

Report to the Future Melbourne Environment Committee

Agenda item 6.5

Draft Waste and Resource Recovery Strategy 2030

15 May 2018

Presenter: Jenny Bailey, Manager Engineering Services

Purpose and background

1. The purpose of this report is to present the draft Waste and Resource Recovery Strategy 2030 ('Draft Strategy') and seek approval for it to be released for public comment.
2. Once finalised, the Strategy will replace the Waste Management Strategy (adopted November 2005) and the Waste and Resource Recovery Plan 2015-18 (adopted in September 2015).

Key issues

3. The main challenges identified in the Draft Strategy are:
 - 3.1. *Population growth and high-density development* – at current waste generation rates, the amount of waste produced by City of Melbourne households, businesses/other organisations and our own operations could increase from 507,500 tonnes in 2016 to over 660,000 tonnes in 2031.
 - 3.2. *Greenhouse gas emissions and climate change* – production, consumption, use and disposal of goods and materials has a substantial impact on climate change.
 - 3.3. *Amenity impacts* – the collection and transport of waste continues to cause odour, noise and traffic congestion.
 - 3.4. *Level of influence* – Council has only a limited level of control in the overall waste system. Successful collaboration and advocacy with other parties is required if change is to be realised.
 - 3.5. *Recycling and resource recovery system viability* – global changes in recycling markets due to Chinese import restrictions have had a dramatic impact on the recycling system and local markets for recovered materials remain underdeveloped.
 - 3.6. *Living in a throwaway society* – single-use items are often produced unnecessarily and difficult to recycle and littered plastic has environmental impacts on land and in waterways and oceans.
4. The Draft Strategy is underpinned by the waste hierarchy and the notion of a circular economy. The goal for 2030 is "to develop and introduce cost effective, environmentally responsible waste and resource recovery systems". The outcomes and targets to be achieved by 2030 are also identified.
5. The Draft Strategy includes proposed actions for 2018-2022, focusing on four priorities:
 - 5.1. *Reducing, reusing, recycling and recovering waste* – focusing on the most problematic waste streams, including organic waste, plastic and single-use items and e-waste.
 - 5.2. *Developing landfill alternatives* – through establishment of Alternative Waste and Resource Recovery Technologies that recovers resources and potentially creates energy from waste.
 - 5.3. *Stimulating innovation* – primarily through the establishment of a waste minimisation innovation fund that provides support for businesses, community organisations and social enterprises to propose and implement solutions to meet the strategy goal and targets.
 - 5.4. *Reducing amenity impacts from waste collection* – extending our existing programs and finding new ways to reduce the amenity impacts including noise and congestion from waste collections.
6. Actions in the Draft Strategy are subject to budget allocation through the annual budget process.
7. Given the importance and topicality of challenges surrounding waste, further community engagement is proposed following consideration of the Draft Strategy by Committee. This will include a series of discussion papers on key topics; an additional two forums to engage the retail and hospitality industry on the issue of single-use waste items and an open forum on what can Council do about waste; and targeted engagement with residents, businesses, government and waste industry stakeholders.

Recommendation from management

8. That the Future Melbourne Committee:
 - 8.1. approves the release of the Draft Waste and Resource Recovery Strategy 2030 for public comment
 - 8.2. notes further community engagement is proposed following consideration of the Draft Strategy by Committee
 - 8.3. notes the final Waste and Resource Recovery Strategy 2030 will be presented to the Future Melbourne Committee for consideration in November 2018.

Attachments:

1. Supporting Attachment (page 3 of 64)
2. Community Engagement Summary Report (page 5 of 64)
3. Draft Waste and Resource Recovery Strategy 2030 (page 34 of 64)

Legal

1. There are no legal implications in the adoption of this report. Legal advice will be provided on an as needed basis.

Finance

2. There are no financial implications of adopting the recommendation as implementation of proposed actions is subject to the annual budget approval process. Further economic analysis will be undertaken during the consultation phase to determine any long term financial implications.

Conflict of interest

3. No member of Council staff, or other person engaged under a contract, involved in advising on or preparing this report has declared a direct or indirect interest in relation to the matter of the report.

Stakeholder consultation

4. A community and stakeholder engagement process was undertaken from between November 2017 and March 2018 to obtain feedback and ideas from the community and to identify areas of alignment with stakeholders' strategic goals.
5. Community feedback was received through online surveys, email submissions, community and resident group meetings.
6. Stakeholder feedback was received through meetings held with representatives of Sustainability Victoria, Metropolitan Waste and Resource Recovery Group, Victorian Waste Management Association and other metropolitan councils.
7. The major themes identified through the feedback were:
 - 7.1. further recycling – respondents are recycling as much as they can through existing systems but there are other items that they want to be able to recycle
 - 7.2. more services – organic waste (food and garden) collections or other options for composting was requested by many respondents, along with options for recycling of soft-plastics and polystyrene, e-waste, clothing and other items
 - 7.3. further education – many recommendations were received on the scope and method for educating the community
 - 7.4. further regulation, enforcement and incentives– these methods were all suggested as ways that City of Melbourne could improve waste management
 - 7.5. waste reduction and reuse – methods for reducing waste and increasing reuse were suggested
 - 7.6. City of Melbourne operations – improvements to our operational waste management, for example, through our procurement and event management.
8. The feedback that was received was used to inform the development of the Draft Strategy.
9. A community engagement summary report is provided at Attachment 3.

10. A further community and stakeholder engagement process is recommended once the Draft Strategy is approved to ensure that it meets the expectations and needs of the community and key stakeholders. Four discussion papers on key topics will be produced to assist the engagement. Two forums will be held: one specifically to engage the retail and hospitality industry on the issue of single-use waste items and the other an open forum on 'what can City of Melbourne do about waste?'. Residents, businesses, government and waste industry stakeholders will also be engaged.

Relation to Council policy

11. The recommendation is consistent with the following Council policies:
 - 11.1. Future Melbourne vision: "in 2026, Melbourne will be a sustainable, inventive and inclusive city that is vibrant and flourishing".
 - 11.2. Council Plan 2017-2021: Goal - a city that cares for its environment
 - 11.3. Zero Net Emissions by 2020

Environmental sustainability

12. Environmental sustainability issues and opportunities are integral to the Draft Strategy. Five outcomes have been identified to achieve the Draft Strategy goal of developing and introducing cost effective, environmentally responsible waste and resource recovery systems:
 - 12.1. The City is a leader in sustainable waste management.
 - 12.2. Waste to landfill is minimised.
 - 12.3. Cost to ratepayers is minimised.
 - 12.4. The waste management system is carbon neutral or better.
 - 12.5. Amenity impacts of the waste collection system are minimised.
13. Adoption of the Draft Strategy and implementation of the proposed actions will result in positive environmental sustainability impacts including diversion of more waste from landfill and reduction of greenhouse gas emissions due to waste collection and disposal.

CITY OF MELBOURNE

WASTE AND RESOURCE RECOVERY STRATEGY - TOWARDS 2030

EXECUTIVE SUMMARY

1. The City of Melbourne wants to become a global leader in waste management, resource recovery and reduction of all waste streams to landfill. The draft Waste and Resource Recovery Strategy 2030 establishes a long-term vision to help reach this goal.
2. As a local government, City of Melbourne is responsible for collection and recycling or disposal of waste from our operations, our residents and public places such as streets and parks. We also run education and behaviour change campaigns for residents, businesses and visitors to our City and work with events to reduce their waste footprint.
3. As a Capital City we also have a responsibility to advocate to and work with businesses and industry, state and federal governments and neighbouring Councils to decrease single use waste products, increase efficiency in waste collection across the whole municipality and state and to maximise collective ambition for best practice resource recovery and recycling operations including waste to energy opportunities and organic and food waste reduction.
4. We have developed some world leading initiatives such as Degraeves Street Recycling Facility, laneway garbage compactor and recycling hub program and the Single Use Waste Reduction Fund to work with businesses, visitors and residents to test opportunities to reduce waste in our city regardless of whose responsibility it is.
5. The main challenges for waste management in the City of Melbourne are: population growth, collection from high-density development, greenhouse gas emissions and climate change, amenity and under-developed recycling or reuse markets.
6. It is important to note that the vast majority of waste in the City of Melbourne is generated by the commercial and industrial and construction and demolition sectors (see table below).

Table 1 Waste generation and recycling (tonnes, estimated, 2016-17 or baseline year)¹

Waste stream	Waste landfill/recycling	Amount collected for recycling	Recycling rate
City of Melbourne operations	7,300	800	11%
Municipal solid waste:			
• Household waste	33,600	8,400	25%
• Public place bins	5,800	1,300	22%
Commercial and industrial (2015-16)	461,000	280,500	61%
Construction and demolition (2014-15)	298,500	258,400	87%
Total	805,800	549,353	68%

7. To become a world leader, the draft Waste and Resource Recovery Strategy 2030 sets out to develop cost effective, environmentally responsible waste and resource recovery systems, with these goals and outcomes (Figure 1).

Figure 1 Strategy goal and outcomes



8. Indicators and targets have been identified to track our progress towards 2030, including 85 per cent of all residential waste is diverted from landfill, recycling quality is at 95 per cent, 75 per cent of commercial and industrial waste is diverted from landfill and the City of Melbourne reduces waste by 30 per cent including at our events.

Table 2 Summary of 2030 targets

Source	Indicator	Baseline	Target - 2030
City of Melbourne operations	Amount of waste produced in CoM buildings	55 kg / EFT / year	38.5 kg / EFT / year
	Events indicator and target - to be developed when baseline is available		
Residential waste	Diversion from landfill rate	25 per cent	85 per cent
	Recycling quality	90 per cent	95 per cent
Commercial and industrial waste	Diversion from landfill rate	61 per cent	75 per cent

9. The Strategy includes an action plan outlining the priorities and actions for the first four years. The four priorities are:
- Reducing, reusing, recycling and recovering waste – collection options and education campaigns focusing on the most problematic waste streams, including organic waste, plastic and single-use items and e-waste and supporting local solutions to recycling materials produced in the municipality, not reliant on overseas operations.
 - Developing landfill alternatives – through establishment of Alternative Waste and Resource Recovery Technologies with other Councils and the Victorian and Federal governments.
 - Stimulating innovation –through the establishment of a waste minimisation innovation fund, in partnership with our City’s business, retail, hospitality and residential communities.
 - Reducing amenity impacts from waste collection – extending our existing programs and finding new ways to reduce amenity impacts from residential and commercial waste collection operations on our streets and in waterways.

10. This includes actions such as partnering with other organisations to establish a Fisherman's Bend Sustainability Hub, the establishment of a Waste Minimisation Innovation Fund, new programs to maximise resource recovery from the City of Melbourne's own operations and extending the network of communal waste compactors and recycling hubs.
11. The City of Melbourne will rely on the support and effort of its own constituents, other levels of Government and the community as a whole to achieve its vision of sustainable waste management.

INTRODUCTION

The Waste and Resource Recovery Strategy 2030 (the Strategy) establishes a long-term vision for the City of Melbourne to become a global leader in waste management and resource recovery.

Our residents, workers, students, visitors, businesses and other organisations are purchasing, using and disposing of products and materials as they go about their daily routines. More than 800,000 tonnes of waste (including garbage and recycling) is estimated to be generated in City of Melbourne each year. However, less than 1 per cent of this is generated by City of Melbourne's operations and only 6 per cent is collected by City of Melbourne. The remaining 94 per cent is generated by the commercial and construction and demolition sectors and collected by private waste collection companies. Our challenge is to reduce the negative social and environmental impacts associated with waste management and to provide ratepayers with efficient and effective services.

As a Capital City we also have a responsibility to advocate to and work with businesses and industry, state and federal governments and neighbouring Councils to decrease single use waste products, increase efficiency in waste collection across the whole municipality and state and to maximise collective ambition for best practice resource recovery and recycling operations including waste to energy opportunities and organic and food waste reduction.

The economic impacts of waste are substantial. For example, food waste in Australia leads to a loss of \$20 billion to the overall economy each year². These losses occur at all stages of the food life-cycle, from production, processing and manufacturing, distribution, retail, hospitality and food service, and at the household level. Food is not unique in this way - waste occurs throughout the life-cycle of all goods and materials.

This Strategy sets out a way forward, a platform through which waste can be managed as a resource for a modern city. The impacts and trends are identified, followed by a snapshot of the current waste profile and City of Melbourne's services and programs and identification of the key challenges. This provides the context for our pathway towards 2030.

The 2030 goal is for City of Melbourne to develop and introduce cost effective, environmentally responsible waste and resource recovery systems. The five outcomes to support the goal are:

- the City is a leader in sustainable waste management
- waste to landfill is minimised
- cost to ratepayers is minimised
- the waste management system is carbon neutral or better
- amenity impacts of the waste collection system are minimised.

Ambitious targets and supporting indicators will help to track our progress. Four priorities, each with supporting actions, will guide our efforts for the first four years of implementation. The priorities and actions will be reviewed and updated in year four to provide the next steps forward.

² Commonwealth of Australia. (2017a). *National Food Waste Strategy: Halving the Nation's Food Waste by 2030*. www.environment.gov.au

THE CONTEXT

Environmental Impacts

Production, use and disposal of materials and products are a large component of an individual, household or business' environmental footprint. The main environmental impacts of the management of waste are:

- Production and manufacturing of materials that then become waste.
- Waste collection - the large number of trucks collecting waste in the City leads to exhaust fumes and greenhouse gas emissions.
- Waste disposal - landfill disposal impacts include leaching of heavy metals and chemicals and methane gas emissions. Methane is a greenhouse gas with 25 times the global warming impact of carbon dioxide³. In landfills it is created by the breakdown of organic waste in anaerobic (oxygen-free) conditions. Whilst many landfills also have the technology for methane capture, this is not necessarily an efficient process. Landfills also occupy space that could be used for a more useful purpose.
- Natural environment (such as waterways) health which can be impacted due to inappropriate disposal practices or litter.

Trends

Global trends

Global trends in waste management relate to a drive to improve processes and delivery through innovation and new technology. Whilst many European countries moved away from landfill some years ago, treatment facilities continue to grow in sophistication and in their capacity to convert waste to useful materials and/or energy.

There is a growing international awareness and community understanding of the resource value of items that are discarded and a move towards the recovery of items that used to be considered 'residual' such as industrial equipment and plastic films. Other developments include the use of more sustainable and environmental-friendly raw materials and improvements in product design to increase recyclability.

Major cities are taking up the idea of the circular economy as a means of maintaining economic growth while reducing environmental degradation: this approach moves away from the current 'take-make-waste culture'⁴. The vast majority of goods don't need to end up as waste. Creating a more circular economy involves designing out waste where possible, then recovering more materials to re-use and recycle; eventually no longer sending any waste to landfill. This allows more value to be gained from products and materials and for a reduction in the negative social, environmental and economic impacts associated waste.

Cities are making evidence based decisions by leveraging community-generated data capturing personal behaviours relating to waste and litter pollution in urban areas and waterways. The creation of such data sets is reflective of a growing understanding of the degradation of ocean and waterway ecosystems through discarded waste, especially plastics.

Many cities have set ambitious targets for diversion of waste from landfill through recycling or recovery. For example, Sydney City Council has targets for 90 per cent diversion for waste from council operations, residents and businesses and other organisations.

³ Commonwealth of Australia. (2017b). National Greenhouse Accounts Factors. www.environment.gov.au

⁴ www.ellenmacarthurfoundation.org

These positive trends towards greater recovery and recycling have been dramatically impacted by the change in global markets for recyclable materials in early 2018. The market change has occurred as a result of China restricting the type of waste materials that they accept as imports. In 2016, China spent over \$US18 billion on imports of recyclable materials and accepted more than half of the world's waste paper exports and half of its waste plastic exports⁵. China, having gradually tightened the standards for imports over a number of years through their Green Fence program, implemented new restrictions on 24 categories of solid waste from 1 January 2018 under the National Sword policy⁶. The restrictions have had immediate effect, with imports in January 2018 dropping by 44 per cent for scrap paper imports (compared to January 2017) and by 94 per cent for plastic scrap (compared to the previous month)⁷. This is driving an interest in expanding local recycling industries and markets.

Australian and Victorian trends

Increases in waste generation are driving a move towards alternative waste and resource recovery technology facilities as the preferred destination for waste that cannot be re-used or recycled. These technologies allow value to be recovered through sorting and processing which may include waste to energy.

Organic waste is increasingly being seen as a priority waste material. A growing number of councils are implementing a "FOGO" system that collects food organics and garden organics in a single bin. This can be introduced as a change to an existing garden waste collection bin service or as a new organics bin. In the commercial and industrial sector, proactive businesses and organisations are introducing 'boutique' options to enable resource recovery for food organics, honing in on anaerobic digestion as a means of processing this waste.

The Victorian Government's Metropolitan Waste and Resource Recovery (MWRRG) Implementation Plan⁸ sets out how infrastructure needs will be met in the metropolitan region over 2016-2026. The Plan notes that the existing regional landfill arrangements expire in April 2021 and that in the south east of metropolitan Melbourne, landfill space is almost exhausted.

In Victoria, there is also a trend towards more regulatory intervention in waste management. The Victorian Government has announced plans to ban single, light weight plastic bags and have begun community engagement on how such a ban is best managed and over what time period. The banning of electronic waste from landfill has also been announced. The Victorian Government's landfill levy currently stands at \$63.28 per tonne, more than doubling the cost of sending waste to landfill. This levy increases in line with Department of Treasury and Finance indexing for inflation⁹.

State and local governments across Australia have been impacted by the changes in global recycling markets in early 2018. Councils are facing increased costs for recycling sorting and have to renegotiate contracts for this service. The Victorian Government has provided a short-term assistance package of \$12 million to fund the increased costs to councils for the period 1 March – 30 June 2018 and has made a further \$1 million available to the Victorian recycling industry for new infrastructure to improve the quality of recovered plastic, paper

⁵ The Economist. (2017, 3 Aug). [China tries to keep foreign rubbish out. www.economist.com](http://www.economist.com)

⁶ Inside Waste. (2018, 9 Feb). [National Sword: urgent action needed. www.insidewaste.com.au](http://www.insidewaste.com.au)

⁷ Taylor, B. (2018, 23 Feb). [Scrap imports drop in China in early 2018. www.recyclingtoday.com](http://www.recyclingtoday.com)

⁸ MWRRG. (2016). *Metropolitan Waste and Resource Recovery Implementation Plan 2016*.

www.mwrrg.vic.gov.au

⁹ www.epa.vic.gov.au

and cardboard¹⁰. In April 2018, Ipswich City Council in Queensland announced that they would be landfilling all recyclable waste but then reversed this decision¹¹. The issue has become one of the most urgent challenges for recycling in Australia and will be discussed at the meeting of state and territory environment ministers on 27 April 2018¹².

Population and waste generation trends

In April 2018, the population of Australia was 24.9 million¹³. Waste generation rates are a function of population growth, the level of urbanisation and per capita income. Australians produced 64 million tonnes of waste in 2014-15, averaging 2.7 tonnes per person¹⁴. Waste generation increased by an average of 1.2 per cent, per year from 2006 to 2015, while population grew by 1.5 per cent¹⁵.

In 2017 there were an estimated 142,000 residents and a daily population of 922,000 residents, workers, students and visitors within the City of Melbourne. This is expected to grow to 233,000 residential and 1.23 million daily population by 2030¹⁶. Our 142,000 residents occupy 71,000 residential dwellings, of which 86 per cent are apartments and 14 per cent are houses or townhouses¹⁷.

ROLES AND RESPONSIBILITIES

The roles and responsibilities of government, industry and waste generators are outlined briefly below.

Local government

Councils are responsible for providing waste and recycling services to residents. While the Local Government Act 1989 does not specify how these services should be delivered, it does state that the objective of local government is: 'to endeavour to achieve the best outcomes for the local community having regard to the long term and cumulative effects of decisions'¹⁸. Many Councils, including the City of Melbourne, outsource the delivery of waste services through a competitive tender process. Local government also undertakes local planning, develops policy and implements education and behaviour change programs for waste reduction and recycling.

State government

State governments plan, licence and regulate, and manage the impacts of waste management activities. Various legislation, policies and programs exist at the state- and metropolitan-level. The Victorian Government's waste portfolio includes the Department of Environment, Land, Water and Planning, the Environment Protection Agency, Sustainability Victoria, and seven regional groups including the MWRRG Group.

Australian government

The Australian government has an over-arching role in waste management through national legislation, strategies and policy frameworks. Their role in developing and implementing legislation and schemes for product stewardship has been a particular focus in recent years.

¹⁰ www.environment.vic.gov.au

¹¹ Bavas, J. (2018, 20 April). [Ipswich Council backflips on decision to scrap recycling, wants fewer pizza boxes in yellow-lid bins](http://www.abc.net.au/yellow-lid-bins). www.abc.net.au

¹² <https://greensmps.org.au/articles/josh-frydenberg-must-settle-recycling-solution-upcoming-meeting-environment-ministers>

¹³ www.abs.gov.au

¹⁴ Blue Environment. (2016). *Australian National Waste Report 2016*. www.environment.gov.au

¹⁵ Blue Environment. (2016). As above.

¹⁶ www.melbourne.vic.gov.au Daily population estimates and forecasts.

¹⁷ City of Melbourne. (2016). *Census of Land Use and Employment Profile 2016*. www.melbourne.vic.gov.au

¹⁸ Reincarnate. (2017). *City of Melbourne: Context, initiatives and innovations - Waste and resource recovery strategy 2030*. (Unpublished).

For example, the National Television and Computer Recycling Scheme has resulted in increased availability of free recycling services for these products.

Waste and resource recovery industry

The waste and resource recovery industry provides a wide range of services and infrastructure for collection, transport, sorting, reprocessing, exporting and disposal of waste. Nationally the waste sector is worth over \$14 billion and employs 50,000 people both directly and indirectly¹⁹. The industry has a substantial impact on the waste and resource recovery outcomes in the City of Melbourne's municipal boundaries.

Waste generators

Households, businesses, governments and other organisations and construction and demolition companies all consume materials and goods and use services as part of their daily activities. When choosing the type and quantity of materials and goods they have an opportunity to support the circular economy. For example, by purchasing only what is really needed, choosing second-hand or remanufactured goods and using materials or goods made from recycled content or renewable resources. Shifting to using services rather than purchasing goods can also reduce waste, for example, by renting goods or using sharing services like car-share programs. When discarding unwanted goods or materials, individuals, households and businesses or other organisations have a responsibility to sort and separate their waste and ensure that they are selecting the highest value pathway for their unwanted items.

Waste policy

The Strategy operates within the broad context of the Australian and Victorian waste policy frameworks.

Australian government

The National Waste Policy (2009) provides an overall direction for waste and resource recovery until 2020. The Australian Government has played an important role in enhancing product stewardship in Australia, through the *Product Stewardship Act 2011* and the implementation of national regulatory and co-regulatory schemes, most notably the National Television and Computer Recycling Scheme²⁰. The Australian Government launched a National Food Waste Strategy in November 2017 which refers to the United Nations Sustainable Development Goals (SDGs) target 12.3: 'By 2030, halve per capita food waste at the retail and consumer levels and reduce food losses along the production and supply chains, including post-harvest losses'²¹.

Victorian Government

The Victoria policy and strategic planning framework for waste and resource recovery includes legislation, strategic planning documents and enabling strategy documents, as shown in

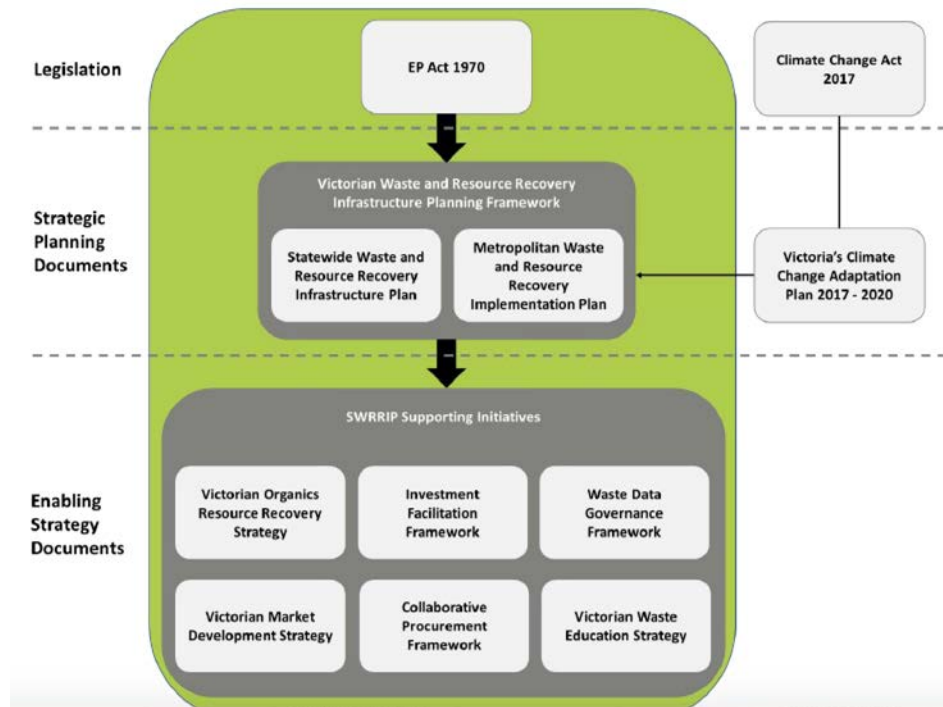
¹⁹ Ritchie, M. (2016, April 20). State of Waste 2016 - current and future Australian trends.

<http://blog.mraconsulting.com.au>

²⁰ Reincarnate. (2017). As above.

²¹ Reincarnate. (2017). As above.

Figure 2.

Figure 2 Current Victorian waste and resource recovery policy and strategy framework²²

The Victorian framework identifies the current resource flows in Victoria's waste and resource recovery system as a form of a circular economy²³. The framework has a strong focus on improving diversion of waste from landfill and on processing and management of food and other organic waste. Improved recovery, education and processing for commercial and industrial waste is also a focus, while acknowledging the challenges posed by the large number of businesses and waste service providers²⁴.

The MWRRG Implementation Plan²⁵ applies the Victoria-wide priorities in the metropolitan region. This plan sets out how infrastructure needs will be met over a 10-year period in order to meet four strategic objectives: reduce waste to landfill, increase diversion of organic waste, deliver community, environmental and economic benefits and plan for a growing population. Actions include the establishment of new infrastructure that can recovery resources from residual waste and improving the organic waste recovery and processing network. Collaborative procurement between local governments is a key mechanism for establishing new infrastructure.

Sustainable Development Goals

Australia is one of many nations globally that has adopted the United Nations SDGs. The 17 goals and accompanying 169 targets were agreed in 2015 to address common global issues. An assessment of the SDGs to the waste and resource recovery system identified that goal 12 is the most directly relevant goal, addressing 'responsible consumption and production', which seeks to 'ensure sustainable consumption and production patterns'. Five other goals were also relevant: making cities more sustainable (goal number 11), taking action to combat climate change (13), to lessen our impacts for life below water (14) and on land (15) and by using partnerships to achieve the goals (17).

²² Reincarnate. (2017). As above.

²³ For example, refer Figure 1-1 in Sustainability Victoria. (2017a). State-wide Waste and Resource Recovery Infrastructure Plan (SWRRIP) Amendment consultation draft. www.engage.vic.gov.au

²⁴ Reincarnate. (2017). As above.

²⁵ MWRRG. (2016). *Metropolitan Waste and Resource Recovery Implementation Plan 2016*. www.mwrrg.vic.gov.au

WASTE AND RESOURCE MANAGEMENT - A SNAPSHOT

Sources of waste

Waste is generated by four sources within the municipality. These are:

- City of Melbourne operations - i.e. buildings, parks maintenance etc.
- Municipal solid waste - i.e. household waste, public place bin waste.
- Commercial and industrial waste - shops and offices but also factories/warehouses.
- Construction and demolition waste - building and renovation projects.

The estimated amount of waste generated from each of these sources of waste is presented in Table 3 below.

Table 3 Waste generation and recycling (estimated, 2016-17 or baseline year)²⁶

Waste stream	Amount of waste generated (landfill and recycling)	Amount collected for recycling	Recycling rate
City of Melbourne operations	7,300	800	11%
Municipal solid waste:			
• Household waste	33,600	8,400	25%
• Public place bins	5,800	1,300	22%
Commercial and industrial (2015-16)	461,000	280,500	61%
Construction and demolition (2014-15)	298,500	258,400	87%
Total	805,800	549,353	68%

City of Melbourne operations

Waste generation and recycling for City of Melbourne's operations is shown in Table 2 below.

Table 4 Waste generation and recycling for City of Melbourne operations (estimated, 2016-17)²⁷

Waste source	Amount of waste generated (landfill and recycling)	Amount collected for recycling	Recycling rate
Buildings	900	200	22%
Parks and garden maintenance	600	600	100%
Illegally dumped rubbish	1,800	0	0%
Street sweepings	3,900	0	0%
Total	7,300	800	11%

²⁶ Blue Environment. (2017). *City of Melbourne waste data and projections*. (Unpublished)

²⁷ Blue Environment. (2017). As above.

Municipal waste

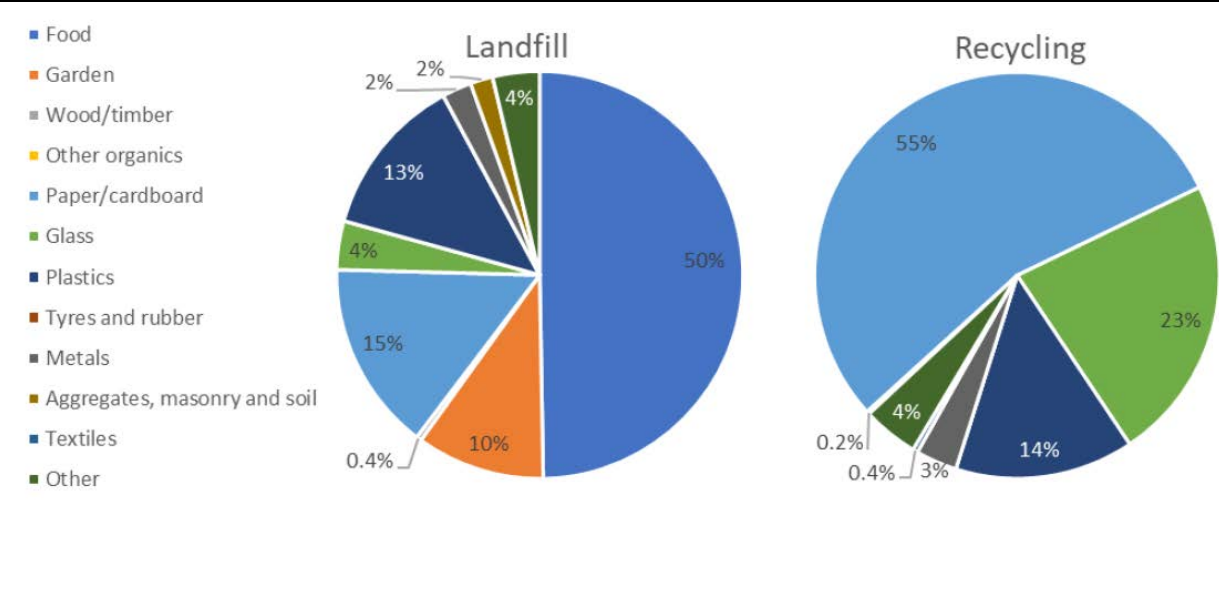
Household waste

Residents of City of Melbourne currently only recycle 25 per cent of the waste they generate. This is low compared to the Victorian average of 40 per cent²⁸ and metropolitan Melbourne average of 48 per cent²⁹ of waste recovered from municipal solid waste (which includes material generated by households, council operations and users of public spaces).

Overall satisfaction by residents is high, with a 2017 survey of 300 residents finding 86 per cent satisfaction with both garbage and recycling services. Satisfaction was lower for hard waste collection (e.g. furniture, white goods) at 57 per cent and garden materials at 47 per cent satisfaction³⁰.

The graph below details the indicative landfill and recycling composition for households in the City of Melbourne.

Figure 3 Average composition of landfill waste (Sustainability Victoria data) and recycling (CoM data)³¹



Public place bins

Public place bins are provided by City of Melbourne on streets and in parks. Users of our public spaces, including workers, students and visitors, disposed of 5,800 tonnes in public place litter and recycling bins in streets and parks during 2016-17 with approximately 22 per cent recycled. Solar-powered compacting litter bins were installed across the central city in 2018. The material collected will be sorted to recover comingled recyclables.

Commercial and industrial waste

With 16,000 business establishments and 456,000 jobs in 2016³², the commercial and industrial sector generates most of the waste in the municipality. Waste generation and recycling estimates are based upon an extensive survey and extrapolation model developed

²⁸ Sustainability Victoria. (2017a). As above.

²⁹ MWRRG. (2016). *Key Data: Metropolitan Waste and Resource Recovery Implementation Plan*. www.mwrrg.vic.gov.au

³⁰ Colmar Brunton. (2017). *City of Melbourne. Waste services research*. (Unpublished)

³¹ Blue Environment. (2017). As above.

³² City of Melbourne. (2016). As above.

in 2016³³. Actual data was not available as collections are provided by up to 40 different commercial waste and recycling companies.

Of the 461,000 tonnes of waste generated in 2016, 60 per cent was recycled. Around half of this was paper and cardboard (including secure paper destruction collections, 44 per cent was mixed recyclables or glass and the rest was made up of organics recycling (5 per cent) and other materials (1 per cent).

Hospitality and food retail businesses generated over one third of the waste despite having less than 20 per cent of employees. They also had relatively low recycling rates of 47 per cent (hospitality) and 61 per cent (food retail) when compared to other business types such as health care and social assistance (92 per cent) and office-based businesses (86 per cent recycling).

Construction and demolition waste

Construction and demolition activities primarily generate concrete, masonry and soil, metals and timber. Actual data on construction and demolition waste generation from City of Melbourne was not available as this material is managed by commercial waste and recycling collection companies. Waste volumes have been estimated based on the value of building permits issued and the overall amount of waste generated for metropolitan Melbourne³⁴.

City of Melbourne waste services and programs

City of Melbourne provides collection services, infrastructure programs and education/behaviour change programs for resource recovery and waste management.

Collection and infrastructure

The City of Melbourne provides residential properties with collection services for garbage/landfill, comingled recycling, cardboard, garden organics, hard waste items (e.g. furniture, white goods) and electronic items. Commercial rateable properties are also entitled to a weekly collection of one small garbage and one small or large recycling bin. Those businesses who generate more waste than this are required to purchase their own waste disposal service from a commercial collection provider. Electronic items can also be dropped off for recycling at three community hub/library locations, the Waste and Recycling Centre in West Melbourne and during collection events.

The City of Melbourne has established three specialised infrastructure programs. These are:

- The Degraeves Street Recycling Facility which, from a basement carpark, processes food waste and collects glass, steel, aluminium, plastic and cardboard generated from surrounding cafes and restaurants. The facility currently processes 600 kilograms of food waste per day from two machines. Participating businesses are not charged for use of the facility.
- Communal waste compactors. Five waste compactors are in place in central city laneways each taking waste from up to 130 businesses at each location. Fees apply for most businesses. The garbage compactor quarterly access fee is currently charged on the basis of low, medium and high usage levels, depending on how often the garbage compactor is used. Residents use the compactors free of charge in lieu of their rateable service.
- Recycling hubs. Free recycling is available to businesses through 55 cardboard and 65 comingled recycling bins located in twelve recycling hubs and a further 76

³³ Blue Environment. (2016). *City of Melbourne commercial waste survey, 2016*. (Unpublished).

³⁴ Blue Environment. (2017). As above.

cardboard bins in 41 laneways across the central city. The large bins are collected up to three times per day to meet demand.

Collection services are provided through the Waste Management Services Contract. City of Melbourne also has contracts for landfill disposal, sorting and on-selling of recyclables and garden waste processing. These contracts are managed by the MWRRG on behalf of City of Melbourne and other participating councils.

Behaviour change and education

The compactor, recycling hub and Degraeves Street Recycling Facility programs include a substantial behaviour change and education component, with staff working with users to increase the amount and quality of material being recovered. Other behaviour change and education programs focus on high-rise and residential recycling, home composting and organic waste, single use items and sustainable rewards.

Household recycling has been improved through programs for high-rise buildings and other residential properties. 340 buildings with more than 58,000 apartments have been engaged through the High Rise Recycling Program since it started in 2013. Improvements typically include larger recycling bins, addition of electronic recycling and clothing/household good donation bins, signage and educational materials. The program has resulted in estimated increases of 1040 tonnes of recycling, 260 tonnes of clothing/household goods and 10 tonnes of electronic items recovered annually.

Free educational materials including fridge magnets and stickers are available on request to help residents to recycle correctly. The quality of residential recycling is also improved through the annual recycling bin inspection program. During the 2016-17 inspections a total of 7,100 bins inspected. Correct recycling behaviour increased from 61 per cent of bins in the first inspection to 68 per cent in the follow-up inspection³⁵.

The City of Melbourne provides discounted compost bins, worm farms and bokashi bins through the Compost Revolution website to promote home composting of food and garden waste. Between September 2016 and February 2018, 89 households purchased an item through this service and 1,240 residents completed an educational tutorial³⁶. Worm farm installations have also been supported as an initiative of City of Melbourne's Food Policy, with 55 worm farms and 39 wicking garden beds commissioned between 2014-2017. These are located at a range of sites including City of Melbourne offices and childcare centres, city laneways, apartment buildings and community sites. In Kensington, residents have established a compost service which has been supplemented by a Closed Loop Project where residents take food organics to an off-site processing area at Kensington Town Hall. The compost generated from the food scraps will be used to 'feed' plants growing in a nearby community garden.

Other recent initiatives include:

- A fortnightly garden waste bin trial in Kensington and a part of Flemington. The trial sought membership of a minimum of 200 households to create a critical mass and make the collection investment worthwhile. Only 160 residents joined the trial with most prepared to continue with the standard monthly on call green waste collection service.

³⁵ Envirocom. (2017). *City of Melbourne Recycling Bin Inspection Program*. (Unpublished).

³⁶ Compost Revolution unpublished data.

- A trial of on-site food waste processing technology in three high-rise apartment buildings in 2015-16 with each apartment building choosing to continue to use the technology and build costs into body corporate fees.
- The single-use waste fund which provided small grants to help businesses to avoid or reduce their use of single-use items such as coffee cups. 25 businesses were awarded up to \$2000 each for activities such as providing customers with reusable cups or purchasing reusable alternatives for use in-store.

THE CHALLENGES

Population growth and high-density development

By 2030, the residential population is forecast to grow to 233,000 with a visiting population of 1.23 million people per day³⁷. Business activity is also expected to grow significantly with the number of jobs located within the City of Melbourne predicted to increase from 455,500 in 2016 to more than 627,000 in 2031³⁸. If current waste practices continue, waste generation could increase to more than 660,000 tonnes from households and the commercial and industrial sector by 2030. The City must plan to manage this growth and the potential negative environmental and amenity impacts.

High-rise apartments have traditionally had lower recycling rates than stand-alone houses. This is because convenient recycling systems were not built into older apartment buildings. Storage is at a premium and effective recycling systems are difficult to retrofit. Systems for managing specialised waste streams such as organics and e-waste will also be needed in future. Even though the problems are less evident in new developments, the challenge will be to design apartments in a way that facilitates waste reduction and resource recovery.

Greenhouse gas emissions and climate change

The production, consumption, use and disposal of goods and materials has a substantial impact on greenhouse gas emissions. By implication, unless action is taken, a growth in the amount of waste will also increase greenhouse gas emissions.

The waste sector accounted for 2 per cent of Australia's national greenhouse gas inventory in 2016-17³⁹. The inventory counted emissions from landfills, waste incineration and biological treatment of solid waste and wastewater treatment.

Because this inventory method does not take account of the impact of waste management activity beyond disposal - such as collection, recycling and transport, the real emissions levels are higher. One view suggests that the waste contribution to greenhouse gas emissions could be as high as 20-25 per cent of a city's greenhouse gas emissions⁴⁰.

Amenity impacts from waste collection

Waste storage, collection and transport within City of Melbourne can create negative amenity impacts, particularly in the densely populated central city. Bins stored in public spaces such as laneways can be unsightly and attract vermin if they are not emptied regularly. Emptying bins into collection vehicles can be very loud, particularly for bins with a lot of glass bottles. Many collections occur between the hours of 11pm and 6am to minimise traffic congestion and reduce risks to the general public but this creates late-night noise that wakes inner-city residents. Multiple bins and collection companies operating in a single laneway or precinct means that this disruption may occur many times each night.

City of Melbourne level of influence

City of Melbourne has a limited level of control and influence in the overall waste system. Design and production of materials and products is outside of City of Melbourne control and

³⁷ City of Melbourne. (2016). Residential forecasts. (Unpublished).

³⁸ City of Melbourne. (2016). Employment forecasts. (Unpublished).

³⁹ Commonwealth of Australia. (2017c). *Quarterly update of Australia's National Greenhouse Gas Inventory: June 2017*. www.environment.gov.au

⁴⁰ www.c40.org/blog_posts/waste-to-resources-an-incredible-opportunity-to-reduce-ghg-emissions-and-transform-communities

influence. The Australian Government has some ability to affect change - for example, improved packaging design as a result of the National Packaging Covenant. Advocating for stronger regulation at the national level may be an option for City of Melbourne. At its July 2017 meeting the City of Melbourne's Future Melbourne Committee endorsed a Notice of Motion in response to ABC Television's *War on Waste* series. The Motion requested that the Environment Portfolio Chair write to the Victorian Premier to formally advocate to the State Government for a state-wide ban of single-use plastic bags and reiterate our support for the introduction of a Container Deposit Scheme.

Consumption of materials and products is also limited beyond the City of Melbourne's own procurement and use decisions. Consideration of our operational procedures and policies can provide an avenue here but the overall impact may be relatively small as we are only one organisation of the many operating within the municipality.

Similarly, control and influence over waste generation, collection and disposal is largely constrained. City of Melbourne has direct responsibility over the waste generated through our own operations - buildings, events, recreation and childcare facilities. We are responsible for collecting waste from residential properties, which allows us to influence outcomes by deciding the collection systems provided and the end destination of each collection stream. The vast majority of waste generated within the municipality is within the commercial and industrial and construction and demolition sectors. Businesses and organisations in these sectors are required to make their own arrangements for waste and recycling collections, although City of Melbourne does provide some collection services to businesses through communal waste compactors and recycling hubs. City of Melbourne must identify other ways to influence these sectors, such as leading by example, supporting innovative ideas and demonstration projects, local law regulations and advocating for regulation at the state and national level.

Recycling and resource recovery system viability

The resource recovery system depends on end markets for the materials and products being collected. Victorians are strong supporters of recycling, but fluctuations in demand for recovered materials can lead to an over-supply and stockpiling and reduced recovery industry viability⁴¹. Materials such as paper and cardboard, metals and plastics are often exported for reprocessing⁴². While 86 per cent of the material collected for recycling in Victoria was reprocessed locally in 2015-16⁴³, over half of this material was comprised of aggregates, masonry and soil, which, along with other construction and demolition wastes are not usually exported due to their low value. The recent changes in global recycling markets due to the restrictions on exports of recyclable materials to China is directly impacting City of Melbourne through increased costs of sorting recyclable material, though as at April 2018, the degree of this impact is unknown as contract negotiations are still underway. The extent of the impact on recycling collections from the commercial and industrial sector is not known. The challenge is to manage the immediate implications while also developing a medium- and long-term plan to transition to a sustainable recycling and resource recovery system.

⁴¹ Sustainability Victoria. (2016). *Victorian market development strategy for recovered resources*. www.sustainability.vic.gov.au.

⁴² Sustainability Victoria. (2016). As above.

⁴³ Sustainability Victoria. (2016). As above.

Living in a throwaway society

The rise in disposable items such as food and drink containers and packaging such as plastic bags has implications for society because so many of these items have been either produced unnecessarily or are made of materials that are difficult to recycle, such as multi-layer materials. For example, Australians use an estimated 3 billion takeaway hot drink cups each year. The mix of plastic and paper in these cups makes them difficult to recycle through mixed recycling streams⁴⁴.

Plastics are widely used in packaging and other products due to their low cost and adaptable properties. Around 1.5 million tonnes of plastic waste was generated in Australia in 2013-14, with more than one third being disposable, single-use packaging⁴⁵. Littered plastic is causing an environmental problem with thousands of tonnes of plastic entering waterways and oceans each year globally⁴⁶.

Other types of items are also becoming 'throwaway' products. E-waste (electronic and electrical items) only comprises 1 per cent of the waste sent to landfill in Australia but it is one of the fastest growing waste streams⁴⁷. According to a 2015 study, Australians spend \$260 million buying almost 1.7 million small electrical items every four weeks⁴⁸. This is consistent with the huge growth in the disposal of furniture and other large items from City of Melbourne households with hard waste collections increasing from 230 tonnes in 2009-10 to 940 tonnes (with only 28 per cent recycled) in 2016-17⁴⁹. In the fashion industry, there has been a shift from quality, durable items towards cheap 'fast fashion' items that are bought and discarded after only being worn a few times.

Combatting the impact of the throwaway society is a significant cultural challenge.

CONCLUSION

Waste generation is projected to increase substantially over the life of the strategy due to increased population growth and business activity. While waste reduction is the most effective way of minimising waste management impacts, this is largely out of our control. In the mid- to long-term, alternative technologies such as waste to energy will become available. We are limited to landfill disposal of residual waste in the short- to medium-term while also pursuing alternative waste and resource recovery technologies. Therefore, a focus on reuse, recycling and recovery provides the best way forward. The circular economy model provides a basis for this approach.

⁴⁴ <http://www.sustainability.vic.gov.au/You-and-Your-Home/Live-sustainably/Single-use-items/Coffee-cups>

⁴⁵ DELWP. (2017a). *Reducing the impacts of plastics on the Victorian environment*. www.engage.vic.gov.au

⁴⁶ DELWP. (2017a). As above.

⁴⁷ DELWP. (2017b). *Managing e-waste in Victoria. Policy impact assessment*. www.engage.vic.gov.au

⁴⁸ Roy Morgan Research. (2015, 28 September). *Nothing small about the small electrical market*.

www.roymorgan.com

⁴⁹ Internal City of Melbourne waste services contract data (unpublished).

TOWARDS 2030

Council Goals

Future Melbourne

Future Melbourne identifies the community's aspirations for the City. The vision put forward in the Future Melbourne 2026 Plan is that 'in 2026, Melbourne will be a sustainable, inventive and inclusive city that is vibrant and flourishing'⁵⁰.

Council Plan 2017-2021

The City of Melbourne's Council Plan 2017-2021⁵¹ includes a goal of being 'a city that cares for its environment' whilst ensuring that:

1. Melbourne's reputation as a global city leader of sustainability is maintained
2. Melbourne is adapting well to climate change
3. Melbourne will meet its pledge to help deliver the Paris Agreement to limit global temperature rise
4. Melbourne uses its resources efficiently.

The City also aims to be a prosperous one that stimulates future growth and innovation through partnerships with government, business, the community and peak bodies. It promotes the City of Melbourne as accessible and safe, emphasising the need for Melbourne's commercial, retail and residential development and supporting infrastructure to meet the needs of a growing working and residential community.

Waste hierarchy

The waste hierarchy states that waste should be managed in order of preference: reduce (also referred to as 'avoid' or 'refuse'), reuse, recycle, recover and dispose only as a last resort. This principle is supported in Victorian Government legislation through the *Environment Protection Act 1970 (Vic)*.

Circular economy

This strategy is underpinned by circular economy thinking: where resources - including those that may have once been considered 'waste' - are valued, used efficiently and only discarded when their component materials have no further use.

A circular economy approach designs out waste wherever possible, keeps materials in use as long as possible (through repair, reuse etc.) and then returns materials to the economy through efficient recycling processes.

Studies have shown that the benefits of a circular economy are both economic (jobs growth) and environmental (greenhouse gas emission reductions)⁵².

Future direction

Goal

Our goal is to develop and introduce cost effective, environmentally responsible waste and resource recovery systems now and into the future.

⁵⁰ <http://www.melbourne.vic.gov.au/about-melbourne/future-melbourne/future-melbourne-2026-plan/Pages/vision.aspx>

⁵¹ <http://www.melbourne.vic.gov.au/about-council/vision-goals/Pages/council-plan.aspx>

⁵² See, for example, Green Industries SA (2017). *Benefits of a Circular Economy in South Australia. Summary.* www.greenindustries.sa.gov.au/circular-economy

Outcomes

Five outcomes have been identified to achieve this goal:

- The City is a leader in sustainable waste management.
- Waste to landfill is minimised.
- Cost to ratepayers is minimised.
- The waste management system is carbon neutral or better.
- Amenity impacts of the waste collection system are minimised.

The outcomes and the key elements of each are shown in Figure 4 below.

Figure 4 Strategy goal and outcomes



The City of Melbourne will rely on the support and effort of its own constituents, other levels of Government and the community as a whole to achieve the goal and outcomes. The environmental benefit of individual actions must be assessed against financial viability.

Indicators and targets

The indicators and targets for 2030 are outlined below along with a short commentary on how they have been developed and a summary provided in Table 5. The indicators will be used to evaluate the success of the strategy implementation.

City of Melbourne's operations

As the only source of waste generation that City of Melbourne can directly control, improving performance our own operations will be an important element of delivering this strategy.

Proposed indicators:

Indicator 1: Amount of waste produced: Waste generation (including garbage and recycling) from City of Melbourne buildings (kilograms per equivalent full time (EFT) employee, based on cleaning contractor data reports and EFT figure for 30 June).

- 2030 Target: To reduce the amount of material generated by City of Melbourne buildings by 30 per cent from 2016-17 baseline.
- Current performance: 55 kilograms per EFT per year (2016-17).
- Commentary: Achievement of this target relies on an assessment of current processes and behaviours that are currently causing waste to be generated unnecessarily. The most recent office waste and recycling audit demonstrated that food organics, paper and single-use items such as coffee cups were some of the main waste streams generated⁵³.

Indicator 2: Events: Waste generation and/or diversion from Council-run and major Council-financially supported events (indicator to be developed when baseline data is available).⁵⁴

- 2030 Target: to be developed when baseline data is available.
- Current performance: data unavailable, baseline data to be gathered in year one of the Strategy.
- Commentary: Some events are already achieving high recycling rates and low amount of waste disposed to landfill but a systematic and planned approach to reducing waste and increasing recovery from produced, sponsored and permitted events would provide substantial waste reduction outcomes.

Residential waste:

Residential waste outcomes can be influenced by City of Melbourne through the collection, recovery and disposal services provided to ratepayers and the requirements in waste management plans for new developments.

Indicator 1: Diversion from landfill rate: Diversion of residential waste from landfill. (Percentage of material collected by City of Melbourne from residential properties for recycling or recovery vs landfill, as reported by our waste collection contractor).

- 2030 Target: To divert 85 per cent of all residential waste from landfill.
- Current performance: 25 per cent (2016-17).
- Commentary: The 2030 target is a substantial performance improvement. This is considered to be achievable with the implementation of Alternative Waste and Resource Recovery Technology infrastructure, which can achieve up to 80-90 per

⁵³ Envirocom. (2016). *City of Melbourne office audits*. (Unpublished).

⁵⁴ At its July 2017 meeting the Future Melbourne Committee endorsed a Notice of Motion in response to ABC Television's *War on Waste* series. The Motion requested that a program be developed to support the establishment of waste reduction targets for the diverse range and scale of Council run events and Council supported events.

cent recovery rates depending on the technology type used⁵⁵. Ambitious “zero waste” targets in the order of 90 per cent have been adopted by other cities. San Francisco started this trend in 2003 by adopting a target of zero waste to landfill by 2020. They achieved an 80 per cent landfill diversion rate by 2012. Other cities have followed their leadership. For example, New York has a target of sending zero waste to landfill by 2030; Auckland City Council has a target of zero waste by 2040; City of Sydney adopted a 2030 target of diverting 90 per cent of waste from residential waste in 2017. Others have specified ‘recyclable’ waste: London: zero recyclable waste to landfill by 2026, Buenos Aires: zero recyclable waste sent to landfill by 2020

Indicator 2: Recycling quality: Quality of comingled recycling stream collected from residential properties (average percentage by weight of correctly recycled items from the most recent three annual recycling contractor audits. Correctly recycled items are those that can be recycled through the kerbside recycling bin).

- 2030 Target: For the comingled recycling stream to be 95 per cent correctly recycled items.
- Current performance: 90 per cent⁵⁶
- Commentary: The quality of the comingled recycling stream has long impacted the ability of recycling sorting companies to produce valuable end products. The importance of clean recycling stream has been heightened by China’s recent restrictions on imports of mixed and contaminated recycling streams.

Commercial and industrial waste:

Indicator: Diversion from landfill rate: Diversion of commercial and industrial waste from landfill through recycling or recovery (Percentage of material collected from commercial properties for recycling or recovery vs landfill, estimated through a repeat of the survey and extrapolation model developed in 2016).

- 2030 Target: To divert 75 per cent of all commercial and industrial waste from landfill.
- Current performance: 61 per cent (2015-16).
- Commentary: A less ambitious diversion target is proposed as the City of Melbourne does not provide C&I waste collection and disposal services. This lack of direct service provision limits our ability to influence the resource recovery outcomes as well as our ability to accurately monitor performance.

Table 5 Summary of 2030 targets

Source	Indicator	Baseline	Target - 2030
City of Melbourne operations	Amount of waste produced in CoM buildings	55 kg / EFT / year	38.5 kg / EFT / year
	Events indicator and target - to be developed when baseline is available		
Residential waste	Diversion from landfill rate	25 per cent	85 per cent
	Recycling quality	90.34 per cent	95 per cent
Commercial and industrial waste	Diversion from landfill rate	61 per cent	75 per cent

⁵⁵ Blue Environment. (2017). As above.

⁵⁶ Just Waste Consulting. (2017). *Kerbside audit of recyclables. Melbourne, Brimbank, Port Phillip and Wyndham. November 2016. Produced for SKM Recycling and MWRRG.* (Unpublished). (90.34 per cent was the average result for audits held November 2014, 2015 and 2016).

TAKING ACTION

The priorities and actions outlined in this section will move the City of Melbourne towards its goals and outcomes. The Strategy will be reviewed every four years and at each interval a new action plan will be developed.

Four priorities have been identified for the initial four-year term of the Strategy period:

- developing landfill alternatives
- stimulating innovation
- reducing, reusing, recycling and recovering waste
- reducing amenity impacts from waste collection.

Each of these priorities is outlined below and possible actions identified. While some actions can be committed to at this time, others require further investigation and assessment against a set of criteria to enable prioritisation. An assessment tool will be developed to assess and prioritise actions. The following criteria will be used:

- Environmental benefit including
 - greenhouse gas emissions reduction including transport CO² emissions and methane from landfill
 - reduced harmful metals and chemicals stored in landfill
 - reduced damage to productive land and habitat through use as landfill.
- Cost to City of Melbourne ratepayers.
- Acceptability to users and stakeholders.

City of Melbourne is one of many stakeholders that can influence the waste production, use and disposal cycle. There are some things we can control, some we can influence and others where we can only advocate. For the purposes of this strategy three possible levels of City of Melbourne involvement or activity have been specified. These are:

- Implementation - where the outcome is managed by City of Melbourne.
- Collaboration - where responsibility for the outcome is shared.
- Advocacy - where the outcome is out of our control and our degree of influence is limited.

Within the City of Melbourne there are three categories in which waste is managed:

- City of Melbourne operations - where we generate our own waste which then requires recycling or disposal.
- Households and public places - residential, public place bin and limited commercial waste collected by City of Melbourne.
- Businesses and other organisations - waste generated by businesses and organisations in both the commercial and industrial and construction and demolition sectors and collected by waste collection and disposal companies that are not part of the City of Melbourne's service.

The main areas for financial investment by City of Melbourne over the period 2018-2022 will be:

- *Priority 1: reducing, reusing, recycling and recovering waste:*
 - identifying and implementing a suite of options to assist residents and businesses to divert their food waste from landfill

- working with residents to improve recycling quality and quantity and extending our network of recycling hubs for businesses
- enabling residents to comply with the Victorian Government's landfill ban on e-waste by providing a range of recycling options.
- *Priority 2: developing landfill alternatives* - establishing an Alternative Waste and Resource Recovery Technology (AWRRT) facility, whether located in Fishermans Bend or elsewhere. More information on the amount and type of investment will be available as the procurement process continues.
- *Priority 3: stimulating innovation* - providing financial support for community, business and social sector initiatives that reduce waste to landfill through the Waste Minimisation Innovation Fund (WMIF).
- *Priority 4: reducing amenity impacts from waste collection* - extending the network of communal garbage compactors and identifying methods of minimising the amenity impacts from commercial waste services within the central city.

Priority 1: Reducing, reusing, recycling and recovering waste

The absence of alternatives to landfill disposal in the short-term means that applying the waste hierarchy levels of reduce, reuse, recycle and recover is the most effective means of reducing landfill volumes and associated environmental impacts.

Actions have been identified across five waste types/categories:

- Organics - which generate the powerful greenhouse gas methane when degrading in landfill.
- Easily recycled materials (paper/steel/aluminium/glass) - which are not being separated and recycled well in some areas (e.g. high rise apartments and small businesses) and for some materials are impacted by the current challenges facing the global recycling industry.
- Plastics and single-use items - problematic due to loss of potentially valuable resources when not recovered and pollution impacts when entering the environment, especially waterways.
- E-waste - high levels of toxicity and loss of valuable resources when not recycled.
- Other (textiles, furniture/hard waste) - increasing volumes of materials not recovered.

The reduction in off-shore recycling markets emphasises the need for further investment in Australian markets for recycled materials. The City of Melbourne will continue to engage with government and peak bodies to resolve this growing problem.

Priority 2: Developing landfill alternatives

The availability of the right mix of collection and processing infrastructure is a key element of the waste management system. Residual waste from all waste sources will continue to go to landfill in the short-term due to the absence of alternative options. If the City of Melbourne is to reach its landfill diversion target, it must radically change how it processes waste. Establishment of alternative waste and resource recovery technology (AWRRT) infrastructure should enable this in the mid-term.

AWRRTs provide an opportunity to recover materials and/or energy from material that is currently being landfilled⁵⁷. The three main types of technology are:

⁵⁷ MWRRG. (2017). *Collective procurement of municipal residual waste processing technologies: Background paper*. (Unpublished)

- Sorting, including material recovery facilities, mechanical biological treatment or mechanical heat treatment technologies
- Biological treatment, including anaerobic digestion or composting
- Waste to energy, including combustion, gasification and pyrolysis.

AWRRTs can divert up to 90 per cent of waste from landfill while producing useful products and/or energy. Some technologies have a strong commercial and technical track record, such as mass burn combustion with energy capture, anaerobic digestion and mechanical biological treatment. Ensuring that commercial and industrial waste can also be accepted at any new facilities will be important to ensure the sector target can be achieved.

The City of Melbourne is partnering with City of Port Phillip, Metropolitan Waste and Resource Recovery Group (MWRRG) and South-East Water to investigate the feasibility of a sustainability hub with shared infrastructure at Fishermans Bend. This would support the Fishermans Bend Draft Framework which included targets for 70 per cent of household waste diverted from landfill and 50 per cent of all food waste diverted from landfill by 2050⁵⁸. Food organics and bio-solids can be processed through an anaerobic digester to generate electricity and an AWRRT facility could process residual waste from both City of Melbourne and City of Port Phillip municipal areas. The concept of a sustainability hub is strongly supported.

The City of Melbourne is also involved in the development of a business case and procurement model for the establishment of an AWRRT facility through the auspice of the MWRRG. This may provide an alternative or addition to the proposed sustainability hub.

Given that the vast majority of waste within the City is generated by the commercial and industrial sector, it is important that the City of Melbourne negotiate for AWRRT facilities to cater for this sector as well as the residential sector.

The MWRRG has undertaken three collective procurement processes that enable 24 metropolitan councils to access organic waste processing sites. City of Melbourne will need to negotiate access to one of these or an alternative facility if a source separated collection service for food organics is to be established.

The proposed actions will contribute to achieving the 2030 targets and outcomes by establishing AWRRT facilities that can process residual waste from households, public places, City of Melbourne operations and businesses and other organisations.

Priority 3: Stimulating innovation

Innovation in technologies for separation and collection, new business models and products and community initiatives all provide opportunities for achieving the Strategy outcomes.

New technologies can improve service delivery. Our solar-powered litter bins provide real-time information on bin-fullness enabling collection efficiency and our communal garbage compactors track the waste deposits made by each user. Further application of smart and digital technologies could provide many other service improvements. High-rise building managers surveyed in 2017 suggested that automated notifications before collection, ability to track the collection truck and a mobile phone application to book hard waste collections would improve our services⁵⁹.

⁵⁸ State Government of Victoria. (2017). *Fishermans Bend Framework. Draft for consultation.* www.fishermansbend.vic.gov.au/framework

⁵⁹ Colmar Brunton (2017) *City of Melbourne. Waste services research.* (Unpublished).

New business models are facilitating waste reduction. City of Melbourne could support the adoption of these business models through procurement decisions, policy and regulation and direct funding support for start-ups or businesses taking on new approaches. For example, Keep Cup, one of the first widely-used reusable coffee cup products, was supported by City of Melbourne in their early stages.

Community initiatives provide an opportunity for local action. An innovative proposal has been received by the City of Melbourne for the establishment of a reuse and repair centre within the municipality. This would involve the creation of a social enterprise where items are repaired for reuse and possibly on-sold at a later date. The City of Melbourne's community grants have previously provided funding to support waste reduction and recycling projects.

A key principle of this waste strategy is to harness the innovation and creativity of the people of Melbourne through the establishment of a Waste Minimisation Innovation Fund that will ask other organisations to propose and implement solutions to divert waste to landfill. The principle here is that government is not 'picking winners' and running programs that could be better run by entrepreneurs, community groups or other organisations.

A key element of this fund will be the development of a robust evaluation tool that enables proposals to be measured against the key criteria of:

- Environmental benefit including
 - greenhouse gas emissions reduction including transport CO² emissions and methane from landfill
 - reduced harmful metals and chemicals stored in landfill
 - reduced damage to productive land and habitat through use as landfill.
- Cost to City of Melbourne ratepayers.
- Acceptability to users and stakeholders.
- Scalability across the City.

The fund would be delivered by City of Melbourne through a combination of existing and new initiatives. The City of Melbourne has provided financial support to community organisations, social enterprises and businesses through a range of grant programs over many years. City of Melbourne's Startup Action Plan 2017-21 provides a platform to support and enhance this support to innovators and entrepreneurs. The CityLab team within City of Melbourne's Smart City Office have conducted 'open innovation challenges' that stimulate the development of prototype solutions for the problems facing the city.

These actions will contribute to achieving the 2030 targets and outcomes by establishing a fund to support community and business initiatives that meet a set of agreed criteria and supporting new business models through the delivery of the Start-Up Action Plan.

Priority 4: Reducing amenity impacts from waste collection

Waste storage and collection has a large impact on amenity due to odour and visual amenity from bins stored in public spaces, noise from waste collection and congestion caused by the large number of collection trucks. These issues are expected increase in waste generation is likely to exacerbate these issues.

City of Melbourne's Activities Local Law 2009 places requirements on waste generators and waste collection companies in the central city. Waste generators may only store their bin in certain locations and when given permission by the City of Melbourne. Waste collectors are not able to collect waste from three 'restricted access areas' between the hours of 11pm and

6am daily. The implementation of this law and other central city waste programs has greatly reduced the number of bins stored permanently in the public space.

Despite these gains, there are still 40 waste and recycling companies collecting material within the central city. Whilst the same amount of waste needs to be collected, a lesser number of collectors would lead to synergies in collection and transportation and improvements in amenity.

Other stakeholders such as the Melbourne Metro Rail Authority also need to be engaged to ensure that waste management in the impacted precincts is well managed and long-term waste collection arrangements are optimal.

ACTIONS

These actions have not been costed. An economic analysis will be undertaken and recorded in the final version of this document. These actions relate to the first four years of the Plan only.

Priority 1: Reducing, reusing, recycling and recovering waste

1. *Collaborate.* Partner with the Victorian Government and local recycling industry to resolve the recent challenges for recycling collections, particularly for plastics and cardboard.
2. *Implement.* Require a detailed waste reduction and resource recovery plan to be developed or provided for all Council-run, Council financially supported and Council permitted major events and critically assess the plan.
3. *Implement.* Review City of Melbourne's procurement policies and practices to support innovative business models including recycling technologies and use recycled materials.
4. *Implement.* Undertake a review of the City of Melbourne's own operations, assess waste practices and introduce changes that build sustainability into City of Melbourne operations.
5. *Collaborate.* Partner with the local community to investigate the viability of a social enterprise-run reuse centre.
6. *Implement.* Use the City of Melbourne's communications and social media channels to promote waste avoidance, reuse and recycling.
7. *Collaborate.* Ensure that the Queen Victoria Market redevelopment maximises organic waste reduction, food rescue and recovery options.
8. *Collaborate.* Work with the food rescue charity operators to identify ways to help them expand their reach.
9. *Collaborate.* Evaluate the Kensington Town Hall communal composting hub in conjunction with users and expand to other community areas if successful.
10. *Implement.* Assess the potential costs and benefits of a bin-based organic collection for all households within the municipality and other options for managing organic waste.
11. *Collaborate.* Work with MWRRG to negotiate access to one or more organic waste processing sites.
12. *Collaborate.* Develop a plan in partnership with cafes and restaurants using communal compactors to source separate their organic waste.
13. *Collaborate.* Work with food businesses, supermarkets and high volume organic waste generators and precincts to separate and recover organics.
14. *Collaborate.* Support developers, Owners Corporation (OC) committees and/or OC- or building managers to avoid, reuse and recycle and engage with residents including high-rise, students and short-stay residents and residents in low-rise or stand-alone housing areas.

15. *Advocate.* Support the benefits of a container deposit scheme that covers a wide range of packaging items including takeaway coffee cups and advocate to the Victorian Government in favour of this scheme.
16. *Collaborate.* Support the Victorian Government's ban on plastic bags and collaborate with business on its implementation.
17. *Collaborate.* Convene a forum with the retail and hospitality sector to assist with development of a plan to fast track further reductions in the use of single use waste items within the municipality.
18. *Implement.* Establish a network of drop-off recycling hubs for soft plastics and polystyrene, large cardboard and textiles/clothing.
19. *Implement.* Enable residents to comply with the e-waste landfill ban by providing a range of recycling options.

Priority 2: Developing landfill alternatives

1. *Implement.* Subject to budget, commit to procurement arrangements that will lead to the processing of residential and commercial/industrial waste through Advanced Resource Recovery Technology facilities.
2. *Collaborate.* Partner with City of Port Phillip, MWRRG and South-East Water to develop the Fishermans Bend Sustainability Hub.
3. *Collaborate.* Partner with the Victorian Government and other Councils in the establishment of an AWRRT that services the City of Melbourne.
4. *Advocate.* Ensure that any future AWRRT facility developed in partnership with City of Melbourne can accept waste generated by the commercial and industrial sector.

Priority 3: Stimulating innovation

1. *Implement.* Establish a Waste Minimisation Innovation Fund. This Fund will be delivered through existing City of Melbourne grants programs.
2. *Implement.* Identify opportunities to support new business models through the delivery of City of Melbourne's Start-Up Action Plan.
3. *Collaborate.* Identify community-generated data sets relating to waste and litter behaviour and use these to engage the community.
4. *Advocate.* Advocate to the Victorian and Australian Government to apply extended producer responsibility requirements to drive innovation in packaging design.

Priority 4: Reducing amenity impacts from waste collection

1. *Implement.* Review the existing waste collection permit system and 'restricted access areas' to identify the potential to further improve amenity.
2. *Collaborate.* Review waste collection in the central city in conjunction with the waste industry and other stakeholders.
3. *Implement.* Extend the existing network of central city waste compactors and recycling hubs, focusing on areas where there are high numbers of cafes and eateries.

DRAFT WASTE AND RESOURCE RECOVERY STRATEGY 2030 COMMUNITY ENGAGEMENT SUMMARY REPORT

Introduction

The purpose of this engagement was to obtain stakeholder input to inform the development of the draft Waste and Resource Recovery Strategy 2030 (Draft Strategy). The goal was to ensure that the Draft Strategy was underpinned by an understanding of stakeholders' needs, challenges and aspirations.

Methodology

A dedicated page was established on the Participate Melbourne website. This provided information about the project and invited feedback and ideas through an online survey and email submissions. The survey was open from late November 2017 until 28 February 2018. The survey questions are included at Appendix 1.

A flier was produced to promote the engagement process (see Appendix 2). The flier was sent electronically to the following stakeholders:

- resident groups and associations
- resident and city workers participating in the GreenMoney sustainable rewards program
- precinct trader associations
- Victorian Waste Management Association
- Sustainability Victoria and Metropolitan Waste and Resource Recovery Group
- environmental groups: Centre for Sustainability Leadership, Alternative Technology Association, Australian Conservation Foundation, Friends of the Earth, Friends of Westgate Park, Sustainable Table Ltd, Environment Victoria and CERES.

The engagement was also promoted through the following channels:

- City of Melbourne website (sustainability and waste pages)
- City of Melbourne Green Leaflet
- Eco-City Facebook and Twitter channels
- Sustainability Victoria and Victorian Waste Management Association newsletters.

Trader associations and resident groups were offered a presentation at their member or committee meetings during December-February. Five meetings were attended to provide information and receive feedback.

Stakeholder meetings were held with representatives of Sustainability Victoria, Metropolitan Waste and Resource Recovery Group and the Victorian Waste Management Association. A meeting was also held with representatives from other metropolitan Melbourne councils to discuss alignment between council strategies.

Community engagement response

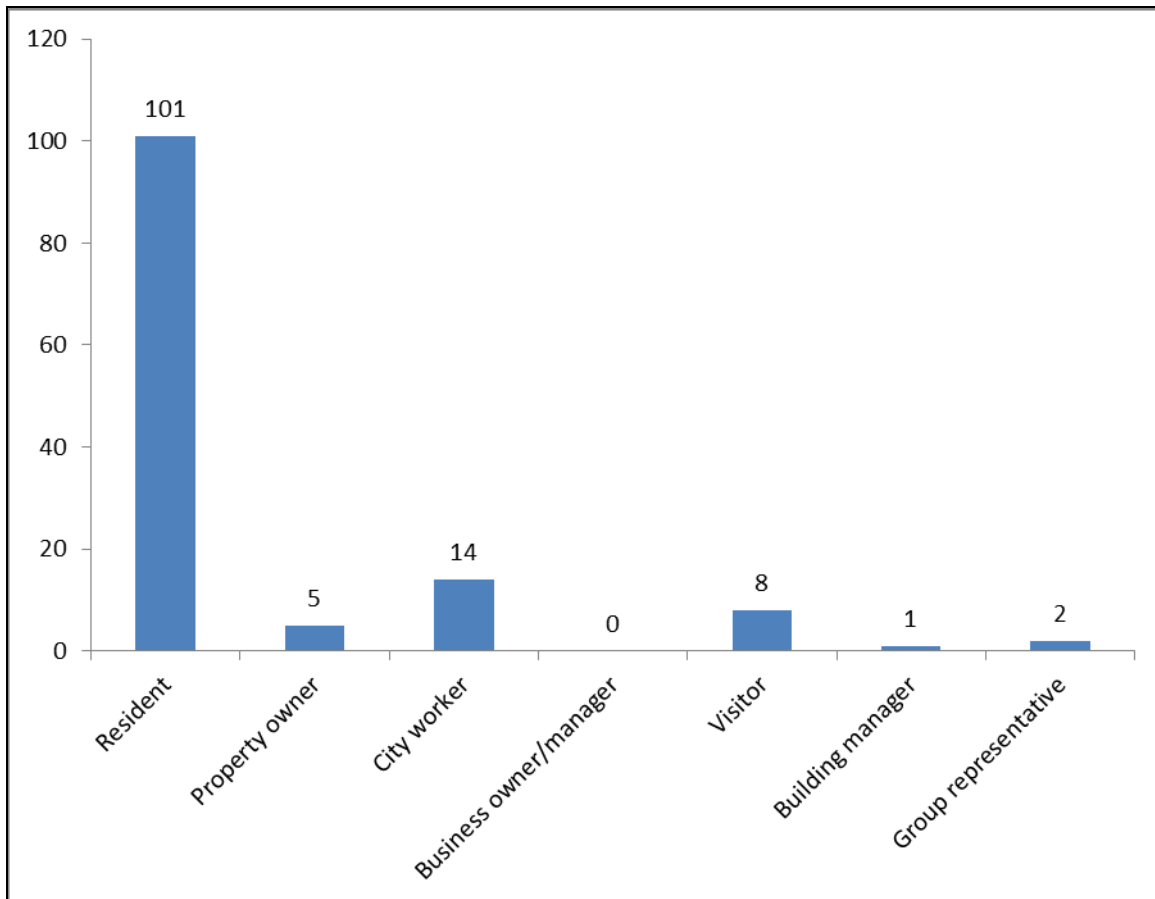
The engagement response and the main themes of the feedback received through Participate Melbourne surveys and email submissions are outlined below.

There were 1130 views of the Participate Melbourne page by 774 users (some may have viewed the page more than once). 131 online surveys were received. Figure 1 shows the number of completed online surveys by respondent type. The majority were residents (101 surveys) although some of

these also stated that they owned their property and/or worked in the city. No online surveys were completed by business owners or managers. Six email submissions were received in addition to the online survey feedback. The feedback received through the email submissions and online survey responses has been summarised and presented in Appendix 3.

Feedback was also received at the five community and resident group meetings attended: Docklands Community Forum and meetings of the Kensington Community Network and North and West Melbourne, East Enders and Parkville resident associations. The feedback received at these meetings has been collated and presented in Appendix 4.

Figure 1 Online survey respondent type



Major themes

The need for more recycling options

Respondents were recycling everything they could through their household recycling bins. Many reported that they were taking soft plastics to a supermarket for recycling and e-waste to City of Melbourne drop-off locations.

Suggestions included ways to deal with organic waste, recycling of soft-plastics, drop-off recycling options and infrastructure.

Organics, particularly food waste, was the most commonly nominated material that respondents wanted to be able to recycle and an area that City of Melbourne should provide more services. Different approaches were suggested including:

- a bin-based collection service for garden and food organics
- more support for home composting or worm farming
- providing apartment buildings with on-site composting or worm farming systems

- communal composting drop-off locations, including in the central city and public places, businesses and institutions
- supporting local community initiatives for composting
- the need for food waste collections from businesses, particularly central city supermarkets.

Soft-plastics recycling through the household recycling bin or, less preferably, through drop-off recycling hubs was also requested.

Respondents noted that they wanted drop-off recycling locations for textiles/clothing (both reusable and for recycling), large cardboard, polystyrene, e-waste and batteries. One respondent suggested a monthly reuse collection of clothing, small household items, books and e-waste. Dedicated coffee cup bins or collection points in shopping strips and central city streets were requested by some respondents.

Infrastructure improvements were also suggested, including:

- Establishing more drop-off recycling facilities including some that are accessible without a car
- Improving existing drop-off facilities including lay-out and signage at Citywide's Waste and Recycling Centre on Dynon Road. The Port Phillip Resource Recovery Centre was given as a good example by one respondent.
- Establishing waste-to-energy facilities for material that is currently going to landfill and cannot be recycled
- Providing smaller household garbage bins.

The need for improved education

Many respondents made recommendations about waste education, suggesting topics and methods. The overall message was support for City of Melbourne's role in education.

Nominated topics or areas for education were:

- How to recycle in kerbside bins – detailed information on which items can/can't be recycled, whether they need to be cleaned
- How to recycle 'difficult' items – light bulbs
- Feedback – end results/benefits of recycling, collection tonnage data
- Plastics – which types can/can't be recycled, cutting it up to make it less dangerous for animals if it becomes litter
- Sustainable consumption – reduction and reuse, recycling is only part of the solution, impacts of cheap fashion.

Suggested methods of educating included:

- Higher profile campaign - City of Melbourne website and social media as well as advertisements
- Helping others to spread the message - making material available for download, assist Owners Corporations/strata managers with induction programs and tip sheets/posters
- Face-to-face education – community workshops, school visits, education stalls at local events, community members as 'recycling champions'
- Labelling – by packaging manufacturers, simple bin labelling to assist non-English speakers
- Placing notices on bins – continue the existing bin inspection program, have collection truck drivers leave a notice.

The provision of regulation, enforcement and incentives

Suggested areas for greater enforcement and regulation included:

- Requiring recycling at individual households or businesses and in apartment blocks and commercial buildings
- Bans, taxes/levies (including container deposit schemes) or other regulation on single-use and plastic items including shopping bags, plastic straws and takeaway containers, coffee cups and polluting items
- Greater enforcement of anti-littering laws
- Greater producer responsibility, i.e. for recycling of packaging and advertising material.

Suggested incentives included:

- Subsidies for using recycled materials
- User-pays systems that allows a financial incentive for households and businesses to dispose of less waste to landfill
- Supporting innovative and sustainable business ideas
- Promoting businesses that are taking positive actions such as reducing single-use items or providing less packaging or packaging that is entirely recyclable.

Waste reduction and reuse

Respondents suggested a range of ways that waste could be reduced and reused. This included:

- Encouraging businesses to find alternatives to disposable or single-use items and promoting/supporting individuals to use reusable coffee cups and take-away containers
- Helping householders to reuse unwanted items by supporting or promoting neighbourhood swap meets, garage sales, reuse websites
- Reusing of hard waste collection items, preferably by charities
- Incentivising and supporting the establishment of repair shops, tool or appliance libraries.

City of Melbourne operations

Suggestions were made for what City of Melbourne should be doing in our own operations or activities. This included:

- Developing purchasing policies and practices to support local recycling and recycled content products
- Requiring events to have good waste management practices
- Undertaking more audits of waste bins
- Providing the community with mulch from tree maintenance in our parks and gardens
- Providing water bottle refill stations in parks.

Key stakeholder engagement outcomes

The face-to-face meetings held with key stakeholders (State Government, other councils and the waste industry representatives) identified areas where the draft Strategy could align with and support their strategic and operational goals and programs. Feedback received during these discussions was incorporated into the Draft Strategy.

Recommendations

The major themes and summaries of each survey response and submissions that are included in this report should be noted.

APPENDICES

Appendix 1: Participate Melbourne survey questions

1. What is your connection to Melbourne? (Answer options: I live here, I own a property here, I work here, I own or manage a business here, I visit the City of Melbourne, I manage a building, I am representing a group, Other)
2. Do you currently use City of Melbourne's waste and/or recycling services?
3. Are there other services that the City of Melbourne should be providing?
4. If you recycle now, which items do you recycle?
5. Which items do you send to landfill that you wish could be recycled?
6. What would make it easier for you to recycle or reduce your waste?
7. How can we improve the management of waste and recycling in the City of Melbourne?
8. Do you have any ideas for further reducing waste?

Appendix 2: Community engagement flier



Appendix 3: Feedback summaries: online survey responses

The online survey responses are listed in the order in which they were received. The feedback received from respondents has been summarised in the comment précis. The response column indicates how this feedback has been referenced in the Draft Strategy. Where the response to feedback is the same for multiple respondents, a reference is made to the previous response.

No.	Respondent type	Comment précis	Response
Email submissions			
E1	Kensington Community Network	E1.1 The submission provided a proposal for a Repair, Reuse and Recycle Hub for Kensington. The proposed Hub would be a location that offers a workplace for people and teaches repair skills to enable reuse of textile items, furniture/timber items, electronic and electrical items and bicycles. Financial support is initially being sought to prepare a more detailed business plan. Support is also requested to provide the land and assist with funding the construction of the Hub.	Thank-you. This proposal has been acknowledged in the Draft, which also includes an avenue for community initiatives to be supported through a funding program.
E2	Community group – Transition Town Kensington	E2.1 The group has developed an action plan for organic waste. This includes: <ul style="list-style-type: none"> • compost set-up service • school facilitation campaign • promoting and supporting street composting • establishing a pilot organic waste system for local cafes • public housing estate composting program • an incentive program for households to reduce their garbage bin size and convert existing bins into worm farms 	Thankyou. The Draft includes an avenue for community initiatives to be supported through a funding program.
		E2.2 The group supports a community initiative to establish a recycle and reuse hub in Kensington	Refer to response to E1.1
		E2.3 Reducing storm-water run-off	Outside the scope of the Draft.
E3	On-line e-waste service provider	E3.1 The submission is promoting an on-line platform for managing e-waste that is currently dormant but could be reactivated if City of Melbourne would like to adopt it on a commercial basis	Draft includes an avenue for business initiatives to be supported through a funding program.
E4	Property owner and resident	E4.1 Provide e-waste, battery and light globe recycling collection points that are easily accessible i.e. at all libraries	Draft includes an action to establish convenient drop-off locations.
		E4.2 Queen Victoria Market should be established as a world-class facility in regards to management of food and general waste and should be totally plastic bag free	Draft includes action so as Queen Vic Market maximises organic waste reduction, food rescue and recovery options.
		E4.3 Fines should be applied to landlords or managing agents who allow tenants to move out and dump	City of Melbourne already enforces illegal dumping

No.	Respondent type	Comment précis		Response
			their unwanted items	but supports sanctions against the person dumping the rubbish.
E5	Property owner and resident	E5.1	High density living has challenges but there are innovations that could be explored in three areas: <ul style="list-style-type: none"> apartment: e.g. in-house dehydrators either for individual apartments or shared; sharing programs building: e.g. supporting resident induction, providing educational material for notice-boards precinct/neighbourhood: turning waste into something of value, such as the 'Trashpresso' mobile recycling unit, local options for value-exchange, incorporating a focus on high-density living into existing activities such as Climathon. 	The Draft includes an action to engage with high-rise and other residents. This will include consideration of the suggestions provided. The Draft includes a proposed Waste Minimisation Innovation Fund which could be used to support innovations such as the 'Trashpresso'.
		E5.2	Engagement could be improved with the corporate sector to reduce littering of cigarette butts by workers in Docklands.	Our engagement program Cityswitch will be used as a platform to engage organisations regarding littering behaviour of staff.
E6	Individual (unspecified)	E6.1	Provide a food waste collection service	The Draft supports food waste collection and discusses options.
		E6.2	Educate the public on how much waste is generated, where the landfill is taken and how recycling is managed	CoM will review the waste education material on its website taking this feedback into account.
Online submissions				
1	Resident	1.1	Include soft plastics in kerbside recycling	The Draft includes an action to establish drop-off locations for soft plastics. This is an alternative to kerbside recycling because this item isn't able to be sorted by service provider.
		1.2	Provide education and assistance for small apartment blocks	Included in the Draft through action on engagement of residents.
		1.3	Place a recycling bin next to each public litter bin	Solar-powered compacting bins are being installed in the central city with a single-stream collection rather than separate bins. This enables a far more efficient collection process and for material to be sorted for recycling.
		1.4	Support community compost initiatives	Included in the Draft through support for

No.	Respondent type	Comment précis		Response
				community initiatives.
2	Resident	2.1	Provide easier access to chemical waste recycling	Residents have access to chemical waste recycling through the Victorian Government's Detox your Home program. CoM will review program availability.
		2.2	Include soft plastics in kerbside recycling	Refer to response to 1.1
		2.3	Provide comprehensive composting services including support for local composting initiatives <ul style="list-style-type: none"> Compost/green bin collection available for households and apartments Composting support for businesses Supporting local composting initiatives 	Draft includes investigation of organic waste services and support for community initiatives.
		2.4	Provide clearer and comprehensive instructions on what is or is not recyclable	We provide instructions through our website. If there are any areas that need clarification please let us know.
		2.5	Improve signage and instruction at the Waste and Recycling centre at Dynon Road	CoM will liaise with the management of the Waste and Recycling Centre at Dynon Road to investigate site improvements.
3	Resident	3.1	Recycling drop-off options for items that cannot be recycled through the kerbside bin would be beneficial, including: ink cartridges, CDs, toiletry bottles, soft plastics, e-waste.	The Draft includes an action to establish drop-off locations for most of these items.
		3.2	Include soft plastics in kerbside recycling	Refer to response to 1.1
		3.3	Provide education and assistance for small apartment blocks	Refer to response to 1.2
4	Resident	4.1	A bin-based compost collection service from the household would make it easier to recycle/reduce waste.	The draft includes an action to undertake an assessment of a bin-based collection and other options for managing organic waste.
5	Resident	5.1	Provide a bin-based organic waste collection, especially for those in apartments or houses without space for a compost bin	Refer to response to 4.1
		5.2	Include soft plastics in kerbside recycling	Refer to response to 1.1
		5.3	Use recycled plastic in City of Melbourne capital works	Included in the Draft through action to review CoM's procurement.
6	Resident	6.1	Provide a bin-based organic waste collection service for households	Refer to response to 4.1
7	Resident	7.1	Provide a bin-based organic waste collection for households including a small container for food	Refer to response to 4.1

No.	Respondent type	Comment précis		Response
		7.2	Include soft plastics in kerbside recycling	Refer to response to 1.1
		7.3	Improve Waste and Recycling Centre at Dynon Road by separating garbage trucks and household users	Refer to 2.5
8	Worker	8.1	Provide options for disposing of organic waste such as community hubs across the city without the need to access a car	Refer to response to 4.1
		8.2	Establish drop-off points across the city for items that cannot be recycled through the kerbside bin including e-waste	Refer to response to 3.1
		8.3	Look to other countries (e.g. South Korea) for technologies to capture food waste	Other countries' systems will be considered when assessing options for managing organic waste.
		8.4	Provide more funding for viral, inspiring education that is fun and engaging	Potentially able to be funded through the proposed Waste Minimisation Innovation Fund.
9	Worker	9.1	Provide organic waste collection	Refer to response to 4.1
		9.2	Provide soft plastics recycling	Refer to response to 1.1
		9.3	Provide free e-waste drop-off sites	Refer to response to 3.1
		9.4	Further ideas to reduce waste include: <ul style="list-style-type: none"> regulate materials used in coffee cup production place a tax on single use items provide subsidies for recycled materials 	The Draft includes actions to address single-use items and improve markets for recycled materials.
10	Resident	10.1	Community composting bins would make it easier to recycle/reduce waste	Refer to response to 4.1
		10.2	Improve Waste and Recycling Centre at Dynon Road by ensuring consistency in charging by different personnel	Any inconsistencies in charging can be reported to City of Melbourne by calling 9658 9658.
		10.3	Charging businesses for recycling of advertising material could assist in reducing waste.	Noted, concerned that this would be difficult to administer and not supported by the business sector.
11	Worker	11.1	Provide soft plastic recycling bins for commercial buildings	Not included in the Draft but businesses and workers could use the drop-off locations that have been proposed in the Draft.
12	Worker	12.1	Litter bins need to be emptied more frequently, especially near event locations such as Etihad	Issue reported to our waste contractor. Please help us by reporting overflowing litter bins to City of Melbourne by calling 9658 9658.

No.	Respondent type	Comment précis		Response
		12.2	More recycling bins should be placed around the city	Refer to response to 1.3
13	Resident	13.1	Provide green waste or composting collection	Refer to response to 4.1
		13.2	Include soft plastics in kerbside recycling	Refer response to 1.1
14	Resident	14.1	Expand the range of items collected in kerbside recycling	The range of items collected at kerbside recycling will be expanded in future subject to the resolution of the current challenges in global and local recycling systems.
		14.2	Provide composting collection for apartment buildings	Refer to response to 4.1
		14.3	In Sweden, old waste disposal chutes are sealed to encourage recycling	Feedback noted
15	Resident	15.1	No suggestions made	N/A
16	Resident	16.1	Include soft plastics in kerbside recycling	Refer to response to 1.1
		16.2	Provide mulch to the community from council's tree maintenance operations	Not referenced in Draft. This feedback will be provided to the parks services team for consideration.
		16.3	Increase advertising of what is recyclable	Refer to response for 8.4
17	Worker	17.1	No feedback provided	N/A
18	Resident	18.1	Provide a bin-based organic waste collection or drop-off composting locations	Refer to response to 4.1
19	Resident	19.1	Expand the range of items collected in kerbside recycling	Refer to response to 14.1
		19.2	Adopt a purchasing policy for recycled content materials and goods	Included in the Draft through action to review CoM's procurement.
20	Resident	20.1	Drop-off composting locations would make it easier to reduce waste	Refer to response to 4.1
		20.2	An advertising campaign is needed to raise awareness of items that can be recycled	Refer to response for 8.4
21	Resident	21.1	Provide drop-off composting locations	Refer to response to 4.1
		21.2	Provide drop-off recycling locations for polystyrene	Refer to response to 3.1
		21.3	More recycling bins are needed on St Kilda Road	City of Melbourne has consolidated the number of litter and public place recycling bins as part of the roll-out of solar-powered compacting bins. This location will be considered for future extensions of the solar bin program.
		21.4	More water-bottle refill stations could reduce	Actions to reduce single-

No.	Respondent type	Comment précis		Response
			plastic bottle use	use plastics have been included in the Draft.
22	Resident	22.1	Provide soft-plastic recycling	Refer to response to 1.1
		22.2	Provide a bin-based organic waste collection	Refer to response to 4.1
		22.3	Regulations to reduce use of food packaging, plastic containers, cutlery and straws could reduce waste	Included in Draft through actions to reduce single-use items.
		22.4	Smaller grocery shops often have over-packaged products	Feedback noted
23	Resident	22.1	Provide a bin-based organic (food and garden) waste collection	Refer to response to 4.1
		22.2	Supports a container deposit scheme	Draft includes an action to assess container deposit scheme benefits.
		22.3	Waste could be reduced through education on where waste and recycling is going and how much is recycled each day	Refer to response to 8.4
24	Visitor	24.1	Encourage alternatives to disposable products, e.g. coffee cups, straws, any polystyrene products, plastic soy sauce 'fish', plastic water bottles	Refer to response to 22.3
		24.2	Promote businesses that reduce disposable products by providing signage to acknowledge their efforts	Refer to response to 22.3
25	Resident	25.1	Provide a bin-based organic (food and garden) waste collection	Refer to response to 4.1
		25.2	Provide twice-yearly kerbside collections of e-waste and hard waste	The Draft includes actions to improve recovery of e-waste. Hard waste collections are available twice annually.
		25.3	More bulk food shops would make it easier to reduce waste	The Draft includes actions to support business and community initiatives to reduce waste.
26	Visitor	26.1	Clear labelling and consistency of kerbside recycling bin contents and bin colours across all Councils would make it easier to recycle	Referenced in the Draft through an action seeking this consistency of presentation across Councils
		26.2	Drop-off composting locations should at least be trialled	Refer to response to 4.1
27	Property owner	27.1	Provide a bin-based food waste collection from central city and supermarkets	The Draft includes an action to collaborate with supermarkets and food businesses on food waste recovery.
		27.2	Less packaging on products and making more bulk food available would make it easier to reduce waste	Referenced in the draft through an action for advocacy for more extended producer

No.	Respondent type	Comment précis		Response
				responsibility to encourage manufacturers, shops and businesses to improve packaging design and labelling. Refer to response to 25.3 re: bulk food stores.
		27.3	More clarity on what can be recycled and how it is sorted would improve waste management	Refer to response to 8.4
		27.4	Regulations for using reusable coffee cups would reduce waste	Refer to response to 22.3
		27.5	Supports a container deposit scheme	Refer to response for 22.2
28	Resident		No specific suggestions	N/A
29	Resident	29.1	Provide a bin-based organic (food and garden) waste collection	Refer to response to 4.1
		29.2	Provide e-waste drop-off sites	Refer to response to 3.1
		29.3	Lockable bins should be provided to stop over-filling	Residents are allowed to lock bins providing they are unlocked on collection day. Overflowing bins can be reported to our customer service centre.
		29.4	City of Melbourne should provide a solution to take-away coffee cups	Refer to response to 22.3
		29.5	Supports a ban on plastic shopping bags	Referenced in the Draft through an action to support the Victorian State Government's ban on plastic bags.
		29.6	Supports a container deposit scheme	Refer to response for 22.2
30	Resident	30.1	Provide a bin-based green waste collection	Referenced in the draft through an action to assess the costs and benefits of a bin-based organic collection
31	Resident	31.1	Provide a bin-based green waste collection	Refer to response to 30.1
		31.2	Supports action or ban on plastics and other pollutants	Refer to response to 22.3
		31.3	More enforcement and higher fines are needed for littering including cigarette butts and those who do not clean up after their dog	Feedback noted and passed to our compliance staff.
32	Resident	32.1	Provide a bin-based organic waste collection	Refer to response to 4.1
		32.2	Support high rise buildings to increase recycling	Refer to response to 1.2
33	Property owner	33.1	Provide a bin-based green waste collection	Refer to response to 30.1
34	Resident	34.1	Drop-off composting locations should be provided and apartments provided with worm farms	Refer to response to 4.1
		34.2	Subsidies for sustainable products should be provided. Other councils have a better discount	Refer to response to 4.1

No.	Respondent type	Comment précis		Response
			through the Compost Revolution	
		34.3	Classes and workshops should be provided	Refer to response to 8.4
35	Resident	35.1	Provide drop-off recycling locations for e-waste and batteries in the central city and advertise these well	Refer to response to 3.1
		35.2	Recycling locations must be convenient and free – must be located within apartment buildings as people will not carry material elsewhere	Feedback noted. Not referenced in the Draft, which seeks to establish drop-off locations for recyclables. Residents may advocate for individual apartment facilities.
36	Resident	36.1	Provide a bin-based organic waste collection	Refer to response to 4.1
		36.2	Include soft plastics in kerbside recycling	Refer to response to 1.1
37	Resident	37.1	Less unnecessary plastic packaging would assist in reducing waste	Refer to response to 27.2
38	Resident	38.1	Material should be processed in an advanced waste treatment plant rather than sent to landfill	Referenced in the Draft through Priority 1
		38.2	Clearly labelled recycling waste and a comprehensive education strategy will help to reduce and recycle waste	Refer to response to 8.4
		38.3	Information on the destructive aspects of cheap fashion and schools education will improve waste and recycling	Refer to response to 8.4
39	Property owner	39.1	Expand the range of items collected in kerbside recycling	Refer to response to 14.1
		39.2	Provide incentives for businesses to reduce packaging and plastic bags	Refer to response to 22.3
40	Resident	40.1	Drop-off composting locations should be provided	Refer to response to 4.1
		40.2	Greater availability of products with less packaging and incentives to use reusable takeaway containers (not just coffee cups) would make it easier to reduce waste	Refer to response to 22.3
41	Resident	41.1	Drop-off composting locations in public spaces and free provision of compost bins and worm farms at home	Refer to response to 4.1
		41.2	Provide convenient drop-off locations for plastic bags and other waste including e-waste, corks, batteries	Refer to response to 3.1
		41.3	Support community groups through grants	Refer to response to 1.4
42	Resident	42.1	More rubbish bins are needed in Royal Park	Feedback noted and passed to our park services staff to review.
43	Resident	43.1	Include soft plastics in kerbside recycling	Refer to response to 1.1
		43.2	Supports a container deposit scheme	Refer to response for 22.2
		43.3	Clothing recycling would assist with reducing waste	Referenced in the draft through action to increase clothing recovery through

No.	Respondent type	Comment précis		Response
				drop-off locations.
44	Owners Corporation Chairperson	44.1	Hard waste collection and removal timing should be more flexible	It is difficult for our contractor to specify a time because they are collecting from many properties each day. However we will discuss the issue with our contractor.
		44.2	Work with Owners Corporations to get the best outcomes for owners and ratepayers	Not referenced directly but noted for future engagement
45	Resident	45.1	Provide annual e-waste and battery collections	The Draft includes actions to support residents to comply with the e-waste ban.
		45.2	Provide convenient drop-off locations for plastic bags and batteries	Refer to response to 3.1
		45.3	A reward scheme for producers and retailers who use recyclable packaging could help to reduce waste	Not referenced in the Draft
46	Property owner	46.1	Provide a bin-based organic waste collection for apartments and houses	Refer to response to 4.1
		46.2	Include soft plastics in kerbside recycling	Refer to response to 1.1
47	Resident	47.1	Provide a bin-based organic waste collection for residents	Refer to response to 4.1
		47.2	Provide compost bins for restaurants and bakeries. Incentives and easy methods for all hospitality businesses across the city to recycle and compost their waste would reduce waste.	Supported in the Draft through actions on commercial organic waste.
		47.3	Convenient drop-off bins for items that cannot be recycled through the kerbside bin would make it easier to recycle	Refer to response to 3.1
		47.4	A user-friendly website or app that can be searched to find out where and how to recycle everything would make it easier to recycle	Not referenced directly but the Draft but education materials are reviewed on a regular basis.
48	Resident	48.1	Provide a bin-based organic waste collection for residents	Refer to response to 4.1
		48.2	Provide more frequent e-waste collection	Refer to response to 45.1
		48.3	More compacting public garbage bins and cigarette butt bins in parks and near bus or tram stops should be provided	Placement of bins can be requested for a specific location by calling 9658 9658.
49	Resident	49.1	Drop-off bins for soft plastics	Action included in the Draft
		49.2	E-waste and battery recycling at City Library	Refer to response to 45.1
50	Resident		No suggestions provided	N/A
51	Resident	51.1	Drop-off bins for soft plastics	Action included in the Draft

No.	Respondent type	Comment précis		Response
		51.2	E-waste and battery recycling at City Library	Refer to response to 45.1
		51.3	Mandate businesses to stop using single-use coffee cups	Not referenced directly in the Draft but actions on single-use items are included.
		51.4	City of Melbourne policies should support zero-waste business operations	Refer to response to 25.3
52	Resident	52.1	Provide a bin-based food waste collection	Refer to response to 4.1
		52.2	Provide drop-off bins for soft plastics	Action included in the Draft
53	Resident	53.1	Provide a some way of recovering food waste	Refer to response to 4.1
		53.2	Fully co-mingled recycling bins in apartment buildings	Feedback noted. Separate bins are provided in apartment buildings to help residents and building managers manage the large volumes (eg. cardboard boxes). Staff continue to work with apartment buildings on this issue.
		53.3	Simpler labelling for recycling bins, particularly to support non-English speaking residents	Refer to response to 8.4
54	Resident	54.1	Provide a bin-based garden waste collection	Refer to response to 4.1
		54.2	Drop-off composting locations should be provided in the central city and public places, business and institutions	Refer to response to 3.1
		54.3	Provide coffee cup recycling	Not referenced directly in the Draft but actions on single-use items are included.
		54.4	Include soft plastics in kerbside recycling	Refer to response to 1.1
		54.5	Use advertising and innovative media and school campaigns to promote recycling.	Refer to response to 8.4
55	Worker	55.1	Place a recycling bin next to each public litter bin and collect street bins more often so they do not overflow and create litter	Refer to response to 1.1
		55.2	Provide drop-off bins on the street for soft plastics recycling and collection of food waste	Refer to responses to 3.1 and 4.1
		55.3	Cleaning companies and city workplaces/ buildings could reduce waste by reducing the number of bin liners being used	Feedback noted and will be included in our engagement with businesses on waste.
		55.4	Encouraging worm farms in city buildings could reduce waste	Refer to response to 47.2
56	Resident	56.1	More street litter bins are needed in Kavanagh Street, Southbank	City of Melbourne has consolidated and reduced the number of litter and public place recycling bins as part of the roll-out of solar-powered compacting

No.	Respondent type	Comment précis		Response
				bins. This location will be considered for future extensions of the solar bin program.
		56.2	Provide a bin-based food waste collection	Refer to response to 4.1
		56.3	Finding a charity to accompany the hard waste collection truck could divert items for reuse rather than landfill	This is already underway through the current waste services contract.
57	Resident	57.1	Provide a bin-based food waste collection	Refer to response to 4.1
		57.2	Supports a container deposit scheme with 'reverse vending machines' or other means for receiving payment for collecting recyclables	Refer to response for 22.2
		57.3	Support business or community initiatives for repair, reuse and making goods from recycled materials	Refer to response to 1.4
		57.4	Businesses should be made responsible for their waste, especially single-use plastics, possibly through a charge on single-use plastics	Refer to response for 27.2
58	Resident		No feedback provided	N/A
59	Visitor	59.1	More hard waste collections, options for e-waste recycling and drop-off recycling points would all assist in reducing waste and increasing recycling	Refer to response to 3.1
		59.2	Education and workshops would reduce waste	Refer to response to 8.4
		59.3	Reusable products are a better option than recycling	Feedback noted. This is supported in the Draft which references the waste hierarchy.
60	Worker	60.1	The 'Composta' worm farm is a good small-scale option and also is a herb-farm	This product will be recommended to Compost Revolution for inclusion in their range of subsidised items.
		60.2	Provide soft-plastics recycling	Refer to response to 1.1
		60.3	More swap meets and garage sales would help to reduce waste	Referenced in the Draft through action to promote existing opportunities for reuse
		60.4	Guidelines/requirements for events would reduce waste	Referenced in the Draft through actions on events
61	Worker	61.1	Provide soft-plastics recycling	Refer to response to 1.1
		61.2	Expand the range of items collected in kerbside recycling	Refer to response to 14.1
		61.3	Educate the public through clearer labelling of bins and interactive pop-up recycling hubs	Refer to response to 8.4
62	Worker	62.1	Litterers should be fined by City of Melbourne	Refer to action 31.3
		62.2	Supports the use of the solar compactor bins as long as pedestrian space is retained	Feedback noted. The placement of compactor bins does consider

No.	Respondent type	Comment précis		Response
				pedestrian access.
63	Resident	63.1	Provide apartment buildings with on-site composting machines	Refer to response to 4.1
		63.2	More recycling bins and more education would improve waste management	Refer to response to 8.4
64	Resident	64.1	Higher profile education campaigns should be provided on all waste and recycling aspects, through events, advertising and websites	Refer to response to 8.4
		64.2	Waste could be reduced through neighbourhood swap meets and being able to leave 'free' items on the kerbside for others to take	Refer to response for 60.3
		64.3	Innovative industries should be incentivised to take more waste for recycling	Feedback noted. Referenced in the draft through support for innovative business initiatives.
		64.4	Residents should be provided with an incentive to use a worm farm or compost bin at home	Refer to response to 4.1
65	Resident	65.1	Provide a bin-based organic (garden and food) waste collection	Refer to response to 4.1
		65.2	A larger recycling bin would make it easier to recycle	Larger recycling bins are available on request
66	Resident	66.1	Provide a bin-based organic (garden and food) waste collection	Refer to response to 4.1
		66.2	Include soft plastics in kerbside recycling	Refer to response to 1.1
		66.3	Clear information on what items can be recycled and whether they need to be cleaned would make it easier to recycle	Refer to response to 8.4
		66.4	Information should be provided on cutting up plastic to make it less dangerous for animals	Refer to response to 8.4
67	Resident	67.1	Provide a bin-based garden waste collection	Refer to response to 4.1
		67.2	Bins from Parkville Gardens estate apartment buildings can create litter when over-filled	Over-flowing bins and litter issues can be reported by calling 9658 9658.
68	Visitor	68.1	Public place recycling bins should be provided inside and outside at Southgate and across the central city	Refer to response to 1.1
69	Group submission	69.1	Large scale provision of a full suite of waste segregation services should be provided	Not referenced directly in the Draft but it does include actions to address organics and other recyclable materials.
		69.2	More soft plastic recycling drop-off locations should be provided.	Refer to response to 1.1
		69.3	City of Melbourne greening strategies should be expanded to combat air pollution	Outside the strategy scope
		69.4	Electric car concessions should be provided	Outside the strategy scope
			The following would make it easier to recycle:	

No.	Respondent type	Comment précis		Response
		69.5	A dedicated soft-plastics recycling collection	Refer to response to 1.1
		69.6	Dedicated coffee cup recycling bins	Refer to response to 54.3
		69.7	Material that can be downloaded and used for education	Our website has recently been upgraded to include downloadable educational materials.
		69.8	Drop-off points for polystyrene	Refer to response to 3.1
		Waste and recycling management could be improved in the City of Melbourne by:		
		69.9	Mandated minimum recycling content in contracts	Referenced in Draft through action to review CoM's procurement.
		69.10	Communal services e.g. facilitate apartment dwellers to participate in soft plastic collections or community organics/composting	Refer to response to 3.1
		Further ideas to reduce waste are:		
		69.11	Provide feedback on end results of recycling	Refer to response to 8.4
		69.12	Incentivise retailer participation in Responsible Cafes	Not referenced directly in draft but actions are included on single-use items.
		69.13	Supports a ban on plastic bags	Referenced in the Draft through action to support the Victorian State Government's ban on plastic bags.
		69.14	Increase composting by subsidising organics diversion and expanding industrial composting access	Potentially able to be funded through the proposed Waste Minimisation Innovation Fund.
		69.15	Encourage reusable take-away containers	Refer to response to 22.3
70	Resident		No feedback provided	N/A
71	Resident		No feedback provided	N/A
72	Resident	72.1	Recycling should be provided to all properties	All rateable properties are entitled to a recycling collection.
73	Resident	73.1	Provide an organic waste collection	Refer to response to 4.1
		73.2	Impose strong penalties for incorrect recycling	Not referenced in the Draft. An action to engage residents to improve recycling is included rather than an enforcement approach.
		73.3	Reducing plastic packaging in retailers and on products could assist in reducing waste	Feedback noted. The Draft includes an action to advocate for more extended producer responsibility.

No.	Respondent type	Comment précis		Response
		73.4	Supports a ban on plastic shopping bags	Refer to response to 69.13
74	Visitor	74.1	Provide more bins for cigarette butt disposal	Requests for cigarette butt bins to be installed in specific locations can be made by calling 9658 9658
		74.2	Stronger enforcement of anti-littering laws	Outside the scope of the Draft
75	Resident	75.1	Provide a bin-based organic (food) waste collection	Refer to response to 4.1
76	Resident	76.1	Provide an outlet for the compost and fluid generated by household worm farms and other organic waste	Not referenced directly in the Draft but the if the Kensington Composting Hub or future similar locations could provide this outlet.
		76.2	Provide a kerbside collection of excess goods for charity/donation	Not directly referenced in the Draft but actions to increase reuse options have been included.
		76.3	Providing larger or multiple recycling bins could improve waste management	Larger recycling bins are already available.
		76.4	Food waste avoidance would further reduce waste	Included in the Draft through an action to promote waste avoidance.
77	Resident	77.1	Provide a small recycling bin	Smaller recycling bins are already available on request
78	Property owner	78.1	Consider community composting and worm farming initiatives	Refer to response to 1.4
		78.2	Include soft plastics in kerbside recycling	Refer to response to 1.1
		78.3	Providing smaller garbage bins or charging more for larger bins could encourage waste reduction	Differential charging is not referenced in the Draft due to the large proportion of residents who share their bins. This makes individual charging difficult.
		78.4	The Compost Revolution program should be promoted more widely	Noted.
		78.5	Drop-off recycling locations in each suburb for items like large pieces of cardboard, batteries and polystyrene would be useful.	Refer to response to 3.1
79	Resident	79.1	Provide a bin-based food waste service and on-site processing (compost) for large buildings	Refer to response to 4.1
80	Resident	80.1	Include soft plastics in kerbside recycling	Refer to response to 1.1
		80.2	Provide more convenient and more frequent e-waste collections	Refer to response to 45.1
		80.3	Allow residents to take items from the e-waste collections for reuse	This is not possible due to concerns regarding privacy

No.	Respondent type	Comment précis		Response
		80.4	More or better reuse sites (like Zilch) would make it easier to reduce waste	Noted. Potentially able to be funded through the proposed Waste Minimisation Innovation Fund.
		80.5	Litter bins should either be paired with recycling bins or the material should be sorted for recycling	Refer to response to 1.3
		80.6	Improving labelling of recyclability on packaging material would assist to reduce waste	Refer to response for 27.2
81	Resident	81.1	Provide a bin-based food waste collection	Refer to response to 4.1
		81.2	Enforcing recycling at apartment buildings, offices, retail and other businesses would help to reduce waste	Refer to response to 73.2
82	Resident	82.1	Provide a bin-based garden waste collection	Refer to response to 4.1
		82.2	Community composting locations would make it easier to reduce waste	Refer to response to 4.1
		82.3	Provide reliable drop-off points for soft plastic recycling	Refer to response to 3.1
83	Resident	83.1	Provide different forms of composting that are easily accessible	Refer to response to 4.1
		83.2	Provide more e-waste drop-off locations that are accessible without a car	Refer to response to 3.1
		83.3	Incentivising or requiring (through regulation) shops and businesses to reduce or eliminate plastic packaging would assist in reducing waste	Refer to response for 27.2
		83.4	More education on recycling, including that recycling is only part of the solution and waste should be avoided if possible would improve waste management	Refer to response to 8.4
84	Resident	84.1	Provide composting services	Refer to response to 4.1
		84.2	Less packaging on products would assist to reduce waste	Refer to response for 27.2
		84.3	The bin inspection program tags that are plastic and can't be recycled in the household recycling bin should be made from stiff paper instead	Cardboard tags would not be durable enough for this program.
85	Resident	85.1	Compost sharing schemes would make it easier to reduce waste	Refer to response to 4.1
		85.2	Extending advertising and liaising with primary schools could improve waste management	Refer to response to 8.4
		85.3	Supports a container deposit scheme	Refer to response for 22.2
		85.4	Supports extended producer responsibility for manufacturers to have responsibility for their own packaging	Refer to response for 27.2
		85.5	Discounts for households or businesses for producing less waste could reduce waste	Refer to response 78.3
86	Resident	86.1	Community composting bins should be provided	Refer to response 4.1
		86.2	Educate all residents and support them to reduce waste, compost their food waste and recycle	Refer to response to 8.4

No.	Respondent type	Comment précis	Response
		correctly	
		86.3 Collection truck drivers should leave a notice for residents with over-filled bins and the bin should not be collected if over-filled in the following week	Over-flowing bins can be reported by calling 9658 9658.
87	Resident	87.1 Separate bins should be provided for different types of recyclable materials: glass, paper, metal, plastics	Not referenced in the Draft. Future changes to the kerbside recycling system will reflect the processes in place by recycling companies.
		87.2 Community composting bins should be provided	Refer to response to 4.1
88	Worker	88.1 Staff at City of Melbourne and in other organisations should be encouraged to take home shredded paper for use as garden mulch	Not directly referenced in the Draft but a review of waste practices in City of Melbourne operations is been included.
		88.2 Providing residents with user-friendly compost bins would help to reduce waste	Refer to response to 4.1
89	Resident	89.1 Provide hard waste collections twice yearly	Hard waste collections are available twice annually: once as part of the annual Spring Clean promotion in Oct-Dec and at one other time on request.
		89.2 More instructional education for apartment residents would make it easier to recycle	Refer to response to 8.4
		89.3 Demonstrating the benefits and outcome of recycling could help to reduce waste	Refer to response to 8.4
90	Resident	90.1 Include soft plastics in kerbside recycling or provide drop-off locations	Refer to response to 1.1
		90.2 Provide coffee-cup recycling bins in retail areas and central city streets	Refer to response to 54.3
91	Resident	91.1 Supports a deposit on disposable coffee cups	Refer to response to 22.2
		91.2 Provided details of a local reusable cup product	Noted
92	Resident	92.1 Supports a waste-to-energy facility for residual waste	Refer to response to 38.1
		92.2 Improved labelling of bins and a comprehensive and long-term education campaign would make it easier to recycle	Refer to response to 8.4
		92.3 Waste management could be improved through less consumption, more information on the destructive aspects of cheap fashion, educating in schools and employing people to care for the local environment	Refer to response to 8.4
		92.4 Supports business responsibility for their own waste	Refer to response for 27.2
93	Resident	93.1 Provide a polystyrene recycling option	Refer to response to 3.1
		93.2 A sticker on the household recycling bin would make it easier to recycle	Refer to response to 8.4

No.	Respondent type	Comment précis		Response
		93.3	Providing a drop-off facility similar to Port Phillip Resource Recovery Centre would improve waste management	The Draft includes an action to establish drop-off locations.
		93.4	Television advertisements to promote recycling may assist to reduce waste	Television advertising costs would be beyond the City of Melbourne's budget for waste education.
94	Resident	94.1	Supports businesses and developers to take responsibility for their own waste	Refer to response for 27.2
95	Resident	95.1	Providing a monthly reuse collection service and more drop-off collection points for clothes, shoes, books, e-waste	A monthly collection is not referenced in the Draft but drop-off locations are included.
		95.2	Provide a service for sharing tools and services	Refer to response for 80.4
		95.3	Include soft plastics and e-waste in kerbside recycling or provide drop-off locations	Refer to response to 3.1
		95.4	Supports investigating a bin-based organic (food and garden) waste collection	Refer to response to 3.1
96	Worker	96.1	Provide communal composting stations for apartment residents to drop-off food waste	Refer to response to 3.1
		96.2	Supports container deposit scheme	Refer to response for 22.2
		96.3	Supports charging by amount of waste produced	Refer to response 78.3
		96.4	More public place recycling bins would make it easier to recycle	Refer to response to 1.3
		96.5	Supports a ban on plastic straws	Not referenced directly in the Draft but actions on single-use items are included.
		96.6	Supports a levy on single-use coffee cups	Referenced in the Draft through assessment of benefits of a container deposit scheme that covers a wide range of packaging items including takeaway coffee cups.
97	Resident	97.1	Provide composting services including high-rise and community-based composting	Refer to response to 4.1
		97.2	Improving the lay-out and signage at Citywide's Waste and Recycling Centre on Dynon Road would make it easier to recycle	Refer to 2.5
		97.3	Clearer information on exactly what can and can't be recycled would make it easier to recycle	Refer to response to 8.4
		97.4	Look at international examples to improve waste management	A review of international programs was undertaken as part of the Draft development.
		97.5	Support community initiatives to reduce waste	Refer to response to 1.4
		97.6	Supports extended producer responsibility for manufacturers and retailers to minimise and reduce plastic packaging	Refer to response for 27.2

No.	Respondent type	Comment précis		Response
98	Visitor	98.1	Provide recycling options for small e-waste items	Refer to response to 45.1
		98.2	More options for purchasing unpackaged grocery items would make it easier to reduce waste	Refer to response to 25.3
		98.3	Supports a ban on single-use coffee cups and plastic takeaway containers	Partially referenced in the Draft through actions on single-use items
99	Building manager	99.1	Dedicated coffee cup collection points would reduce waste	Refer to response to 54.3
		99.2	More education for businesses, workers and visitors would improve waste management	Refer to response to 8.4
100	Resident	100.1	Provide compost services	Refer to response to 4.1
		100.2	More education would improve waste management	Refer to response to 8.4
101	Resident	101.1	Supports provision of soft plastics recycling bins for apartment buildings	Refer to response to 1.1
		101.2	Supports provision of organic recycling bins for apartment buildings	Refer to response to 4.1
		101.3	Employing community members as recycling champions or supporting community organisations to educate the community would improve waste management	Employing community members as recycling champions is not referenced in the Draft but support for community initiatives which could include organisations is included.
		101.4	Supports a ban on plastic bags	Refer to response to 69.13
		101.5	Events could reduce waste	Refer to response to 60.4
102	Worker	102.1	Provide a bin-based garden organics collection	Refer to response to 4.1
		102.2	Provide soft-plastic recycling	Refer to response to 3.1
		102.3	More specific information and better labelling to identify which plastics can be recycled would make it easier to recycle	Refer to response to 8.4
103	Resident	103.1	Provide a bin-based organics (food and garden) waste collection service	Refer to response to 4.1
		103.2	Include soft plastics in kerbside recycling	Refer to response to 1.1
		103.3	Compactors in high rise apartments and commercial buildings and separate waste streams for each recycling stream would improve waste management	Not referenced directly in the Draft but compactors are already required in new developments over a certain size.
		103.4	Waste-to-energy hubs would reduce waste	Refer to response to 38.1
104	Resident	104.1	Include soft plastics and polystyrene in kerbside recycling or provide drop-off locations	Refer to response to 3.1
		104.2	Improve e-waste collection service	Refer to response to 45.1
		104.3	Provide options for food waste composting	Refer to response to 4.1
		104.4	Separate waste streams for each recycling stream could improve recycling	Refer to response to 87.1

No.	Respondent type	Comment précis		Response
		104.5	Supports a ban on plastic bags	Refer to response to 69.13
		104.6	Supports a levy/tax on take-away containers	Refer to response to 22.3
		104.7	Encouraging businesses or groups that reduce waste through bulk sale of items without packaging could reduce waste	Refer to response to 25.3
105	Visitor	105.1	Supports a container deposit scheme with reverse vending machines	Refer to response for 22.2
		105.2	Supports the use of incentives for businesses to reduce waste and provide goods with less packaging	Refer to response for 27.2
		105.3	More education on what can and can't be recycled and clearer public bins would improve waste management	Refer to response to 8.4
		105.4	Government-funded companies that provide reusable cups and plates for events could reduce waste	Refer to response to 60.4
106	Resident	106.1	Provide a compost bin for food waste	Refer to response to 4.1
107	Resident	107.1	Include soft plastics in kerbside recycling	Refer to response to 1.1
		107.2	Supports enforcement and penalties for residents who do not recycle or recycle incorrectly	Refer to response to 73.2
		107.3	Supports a ban on single-use plastics	Refer to response to 22.3
		107.4	More plastic-free options and reduced packaging would help to reduce waste	Refer to response for 27.2
108	Resident	108.1	Provide a bin-based organic waste collection service for apartments	Refer to response to 4.1
		108.2	Improve e-waste collection services	Refer to response to 45.1
		108.3	Provide education, particularly for international students	Refer to response to 8.4
109	Resident	109.1	Include soft plastics in kerbside recycling	Refer to response to 1.1
		109.2	Composting systems and a solution for large apartment buildings to manage their food waste on-site would reduce waste	Refer to response to 4.1
		109.3	Workshops to have items repaired should be provided	Referenced in the Draft through actions to support repair and reuse.
110	Worker	110.1	Street litter bins need to be emptied more often especially after events	Over-flowing bins can be reported by calling 9658 9658. The new solar compacting litter bins in the central city should reduce the incidence of overflowing bins.
		110.2	Supports stronger enforcement and penalties for littering	Refer to action 31.3
111	Resident	111.1	Include soft plastics in kerbside recycling	Refer to response to 1.1
		111.2	Provide a bin-based organic (food and garden) waste collection	Refer to response to 4.1

No.	Respondent type	Comment précis	Response
		111.3 Provide better education on what can and can't be recycled and feedback to residents on the positive impact	Refer to response to 8.4
		111.4 Supports container deposit scheme	Refer to response for 22.2
		111.5 Concerned that a ten-year plan may become out-dated quickly	Noted. The Strategy will be reviewed and a new action plan developed each four years.
112	Resident	112.1 Provide a bin-based organic (food and garden) waste collection or home compost/worm farm and information on how to use it	Refer to response to 4.1
		112.2 Better education on what can and can't be recycled and the outcomes (where and how they are recycled) would make it easier to recycle	Refer to response to 8.4
113	Resident	113.1 Provide a bin-based organic (food and garden) waste collection	Refer to response to 4.1
		113.2 Consistency between councils on recycling procedures would make it easier to recycling	Not referenced directly in the draft but actions to work with other councils to improve recycling is included.
		113.3 Better labelling on packaging to identify how it should be recycled would make this easier	Refer to response for 27.2
114	Worker	114.1 Releasing more council waste collection data would improve waste management	Referenced in the Draft through an action to release waste collection data
115	Resident	115.1 Provide soft-plastics recycling	Refer to response to 1.1
		115.2 Compost bins would make it easier to reduce waste	Refer to response to 4.1
		115.3 Education, especially focused on waste reduction, would be beneficial	Refer to response to 8.4
		115.4 Supports extended producer responsibility: laws and policies for corporations to use less plastic	Refer to response for 27.2
116	Resident	116.1 Disappointed that the green-waste collection trial was not continued and extended	Noted. The trial was not continued due to the low take-up rate. Future organic waste options are being investigated through the Draft.
		116.2 Provide a bin-based garden waste collection at least fortnightly	Refer to response to 4.1
		116.3 Extending food waste collections could improve waste management	Refer to response to 4.1
		116.4 Six-monthly collection of small and large e-waste items would make it easier to recycle	Refer to response to 45.1
		116.5 Supports a ban on plastic shopping bag	Refer to response to 69.13
		116.6 Supports more education on the impact on oceans and birds	Refer to response to 8.4

No.	Respondent type	Comment précis		Response
117	Resident	117.1	Include soft plastics in kerbside recycling	Refer to response to 1.1
		117.2	Provide a bin-based garden waste collection at least monthly	Refer to response to 4.1
		117.3	Support local recycling (within Australia)	Referenced in the Draft through review of CoM procurement.
		117.4	Encouraging individuals to reduce waste and working with businesses to find alternatives to plastic bags would reduce waste	Refer to responses to 8.4 and 22.3
118	Resident	118.1	Supports container deposit scheme	Refer to response for 22.2
		118.2	Supports extended producer responsibility for supermarkets to be responsible for packaging	Refer to response for 27.2
		118.3	A food-waste recycling system like South Korea would improve waste management	Refer to response to 4.1
		118.4	Promoting the benefits and outcomes of recycling could help as many Melburnians are cynical about recycling	Refer to response to 8.4
119	Resident	119.1	Provide a bin-based organic (food and garden) waste collection	Refer to response to 4.1
		119.2	Provide drop-off recycling hubs for soft-plastics and other	Refer to response to 1.1
		119.3	Supports a ban on plastic bags in the central city	Refer to response to 69.13
		119.4	Providing more education to residents and repeating the bin inspection program could improve recycling	Refer to response to 8.4
120	Resident	120.1	Provide direct collections of items that cannot be recycled in the kerbside bin (batteries, printer cartridges, e-waste, light globes, scrap metal) so that people without a car can recycle them	Not referenced directly but establishing drop-off locations that are accessible without a car is included in the Draft.
		120.2	More education and bin audits with warnings or potentially penalties for those who don't recycle	Refer to response to 73.2
		120.3	Supports methods to reduce single-use items such as incentives for reusable coffee cups, water-bottle reuse stations in parks and banning of all plastic bags	Referenced through actions in the Draft
121	Resident	121.1	Provide a bin-based garden waste collection with mulch able to be purchased back by residents	Refer to response to 4.1
		121.2	Provide more public litter bins	Requests for litter bins to be installed in specific locations can be made by calling 9658 9658
		121.3	Rebates for reducing general waste could help to reduce waste	Refer to response 78.3
		121.4	Hard waste collections should be available twice a year	Hard waste collections are available twice annually: once as part of the annual Spring Clean promotion in Oct-Dec and at one other time on request.

No.	Respondent type	Comment précis		Response
122	Resident	122.1	increase the size limit for hard waste collections	The size limit is in place to allow fair and equitable collection service for all users.
		122.2	Supports a container deposit scheme	Refer to response for 22.2
123	Resident	123.1	Provide more frequent hard waste collections (especially for leased properties) (i.e. monthly)	If a hard waste collection is required please contact us on 9658 9658.
		123.2	Provide a bin-based garden waste collection	Refer to response to 4.1
		123.3	The current waste service could be improved by: washing the bins annually, replacing damaged bins, collecting bins on both sides of the street on the same day (Hawke Street). Collecting too early and on different days of the week creates noise problems.	Residents are responsible for washing their own bins as required. Please help us by reporting damaged bins by calling 9658 9658. Many apartment buildings have multiple collection days per week. Hawke Street also has multiple collection days because it falls into two collection day zones. Noise issues can be reported to City of Melbourne for investigation.
		123.4	More educational information for tenants and students and stickers on recycling bins could improve recycling	Refer to response to 8.4
124	Resident	124.1	The swipe-access compactor bins in apartment buildings would improve waste management and could be used to charge residents on a user-pays basis	Refer to response 78.3
		124.2	An e-waste recycling bin would help to recycle	Refer to response to 45.1
125	Resident	125.1	Provide a bin-based organic (food and garden) waste collection	Refer to response to 4.1
		125.2	Supporting zero-waste small businesses through promotions and grants and helping to establish zero-packaging food cooperatives could reduce waste	The Draft includes actions to support business and community initiatives to reduce waste.
		125.3	Supports reduction of single-use plastics through Boomerang Bags, reusable cups and plates	Refer to response to 22.3
		125.4	An education campaign about why recycling is important could improve waste management	Refer to response to 8.4
126	Visitor	126.1	Would like to understand the numbers on where the biggest problems are – consumer waste, food waste, industrial waste etc.	Current garbage and recycling data estimates are included in the Draft.
127	Property owner	127.1	Provide “clean-up crews” along streets	City of Melbourne has a street cleaning contract in place already. Please help us by reporting locations that need cleaning through our website or by calling 9658 9658.

No.	Respondent type	Comment précis		Response
		127.2	Provide compliance checks and fines for builders	Feedback noted. Problems with construction /demolition activities can be reported by calling 9658 9658.
128	Resident	128.1	Provide composting service	Refer to response to 4.1
		128.2	More bulk-food stores and shops allowing use of own containers could assist to reduce waste	Refer to response to 25.3
		128.3	Supports a container deposit scheme	Refer to response for 22.2
		128.4	Supports a ban on all plastic bags	Refer to response to 69.13
129	Resident	129.1	Provide a bin-based organic (food and garden) waste collection for small households without a garden	Refer to response to 4.1
		129.2	Smaller garbage bins should be provided on request	Smaller bins are available on request.
130	Resident	130.1	Provide drop-off location at Citywide's Waste and Recycling Centre on Dynon Road for paints, solvents, light globes, batteries, e-waste	Refer to response to 3.1
		130.2	Provide drop-off composting locations on council property for businesses and residents	Refer to response to 4.1
		130.3	Provide picture-based educational posters for renters and non-English speakers	Refer to response to 69.7
131	Resident	131.1	Provide more frequent garden waste collections	Refer to response to 4.1
		131.2	Improve the services at Citywide's Waste and Recycling Centre on Dynon Road	Refer to 2.5

Appendix 4: Feedback received at community and resident group meetings

The following feedback was received at the five community and resident group meetings that were attended from November 2017 to February 2018. The comments from the different groups have been summarised in the comment précis and collated to remove duplication.

Comment précis	Response
Education and engagement programs are needed to target university students (especially international students), renters and short-stay residents. University orientation days and International student welcome day are opportunities for this education.	Discussions to be held with organisers of orientation events for international students to investigate including waste management and recycling messages.
Contaminated waste from other neighbours and limited recycling options are problems for high-rise apartment residents.	The challenges associated with high-rise apartment dwellings are acknowledged in the Draft and the Draft commits to more recycling options.
Council should have a procurement policy that enables the purchase of products made from recycled materials.	A review of City of Melbourne procurement policies is included as an action in the Draft.
Dumping of hard rubbish is a major issue and should be addressed through education and enforcement/penalties. More enforcement is also needed for littering of cigarette butts.	City of Melbourne does enforce dumping and littering. These issues can be reported by contacting 9658 9568. CoM will review its website content to see if the content on this issue can be improved.
Concerns were raised about the current and future viability of the recycling industry.	Noted. These issues are addressed in the Draft.
Moonee Ponds Resource Recovery Centre was given as an example to be followed.	This example will be reviewed when we are planning our new drop-off locations.
Requested that a bin-based garden waste collection be provided.	The Draft includes actions on residential organic waste.
City of Melbourne should advocate to the State Government for extended producer responsibility and more use of taxes and subsidies.	The Draft includes advocacy to other levels of government on extended producer responsibility and bans.
International examples should be examined.	A review of international programs was undertaken as part of the Draft development.
Organic waste collections can work in apartment buildings.	The Draft includes actions on residential organic waste.
Signs should be installed on the street to say 'please put rubbish in the bins'.	Specific education methods were not specified in the Draft but this feedback will be considered for future education campaigns.
Loose cardboard collection from the central city causes problems especially when windy.	Loose cardboard collection is being phased out and will cease when the new waste services contract commences in April 2019.
More information is needed on where batteries can be recycled.	Specific education methods were not specified in the Draft but this feedback will be considered for future education campaigns.
Hard waste collections should include collection for reuse, for example by refugee support groups.	The current waste services contractor is now collecting items for reuse though not specifically by refugee groups.
Bin repairs can take a long time.	Bin repairs should be completed within a week of being reported to City of Melbourne. If repairs take longer than this please let us know so we can investigate this with our contractor.

Comment précis	Response
Support for a container deposit scheme and/or bans on single-use items.	The Draft details our support for both of these measures.
Event waste management could be improved.	The Draft includes actions to improve event waste management.
Traffic management plans for construction and demolition must consider access for bin collections to avoid overflowing bins.	Traffic management plans should allow for bin access. If specific issues are identified this feedback should be provided by calling 9658 9658.
A program to assess business' waste and help them to reduce would be beneficial.	Specific education methods were not specified in the Draft but this feedback will be considered for future education campaigns.
All bins in public spaces should be locked – including residential bins.	Residents are allowed to lock bins providing they are unlocked on collection day. Overflowing bins can be reported by calling 9658 9658.
Waste planning needs to be improved for renovations to ensure that new restaurants or other businesses have good waste management systems.	The planning process for change-of-use (e.g. a retail premises becoming a café) does not allow for waste management plans to be developed. Work is underway within City of Melbourne to address this issue.
Support for organic waste collection services or communal composting drop-off locations.	The Draft includes actions on residential organic waste.
More information could be provided to resident groups, for example on how to report rubbish dumping, upsize their recycling bin or report overflowing litter bins.	Specific education methods were not specified in the Draft but this feedback will be considered for future education campaigns.
Action on single-use items was supported.	The Draft includes actions on single-use items.
Stickers on recycling bins to advise what can or can't be recycled would be useful	Stickers are now available on request.
Smaller bins could encourage waste reduction. A rates reduction for smaller bins was suggested.	Differential charging is not referenced in the Draft due to the large proportion of residents who share their bins which makes individual charging difficult.
Grant funding for community initiatives would be beneficial.	The Draft includes actions to support community initiatives.
State government funding applications could be made in partnership with community groups where appropriate	Community groups are welcome to contact us to discuss funding opportunities.
Vacuum waste systems should be considered for individual buildings or new developments.	The current Guidelines for Waste Management Plans for New Developments allow developers to propose innovative systems like this.
Large numbers of waste companies are still operating in the central city causing problems with noise.	The Draft acknowledges the amenity impacts of waste management and seeks to reduce these impacts through a range of actions.