Attitudes and social acceptance in the waste and resource recovery sector

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Engaging Communities on Waste project: Phase 3
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We would also like to thank the stakeholder participants (community, industry, and government) in the previous phase of this research (Phase 2) whose input contributed to developing this survey for Phase 3 of the research project.

Lastly we would like to thank the Victorian residents who participated in this survey.

About Sustainability Victoria

Sustainability Victoria is a Victorian government agency and our vision is for a sustainable and thriving Victoria.

Our purpose is to support Victorians to use resources more sustainably and to take practical action on climate change – we do this via delivering programs and shaping policy.

We also have obligations under the Environment Protection Act 1970 for statewide waste management strategy and planning.
Executive Summary

The 2016 CSIRO Victorian Attitudes to Waste Management survey measured community attitudes and perceptions about waste and the waste and resource recovery sector, identifying the key drivers underpinning social acceptance.

This report documents and models the drivers that underpin both waste reducing behaviour and social acceptance. Moreover, it identifies which drivers are most important.

Research results provide an opportunity for government and industry to target their policies and programs on the areas that are important to waste reducing behaviour and to social acceptance of the industry, potentially providing wider benefits to the waste and resource recovery sector and society at large.

What we did

We conducted an online survey that took approximately 20 minutes to complete. We asked 1,212 Victorians 134 questions about their attitudes, knowledge and behaviour in relation to waste and resource recovery. We also asked them about their views towards living near an imaginary waste and resource recovery complex. We used a ‘scenario’ to ask about issues such as impacts, benefits, trust, and governance in relation to living near such a site.

When

We conducted the survey in June 2016.

Where

We included people from all over Victoria. We made sure half the participants lived within a 2 km radius of waste and resource recovery infrastructure, as listed in the ‘Existing hubs of state importance’, Statewide Waste and Resource Recovery Infrastructure Plan: Victoria 2015-44. The other half of participants were from across urban and regional Victoria.

Who

All participants were randomly selected from a panel of approximately 75,000 participants.

The people who completed the survey were over 18 years old and representative of Victoria based on ABS (2015) statistics for age, sex, and geography.
Our sample included

- 79% from Metropolitan Melbourne
- 21% from Regional Victoria

We asked participants if they were presently negatively affected by a waste and resource recovery facility near their home such as a landfill, transfer station, or organic processing facility.

- 24% were ‘Impacted residents’
- 76% were ‘Non-impacted residents’

What we found

Knowledge

- Participants rated their overall knowledge of the waste and resource recovery sector as low.
- Knowledge about household waste collection services was good and knowledge about landfills and use of recycled materials was poor.

Figure 1 Self-rated knowledge scores

<table>
<thead>
<tr>
<th>Description</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household waste collection services</td>
<td>3.4</td>
</tr>
<tr>
<td>The sorting, recycling and recovery of materials</td>
<td>3.0</td>
</tr>
<tr>
<td>The use of recycled materials in new products</td>
<td>2.8</td>
</tr>
<tr>
<td>Landfill services or tips</td>
<td>2.8</td>
</tr>
<tr>
<td>The overall waste and resource recovery system</td>
<td>2.7</td>
</tr>
</tbody>
</table>

Attitudes

Essentialness of waste and resource recovery services

People agreed that waste and resource recovery services were an essential service, and they ranked waste services fifth out of eight different essential services. Emergency and health services were ranked most highly, and utilities were next most essential. Waste management and resource recovery services were similar to public transport services.
Generating and reducing waste

People perceived households as contributing the least to total waste when compared to commercial and industrial waste generation. They also viewed responsibility for reducing waste as primarily falling on businesses and companies, followed by government, and then households.

Participants were largely unsure if they would be willing to pay a little more to reduce the amount of waste going to landfill.

Figure 2 Willingness to pay a little more for household waste collection / disposal to reduce the amount of waste going to landfill

People also indicated they put more effort into reducing waste going to landfill when they are at home than at work or when out and about.
Behaviour

Underlying drivers of waste reducing behaviours

We tested the underlying drivers of waste reducing behaviour and found that attitudes, perceptions of difficulty (perceived control), and normative pressure from family and friends were all direct influences. Broader perceptions of Victorian norms towards waste reducing behaviours and beliefs of collective efficacy were more indirect drivers of behaviour. Together, these drivers provide opportunities for increasing waste reducing behaviour through targeted programs aimed at increasing the driver’s influence on positive behavioural outcomes.

Figure 4 Model of waste reducing behaviour

Participants scored the level of these drivers quite favourably though perceived control and norms were not as high. Lower perceptions of control indicates undertaking waste reducing behaviour is not easy for households. Normative perceptions in relation to beliefs that family, friends and Victorians were regularly undertaking waste reducing behaviour were also not high. However, both perceived control and norms were significant influences on actual behaviour indicating there is scope for improvement.

Figure 5 Drivers of waste reducing behaviour: importance and means
Social acceptance

We measured ten drivers of social acceptance for our model of social acceptance in the waste domain.

Drivers used in the model

- **Relationship quality** – relates to operator contact quality and responsiveness.
- **Procedural fairness** – relates to decision making processes, citizen voice, and participation.
- **Citizenship fairness** – relates to an element of distributional fairness taking into account wider societal considerations (‘the greater good’) when judging the fairness of living near a waste facility.
- **Personal fairness** – relates to perceptions about the fairness of living near a waste management complex on a personal level.
- **Trust** – relates to trust in the local operator, local government and state government bodies to each act responsibly and in the community best interests, as well as trust in their capabilities.
- **Governance** - relates to regulation and compliance, planning and strategic vision, and collaboration
- **Benefits** – includes both local and societal benefits of waste and resource recovery facilities
- **Impacts** – relate to negative impacts of living near such facilities (e.g., dust and odour, environmental issues, noise, traffic, litter, and visual impacts).
- **Knowledge** - includes self-rated knowledge about activities in the waste and resource recovery system (e.g., household collection services; landfill services; sorting, recycling and recovery of materials; and the overall waste and resource recovery system.
- **Behaviours** – relates to self-reported behaviours for reducing waste going to landfill. This reflects the beliefs, attitudes, norms and intentions underlying these behaviours, which were not included to simplify the model.

All drivers were statistically significant predictors of social acceptance. However, some were more important than others. When people perceived these drivers to be positive or favourable then they are more accepting of waste and resource recovery infrastructure, including living near such infrastructure.

Figure 6 Model of social acceptance in the waste and resource recovery sector
The top five drivers of social acceptance in order of priority included:

- Benefits
- Governance
- Impacts
- Citizenship fairness
- Trust

Surprisingly benefits was a key driver of acceptance, as well as impacts. This suggests that developing the perceived benefits and value to society of the waste sector can be a major driver for increasing acceptance. Governance, not only in terms of regulations and compliance, but also, in relation to institutional planning and collaborating was also key to acceptance. Governance was also a major contributor to trust. Not surprisingly, perceptions of fairness and trust underpinned people’s acceptance.

Some of the drivers were perceived to be functioning at low levels or viewed quite negatively (impacts, quality of relationships, perceptions of personal and citizenship fairness, and waste sector knowledge) and yet were capable of influencing a person’s level of acceptance. These drivers provide an opportunity for targeting programs and policy that through the improved performance of the driver will translate to increased social acceptance.

Figure 7 Drivers of social acceptance: importance and means
Previous experience with the waste sector

We found that acceptance of waste and resource recovery infrastructure was dependent on a person’s previous experience with the sector.

If a person had visited a site, considered themselves to be negatively impacted by a site, or were associated with a community group engaging with a site, then they were more accepting than those who had never encountered these experiences. Notably, people having more contact with sites were more accepting on average.

Figure 8 Acceptance of living near a waste facility: Differences based on previous experience with the waste sector

<table>
<thead>
<tr>
<th>Experience</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visited a site within last few years</td>
<td>3.03</td>
<td>2.81</td>
</tr>
<tr>
<td>Impacted resident</td>
<td>3.09</td>
<td>2.85</td>
</tr>
<tr>
<td>Associated with a community group engaging with a site</td>
<td>3.23</td>
<td>2.88</td>
</tr>
</tbody>
</table>

Demographic influences on acceptance

Four demographic characteristics were analysed as influences on social acceptance: age, gender, income brackets, education levels, working status, and geographic location.

Even though social acceptance was not high in any demographic group, it was significantly higher in younger people (18-34 years old), males, and residents living in regional Victoria. However, there were no significant differences in social acceptance between income groups, education levels, or working status.

These findings indicate that demographics are less important in predicting social acceptance in the waste and resource recovery sector than the underlying drivers such as perceptions of benefits, governance, impacts, fairness, and trust.
1 Introduction

As the links between population growth, urban planning and waste management become clearer, the need for community involvement and cooperation with the waste and resource recovery sector becomes more important if we are to achieve sustainable waste management outcomes for our cities and towns.

The waste and resource recovery sector functions as an integrated system involving different types of infrastructure and a range of stakeholders. The nature and function of the infrastructure over forthcoming decades will need to adapt and change to the changing demands of communities. Community support and involvement is necessary for achieving the best outcomes.

This report documents Phase 3 research findings of a joint CSIRO-Sustainability Victoria (SV) research project. The overall project investigates community perceptions of the waste and resource recovery sector and Phase 3 examined the drivers important for building community trust and social acceptance in relation to the waste and resource recovery sector in Victoria. The aim of Phase 3 was to conduct a survey that measures and models trust and social acceptance in this sector.

WHY ENGAGING COMMUNITIES IS IMPORTANT

Sustainable waste management extends beyond the traditional disposal of waste to landfill, and includes recycling, reusing, and recovering products. Disposal of waste to landfill has become a solution of last resort with many waste and resource recovery operators and facilities undertaking a variety of the waste and resource recovery activities.

However, the activities and locations of waste and resource recovery sites are constantly changing as the industry responds to changes in the external landscape, such as climate change, population growth, new technologies and markets, and changing societal expectations.

To achieve changes in the waste management industry that are acceptable to local communities, reflect best practice, and align with sustainable waste management strategies it is necessary to understand community perceptions about waste and its management. An understanding of community expectations and concerns regarding the waste and resource recovery sector is important to underpin community support, cooperation and collaboration with policy, programs, and plans to manage waste.

Upgrading, extending, relocating, or siting new waste and resource recovery facilities are important components for ensuring the ongoing safe and sustainable management of waste associated with a growing population. Community support and involvement in decision making is important for achieving the most effective and acceptable solutions.

Yet matters of community concern, their expectations, and how best to engage and involve community perspectives is not widely understood in the waste domain. These aspects form the basis of building trust and a social licence to operate and are necessary to understand for the sector to achieve its plans and objectives.
PROJECT OVERVIEW

PROJECT AIMS

1. Understand and measure community attitudes and perceptions about waste, and the waste and resource recovery sector
2. Identify the drivers for building trust and community acceptance of the waste and resource recovery sector, its operators, facilities, and activities
3. Identify the relative importance of the key drivers that contribute to building trust and achieving acceptance in the waste and resource recovery sector
4. Identify key contextual variables that influence levels of trust and acceptance e.g. type and location of a facility
5. Identify opportunities for policy, programs, and collaborative actions to shape behaviour among stakeholders in the waste and resource recovery sector

MIXED METHODS DESIGN

Using both qualitative and quantitative methods provides a holistic and robust evidence base for our project findings.

- Community group discussions and key informant interviews provide a broad and rich understanding of the topic
- A state-wide survey allows us to measure Victorian attitudes about waste and to test a model that explains social licence to operate for this industry

FOUR PROJECT PHASES

Phase 1: Preparation and Planning
Phase 2: Community group discussions and key informant interviews
Phase 3: State-wide survey
Phase 4: Feeding back results and identifying opportunities for collaborative actions

This report presents Phase 3 research findings.
Drivers of social acceptance in the waste domain

Drawing from the research findings of Phase 2, we identify a range of potential drivers of social acceptance that are relevant to the waste and resource recovery sector (see Figure 9).

The aim of the Phase 3 survey study is to measure each of these drivers and to identify which are the most important. We use statistical analyses to develop a model that explains social acceptance and how these various drivers work together. For example, some drivers may be similar constructs and can be grouped together, thereby reducing the number of overall drivers or variables in the model. Similarly, some of the drivers may be underlying another driver, such as those that explain trust, with trust then going on to explain acceptance.

Overall, we aim to produce a model that is both statistically sound, yet not overly complex, but still capable of explaining the important components that contribute to the notion of social acceptance in the waste sector.

Figure 9 Drivers of social acceptance in the waste domain
2 How we conducted Phase 3 research

SURVEY PROCEDURE

An online survey about Victorian attitudes to waste management was conducted during June 2016. We used a representative sample of Victorian residents from a research panel administered by the Online Research Unit (ORU). The survey took 15 -20 minutes to complete on average.

The survey questions were developed from the previous stage in this research project (Phase 2), which explored community expectations and perceptions of the Waste and Resource Recovery sector (Walton, Jeanneret, McCrea, Lacey, & Moffat, 2016). The survey was also informed by previous research conducted by CSIRO on the social licence to operate in mining and coal seam gas industries (Moffat & Zhang, 2014; Moffat, Zhang, & Boughen, 2014; Williams & Walton, 2013).

This present study was conducted in accordance with the ethical review processes of CSIRO and within the guidelines of the National Statement on Ethical Conduct in Human Research.

SURVEY SAMPLE

The sample comprised 1,212 residents across Victoria, including people living at different proximities from waste and resource recovery facilities. Participants were a minimum of 18 years old and considered to be representative of Victoria based on ABS (2015) statistics for age, sex, and geography. See Table 1.

Table 1 Sample profile: Age, gender, geography

<table>
<thead>
<tr>
<th>Variable</th>
<th>Sample profile June 2016</th>
<th>ABS demographics Dec 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aged 18 – 34</td>
<td>29.2%</td>
<td>32.0%</td>
</tr>
<tr>
<td>Aged 35 – 54</td>
<td>38.0%</td>
<td>34.4%</td>
</tr>
<tr>
<td>Aged 55+</td>
<td>32.8%</td>
<td>33.6%</td>
</tr>
<tr>
<td>Male</td>
<td>50.6%</td>
<td>49.9%</td>
</tr>
<tr>
<td>Female</td>
<td>49.8%</td>
<td>51.1%</td>
</tr>
<tr>
<td>Metropolitan Melbourne</td>
<td>79.0%</td>
<td>76.2%¹</td>
</tr>
<tr>
<td>Regional Victoria</td>
<td>21.0%</td>
<td>23.8%²</td>
</tr>
</tbody>
</table>

The survey was anonymous, but approximately half the respondents voluntarily shared their address to enable us to measure the proximity to waste and resource recovery infrastructure. Figure 10 shows a distribution of respondents who shared their address.

¹ Melbourne Greater Capital City Statistical area as a percentage of the total Victorian population in June 2015
² Total Victorian population outside the Melbourne Greater Capital City Statistical Area in June 2015
SURVEY DESIGN

To ensure we included substantial numbers of respondents that were personally impacted (and not impacted) by waste and resource recovery sites in the sample, two sample subsets were targeted:

1. **Victorians in targeted postcodes** \( (n = 610) \) – Randomly selected residents from postcodes within a 2km radius of infrastructure listed on the ‘Existing hubs of state importance’ as detailed in the Statewide Waste and Resource Recovery Infrastructure Plan: Victoria 2015-44 (Sustainability Victoria, 2015). We also targeted postcodes with more than 20 registered complaints or ‘Pollution Reports’ registered with the Environment Protection Authority about waste or waste management issues.

2. **Victorians in other postcodes** \( (n = 602) \) – Randomly selected residents across the remaining postcodes in urban and regional Victoria.

This survey design ensured the sample contained a reasonable number of residents who were negatively impacted by one or more waste and resource recovery facilities and allowed us to:

- test for differences between residents impacted and not-impacted by waste management facilities
- measure general attitudes to waste management in the overall Victorian public
Impacted respondents

As part of the survey, all respondents were asked if they were presently negatively affected by any of the following types of waste and resource recovery facilities near their home: a transfer station; a landfill or tip; an organic processing or composting facility; or any other type of waste or resource recovery facility.

- **Impacted residents** - 24% of respondents (n = 297) who stated they were negatively affected by one or more different types of waste and resource recovery facilities
- **Non-impacted residents** - 76% of respondents (n = 915) who stated they were not affected by waste and resource recovery infrastructure
- **Overall residents** – total respondents (N = 1,212)

Figure 11 shows the percentages of the sample who described themselves as not impacted or negatively impacted by one or more different types of waste management and resource recovery facilities.

**Figure 11 Percentages of sample impacted by waste and resource recovery facilities**

Table 2 shows 29% of residents in targeted postcodes reported being impacted by at least one waste management facility near their home compared to 20% in other postcodes.

**Table 2 Percentage of Impacted respondents by postcodes**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Impacted respondents</th>
<th>Non-impacted respondents</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Targeted postcodes</td>
<td>29%</td>
<td>71%</td>
<td>100%</td>
</tr>
<tr>
<td>Other postcodes</td>
<td>20%</td>
<td>80%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>24%</td>
<td>76%</td>
<td>100%</td>
</tr>
</tbody>
</table>
SURVEY QUESTIONS

The survey comprised 134 questions (items) covering four main sections

KNOWLEDGE, ATTITUDE, AND BEHAVIOUR QUESTIONS

- General attitudes about waste and resource recovery – essentialness of service, shared responsibility, efficacy beliefs (self and collective), social influences
- Self-reported waste reduction behaviour
- Knowledge of the waste sector

SOCIAL ACCEPTANCE QUESTIONS

- Perceived impacts
- Perceived benefits
- Perceived fairness
- Trust
- Quality of relationships
- Responsiveness
- Governance
- Planning and strategic vision
- Community acceptance

PREVIOUS EXPERIENCE WITH THE WASTE SECTOR QUESTIONS

- Impacted by current waste and resource recovery infrastructure
- Visited waste and resource recovery infrastructure
- Previous experience engaging with the waste sector

DEMOGRAPHICS QUESTIONS

- Age / Gender / Income / Education / working status
- Geographic location

A full copy of the survey can be found in Appendix A.

DATA ANALYSIS

In analysing the data, we primarily used t-tests and Analysis of Variance (ANOVA) to test for differences among question responses and between sample groups. We also used a path analysis to test the two models (waste reducing behaviour model and social acceptance model).

All results described as ‘significant’ refer to a statistical significance level of $p < .05$. We have purposefully kept the reporting of statistical tests to a minimum within the document, so that it is easier to read, and have rounded mean scores to one decimal point and percentages to whole numbers in most graphs. Detailed statistical descriptions of the two models are in the Appendices.
What we found

3 KNOWLEDGE, ATTITUDES, AND BEHAVIOUR

3.1 Knowledge levels

After being shown a diagram of the waste and resource recovery system and having its main components explained (see Appendix A), respondents were asked to self-assess their knowledge about the following waste and resource recovery services:

- Household waste collection services (e.g., collection of garbage, recyclables, garden waste)
- Landfill services or tips (including transfer stations and tip shops)
- The sorting, recycling and recovery of materials (e.g., glass, paper, construction, organic material)
- The use of recycled materials in new products
- The overall waste and resource recovery system

Figure 12 shows the average (mean) levels of knowledge for each service where 1 = no knowledge, 3 = some knowledge, to 5 = a lot of knowledge. Self-rated knowledge about different waste and resource recovery services was modest. Only knowledge of waste and collection services was higher than the mid-point of the scale (3 = some knowledge). Overall knowledge of the waste and resource recovery system was rated the lowest ($M = 2.72$).

Figure 12 Self-rated knowledge scores
3.2 Attitudes

3.2.1 General views about the sector

Essentialness of the service

Waste and resource recovery services can be viewed as essential services, where an essential service is defined as a service that is a basic right for the community, and any failure to deliver it results in risks to the community.

Respondents were asked how much they agreed waste and resource recovery services were essential services, along with rating other services. Figure 13 shows the average rating for each service, where 1 = strongly disagree to 5 = strongly agree, ordered from highest to lowest scores for perceived essentialness of the service.

**Figure 13 Perceived essentialness of various services**

Average scores above 3 mean that respondents agree that these services are essential on average. Emergency and health services were ranked most highly as essential, and utilities were ranked as next most essential. Waste management and resource recovery services were similar to public transport services. Mobile and phone services were seen as the least essential service, though the mean of 4.01 still meant that respondents agreed that this was an essential service on average.

The mean score of 4.41 for waste management and resource recovery services reflected 86% of respondents agreeing or strongly agreeing that these were essential services. See Figure 14.
3.2.2 Beliefs about generating waste

Contributors to waste

Respondents were asked to identify how much they believed the different producers of waste each contributed to total waste generation, using a scale where 1 = not much of the total waste to 5 = most of the total waste. The three sectors of waste producers were:

- Household waste (including garbage, recyclables and organic waste)
- Commercial waste (including food and other retailers, accommodation and other service providers, public sectors and educational institutions)
- Industrial, construction and demolition waste (including manufacturing, housing, civil, and commercial projects)

Figure 15 shows that residents thought household waste contributed less than the other two sectors. The mean scores were all over 3, which shows that residents see all three sectors as large contributors on average (see bar heights). The percentage of residents who believe each sector contributes most of the total waste is denoted by a black dot. For example, respondents who believed that households contributed most of the total waste generation was 19.3% of total participants, compared to 24% and 26.1% for the other two sectors (see black dots).
Capability for reducing waste

As well as beliefs about sectors contributing to waste, respondents were asked how much potential they thought the same sectors had for reducing waste going to landfill, from 1 = very little potential to 5 = a lot of potential. Figure 16 shows that all sectors are seen as having considerable potential to reduce waste going to landfill with mean scores near 4. The least potential for reducing waste was seen in the industrial, construction and demolition waste sector, though over a third of residents (34.8%) still thought this sector had a lot of potential to reduce waste (black dot). Nearly 4 in 10 residents thought that the household and commercial sectors (37.1% and 38.8% respectively) also had a lot of potential to reduce waste going to landfill.
Responsibility for reducing waste

However, the responsibility for reducing waste to landfill was seen as primarily falling on private organisations (e.g., businesses and companies) and government. Residents were asked which of these sectors should bear most responsibility for reducing the amount of waste going to landfills using a scale from 1 = Very little responsibility to 5 = Most of the responsibility.

Figure 17 shows that although all sectors are seen as having considerable responsibility for reducing waste, households are viewed as the least responsible on average ($M = 3.9$). Approximately 4 in 10 residents saw private organisations and government as having the most responsibility for reducing waste going to landfill (40.4% and 39.1% respectively), while only 26% of residents thought that households had the most responsibility for reducing waste.
Willingness to pay

In contrast to responsibility, residents were also asked how much they agreed that they would be willing to pay a little more for their household waste collection/disposal if it reduced the amount of waste going to landfill, using a scale from 1 = strongly disagree to 5 = strongly agree. Figure 18 shows that most residents (35.2%) were unsure, neither agreeing nor disagreeing with the statement. One in three residents agreed or strongly agreed with this statement (22.9% and 10.3% respectively). However, the mean for this question was slighting less than 3 (mean = 2.96), indicating that residents slightly disagreed with this statement on average, with 16% strongly disagreeing.

Support for different types of waste reduction services

A range of services can be utilised for reducing waste going to landfill. Respondents were asked to what extent they were in favour of the services that collect and dispose of the following types of waste, on a scale from 1 = not at all in favour to 5 = strongly in favour.

- food waste (e.g., vegetable scraps and leftover food)
- garden waste (e.g., lawn clippings and tree prunings)
- recyclables waste (e.g., cans, glass, plastics and paper)
- e-waste (e.g., batteries, computers, mobile phones)
- hard waste (e.g., sofas, beds and washing machines)
Figure 19 shows residents viewed all services that collected these different types of waste very favourably with mean scores all over 4. More than two in three residents were strongly in favour of services collecting and disposing of recyclable waste (68%). However, less than half of residents were strongly in favour of services collecting and disposing of food waste.

**Figure 19 Attitude towards different services for reducing waste going to land fill**

![Bar chart showing attitude towards different services for reducing waste going to land fill]

**Reducing waste at work and home**

Residents were also asked how much effort they put into reducing waste going to landfill when they are at home, at work, and ‘out and about’, using a scale from 1 = none to 5 = a lot of effort. As Figure 20 shows, residents tend to put more effort into reducing waste at home ($M = 4.2$).

This suggests that different drivers of behaviour are potentially at play in different environments with some environments being more enabling than others. For example, recycling bins may be more prevalent in homes than working environments, or there may not be a culture at some workplaces for reducing waste going to landfill, even though the person may be doing so at home.

**Figure 20 Effort put into reducing waste going to landfill - at home / at work / out and about**

![Bar chart showing effort put into reducing waste going to landfill]
3.3 Behaviours (reducing waste going to landfill)

3.3.1 Self-reported behaviour

The survey asked how often respondents did the following range of behaviours in the past year, where 1 = never, 2 = rarely, 3 = sometimes, 4 = often, and 5 = almost always:

- Looked for ways to reuse things
- Recycled newspapers
- Recycled cans or bottles
- Encouraged friends or family to recycle
- Intentionally purchased products in reusable or recyclable containers
- Picked up litter that was not your own
- Composted food scraps
- Chosen an alternative product because of excess packaging
- Purchased second hand household items (e.g., from Op Shops, eBay or Gumtree)

Figure 21 shows these behaviours ordered by behaviours that are done least often. The behaviour undertaken least often is composting food scraps with 4 in 10 residents rarely or never composting (39%), followed by one in three never or rarely choosing an alternative product because of excess packaging. In contrast, most residents recycle cans and bottles (87%), as well as newspapers (82%), often or almost always.

This suggests that recycling cans, bottles and newspapers is part of routine household behaviour for most Victorians. Most of the other behaviours have sizable percentages undertaking these behaviours less frequently or ‘sometimes’, which provides an opportunity for increasing the frequency of these behaviours.
When we take the average of all these behaviours for each resident, we find that Victorian residents undertake these behaviours somewhere between “sometimes” and “often” on average ($M = 3.46$). This means that eight in ten residents undertake these behaviours at least sometimes (80.4% of residents score three or more), and two in three residents undertake these behaviours more often than sometimes (66.7% of residents score over 3). Nearly one in five residents undertake this range of behaviours often to almost always (19.1% of residents score between 4 and 5 inclusive).

### 3.3.2 Underlying drivers of behaviour

The Theory of Planned Behaviour (Ajzen, 1985, 1991; Ajzen & Fishbein, 2005) suggests a number of underlying types of drivers that may influence behaviour, in this case, residents’ behaviours for reducing waste going to landfill. These include residents’ attitudes toward reducing their waste going to landfill (attitudes), their perceived behavioural control about reducing their waste (perceived control), what others around them are doing (social norms), and their intentions to reduce waste going to landfill.

**Attitudes** can be viewed as a person’s overall evaluation of the benefits of undertaking the behaviour versus the costs, where costs can be considered in terms of time, effort, convenience, as well as money. **Perceived control** reflects how easy or difficult it is for a person to undertake the behaviour, even if they want to. **Social norms** are a type of social pressure on a person’s behaviour generated from a person’s beliefs about what they think others are doing in relation to the behaviour. In this study, we have used descriptive norms about ‘what others do’ rather than norms about what ‘should be done’ as the social influence.
In addition, we have included a collective efficacy belief as a driver of behaviour. This is where people believe ‘together we can make a difference’. If people believe that the problem is all too big and difficult to overcome then it is likely to influence that person’s intention to reduce their waste going to landfill.

Table 3 shows how these underlying drivers were measured in the survey, including the average scores for each survey item. Residents were asked how much they agreed with each survey item from 1 = strongly disagree to 5 = strongly agree.

Attitudes to waste reduction were very positive ($M = 4.33$), and perceived social norms around waste reduction were also significantly above 3 (the mid-point on the scale). However, perceived control by households to reduce their waste was significantly lower ($M = 2.88$). Notwithstanding, low perceived control within households, collective efficacy beliefs that households, businesses and governments being able to work together to reduce waste going to landfills was high ($M = 4.15$). Overall, households had very good intentions to reduce waste going to landfill ($M = 3.99$), and we saw in the previous subsection that actual behaviour was modest ($M = 3.46$), representing 80.4% of Victorian residents reporting they engage in waste reducing behaviour at least sometimes.

Table 3 Survey items used to measure the underlying drivers of waste reducing behaviours

<table>
<thead>
<tr>
<th>Underlying drivers of waste reducing behaviours</th>
<th>Survey items</th>
<th>Mean scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitudes to waste reduction</td>
<td>It is important for your household to minimise the amount of waste that goes to landfill</td>
<td>4.33</td>
</tr>
<tr>
<td>Perceived control</td>
<td>It is difficult for your household to minimise the amount of waste that goes to landfill (reverse coded)</td>
<td>3.18</td>
</tr>
<tr>
<td>Social norms</td>
<td>Family and friend norms:</td>
<td>3.34</td>
</tr>
<tr>
<td></td>
<td>Family members (outside your household) are minimising the amount of waste that goes to landfill</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Your friends are minimising the amount of waste they send to landfill</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Victorian norms:</td>
<td>3.22</td>
</tr>
<tr>
<td></td>
<td>Victorians generally are minimising the amount of waste they send to landfill</td>
<td></td>
</tr>
<tr>
<td>Collective efficacy</td>
<td>Households, businesses and governments can effectively work together to reduce the amount of waste going to landfills</td>
<td>4.15</td>
</tr>
<tr>
<td>Intentions to reduce waste going to landfill</td>
<td>Our household intends to keep future household waste going to landfill to a minimum</td>
<td>3.99</td>
</tr>
<tr>
<td>Self-reported actual behaviour</td>
<td>How often do you undertake the following behaviours [nine different waste reducing behaviours]</td>
<td>3.46</td>
</tr>
</tbody>
</table>
Model of Behaviour

Figure 22 shows a path analysis predicting both intentions to reduce waste and self-reported waste reducing behaviours. The social norm items for family and friends were highly correlated ($r = .71$) and so these two items were combined. The thickness of the arrows indicates the strength of each predictor. See Appendix B for a detailed description of the path analysis statistics.

We can see that attitudes to waste reduction and collective efficacy are the strongest predictors of intentions to reduce waste, and that these intentions are the strongest predictors of waste reducing behaviour, which was measured as the mean of the self-reported behaviour items above.

**Figure 22 Model of waste reducing behaviour**

Some of the drivers (attitudes, perceived control, family and friend norms) are significant predictors of both intentions to reduce waste and waste reducing behaviour. These drivers have both *direct* and *indirect* effects on waste reducing behaviour. For example, perceived control acts indirectly on behaviour by influencing intentions but also has a direct effect on behaviour. This means that if a person believes they have the capability and it is not too difficult they will be motivated and intend to reduce waste (indirect effect). Alternatively, despite their best intentions to reduce behaviour, if it is perceived beyond the person's control to do (e.g., no available composting bin), then they will not undertake the behaviour (direct effect).

In contrast, two of the drivers (Victorian norms and collective efficacy) have no direct effects.
Figure 23 shows the total effects for each driver on waste reducing behaviours (direct + indirect effects). The size of the bubbles reflect the total effect of the drivers or their level of importance. The height of the bubbles reflects the mean scores of the drivers, that is, how respondents rated each of the drivers.

**Figure 23 Drivers of waste reducing behaviour: importance and means**

![Graph showing drivers of waste reducing behaviour]

The largest influences on waste reducing behaviour come from residents' intentions and attitudes towards reducing waste, followed by their perceptions that family and friends are minimising the amount of waste they send to landfill and their belief that collectively Victorian households, businesses, and government can effectively work together to reduce the amount of waste going to landfills. Even though, perceived control and wider Victorian norms were less important predictors, these perceptions both had most potential for improvement (i.e. is lower mean scores as shown in Figure 23).

While this model fits the data well and predicts nearly half of intentions to reduce waste (47%), it predicts less than a quarter of self-reported waste reducing behaviour (23.9%). This suggests other drivers need to be explored beyond the Theory of Planned Behaviour, for example, the influence of habits on behaviour.
The next section explores levels and drivers of social acceptance of waste facilities. We analyse participant responses by looking for differences between those who, in real life, describe themselves as being affected by waste and resource recovery infrastructure (Impacted residents) and those who don’t (Non-impacted residents). Thus, for most results in this section, we provide results for ‘Impacted residents’, ‘Non-impacted residents’ and ‘Overall residents’. ‘Overall residents’ are all survey participant responses – the combined impacted and non-impacted groups.

To explore the drivers of social acceptance, we used a scenario of an imaginary waste and resource recovery site as the stimulus for understanding these issues.

**Imaginary scenario**

The scenario asked residents to imagine they had moved house and lived within 2 kilometres of a waste complex which included the following activities.

- A landfill or tip (i.e., burying waste that cannot be recycled, reprocessed or reused)
- A transfer station (i.e., a local drop off point for excess household waste which is then sorted for further processing, resale, or else disposed to landfill)
- A tip shop (i.e., an on-site shop selling second hand goods recovered from household waste)
- Sorting recyclables (i.e., separating recyclables into different material streams)
- Organic reprocessing (e.g., composting grass clippings and tree prunings for soil, wood chips, or other organic matter)
- Recovering and reprocessing building materials (e.g., recovering waste timber and crushing cement)

They were also asked to imagine that:

- The local council granted planning permits for this waste complex
- The Environment and Planning Authority (EPA) granted an operating licence to a large private contractor to manage this waste complex within the EPA’s regulatory guidelines.

### 4.1 Levels of social acceptance

After being asked a range of questions about living near this type of waste complex or ‘hub’, residents were asked about their level of acceptance of such a facility. Residents were asked to think about living near such a waste complex (e.g., within 2 kms) and asked how accepting they would be of the activities listed above, using a scale from 1 = not at all accepting; 3 = somewhat accepting; 5 = very accepting.

Figure 24 shows the average level of acceptance for living near each activity, together with the percentage of residents unaccepting of living near each activity (rating 1 or 2 out of 5). Overall, residents were generally unaccepting of living near a waste complex with the average less than 3 ($M = 2.91$) and 32% of respondents being unaccepting of living near such a waste complex. However, residents presently impacted by a waste management and resource recovery facility were significantly more accepting overall ($M = 3.09$ vs $M = 2.85$).
Actually, the only negatively viewed activity on average was living near landfill or tip activities ($M = 2.89$). Living near the other activities were viewed more positively, with their average scores all over 3. Notwithstanding this, all these activities still have a reasonable percentage of residents who would be unaccepting of living near such activities, especially landfill or tip activities (see black dots).

Residents were also asked which best describes their attitude toward this type of waste management facility: I would reject it, I would tolerate it, I would be OK with it, I would accept it, or I would approve of it.

Figure 25 shows that 34% of residents would reject living near such a facility, which is similar to the 32% of residents above being unaccepting. Over half the residents would tolerate or be OK with it (31% and 23% respectively), but only one in ten residents would accept or approve of it (8% and 3%) respectively. Overall, the acceptance for such a waste facility seems low when residents imagine living nearby.
4.2 Underlying drivers of social acceptance

There are a range of possible drivers of social acceptance of waste facilities. Table 4 shows the possible drivers measured in this survey, together with a short description of each one.

Table 4 Potential drivers of social acceptance in the waste and resource recovery sector

<table>
<thead>
<tr>
<th>Drivers</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impacts – Local</td>
<td>For example, dust and odour, environmental management (soil, air, water contamination), noise, increased traffic, litter, scavenging birds, and visual impacts</td>
</tr>
<tr>
<td>Benefits – Local and societal</td>
<td>Local benefits of convenient disposal of large household items and waste, local employment/training opportunities, corporate support for community activities, for example</td>
</tr>
<tr>
<td></td>
<td>Societal benefits - managing waste generated by society, reducing public health risks, and supporting the Victorian economy, for example</td>
</tr>
<tr>
<td>Distributional Fairness</td>
<td>Distributional fairness – feelings of unfair impacts are a negative driver of acceptance. NIMBYism and proximity to infrastructure can also underpin feelings of distributional fairness, whereas reasons that support the ‘greater good’ (citizenship fairness) may act as a positive influence</td>
</tr>
<tr>
<td>Procedural fairness</td>
<td>Procedural fairness - driven by quality of relationships, meaningful two-way dialogue; opportunity to be heard and have a voice; not feeling intimidated or that there are power imbalances in the interactions.</td>
</tr>
<tr>
<td>Relationship quality</td>
<td>Relationship quality is related to the quality of contact (e.g., open, honest and genuine) and responsiveness of the operator to concerns and issues</td>
</tr>
<tr>
<td>Trust</td>
<td>Trust relates to acting responsibly, in the community best interests and in the capability of local operators, local government and state government bodies.</td>
</tr>
<tr>
<td>Governance</td>
<td>Governance included regulations, planning, and collaborations which govern processes and activities associated with waste management and resource recovery facilities.</td>
</tr>
</tbody>
</table>
4.2.1 Impacts

Victorians were asked how concerned they would be about a range of potential impacts associated with the imaginary waste complex above. They responded on a scale from 1 = not at all concerned to 5 = very concerned. We were also able to compare peoples’ perceptions of impacts based on whether they had identified themselves in the survey as someone who was currently impacted negatively by living near a waste and resource recovery site, which we have previously described as ‘Impacted residents’ in our profile of the survey participants (see Section 2).

Figure 26 shows participants perceptions of impacts ordered by level of concern, including concerns for residents presently impacted by a Victorian waste management facility (impacted residents) and other Victorian residents not presently impacted by a waste management facility (non-impacted residents).

Odour was of most concern to residents, along with illegal roadside dumping, environmental impacts, and health concerns (all mean scores over 4). Potential impacts of less concern overall were local businesses and local stigma (e.g. bad media coverage), both being below means of 3.5 for overall residents.

However, impacts on local businesses and local stigma were of significantly more concern to residents currently impacted by a waste management facility ($M = 3.62$ and $M = 3.61$ respectively). Impacted residents were also significantly more concerned about risk of fire ($M = 3.81$), though less concerned about illegal dumping of waste (e.g., by the roadside) and odour.

Despite the variation in concerns for different types of impacts, overall levels of concern were reasonably high (means over 3.90) with two-thirds of residents rating their overall level of concern as a 4 or 5 out of 5. There was no significant difference between impacted and non-impacted residents in their overall levels of concern about living near this imaginary wasted management complex.
Figure 26 Perceptions of impacts associated with living within 2 kms of a hub

<table>
<thead>
<tr>
<th>Impact</th>
<th>Overall residents</th>
<th>Non impacted residents</th>
<th>Impacted Residents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odour</td>
<td>4.2</td>
<td>4.3</td>
<td>4.0</td>
</tr>
<tr>
<td>Illegal roadside dumping of waste</td>
<td>4.1</td>
<td>4.1</td>
<td>3.9</td>
</tr>
<tr>
<td>Environmental impacts</td>
<td>4.0</td>
<td>4.1</td>
<td>4.0</td>
</tr>
<tr>
<td>Health impacts</td>
<td>4.0</td>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td>Nearby litter</td>
<td>3.9</td>
<td>3.9</td>
<td>3.8</td>
</tr>
<tr>
<td>Dust</td>
<td>3.9</td>
<td>3.9</td>
<td>3.8</td>
</tr>
<tr>
<td>Lower property values</td>
<td>3.8</td>
<td>3.8</td>
<td>3.8</td>
</tr>
<tr>
<td>Trucks on local roads</td>
<td>3.8</td>
<td>3.9</td>
<td>3.9</td>
</tr>
<tr>
<td>Noise</td>
<td>3.8</td>
<td>3.8</td>
<td>3.8</td>
</tr>
<tr>
<td>Visual appearance</td>
<td>3.8</td>
<td>3.8</td>
<td>3.8</td>
</tr>
<tr>
<td>Scavenging birds</td>
<td>3.6</td>
<td>3.6</td>
<td>3.6</td>
</tr>
<tr>
<td>Risk of fire</td>
<td>3.5</td>
<td>3.8</td>
<td>3.8</td>
</tr>
<tr>
<td>Local stigma</td>
<td>3.4</td>
<td>3.4</td>
<td>3.6</td>
</tr>
<tr>
<td>Impacts on local business</td>
<td>3.3</td>
<td>3.6</td>
<td>3.6</td>
</tr>
<tr>
<td>Overall concern about negative impacts</td>
<td>4.0</td>
<td>4.0</td>
<td>3.9</td>
</tr>
</tbody>
</table>

Note: Scores have been rounded to one decimal point
4.2.2 Benefits

There are also potential benefits from such waste management facilities, both locally and for the broader Victorian society. So respondents were also asked how much they agreed that such a waste complex may provide a range of local and societal benefits using a scale from 1=strongly disagree; 3=neither agree nor disagree; 5=strongly agree.

Figure 27 shows that overall, residents agreed there would be both local and societal benefits associated with this imaginary waste management complex on average, though the overall agreement levels were relatively modest, with significantly lower agreement with overall local benefits ($M = 3.53$) compared to overall societal benefits ($M = 3.77$).

Local benefits

The highest perceived local benefit was the convenient disposal of large household items and garden rubbish, followed by local employment and training opportunities, and corporate support for local community activities.

Agreement about convenient disposal for household items and rubbish as a benefit was significantly lower for impacted residents compared to non-impacted residents ($M = 3.75$ vs $M = 3.95$), though their perception that corporate support was a benefit was significantly higher.

Societal benefits

Regarding societal benefits, residents most appreciated that such facilities manage waste generated by all sectors of the economy ($M = 3.94$), especially for non-impacted residents who rated this higher than impacted residents ($M = 3.97$ and $M = 3.84$ respectively).

Similarly, as shown in Figure 27, Victorian residents appreciated the role such facilities play in reducing environmental damage for society ($M = 3.83$). Perceived benefits around supporting the Victorian economy and reducing the public health risk were perceived to be less beneficial, though reducing the public health risk were seen as significantly more beneficial by impacted residents ($M = 3.66$ vs $M = 3.50$).
Figure 27 Perceptions of benefits

Overall, such waste facilities would provide significant benefits to the wider Victorian public:
- Reducing the public health risk: 3.7
- Supporting the Victorian economy: 3.7
- Reducing environmental damage: 3.8
- Managing waste generated by all sectors of the community and economy: 3.9

Societal benefits:
- Overall, such waste facilities would provide significant benefits to the wider Victorian public: 3.8

Local benefits:
- Convenient disposal of large household items and garden rubbish: 3.8
- Local employment and training opportunities: 3.7
- Corporate support for local community activities: 3.5
- Overall, such a waste complex would bring significant benefits to the local community: 3.6

Note: Scores have been rounded to one decimal point.
4.2.3 Distributional Fairness

Distributional fairness relates to feelings of fairness or unfairness about the locational siting of waste management facilities. In this study we measured two types of distributional fairness: personal fairness and citizenship fairness.

**Personal fairness**

Personal fairness measures whether residents would think it was fair and equitable to live near this imaginary waste management complex. It was measured as the average agreement with the following two items (both reverse coded):

- I would consider it unfair to live near such a waste complex (reverse coded)
- It would conflict with my ideas about equity to live near such a waste complex (reverse coded)

**Citizenship fairness**

Citizenship fairness on the other hand takes into account wider societal considerations when judging the fairness of living near a waste management facility, and was measured as the average agreement with the following three items:

- I would consider it fair to live near such a waste complex if my local council were compensated accordingly
- If there were good arguments for such a waste complex near me instead of in someone else’s neighbourhood, I would be accepting
- Because such a waste complex ultimately has to be built somewhere, I would not object to living near such a facility.

Figure 28 shows the overall levels of personal and citizenship fairness, as well as for impacted and non-impacted residents. In general, the levels of overall personal fairness and overall citizenship fairness were low, both below 3 ($M = 2.63$ and $M = 2.89$ respectively). However, citizenship fairness was rated significantly higher than personal fairness, indicating that even though living near such a complex may be seen as personally unfair by an individual, it is seen as less unfair if viewed from a citizen perspective.

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**Figure 28 Perceptions of distributional fairness**

![Bar chart showing perceptions of distributional fairness for personal and citizenship fairness, differentiated by non-impacted, impacted, and overall residents.](image-url)
Residents presently impacted by living near a waste management facility had significantly lower perceptions of personal fairness than non-impacted residents. They thought that living near such a waste management complex would be more personally unfair than non-impacted residents ($M = 2.47$ and $M = 2.68$ respectively). However, both thought it was personally unfair on average.

Interestingly, impacted residents were associated with significantly higher levels of citizenship fairness than non-impacted residents ($M = 3.12$ and $M = 2.89$ respectively). This means that impacted residents agreed more on average that living near such a complex reflects citizenship fairness; they also viewed it as fair, on average, from a broader citizenship perspective (mean greater than 3).

### 4.2.4 Procedural fairness

Procedural fairness relates to citizen voice and decision making, especially the opportunity for the community to feel it can be heard, have a voice, and able to participate in decision making processes. Procedural fairness is also driven by quality of relationships, meaningful two-way dialogue, and not feeling intimidated or that power imbalances exist in interactions.

A range of items were asked about procedural fairness, some relating to the local waste complex operator (or local operator), some relating to local government, and one relating to state government.

Figure 29 shows the average agreement for statements about procedural fairness relating to the local operator of the imagined waste complex, the local government and state government. There was a moderate level of agreement that these three different stakeholders would listen to and respect community opinions about the site (scores all over 3). While these responses were not high levels, agreement with this statement was significantly higher for local government ($M = 3.27$) than for the local operator or state government ($M = 3.15$ and $M = 3.18$ respectively).

**Figure 29 Perceptions of procedural fairness**

The [...] would listen to and respect communities opinions about the site

The [...] would inform residents of important developments regarding the site

The community would have opportunities to participate in decisions relating to the site

The Local operator would be prepared to change its practices in response to community sentiment

![Agreement scores](image-url)
Informing residents of important developments regarding the site was asked about the local operator and local government. Agreement with this statement was significantly higher for the local operator and local government compared to the community being listened to and respected ($M = 3.34$ and $M = 3.47$ respectively), and it was significantly higher for local government than the local operator. Generally residents agreed with this statement.

Residents also agreed on average that their community would have opportunities to participate in decisions related to the site by local operators ($M = 3.25$) and in planning decisions by local government ($M = 3.33$), which was slightly but significantly higher for local government.

The overall average across all items was relatively modest ($M = 3.27$). Interestingly however, procedural fairness was rated significantly higher for those residents already impacted by a waste and resource recovery facility ($M = 3.45$) compared to residents not impacted by any such facility ($M = 3.22$). See Figure 30. This means that residents who have experienced actual impacts from a waste and resource infrastructure have, on average, higher perceptions of opportunities for citizen voice and involvement in decision making than those who have not been affected by such sites.

![Figure 30 Perceptions of overall procedural fairness](image-url)
4.2.5 Relationship quality

Relationship quality related to the contact quality and responsiveness of relationships with the local waste complex operator. Contact quality and responsiveness were both measured with three items, where residents were asked how confident they would be that the community’s relationship with the waste complex operator would have the following qualities on a scale from 1= not at all confident to 5=very confident.

**Contact quality**
- open, honest and transparent
- genuine two way dialogue
- pleasant and positive

**Operator responsiveness**
- responds to concerns and issues in a timely manner
- accessible or easy to contact
- committed to genuinely responding to community concerns

Figure 31 shows the perceptions of contact quality and operator responsiveness for impacted and non-impacted residents, as well as for Victorian residents overall. In general, confidence in the overall relationship quality was poor for all residents ($M = 2.75$). Residents not presently impacted by a waste management facility were particularly pessimistic. However, perceptions of the relationship were significantly higher for impacted residents, with expectations about relationship quality favourable though modest ($M = 3.08$).

Both contact quality and responsiveness were rated at very similar levels and were very highly correlated with each other ($r = .89$). This suggests they go hand in hand, hence they were averaged to give the overall relationship quality measure (i.e., the green dot).

**Figure 31 Perceptions of relationship quality**
4.2.6 Trust

Previous research has shown that perceptions about fairness and the quality of relationships underpin trust, and that trust in turn is a driver of social acceptance (Moffat and Zhang, 2014). Trust levels were measured for the private company operator, the local council, and state government bodies like the Environmental Protection Authority (EPA). Residents were asked how much they would trust each of these entities, in terms of operating or overseeing a waste and resource recovery site, on a scale 1=not at all to 5= trust a great deal, and the items were:

- trust them to act in the local community’s best interests
- trust them to act responsibly
- trust their capability

In general, the overall levels of trust for these items was similar. Figure 32 shows trust in these entities to act in the communities best interests, to act responsibly; and trust in capabilities ($M = 3.05$, $M = 3.13$ and $M = 3.14$ respectively) are comparable. These are quite modest levels of trust overall.

Trust in the local operator to act in the interests of the community and trust in them to act responsibly were both low ($M = 2.66$ and $M = 2.80$), and significantly lower than for local councils and state bodies. Trust in the capabilities of local operators and local councils were both more modest and about the same ($M = 3.00$ and $M = 3.03$ respectively). State government bodies on the other hand were rated significantly higher in their capability ($M = 3.40$).

Figure 32 Perceived trust in institutions
Figure 33 shows trust averaged across the above three items for each of the three entities: state bodies, local council, and the local operator. Average levels of trust was highest for state government bodies like the EPA ($M = 3.42$ for overall residents), which was significantly higher than for local government, which in turn was significantly higher than for local operators ($M = 3.42$, $M = 3.08$, and $M = 2.82$ respectively). A dotted line shows this linear trend for overall residents’ perceptions of trust.

Notably, trust in the local operator and local government was significantly higher for residents already impacted by a waste management and resource recovery facility than for residents presently not impacted ($M = 3.12$ vs $M = 2.72$), suggesting an overly pessimistic view for non-impacted residents. However, trust levels for the local operator by impacted residents were still modest. Trust levels were higher for state government bodies and did not differ significantly between non-impacted and impacted residents ($M = 3.43$ and $M = 3.38$ respectively).
4.2.7 Governance

Governance relates to the institutions, rules, and processes which govern activities associated with waste management and resource recovery facilities. There are both ‘hard’ and ‘soft’ forms of governance. Hard governance relates to formal institutions and their rules and regulations, while soft governance refers to informal rules and processes that guide such activities. Below we look at three components of governance - regulation and compliance as forms of hard governance, as well as planning and strategic vision, and collaboration as soft forms of governance.

Regulation and compliance

This component of governance relates to the regulations, rules, and operating practices that govern the everyday operations of waste management sites. Residents were asked how much they agreed with four statements relating to governance of the waste complex operator. Figure 34 shows a degree of confidence in governance of such a waste complex. All four items were rating over 3 on average, with the mean of these items being 3.44 (i.e. overall governance).

However, it was evident that confidence was lowest for the waste complex operator complying with permits and licences ($M = 3.31$). This was significantly less than for local council, the Environment Protection Authority (EPA), and legislation and regulations being able to provide good industry governance ($M = 3.41$, $M = 3.61$ and $M = 3.43$ respectively). Interestingly, there were no significant differences between impacted and non-impacted residents in their perceptions of good governance.

Figure 34 Confidence in governance

<table>
<thead>
<tr>
<th>Statement</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legislation and regulation could be counted upon to ensure that the waste complex operator did the right thing</td>
<td>3.41</td>
</tr>
<tr>
<td>The Environmental Protection Authority (EPA) would be able to hold the waste complex operator accountable</td>
<td>3.61</td>
</tr>
<tr>
<td>Local council would be able to ensure the operator functioned within their permits</td>
<td>3.43</td>
</tr>
<tr>
<td>The waste complex operator could be relied upon to comply with permits and licences.</td>
<td>3.31</td>
</tr>
<tr>
<td>Overall governance</td>
<td>3.44</td>
</tr>
</tbody>
</table>
Planning and strategic vision

Residents were also asked how much they agreed that state government, local government and the waste complex operator would have good plans and strategic vision for the future. Figure 35 shows there was moderate agreement with this statement overall ($M = 3.28$) and the ratings were surprisingly similar for state government, local council and the waste complex operator ($M = 3.27$, $M = 3.32$ and $M = 3.26$ respectively).

While there was not strong agreement that there would be good plans and strategic vision for the future, agreement was significantly higher for impacted residents across these three items and overall, suggesting that impacted residents may be more aware of plans and strategies for the future.

**Figure 35 Perceptions of planning and vision**
Collaboration

Collaboration is where different stakeholders come together to accomplish shared goals. Residents were asked how much they agreed that local residents, businesses, government and the waste complex operator would be able to work together: 1) address any problems with the waste complex, and 2) maximise any benefits associated with the waste complex.

As with strategic planning and vision, there was only modest agreement that these groups could work together ($M = 3.21$). There was also significantly less collective efficacy for addressing any problems with the waste complex compared to taking advantage of any co-benefits that may arise. However, there was significantly higher collectively efficacy beliefs for impacted residents compared to non-impacted residents ($M = 3.30$, $M = 3.40$ and $M = 3.34$ respectively), suggesting that collectively efficacy may improve for residents more closely associated with waste management sites. See Figure 36.

**Figure 36 Perceptions of collaboration**
Model of social acceptance

The drivers of social acceptance can be gathered together into a path model for predicting social acceptance of waste management and resource recovery facilities. Path models can show how drivers of social acceptance may be related to each other. Some drivers may directly predict social acceptance and others may be indirectly associated with social acceptance. Based on previous research, it is likely that some drivers impact social acceptance indirectly via trust, such as fairness, relationship quality, and governance (Moffat & Zhang, 2014; Moffat et al., 2014).

Generally speaking, the predictors in the model use the mean of the items for each driver in the sections above. However, some drivers have been bundled together for simplicity. A definition of each driver used in the model is listed as follows:

Drivers used in the model

- **Relationship quality** – relates to operator contact quality and responsiveness.
- **Procedural fairness** – relates to decision making processes, citizen voice, and participation.
- **Citizenship fairness** – relates to an element of distributional fairness taking into account wider societal considerations (‘the greater good’) when judging the fairness of living near a waste management facility.
- **Personal fairness** – relates to perceptions about the fairness of living near a waste management complex on a personal level.
- **Trust** – relates to trust in the local operator, local government and state government bodies to each act responsibly and in the community best interests, as well as trust in their capabilities.
- **Governance** - relates to regulation and compliance, planning and strategic vision, and collaboration
- **Benefits** –includes both local and societal benefits of waste and resource recovery facilities
- **Impacts** – relate to negative impacts of living near such facilities (e.g., dust and odour, environmental issues, noise, traffic, litter, and visual impacts).
- **Knowledge** - includes self-rated knowledge about activities in the waste and resource recovery system (e.g., household collection services; landfill services; sorting, recycling and recovery of materials; and the overall waste and resource recovery system.
- **Behaviours** – relates to self-reported behaviours for reducing waste going to landfill. This reflects the beliefs, attitudes, norms and intentions underlying these behaviours, which were not included to simplify the model.

Figure 37 outlines the model of social acceptance. When interpreting the model, the width of the arrows reflects the importance of the predictors or drivers (e.g. the wider the arrow the stronger the relationship). Appendix C presents a detailed description of the path analysis statistics.

As shown in the model, two of the drivers are mediators of social acceptance: **relationship quality** and **trust**. This means that these drivers are both influenced by and influence other drivers in the model.
The strongest predictor of relationship quality was governance, which incorporated soft governance (collaboration, planning and strategic vision) as well as hard governance (regulation and compliance). Governance was also a strong support for trust, suggesting that if residents perceived good governance, then they were more trusting of the private operator, local council and state government bodies. Finally, governance was also a significant predictor of social acceptance of the waste management complex, making it a pivotal driver in the model.

Trust was also an important variable in the model in that it was a significant predictor of social acceptance but was also an important intermediate variable which was influenced by other factors. Trust was mainly underpinned by good governance and next by relationship quality.

Underpinning relationship quality were perceptions of fairness. Citizenship and procedural fairness were both significant predictors of relationship quality, suggesting that a wider societal perspective of fairness and fair processes, particularly terms of citizens having a say and being heard, are both important for building relationship quality.

Citizenship fairness is also a significant and direct predictor of trust and social acceptance suggesting it has a wide ranging role in the model. However personal fairness was not a significant predictor of relationship quality, suggesting personal fairness is less about relationships. In contrast, it was a direct predictor of social acceptance of this waste management complex.

Other significant and direct predictors of social acceptance were the impacts and benefits associated with living near a waste complex, knowledge of the waste management and resource recovery system, and personal behaviours reducing waste going to landfills. Social acceptance was the final variable predicted in the model.

Figure 38 shows the total effect of different variables in predicting social acceptance, including direct and indirect effects. While trust was an important mediating variable, it was only fifth in importance overall. Perceived benefits and impacts, along with governance and citizenship fairness were the most important predictors of social acceptance for living near a waste facility.
Figure 38 also presents the mean scores of the drivers. The mean scores can provide an indication of how much improvement is possible regarding the community’s perceptions of each of the drivers that were measured. For example, the mean score for impacts was quite high ($M = 3.82$) suggesting that improvements in this area is likely to improve social acceptance. Similarly, perceived citizenship fairness, which was perceived as low ($M = 2.89$), would also be an area that could potentially drive improvements in social acceptance. Governance was perceived as reasonably good ($M = 3.34$); however, because of its importance and pivotal role in the model, it is important that both soft and hard governance are maintained and enhanced to drive higher levels of social acceptance.

The remaining drivers in Figure 38 are significant but less important in predicting social acceptance of living near a waste complex. Behaviours to reduce waste were reasonably high ($M = 3.46$) and would not seem as important for increasing social acceptance of living near a waste and resource recovery site. However, knowledge of the waste management system was not high ($M = 2.96$) and may assist with social acceptance. Perceived personal fairness is low ($M = 2.63$), though of lesser importance and perhaps less easily influenced.

In addition, some drivers in the model might not have a large direct effect on social acceptance but indirectly and importantly still impact social acceptance. This is the case for relationship quality and procedural fairness, which had smaller but significant impacts on social acceptance, even though they were less direct. For example, procedural fairness was a significant predictor of relationship quality, which was a significant predictor of trust, which in turn was a significant predictor of social acceptance.
5 PREVIOUS EXPERIENCE AND THE WASTE SECTOR

In this section, we look at overall social acceptance of living near a waste complex by a range of previous experiences that residents have had with waste management and resource recovery sites. More specifically, we look at differences based on three types of experiences:

- residents who have visited a site within the last few years,
- residents who have been impacted by a site,
- residents who are associated with community groups engaging with waste management and resource recovery sites

As shown in Figure 39, acceptance was significantly higher for residents more closely related to existing waste and resource recovery sites, either by being impacted by them, engaging with them or visiting them in the last few years. Levels of acceptance for these residents were around 3 or a little higher, where 3 = somewhat accepting, and speaks to the value of engaging with residents about issues of waste. Interestingly, residents who have less connection with waste and resource recovery sites seem less accepting of living near a waste management complex, suggesting a negative bias in the wider public.

Previous site visit

Over half the sample (54%) had visited a waste and resource recovery site within the past few years, whether it be a transfer station, landfill, organic processing, or some other type of facility.

Figure 39 shows that residents who had visited a site within the past few years were significantly more accepting of living near the imaginary waste complex than residents who had not visited a site within the last few years ($M = 3.03$ vs $M = 2.81$).

Impacted residents

Figure 39 also shows a similar difference for residents who are presently impacted negatively by a waste management or resource recovery facility near their home, whereby, impacted residents were significantly more accepting overall ($M = 3.09$ vs $M = 2.85$). About one in four residents in the sample (24.5%) were impacted residents.

Associated with a community groups engaged with a site

Lastly, about one in ten (9.6%) residents in the sample were associated with a community group engaging with a local waste and resource recovery site, which could be opposing or working with the waste complex operator. Once again, residents associated with such community groups were significantly more accepting of the imaginary waste complex ($M = 3.09$ vs $M = 2.88$). See Figure 39 Interestingly, 32% of impacted residents were associated with a community group of some kind that was connected to waste issues, compared to 2% of non-impacted residents.
Figure 39 Acceptance of living near a waste facility: Differences based on previous experience with the waste sector

- Visited a site within last few years
  - Yes: 3.03
  - No: 2.81

- Impact resident
  - Yes: 3.09
  - No: 2.85

- Associated with a community group engaging with a site
  - Yes: 3.23
  - No: 2.88
We analysed the results of social acceptance, looking for differences based on demographic characteristics. Table 5 presents social acceptance scores for different ages, gender, income brackets, education levels, and working status. We also compared social acceptance scores based on geographic location – whether someone lived in metropolitan Melbourne or regional Victoria.

In general, even though social acceptance was not high in any demographic group, it was significantly higher in younger people (18-34 years old), males, and residents living in regional Victoria. However, there were no significant differences in social acceptance between income groups, education levels, or working status.

Table 5 Demographics: levels of social acceptance

<table>
<thead>
<tr>
<th>Demographic characteristics</th>
<th>Percentage of overall sample</th>
<th>Overall social acceptance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Geographical location</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metropolitan Melbourne</td>
<td>79.0%</td>
<td>2.87\textsuperscript{H}</td>
</tr>
<tr>
<td>Regional Victoria</td>
<td>21.0%</td>
<td>3.07\textsuperscript{H}</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aged 18 – 34</td>
<td>29.2%</td>
<td>3.10\textsuperscript{H}</td>
</tr>
<tr>
<td>Aged 35 – 54</td>
<td>38.0%</td>
<td>2.84\textsuperscript{L}</td>
</tr>
<tr>
<td>Aged 55+</td>
<td>32.8%</td>
<td>2.83\textsuperscript{L}</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>50.6%</td>
<td>3.00\textsuperscript{H}</td>
</tr>
<tr>
<td>Female</td>
<td>49.8%</td>
<td>2.82\textsuperscript{L}</td>
</tr>
<tr>
<td><strong>Income</strong></td>
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</tr>
<tr>
<td>Less than $40,000</td>
<td>28.8%</td>
<td>2.96</td>
</tr>
<tr>
<td>Between $40,000 and $80,000</td>
<td>34.1%</td>
<td>2.98</td>
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<tr>
<td>Between $80,000 and $120,000</td>
<td>23.7%</td>
<td>2.82</td>
</tr>
<tr>
<td>More than $120,000</td>
<td>13.4%</td>
<td>2.90</td>
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<tr>
<td><strong>Educational attainment</strong></td>
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<tr>
<td>Less than Year 12</td>
<td>12.8%</td>
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</tr>
<tr>
<td>Completed Year 12</td>
<td>18.6%</td>
<td>2.87</td>
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<tr>
<td>Certificate, diploma, or trade qualification</td>
<td>29.9%</td>
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</tr>
<tr>
<td>Bachelor degree or higher</td>
<td>38.8%</td>
<td>2.98</td>
</tr>
<tr>
<td><strong>Working status</strong></td>
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<td></td>
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<tr>
<td>Working</td>
<td>60.4%</td>
<td>2.96</td>
</tr>
<tr>
<td>Not working</td>
<td>39.6%</td>
<td>2.84</td>
</tr>
</tbody>
</table>

Note: Superscripts \textsuperscript{H} = significantly higher and \textsuperscript{L} = significantly lower than other demographic group in that category;
This survey research has measured community attitudes, and perceptions about waste and the waste and resource recovery sector and identified the key drivers underpinning social acceptance. We have measured each of these drivers and determined their relative importance to acceptance.

In addition, we have modelled social acceptance describing how these drivers can be grouped and work together. We have also identified differences in social acceptance based on previous experience and demographic characteristics.

Furthermore, we have used the Theory of Planned Behaviour to model socio-psychological drivers of waste reducing behaviour.

These findings have been summarised in the Executive summary and detailed within the report in four parts.

1. Knowledge, Attitudes, and Behaviour
2. Social acceptance of waste facilities
3. Previous experience and the waste sector
4. Demographic differences

In combination, these results provide opportunities for government and industry to develop programs and policy that target areas underpinning waste reducing behaviour and social acceptance.

We hope that such research findings will assist the waste and resource recovery sector to foster and promote waste reducing behaviour, and to address issues important for social acceptance of the industry. In so doing, achieving outcomes that bring benefit to the waste and resource recovery sector and society at large.
Next Steps: Phase 4

Feeding back results and identifying opportunities for collaborative actions

The next phase of the research project (Phase 4) involves feeding back results to community, industry, and government stakeholders and to identify implications for each stakeholder. This final phase provides an opportunity to understand what the research results mean for each stakeholder group and the potential for collaborative actions going forward. We will document implications and ideas for collaborative action including possible programs and interventions, policy and industry standards, and community engagement processes.

Phase 4 tasks

- Conduct workshops to feedback findings and identify opportunities for collaborative actions
- Analyse and summarise workshop findings
- Communicate collaborative solutions – generate End of Project report

Project Milestones

<table>
<thead>
<tr>
<th>MILESTONES</th>
<th>Date</th>
<th>Description</th>
<th>Progress / Status</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>26/10/2015</td>
<td>Project Starts / Contracts signed</td>
<td>Completed</td>
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<tr>
<td></td>
<td>08/12/2015</td>
<td>Planning and Preparation update</td>
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<td></td>
<td>15/04/2016</td>
<td>Community Expectations and Perceptions of WRR sector - Summary of Qualitative Findings report delivered</td>
<td>Completed</td>
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<td></td>
<td>29/07/2016</td>
<td>Survey Report delivered</td>
<td>On schedule</td>
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<tr>
<td></td>
<td>31/10/2016</td>
<td>End of Project Report</td>
<td>On schedule</td>
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</table>
REFERENCES


Appendix A Example of the survey

Introduction

This survey is conducted on behalf of CSIRO.

It takes about 15 minutes and asks questions about your attitudes and views towards waste and the waste sector.

There are no right or wrong answers and you are free to withdraw at any time.

The survey covers four main areas:

1. General attitudes about the waste sector.
2. Living near an imaginary waste site.
3. Personal experiences with waste sites
4. Some demographic questions

The research will inform government and industry policy and help manage and plan Victoria’s waste sites. It will also be used in a publicly available report and scientific research papers.

The project is funded by the CSIRO and Sustainability Victoria

This survey has been cleared by CSIRO’s Human Research Ethics Committee. You will be anonymous; all data will be coded to preserve your identity. All your answers remain completely confidential and you can withdraw from this survey at any time. All information collected through the survey will be used for research purposes only.

If you have any questions about this research before participating, you can call Dr Rod McCrea at CSIRO on 07 3833 5677 or by email at rod.mccrea@csiro.au.

If you have any complaints about the conduct of this research, you can contact CSIRO’s Manager of Social Responsibility and Ethics on 07 3833 5693 or by email at csshrec@csiro.au.

If you are happy to participate, please continue.

1. What is your age last birthday?
   Scale: years
2. Gender?
   • Male
   • Female
3. Postcode?
Thank you for participating in this survey on Victorian attitudes to waste management.

Please read the following background information before proceeding.

**Background information**

For this survey, we define waste as solid materials discarded by consumers, businesses, industry, and organisations.

- It includes materials intended for disposal, re-use, recycling or reprocessing.
- It EXCLUDES sewage from water treatment facilities and highly hazardous waste, for the purposes of this survey.

The waste and resource recovery system manages the waste that all sectors of the community and economy generate.

It is a network of different activities and different types of infrastructure, each performing a specific function in managing our waste. See the following waste system diagram.

The main components are of the waste and resource recovery system are:

1. **Generation** - Waste generated from households, businesses, industry and government needs to be managed. Victoria generates over 12 million tonnes of waste per year.
2. **Separation** - Prior to collection, waste is often separated by households, factories, businesses, construction and other organisations into different waste streams (e.g. organics and recyclables).

3. **Collection** - Waste streams are collected in different bins and transported for further management. Waste that cannot be re-used, recycled, or composted is taken to landfill.

4. **Landfills (Tips)** - Sites for burying waste that cannot be recovered. These sites are important, but also the last resort for managing waste.

   Landfills may also be co-located with:
   - A transfer station or resource recovery centre where people can bring their excess waste, which is then sorted for further processing or resale if possible or else disposed to landfill
   - A resale or tip shop selling second hand goods from waste

5. **Sorting, recycling and recovery** - Recyclables are further sorted and reprocessed into useful materials. Organic waste can be processed or composted for soil or other organic material.

6. **Design and production** - Recycled or reprocessed materials can be used in the design and manufacture of new goods and services, including electricity generation by capturing methane from waste, for example.

**Section 1. Attitudes about the waste sector**

This is the first of four sections in this survey.

4. How much do you feel you know about the following waste and resource recovery services?

*Scale: 1 = no knowledge; 3 = some knowledge; 5 = a lot of knowledge.*

- Household waste collection services (e.g., curbside collection of garbage, recyclables, and garden waste)
- Landfill services or tips (including transfer stations and tip shops)
- The sorting, recycling and recovery of materials (e.g., glass, paper, construction, and organic material)
- The use of recycled materials in new products
- The overall waste and resource recovery system

An essential service can be defined as a service that is a basic right for the community, and any failure to deliver results in risks to the community.

5. How much do you agree that the following services are essential services?

*Scale: 1 = strongly disagree to 5 = strongly agree; randomised*

- Electricity and gas services
- Water and sewage services
- Public transport services
- Ambulance, fire and police services
- Hospital and health services
- Mobile and phone services
• Road repairs and maintenance
• Waste management and resource recovery services

6. How much do you think the following sectors contribute to total waste generation?

Scale: 1 = not much of the total waste to 5 = most of the total waste

• Household waste (including garbage, recyclables and organic waste)
• Commercial waste (including food and other retailers, accommodation and other service providers, public sectors and educational institutions)
• Industrial, construction and demolition waste (including manufacturing, housing, civil, and commercial projects)

7. How much potential do you think the following sectors have for reducing waste going to landfill?

Scale: 1 = Very little potential to 5 = A lot of potential

• Household waste (including garbage, recyclables and organic waste)
• Commercial waste (including food and other retailers, accommodation and other service providers, public sectors and educational institutions)
• Industrial, construction and demolition waste (including manufacturing, housing, civil, and commercial projects)

8. How much responsibility do you think households, the private sector, and governments should bear for reducing the amount of waste going to landfills?

Scale: 1 = Very little responsibility to 5 = Most of the responsibility

• Households
• Businesses, companies and other private organisations
• Government

9. How much do you agree with the following statements?

Scale: 1 = strongly disagree to 5 = strongly agree

• It is important for your household to minimise the amount of waste that goes to landfill
• It is difficult for your household to minimise the amount of waste that goes to landfill
• Family members (outside your household) are minimising the amount of waste they send to landfill
• Your friends are minimising the amount of waste they send to landfill
• Victorians generally are minimising the amount of waste they send to landfill
• Our household intends to keep future household waste going to landfill to a minimum
• Households, businesses and governments can effectively work together to reduce the amount of waste going to landfills
• Our household would be willing to pay a little more for household waste collection/disposal if it reduced the amount of waste going to landfill

10. Please indicate how often you have done each of the following in the last year.

Scale: 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, and 5 = Almost always

• Looked for ways to reuse things
• Recycled newspapers
• Recycled cans or bottles
• Encouraged friends or family to recycle
• Intentionally purchased products in reusable or recyclable containers
• Picked up litter that was not your own
• Composted food scraps
• Chosen an alternative product because of excess packaging
• Purchased second hand household items (e.g., from Op Shops, eBay or Gumtree)

11. How much effort do you put into reducing waste going to landfill when?

Scale: 1 = none to 5 = a lot of effort

• You’re at work
• You’re at home
• You’re out and about

12. To what extent are you in favour of services that collect and dispose of the following?

Scale: 1 = not at all in favour to 5 = strongly in favour

• Food waste (e.g., vegetable scraps and leftover food)
• Garden waste (e.g., lawn clippings and tree prunings)
• Recyclables waste (e.g., cans, glass, plastics and paper)
• E-waste (e.g., batteries, computers, mobile phones)
• Hard waste (e.g., sofas, beds and washing machines)

Section 2. Imaginary Scenario

Please imagine the following situation and answer the following questions with this scenario in mind:

Imagine you moved house and lived within 2 kilometres of a waste resource and recovery complex. The complex includes the following activities:

• A landfill or tip (i.e., burying waste that cannot be recycled, reprocessed or reused)
• A transfer station (i.e., a local drop off point for excess household waste which is then sorted for further processing, resale, or else disposed to landfill)
• A tip shop (i.e., an on-site shop selling second hand goods recovered from household waste)
• Sorting recyclables (i.e., separating recyclables into different material streams)
• Organic reprocessing (e.g., composting grass clippings and tree prunings for soil, wood chips, or other organic matter)
• Recovering and reprocessing building materials (e.g., recovering waste timber and crushing cement)

Also imagine that:

• The local council granted planning permits for this waste complex
• The Environment and Planning Authority (EPA) granted an operating licence to a large private contractor to manage this waste complex within the EPA’s regulatory guidelines.

[Link to scenario available to respondents throughout survey completion: Click here to open the scenario in a new tab, if needed.]

Please answer the following questions with this imaginary situation in mind.

13. How concerned would you be about the following potential impacts?

Scale: 1 = not at all concerned to 5 = very concerned

• Odour
• Noise
• Nearby litter
• Illegal roadside dumping of waste
• Dust
• Environmental impacts (soil, water and air contamination)
• Risk of fire
• Health impacts
• Scavenging birds
• Visual appearance
• Local stigma (e.g. Bad media coverage)
• Lower property values
• Trucks on local roads
• Impacts on local business
• Overall, how concerned would you be about potential negative impacts

14. How much do you agree that such a waste complex would provide the following significant local benefits?

Scale: 1=strongly disagree; 3=neither agree nor disagree; 5=strongly agree

• Convenient disposal of large household items and garden rubbish
• Local employment and training opportunities
• Corporate support for local community activities (e.g. Operator sponsorship of a local sporting club)
• Overall, how much do you agree that such a waste complex would bring significant benefits to the local community

15. How much do you agree that such waste complexes would provide the following significant societal benefits?

Scale: 1=strongly disagree; 3=neither agree nor disagree; 5=strongly agree

• Managing waste generated by all sectors of the community and economy
• Reducing the public health risk
• Reducing environmental damage
• Supporting the Victorian economy
• Overall, how much do you agree that such waste facilities would provide significant benefits to the wider Victorian public

16. How much do you agree with the following statements?

Scale: 1=strongly disagree; 3=neither agree nor disagree; 5=strongly agree

• I would consider it unfair to live near such a waste complex [reverse coded]
• I would consider it fair to live near such a waste complex if my local council were compensated accordingly
• If there were good arguments for such a waste complex near me instead of in someone else’s neighbourhood, I would be accepting
• Because such a waste complex ultimately has to be built somewhere, I would not object to living near such a facility.
• It would conflict with my ideas about equity to live near such a waste complex [reverse coded]

17. Thinking about how decisions might be made regarding the plans and operations of the waste complex, how much do you agree that:

Scale: 1=strongly disagree; 3=neither agree nor disagree; 5=strongly agree

• The waste complex operator would listen to and respect the community’s opinions
• The waste complex operator would inform residents of important developments regarding the site
• People in your community would have opportunities to participate in the decisions made by the waste complex operator
• The waste complex operator would be prepared to change its practices in response to community sentiment
• The local council would listen to and respect the communities opinions
• The local council would inform residents of important developments regarding the site
• Local residents would have opportunities to participate in local council planning decisions relating to the site
• State government would listen to and respect community opinions about the site

18. How confident are you that the waste complex operator would:

Scale: 1=not at all confident; 5=very confident

• Respond to concerns and issues in a timely manner
• Would be accessible or easy to contact
• Be committed to genuinely responding to community concerns

19. Thinking about the waste complex operator’s relationship with the local community, how confident are you that the waste complex operator would

Scale: 1=not at all confident; 5=very confident

• Be open, honest and transparent
• Engage in genuine two way dialogue
• Be pleasant and positive

20. Thinking about how the waste complex operator would be governed, how much do you agree that:

Scale: 1=strongly disagree; 3=neither agree nor disagree; 5=strongly agree

• Legislation and regulation could be counted upon to ensure that the waste complex operator did the right thing
• The Environmental and Protection Authority (EPA) would be able to hold the waste complex operator accountable
• Local council would be able to ensure the operator functioned within their permits
• The waste complex operator could be relied upon to comply with permits and licences.

21. How much do you agree that there would be good future plans and strategic vision for the waste and resource recovery site by the:

Scale: 1=strongly disagree; 3=neither agree nor disagree; 5=strongly agree

• State government
• Local council
• The waste complex operator

22. How much do you agree that local residents, businesses, government and the waste complex operator would be able to work together?

Scale: 1=strongly disagree; 3=neither agree nor disagree; 5=strongly agree

• To address any problems with the waste complex
• To maximise any benefits associated with the waste complex

23. Thinking about a **private company operating** this waste complex, to what extent would you
Scale: 1=not at all to 5=a great deal

- Trust them to act in the local community’s best interests
- Trust them to act responsibly
- Trust their capability

24. Thinking about local council overseeing this waste complex, to what extent would you

Scale: 1=not at all to 5=a great deal

- Trust them to act in the local community’s best interests
- Trust them to act responsibly
- Trust their capability

25. Thinking about state government bodies involved in overseeing this waste complex, such as the Environment Protection Authority (EPA), to what extent would you

Scale: 1=not at all to 5=a great deal

- Trust them to act in the local community’s best interests
- Trust them to act responsibly
- Trust their capability

26. Thinking about living near this type of waste complex (e.g., within 2 kms), how accepting would you be of the following activities at that site?

Scale: 1=not at all accepting; 3=somewhat accepting; 5=very accepting

- Landfill or tip activities (i.e., burying of waste that cannot be recycled, reprocessed or reused)
- Transfer station activities (i.e., a local drop off point for excess household waste which is then sorted for further processing or resale if possible or else disposed to landfill)
- Tip shop (i.e., an on-site shop selling second hand goods recovered from household waste)
- Sorting recyclables (i.e., separating recyclables into different material streams)
- Organic reprocessing (e.g., composting grass clippings and tree prunings for soil, wood chips, or other organic matter)
- Recovering and reprocessing building materials (e.g., recovering waste timber and crushing cement)
- Overall, how accepting would you be living near such a waste complex

27. Think about living near this type of waste complex (e.g., within 2 kms). Which best describes your attitude toward this type of waste management facility?

- I would reject it
- I would tolerate it
- I would be OK with it
- I would accept it
- I would approve of it

Section 3. Personal experience with waste and resource recovery

We are almost at the end of the survey.

This section is short and we would like to ask some questions about your personal experience with waste and resource recovery.

28. Are you presently associated with a community group engaging with a local waste and resource recovery site?

Scale: 0=No; 1=Yes
• A local community group opposing a waste and resource recovery site
• A community consultation or reference group engaging with a waste operator or site
• Another local community group engaging with a waste operator or site

29. Are you presently negatively affected by any of the following types of waste management or resource recovery facilities near your home?

Scale: 0 to 5, where 0 = not affected; 1 = mildly affected; and 5 = very negatively affected

• A transfer station
• A landfill or tip
• An organic processing or composting facility
• Any other type of waste or resource recovery facility
  (please specify type) .................................................................

30. When was the last time you visited and saw any of the following waste and resource recovery facilities?

Scale: 1 = recently; 2 = last few years; 3 = some years ago; 4 = a long time ago; 5 = never

• A transfer station (sorting materials for recycling or reprocessing)
• A landfill or tip
• An organic processing or composting facility
• Any other type of waste or resource recovery facility
  (please specify type) .................................................................

Section 4. Demographics

Lastly, we’d like to ask a few demographic questions to ensure our survey is representative of everyone’s views.

31. What is the highest level of education you have completed?

• Less than Year 12 (or senior high school)
• Completed Year 12 (or senior high school)
• Certificate, diploma, or trade qualification
• Bachelor degree or higher

32. An optional question: What is your household’s taxable income per year, approximately?

[those living in group households (e.g., shared accommodation) to report their own income only]

• Less than $40,000
• Between $40,000 and $80,000
• Between $80,000 and $120,000
• More than $120,000

33. Is your employment status work or not working?

• Working
• Not working

34. To help calculate the distance to your nearest waste or resource recovery facility, do you mind if we have your residential address?
Note: This will help us measure the effect of distance on impacts from waste and resource recovery sites in Victoria. This information will be coded as a map reference to preserve your anonymity. CSIRO will not keep your address on file or use it for any other purpose.

- Yes [Next question]
- No [If no, skip next question]

35. Enter street address:

Thanks. That brings us to the end of our survey. Thanks again for participating and enjoy your day/evening.
Appendix B Path analysis statistics: Model of Waste Reducing Behaviour

The model of waste reducing behaviour fitted the data very well (normed Chi-squared = 2.2; RMSEA = .03; SRMR = .01), explaining 47.0% of the variation in waste reducing intentions and 23.9% of the variation in waste reducing behaviour. The standardised betas in Table 6 shows the relative strength of the direct predictors predictor of waste reducing intentions and behaviour.

Table 6. Strength of direct predictors for waste reducing intentions and behaviour

<table>
<thead>
<tr>
<th>Predicted</th>
<th>Predictors</th>
<th>Standardised Beta</th>
<th>Significant (p &lt; .05)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intentions</td>
<td>Attitudes</td>
<td>0.31</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Perceived control</td>
<td>0.10</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Family and friend norms</td>
<td>0.16</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Victorian norms</td>
<td>0.11</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Collective efficacy</td>
<td>0.32</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Constant</td>
<td>0.54</td>
<td>*</td>
</tr>
<tr>
<td>Behaviour</td>
<td>Intentions</td>
<td>0.29</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Attitudes</td>
<td>0.16</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Family and friend norms</td>
<td>0.14</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Perceived control</td>
<td>0.07</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Constant</td>
<td>2.59</td>
<td>*</td>
</tr>
</tbody>
</table>

Note that significant predictors (p < .05) are bolded
The model of social acceptance also fitted the data very well (normed Chi-squared = 3.3; RMSEA = .04; SRMR = .01), explaining 48.0% of the variation in social acceptance, 67.1% of the variation in trust, and 56.2% of the variation in relationship quality. The standardised betas in Table 7 shows the relative strength of the direct predictors predictor of social acceptance, trust and relationship quality.

Note that significant predictors (p < .05) are bolded.
### Appendix D Survey results for all items

<table>
<thead>
<tr>
<th>Questions and items</th>
<th>Impact resident</th>
<th>Victoria</th>
<th>Metro. Melb</th>
<th>Reg. Vic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Overall</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>4. How much do you feel you know about the following waste and resource recovery services?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Household waste collection services (e.g., curbside collection of garbage, recyclables, and garden waste)</td>
<td>3.45</td>
<td>3.40</td>
<td>3.46</td>
<td>3.42</td>
</tr>
<tr>
<td>Landfill services or tips (including transfer stations and tip shops)</td>
<td>2.81</td>
<td>2.98</td>
<td>2.76</td>
<td>2.74</td>
</tr>
<tr>
<td>The sorting, recycling and recovery of materials (e.g., glass, paper, construction, and organic material)</td>
<td>2.99</td>
<td>3.18</td>
<td>2.93</td>
<td>2.97</td>
</tr>
<tr>
<td>The use of recycled materials in new products</td>
<td>2.82</td>
<td>3.04</td>
<td>2.75</td>
<td>2.80</td>
</tr>
<tr>
<td>The overall waste and resource recovery system</td>
<td>2.72</td>
<td>2.95</td>
<td>2.65</td>
<td>2.71</td>
</tr>
<tr>
<td>5. How much do you agree that the following services are essential services?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity and gas services</td>
<td>4.54</td>
<td>4.19</td>
<td>4.65</td>
<td>4.53</td>
</tr>
<tr>
<td>Water and sewage services</td>
<td>4.58</td>
<td>4.19</td>
<td>4.71</td>
<td>4.58</td>
</tr>
<tr>
<td>Public transport services</td>
<td>4.37</td>
<td>4.08</td>
<td>4.46</td>
<td>4.39</td>
</tr>
<tr>
<td>Ambulance, fire and police services</td>
<td>4.69</td>
<td>4.32</td>
<td>4.81</td>
<td>4.66</td>
</tr>
<tr>
<td>Hospital and health services</td>
<td>4.68</td>
<td>4.33</td>
<td>4.80</td>
<td>4.67</td>
</tr>
<tr>
<td>Mobile and phone services</td>
<td>4.01</td>
<td>3.84</td>
<td>4.06</td>
<td>4.01</td>
</tr>
<tr>
<td>Road repairs and maintenance</td>
<td>4.32</td>
<td>3.99</td>
<td>4.43</td>
<td>4.31</td>
</tr>
<tr>
<td>Waste management and resource recovery services</td>
<td>4.41</td>
<td>4.10</td>
<td>4.51</td>
<td>4.42</td>
</tr>
<tr>
<td>6. How much do you think the following sectors contribute to total waste generation?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Household waste (including garbage, recyclables and organic waste)</td>
<td>3.68</td>
<td>3.63</td>
<td>3.70</td>
<td>3.66</td>
</tr>
<tr>
<td>Commercial waste (including food and other retailers, accommodation and other service providers, public sectors and educational institutions)</td>
<td>3.88</td>
<td>3.76</td>
<td>3.91</td>
<td>3.89</td>
</tr>
<tr>
<td>Industrial, construction and demolition waste (including manufacturing, housing, civil, and commercial projects)</td>
<td>3.91</td>
<td>3.80</td>
<td>3.94</td>
<td>3.92</td>
</tr>
<tr>
<td>7. How much potential do you think the following sectors have for reducing waste going to landfill?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Household waste (including garbage, recyclables and organic waste)</td>
<td>3.95</td>
<td>3.72</td>
<td>4.03</td>
<td>3.91</td>
</tr>
<tr>
<td>Commercial waste (including food and other retailers, accommodation and other service providers, public sectors and educational institutions)</td>
<td>4.01</td>
<td>3.77</td>
<td>4.09</td>
<td>3.99</td>
</tr>
<tr>
<td>Industrial, construction and demolition waste (including manufacturing, housing, civil, and commercial projects)</td>
<td>3.89</td>
<td>3.68</td>
<td>3.96</td>
<td>3.88</td>
</tr>
<tr>
<td>8. How much responsibility do you think households, the private sector, and governments should bear for reducing the amount of waste going to landfills?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Households</td>
<td>3.87</td>
<td>3.78</td>
<td>3.90</td>
<td>3.84</td>
</tr>
<tr>
<td>Businesses, companies and other private organisations</td>
<td>4.18</td>
<td>3.98</td>
<td>4.25</td>
<td>4.19</td>
</tr>
<tr>
<td>Questions and items</td>
<td>Victoria Overall</td>
<td>Yes</td>
<td>No</td>
<td>Metro. Melb</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------------------</td>
<td>------------------</td>
<td>------</td>
<td>-----</td>
<td>-------------</td>
</tr>
<tr>
<td>9. How much do you agree with the following statements?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It is important for your household to minimise the amount of waste that goes to landfill</td>
<td>4.33</td>
<td>4.00</td>
<td>4.44</td>
<td>4.31</td>
</tr>
<tr>
<td>It is difficult for your household to minimise the amount of waste that goes to landfill</td>
<td>2.82</td>
<td>3.23</td>
<td>2.69</td>
<td>2.88</td>
</tr>
<tr>
<td>Family members (outside your household) are minimizing the amount of waste they send to landfill</td>
<td>3.38</td>
<td>3.48</td>
<td>3.34</td>
<td>3.36</td>
</tr>
<tr>
<td>Your friends are minimising the amount of waste they send to landfill</td>
<td>3.30</td>
<td>3.36</td>
<td>3.28</td>
<td>3.28</td>
</tr>
<tr>
<td>Victorians generally are minimising the amount of waste they send to landfill</td>
<td>3.22</td>
<td>3.32</td>
<td>3.18</td>
<td>3.20</td>
</tr>
<tr>
<td>Our household intends to keep future household waste going to landfill to a minimum</td>
<td>3.99</td>
<td>3.82</td>
<td>4.04</td>
<td>3.96</td>
</tr>
<tr>
<td>Households, businesses and governments can effectively work together to reduce the amount of waste going to landfills</td>
<td>4.15</td>
<td>3.91</td>
<td>4.23</td>
<td>4.15</td>
</tr>
<tr>
<td>Our household would be willing to pay a little more for household waste collection/disposal if it reduced the amount of waste going to landfill</td>
<td>2.96</td>
<td>3.21</td>
<td>2.88</td>
<td>2.99</td>
</tr>
<tr>
<td>10. Please indicate how often you have done each of the following in the last year.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Looked for ways to reuse things</td>
<td>3.61</td>
<td>3.65</td>
<td>3.60</td>
<td>3.58</td>
</tr>
<tr>
<td>Recycled newspapers</td>
<td>4.38</td>
<td>4.07</td>
<td>4.48</td>
<td>4.34</td>
</tr>
<tr>
<td>Recycled cans or bottles</td>
<td>4.53</td>
<td>4.18</td>
<td>4.65</td>
<td>4.49</td>
</tr>
<tr>
<td>Encouraged friends or family to recycle</td>
<td>3.28</td>
<td>3.37</td>
<td>3.25</td>
<td>3.29</td>
</tr>
<tr>
<td>Intentionally purchased products in reusable or recyclable containers</td>
<td>3.21</td>
<td>3.38</td>
<td>3.16</td>
<td>3.20</td>
</tr>
<tr>
<td>Picked up litter that was not your own</td>
<td>3.23</td>
<td>3.38</td>
<td>3.18</td>
<td>3.21</td>
</tr>
<tr>
<td>Composted food scraps</td>
<td>3.00</td>
<td>3.30</td>
<td>2.91</td>
<td>2.94</td>
</tr>
<tr>
<td>Chosen an alternative product because of excess packaging</td>
<td>2.92</td>
<td>3.18</td>
<td>2.83</td>
<td>2.92</td>
</tr>
<tr>
<td>Purchased second hand household items (e.g., from Op Shops, eBay or Gumtree)</td>
<td>2.98</td>
<td>3.15</td>
<td>2.93</td>
<td>2.95</td>
</tr>
<tr>
<td>11. How much effort do you put into reducing waste going to landfill when?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>You’re at home</td>
<td>4.20</td>
<td>4.05</td>
<td>4.25</td>
<td>4.18</td>
</tr>
<tr>
<td>You’re at work</td>
<td>3.45</td>
<td>3.53</td>
<td>3.43</td>
<td>3.48</td>
</tr>
<tr>
<td>You’re out and about</td>
<td>3.57</td>
<td>3.55</td>
<td>3.58</td>
<td>3.56</td>
</tr>
<tr>
<td>12. To what extent are you in favour of services that collect and dispose of the following</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food waste (e.g., vegetable scraps and leftover food)</td>
<td>4.07</td>
<td>3.90</td>
<td>4.13</td>
<td>4.11</td>
</tr>
<tr>
<td>Garden waste (e.g., lawn clippings and tree prunings)</td>
<td>4.32</td>
<td>4.06</td>
<td>4.41</td>
<td>4.33</td>
</tr>
<tr>
<td>Recyclables waste (e.g., cans, glass, plastics and paper)</td>
<td>4.56</td>
<td>4.21</td>
<td>4.68</td>
<td>4.54</td>
</tr>
<tr>
<td>E-waste (e.g., batteries, computers, mobile phones)</td>
<td>4.40</td>
<td>4.06</td>
<td>4.51</td>
<td>4.38</td>
</tr>
<tr>
<td>Hard waste (e.g., sofas, beds and washing machines)</td>
<td>4.48</td>
<td>4.15</td>
<td>4.58</td>
<td>4.47</td>
</tr>
<tr>
<td>13. How concerned would you be about the following potential impacts?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Odour</td>
<td>4.23</td>
<td>4.04</td>
<td>4.29</td>
<td>4.25</td>
</tr>
<tr>
<td>Questions and items</td>
<td>Victoria Overall</td>
<td>Impacted resident</td>
<td>Location</td>
<td></td>
</tr>
<tr>
<td>-----------------------------------------------------------------------------------</td>
<td>------------------</td>
<td>-------------------</td>
<td>----------</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Noise</td>
<td>3.82</td>
<td>3.82</td>
<td>3.82</td>
<td>3.87</td>
</tr>
<tr>
<td>Nearby litter</td>
<td>3.88</td>
<td>3.84</td>
<td>3.89</td>
<td>3.88</td>
</tr>
<tr>
<td>Illegal roadside dumping of waste</td>
<td>4.09</td>
<td>3.93</td>
<td>4.14</td>
<td>4.05</td>
</tr>
<tr>
<td>Dust</td>
<td>3.86</td>
<td>3.84</td>
<td>3.87</td>
<td>3.91</td>
</tr>
<tr>
<td>Environmental impacts (soil, water and air contamination)</td>
<td>4.03</td>
<td>3.96</td>
<td>4.05</td>
<td>4.07</td>
</tr>
<tr>
<td>Risk of fire</td>
<td>3.61</td>
<td>3.81</td>
<td>3.54</td>
<td>3.66</td>
</tr>
<tr>
<td>Health impacts</td>
<td>4.00</td>
<td>4.00</td>
<td>4.01</td>
<td>4.07</td>
</tr>
<tr>
<td>Scavenging birds</td>
<td>3.61</td>
<td>3.63</td>
<td>3.61</td>
<td>3.63</td>
</tr>
<tr>
<td>Visual appearance</td>
<td>3.80</td>
<td>3.82</td>
<td>3.79</td>
<td>3.84</td>
</tr>
<tr>
<td>Local stigma (e.g. bad media coverage)</td>
<td>3.42</td>
<td>3.61</td>
<td>3.36</td>
<td>3.47</td>
</tr>
<tr>
<td>Lower property values</td>
<td>3.84</td>
<td>3.80</td>
<td>3.85</td>
<td>3.86</td>
</tr>
<tr>
<td>Trucks on local roads</td>
<td>3.84</td>
<td>3.85</td>
<td>3.83</td>
<td>3.86</td>
</tr>
<tr>
<td>Impacts on local business</td>
<td>3.40</td>
<td>3.62</td>
<td>3.33</td>
<td>3.44</td>
</tr>
<tr>
<td>Overall, how concerned would you be about potential negative impacts?</td>
<td></td>
<td></td>
<td>3.95</td>
<td>3.91</td>
</tr>
<tr>
<td>14. How much do you agree that such a waste complex would provide the following significant local benefits?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Convenient disposal of large household items and garden rubbish</td>
<td>3.95</td>
<td>3.75</td>
<td>4.02</td>
<td>3.93</td>
</tr>
<tr>
<td>Local employment and training opportunities</td>
<td>3.70</td>
<td>3.71</td>
<td>3.69</td>
<td>3.68</td>
</tr>
<tr>
<td>Corporate support for local community activities (e.g. operator sponsorship of a local sporting club)</td>
<td>3.39</td>
<td>3.53</td>
<td>3.34</td>
<td>3.36</td>
</tr>
<tr>
<td>Overall, how much do you agree that such a waste complex would bring significant benefits to the local community</td>
<td>3.53</td>
<td>3.60</td>
<td>3.50</td>
<td>3.49</td>
</tr>
<tr>
<td>15. How much do you agree that such waste complexes would provide the following significant societal benefits?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Managing waste generated by all sectors of the community and economy</td>
<td>3.94</td>
<td>3.84</td>
<td>3.97</td>
<td>3.92</td>
</tr>
<tr>
<td>Reducing the public health risk</td>
<td>3.54</td>
<td>3.66</td>
<td>3.50</td>
<td>3.53</td>
</tr>
<tr>
<td>Reducing environmental damage</td>
<td>3.83</td>
<td>3.77</td>
<td>3.86</td>
<td>3.82</td>
</tr>
<tr>
<td>Supporting the Victorian economy</td>
<td>3.67</td>
<td>3.66</td>
<td>3.67</td>
<td>3.66</td>
</tr>
<tr>
<td>Overall, how much do you agree that such waste facilities would provide significant benefits to the wider Victorian public</td>
<td>3.77</td>
<td>3.74</td>
<td>3.78</td>
<td>3.75</td>
</tr>
<tr>
<td>16. How much do you agree with the following statements?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I would consider it unfair to live near such a waste complex (reverse coded)</td>
<td>2.55</td>
<td>2.40</td>
<td>2.59</td>
<td>2.53</td>
</tr>
<tr>
<td>I would consider it fair to live near such a waste complex if my local council were compensated accordingly</td>
<td>2.89</td>
<td>3.09</td>
<td>2.82</td>
<td>2.90</td>
</tr>
<tr>
<td>If there were good arguments for such a waste complex near me instead of in someone else’s neighbourhood, I would be accepting</td>
<td>3.01</td>
<td>3.16</td>
<td>2.96</td>
<td>3.00</td>
</tr>
<tr>
<td>Because such a waste complex ultimately has to be built somewhere, I would not object to living near such a facility.</td>
<td>2.78</td>
<td>3.09</td>
<td>2.67</td>
<td>2.78</td>
</tr>
<tr>
<td>Questions and items</td>
<td>Victoria Overall</td>
<td>Impacted resident Yes</td>
<td>No</td>
<td>Metro. Melb</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------------</td>
<td>------------------</td>
<td>------------------------</td>
<td>----</td>
<td>-------------</td>
</tr>
<tr>
<td>It would conflict with my ideas about equity to live near such a waste complex</td>
<td>2.71</td>
<td>2.53</td>
<td>2.77</td>
<td>2.69</td>
</tr>
<tr>
<td>[reverse coded]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. Thinking about how decisions might be made regarding the plans and operations of the waste complex, how much do you agree that:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The waste complex operator would listen to and respect the community's opinions</td>
<td>3.15</td>
<td>3.37</td>
<td>3.08</td>
<td>3.16</td>
</tr>
<tr>
<td>The waste complex operator would inform residents of important developments regarding the site</td>
<td>3.34</td>
<td>3.47</td>
<td>3.30</td>
<td>3.36</td>
</tr>
<tr>
<td>People in your community would have opportunities to participate in the decisions made by the waste complex operator</td>
<td>3.25</td>
<td>3.44</td>
<td>3.19</td>
<td>3.27</td>
</tr>
<tr>
<td>The waste complex operator would be prepared to change its practices in response to community sentiment</td>
<td>3.20</td>
<td>3.45</td>
<td>3.11</td>
<td>3.21</td>
</tr>
<tr>
<td>The local council would listen to and respect the communities opinions</td>
<td>3.27</td>
<td>3.46</td>
<td>3.22</td>
<td>3.31</td>
</tr>
<tr>
<td>The local council would inform residents of important developments regarding the site</td>
<td>3.47</td>
<td>3.54</td>
<td>3.45</td>
<td>3.50</td>
</tr>
<tr>
<td>Local residents would have opportunities to participate in local council planning decisions relating to the site</td>
<td>3.33</td>
<td>3.47</td>
<td>3.28</td>
<td>3.35</td>
</tr>
<tr>
<td>State government would listen to and respect community opinions about the site</td>
<td>3.18</td>
<td>3.40</td>
<td>3.10</td>
<td>3.22</td>
</tr>
<tr>
<td>18. How confident are you that the waste complex operator would:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respond to concerns and issues in a timely manner</td>
<td>2.70</td>
<td>3.05</td>
<td>2.59</td>
<td>2.70</td>
</tr>
<tr>
<td>Be accessible or easy to contact</td>
<td>2.79</td>
<td>3.05</td>
<td>2.70</td>
<td>2.79</td>
</tr>
<tr>
<td>Be committed to genuinely responding to community concerns</td>
<td>2.71</td>
<td>3.06</td>
<td>2.59</td>
<td>2.71</td>
</tr>
<tr>
<td>19. Thinking about the waste complex operator’s relationship with the local community, how confident are you that the waste complex operator would</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Be open, honest and transparent</td>
<td>2.68</td>
<td>3.03</td>
<td>2.57</td>
<td>2.68</td>
</tr>
<tr>
<td>Engage in genuine two way dialogue</td>
<td>2.74</td>
<td>3.13</td>
<td>2.62</td>
<td>2.74</td>
</tr>
<tr>
<td>Be pleasant and positive</td>
<td>2.89</td>
<td>3.18</td>
<td>2.80</td>
<td>2.88</td>
</tr>
<tr>
<td>20. Thinking about how the waste complex operator would be governed, how much do you agree that:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Legislation and regulation could be counted upon to ensure the waste complex operator did the right thing</td>
<td>3.41</td>
<td>3.48</td>
<td>3.39</td>
<td>3.41</td>
</tr>
<tr>
<td>The Environmental Protection Authority (EPA) would be able to hold the waste complex operator accountable</td>
<td>3.61</td>
<td>3.54</td>
<td>3.63</td>
<td>3.61</td>
</tr>
<tr>
<td>Local council would be able to ensure the operator functioned within their permits</td>
<td>3.43</td>
<td>3.45</td>
<td>3.42</td>
<td>3.42</td>
</tr>
<tr>
<td>The waste complex operator could be relied upon to comply with permits and licences</td>
<td>3.31</td>
<td>3.39</td>
<td>3.28</td>
<td>3.31</td>
</tr>
<tr>
<td>21. How much do you agree that there would be good future plans and strategic vision for the waste and resource recovery site by the:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>State government</td>
<td>3.27</td>
<td>3.41</td>
<td>3.22</td>
<td>3.28</td>
</tr>
<tr>
<td>Local council</td>
<td>3.32</td>
<td>3.46</td>
<td>3.27</td>
<td>3.33</td>
</tr>
<tr>
<td>Waste complex operator</td>
<td>3.26</td>
<td>3.41</td>
<td>3.21</td>
<td>3.26</td>
</tr>
<tr>
<td>22. How much do you agree that local residents, businesses, government and the waste complex operator would be able to work together?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Questions and items

<table>
<thead>
<tr>
<th>Questions and items</th>
<th>Victoria Overall</th>
<th>Impacted resident</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>To address any problems with the waste complex</td>
<td>3.16</td>
<td>3.30</td>
<td>3.11</td>
</tr>
<tr>
<td>To maximise any benefits associated with the waste complex</td>
<td>3.26</td>
<td>3.40</td>
<td>3.22</td>
</tr>
</tbody>
</table>

**23. Thinking about a private company operating this waste complex, to what extent would you**

| Trust them to act in the local community’s best interests | 2.66 | 2.04 | 2.53 | 2.65 | 2.69 |
| Trust them to act responsibly | 2.80 | 3.13 | 2.70 | 2.80 | 2.81 |
| Trust their capability | 3.00 | 3.19 | 2.94 | 3.00 | 3.00 |

**24. Thinking about local council overseeing this waste complex, to what extent would you**

| Trust them to act in the local community’s best interests | 3.12 | 3.25 | 3.07 | 3.15 | 2.97 |
| Trust them to act responsibly | 3.11 | 3.25 | 3.06 | 3.14 | 2.98 |
| Trust their capability | 3.03 | 3.20 | 2.97 | 3.07 | 2.87 |

**25. Thinking about state government bodies involved in overseeing this waste complex, such as the Environment Protection Authority (EPA), to what extent would you**

| Trust them to act in the local community’s best interests | 3.37 | 3.38 | 3.37 | 3.38 | 3.34 |
| Trust them to act responsibly | 3.48 | 3.43 | 3.49 | 3.49 | 3.43 |
| Trust their capability | 3.40 | 3.33 | 3.42 | 3.41 | 3.35 |

**26. Thinking about living near this type of waste complex (e.g., within 2 kms), how accepting would you be of the following activities at that site?**

| Landfill or tip activities (i.e., burying of waste that cannot be recycled, reprocessed or reused) | 2.89 | 3.19 | 2.80 | 2.87 | 2.98 |
| Transfer station activities (i.e., a local drop off point for excess household waste which is then sorted for further processing or resale if possible or else disposed to landfill) | 3.38 | 3.29 | 3.41 | 3.35 | 3.49 |
| Tip shop (i.e., an on-site shop selling second hand goods recovered from) | 3.61 | 3.51 | 3.65 | 3.56 | 3.82 |
| Sorting recyclables (i.e., separating recyclables into different material streams) | 3.68 | 3.59 | 3.71 | 3.66 | 3.77 |
| Organic reprocessing (e.g., composting grass clippings and tree prunings for soil, wood chips, or other organic matter) | 3.57 | 3.49 | 3.60 | 3.54 | 3.67 |
| Recovering and reprocessing building materials (e.g., recovering waste timber and crushing cement) | 3.41 | 3.41 | 3.41 | 3.37 | 3.54 |
| Overall, how accepting would you be living near such a waste complex? | 2.91 | 3.09 | 2.85 | 2.87 | 3.07 |

**27. Think about living near this type of waste complex (e.g. within 2 kms). Which best describes your attitude toward this type of waste management facility?**

- I would reject it = 1
- I would tolerate it = 2
- I would be ok with it = 3
- I would accept it = 4
- I would approve of it = 5

| | 2.15 | 2.19 | 2.14 | 2.10 | 2.32 |

**28. Are you presently associated with a community group engaging with a local waste and resource recovery site?**

A local community group opposing a waste and resource recovery site

<p>| | 6% | 21% | 1% | 7% | 4% |</p>
<table>
<thead>
<tr>
<th>Questions and items</th>
<th>Victoria Overall</th>
<th>Impacted resident</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>A community consultation or reference group engaging with a waste operator or site</td>
<td>8%</td>
<td>26%</td>
<td>2%</td>
</tr>
<tr>
<td>Another local community group engaging with a waste operator or site</td>
<td>7%</td>
<td>24%</td>
<td>1%</td>
</tr>
</tbody>
</table>

29. Are you presently negatively affected by any of the following types of waste management or resource recovery facilities near your home? If so how much?

- A transfer station                                                               | 2.21             | 0.00   |
- A landfill or tip                                                                | 2.56             | 0.00   |
- An organic processing or composting facility                                    | 2.28             | 0.00   |
- Any other type of waste or resource recovery facility                            | 1.80             | 0.00   |

30. When was the last time you visited and saw any of the following waste and resource recovery facilities?

- Recently = 1
- Last few years = 2
- Some years ago = 3
- A long time ago = 4
- Never = 5

<table>
<thead>
<tr>
<th></th>
<th>Recently</th>
<th>Last few years</th>
<th>Some years ago</th>
<th>A long time ago</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>A transfer station (sorting materials for recycling or reprocessing)</td>
<td>3.35</td>
<td>3.31</td>
<td>3.36</td>
<td>3.50</td>
<td>2.78</td>
</tr>
<tr>
<td>A landfill or tip</td>
<td>3.20</td>
<td>3.02</td>
<td>3.26</td>
<td>3.33</td>
<td>2.72</td>
</tr>
<tr>
<td>An organic processing or composting facility</td>
<td>4.06</td>
<td>3.65</td>
<td>4.20</td>
<td>4.18</td>
<td>3.62</td>
</tr>
<tr>
<td>Any other type of waste or resource recovery facility</td>
<td>4.27</td>
<td>4.01</td>
<td>4.36</td>
<td>4.36</td>
<td>3.96</td>
</tr>
</tbody>
</table>

Note: mean scores are on a scale from 1-5, where ‘1’ is the least and ‘5’ is the ‘most’, except for Q 30; Q 28 are percentages; Shaded scores are scores that on average are viewed as unfavourable or in disagreement with the statement.
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