

**TO** : City Infrastructure Committee

**FROM** : Director Parks and City Amenity  
Manager Cleansing and Solid Waste

**DATE** : 20 April, 2016

**SUBJECT** : **CITY OF HOBART WASTE MANAGEMENT STRATEGY  
2015-2030**

**FILE** : 44-10-1 JH:JH (o:\pr\reports\infrastructure services\2016\27 april\waste strategy 2015-2030.docx)

## **1. INTRODUCTION**

- 1.1. The purpose of this report is to seek the Council's endorsement of the *City of Hobart Waste Management Strategy 2015-2030*, marked as **Attachment A**.

## **2. BACKGROUND**

- 2.1. At its meeting of 21 December 2015 the Council resolved *inter alia* as follows;

*“the Draft City of Hobart Waste Management Strategy 2015-2030, be endorsed for public exhibition.*

*the public exhibition be for a period of 8 weeks during January to February 2016, after which a further report be provided.”*

- 2.2. The Draft Waste Management Strategy 2015-2030 (prepared to replace the former Waste Management Strategy 2010-2015) was developed involving extensive stakeholder engagement including public meetings, on-line surveys and one-on-one meetings with industry, government and community groups.
- 2.2.1. The duration of the strategy aligns with the proposed closure date of McRobies Gully as an active landfill (subject to EPA and Planning Authority approval).
- 2.3. Following the Council's decision of 21 December, the draft Strategy was released for public comment commencing 18 January 2016 and ending 11 March 2016 upon which nine submissions were received from the public exhibition period.

### 3. COMMUNITY ENGAGEMENT RESULTS

- 3.1. The responses received from the draft Strategy public exhibition period were very positive and demonstrate strong community support for the identified actions.
- 3.2. All submissions have been reviewed by City Officers and a summary of key findings are detailed in Table 1.

***Table 1 – Summary of Draft Waste Management Strategy 2015-2030 Submissions***

Key focus Area	Submission Summary	Number of references to the Key Focus Area in the 9 submissions
Advocating for change	Submissions indicate clear support for the City to perform an advocacy role. Many consider the State Government should be more involved and active, particularly in the areas of a waste levy and container deposit schemes.	11
Finance	There is agreement that the City needs to understand the true cost of landfill operations. There is support to recover true costs for the landfill and recycling services provided.	5
Education & Engagement	The submissions received listed education and engagement as high priority issues vital to the success of the strategy.	4
Organics	There is support for diversion of organics from landfill. There is some comment that green waste should be accepted free, as it is then sold by the Council after the composting process.	4
Litter & Illegal Dumping	There is agreement for the City to monitor and document litter and dumping, including calling for strong actions such as issuing fines to offenders.	4
Inert Waste	There is a good understanding of the need for source separation and the benefits this provides to both the City (reduced landfill, increased recycling) and the landfill customer (reduced fees).	5
City Waste	There is clear support for the City to lead by example in reducing waste from its own operations, services and events, and improve the number & quality of public place recycling and waste bins.	4
Innovation, Programs & Services	There is strong support for this key focus area, specifically to invest in preventative measures rather than disposal solutions, and source separation prior to delivery to the waste management centre.	5

- 3.3. Submissions indicated community emphasis on the removal of food and hazardous waste (2 listings each) from the waste stream. Other materials mentioned were construction waste, metals, and plastic.
- 3.4. When asked about '*materials not identified in the strategy that should be*' responses were electronic waste (x2), oils, grease and paints, and CRT glass (from old televisions). These materials were already included in the strategy however amendments have been made to clarify that these materials are covered (as detailed in Table 2).
- 3.5. The submissions indicate there is a clear understanding from the community of the importance of source separation in delivering the Waste Strategy objectives.
- 3.6. The greatest emphasis from the community submissions was on the importance of the City's role in advocating to other tiers of government, in particular to the State Government, to improve resource recovery. This was in relation to issues including implementing a state waste levy, encouraging source separation and introducing a container deposit scheme.
- 3.7. There is support for the City to improve its knowledge of the cost of waste and landfill operations, and to apply true cost in charging for landfill space.
- 3.8. Upon consideration of a request of the Committee of 9 December 2015,
- Officers explore opportunities and report back to committee on engaging with social enterprises as a component of the City's procurement processes associated with waste management activities, as outlined within the Community Recycling Network Forum, Attendance Report*

Action 1.2 of the Strategy has been expanded to consider 'Social enterprises' when undertaking the review of the City's procurement policies.

- 3.9. The Director of the consultancy firm employed by the City to undertake the initial community consultation process for the Draft Strategy provided comments that the City has produced an excellent strategy, and that there are aspects of the strategy they will use when developing strategies for their clients including clear language, pull quotes, and clear recommendations.

### ***Summary of changes***

- 3.10. Amendments have been made to the strategy to address comments made during the public exhibition process. There are no changes to the structure or the key components of the strategy. These changes clarify some aspects of the strategy and improve the scope or detail of actions in accordance with the submissions feedback.

Table 2 details each amendment and the relevant section of the Draft Strategy.

***Table 2 – Summary of Amendments***

<b>Amendment</b>	<b>Section/Action</b>
Action included to support retail businesses to introduce waste avoidance and reduction strategies	Action 8.26
Action expanded to consider 'Social enterprises' when undertaking the review of the City's procurement policies	Action 1.2
Clarified the inclusion of paints, oils, greases within any future household hazardous waste collection/drop off program	Action 8.6, Action 3.5
Clarified the current arrangements for recycling of paints, oils etc at the Waste Management Centre	Section 2.3
Clarified that electrical appliances can be recycled at the Waste Management Centre	Section 2.3
Clarified the action about public place litter and recycling bins	Action 5.2
Additional comment in regard to reviewing processes to issue infringement notices and fines for littering offences	Action 5.3
Clarify in the strategy actions to support at home composting programs	Action 4.3

- 3.11. The Strategy includes in excess of 90 actions for implementation over the next 15 years. Minor reviews of the Strategy will be undertaken annually with a major review to be undertaken in five years. Progress under the Strategy will be documented in an annual report to be placed on the City's website.

3.12. The implementation of a series of waste reduction programs is a key component of the Strategy at an estimated cost of \$180,000 commencing in the 2016/2017 financial year.

3.12.1. The funding amount may vary for future years subject to the extent of programs identified annually. Each year's funding request will be presented to the Council for consideration through the annual budgeting process.

3.12.2. Significant waste reduction programs, such as the procurement of capital items or implementing new services, will be presented to Council for consideration via a report.

#### **4. PROPOSAL**

4.1. It is proposed that the *City of Hobart Waste Management Strategy 2015-2030* (**Attachment A**) be endorsed to enable implementation.

4.2. An allocation of \$180,000 be considered for approval in the 2016/17 budget estimates towards waste reduction programs to progress the strategy.

#### **5. IMPLEMENTATION**

5.1. Actions under the Strategy will be implemented.

#### **6. STRATEGIC PLANNING IMPLICATIONS**

6.1. The City's Strategic Plan includes Strategic Objective 3.2, Strong Environmental Stewardship, this contains Objective 3.2.5

*Develop and Implement a new waste management strategy 2015-2030 for the city.*

#### **7. FINANCIAL IMPLICATIONS**

7.1. Funding Source(s)

7.1.1. Funding for waste minimisation initiatives and programs resides within the Solid Waste Strategy & Projects Budget Function (240).

7.2. Impact on Current Year Operating Result

7.2.1. There is no impact on the current year's operating result.

7.3. Impact on Future Years' Financial Result

7.3.1. The Waste Management Strategy 2015-2030 implementation program for 2016/17, at an estimated cost of \$180,000, is to be

submitted for consideration as part of the 2016/2017 Budget Estimates.

#### 7.4. Asset Related Implications

- 7.4.1. Asset related implications will be managed through the City's Asset Management processes, and if required through future reports to the Council.

### 8. DELEGATION

- 8.1. Council

### 9. CONSULTATION

- 9.1. Consultation has occurred with the public, the Manager Cleansing & Waste, and the Cleansing & Waste Policy Coordinator.
- 9.2. Throughout the preparation of the Strategy consultation has occurred with a range of stakeholders such as the Environmental Protection Authority (EPA), neighbouring council's, industry service providers, MRA Consulting Group, ratepayers and the community.

### 10. CONCLUSION

- 10.1. It is proposed that Council adopt the *City of Hobart Waste Management Strategy 2015-2030* (Attachment A).
- 10.2. The draft strategy was released for public comment commencing 18 January 2016 and ending 11 March 2016 upon which a total of 9 submissions were received.
- 10.3. The responses received from the public exhibition period show that there is strong support for the implementation of this strategy.
- 10.4. Amendments have been made to the Strategy in response to the public exhibition period (detailed in Table 2).
- 10.5. Progress against the Strategy will be reported at least annually, and the strategy will be reviewed for its appropriateness at 5 yearly intervals. Progress reports will be made available to the public, interested community groups, governments, and industry through the City's internet site.

## **11. RECOMMENDATION**

*That:*

- 11.1. *The report JH:jh(o:\pr\reports\infrastructure services\2016\27 april\waste strategy 2015-2030.docx) be received and noted.***
- 11.2. *The City of Hobart Waste Management Strategy 2015-2030, be endorsed.***
- 11.3. *An allocation of \$180,000 be considered for approval in the 2016/2017 budget estimates to fund waste reduction programs to progress the implementation of the Strategy.***

*As signatory to this report, I certify that, pursuant to Section 55(1) of the Local Government Act 1993, I hold no interest, as referred to in Section 49 of the Local Government Act 1993, in matters contained in this report.*



(Dave Holman)  
**MANAGER  
CLEANSING AND SOLID WASTE**



(Glenn Doyle)  
**DIRECTOR  
PARKS AND CITY AMENITY**



# WASTE MANAGEMENT STRATEGY 2015-2030

APRIL 2016

A Strategy to achieve  
zero waste to landfill by 2030



City of **HOBART**





## EXECUTIVE SUMMARY

The City of Hobart is preparing for life without its own landfill, and has set a target date of 2030 to cease the operation of the landfill at McRobies Gully in South Hobart. The City has developed the Waste Management Strategy 2015-2030 to implement significant waste reduction actions and programs with the primary aim to achieve zero waste to landfill. This represents a long term commitment to waste reduction that will provide environmental, financial, and social benefits to the community of Hobart.

Around 25,000 tonnes of general waste is disposed to the McRobies Gully landfill each year. This represents a waste reduction of 50% over the past decade due to measures including recycling programs, organics composting, and inert waste recycling. External factors including commercial operators increasing recycling and waste diversion, the availability of multiple waste disposal facilities in Southern Tasmania and increases to gate fees have also contributed. The City recognises that the landfill should not be seen as a long term revenue raising activity, and this strategy should be evaluated on delivery of reduced future transport & disposal costs to the community through better resource recovery.

This strategy has been developed to place the City in the best possible situation in 2030, with the ultimate aim of zero waste to transport and dispose at an alternative landfill facility by that time. The timing of the strategy has purposely been set to coincide with the proposed closure of landfill operations at McRobies Gully. It will provide a considerable lead in time to allow for progressive waste reduction to occur, and for technology advancements relating to the residual waste to develop and become reliable and financially viable.

The City's previous waste management strategy delivered considerable improvements to infrastructure and waste reduction, with completion of a waste transfer station and resource recovery facility. The City has undertaken substantial consultation and research in the preparation of this strategy, resulting in accurate baseline data and the identification of the waste stream composition entering landfill. This has enabled specific actions to be detailed to reduce waste that consider the:

- amount of waste that can be avoided, reduced, reused or recycled

- cost effectiveness of identified options
- field of influence of the City of Hobart Council
- practicality and achievability of programs and actions

This strategy will provide the blueprint and strategic impetus for eliminating waste disposed to landfill, in addition to wider ranging waste reduction benefits. This will be achieved by a combination of actions including cooperation, collaboration, advocacy, education, and the delivery of recycling services and waste reduction programs.

The strategy details a committed, planned approach to waste reduction, focussing on key priority areas and maintaining cost effectiveness, service to the community, whilst creating social inclusion and positive environmental outcomes.







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# 1. INTRODUCTION

*This strategy will build on the outcomes of previous strategies, in particular the built waste infrastructure.*

## 1.1 WHY DO WE NEED A STRATEGY?

The City is making a commitment to achieving zero waste to landfill and to cease operating the McRobies Gully Landfill by the year 2030.

To be in the best possible position come 2030, the City must find ways to progressively reduce the amount of waste being disposed to its landfill, and as such a waste strategy from now until 2030 is required that outlines the actions needed to achieve this goal.

Once the City ceases to have a facility to dispose of waste, there will be significant costs for the consolidation, transport, and disposal of any residual waste to an alternative facility. We have the remaining 15 years to implement as many actions as we can to reduce that liability.

Actions to be implemented by 2030 will range from targeting specific materials for reduction or removal from the waste stream, to broader education and advocacy programs.

## 1.2 WHAT WILL THE STRATEGY DELIVER?

### MORE

Recycling  
Waste Diversion  
Community Awareness  
Cooperation



### LESS

Organics to Landfill  
Greenhouse Gas Emission  
Illegal Dumping  
Reliance on Landfill





## 2. WHERE ARE WE NOW?

### 2.1 BACKGROUND & PREVIOUS STRATEGIES

In 2010 the City identified the need to develop strategic documentation and plans to detail how to deal with increasing community expectation, increased environmental controls, and planning of appropriate infrastructure and waste management service requirements into the future. The development of the Waste Management Strategy 2010-2015 and the McRobies Gully Waste Management Centre Strategic Plan 2010-2015 have provided the blueprint for advancements in waste management for the City. Both plans have reached the end of their life span, a new phase of strategic planning is required.

The implementation of the former strategies has provided infrastructure and service review, and new planning needs to build on these achievements and delve further into waste avoidance, reduction and recycling programs.

The previous strategies outlined objectives and actions to ensure the development of infrastructure at the Waste Management Centre in particular. Some of the major actions completed include:

- Construction of a Waste Transfer Station and Resource Recovery Centre
- Landfill rehabilitation works
- Completion of significant diversion drain works to divert clean water around the landfill
- Implementation of a waste grants program
- A range of waste reduction programs focusing on concrete, ewaste, phone and battery recycling, & organic waste.

These outcomes represent a sound foundation on which the City can build to support its future waste requirements. The importance and quality of these outcomes was reinforced when the City was shortlisted as a finalist in the Waste Management Association of Australia Landfill and Transfer Stations Excellence & Innovation Awards for 2015.

A key focus of the development of the former Waste Management Strategy was to ensure all actions were realistic and achievable, with the progress made to date demonstrating that this has been accomplished.

The development of the new Waste Management Strategy 2015-2030 is more focussed on goals associated with minimising waste to landfill through reuse and recycling programs and reducing waste generation.

The City's waste strategy aims to deliver evidence based waste management outcomes that consider economic, environmental, social and regulatory impacts. This will enable the City and the community to understand and measure the waste management initiatives implemented.





## 2.2 DEMOGRAPHICS

The City of Hobart municipal area is approximately 78km<sup>2</sup>, with a population of 50,655 as at June 2014. The population is approximately 10% of the state total.

The City is the most densely populated local government area in the state, with 650 people per km<sup>2</sup>. There are only 3 other areas with a population density over 100 people per km<sup>2</sup>, being Glenorchy (378) Devonport (230) and Clarence (143).

The population of Hobart has remained fairly static in recent years, with a very slight increase of 0.4% from 2013 to 2014.

The average weekly earnings for Tasmania are the lowest in the Country, at \$1,290 per full time adult at ordinary hours. The low population growth in conjunction with comparatively low earnings effectively reduces the level of consumption and associated waste generation compared to the rest of the country.

Around 400,000 tonnes of waste is landfilled in Tasmania annually, with the average waste generated per person in Tasmania around 0.8 tonnes per person per year.

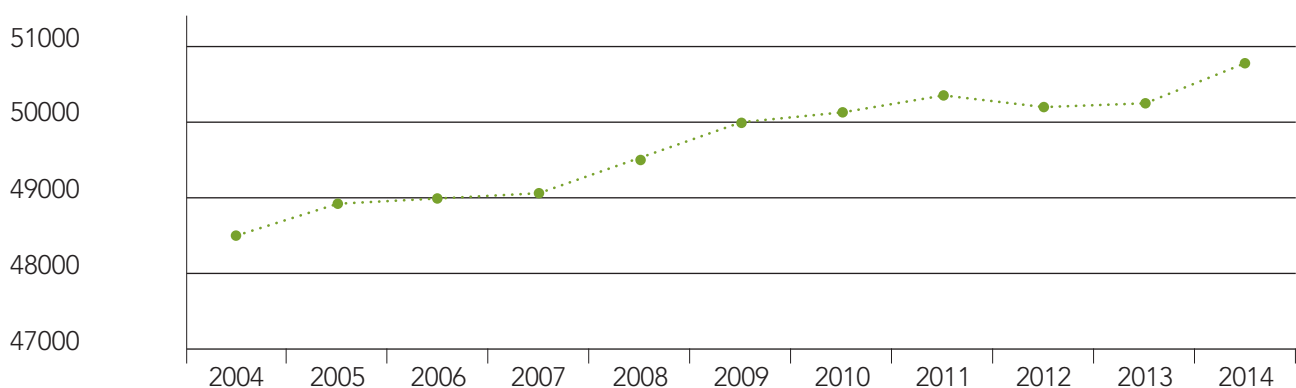


Figure 3 – Population of Hobart

## *60% of waste in household bins is organic material that should be removed from the waste stream.*

### 2.3 CURRENT WASTE INFRASTRUCTURE & SERVICES

The City currently operates/ provides the following facilities and services

- One Waste Management Centre, incorporating
  - o an active category 2 landfill
  - o a transfer station
  - o a resource recovery centre, incorporating recycling drop off and Tip Shop
  - o an organic waste composting facility
  - o facilities for the recycling of engine oil, ewaste, appliances, batteries, tyres, concrete, paint, cardboard, comingled recycling & steel.
- Weekly kerbside waste collection (120L)
- Fortnightly kerbside recycling collection (240L)
- Twice yearly bulk green kerbside waste collection (up to 2m3)
- Up to five free entry weekends to the waste management centre for residents of the City.

### 2.4 KERBSIDE COLLECTION SERVICES

The City's current standard kerbside service provision to residents is a weekly collection of a 120L waste bin, and a fortnightly collection of a 240L recycling bin per rateable property. Commercial operators are provided a service upon request, as per the residential service. The City collects around 20,000 waste bins per week, predominately from the residential sector (95%). The City currently collects around 12,000 tonnes of waste via the kerbside system each year, representing almost 50% of all general mixed waste delivered to landfill. As such, waste reduction across the kerbside waste system will have a significant impact on achieving zero waste to landfill.

The City has undertaken detailed waste audits in preparing this strategy, for both the kerbside waste service and waste transported directly to the landfill. The City has a reliable set of data for the commencement of the strategy, and will continue to audit waste to landfill to inform program development and track progress towards waste reduction targets.

A typical domestic waste bin collected in the City weighs 11kgs, with contents as shown in Figure 4 (A detailed composition analysis is included as Appendix A). The data shows that there is a low level of recycling ending up in the waste bin that should have been placed in the kerbside recycling bin (12%). However, it does indicate that there is work to do for the City to improve the clarity and delivery of messages to the community to ensure all recyclables are placed in the right bin over the course of this strategy.

The results also indicate that organics represent around 60% of the average bin. For this strategy to be effective it must implement measures to remove and recycle both garden and food waste as a high priority.

Improving recycling rates and implementing measures to remove organic waste will leave the average bin about a quarter full compared to current levels, with the remaining material a ready-made input source for waste to energy systems. There will be many issues to address including cost, processing options, location and regulatory requirements prior to adopting new services.

A sound approach, in terms of waste reduction, will be to introduce a garden waste collection service, by use of a 3rd kerbside bin, collected fortnightly, followed by expanding this service to include food waste after the garden waste service has been bedded down. Throughout this process, domestic recyclables will continue to be targeted to drive materials from the waste bin to the recycling bins.

A staged approach to recovering the organics and recyclables from household bins could reduce the average bin weight from 11kgs down to 4kgs.

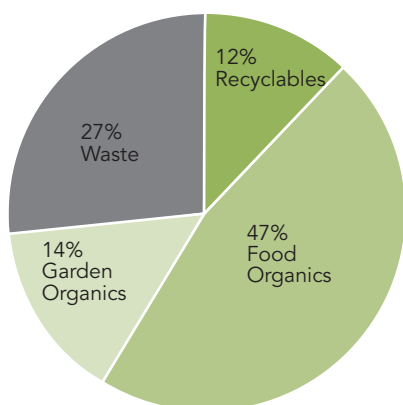


Figure 4 – Material composition in a kerbside waste bin (% by weight)

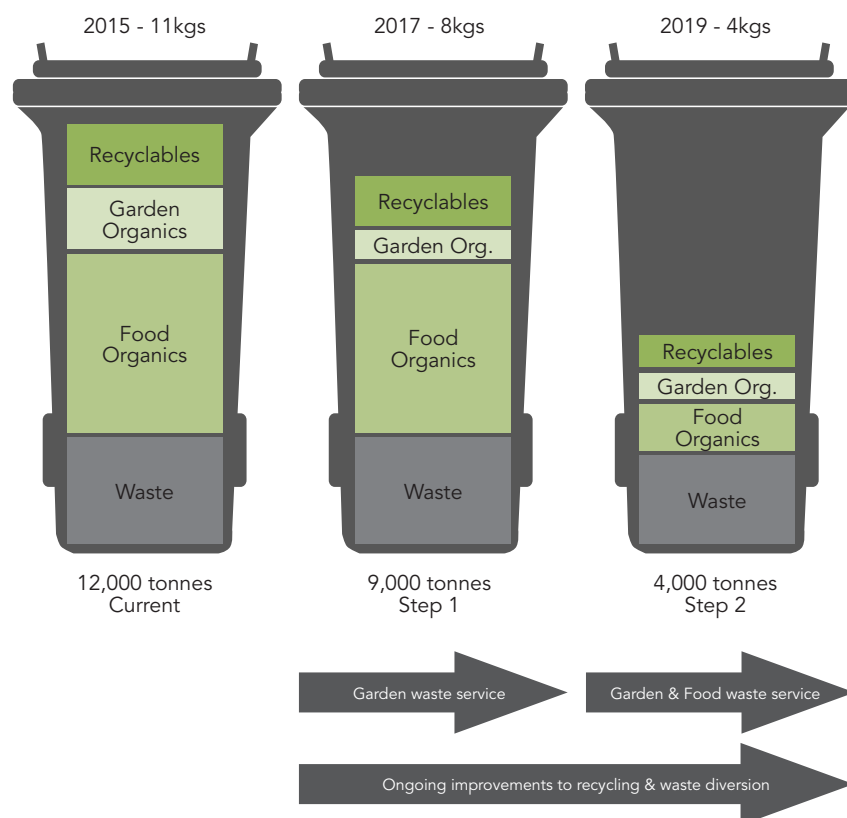


Figure 5 –Example staged process to reduce waste in kerbside waste bins

## *Hobart's recycling contamination rate of around 3% is consistently lower than national averages.*

It may not be feasible to recover 100% of recyclables and organic waste from bins, however, even halving the amount of recycling entering waste bins and recovering 80% of organics, would result in a waste reduction of 8,000 tonnes per year in waste to landfill.

The City collects around 4,500 tonnes of material through its kerbside recycling service, through the fortnightly collection of a 240L bin from each residential property, and a small number of commercial properties. Kerbside collection systems across Tasmania generally perform well, and collect materials per person in excess of the national averages. This could be for a number of reasons, including increased commitment to recycling and knowledge, or a lack of a container deposit scheme, however whilst systems are in place and operating well there is little need to alter the current kerbside recycling system. The main issue will be to access the 12% of the general waste bin that should be going into the kerbside recycling bins and to continue to minimise the contamination levels in recycling bins through education.

Whilst there is room to improve the level of kerbside recycling, as far as recycling programs go it is one of the most successful ever implemented across Australia. The main types of materials in the domestic waste stream that should be collected through the recycling system are plastics, in particular food containers, plastic bottles, and paper waste.

Based on the current kerbside waste & recycling analyses, more can be done to educate residents about the range of recyclable materials that can be presented kerbside, in particular plastic containers and plastic food packaging, and paper products such as magazines, brochures, and cardboard packaging. Figure 6 details the types of recyclable materials ending up in household waste bins.

The City has over a number of years achieved very low contamination rates within its kerbside recycling, ranging between 2-4% over the past 5 years. The main sources of contamination continue to be plastic bags and unclean recyclable material (e.g. glass jars full of food waste). A typical recycling bin collected in Hobart weighs around 8.5kgs.

Residents have become accustomed to the kerbside recycling system, and it performs a vital waste reduction outcome, in addition to the associated reductions in use of virgin resources by avoiding the creation of new products from new inputs.

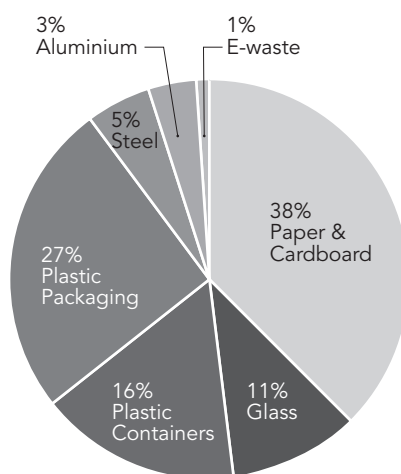


Figure 6 – Recyclable materials being placed in waste bins (kerbside collections)





## 2.5 WASTE TO MCROBIES GULLY LANDFILL

The City has operated the McRobies Gully landfill since the mid 1970's, when it was identified as a site that could cater for the long term waste disposal needs of a growing City. The main wastes disposed of to the site include municipal solid waste (kerbside collections), construction and demolition waste (inert wastes such as clean fill and rubble) and commercial and industrial wastes. Waste to the landfill has steadily declined over the past decade, with waste to landfill historically being 50-60,000 tonnes, reducing to around 25,000 tonnes in recent years.

The reductions in tonnages in recent times can be attributed to 3 main factors

- Improved waste classification, data management, and reporting.
- Increased recycling programs such as kerbside recycling, organic waste, and inert waste.
- Increased competition and landfill availability within the region.

There is no doubt that highly successful recycling and waste diversion programs have been implemented, however there is a relative over supply of waste acceptance facilities within the Southern Tasmanian region, including both transfer stations and landfills. As a result, residents and commercial operators have several options for waste disposal in the Greater Hobart area and can easily compare factors such as cost, proximity, amenity, and customer service in deciding where to dispose of waste.

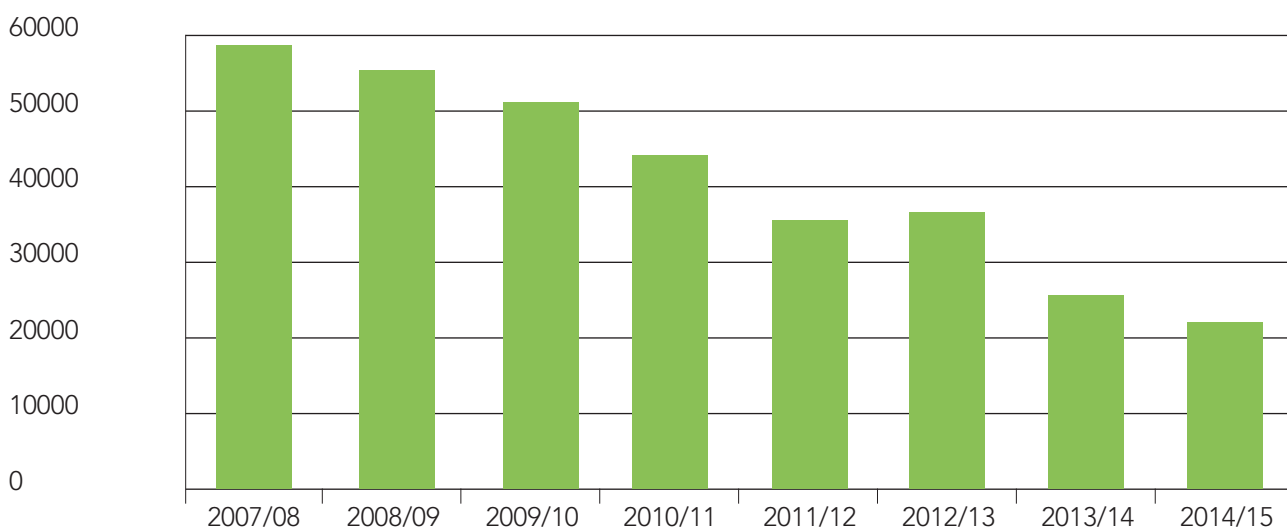


Figure 7 – Waste to landfill 2007/08 to 2014/15



A decline in waste to landfill would generally be considered favourable in terms of waste reduction outcomes, but landfills have historically been seen as a significant source of revenue for their operators, and declining inputs perceived as having a negative impact on the bottom line. In the case of a council owned landfill, an unprofitable landfill or one that doesn't at least meet its operating & ongoing costs leads to it requiring subsidisation by ratepayers. It is vital that the costs associated with the operation of the landfill are recognised and fees are set accordingly.

An important influencing factor is that the Council has become increasingly aware and involved in the management of waste in recent times, and understands that the landfill should no longer be seen as a long term significant revenue generating activity. The value of the landfill is now being measured by its worth as a community asset, and in particular in its capacity to reduce long term transport and disposal costs.

*Over the past 8 years to 2015, general waste to City of Hobart landfill has halved.*



Figure 8 – xxx





## *In 2025 the City of Hobart will be a city that is recognised for its natural beauty and quality of environment*

The City has undertaken comprehensive reviews of the waste streams entering its landfill, both from the commercial and industrial sector delivering direct to the landfill, from the waste transfer station on site, and from deliveries to the Resource Recovery Centre. The landfill accepts a wide array of material, much of which could be diverted for recycling or reuse. Detailed information on the breakdown of materials to landfill is included as Appendix B, and the most predominant materials disposed to landfill by weight are:

- Masonry materials, such as concrete and bricks (32%)
- Unpackaged food waste (10%)
- Garden organics (7%)
- Treated/painted timber (7%)

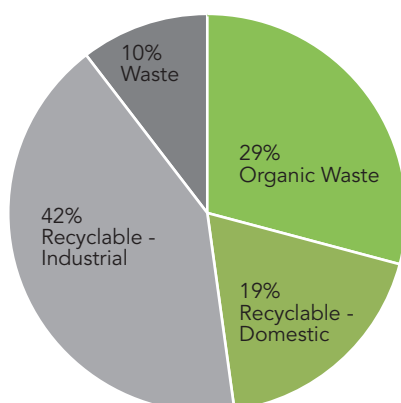


Figure 9 – Waste to Landfill – by category

There is currently a high volume of materials being landfilled that simply don't need to be.

The reasons for this include a lack of source separation and financial encouragement to recycle, and the ease of disposing to landfill. A look at the detailed material composition entering the landfill reveals significant opportunities to reduce waste to landfill. Broadly grouped, there are 4 main categories of materials entering the site.

- Organic waste – Organic material that could be treated through composting or other organic method. Includes food waste, garden waste & timbers.
- Recyclable Domestic – Materials that can be recycled at the domestic level. Includes items such as cardboard, paper, plastics and ewaste.
- Recyclable Industrial – Materials that could be recycled through commercial and industrial programs and facilities. Includes items such as bricks, concrete, and textiles.
- Waste – Those materials that at present have no viable reuse or recycling option.

The waste composition studies undertaken highlight that there are significant opportunities to reduce waste to landfill. Opportunities are material specific but include:

- Increased & improved source separation
- Increased commercial and industrial recycling
- Increased construction and demolition recycling
- Improved education and messaging about the materials that can be recycled through kerbside services
- Increased recycling at public events
- Improved waste management of City operations
- Increased cooperation and collaboration with government and industry

The City has a limited sphere of influence, and whilst there are many waste programs it can implement, the most sustainable waste reduction gains will come from ongoing collaboration with other stakeholders across government and industry. To drastically reduce the amount of waste disposed to landfill, detailed programs will need to be undertaken targeting specific wastes from a variety of sources.



## 2.6 STRATEGIC ALIGNMENT

The City has a number of strategic documents, plans and policies that interact with and impact upon waste management; these include the City's Strategic Plan, Corporate Plan, Annual Plan, and Long Term Financial Management Plan 2016-2036

The current vision & mission for the City of Hobart is that in 2025 Hobart will be a city that:

- Offers opportunities for all ages and is a city for life
- Is recognised for its natural beauty and quality of environment
- Is well-governed at a regional and community level
- Achieves good quality development and urban management
- Is highly-accessible through efficient transport options
- Builds strong and healthy communities through diversity, participation and empathy
- Is dynamic, vibrant and culturally expressive

Our mission is to ensure good governance for our capital City

The implementation of this waste strategy will assist the City to achieve its mission and visions, in particular the vision associated with quality of environment. In addition to strategic documentation, there are key groups within the Council that will interact with the waste field, including the Aldermen and the Executive Leadership Team. Waste management transgresses many units across council, and this strategy will seek to improve collaborations, in work areas such as Community Development, Events and Marketing, Bushland & Biodiversity, Civil Construction & Maintenance, Environmental Engineering, and Parks and Reserves.

In addition to internal alignments, the City has and will need to further develop strategic partnerships and alliances with external parties, such as other local government organisations, commercial operators and peak industry/community representative bodies.

## *60% of all waste generated across australia is diverted from landfill*

### **2.7 NATIONAL & STATE WASTE POLICY INTEGRATION**

There have been significant improvements in waste policy, regulation, and legislation in recent times, indicating the increased importance and action the community expects from all tiers of government in relation to environmental aspects impacting society. There are currently two overarching policies that impact directly on the City in this area:

- National Waste Policy
- Tasmanian Waste & Resource Management Strategy

These strategy documents set out National and State priorities and actions across a range of areas such as governance, coordination, regulation, data collection and waste minimisation. There are plans, policies, and legislation to which the City must remain cognisant throughout the life of this strategy in areas including product stewardship schemes, freight equalisation schemes, container deposit legislation, waste management laws and levies.

### **NATIONAL SNAPSHOT – RECYCLING RATES**

At present there are approximately 29 million tonnes of material recycled, and 20 million tonnes of waste landfilled in Australia each year. The main sectors for recycling are the construction & demolition (25%), the commercial and industrial (18%) and kerbside recycling (15%). These sectors support a national recycling rate of just under 60%, being the amount of material that once generated, does not reach landfill.

The situation in Tasmania varies from the national averages. Current estimates are that the Tasmanian recycling rate is around 33%. Around 600,000 tonnes of waste is generated in Tasmania and 400,000 tonnes landfilled, with the main sectors for recycling being kerbside (17%), commercial and industrial (16%) and construction & demolition (1%). The kerbside recycling and commercial and industrial recycling rates for Tasmania are comparable with the national averages, and in fact the kerbside recycling performs better than the national average. The construction and demolition recycling data however suggests that either there is very limited construction and demolition recycling being undertaken, or, more likely, there are issues with

the data collection impacting the results.

This highlights the need for consistent and accurate recording and reporting mechanisms to be implemented on regional, state, and national levels. The need to improve the coordination and extent of data collection systems in Tasmania was highlighted in the State Governments Tasmanian Waste and Resource Management Strategy, 2009.

For the City, the refinement of waste categorisation and the undertaking of regular waste audits are vital to support confident reporting of waste diversion rates.

### **WASTE REDUCTION TARGETS**

At present all states and territories have dedicated waste reduction targets with the exception of Tasmania and the Northern Territory. Targets range from the ACT's 100% target, to WA's target of 65% by 2020.

This Strategy will support the City to deliver accurate and reliable data in regard to any future State waste targets, should they be initiated.









### 3. WHERE DO WE WANT TO BE?

*The city has committed to cease operating the McRobies Gully Landfill by 2030.*

#### 3.1 VISION

We want to close the McRobies Gully landfill operation and achieve zero waste to landfill by the year 2030. The current estimates are that the City's landfill at McRobies Gully will reach capacity by 2030. When the capacity of the McRobies Gully landfill is reached we want to be in the position where there is no material left for disposal to landfill.

The City does not intend to open any further landfills, and as such any residual waste would incur transport and disposal costs to an alternative facility. The closer to zero waste the City gets the lower the disposal to landfill costs to its ratepayers.

We aim to achieve our vision by working collaboratively and supportively with partners across the community, government, and industry to deliver economically, environmentally, and socially beneficial waste reduction programs.

#### 3.2 KEY OUTCOMES & PRIORITIES

The overarching target for this strategy is to achieve zero waste to landfill within the City of Hobart by 2030. There will be various milestones along the way, and key actions to be undertaken over the course of the strategy. Some of the Key outcomes and priorities of this strategy are;

- A better funded and regulated waste sector
- Maximised resource recovery
- A more waste aware community
- A reduction in organic materials disposed to landfill
- A better informed waste disposal fee structure
- More frequent and accurate waste to landfill and waste diversion data collection

Sections 4 and 5 of this Strategy detail the measures and actions required to enable progress towards zero waste.

The comprehensive reviews undertaken in developing this strategy indicate that the City provides a high standard of service, with a high level of community acceptance and represents good value for money. This strategy will enable the City to maintain those high service standards, whilst improving waste reduction and diversion from landfill.



**PLEASE STOP**

**RING BELL FOR  
ASSISTANCE**



## 4. HOW WILL WE GET THERE?

### 4.1 STAKEHOLDER ENGAGEMENT & PUBLIC CONSULTANCY

Prior to the development of this strategy the City undertook a thorough stakeholder engagement process, including one on one meetings with industry, government, and peak representative bodies. Public forums were also held for the residents and broader community and on-line surveys made available to identify waste related issues.

The objective of the pre strategy consultation process was to provide a comprehensive stakeholder analysis of current waste issues for the development of the City's Strategy. The stakeholder consultation was designed to provide the following information:

- Stakeholder type and interest point
- Any current waste issues to be considered
- The identification of potential actions that could be undertaken in order to address the issues raised.

The involvement and buy-in of stakeholders was very positive, and has provided insight into the community's expectations in relation to waste management and the development of this strategy. A series of potential actions were analysed qualitatively for their value for money (cost per tonne of waste diverted), range of impact and achievability prior to inclusion in the strategy.

### 4.2 GAP/NEEDS ANALYSIS

Through the analysis of previous strategies and programs, the stakeholder engagement process, and staff review, the City has been able to undertake a gap analysis to inform the options for achieving zero waste to landfill.

The City will have limited influence on some of the issues identified, such as waste levies, external landfill pricing, and consumption; however there are opportunities to lead and lobby in these areas. There are a range of issues the City can address, some on its own and some in partnership with others. The main gaps identified are as follows:

- An understanding of the full cost of disposing to landfill across the region
- An adequately resourced peak body to represent and support the waste sector at the regional/state level
- A state waste levy that increases landfill costs & as such the viability of alternative recycling programs
- Productive partnerships with the private sector to achieve shared goals
- Reliable, up to date & accurate baseline data across all areas of waste (tonnes landfilled, recycling rates, costs, litter collections, illegal dumping, resource recovery etc)
- Adequate source separation of waste prior to arrival at McRobies Gully Waste Management Centre

## There are 8 key areas the city must focus on to achieve substantial waste reduction.

### 4.3 KEY FOCUS AREAS

The City has undertaken an audit of the waste entering the landfill and identified diversion and recycling options for materials where available. A list of materials currently being landfilled that have alternative options is provided in Appendix C – Alternative treatment options

and costs analysis. Figure 10 provides a pictorial account of the material types with costs and the relative complexity and effort required for implementation. Materials closer to the bottom and left of the figure represent the best value for money to target for recycling programs. These are generally materials with low costs to recycle &/or a

capacity to divert high volumes from landfill.

The City has identified 8 key focus areas that will result in improved waste reduction. The focus areas involve increasing recycling, diverting more waste from landfill, enhancing cooperation across industry and government and improving education.

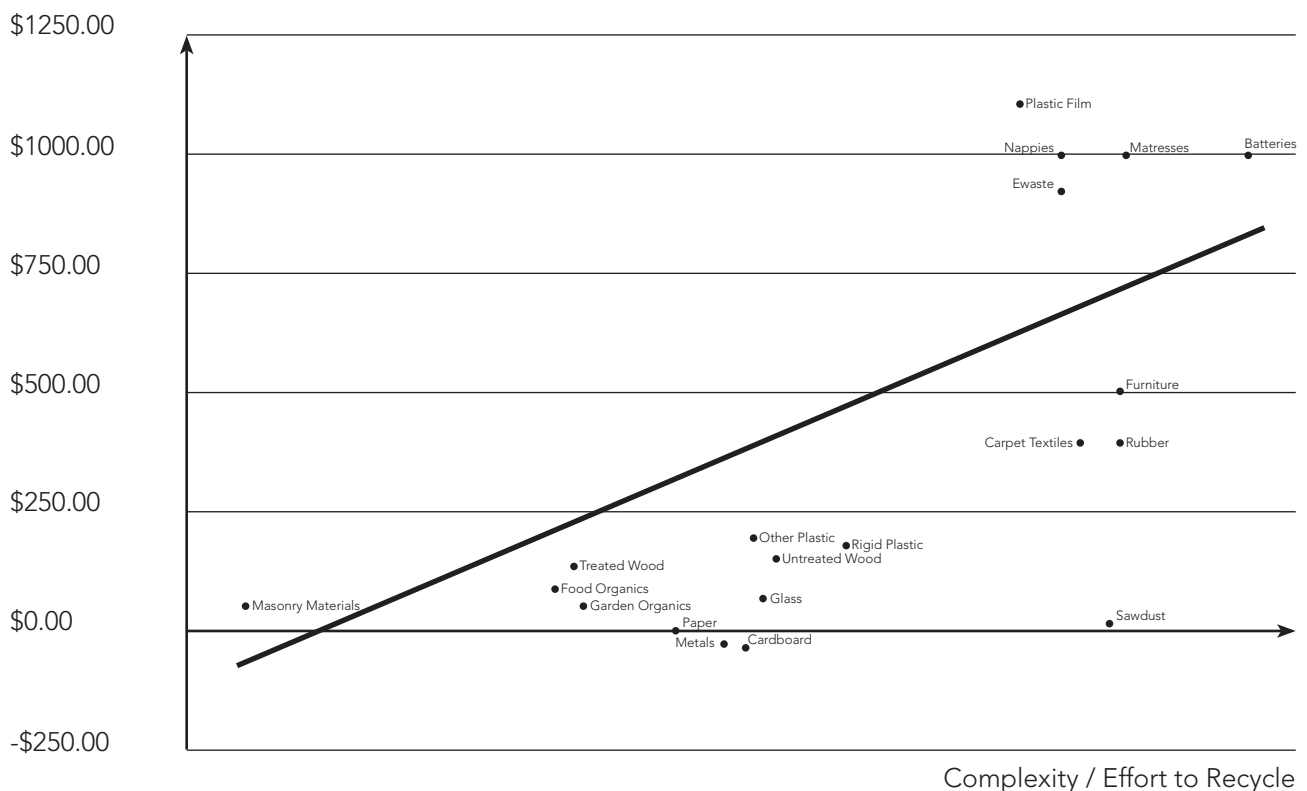


Figure 10 – Waste reduction cost, capacity, and complexity summary

#### **4.3.1 ADVOCATING FOR CHANGE**

Achieving broad behavioural change and waste reduction will require extensive cooperation and the City needs to collaborate with state authorities and other local governments to implement regional governance for waste management. The City must also advocate for the establishment of state waste reduction targets and the introduction of a state waste levy. It must investigate its capacity to impact on commercial and industrial operators through legislative processes such as development and planning applications, and also learn from progressive sectors of government and industry. In addition to advocacy functions, the City must ensure effective planning for the long term needs of the immediate community and broader region.

#### **4.3.2 FINANCE**

The City needs to improve its understanding of the costs of landfill and recycling programs, as an incorrectly costed landfill can result in long-term financial liabilities. Accurate and transparent accounting of all waste and resource recovery operations is necessary, as is working in partnership with government and industry to develop long term contracts and commercial opportunities. Through detailed financial analysis, materials that cost the least per tonne to divert from landfill will be able to be prioritised to provide the most effective value for money waste reduction.

#### **4.3.3 EDUCATION & ENGAGEMENT**

An important component of education and engagement programs is securing the funding required to implement them, and ensuring regional consistencies. The establishment of appropriate regional governance and a state levy may provide the necessary resources for a successful education program; the City should continue to work towards establishment of both. However the City can still make significant improvements to the local education and community engagement processes, through programs and working collaboratively with community and environmental groups.

Community groups and projects often have a reach far greater than council programs, and generate local connections within and across communities. The City recognises the importance of a vibrant, engaged and proactive community, and will provide assistance and support to achieve shared goals of waste reduction.



## *Over 90 actions will be required to progress towards zero waste to landfill by 2030.*

### **4.3.4 ORGANICS**

Organics represents a significant proportion of waste to landfill at McRobies Gully, with around 60% of the kerbside waste bin contents being organics. In addition, around 30% of the waste delivered direct to the landfill tip face is organic. Organics is one of the most significant waste inputs, and is also one of the most cost effective waste streams to divert from landfill. The costs of different technology types for composting, kerbside collection services and bin configurations must be investigated and appropriate services implemented as a priority. Organics represent a great opportunity to make substantial inroads into the zero waste targets.

### **4.3.5 LITTER & ILLEGAL DUMPING**

Currently there is limited measurement regarding the amount of illegal dumping and costs incurred by the City in the collection of illegally dumped waste and litter. A baseline needs to be established to inform the prevalence, make up, and resource implications associated with litter and illegal dumping. The City must also expand its vision and consult with neighbouring land owners to develop regional litter and illegal dumping monitoring and education and enforcement programs. Litter and illegal dumping can have a considerable impact on the environment and amenity of natural areas, and measures need to be taken to prevent the occurrences and impacts associated with illegal dumping and litter.

### **4.3.6 INERT WASTE**

The City already conducts a range of inert waste recycling programs with materials such as concrete, clean fill, bricks and steel diverted from landfill at significant rates. The capacity of McRobies Gully Landfill is vital to the City, and inert wastes shouldn't be taking up valuable airspace. The City must proactively manage the inert waste types and volumes delivered to the site to ensure there is no oversupply of materials surplus to the ongoing needs of the site. Mechanisms to encourage source separation of construction and demolition waste need to be explored including legislative controls and landfill fee structures. Identification and support of alternative facilities for the acceptance and treatment of inert waste, either operated by the City, or externally, must also be investigated.

#### 4.3.7 CITY WASTE

The City contributes a significant portion of waste to landfill, with the majority generated by the civil works area, however other arms of council also generate waste such as council owned buildings, offices, parks and reserves, and events. The City conducts some internal recycling programs, however, the range and scale of these needs to be significantly increased. An audit of City generated waste needs to be undertaken that captures the complete picture of waste generation from City services and facilities. Such an audit will provide baseline data and waste generation trends to enable targeted programs to be delivered. The City must take the lead and set the example for its community to follow. There are significant opportunities to reduce waste from City operations and services, and these must be explored as a priority.

#### 4.3.8 INNOVATION, PROGRAMS & SERVICES

Waste technology will develop throughout the life of this strategy and it is expected that new and innovative solutions will emerge for diversion and for post 2030 residual waste. The key for the City will be to assess options as they arise and determine the appropriate time to adopt proven technologies. Innovation brings with it considerable risk, and there are many examples across the country of advanced waste treatment facilities that have failed. The City needs to encourage innovation while continuing to monitor advancements in the waste technology and management fields. In parallel, the City must make inroads into waste reduction in preparation for implementing a solution for the residual waste stream when the appropriate options become clear.

The City must implement programs that target specific materials for removal from the waste stream. This strategy provides actions to target and reduce a range of materials currently entering the landfill such as:

- Organics
- Mattresses
- Plastics
- Wood
- Batteries
- Glass
- Ewaste
- Paper and cardboard
- Inert waste

There are viable options to recycle much of the waste that is currently landfilled. These may be more costly than current landfilling costs and require additional infrastructure and services to be implemented. However, more accurate landfill accounting models and a clear intent to reduce waste to landfill will see the viability of recycling programs increase.

For some materials methods to recycle are as yet unavailable or unsustainable. For these materials the City must monitor advancements in recycling technologies and processes, and where relevant support the development of programs that increase the accessibility and viability of recycling such materials.







## 5. HOW WILL THE STRATEGY BE IMPLEMENTED?

### 5.1 OPTIONS APPRAISAL

Every waste type being disposed to McRobies Gully Landfill was reviewed to identify alternatives. Appendix C – Alternative Treatment Options & Costs Analysis provides a summary of the various treatment methods available for waste entering McRobies Gully Landfill. The estimated cost to divert all materials that currently have alternative recycling options is over \$2m per year.

For each of the key focus areas a series of actions was identified and assessed for their suitability and appropriateness using a multi-criteria analysis. This approach has provided a listing of actions in order of priority.

The prioritisation of actions effectively provides a strategic blueprint for the implementation of the strategy, and considers factors such as the amount of waste stream reduced, cost effectiveness, the range of impact, and achievability. Appendix D - City of Hobart Zero Waste to Landfill Strategy Action Priority Listing provides a complete listing of all actions by their priority, with highest scoring actions listed first.

The City has identified 90 actions to be undertaken during the life of this strategy. Actions cover a wide range of areas and move from advocacy and developing partnerships, working collaboratively with others, through to on the ground actions completed solely by the City.

All actions have undergone a thorough assessment process to allocate a priority for action. The priority identification process encompassed the following aspects;

- the amount of waste reduced
- cost effectiveness
- the range of impact
- practicality and achievability

Actions outlined within this strategy will be subjected to regular review and reporting, and waste reduction rates will be reported and communicated to the community consistently.

It is the aim of this strategy to deliver the outcome of zero waste to landfill by 2030. Critical to the success of the strategy in reducing waste to landfill is the support of the Aldermen and senior management within the City of Hobart. All actions have undergone a robust analysis, and adequate resourcing levels to achieve the desired outcomes must be allocated for the life of the strategy if the vision is to be achieved.

This strategy is the driver for the City to implement wide ranging waste reduction programs over the next 15 years that will benefit both the environment and the community of the City of Hobart and Greater Hobart.

Table 1 details all Actions under each of the 8 Key Focus areas

## 1. ADVOCATING FOR CHANGE

1.1	Advocate to the State Government for a state based waste levy
1.2	Implement internal procurement policies that favour recycled products and waste diversion including engagement of social enterprises in the waste area
1.3	Increase the capacity of the Resource Recovery Centre to divert waste from landfill. Provide assistance, facilities, and work together with the site operator to recover as much material as possible, including C&D wastes
1.4	Investigate the use of planning processes to improve source separation and recycling programs
1.5	Advocate to State Government to support a state wide Container Deposit System
1.6	Support the establishment of, and be represented on an adequately resourced Regional Waste Authority
1.7	Lobby for additional product stewardship programs to be regularly implemented through the National Waste Policy
1.8	Work with the EPA and other facilities to establish common definitions for waste
1.9	Evaluate the costs and benefits of joining existing or new Waste Authorities
1.10	Optimise the use of the Derwent Park site for regional waste infrastructure provision
1.11	Advocate to the State Government for the establishment of state waste reduction targets.
1.12	Provide assistance and advice to others looking to establish transfer stations and resource recovery facilities
1.13	Develop a regional waste managers network with representatives from government and industry
1.14	Monitor National Policy movements such as National Packaging Covenant developments and advocate for change when required
1.15	Engage with agencies that make recycling a mandatory component of contracts
1.16	Adequately Plan and fund post closure requirements, and work in accordance with the Landfill sustainability Guidelines, the sites Environmental Management Plan. Ensure all reasonable efforts are made to protect the ecology of the area surrounding the landfill
1.17	Work with other facilities to rationalise regional waste infrastructure, and investigate shared infrastructure and services
1.18	Promote existing take back schemes (tyres, ewaste, fluorescent globes) & lobby for the development of further schemes (mattresses, pallets, plastics)

## 2. FINANCE

2.1	Set fees & charges (annually) to encourage waste avoidance and investment in commercial recycling programs
2.2	Conduct a full cost accounting study of the landfill to review the pricing for current operations and long-term financial liabilities, including post closure requirements
2.3	Where possible, work with others towards joint procurement and purchasing in the waste management and resource recovery area, resulting in savings from greater economies of scale in relation to delivering the objectives of the strategy
2.4	Evaluate the cost effectiveness of the use of external facilities for waste disposal
2.5	Conduct a review into the pricing and the business model for green waste processing at the landfill

### 3. EDUCATION & ENGAGEMENT

3.1	Implement mandatory recycling and waste diversion requirements on all City coordinated events
3.2	Support the development of regional recycling education strategies and programs
3.3	Support and encourage organisers to implement recycling and waste diversion programs for events, including food waste
3.4	Appoint a Waste Education Officer
3.5	Identify and provide viable recycling systems for difficult wastes such as polystyrene, batteries, oils, fluorescent light globes, paint, and effectively promote facilities and services to the community
3.6	Make available to residents an App that provides a range of information on Council services and facilities for recyclable products, & upgrade the City's internet pages to reflect the strategy implementation
3.7	Encourage and support School recycling and waste diversion programs and projects
3.8	Promote and support community reuse programs such as the Art From Trash Annual exhibition
3.9	Work to develop a regional kerbside recycling contamination reduction education program
3.1	Develop campaigns to promote the use of sustainable materials and recycled products
3.11	Progressively report to Council to seek funds to implement the strategy
3.12	Develop a Good Neighbour Agreement with the South Hobart Community
3.13	Undertake community engagement and education on the closure of McRobies Gully Landfill, and the potential post closure uses for the site
3.14	Implement branding across the City's waste services & infrastructure
3.15	Promote achievements in relation to waste minimisation programs as they are implemented
3.16	Conduct regular contamination audits of kerbside recycling
3.17	Ensure open and transparent communication with industry and residents through ongoing education and engagement programs
3.18	Provide details on the end markets for recyclables to the community

### 4. ORGANICS

4.1	Implement a fortnightly green waste kerbside collection service, to appropriate tenements
4.2	Implement a food waste kerbside collection service, after the successful introduction of the green waste kerbside collection service, and once appropriate receival infrastructure & facilities are identified
4.3	Encourage & support existing and new community gardens and at home composting programs
4.4	Investigate commercial food organics diversion, and identify alternative sites and technologies for organics processing (either regional or stand alone City facility)
4.5	Work with others to establish a regional organics quantity analysis and processing plan
4.6	Review the costs and benefits of providing home composting kits and education
4.7	Review the kerbside waste service frequency of collection and bin capacity following the introduction of other services such as kerbside green and food waste collection



## 5. LITTER & ILLEGAL DUMPING

5.1	Support extended producer responsibility programs to address localised litter generation and removal
5.2	Continue to refine the public waste and recycling bin program, including locations, sizes, and collection frequencies, and increasing the number of recycling bins
5.3	Develop strategies to prevent illegal dumping within Hobart, and review processes for the issuing of fines for litter related offences
5.4	Work with other councils and industry on joint litter and illegal dumping prevention and monitoring programs
5.5	Investigate measures to refine the operation of public waste & recycling bin infrastructure, such as bin level sensors, solar powered compaction units and route optimisation
5.6	Monitor the quality and appearance of waterways through regular testing and litter reduction measures

## 6. INERT WASTE

6.1	Work with government & industry to establish regional C&D sorting facilities, and develop and promote C&D recycled materials markets
6.2	Investigate long term facilities for the sorting, storage, & recycling of inert waste, at McRobies gully or alternative locations
6.3	Implement programs to increase concrete recycling
6.4	Work with C&D recyclers to establish take back systems and back loading of recyclable materials

## 7. CITY WASTE

7.1	Secure approvals to operate a general waste landfill to 2030
7.2	Improve source separation of City generated waste
7.3	Implement a disposal strategy/policy for City assets that incorporates reuse and recycling
7.4	Conduct an audit of all City generated waste, and develop a waste minimisation plan with programs to increase recycling and reduce waste generation
7.5	Investigate disposal to alternative facilities for City generated wastes
7.6	Implement office recycling programs in all City work areas
7.7	Incorporate recycled products into City designed works where viable such as glass into concrete applications, the use of recycled plastics and replacement of sand with glass in civil works

## 8. INNOVATION & PROGRAMS

8.1	Implement effective cardboard and paper recycling programs at the Waste Management Centre
8.2	Continue to provide kerbside recycling services and explore additional materials for inclusion when economically viable
8.3	Provide an annual Waste Reduction Grants Program, to fund public waste reduction initiatives and projects
8.4	Establish a regional long-term solution for glass recycling, including market options
8.5	Seek grant funding opportunities (for the City and the community)
8.6	Identify solutions and costs for residential services for the drop off and recycling of household hazardous waste, including oils, grease, paints, pesticides, and medicines
8.7	Improve signage at McRobies Gully to ensure diversion of waste to the Resource Recovery Centre
8.8	Consider implementing a 'waste reduction levy' to fund recycling programs for materials delivered to the waste management centre (in absence of a state based levy)
8.9	Develop recycling options for building materials such as plasterboard and masonry items
8.1	Increase the use of recycled products within City projects
8.11	Implement effective plastics recycling programs at the Waste Management Centre
8.12	Research, Identify & commission feasibility studies into Alternative Waste Treatment and Energy from Waste facilities
8.13	Support regional, state, and national waste reduction and education programs such as the Garage Sale Trail, & National Recycling Week
8.14	Establish a mattress recycling program, locally or regionally
8.15	Review collection fleet to ensure optimum compaction, capacity, configuration and functionality
8.16	Review the frequency and appropriateness of the free entry weekends program
8.17	Review e-waste recycling options and continue to implement the most environmental and economic program available
8.18	Support and expand the flexible plastics recycling programs currently undertaken by the retail industry
8.19	Continue to separate steel from the waste stream for recycling
8.20	Conduct regular audits of waste to landfill, and kerbside waste and recycling composition
8.21	Review opening days & hours of the Waste Management Centre to suit the needs of the community & site operations
8.22	Improve Tyre recycling programs and work to identify viable recycling options.
8.23	Investigate and conduct cost modelling for alternative treatment options for timber waste, such as pyrolysis
8.24	Develop improved systems for multi-tenement waste and recycling services
8.25	Implement a textiles recycling program
8.26	Support the retail industry to introduce waste avoidance and recycling strategies and programs

Table 1 – Actions of the Waste Strategy 2015-2030







## 6. HOW WILL PROGRESS AGAINST THE STRATEGY BE MEASURED?

### 6.1 TARGETS

A series of targets at 5 yearly intervals will be applied to monitor progress under the strategy towards the goal of zero waste to landfill by 2030. The current waste diversion rate from landfill is 32%, and all future targets will be assessed against current waste acceptance and recycling levels (2015).

2015 Rate	32%
2020 Target	50%
2025 Target	70%
2030 Target	100%

### 6.2 MEASUREMENT

A range of measurement processes will be required to track progress against the strategy and to appropriately define diversion rates of material from landfill. Key performance indicators will be derived from a range of measurement processes including

- Regular Audits (waste to landfill, kerbside)
- Contamination audits of kerbside collection services
- Environmental monitoring
- Litter control records
- Review of the number and types of services and programs provided
- Financial measurement and reporting
- Regulatory compliance

The measurement processes above will provide information to Council on economic and environmental performance, and community service provision in addition to providing waste diversion rates. All measurement processes will be undertaken annually as a minimum, and in many instances quarterly and monthly measurement will be required.

This strategy will be formally reviewed at 5 year intervals, to ensure it remains relevant to the City and on track to meet diversion targets.



# ATTACHMENTS



## ATTACHMENT A – COMPOSITION OF CITY OF HOBART KERBSIDE WASTE BIN

CATEGORY	PRODUCT	% of BIN
PAPER & CARDBOARD	Paper - Newspaper & Magazines	1.31%
	Paper - Office Paper	1.77%
	Cardboard - Pizza Box	0.21%
	Cardboard - Corrugated	2.21%
	Liquid paper containers	0.25%
	Paper towel	1.43%
	contaminated soil paper	0.11%
ORGANICS	Food - kitchen	46.81%
	garden organics	14.53%
	Kitty Litter organic	4.11%
	wood	1.01%
	Textiles - organic	3.44%
	leather	0.06%
	rubber - organic	0.33%
	oils	0.20%
GLASS	Glass - packaging/containers	1.90%
	glass - mixed fines	0.20%
PLASTICS	PET #1	0.70%
	HDPE #2	0.57%
	PVC #3	0.05%
	LDPE #4	0.07%
	Polypropylene #5	0.77%
	Polystyrene #6	0.18%
	Rigid plastic #7	0.64%
	plastic bags	0.07%
	plastic packaging	4.90%
	Polystyrene (non container)	0.16%
METAL	Steel Cans	0.54%
	Steel aerosols	0.04%
	Ferrous other	0.41%
	Ferrous composite	0.00%
	Aluminium cans, aerosols, foil	0.57%
	Non ferrous (other copper, brass etc)	0.05%
HAZARDOUS	Household Hazardous - flourescent globes	0.29%
	Household Hazardous - Dry cell batteries	0.00%
	Household Hazardous - chemicals & pharmaceuticals	0.01%
	Household Hazardous - other	0.02%

CATEGORY	PRODUCT	% of BIN
EARTH BASED	Ceramics	0.78%
	Dust/dirt/rock/inert	2.38%
	Ash	0.21%
OTHER	Ewaste	0.27%
	Nappies - disposalable paper nappies	4.41%
	Toner Cartridges	0.03%
	Electrical items	0.25%
	Coffee pods	0.05%
	Liquids	0.08%
	Photo paper	0.23%
	Plasterboard	0.26%
	CD's/DVD's	0.28%
	Textiles - Carpets	0.05%
	Miscellaneous	0.80%

## ATTACHMENT B – COMPOSITION OF WASTE TO LANDFILL – MCROBIES GULLY

WASTE CATEGORY	WASTE PRODUCT	% of Landfill
Organics 29.18%	Food organics – unpackaged	10.43%
	Wood – treated/painted	7.85%
	Wood – treated - pallets	0.60%
	Garden organics	7.24%
	Wood – untreated	1.70%
	Food organics – packaged	1.11%
	Other - sawdust	0.13%
	Wood – untreated - pallets	0.12%
Recycling 19.39%	Paper – other	2.18%
	Plastic – other	2.15%
	Cardboard – dry – loose	1.92%
	Plastic – film packaging	1.58%
	Glass – packaging	1.50%
	Metal (ferrous) – non-packaging – LD	1.19%
	Glass – non-packaging	1.19%
	Metal (ferrous)– non-packaging – HD	1.14%
	Cardboard – wet /wax – loose	0.80%
	Metal (ferrous) – packaging	0.77%
	Paper – office	0.73%
	Plastic – rigid packaging	0.59%
	Metal (non-ferrous) – packaging	0.57%
	Metal (non-ferrous)– non-pack – LD	0.47%
	Paper – packaging	0.23%
	Plastic – EPS foam	0.22%
	Cardboard – wet /wax – compacted	0.14%
	Metal (non-ferrous)– non-pack – HD	0.07%
	Cardboard – dry – compacted	0.02%
	Other – batteries	0.02%
	Textiles – mattresses	0.43%
	Electrical – TVs	0.40%
	Electrical– computers and peripherals	0.37%
	Electrical – other	0.35%
	Electrical – whitegoods	0.36%



WASTE CATEGORY	WASTE PRODUCT	% of Landfill
C&D 42.18%	Masonry materials – concrete/bricks	32.12%
	Masonry materials – other	6.70%
	Textiles - covered furniture	0.69%
	Textiles - carpet	0.56%
	Rubber	0.48%
	Textiles & leather	1.63%
Waste 9.25%	Other - nappies	1.59%
	Other - insulation	0.30%
	Other - fines	0.23%
	Other - clinical	0.20%
	Other - asbestos	0.03%
	Other - miscellaneous	6.90%
		100.00%

## ATTACHMENT C – ALTERNATIVE DISPOSAL OPTIONS AND COSTS ANALYSIS

WASTE PRODUCT	% OF STREAM TO MCROBIES	PROCESS	WASTE REDUCTION OPTION(S)
Cardboard	2.88%	Recycling	Kerbside recycling service, paper & cardboard recycling facilities at WMC bale on site & sell
Paper	3.14%	Recycling	Kerbside recycling service, recycling facilities at WMC, increase education about paper recycling. Consider adding paper to composting processes
Metal	4.21%	Recycling	Kerbside recycling service, recycling facilities at WMC collect and sell to metals recyclers
Wood – untreated	1.82%	Recycling	Collect for re-sale, shred to sawdust or add to composting processes. Consider take back scheme on pallet manufacturers. Consider collection & transport to pyrolysis facility
Sawdust	0.13%	Compost	Include in composting process, ensure all loads delivered to organics area
Batteries	0.02%	Recycling	Recycling facilities at waste management centre, and other locations for collection and recycling
Plastic – rigid packaging	0.59%	Recycling	Increase community education to ensure materials which can be recycled are promoted. Collect on site and send to Victoria for recycling
Rubber	0.48%	Recycling	Collect, bale & transport to recycling facility in Victoria
Textiles - covered furniture	0.69%	Recycling	Sell through tip shop, or recycle components through deconstruction process
Glass	2.69%	Recycling	Kerbside recycling collection, recycling facilities at WMC, crush to aggregate and use in road construction applications and other civil construction projects
Textiles - carpet & leather	2.19%	Recycling	Consider shredding and exporting
Other - nappies	1.59%	Avoidance	Encourage use of organic nappies & associated products
Garden organics	7.24%	Avoidance & Recycling	Increase fees for green waste to encourage commercial composting. Increase advertising of green waste recycling and use of composting facility
Mattresses	0.43%	Recycling	Mattress recycling program - deconstruct & recover steel, bale textiles for transport to recycling facility. Work with other councils to provide a mattress recycling scheme
Plastic – other	2.37%	Recycling	Kerbside recycling service, recycling facilities at WMC, collect on site & deliver to recycling contractor
Electrical – TV's, whitegoods, Computers, other	1.48%	Recycling	Capture through ewaste recycling systems at WMC, and under National Product Stewardship Scheme
Food organics	11.51%	Compost	Residential & Commercial Kerbside Collection service. Increase information regarding at home composting and on site composting options
Wood – treated/ painted	8.45%	Compost	Consider collection & transport to pyrolysis facility
Plastic – film packaging	1.58%	Recycling	Bale on site and sell

	COST PER TONNE (\$)	LIKELY % OF STREAM REDUCED	COST TO REMOVE FROM LANDFILL (PER YEAR)	RELATED ACTION NUMBER(S)	CUMULATIVE COST (P/A)
	-\$50	2.50%	-\$31,250	1.3,8.1,8.2	-\$31,250
	-\$40	3.00%	-\$30,000	8.1,8.2,1.11,8.11	-\$61,250
	\$-	4.00%	\$-	8.5,8.16	-\$61,250
	\$160	1.50%	\$-	8.8,3.18	-\$61,250
	\$30	0.13%	\$975	2.4	-\$60,275
	\$1,000	0.02%	\$5,000	2.5,7.3	-\$55,275
	\$200	0.50%	\$25,000	7.5	-\$30,275
	\$400	0.25%	\$25,000	2.5, 3.17	-\$5,275
	\$400	0.25%	\$25,000	8.17	\$19,725
	\$75	2.00%	\$37,500	8.3	\$57,225
	\$400	0.50%	\$50,000	8.17	\$107,225
	\$200	1.00%	\$50,000	8.21	\$157,225
	\$60	6.00%	\$90,000	2.1,2.2,2.4	\$247,225
	\$1,000	0.40%	\$100,000	3.11,8.17	\$347,225
	\$200	2.15%	\$107,500	2.5, 7.5	\$454,725
	\$1,000	1.00%	\$250,000	1.3,4.6	\$704,725
	\$150	8.00%	\$300,000	4.2,3.8,3.9	\$1,004,725
	\$200	7.00%	\$350,000	7.2	\$1,354,725
	\$1,000	1.50%	\$375,000	7.5,8.15	\$1,729,725



WASTE PRODUCT	% OF STREAM TO MCROBIES	PROCESS	WASTE REDUCTION OPTION(S)	
Masonry materials – concrete/bricks	32.12%	Recycling	Crush to rubble either through on site machinery or sorting platform at McRobies or remove & crush contract. Consider source separation through DA's & other means	
Masonry materials – other (insulation, plasterboard, fines etc)	7.23%	Recycling	No current viable recyclable options for plasterboard, insulation, glues etc	
Other - asbestos	0.03%	N/A	No current viable recycling avenue	
Other - clinical	0.20%	N/A	No current viable recycling avenue	
Other - miscellaneous	6.93%	N/A	No current viable recycling avenue	
	100.00%			

	COST PER TONNE (\$)	LIKELY % OF STREAM REDUCED	COST TO REMOVE FROM LANDFILL (PER YEAR)	RELATED ACTION NUMBER(S)	CUMULATIVE COST (P/A)
	\$50	31.00%	\$387,500	8.9,6.1	\$2,117,225
		0.00%	N/A	8.8	
		0.00%	N/A	8.21	
		0.00%	N/A	8.21	
		0.00%	N/A	8.21	
		72.70%			

# ATTACHMENT D – CITY OF HOBART ZERO WASTE TO LANDFILL STRATEGY ACTION PRIORITY LISTING

RANK	ACTION NO.	CATEGORY	ACTION
1	2.1	Finance	Set fees & charges (annually) to encourage waste avoidance and investment in commercial recycling programs
2	1.1	Advocating for Change	Advocate to the State Government for a state based waste levy
3	1.2	Advocating for Change	Implement internal procurement policies that favour recycled products and waste diversion including engagement of social enterprises in the waste area
4	1.3	Advocating for Change	Increase the capacity of the Resource Recovery Centre to divert waste from landfill. Provide assistance, facilities, and work together with the site operator to recover as much material as possible, including C&D wastes
5	3.1	Education & Engagement	Implement mandatory recycling and waste diversion requirements on all City coordinated events
6	8.1	Innovation & programs	Implement effective cardboard and paper recycling programs at the Waste Management Centre
7	1.4	Advocating for Change	Investigate the use of planning processes to improve source separation and recycling programs
8	2.2	Finance	Conduct a full cost accounting study of the landfill to review the pricing for current operations and long-term financial liabilities, including post closure requirements
9	3.2	Education & Engagement	Support the development of regional recycling education strategies and programs
10	3.3	Education & Engagement	Support and encourage organisers to implement recycling and waste diversion programs for events, including food waste
11	8.2	Innovation & programs	Continue to provide kerbside recycling services and explore additional materials for inclusion when economically viable
12	4.1	Organics	Implement a fortnightly garden waste kerbside collection service, to appropriate tenements
13	4.2	Organics	Implement a food waste kerbside collection service, after the successful introduction of the garden waste kerbside collection service and appropriate receival infrastructure & facilities identified
14	3.4	Education & Engagement	Appoint a Waste Education Officer
15	7.1	City Waste	Secure approvals to operate a general waste landfill to 2030
16	8.3	Innovation & programs	Provide an annual Waste Reduction Grants Program, to fund public waste reduction initiatives and projects
17	8.4	Innovation & programs	Establish a regional long-term solution for glass recycling, including market options
18	8.4	Innovation & programs	Establish a regional long-term solution for glass recycling, including market options



	SCORE	WASTE STREAM IMPACTED	OUTCOME
	13	ALL	Increased waste avoidance through alternative disposal/recycling programs
	13	ALL	Creation of a fund to provide statewide waste minimisation programs
	13	ALL	Reduced waste from City operations, support for community organisations
	13	ALL	Increased waste diversion and recycling, in particular Construction & Demolition wastes
	13	ALL	Increased recycling at community events organised by the City
	13	Cardboard	Increased recycling of cardboard
	12	C&D	Increased waste reduction in the building sector
	12	ALL	Increased understanding of true costs associated with landfill, and ability to charge correctly
	12	ALL	Improved consistency across the region and increased communications
	12	ALL	Increased recycling from public events
	12	Recycling	Continued diversion from landfill of kerbside recyclables
	12	Garden Organics	Increased waste diversion (of garden waste)
	12	Food	Increased waste diversion (of food waste)
	12	C&D	Increased education programs for waste reduction
	12	ALL	Increased products recovered and recycled
	11	ALL	Increased waste diversion through grant projects
	11	Glass	Increased recycling of glass
	11	Glass	Increased recycling of glass

RANK	ACTION NO.	CATEGORY	ACTION
19	1.5	Advocating for Change	Advocate to State Government to support a state wide Container Deposit System
20	1.6	Advocating for Change	Support the establishment of, and be represented on an adequately resourced Regional Waste Authority
21	1.7	Advocating for Change	Lobby for additional product stewardship programs to be regularly implemented through the National Waste Policy
22	2.3	Finance	Work with others towards joint procurement and purchasing, resulting in savings from greater economics of scale.
23	2.4	Finance	Investigate the use of external facilities for landfilling operations
24	2.5	Finance	Conduct a review into the pricing and the business model for green waste processing at the landfill
25	3.5	Education & Engagement	Identify and provide viable recycling systems for difficult wastes such as polystyrene, batteries, oils, fluorescent light globes, paint, and effectively promote facilities and services to the community
26	3.6	Education & Engagement	Make available to residents an App that provides a range of information on Council services and facilities for recyclable products, & upgrade the City's internet pages
27	3.7	Education & Engagement	Encourage and support School recycling and waste diversion programs and projects
28	3.8	Education & Engagement	Promote and support community reuse programs such as the Art From Trash Annual exhibition
29	4.3	Organics	Encourage and support existing and new community gardens and at home composting programs
30	5.1	Litter/Illegal Dumping	Implement extended producer responsibility programs to address localised litter generation and removal
31	1.8	Advocating for Change	Work with the EPA and other facilities to establish common definitions for waste
32	8.5	Innovation & programs	Seek grant funding opportunities (for the City and the community)
33	7.2	City Waste	Improve source separation of City generated waste
34	7.3	City Waste	Implement a disposal strategy/policy for city assets that incorporates reuse and recycling
35	8.6	Innovation & programs	Identify solutions and costs for residential services for the drop off and recycling of household hazardous waste, including oils, grease, paints, pesticides and medicines
36	8.7	Innovation & programs	Improve signage at McRobies Gully to ensure diversion of waste to the Resource Recovery Centre
37	7.4	City Waste	Conduct an audit of all City generated waste, and develop a waste minimisation plan with programs to increase recycling and reduce waste generation

	SCORE	WASTE STREAM IMPACTED	OUTCOME
	11	Beverage Containers	Reduced litter, and increased recycling of beverage containers
	11	ALL	Increased capacity to contribute to regional waste management programs
	11	ALL	Increased national programs to reduce waste to landfill
	11	ALL	Improved purchasing power, increased viability of recycling programs
	11	ALL	Increased airspace capacity at McRobies
	11	Organics	Increased accountability and knowledge of costs associated with composting
	11	ALL	Increased recycling of household waste items
	11	ALL	Increased information provision to the community
	11	ALL	Increased recycling from schools and school events
	11	ALL	Increased awareness of waste reduction and associated programs
	11	Organics	Increased organic waste reduction
	11	litter	Reduced litter surrounding businesses
	11	ALL	Improved data reporting
	11	ALL	Increased revenue sources for waste reduction programs
	11	ALL	Increased recycling
	11	ALL	Increased emphasis on recycling rather than disposal of council assets
	11	Household Hazardous	Increased diversion of household hazardous waste from landfill
	11	ALL	Increased visitation to the resource Recovery Area, increased recycling
	11	ALL	Increased data to enable wastes to be targetted, increased waste diversion



RANK	ACTION NO.	CATEGORY	ACTION
38	8.8	Innovation & programs	Consider implementing a 'waste reduction levy' to fund recycling programs for materials delivered to the waste management centre (in absence of a state based levy)
39	8.9	Innovation & programs	Develop recycling options for building materials such as plasterboard and masonry items
40	6.1	Inert Waste	Work with government & industry to establish regional C&D sorting facilities, and develop and promote C&D recycled materials markets
41	1.9	Advocating for Change	Evaluate the costs and benefits of joining existing or new Waste Authorities
42	1.10	Advocating for Change	Optimise the use of the Derwent Park site, for regional waste infrastructure provision
43	1.11	Advocating for Change	Advocate to the State Government for the establishment of state waste reduction targets.
44	1.12	Advocating for Change	Provide assistance and advice to others looking to establish transfer stations and resource recovery facilities
45	3.9	Education & Engagement	Work to develop a regional kerbside recycling contamination reduction education program
46	3.1	Education & Engagement	Develop campaigns to promote the use of sustainable materials and recycled products
47	4.4	Organics	Investigate commercial food organics diversion, and identify alternative sites and technologies for organics processing (either regional or stand alone City facility)
48	4.5	Organics	Work with others to establish a regional organics quantity analysis and processing plan
49	5.2	Litter/Illegal Dumping	Continue to refine the public bin program, including locations, sizes, and collection frequencies, and increasing the number of recycling bins
50	6.2	Inert Waste	Investigate long term facilities for the sorting, storage, & recycling of inert waste, at McRobies gully or alternative locations
51	6.3	Inert Waste	Implement programs to increase concrete recycling
52	8.10	Innovation & programs	Increase the use of recycled products within City projects
53	7.5	City Waste	Investigate disposal to alternative facilities for City generated wastes
54	8.11	Innovation & programs	Implement effective plastics recycling programs at the Waste Management Centre
55	7.6	City Waste	Implement office recycling programs in all City work areas
56	1.13	Advocating for Change	Develop a regional waste managers network with representatives from government and industry
57	8.12	Innovation & programs	Research, Identify & commission feasibility studies into Alternative Waste Treatment and Energy from Waste facilities
58	8.13	Innovation & programs	Support regional, state, and national waste reduction and education programs such as the garage sale trail

	SCORE	WASTE STREAM IMPACTED	OUTCOME
	11	ALL	Increased waste reduction
	11	C&D	Reduced masonry waste to landfill
	11	C&D	Increased C&D recycling
	10	ALL	Increased long term security
	10	ALL	Capacity of Derwent Park site to provide waste management programs optimised
	10	ALL	Increased state commitment of waste reduction
	10	ALL	Increased knowledge sharing
	10	Recycling	Reduced contamination in kerbside recycling bins
	10	ALL	Increased use of sustainable materials
	10	Food Organics	Reduced organic waste to landfill
	10	Organics	Increased efficiencies across the region for organic waste processing
	10	Litter	Increased public waste and recycling capacity
	10	Inert Waste	Improved handling and increased recycling of inert waste
	10	Concrete	Increased concrete recycling
	10	ALL	Reduced use of new virgin resources
	10	ALL	Increased landfill capacity for the communities waste
	10	Plastics	Reduced plastic to landfill
	10	Office Recycling	Increased recycling of office based waste such as paper, toner cartridges, beverage containers
	10	ALL	Increased cooperation and collaboration between operators
	10	ALL	Remain informed of state of play regarding alternative treatment methods
	10	ALL	Increased products recovered and recycled

RANK	ACTION NO.	CATEGORY	ACTION
59	3.11	Education & Engagement	Progressively report to Council to seek funds to implement the strategy
60	1.14	Advocating for Change	Monitor National Policy movements such as National Packaging Covenant developments and advocate for change when required
61	3.12	Education & Engagement	Develop a Good Neighbour Agreement with the South Hobart Community
62	4.6	Organics	Review the costs and benefits of providing home composting kits and education
63	8.14	Innovation & programs	Establish a mattress recycling program, locally or regionally
64	8.15	Innovation & programs	Review collection fleet to ensure optimum compaction, capacity, configuration and functionality
65	8.16	Innovation & programs	Review the frequency of the free entry weekends program
66	8.17	Innovation & programs	Review e-waste recycling options and continue to implement the most environmental and economic program available
67	3.13	Education & Engagement	Undertake community engagement and education on the closure of McRobies Gully Landfill, and the potential post closure uses for the site
68	8.26	Innovation & programs	Support the retail industry to introduce waste avoidance and recycling strategies and programs
69	8.18	Innovation & programs	Support and expand the flexible plastics recycling programs currently undertaken by the retail industry
70	8.19	Innovation & programs	Continue to separate steel from the waste stream for recycling
71	7.7	City Waste	Incorporate recycled products into City design processes, such as glass into concrete applications, and recycled plastic street furniture, bollards, and interpretation panels
72	3.14	Education & Engagement	Implement branding across the City's waste services & infrastructure
73	3.15	Education & Engagement	Promote achievements in relation to waste minimisation programs implemented
74	8.25	Innovation & programs	Implement a textiles recycling program
75	1.15	Advocating for Change	Engage with agencies that make recycling a mandatory component of contracts
76	3.16	Education & Engagement	Conduct regular contamination audits of kerbside recycling
77	8.20	Innovation & programs	Conduct regular audits of waste to landfill, and kerbside waste and recycling composition
78	3.17	Education & Engagement	Ensure open and transparent communication with industry and residents through ongoing education and engagement programs
79	3.18	Education & Engagement	Provide details on the end markets for recyclables to the community
80	5.3	Litter/Illegal Dumping	Develop strategies to prevent illegal dumping within Hobart and review processes for the issuing of fines for litter related offences



	SCORE	WASTE STREAM IMPACTED	OUTCOME
	10	ALL	Increased funding capability to implement increased range of programs
	9	ALL	Increased recycling programs on a national scale
	9	ALL	Increased community connection
	9	Organics	Increased organics recycling
	9	Mattresses	Reduced mattresses to landfill
	9	ALL	Improved collection service fleet
	9	ALL	Improved customer service and efficiencies in operations
	9	Ewaste	Reduced ewaste to landfill
	9	ALL	Educated community
	9	ALL	Reduction in retail waste
	9	Plastics	Increased recycling of flexible plastics
	9	Steel	Reduced steel to landfill
	9	ALL	Reduced use of virgin materials
	9	ALL	Increased profile & awareness of City services and facilities
	9	ALL	Increased awareness of waste reduction achievements
	8	Textiles	Increased textiles recycling
	8	ALL	Improved recycling provisions within city contracts
	8	Recycling	Increased data collection to enable targeted education programs
	8	ALL	Increased data collection to enable targeted education programs
	8	ALL	Educated community
	8	ALL	Educated community
	8	Litter	Reduced litter

RANK	ACTION NO.	CATEGORY	ACTION	
81	5.4	Litter/Illegal Dumping	work with other councils and industry on joint litter and illegal dumping prevention and monitoring programs	
82	5.5	Litter/Illegal Dumping	Refine public waste & recycling bin infrastructure, with bin level sensors, solar powered compaction units and route optimisation	
83	6.4	Inert Waste	Work with C&D recyclers to establish take back systems and back loading of recyclable materials	
84	8.21	Innovation & programs	Review opening days & hours of the Waste Management Centre to suit the needs of the community & site operations	
85	8.22	Innovation & programs	Improve tyre recycling programs and work to identify viable recycling options.	
86	8.23	Innovation & programs	Investigate and conduct cost modelling for alternative treatment options for timber waste, such as pyrolysis	
87	1.16	Advocating for Change	Adequately Plan and fund post closure requirements, and work in accordance with the Landfill Sustainability Guidelines, the sites Environmental Management Plan. Ensure all reasonable efforts are made to protect the ecology of the area surrounding the landfill	
88	5.6	Litter/Illegal Dumping	Monitor the quality and appearance of waterways through regular testing and litter reduction measures	
89	4.7	Organics	Review the kerbside waste service frequency of collection and bin capacity following the introduction of other services such as kerbside garden and food waste collection	
90	8.24	Innovation & programs	Develop improved systems for multi-tenement waste and recycling services	
91	1.17	Advocating for Change	Work with other facilities to rationalise regional waste infrastructure, and investigate shared infrastructure and services	
92	1.18	Advocating for Change	Promote existing take back schemes (tyres, ewaste, fluorescent globes) & lobby for the development of further schemes (mattresses, pallets, plastics)	

	SCORE	WASTE STREAM IMPACTED	OUTCOME
	8	Litter	Reduced litter
	8	ALL	Increased efficiency in public infrastructure collection services
	8	C&D	Increased transport efficiencies
	8	N/A	Improved customer service and efficiencies in operations
	8	Tyres	Increased collection and recycling of tyres
	8	Timber	Increased timber recycling, and increased energy production from waste
	8	N/A	Sufficient resources provided to cover post closure requirements
	8	Litter	Reduced litter in waterways
	7	ALL	Increased efficiencies in waste collection
	7	ALL	Reduced street clutter, improved security on use of facilities
	6	ALL	Improved collaboration with other service providers and infrastructure owners
	6	ALL	Increased products recovered and recycled

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