbside dumper

None of the participants spoke about prison sentences as a potential outcome of dumping.

Note: The [Protection of the Environment Operations Act 1997](#) (POEO Act) provides a tiered range of on-the-spot fines and penalties for illegal dumping offences. These were listed earlier under Section 6.9.3.

Impacts of dumping

When participants were asked about the impacts of dumping, the impact that first came to mind was the fact that it falls upon third parties to clean up. There was awareness of the fact that this role fell upon the local council, and in the case of clothing bins, on the charity administering the bin.

'Of course there are (impacts)... somebody's got to clean it up, somebody's got to fix the mess.' – Kerbside dumper

Health impacts were mentioned as being a key concern by some participants.

'Empty blocks of land, they dump on empty blocks...It's a hazard, rats, mice, everything breed there.' – Deliberate dumper

Regarding the impacts of illegal dumping on health, however, it was often difficult for participants to articulate the scale or severity of the problem for materials that don't have a clear, direct impact on public health. Participants in the kerbside dumpers group, for example, turned to the topic of industrial waste being discharged to waterways when asked about the severity of health impacts of dumping. Asbestos was the exception to this, with participants being very aware of its impact on health, and therefore seeing the dumping of asbestos as highly unacceptable.

Similarly, environmental impacts were not clearly understood by participants, although there was a broad acknowledgement that dumping does have a negative impact on the environment.

Aesthetics and community pride being impacted by illegal dumping was also mentioned throughout discussions. A lack of pride in the community often came up spontaneously as an issue, although it was often seen as being a cause of dumping, rather than an outcome of it.

8. Conclusions and recommendations

8.1 The nature and extent of illegal dumping

8.1.1 Illegal dumping is a growing problem

Illegal dumping is a significant issue for NSW LGAs, charitable recyclers, and other land managers, particularly (but not exclusively) in metropolitan NSW. The perception among these groups is that illegal dumping has become more prevalent in recent years, and this is supported by findings of the survey of NSW LGAs which indicated that it has become more of a problem since 2004.

The main problem caused by illegal dumping, for land managers, is the cost of dealing with dumped waste (including the additional resources required). Most LGAs are dealing with up to 100 illegal dumping incidents a year (and fewer illegal landfilling incidents); however, over one in 10 (11 per cent) spend more than half a million dollars a year on activities relating to the prevention, monitoring and enforcement of illegal dumping. Most of this is spent on staff time and contractors.

The prevailing view in industry was that the extent of illegal dumping is fairly limited, with a small minority of businesses adopting the behaviour; however, it was acknowledged that illegal dumping is done covertly and was not often spoken of, and therefore it is difficult to know how prevalent it is.

8.1.2 Household waste on the kerbside is the most common type of illegal dumping

The research found that a third (35 per cent) of the community and over a quarter (27 per cent) of waste producing businesses had dumped waste illegally in the last year. Most of this was on the kerbside or roadside. One in 10 (11 per cent) in the community had illegally dumped waste elsewhere.

Householders and businesses most commonly admitted to illegally dumping household waste and recyclables (among householders) and general waste (among businesses). This aligns with the experiences of LGAs, which find that they most commonly deal with household waste dumped by the roadside or kerbside (and this has remained unchanged since 2004).

Asbestos comprises a small proportion of dumped waste in terms of what LGAs are cleaning up (8 per cent), and no one in industry admitted to illegally dumping asbestos; however, the prevailing view among LGAs was that asbestos is being dumped more frequently now than five years ago. Despite forming only a minority of illegal dumping incidents, illegally dumped asbestos was commonly cited as being the most problematic for land managers, due to the urgency of cleaning it up given the health and safety risks, and the high cost of doing so.

8.1.3 Illegal dumping is not necessarily confined to any particular demographic

The general perception among land managers was that a minority of households and businesses illegally dump waste, and that this was confined to certain demographic characteristics. The view was that low socioeconomic-status households, immigrants and residents of unit blocks were more likely than others to illegally dump waste; however, the research with the community demonstrated that this is not the case: there are no discernible differences in the demographic characteristics of people who dump at the kerbside and people who do not. It is young people, males and those in full-time employment who are among the most likely to illegally dump waste elsewhere (other than or in addition to the

kerbside). The survey showed that illegal dumpers are not characterised as having low incomes, a lower level of formal education, or as culturally and linguistically diverse (CALD).

8.2 Capability: Awareness of legal methods and understanding that dumping is illegal

8.2.1 Low awareness of legal methods does not appear to be driving illegal dumping

Land managers, including LGAs, charities and other government bodies, shared the view that awareness of legal waste disposal methods, such as council services and landfills, may be low in some communities and that this could be leading to illegal dumping; however, research with the community showed that people who were aware of legal disposal methods were no less likely to dump waste illegally, in fact the opposite was the case, whereby those who were most aware of and most likely to have used the services available were also most likely to have dumped waste illegally. Follow-up qualitative research suggested that this is due to these people being in most need to know as they frequently have waste to dispose of, and therefore are knowledgeable of both legal and illegal disposal methods, whereas those who do not generally dispose of waste are less aware of all methods.

8.2.2 People understand that (most) dumping is illegal

The research showed that there is a good understanding of the illegal status of dumping waste among the general community and industry. Businesses in particular have a good understanding of what is and is not illegal regarding waste disposal. There is, however, some confusion in the community about leaving household waste on the kerbside (outside of council collection dates), with a third believing it to be legal (33 per cent) and nearly a quarter not knowing either way (23 per cent).

8.3 Opportunity: Dumping as a social norm, and access to services

8.3.1 Social norms around dumping play an important role in influencing waste disposal behaviour

Cultural and social norms were thought by land managers to play a significant role in people's likelihood to dump illegally, and this was reflected in the research with the community and industry.

Land managers, industry and the community perceived those who dumped waste illegally as being from communities which lacked community pride and in which dumping waste was accepted as the norm. Illegal dumping was viewed by the vast majority of the community and businesses as very unacceptable, with the exception of kerbside dumping which was not viewed with such condemnation. Householders who dumped waste elsewhere or in addition to the kerbside were more likely to see illegal dumping as acceptable, indicating that perceived acceptability of dumping waste does impact on a person's likelihood to do it. There were no differences in terms of income or other demographics among those who viewed dumping as acceptable and those who did not.

In addition, householders and businesses who dumped waste illegally (other than or in addition to the kerbside) were more likely to have seen or heard of other people dumping waste illegally. These householders were also more likely to say that their behaviour is influenced by others. In other words, illegal dumping was more prevalent among people who viewed it as a social norm.

Widespread disapproval of illegal dumping was a major deterrent to businesses to dump waste illegally. The reputation of their business was critically important to them and their

livelihood, and therefore the potential damage to their name caused by illegal dumping was a powerful incentive to use legal disposal methods.

8.3.2 Distance to waste disposal facilities may contribute to decisions to dump illegally

Most in the community and in industry did not experience difficulties accessing waste disposal facilities: the majority have access to a vehicle, and this did not vary between those who did and did not dump waste illegally. However, householders who had further to travel to landfills were more likely to dump waste illegally (in places other than or in addition to the kerbside). These people were also more likely to have access to a trailer, increasing their ability to take waste elsewhere.

8.4 Motivation: Dumping illegally to save money, and the consequences of illegal dumping

8.4.1 Cost avoidance is a key driver for businesses to dump illegally

Land managers perceived cost avoidance as the key driver for both householders and businesses to dump waste illegally, and attributed the increase in dumping in recent years to the increase in the cost of legal disposal. The research suggested that this is the case among businesses, whose margins are tight and for whom waste disposal can comprise a significant proportion of their outgoings, particularly if asbestos disposal is required. The majority of the general community found waste disposal very expensive, however for most, the cost of disposal does not drive them to dump their waste illegally. The research did indicate that those who do dump waste illegally (in places other than or in addition to the kerbside) are doing so in part as a result of the cost of disposal, but this is not the whole story of why these people decide to dump.

8.4.2 Low awareness or consideration of the consequences of dumping illegally is a factor

The perceived low likelihood of being caught was thought to contribute to businesses' and householders' decisions to dump waste illegally; however, the majority in the community and industry thought that there was some chance of being caught and only a minority thought there was only a slim chance or no chance of being caught if dumping illegally (the perceived chance of being caught diminished for certain locations, such as state forests and around charity bins). Perceptions of the likelihood of being caught did not vary between those who do dump waste illegally and those who do not, suggesting that a higher perceived likelihood of being caught is not in itself a strong deterrent.

Despite perceiving being caught as a reality, there was low awareness of the penalties which applied if caught. Knowledge of the magnitude of the fines applicable was fairly low among the community, but there was awareness that higher fines applied if the waste dumped was hazardous. There was higher awareness among industry of the fines applicable.

The view among land managers and industry was that the penalties for illegal dumping were not severe enough to be a true deterrent (for example, it could be more worthwhile financially to dump waste illegally and be fined than to pay for legal disposal).

In terms of the wider impacts of illegal dumping, the general view among land managers and industry was that awareness of the social, economic and environmental impacts of dumping was low among householders and businesses. They perceived householders in particular as having no appreciation that there was a cost associated with disposing of waste, and therefore no understanding of why there needed to be a fee attached to legal disposal. Concern for the environmental impacts of dumping was fairly low, and appears to be lowest

among the householders and businesses who are dumping illegally (in places other than or in addition to the kerbside).

8.5 Interventions

8.5.1 Raising the profile of enforcement and more community education were called for

There was widespread support among land managers for expanded and empowered RID squads (particularly for construction and demolition waste, illegal landfill, and asbestos). As well as increased patrolling and surveillance, it was thought that in order to reduce dumping, it was important to raise the profile of enforcement. Even if actual enforcement could not be increased, it was seen as important that the perceived likelihood of being caught be increased, through increased publicity of enforcement and exposure of offenders. It was thought that 'naming and shaming' businesses guilty of dumping would be particularly effective, as the threat of damage to a business's reputation would be more effective than other potential consequences.

Most LGAs were implementing some kind of community education and awareness raising, in an attempt to reduce illegal dumping. Education was seen as one of the most effective ways to reduce dumping, in conjunction with enforcement.

8.6 Recommendations

Based on the findings of this research, future strategies and interventions to reduce illegal dumping ought to:

- **Capitalise on businesses' concern for their reputation.**
 - Convey a strong message to industry that the reputation of their business (and therefore their livelihood) is at risk if they dump.
 - Name and shame businesses guilty of dumping, to make the threat of reputation damage a reality and leverage word-of-mouth within industries.
- **Reinforce the social norm that illegal dumping is unacceptable.**
 - Communicate to the minority who see it as acceptable and the norm, that illegal dumping is disapproved of and not the norm.
- **Create a social norm around reporting illegal dumping.**
 - Convey the message that 'dobbing in a dumper' is socially acceptable and is the norm, and that it is not acceptable to ignore dumping.
- **Increase the perceived likelihood of being caught dumping in state forests and at charity bins.**
 - Indicate that patrolling and surveillance does happen in these places, and that arrests do occur, through raising the profile of enforcement and penalties.
- **Raise the profile of the personal consequences (i.e. magnitude of fines, prison sentences), and ensure fines are more than the savings made by dumping illegally.**
- **Educate householders to request evidence of legal disposal from any contractors used.**
- **Share best practice relating to strategies to minimise, enforcement, and clean-up among LGAs and other land managers.**

Appendix A: LGA survey additional tables

Reasons for dumping illegally

| Reason | Construction and demolition | | Green waste | | Household waste | | Asbestos | |
|--|-----------------------------|----------|-------------|----------|-----------------|----------|----------|----------|
| | n | per cent | n | per cent | n | per cent | n | per cent |
| Uncaring attitude/lack of community pride | 32 | 51 | 36 | 57 | 46 | 73 | 26 | 41 |
| Unwilling to pay/cost avoidance | 51 | 81 | 38 | 60 | 43 | 68 | 49 | 78 |
| Insufficient surveillance/regulation/enforcement | 31 | 49 | 24 | 38 | 21 | 33 | 21 | 33 |
| Site already used for illegal dumping by others | 18 | 29 | 19 | 30 | 25 | 40 | 5 | 8 |
| Lack of developmental control plan promoting waste reduction | 8 | 13 | 1 | 2 | 0 | 0 | 4 | 6 |
| Convenience | 24 | 38 | 31 | 49 | 34 | 54 | 21 | 33 |
| Limited hours of appropriate landfill site or transfer station | 10 | 16 | 7 | 11 | 7 | 11 | 4 | 6 |
| Long distance to appropriate landfill site or transfer station | 7 | 11 | 3 | 5 | 3 | 5 | 7 | 11 |
| Lack of disposal/reuse/drop-off facilities | 6 | 10 | 6 | 10 | 3 | 5 | 4 | 6 |
| Lack of waste storage space | 3 | 5 | 4 | 6 | 7 | 11 | 1 | 2 |
| Low awareness of proper disposal | 9 | 14 | 12 | 19 | 10 | 16 | 6 | 10 |
| Low awareness of impacts of dumping | 15 | 24 | 28 | 44 | 18 | 29 | 13 | 21 |
| Low awareness of fines | 9 | 14 | 15 | 24 | 14 | 22 | 8 | 13 |
| Fines/penalties aren't a deterrent | 23 | 37 | 17 | 27 | 17 | 27 | 18 | 29 |
| To make money (e.g. organised dumping networks) | 20 | 32 | 8 | 13 | 4 | 6 | 16 | 25 |
| Other | 2 | 3 | 1 | 2 | 2 | 3 | 2 | 3 |
| Q10. For each waste type, why do you think it is dumped illegally in your council area? | | | | | | | | |
| Base: n=63 | | | | | | | | |

Reasons for dumping illegally

| Reason | Cars and car parts | | Illegal landfill | | Dumping around charity bins and shops | |
|--|--------------------|----------|------------------|----------|---------------------------------------|----------|
| | n | per cent | n | per cent | n | per cent |
| Uncaring attitude/lack of community pride | 35 | 56 | 17 | 27 | 27 | 43 |
| Unwilling to pay/cost avoidance | 34 | 54 | 26 | 41 | 23 | 37 |
| Insufficient surveillance/regulation/enforcement | 14 | 22 | 13 | 26 | 15 | 24 |
| Site already used for illegal dumping by others | 12 | 19 | 8 | 13 | 12 | 19 |
| Lack of developmental control plan promoting waste reduction | 1 | 2 | 0 | 0 | 0 | 0 |
| Convenience | 30 | 48 | 22 | 35 | 30 | 48 |
| Limited hours of appropriate landfill site or transfer station | 3 | 5 | 3 | 5 | 3 | 5 |
| Long distance to appropriate landfill site or transfer station | 5 | 8 | 2 | 3 | 2 | 3 |
| Lack of disposal/reuse/drop-off facilities | 3 | 5 | 0 | 0 | 6 | 10 |
| Lack of waste storage space | 0 | 0 | 0 | 0 | 4 | 6 |
| Low awareness of proper disposal | 10 | 16 | 7 | 11 | 10 | 16 |
| Low awareness of impacts of dumping | 13 | 21 | 15 | 24 | 18 | 29 |
| Low awareness of fines | 10 | 16 | 12 | 19 | 11 | 18 |
| Fines/penalties aren't a deterrent | 13 | 21 | 14 | 22 | 9 | 14 |
| To make money (e.g. organised dumping networks) | 5 | 8 | 10 | 16 | 1 | 2 |
| Other | 1 | 2 | 0 | 0 | 0 | 0 |
| Q10. For each waste type, why do you think it is dumped illegally in your council area? | | | | | | |
| Base: n=63 | | | | | | |

Appendix B: Community survey additional tables

Demographics

Gender

| Category | % |
|--|------|
| Male | 51 |
| Female | 49 |
| Base | 1009 |
| SQ1 Are you...? Base: n=1009 | |

Age

| Category | % |
|--|------|
| 18–29 | 21 |
| 30–39 | 19 |
| 40–49 | 19 |
| 50–59 | 16 |
| Over 60 | 25 |
| Base | 1009 |
| SQ2 What is your approximate age? Base: n=1009 | |

Income

| Category | % |
|--|------|
| Less than \$15,000 | 4 |
| \$15,000 – \$25,000 | 8 |
| \$25,001 – \$40,000 | 9 |
| \$40,001 – \$60,000 | 14 |
| \$60,001 – \$80,000 | 11 |
| \$80,001 – \$100,000 | 12 |
| \$100,001 – \$150,000 | 18 |
| Over \$150,000 | 8 |
| I'd prefer not to say | 16 |
| Base | 1009 |
| Q23 What is your approximate annual household income before tax? That is, the combined income of all members of your household. Base: n=1009 | |

Illegal Dumping Research Report

Education

| Category | % |
|--|------|
| Postgraduate degree (honours, Masters, PhD) | 11 |
| Graduate diploma or graduate certificate | 7 |
| Bachelor degree (undergraduate) | 21 |
| Advanced diploma or diploma | 12 |
| Certificate (TAFE) | 21 |
| Year 12 | 13 |
| Year 11 | 2 |
| Year 10 or under | 11 |
| I'd prefer not to say | 1 |
| Base | 1009 |
| Q22 What is the highest level of education that you have completed? Base: n=1009 | |

Employment

| Category | % |
|---|------|
| Employed full time | 40 |
| Employed part time | 17 |
| Retired or pensioner | 22 |
| Home duties | 11 |
| School or secondary student | 0 |
| TAFE or university student | 4 |
| Unemployed | 5 |
| Other | 0 |
| Prefer not to say | 1 |
| Base | 1009 |
| Q18 Which of the following best describes you? Base: n=1009 | |

Illegal Dumping Research Report

Tenure

| Category | % |
|---|------|
| Rent | 28 |
| Board | 2 |
| Own your home | 59 |
| Live with parents or guardian | 8 |
| Live in a communal boarding situation e.g. hall of residence | 0 |
| Other | 0 |
| Prefer not to say | 1 |
| Base | 1009 |
| Q19 Which of the following best describes your living situation? | |
| Base: n=1009 | |

Tenure duration

| Category | % |
|--|------|
| Less than a year | 9 |
| 1–2 years | 16 |
| 3–5 years | 20 |
| 6–10 years | 16 |
| More than 10 years | 40 |
| Base | 1009 |
| Q20 How long have you lived in your current home? | |
| Base: n=1009 | |

Renovation

| Category | % |
|---|-----|
| Yes | 61 |
| No | 39 |
| Base | 593 |
| Q21 Have you renovated any part of your home since you have lived there? | |
| Base: home owners, n=593 | |

Location

| Category | % |
|---|------|
| Sydney | 57 |
| Other NSW | 43 |
| Levy area | 90 |
| Non-levy area | 10 |
| Base | 1009 |
| SQ3 What is the postcode where you live? (coded) | |
| Base: n=1009 | |

Drivers licence

| Category | % |
|---|------|
| Yes, I hold a drivers licence | 91 |
| Yes, someone else in my household holds a drivers licence | 23 |
| No | 4 |
| Base | 1009 |
| Q1 Do you and/or any other members of your household hold a drivers licence? (multiple response) | |
| Base: n=1009 | |

Access to vehicle/trailer

| Category | % |
|--|------|
| A car or other motor vehicle (excluding motor cycles or scooters) | 91 |
| A trailer that can transport waste | 28 |
| Base | 1009 |
| Q2 Does anyone in your household own or have access to: (multiple response) | |
| Base: n=1009 | |

Speak a language other than English

| Category | % |
|---|------|
| Yes | 21 |
| No (only speak English) | 78 |
| I'd prefer not to say | 1 |
| Base | 1009 |
| Q24 Do you or your parents mainly speak a language other than English? | |
| Base: n=1009 | |

Illegal Dumping Research Report

Other languages spoken

| Category | % |
|------------------------|----|
| Aboriginal | 0 |
| Arabic | 4 |
| Assyrian | 1 |
| Bosnian | 0 |
| Cantonese | 10 |
| Creole | 0 |
| Croatian | 1 |
| Dinka | 0 |
| Dutch | 2 |
| Farsi | 0 |
| French | 3 |
| German | 3 |
| Greek | 5 |
| Hindi | 11 |
| Hungarian | 1 |
| Indian dialects | 6 |
| Indonesian | 3 |
| Italian | 4 |
| Japanese | 1 |
| Korean | 3 |
| Khmer | 0 |
| Lao | 0 |
| Macedonian | 1 |
| Mandarin | 10 |
| Maltese | 1 |
| Persian | 0 |
| Polish | 2 |
| Portuguese | 2 |
| Russian | 5 |
| Serbian | 1 |
| Spanish | 5 |
| Sudanese | 0 |
| Tagalog | 4 |
| Thai | 0 |
| Torres Strait Islander | 0 |
| Turkish | 0 |

Illegal Dumping Research Report

| Category | % |
|---|----------|
| Vietnamese | 3 |
| Other | 27 |
| None/not answered | 5 |
| Base | 210 |
| Q25 What other languages are spoken? (multiple response) Base: respondents who spoke a language other than English, n=210 | |

Appendix C: Industry survey additional tables

Demographics

Gender

| Category | % |
|---------------------------------------|-----|
| Male | 57 |
| Female | 43 |
| Base | 100 |
| Q22 Are you...? Base: n=100 | |

Age

| Category | % |
|---|-----|
| 17 years or under | 0 |
| 18–34 | 32 |
| 35–54 | 53 |
| Over 55 | 15 |
| Base | 100 |
| Q23 What is your age? Base: n=100 | |

Income

| Category | % |
|---|-----|
| \$15,000 – \$25,000 | 2 |
| \$25,001 – \$40,000 | 4 |
| \$40,001 – \$60,000 | 7 |
| \$60,001 – \$80,000 | 17 |
| \$80,001 – \$100,000 | 22 |
| \$100,001 – \$150,000 | 27 |
| Over \$150,000 | 15 |
| I'd prefer not to say | 6 |
| Base | 100 |
| Q19 What is your approximate annual household income before tax? That is, the combined income of all members of your household. Base: n=100 | |

Illegal Dumping Research Report

Education

| Category | % |
|--|-----|
| Postgraduate degree (honours, Masters, PhD) | 10 |
| Graduate diploma or graduate certificate | 11 |
| Bachelor degree (undergraduate) | 23 |
| Advanced diploma or diploma | 16 |
| Certificate (TAFE) | 25 |
| Year 12 | 10 |
| Year 11 | 1 |
| Year 10 or under | 4 |
| Base | 100 |
| Q18 What is the highest level of education that you have completed? | |
| Base: n=100 | |

Employment

| Category | % |
|---|-----|
| Employed full time | 77 |
| Employed part time | 17 |
| Retired or pensioner | 0 |
| Home duties | 1 |
| School or secondary student | 0 |
| TAFE or university student | 0 |
| Unemployed | 0 |
| Other | 4 |
| Prefer not to say | 1 |
| Base | 100 |
| Q17 Which of the following best describes you? | |
| Base: n=100 | |

Number of employees

| Category | % |
|--|-----|
| Sole trader | 17 |
| 2–5 employees | 24 |
| 6–10 employees | 14 |
| 11–20 employees | 11 |
| 21–50 employees | 13 |
| 51–100 employees | 21 |
| Base | 100 |
| SQ2 How many staff does your business employ, including yourself? | |
| Base: n=100 | |

Illegal Dumping Research Report

Position in business

| Category | % |
|---|------------|
| Owner/partner | 35 |
| Senior manager/executive | 22 |
| Sole trader | 18 |
| Project or operation manager/coordinator | 18 |
| Clerical/administration | 7 |
| Base | 100 |
| Q1 And which of the following best describes your position in the business? Base: n=100 | |

Location

| Category | % |
|---|------------|
| Sydney | 59 |
| Other NSW | 41 |
| Levy area | 86 |
| Non-levy area | 14 |
| Base | 100 |
| SQ3 What is the postcode of your usual workplace? (coded) Base: n=100 | |

Other languages spoken

| Category | % |
|---|----------|
| German | 2 |
| Hindi | 3 |
| Italian | 1 |
| Spanish | 2 |
| Tagalog | 1 |
| Base | 9 |
| Q21 What other languages are spoken? (multiple response) Base: respondents who spoke a language other than English, n=9 | |