

Benchmarking, characterising and valuing the resources in household bulky waste clean-up services

SUMMARY REPORT AND RECOMMENDATIONS



**Illawarra
Shoalhaven**
Joint
Organisation



**GLOBAL
CHALLENGES**



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Acknowledgements

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Executive Summary

Despite advancements in the recovery of materials from various types of household waste, consideration of the opportunities within the household bulky waste stream have largely been absent. In New South Wales, the vast majority of household bulky waste is currently landfilled. This report provides a summary of the 'Benchmarking, characterising and valuing the resources in household bulky waste clean-up services' project prepared by researchers from the University of Wollongong (UOW) for the Illawarra and Shoalhaven Joint Organisation (ISJO) ('the Research Report'). The collaborative research project ran from August 2019 to November 2020 and was carried out by an interdisciplinary research team from UOW in partnership with ISJO. The project sought to broaden understandings of council household bulky waste clean-up services and the factors that affect the movement of that waste between the household and landfill. The team took a regional snapshot of four Councils which together comprise ISJO and identified existing and emerging opportunities and challenges for their household bulky waste services. A particular focus was on the opportunities for reuse and recovery of materials in this waste stream. The research was funded by the UOW 'Global Challenges' Seed Funding program and ISJO.

The 'bulky' character of materials in unwanted household items present unique logistical challenges which require different service approaches, equipment and facilities. Due to its heterogeneity and size, household bulky waste may be awkward and unsafe to manoeuvre, expensive to transport and break down, and is perceived to be of low value for reuse, recycling or reprocessing. It also demands specific infrastructure for collection, sorting and disposal. However, there are important economic, social and environmental reasons for improving household bulky waste clean-up services, particularly in the transition to a more circular economy. This project sought to develop a richer understanding of household bulky waste in relation to: current household practices of disposal, council communication and engagement about clean-up services, the delivery of clean-up services, opportunities for reuse, recycling, recovery and repurposing and the impact of this waste stream on landfill. The research used a mixed-methods approach, comprising four complementary methods: a review of existing literature, policies and programs; observations and interviews with ISJO council waste teams and contractor staff; data modelling and analysis; and a household survey of residents within the ISJO region.

Councils can play a key role as change makers to improve household bulky waste management. However, timely and effective change requires that Councils receive support, particularly by way of adequate funding, from Commonwealth and State governments. This research found that improvements across household bulky waste clean-up services are essential to improving economic, environmental and social outcomes. To strengthen the management response in this area, the Research Report made recommendations for improvements in the following areas: council communication and engagement strategies with residents; adoption of a consistent State-wide meaning of household bulky waste; data collection, analysis and reporting; encouraging greater reuse, recycling and recovery through measures such as incentive funding and by encouraging Councils to build partnerships and networks with business and third sector organisations; booking systems, and considering the impact of specific variables within the service model. Greater attention to household bulky waste also presents a significant opportunity to move residents into the most preferable levels of the waste hierarchy when making choices about disposal. This can be achieved with improvements in communication and engagement, and by promoting existing opportunities to support greater reuse, recycling and recovery of household bulky waste by residents, as well as seeking new opportunities within the region, such as reuse and repair hubs.

The findings and recommendations of this project provide Councils in the ISJO region with feasible and practical solutions for the improved management of household bulky waste, including measures that will support, grow and develop new networks and enterprises that reduce disposal to landfill and educate the public about better choices. The recommendations of the Research Report also aim to engage Councils, Commonwealth and State policymakers, and key industry and third sector stakeholders, to help transform the management of household bulky waste in the transition to a more circular economy.

Introduction

In 2018-2019 over 85% of household bulky waste disposed of via council clean-up services in NSW was landfilled. However, there is limited understanding of the true impact of this waste stream in terms of the amount of landfill space that it occupies, or the associated economic, social and environmental costs to Councils and the wider community. To date, these have not been properly understood.

The aim of this project was to broaden understandings of council household bulky waste clean-up services ('clean-up services') and the factors that affect the movement of bulky waste between the household and landfill, by taking a regional snapshot of how household bulky waste is managed in different Local Government Areas (LGAs) across the Illawarra and Shoalhaven region of NSW ('the ISJO region'). This included consideration of the factors that influence council clean-up service models, including visibility of the costs of the service, the type of truck that is used, the number of collections per year, and the level of reuse, recycling and recovery of items destined for landfill. The project also considered existing opportunities for community reuse and improvements within communication and engagement strategies, service booking systems and data collection, analysis and reporting.

This summary report considers the problem context surrounding household bulky waste management by Local Councils and discusses key considerations in developing leading practice in bulky waste management in the ISJO region. It presents the findings from the Research Report¹ prepared by a multi-disciplinary team from UOW for ISJO. It also presents the final recommendations made by ISJO, which have been informed not only by the research and recommendations that were made within the Research Report, but also by pre-existing knowledge held by ISJO. An outcome of the research collaboration is a leading practice guide to household bulky waste clean-up services (Appendix 1).

The information in this report increases understandings of the opportunities and challenges arising in clean-up services and provides Councils with feasible and

practical solutions for the improved collection and management of household bulky waste, including measures that will increase reuse and recovery. It can be used to engage with industry and government stakeholders and the community on household bulky waste management.

In order to consider where potential improvements to clean-up services and opportunities for reuse, recycling, recovery and repurposing could occur, the finding and recommendations within this summary report are organised around the following six questions:

- What do household practices of disposal look like?
- How can Councils better communicate and engage with residents about clean-up services?
- How can Councils improve booking systems?
- What is the impact of different clean-up service models?
- How can Councils better promote opportunities for reuse, recycling, recovery and repurposing within (and beyond) council clean-up services?
- How can Councils better understand the impact of household bulky waste on landfill?

Background

Incentives for waste reduction, reuse, recycling and the recovery of materials are being driven by government policies, product stewardship schemes, corporate social responsibility initiatives, and non-government organisations seeking opportunities for employment generation and training. These developments are taking place at a time when domestic waste per capita is increasing in NSW,² there is increasing complexity in materials and packaging, and where changes in policies overseas have shifted Australia's ability to export waste for recycling or reprocessing elsewhere. Recent policy responses have emphasised the need to transition waste management in Australia toward a more circular economy where waste is (re)valued as a resource.^{3,4,5} However, despite growing attention to different kinds of domestic wastes, specific consideration of the services which manage household bulky waste, the conditions under which those materials enter landfill, or the value of the materials themselves, are largely absent. In NSW, less than 15% of household bulky waste is diverted from landfill through Council clean-up services.²

Household bulky waste is notoriously difficult to define. In NSW, there is no single adopted meaning for 'bulky waste', and definitions differ between Councils. For the purposes of this report, household bulky waste refers to materials of a certain size or weight that are not generally collected through standard domestic services.^{1,6,7,8} It can include items such as small appliances, furniture, toys, carpets and clothing.

The 'bulky' and heterogeneous character of bulky waste presents unique logistical challenges for collection and disposal, and it may be unsafe to manoeuvre, expensive

to transport and break down. It is also perceived to be of low value for reuse and recycling.

As the level of government responsible for the day-to-day collection and management of household bulky waste, Councils play a key role as change makers to improve household bulky waste management. However, all levels of government within Australia play a role in waste management. While household bulky waste management is guided by broader Commonwealth and State waste legislation, policies and plans, they do not deal expressly with household bulky waste, with the exception of items such as televisions and computers.

A key concern in the management of household bulky waste is the true impact of bulky waste in terms of the amount of space that it occupies in landfill and the associated cost to Councils. The size and material make-up of bulky waste takes up considerable space, consequently impacting the lifetime of existing landfills. Understandings of the impact of household bulky waste are limited as waste is currently measured by weight rather than by volume, however, the economic and environmental costs associated with household bulky waste arise from its 'bulky' nature and the volume it occupies within landfill. Another key factor which affects the understanding of the impact of household bulky waste is that there is no single adopted meaning of bulky waste, including for the purposes of reporting waste data. Accordingly, this report highlights the need for consistency in reporting definitions and data to accurately determine the impact of household bulky waste on landfill.

As the bodies responsible for collection and management, Councils play a critical role in achieving improvements in service delivery, collection models, and increased reuse, recycling and recovery of resources in the move towards a circular economy, and the achievement of the UN Sustainable Development Goals (SDGs). Although much has been achieved by Councils in recent years to improve services, there are strategic, economic, social and environmental imperatives to make household bulky waste services more cost effective, to increase the recovery of resources and to better involve communities. Councils are positioned to be key change makers to improve household bulky waste management, however, there is no current mode or model of 'best practice' in Australia or internationally against which to benchmark clean-up services.



SUSTAINABLE DEVELOPMENT GOALS

8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



11 SUSTAINABLE CITIES AND COMMUNITIES



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



The Illawarra Shoalhaven Joint Organisation Regional Context

The Illawarra and Shoalhaven region is located south of Sydney, NSW and is comprised of four member Councils – Wollongong City Council, Shellharbour City Council, Kiama Municipal Council and Shoalhaven City Council. Together, these Councils form the Illawarra Shoalhaven Joint Organisation (ISJO).

The ISJO region is the third largest regional economy in NSW⁹ and is geographically unique, with its population condensed into a 250km long narrow corridor of suburban communities and coastal towns (Figure 1).



Figure 1
Councils in the Illawarra and Shoalhaven

The goal of the ISJO Waste and Resource Recovery Strategy¹⁰ is to achieve: 'A confident, vibrant and productive region that practices sustainable waste management and avoids sending resources to landfill, while empowering its people and protecting its environment'.

Each council in the ISJO region uses a different clean-up service model for the management of household bulky waste. The rationale behind the clean-up service provided to residents is primarily based on the size of the LGA, the population size and distribution, if the service is run by a Council or supported by contracted waste services, and the availability of a landfill site. Councils in the ISJO region either provide a set number of clean-up services to residents (involving kerbside collection and/or drop-off events), with the cost factored into the resident's annual rates and charges (including through the provision of vouchers for residents to use), or an unlimited number of clean-up services on a user-pays basis. In some cases, residents with a set number of services may also access any number of additional clean-up services on a user-pays basis. Kerbside collection is the principal delivery model for three of the four Councils, servicing 77% of the region's population. Data provided by ISJO Councils to the NSW Environment Protection Authority (NSW EPA)² indicate a regional landfill diversion rate of just 4.25% for household bulky waste for the 2018-2019 WARR reporting period.

Approach



A set of interdisciplinary mixed methods were developed to capture the diversity of household bulky waste service models and management. These were comprised of four complementary methods: a review of existing literature, policies and programs, a household survey, observations and interviews, and data modelling and analysis. The research was carried out between August 2019 and November 2020.

Understanding the household bulky waste management context

The research team reviewed the existing literature, policies and programs, and audit reports in relation to household bulky waste in order to identify the key factors that shape management of this waste stream and reuse, recycling and recovery initiatives in Australia and internationally. Academic literature and other policies and reports were sourced from an extensive search.

Household survey

A region-wide online survey was conducted to gain a better understanding of the items disposed of by households, and how households engage with clean-up services. The survey comprised both closed and open response questions. It addressed different conduits of disposal for household items typically considered to constitute household bulky waste, resident knowledge of clean-up services offered by their council and gathered community perceptions about how to improve reuse across the region. 292 valid survey responses were received. The survey responses were analysed using both quantitative and qualitative analysis.

Observations

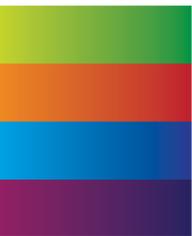
Observations of council clean-up service models provided first-hand experience of how the day-to-day work of collecting, sorting, recovering, recycling and disposing of household bulky waste is carried out. It also offered insights into how the volume of household bulky waste was measured in different audit reports. The research team photographed and documented household bulky waste materials on the kerbside, at organised drop-off events and at council waste management facilities.

Stakeholder interviews

Interviews were conducted with waste teams from the four ISJO Councils and staff of a waste contractor servicing two of those council areas. Interviewees' roles included council waste managers, contract managers, operational staff at waste facilities, booking staff, waste contractors and truck drivers. Interviews explored the characteristics of clean-up services, including: community engagement and education about the service, booking systems, collection, transport, sorting and processing of household bulky waste materials, opportunities for reuse, recycling and recovery within the services as well as details regarding the organisation and roles responsible for undertaking these activities. Participants were purposely recruited to encompass a wide range of professional perspectives.

Data modelling and analysis

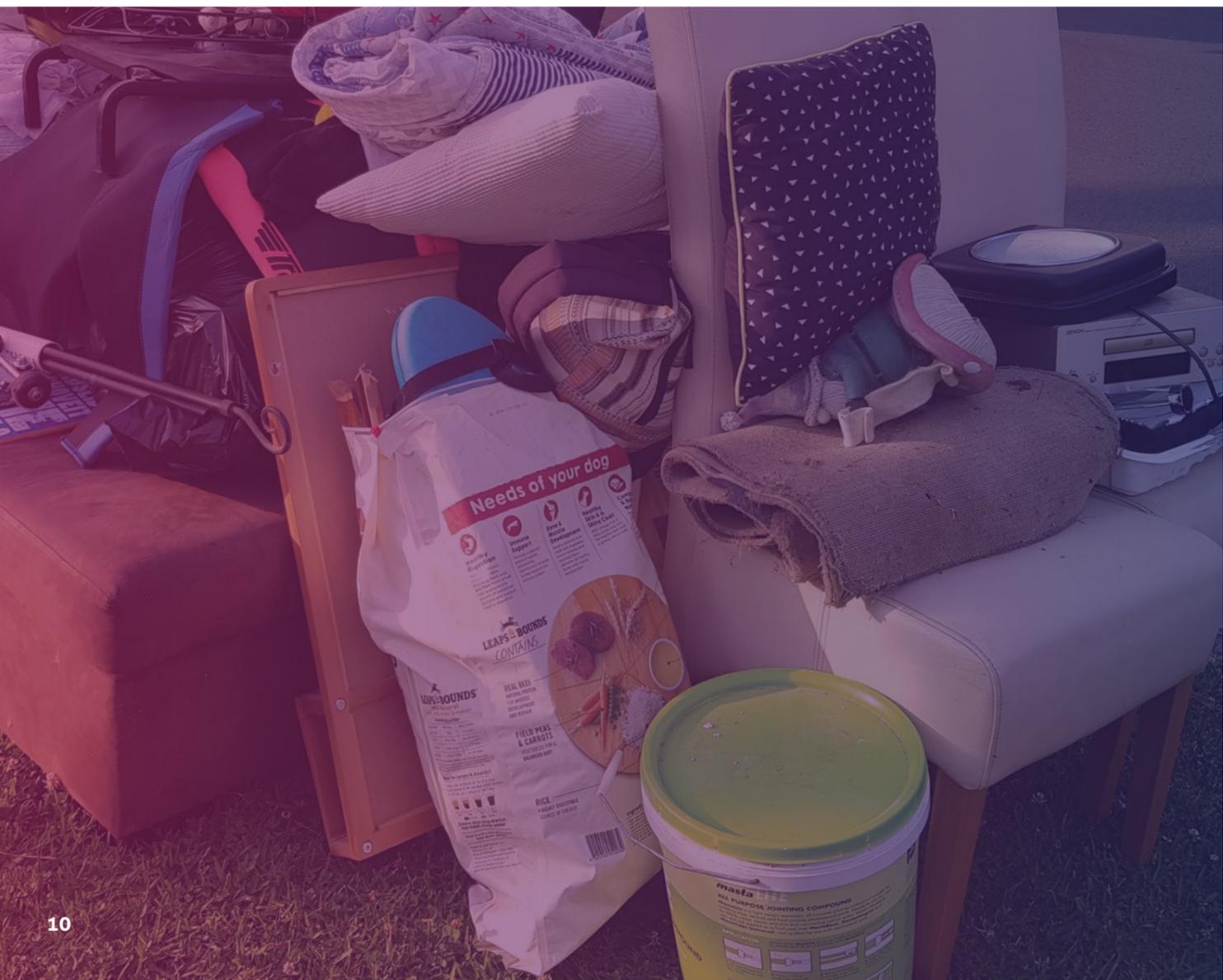
Two methods of statistical analysis were developed and applied to better understand the weight and volume of household bulky waste collected, and the influence of different service models on the amount of household bulky waste landfilled through the service. While the statistical models developed were sound, the availability of consistent and reliable data underpinning clean-up services presented an impediment to determining the accuracy of the results. Further detail about the statistical modelling and analysis developed can be found in the Research Report.



KEY FINDINGS AND RECOMMENDATIONS

What do household practices of disposal look like?

The starting point for considering bulky waste management is the household. When items are no longer wanted or needed households will seek to dispose of the item, either by selling it, giving it away or disposing of it as waste. The latter may create a need to engage with council clean-up services.



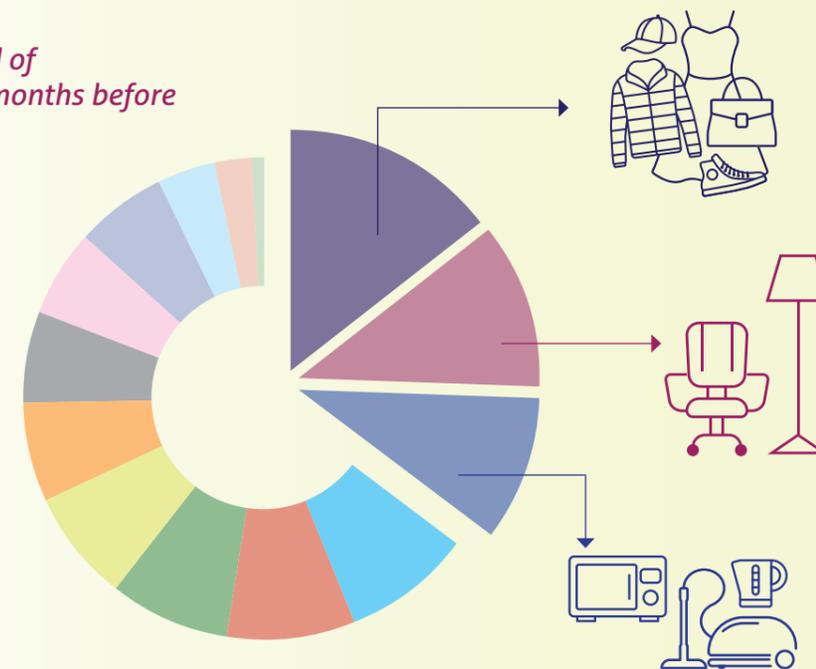
Items households are disposing of and why?

The household survey indicated that the most frequently disposed items were small in size and weight, and mobile to move. These included items such as clothing, textiles and shoes, small furniture and small appliances (Figure 2).

Figure 2

Unwanted items disposed of by households in the 12 months before completing the survey

- Clothing, textiles, shoes
- Small furniture
- Small appliances
- E-Waste
- Scrap metals
- Large furniture
- Toys & baby items
- Mattresses
- Whitegoods
- Sporting goods/equipment
- Rugs & carpet
- Garden tools/equipment
- Tyres
- Other

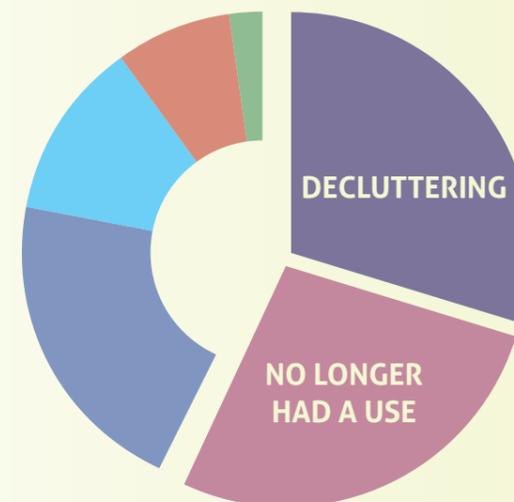


Households reported that decluttering was the most common reason for disposing of unwanted household items, followed by getting rid of items that no longer had a use, and disposing of broken items (Figure 3).

Figure 3

Reasons for disposing of unwanted household items

- Decluttering
- No longer had a use
- The items were broken
- Out of fashion or had been replaced
- Moving house
- Other



How are households disposing of items?

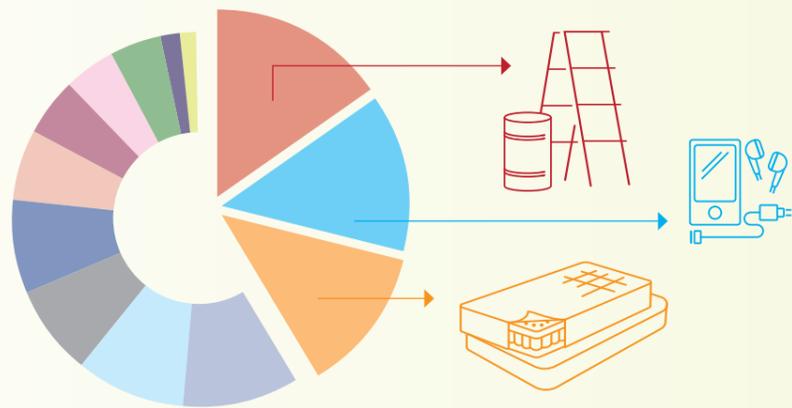
Household survey respondents reported that the most common factor influencing how items were disposed of was the condition of the item followed by environmental concerns and charitable motivations. Less influential drivers included cost, convenience and the opportunity to make some extra money.

While the survey indicated that clothing, textiles and shoes, and small furniture were the items most frequently disposed of by households, the preferred method for disposing of these items was largely one of reuse e.g. giving away to charity, family or friends or selling the items. On the other hand, residents reported that scrap metals, e-waste, mattresses, rugs and carpets as well as garden tools and equipment were more commonly disposed of via clean-up services (Figure 4).

Figure 4 Household disposal of unwanted items by the type of disposal method

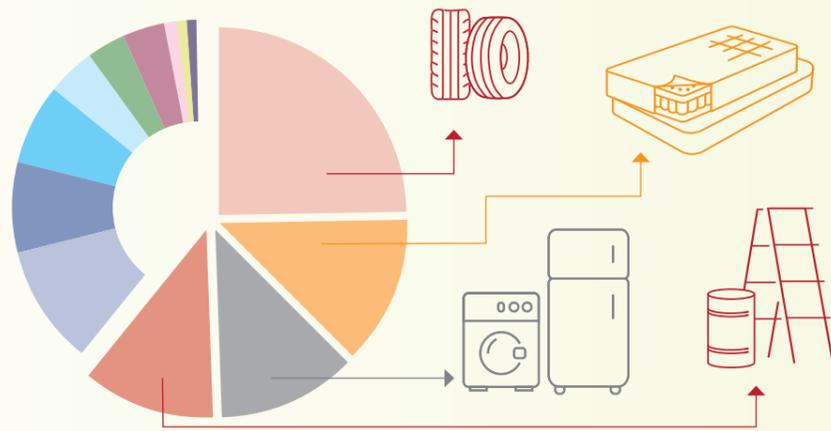
Council kerbside collection or allocated drop-off/event

- Scrap metals
- E-Waste
- Mattresses
- Rugs & carpet
- Garden tools/equipment
- Whitegoods
- Small appliances
- Tyres
- Small furniture
- Sporting goods/equipment
- Large furniture
- Clothing, textiles, shoes
- Toys & baby items



Paid to dispose at landfill or other facility

- Tyres
- Mattresses
- Whitegoods
- Scrap metals



Gave to charity or tip-shop

- Clothing, textiles, shoes
- Toys & baby items
- Sporting goods/equipment
- Small furniture



What items are presented for a Council clean-up service?

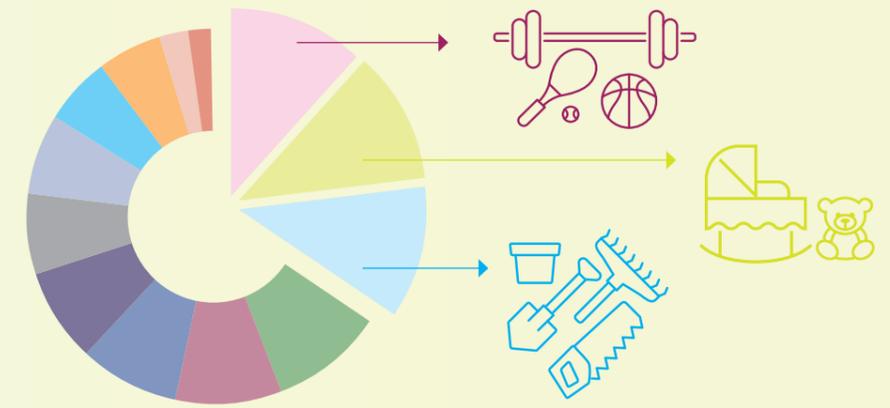
Existing unpublished audit data from ISJO and other similar Council areas, alongside kerbside observations by the collaborative research team, confirmed the presence of soft furnishing (such as sofas and mattresses), items containing metals (such as BBQs) and hard plastics commonly used in outdoor furniture or children's toys within items disposed of by households. Audit data and observations also noted the frequency of wood, timber and laminate furniture being disposed of by households via clean-up services

– particularly poorer quality 'flat-pack' items made with veneer, engineered timber and medium-density fibreboard (MDF). These types of furniture are largely known to be poorer quality and less robust, unable or unlikely to be refurbished or refinished, and quickly rot if exposed to damp or moisture.

Large furniture items, particularly those in poor condition, are commonly considered to be harder to dispose of through reuse or repurposing outlets, or to dispose of by giving away or selling. These items are more likely to end up in landfill rather than be reused or recovered.

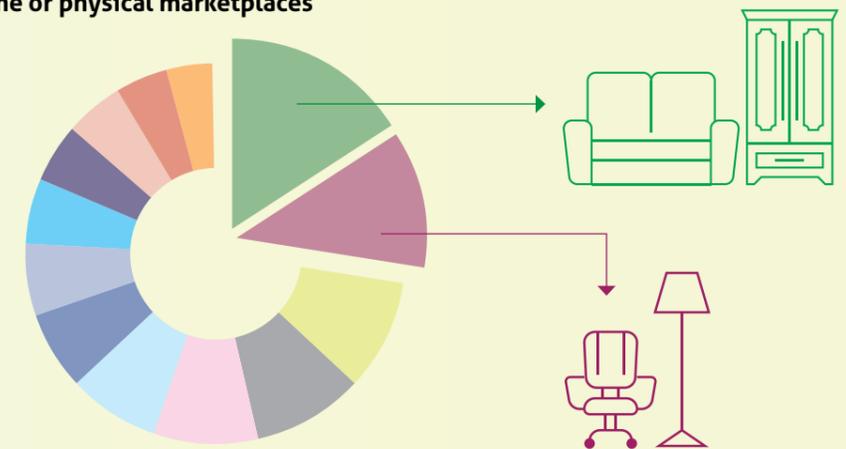
Gave away/sold to neighbours, family, friends

- Sporting goods/equipment
- Toys & baby items
- Garden tools/equipment

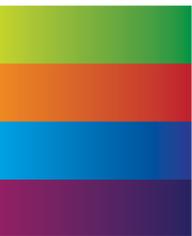


Gave away/sold using online or physical marketplaces

- Large furniture
- Small furniture



If reuse and recovery is to be increased within the household bulky waste stream, responsibility should not just fall on households to manage the consumption and disposal of household items. Changes are also required in product design, manufacture and overall stewardship to ensure that products are better designed at the source for longevity, reuse and material recovery. A shared responsibility from producers, government and the community is needed to keep bulky household products and materials in use for as long as possible.



How can councils better communicate and engage with residents about clean-up services?

Communication is an essential component in the delivery of clean-up services.⁶ Councils play a crucial role in influencing how information about bulky waste is accessed and acted upon by residents.



What do residents understand about clean-up services?

The household survey indicated 89% of respondents were aware that their council offered a clean-up service. However, residents were not as familiar with specific aspects of the service, including the types of bulky waste services provided, their frequency, how the service costs are passed on to residents and what happens to items once collected.

- **Knowledge of the type of service:** There was a mix of knowledge about what type of clean-up service is available to residents within their council area. For instance, in areas where Councils provided a booked kerbside collection service, 1 in 4 residents thought the available clean-up service was actually a pre-scheduled collection which picks up all household bulky waste by area or suburb during a set date or date range.
- **Understanding of cost of service:** There were low levels of awareness of the cost of the service. The survey indicated a general belief that the cost of clean-up services is free. Responses were largely from council areas that recover service costs via the annual rates and charges notice (there was a small response rate from the council with a user-pays service), indicating residents do not understand they are paying for the service in some way (Figure 5).
- **Understanding of what happens to the items:** When asked what happens to household items once collected and/or dropped-off in their council area, the majority (48%) of survey respondents reported that they understood that items are sorted for diversion where possible, with the remaining items going to landfill (Figure 6). Beyond materials with recycling end-markets (such as e-waste or mattresses), the research found little evidence that unwanted household items are being sorted for diversion. This is particularly the case for Councils that use compactor vehicles in clean-up services. Improved communication and engagement could educate households about what happens to items disposed of via clean-up services and could be used to encourage residents to consider reuse and recycling options, rather than engaging in council clean-up services.

Council messaging about the service is important to household understanding of household bulky waste. Councils must provide clear and simple messaging about their clean-up services, including the type of service provided, what items are collected, number of collections per year, cost of the service and what happens to items once they have been collected.

Figure 5
Survey respondent understanding of the cost of service for one ISJO Council.

Note: This particular council recovers the costs via the annual rates and charges notice.

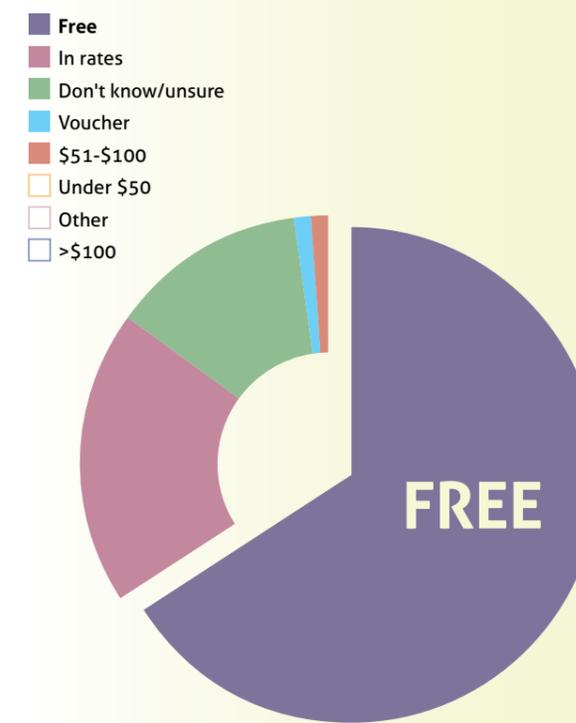


Figure 6
Household understandings of what happens to items via clean-up services



ISJO reflections and recommendations

1. Undertake engagement and research to improve Council understanding of existing community knowledge and perceptions of clean-up services, and the limiting factors for residents engaging in that service.
2. Develop clear and concise communication tools to engage the community on what can and cannot be presented through the service and how to use the service. Include key points around the type of service provided, the number of services per year and eligibility, cost of the service and what happens to the items once disposed of via council clean-up services.
3. Consider how communication can be extended to online booking systems to provide direct and clear information for residents on what the service provides, the use of the service and alternative mechanisms for reuse and recycling.
4. Regularly review and evaluate communication tools to determine the effectiveness of messaging, including in relation to improving understanding of the environmental, social and economic objectives of the service, and adjust and improve these tools where necessary.

Engaging with diverse sectors of the community about the service

Analysis of existing education and engagement materials in the ISJO region found that communications do not adequately engage with diverse sectors of the community, including residents living in multi-unit dwellings (MUDs), Culturally and Linguistically Diverse (CALD) communities and transient populations such as tertiary students and renters. Stakeholder interviews highlighted that further communication with these groups would be beneficial:

With the students, the challenge is that quite often they'll move out at fairly short notice, they're not aware of the booked kerbside clean-up – once they break a lease or they end the lease, everything is out on the front of the kerb and then you've got material sitting there – that essentially is illegally dumped material waiting to be either investigated or cleaned up by council.

ISJO reflections and recommendations

5. Communication and engagement tools should be easily accessible with information tailored to include diverse segments of the community, such as CALD communities, renters, tertiary students and residents who live in MUDs.



Considering how to communicate and engage with households

It is common for Councils to adopt various modes of communication and engagement to assist in informing residents of the type of clean-up services offered. Methods can include information provided on council websites, printed material (such as information packs or waste calendars), social media engagement, or email and telephone contact services which allow residents to speak directly with council or contract staff.

The research found that residents accessed information about clean-up services through a number of different channels, such as council websites (70% of survey respondents), printed materials such as council waste calendars or info packs (31% of respondents) and phone calls to council (18% of respondents) (Figure 7). While the survey indicated that social media was not widely used as a source of information about clean-up services by the residents who responded, interviews and observations found evidence of council experimentation with social media campaigns to communicate information about household bulky waste. For example,

a recent social media campaign delivered by an ISJO council relating to sorting and reuse at waste depots, reached over 14,000 people on Facebook. Previous research has highlighted the strength of social media in engaging with audiences, particularly younger people, to promote participation in correct disposal practices, separation or reuse activities, or to raise awareness about illegal dumping.¹¹

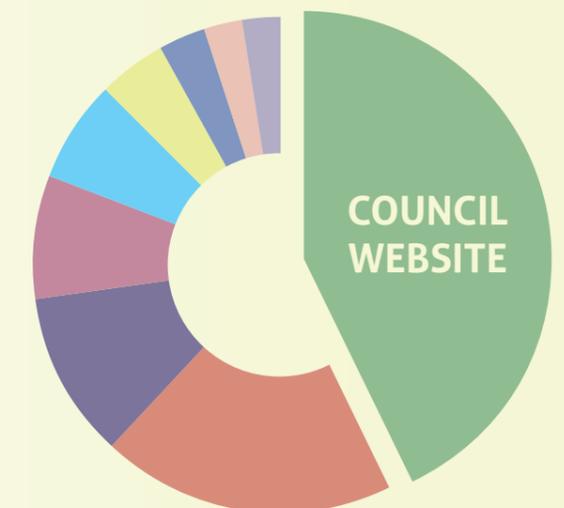
While the survey found that some residents indicated that they wanted more frequent information about clean-up services, this is a matter of balance for Councils due to the costs involved. Utilising electronic forms of communication, such as web and social media, can allow for more frequent engagement, and also allows greater flexibility for Councils where changes to services have been made.

Improved council communication strategies could be achieved by encouraging new working partnerships across council departments to help identify and design information that best meets the needs of the community.

Figure 7

How survey respondents in the ISJO region found out information about clean-up services

- Council website
- Printed waste calendar/info pack from Council
- Phone call to my Council
- Through a neighbour/family/friend
- Council-run social media pages
- I don't know/unsure
- Other
- From my strata/body corporate
- Looking at Council information while at Community events



ISJO reflections and recommendations

6. Messaging should be developed to be utilised across a range of different media types. Utilising electronic forms of communication, such as websites and social media, can allow for more frequent engagement about clean-up services and allow Council to provide accurate and up-to-date information.
7. Communication tools should be designed and developed in collaboration with internal and external stakeholders (such as contractors

providing parts of the waste service) so that core messaging around clean-up services is replicated across all communication tools, providing residents with consistent messaging.

8. Include goals, objectives, indicators and actions around communication and engagement with residents in waste strategies, delivery programs and operational plans to monitor and measure the effectiveness of communication and engagement strategies.

Encouraging reuse and recycling through communication and engagement with residents

There are different types of knowledge about household bulky waste that already exists within the community in relation to clean-up services and alternative methods of reuse, recycling and repurposing. Some resident's practices are based on general knowledge and their underlying social and environmental values and do not necessarily represent the services provided by council. Knowledge of community members can be influenced by the length of time the person has lived in a region, experiences of living in other council areas, whether the resident is an owner occupier or tenant, or knowledge obtained from peers, neighbours and others in the community.

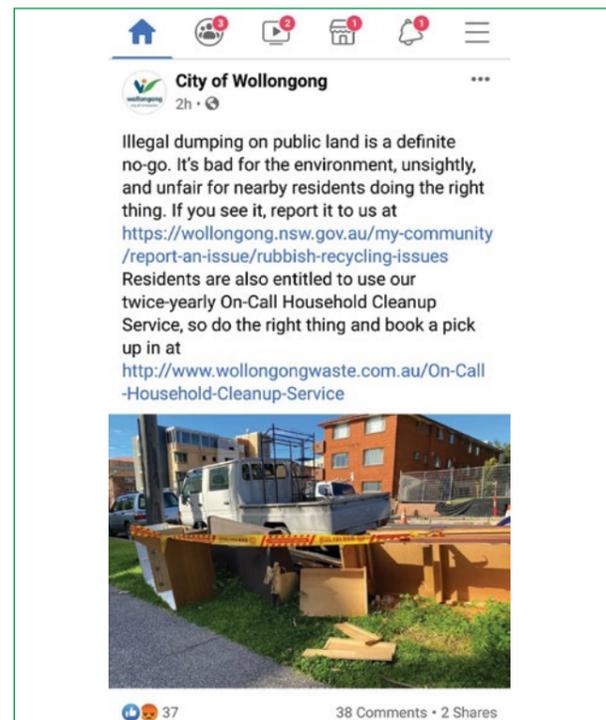
Evidence of some community practices were demonstrated most visibly through acts aimed at encouraging reuse at the kerbside. While not the focus of the research, when prompted for thoughts, comments or feedback on their most recent clean-up service, the responses provided by 21% of respondents indicated that they engaged in kerbside illegal dumping by placing items on to the kerbside that were 'not allowed', placing items out earlier than their council permitted for a scheduled clean-up service, or placing items on the kerbside without a scheduled booking. For example, one resident stated:

'We always put our items out at least one week before as neighbours and people passing by can take any items' (survey respondent)



The research found that information and communication about household bulky waste typically provided details about council services. However, there are missed opportunities to encourage households to engage with the waste hierarchy. Councils can play an important role in influencing the community by making them aware of avoidance (including repair), reuse and recycling opportunities. Councils should, for instance, provide residents with information regarding existing opportunities for reuse, recycling and repurposing of household bulky waste within their area. This includes opportunities within council clean-up services and also by other means such as giving away items to tip shops or charities, selling items via online marketplaces, or passing on items to family or friends.

Encouraging residents to engage with the waste hierarchy principles would not only help residents meet their own values but also have important flow on effects for Councils. This includes reduced cost and environmental impacts of collections, sorting and landfilling of bulky waste items if households used alternatives to reuse, recycle, or repair items.



How Can Councils Improve Booking Systems?

Booking systems are an important step in connecting households with clean-up services. They are essential for resident and council planning, the allocation of staff time, and resourcing services; and are an important extension of communication with residents about clean-up services. Additionally, booking systems can assist with highlighting the environmental, economic and social benefits of diverting waste from landfill and options for reuse, recycling and repurposing.



ISJO reflections and recommendations

9. Councils can better promote waste avoidance, reuse, recycling and repurposing in communication and engagement strategies by mapping existing networks and opportunities to support residents in accessing alternatives to clean up services e.g. repair hubs, tool libraries, charities and social enterprise, as well as pre-loved markets.
10. Facilitate collaboration with reuse networks to build local capacity. This could be done through forums, workshops, localised education campaigns or even joint grant applications.

How do residents book a council clean-up service?

While residents look to council websites for information about clean-up services, the research also found that households most frequently book their clean-up service online (70% of survey respondents) (Figure 8).

The research also revealed the value of a personal approach to bookings conducted via phone calls. When phone calls are made to Councils, residents become involved in a discussion about the types of household bulky waste that are accepted, when and how the items should be presented or dropped off, or if the condition of the item warrants exploration of reuse via other channels (for instance if it is in a saleable condition or still holds use value). One council waste team member stated:

'...that's the key to the success of our system is the discussion right at the beginning. There's no expectations then. We deliver, we warn people not to put it out too early otherwise it gets added to or taken away. Taken away is not such a bad thing if it can get reused' (Council waste team member)

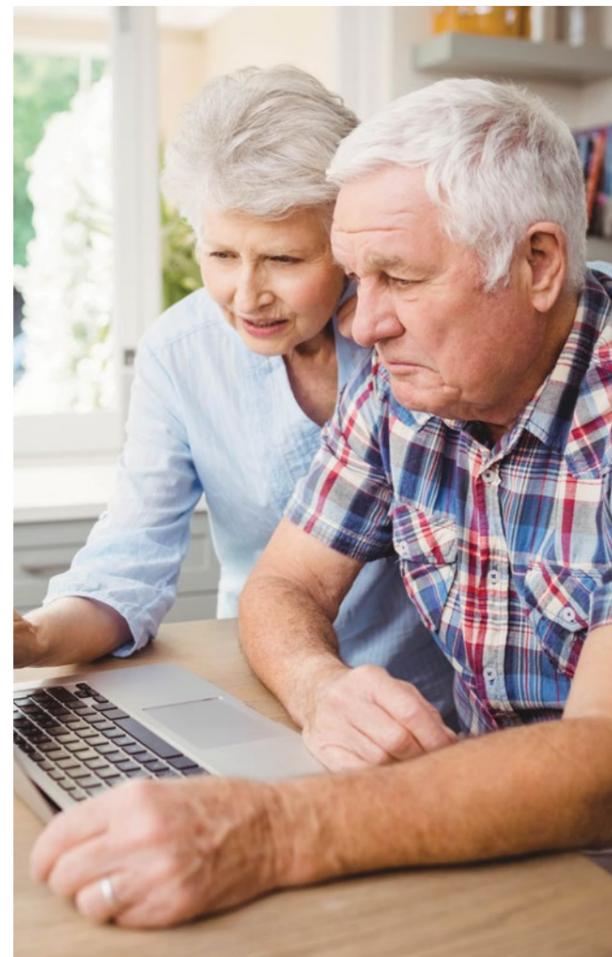
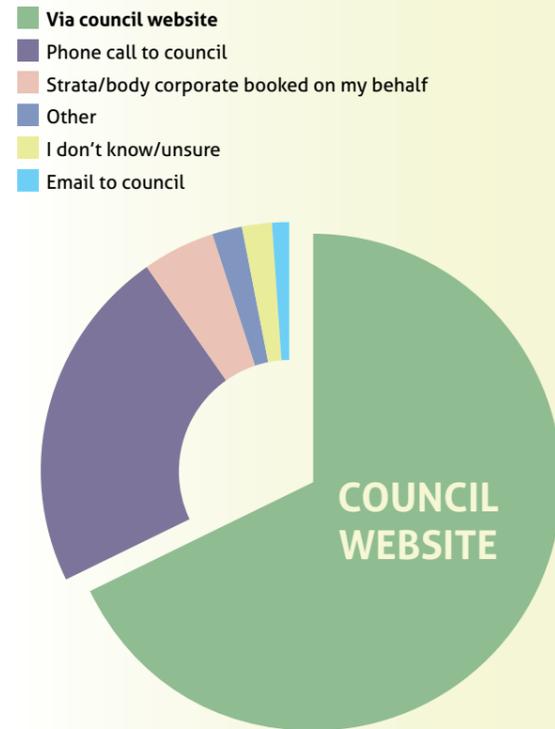
Building communication and engagement strategies into booking systems was found to assist with informing residents of the environmental, economic and social benefits of diverting waste from landfill and highlighting options for reuse, recycling and repurposing. These benefits are currently best realised by residents making a telephone call to council which provides a chance to discuss the different disposal options. This included opportunities for residents to discuss the condition of the item, promoting reuse via family, friends, neighbours, community, donation or sales networks, or aiding in preventing the donation of unsalable goods to third party organisations (such as charity stores or social enterprises). Information about alternative methods of disposal to clean-up service were not found in online booking systems.

ISJO reflections and recommendations

11. Online booking systems should provide direct and clear information for residents on the correct use of the service, and alternatives to promote reuse and recycling.

Figure 8

How survey respondents booked a Council clean-up service



Improving inefficiencies in booking systems

The research revealed a number of inefficiencies embedded within current booking systems. For instance, in some council areas residents are required to engage with the waste contractor (for booking) and council (for payment) to book a clean-up service. This involved several added steps or points of contact for residents, as one council waste team member explained:

'From the administration, yeah, [waste contractor] confirm they live in the area and it's the right person who's making the booking. And then they send an email to our team, and then we check it and say, "Oh, yeah, this person." And then [waste contractor] refer that person to [council] customer service. They [the resident] call customer service and pay the money, or go in, then customer service send an email back to my team, to [council employee]. She checks the two. Confirms it's done, and then sends an email to [waste contractor] saying, "All paid for. Go ahead." And then [waste contractor] do the actual work.' (Council waste team member)

The technology available to Councils and contractors for planning and resourcing the service delivery were also underutilised. For instance, while many online booking systems were supported by a robust content management system, their full capacity was not harnessed by Councils. For example, one council kerbside collection serviced by contractor staff ran their kerbside collection using paper-based printouts of bookings and addresses, even though the service was supported by an online booking system. In this example, it was the responsibility of individual contractor staff driving the collection run to map the most efficient route prior to the shift commencing, using whatever means accessible to that staff member. This led to the duplication of information, steps or processes.

The research also acknowledged that booking systems may be tied to long contracts, reducing flexibility in modifying and improving service approaches. Where contractors are used, flexibility needs to be built into the contract to ensure that the service model can be adapted to continuously improve the efficiencies of clean-up services.

ISJO reflections and recommendations

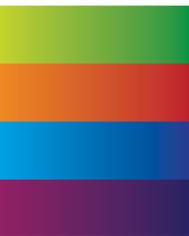
12. Councils should review standard processes across booking systems to identify opportunities to improve service efficiency.
13. Councils should review the booking process and reduce the number of steps or points of contact for the resident.
14. Councils should consider flexible contract clauses to enable improvements in service delivery.
15. The booking system needs to collect sufficient information from residents and utilise available technology to enable Councils to effectively plan, resource and monitor service delivery.
16. Network with other Councils about booking systems, particularly those using the same technology platforms as ISJO Councils, and the results of any assessments regarding the usability of booking systems. Consider how to implement key findings.

Improving data capture through booking systems

The style of one-to-one conversation made possible by telephone calls can act as a type of pre-assessment, offering information for avoidance, reuse, recycling or repurposing not currently provided in printed materials or online. However, the specific benefits of encouraging diversion via reuse, recycling or repurposing are not fully known. This issue requires further attention through data collection, with a recommendation to monitor the number of queries received that do not result in a booked service and subsequently, a follow up with residents regarding their eventual method of disposal. This would also allow for the future planning and collection of materials not currently supported by reuse or recycling programs (such as timber).

ISJO reflections and recommendations

17. Improved data capture through the booking system and subsequent analysis could enhance understandings of where reuse, recycling and repurposing is currently utilized (resident had already sought alternative disposal pathways), and where this could be further encouraged.



What is the impact of different clean-up service models?

There are diverse approaches to providing and managing clean-up services across NSW, each with different advantages and disadvantages in terms of reuse, recycling, resource recovery or disposal, costs to Councils, and the health and safety of staff and the community.

Clean-up service models in the ISJO region include a mix of kerbside collections and drop-off events. Models are based on the size of the LGA, the population size and distribution, if the service is run by council or supported by contracted waste services, and the availability of a landfill site.



Model variants impact the amount of waste landfilled via clean-up services

Analysis of existing clean-up services across NSW Councils was undertaken to determine what impact certain factors had on the amount of waste landfilled via clean-up services:

- **Frequency of collection:** For NSW Councils who offer two or more clean-up services per year, the amount of household bulky waste landfilled via clean-up services is 25kg higher per capita per year (49kg per household) than for Councils offering one clean-up service per year.*
- **Vehicle type used:** The type of vehicle used in kerbside collections across NSW (e.g. compactor versus flatbed truck) made no significant difference to the amount of bulky waste landfilled. However, vehicle types utilised influence opportunities for reuse, recycling and resource recovery.
- **Visibility of the cost of service to residents:** For NSW Councils that included the cost of services in annual rates and charges, the amount of waste landfilled via clean-up services was 35kg higher per capita per year (88kg per household) when compared with Councils who position their costs more visibly e.g. user pays or voucher service.*

* Note: This does not account for waste being disposed of via other means e.g. paid for via self-haul, and therefore does not necessarily mean that more household bulky waste is being landfilled overall in council areas offering two of more clean-up services per year.

The amount of waste landfilled via clean-up services may have cost and labour implications for Councils.

ISJO reflections and recommendations

18. For Councils where the cost of service is included in rates and charges and/or where there is more than one collection per year, consideration needs to be given to what other measures need to be put in place to reduce the amount (by weight and volume) of household bulky waste going to landfill via clean-up services.

Opportunities for reuse and resource recovery at the kerbside

The best model for improved diversion for reuse, recycling, recovery and repurposing occurs at the kerbside, prior to collection. Residents can play a key role in assisting with source separation when they place their materials on the kerbside.

While vehicle type did not impact the amount of household bulky waste sent to landfill, the type of truck used (compactor and flatbed trucks) does have implications for opportunities for reuse (e.g. via tip-shops) and material recovery, such as through separation at the kerbside. For instance, flatbed trucks provide greater potential for reuse and recovery when utilised within a 'first pass' model at the kerbside.

There are already examples of source separation occurring in service models, such as metal recovery. However, this could be expanded to include other materials, such as timber and textiles. Improved data collection can assist in measuring the impact of council or region-wide reuse. Councils should undertake further research, such as a cost-benefit analysis, to determine whether expansion of source separation schemes are feasible, particularly given volatility in end markets for recovered resources. Any Work Health & Safety (WHS) risks within amendments to service models also need to be considered.

ISJO reflections and recommendations

19. Councils should consider reviewing vehicle fleets:
 - a. For opportunities to increase recovery from the kerbside.
 - b. To manage WHS risks
 - c. To confirm service delivery demands are met.
20. Councils should review data collection models or implement methods for data collection to understand and be able to communicate the value of reuse for changes to the service model or planning for infrastructure.



Embracing innovation and training in service models to improve recovery of resources

Councils within the region are also beginning to embrace some more innovative methods within their service models to improve the recovery of resources within household bulky waste. The addition of processing infrastructure at waste facilities (such as sorting pads) can be used in combination with flatbed trucks to improve the reuse or recovery of household bulky waste. Innovation has been effective for specific material types. For example, while data from the 2018-2019 WARR reporting period highlighted that the overall recovery of metals via clean-up services in NSW was high (95% recovered, by weight), only 4% of metals had been specifically source separated via the clean-up process (for example, at the kerbside). Shredder trials undertaken by some ISJO Councils were shown to increase metal recovery. As a result, shredders have since become part of their operational business plan.

While there were important examples of innovation in recovery of materials within household bulky waste, in general, more knowledge is needed about what materials are valued for recovery. For example, the research found missed opportunities and gaps in knowledge for further recovery and waste diversion of metals. This included uncertainties about what types, and the proportion of metals within items, were required for recovery to be valuable and feasible.

Councils should continue to explore innovative methods by seeking additional funding opportunities, such as through Commonwealth and NSW government grants. Councils may also wish to look for collective opportunities for innovation across the region.

ISJO reflections and recommendations

21. Councils need to review existing infrastructure and processing of waste prior to landfilling in order to assess triple bottom line for a business case or grant funding applications for resource recovery infrastructure.
22. Training needs analysis is undertaken and implemented based on the service delivery model, e.g. identification of acceptable metal content in line with metals contract, processes for non-conforming materials presented, items in demand for reuse through tip-shops.

Challenges to achieving flexibility in service delivery

Service models differed as to whether they used only council staff or also engaged contractor services for communication and engagement, booking systems, collection, resource recovery, processing and disposal to waste facilities.

Individual contracts were not reviewed for this project. However, stakeholder interviews noted that contracts may reduce flexibility to modify service approaches where there are changes in policy or attitudes towards waste reduction or diversion. Additionally, interviewees noted that the contracts focus on undertaking clean-up services (for example, collection of items from the kerbside) and generally do not have specific KPIs regarding resource recovery to assist in meeting waste diversion targets.

Where contractors are used within the service model flexibility needs to be built into the contract to ensure that the service model can be adapted to continuously improve reuse, recycling and recovery of household bulky waste materials.

ISJO reflections and recommendations

23. For effective and efficient service delivery:
 - a. Flexibility needs to be built into contracts for continuous improvements in the service model, e.g. to allow for emerging resource recovery initiatives, or new systems and technologies.
 - b. Contracts need to be managed and monitored for effective service delivery. KPI's need to be established and monitored for all aspects of the service. This should include regular meetings with staff involved in the delivery of the service.
 - c. Systems need to be in place to support ongoing service delivery irrespective of personnel.
24. Consider drafting tenders and contracts so as to achieve outcomes by reference to KPIs (including KPIs targeted at continuous improvement), leaving industry to use their expertise to determine how the outcomes and KPIs are met.
25. The clean-up service model should be featured in and measured as a deliverable in Council delivery and operational plans, including the waste strategy.

Performance of work beyond the service model

At times items of household bulky waste were collected outside of council clean-up service models. This may include collecting more waste than is permitted in council clean-up services, collecting items that have not been booked or collecting non-conforming items. Council and waste contract staff carry out work outside of the adopted clean-up service models for a number of reasons, including where current gaps in the service model exist, amenity concerns or diverting household bulky waste from landfill. However, this has important flow on effects in relation to service model efficiencies, the work, health and safety of staff and waste contractors and the community perception of the service. For example, this may encourage residents to put out non-conforming items because they know these will be collected.

Work, health and safety

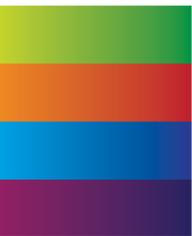
Managing work, health and safety for community and staff is an important issue when implementing and delivering clean-up service models. All clean-up models involve risks for staff related to manual handling, such as lifting heavy or oversized items or encountering hazardous materials. Risks to community safety include matters such as access to pathways when bulky waste is placed on the kerbside and the time of collection e.g. avoiding collection during school drop-off and pick-up times.

While waste collection in NSW has been guided by a code of practice,¹² specific safe work practice could be developed for household bulky waste clean-up services, as done in other states such as Victoria.¹³

ISJO reflections and recommendations

26. Consider whether there should be a specific work, health and safety practice developed at the State level for household bulky waste clean-up services.





How can councils better promote opportunities for reuse, recycling, recovery and repurposing within (and beyond) council clean-up services?

Reuse, recycling, recovery or repurposing of resources from household bulky waste in ISJO council areas is influenced by existing household practices and values, how households engage with council services, and the clean-up service delivery model. The research found a number of informal and formal opportunities for reuse, repurposing, recycling and recovery of resources currently exist across the region.

Capacity for reuse, recycling, recovery and repurposing already exists within the community

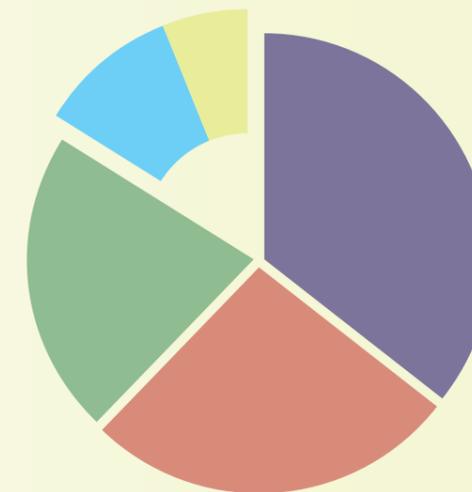
There are already existing informal reuse, recycling, recovery and repurposing networks in the community, such as giving items away to family, friends or neighbours, giving items to charity or tip-shops, or giving away or selling items online or at physical marketplaces (Figure 9). Overall, the surveyed residents indicated that the least preferred disposal method was via a clean-up service or paying to dispose of items at a council waste facility.

The main factors influencing how items were disposed of include the condition of the item, environmental concerns and charitable motivations.

Figure 9

Households most preferred method to dispose of unwanted household items.

- Gave away/sold household items directly to neighbours, family, friends
- Gave items to charity or tip-shop
- Gave away/sold using online/physical marketplaces (Facebook, Gumtree or community markets)
- Council household cleanup service (collection/drop-off event)
- Paid to dispose at local waste or recycling facility



Reuse and recovery within council operations can be informal and incidental

ISJO Councils have formal practices in place for reuse and recovery, for example, collection of recyclable materials such as metals and mattresses from the kerbside and the use of tip-shops. However, some practices of reuse and recovery occurred on an ad hoc basis, such as council staff looking out for or searching through items at waste facilities. A lack of understanding within council and contractor teams about existing formal reuse networks (for instance between waste facilities and tip-shops) led to uncertainties regarding how items could be diverted from landfill.

offered for large usable items eg. Bicycles, bed frames etc.' (survey respondent)

Respondents also identified opportunities for reuse that could be provided through improved facilities and events, such as partnering with another organisation to create a large-scale reuse/ "garage sale" event:

'Better facilities to sort clothing, shoes and textiles to help support charity organisations - Facilities that will reclaim resources from large furniture items (eg lounges containing metal, wood, fabric, foam, etc - these could all be reused, but usually end up in landfill)' (survey respondent)

'Alternative options would be an area to drop off on one day and the following day a free marketplace for items to be redistributed to others and then whatever remains can be disposed of. One persons [sic] trash = one persons [sic] treasure' (survey respondent)

ISJO reflections and recommendations

27. Councils should seek to build stronger networks and improve communication between council and contractor staff and different third sector organisations that support reuse within clean-up service models. This could occur through regional catch-ups or 'toolbox talks'.

These findings are consistent with examples of leading practices of reuse and repair that occur elsewhere in NSW and internationally, such as The Bower in Sydney or the Inorganic Reuse Project in Auckland. Dedicated reuse and repair infrastructure diverts reusable materials from landfill and builds on social and environmental community values to avoid disposing of items that still hold use value.

Councils should explore opportunities for partnering with existing and new stakeholders to establish community facilities and events that can promote reuse, repair and recovery.

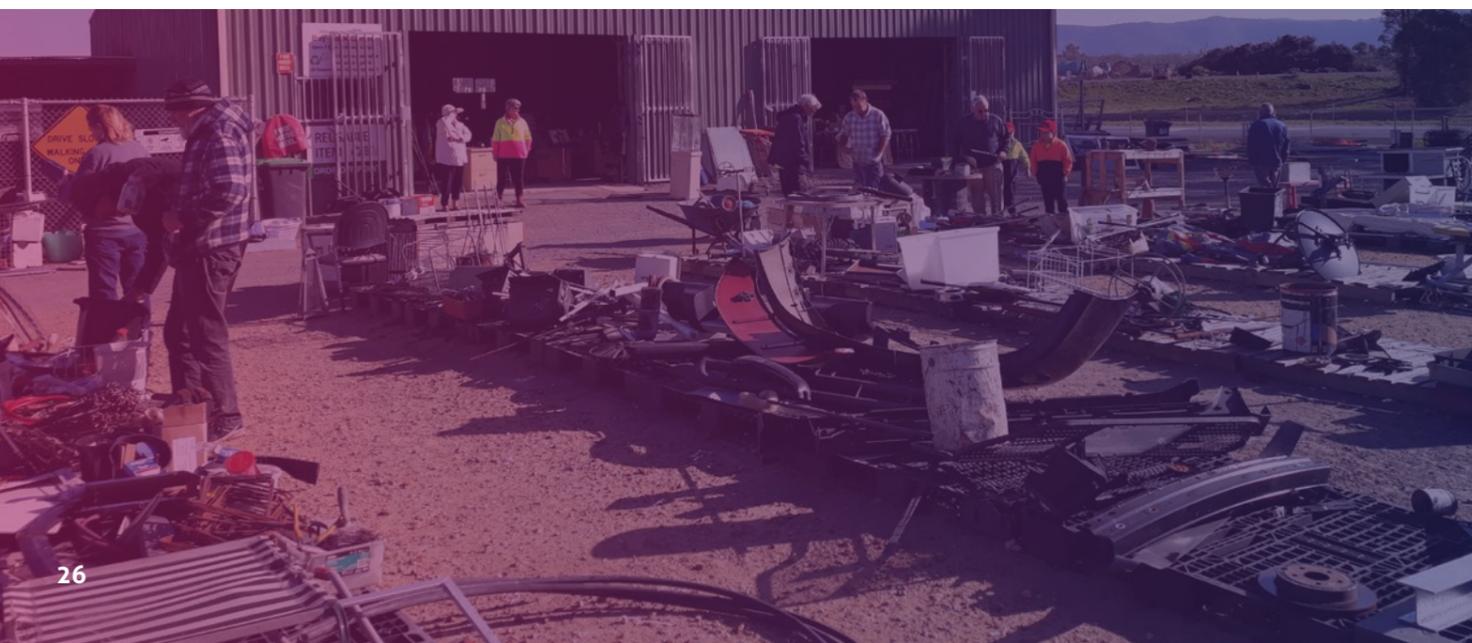
ISJO reflections and recommendations

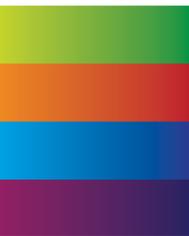
28. Create local stakeholder partnerships for community reuse and repair hubs to encourage the repair rather than replacement of household bulky waste items and hubs to divert reusable items from landfill – and communicate the existence of these facilities to residents.

Further infrastructure for reuse, recycling, recovery and repurposing is needed

The research uncovered demand from households across the ISJO region for improved, expanded or more convenient information and access to services which promote reuse, recycling and repurposing (31% of survey respondents). This could include services at the kerbside and via other channels such as tip-shops or organised drop-off events. Improving service models to enhance the reuse of items was suggested by respondents:

'Council could then send staff out before collection dates to collect items that can be re-used, purposed and sold at a centre such as the [The Bower] in Marrickville Council.' Also - *'many people putting out reusable items for council clean up that probably end up in tip, rather than being used. Perhaps a pick-up service could be*





How can councils better understand the impact of household bulky waste on landfill?

To compare waste and diversion rates across different waste streams, Commonwealth and NSW waste policies and reporting focus on the weight of materials that are both sent to and diverted from landfill. Therefore, what is currently considered important in the reporting of data or determining policy interventions is the demonstrable 'weightiness' of a particular waste stream.

Across NSW over 85% of household bulky waste collected through council clean-up services is landfilled.² However, landfills are a valuable asset with each cubic metre of space used resulting in a cost to council. The 'bulky' character of household bulky waste materials means that there are many factors beyond weight that influence the economic and environmental costs of disposal to landfill. This includes the amount of landfill airspace that this stream occupies and relatedly, the compaction ratios of these items, both before and within landfill. These factors require a strong understanding of the volume of household bulky waste materials in this waste stream. However, this data is currently not available.



Understanding impacts on landfill: weight to volume conversion

Because household bulky waste data is currently collected by weight, a statistical model was developed to convert data for household bulky waste from weight to volume for two ISJO council areas in order to better determine the impact of this waste stream on landfill space (see Table 1). This determined the total volume of household bulky waste taken to waste facilities over a 12-month period via clean-up services and self-haul. The methodology included two data sets: a sample of 156 households from a bulky waste audit carried out by a consultant for an ISJO council, and weighbridge data from the 2018-2019 WARR reporting period. While a sound model was created for weight to volume conversion, there were limitations in calculating accurate results based on the data available and the reporting methods used. This included the small sample size of available audit data, the potential for estimation bias in that data and assumptions made around weight to volume conversion for particular items. Limitations of the model also included inconsistencies in how Councils collect, analyse and report data. These are further detailed in the Research Report.¹

After converting data for household bulky waste from weight to volume, a formula using council weighbridge data and a compaction factor provided by a waste

contractor was applied to assess post-compaction volumes by a compactor truck for service models that use this vehicle type (see Table 1). This formula was used to provide an estimation of the post-compaction volume of household bulky waste landfilled over one year in one council area. The formula could be used to provide a rough indication of the cost to Councils of the volume of household bulky waste landfilled, however, the formula only accounted for compaction within the truck. Further calculations of the volume post-compaction that occurs at waste facilities (such as within landfill cells) were not included in the analysis because the data was not available.

Table 1 details the findings of the statistical analysis for weight to volume conversion. It provides an indication to Councils about the space household bulky waste items may take up in landfill, as disposed by different methods of service delivery (for instance, kerbside collection or self-haul to waste facility). As discussed earlier, the weight and volume of bulky waste being landfilled through clean-up services is impacted by the number of collections provided to residents per year, and the visibility of the cost of service. This also has important cost and labour implications for Councils. Table 1 also represents a figure for the post-compaction volume of household bulky waste in one council area.

Measure – based on 2018/19 WARR reporting period	Council 3 – user pays	Council 4 - cost included in rates & charges
Annual tonnage of material landfilled from kerbside clean-up collection	129 t	3,620 t
Volume of material presented at kerbside for clean-up collection	1,311 m ³ (99% confidence interval between 1,250m ³ & 1,372m ³)	31,160m ³ (99% confidence interval between 30,853m ³ & 31,467m ³)
Volume of material presented to waste facility after compaction in the collection truck	N/A (compactor trucks not used)	21,168m ³ This is the upper limit assuming all trucks are full to a capacity of 24m ³ before tipping at the waste facility
Annual tonnage of material landfilled from self-haul	4,165 t	3,532 t
Volume of material generated from self-haul	35,207 m ³ (99% confidence interval between 34,879m ³ and 35,535m ³)	30,144 m ³ (99% confidence interval between 29,823m ³ and 30,465m ³)

Table 1: Weight to volume conversion for ISJO Councils

An important issue highlighted within the research is the need for improving the accuracy of available data and current mechanisms for reporting if the true impact of the household bulky waste stream on landfill is to be properly understood, particularly the impact of its compacted volume on landfill space. With expanded data collection, more accurate estimates of the economic impact of household bulky waste on landfill could be made.

ISJO reflections and recommendations

29. To more accurately calculate the impact of household bulky waste by volume and the cost of this to Councils, including in terms of landfill space, it is necessary for more accurate data to be collected. This includes:
 - a. The volume of bulky waste items and materials being disposed of by households.
 - b. The volume of household bulky waste disposed of after compaction. This includes establishing accurate compaction factors of different items and materials being disposed of, both for compaction by any vehicles used in the service model and any further compaction within landfill cells.
30. Councils should develop a methodology to include weight and volume of items that are reused, recycled, recovered.

Definition of household bulky waste: importance to data collection and understanding impacts

A key factor which affects the understanding of the impact of household bulky waste is its lack of clear definition, including for the purposes of reporting waste data. The research found that unclear reporting definitions in NSW for material categories that cover household bulky waste are thought to have led to lower levels of expected accuracy when reporting on this stream. Accordingly, because there is no consistent understanding of what constitutes 'household bulky waste' for the purpose of data reporting, this raises issues regarding the accuracy of data. Therefore, the research also highlights the need for improved consistency in reporting definitions and data to accurately determine the impact of household bulky waste on landfill.

Stakeholders interviewed stated that there was little guidance from the NSW EPA regarding data collection and analysis methods when reporting on clean-up services or the interpretation of definitions. This includes, for example, what is understood as 'bulky waste' versus 'other mixed waste', or how data should be

managed for consistency in entry to the WARR portal. As a result, there may be inaccuracies and inconsistencies in data for household bulky waste NSW-wide, which in turn has implications for Councils, such as allocating resources for clean-up services.

In order to ensure clear and accurate data collection, analysis and reporting it is important for Councils and the State to adopt clear and consistent terminology regarding what is considered to be household bulky waste. Any adopted definition of household bulky waste should be reflected in policies, action plans, guidance material, and statistics. Consistent terminology will also aid consultants (who undertake some of the work of household bulky waste audit reporting for Councils) in developing and applying methodologies which assist with determining the effectiveness of services and the impact of bulky waste on landfill. Gaining a clearer picture of how much bulky waste there is, how much is going to landfill, how well current services operate and how much waste is being diverted through other means (such as reuse or recycling) will assist with achieving effective management of household bulky waste in the future. Data collection, management and reporting are essential for planning, innovation and future investment in solutions to target bulky waste challenges.⁷

ISJO reflections and recommendations

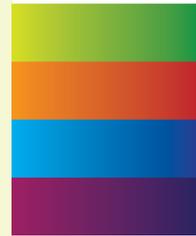
31. A harmonised definition of household bulky waste should be adopted at the State level and included in the relevant policy, guidance material, action plans and data collection specifications.
32. A consistent method of data collection, management, analysis and reporting for household bulky waste data should be adopted across the State. Clear instructions should be provided to Councils as to the data that needs to be collected, analysed and reported.
33. Leading practice data collection would include weight and volume of items that are landfilled. State government should consider how to include volume as an additional metric in annual reporting of clean-up services.
34. Councils should implement regular training and skills development to ensure the ongoing consistency and accuracy of auditing, data collection and reporting.
35. Councils should have defined systems in place linked to State definitions and reporting requirements to enable consistent and verifiable data management.

Conclusion

As the bodies responsible for collection and management of household bulky waste, Councils can play a critical role as change makers in achieving improvements in service delivery, collection models, and increased reuse, recycling and recovery of resources in the move towards a circular economy, and the achievement of the UN SDGs. The findings and recommendations of this project provide ISJO Councils with feasible and practical solutions for the improved management of household bulky waste, including measures that will support, grow and develop new networks and enterprises that reduce disposal to landfill and educate the public about better choices. The findings and recommendations made here and in the Research Report also aim to engage NSW Councils, Commonwealth and State policymakers, and key industry and third sector stakeholders, to help transform the management of household bulky waste in the transition to a more circular economy.

For the full context of the research project carried out in collaboration between UOW and ISJO, see: Stanes, E., Wright, S., Chad, P. and Ng, J. (2020) Benchmarking, characterising and valuing the resources in household bulky waste clean-up services. University of Wollongong. <https://www.uow.edu.au/global-challenges/making-future-industries/bulky-kerbside-collections/>

Along with the findings and recommendations made by ISJO to its Councils that are featured in this report, Councils across NSW can utilise the Guide to Leading Practice in Appendix 1 to assist with the continual assessment, evaluation and improvement of their clean-up services.



Appendix 1

Guide to leading practice in delivering household bulky waste clean-up services

Lounges, bookshelves, old TVs, mattresses and kids toys stacked high on kerb is a familiar sight in Australian life. Piles accumulate over a few days or a week, growing and shrinking with the drive-by of local scavengers. Then in the early hours of a weekday morning, the piles unceremoniously disappear.

Despite growing attention to economies of reuse and recycling for a range of household items, consideration of systems which support household bulky waste clean-up services, or the conditions under which materials enter landfill, are largely absent.

The Illawarra Shoalhaven Joint Organisation partnered with researchers at the University of Wollongong to benchmark, characterise and value the resources in household bulky waste, in order to define leading practice for resource recovery.

This guide is designed for Councils to undertake an assessment of current service delivery. It has been presented in the form of a checklist to enable Council teams to discuss and review all aspects of their service and contains examples to help structure this process. These are examples only and there may be other influences or a combination of factors which drive delivery of your Council's household clean-up services. Implementation of this guide should be based on accurate data collection, reliable reporting methods and program evaluation. In preparing this guide, ISJO has been informed by a University of Wollongong research report. This should be referred to for further information and detail about the project.



The Service Delivery Model

Does your model recognise drivers for service provision to confirm that:	Y	N
The aims and objectives of the clean-up service are clearly understood by Council and the community. Consider how waste is collected, recognition of different social, economic and environmental drivers which underpin the service, and options for resource recovery.		
Community Strategic Plans, delivery programs and operational plans are used to monitor and measure the outcomes of the service.		
The service is accessible by all sectors of the community, e.g. renters, residents living in Multi-Unit Dwellings (MUDs), Culturally and Linguistically Diverse (CALD) communities.		
The costs of service delivery are known to Council – income and expenditure of all elements of the service e.g. if a business case is required for change, costs can be attributed.		
Does your service include a booking system that is:	Y	N
Efficient in planning and resourcing service delivery. Consider basing the booking system around a single point of contact, how data will be collected and collated for monitoring and reporting and the effective use of available technology.		
User friendly for residents and staff, e.g. minimise steps in the booking process.		
Able to capture residents understanding and intent for diversion, i.e. residents had investigated other avenues for reuse / recycling prior to booking service.		
Does your service make use of infrastructure to allow:	Y	N
The use of different vehicle types to enable Council to meet the aims and objectives of the service. This could include flatbed trucks to allow for a first pass for separated collection for reuse or recycling.		
Innovative facilities and processes to increase diversion from landfill, e.g. sorting pad, slow speed shredder. Councils should review available funding and consider grant program opportunities.		
Is there adequate safety and training for:	Y	N
WHS procedures that align with the service delivered, e.g. length of time that materials are left in a public space or manual handling of waste by staff.		
Regular education of staff that aligns to the service delivery e.g. operator toolbox talks regarding KPI's.		

Data & Governance

Do the data and governance aspects of your service model provide for:	Y	N
Consistent and verifiable data collection, interpretation and reporting (both internally and externally, e.g. WARR reporting). This should include tracking the weight and volume of materials which are landfilled, diverted for reuse and diverted for recycling.		
Benchmarking against like Councils, to review factors including: <ul style="list-style-type: none"> • Frequency of clean-up services • Booking process • Uptake of the service • Number and type of items illegally dumped • Tonnage and type of materials diverted • Landfill tonnage per capita 		
Regular discussion and review of service models and delivery as a standing agenda item at internal and regional waste meetings. This could be based around challenges and opportunities for diversion of materials, potential for shared procurement models, or effective communication tools.		
Established and monitored KPI's across the service delivery (Council or delivered under contract), e.g. acceptable metal content for recycling; efficiency in vehicle routing; time between booking and collection.		
Flexible contract clauses to allow for changes in service delivery, e.g. advancements in technology, changes to end markets.		
Opportunities for additional third sector contracts, e.g. material collection for pre-determined end markets (cardboard, EPS, etc).		
Analysis of the effectiveness and efficiency of the service to identify strengths, weaknesses, opportunities and threats (SWOT) for continuous improvement. The analysis should include consideration of: <ul style="list-style-type: none"> • Service delivery model • Data and governance • Engagement and education 		

Engagement & Education

Does your service seek feedback and engage with community and stakeholders to:	Y	N
Understand community knowledge, perception and use of service, and different limiting factors for access and use, e.g. by undertaking surveys or workshops.		
Regularly provide feedback on diversion rates, trends and 'wins', e.g. number of mattresses recycled, social and environmental outcomes, or reuse outcomes achieved by the community indicated via Charitable Recycling Australia Reuse Impact Calculator.		
Map regional reuse opportunities, e.g. social enterprise, repair workshops, tool libraries, pre-loved markets, garage sale trail.		
Collaborate with existing and support new reuse networks to build local capacity, e.g. forums, workshops, development of educational tools, joint funding applications.		
Do your engagement tools provide consistent and transparent messaging for:	Y	N
The types of materials accepted or not accepted as part of the service and the reasons behind this, e.g. gas bottles are not accepted but can be taken to a Community Recycling Centre (CRC) for FREE.		
How materials should be sorted and presented for collection or drop-off, including the permitted size or volume of materials, e.g. e-waste, scrap metals or mattresses separated for recycling.		
The destination of materials once accepted by a service, e.g. materials that are not separated will be landfilled, mattresses will be recycled via social enterprise networks, etc.		
The accurate cost of the service, e.g. services included in Council rates & charges are not free, reflective of processing and/or end markets.		
How materials can be reused or recycled prior to accessing the service, e.g. promotion of local networks including online marketplaces and charities, free drop off of recyclables through Council facilities and CRCs.		
All sectors of the community, e.g. renters, residents living in MUDs and CALD communities.		

The 'Short List'

Don't have time to consider the full guide outlined above?

Make sure that:

-  Council analyses the efficiency and effectiveness of the service to identify strengths, weaknesses, opportunities and threats (SWOT) for continuous improvement. This could include a benchmark of the service against like Councils and should include consideration of:
 - Service delivery model
 - Data and governance
 - Engagement and education
-  Council has systems in place for consistent and verifiable data management; including how data is collected, interpreted, analysed and reported on (both internally and externally, e.g. WARR reporting).
-  Council investigates opportunities to implement innovative processes, infrastructure and facilities for reuse, recycling, recovery and reprocessing. This should include review of available funding, including grant programs.
-  Council regularly reports internally and to the community on diversion rates and trends, and other 'wins', e.g. number of mattresses recycled, social and environmental outcomes, or reuse outcomes achieved by the community indicated via Charitable Recycling Australia Reuse Impact Calculator.
-  Council's service model and delivery is a regular agenda item at internal and regional waste meetings. You could report on challenges and opportunities for diversion of materials, possibilities for shared procurement models, or effective communication tools.

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