WASTE MANAGEMENT STRATEGY 2018-2023

CITY OF
Port Adelaide Enfield

Contents

We acknowledge the work of Colby Industries, in association with Arup, Waste and Management Services and JAC Comrie in the preparation of this Strategy.

Why a Waste Management Strategy?

Waste management is an essential service provided by the City of Port Adelaide Enfield and one which is both visible and valued by our ratepayers.

When we manage waste well it:

- Keeps our streets clear of litter and illegal dumping
- Ensures that the waste we generate is collected and disposed of safely
- Diverts waste away from landfill so we can reduce our impact on the environment and live more sustainably.

Waste management is also a costly service to provide. More than 10 percent of our City's budget each year is spent managing waste.

Responsibly managing waste to increase what we divert from landfill has environmental, health and financial benefits for our City. This document sets out a vision, principles and initiatives that will guide our City's approach to waste management services and activities over the next five years (2017-2022). As a Council we will take action to affordably improve existing services, support new initiatives, and work with others to watch, learn, support and pilot advancements in the waste industry, its technology and management.

Community expectations about waste, the waste sector itself and its contribution to our local economy, are rapidly changing. Our strategy must be sufficiently flexible to respond to these changes together with shifting policy, legislative and regulatory requirements and external funding opportunities. A set of principles and questions to guide implementation of the Waste Management Strategy and help us decide which future opportunities should be pursued has therefore been included in this Strategy.

We are grateful to the broad range of community stakeholders - residents, local businesses, industry experts, elected members and staff that provided input to help inform and shape our Waste Management Strategy.

While there is a lot that Council can and will do, better managing waste is ultimately a shared responsibility. As visitors, workers, residents, and businesses in the City of Port Adelaide Enfield our choices and actions make an important difference to how much waste is created and what happens to it.

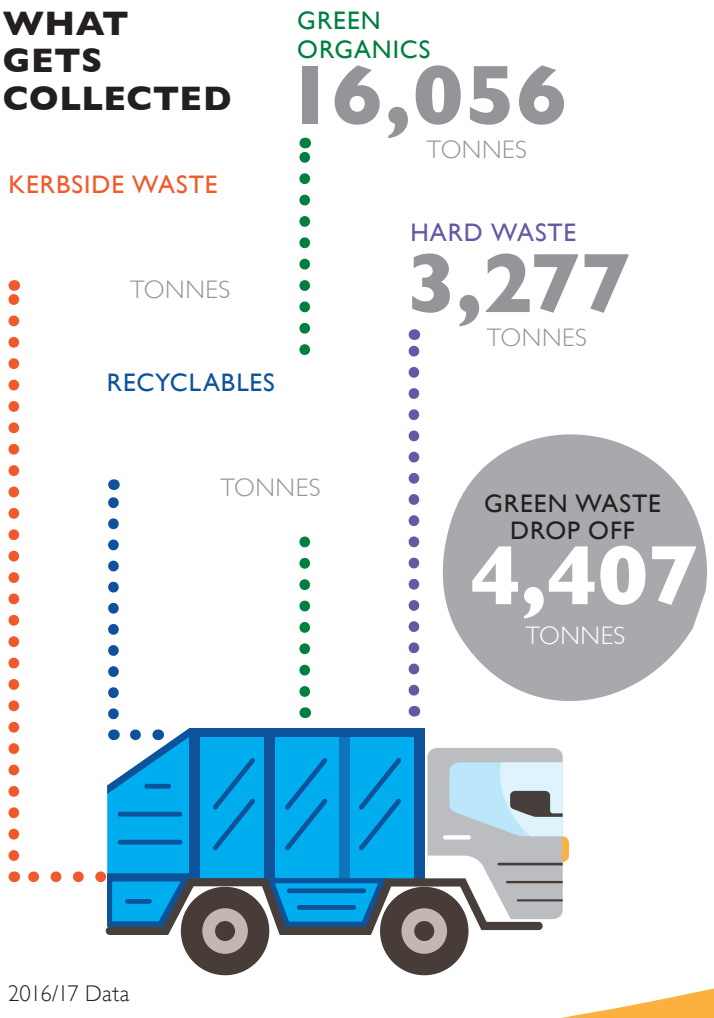
We look forward to your participation and support in helping achieve what this document sets out.

Mayor Gary Johanson

Waste at a glance

Waste

- Changing laws and policies increasing Council's responsibilities for waste *(eg Local Nuisance and Litter Control Act 2016)*
- **Operating budget** for waste and recycling approaching **$13m per year.**
- Hard waste (collection and disposal) costs – more than $1m per year and rising.
- Solid Waste Levy costs rising to $2m per year and estimated to exceed $2.5m by 2020.
- Increasing incidence of illegal dumping: **3,458 incidents in 2016** costing more than $500,000 to collect and dispose of.
- **HALF** of our collected kerbside waste goes to landfill.
- Waste and Recycling Businesses in our City **40+**
- Approximately **5,000** jobs created by the SA waste sector.



2016/17 Data

Community

- More and more people and businesses want to take action to reduce their waste.
- Our population is growing.
- People in our community come from many countries and speak many different languages.
- Some people in our community have very limited incomes and many challenges in their lives.
- More and more people are living in apartments or on smaller blocks.

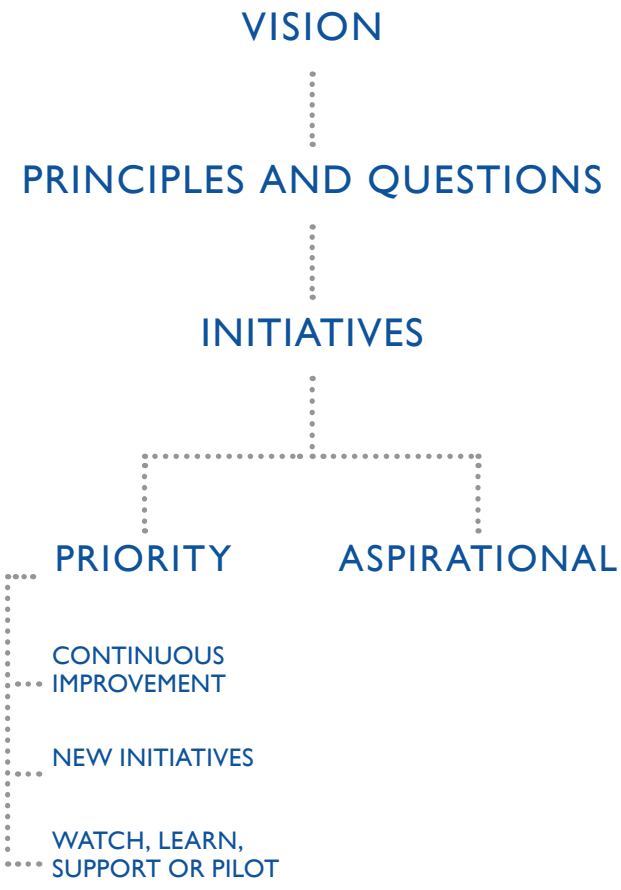
The Strategy in Detail

City Plan 2030 sets an overall vision for our city and establishes five key result areas that are important to us: our economy, our community; our environment; place-making and leadership.

Our Waste Management Strategy contributes in **different ways to each of these.** You can read more about this in the Background Information (Part 2).

Our Waste Management Strategy is made up of three components:

- Vision – a description of what we hope to achieve through the Waste Management Strategy
- Principles and questions – which guided the initial identification of initiatives to be included, and will further guide their implementation
- Initiatives – individual projects or pieces of work that contribute to achieving our vision. These have been separated into two categories:
  - **Priority initiatives** – those that can and should be undertaken over the next five years; and
  - **Aspirational initiatives** - those which are important and will be undertaken if resources permit, additional funding is secured, or circumstances change that supports their implementation.



THE VISION

Affordable and innovative waste management that protects the environment, contributes to the local economy and is valued by its community.

Affordable – Keep costs as affordable as possible for ratepayers (and others) who fund our services and activities.

Innovative – Be astute in the technologies and approaches we use, who we work with, and how we manage waste services and activities.

Environment – Protecting our environment and improving sustainability should be important in every in decision we make.

Economy – Leverage our waste services, activities and knowledge to support local economic development and job opportunities.

Community – Must remain front and centre to our thinking, they are the reason we provide our waste services.

Principles we followed

The following principles will guide our approach and implementation of Waste Management Strategy initiatives.

Change how we see waste
Transform community perceptions so waste is seen as a resource, and initiatives that increase diversion from landfill improve our City's sustainability and save us money.

Innovate to deliver better value for money
Explore, evaluate, innovate and implement new technology, practices and other opportunities to improve the City's waste management and deliver better value-for-money.

Create wealth and jobs for our community
Work with government, industry and our community to support innovation, economic development and job creation from the Circular Economy and expansion of the waste industry.

Lead by example
Apply Product Stewardship, Waste Hierarchy and Circular Economy principles to our decision making and review of services.

Continuously learn and improve
Collaborate with government agencies, other councils, industry, business and our community to identify ways to improve outcomes and services - and make the lives of those that use them easier.

Be accountable
Measure how we are performing so we can demonstrate our progress and results achieved.

Be flexible and ambitious
Assess and be ready to change how we manage waste as laws, practices, solutions, technologies and community expectations change.

Questions we asked

1. Is this likely to improve our diversion from landfill?
2. Is there likely to be an economic and financial return to our City and community?
3. Will this improve the quality, efficiency or effectiveness of our service provision?
4. Is this achievable (within the resources available and 5-year timeframe)?
5. Does this have a view to (preparing our City) for the future?
6. Is there likely to be community acceptance of this? (essential for success)

BY 2022 OUR AIM IS TO INCREASE THE DIVERSION OF WASTE FROM LANDFILL TOWARD 65%

CONTINUOUS IMPROVEMENT

- Enhance community engagement, information and education to support increased waste diversion and recycling
- Continue exploring partnerships with other councils to improve our waste management and reduce costs
- Review and improve management of illegal dumping to reduce its incidence and meet (new) regulatory requirements
- Identify improvements to current hard waste collection to ensure a timely and affordable service for residents which increases recycling
- Ensure all services align with the Environment Protection (Waste to Resources) Policy (W2REPP) obligations to maximise resource recovery before landfill disposal
- Review and improve data collection to better measure, inform and guide City waste management activities and services
- Review and implement best practice waste management for Council's own sites and activities (including community events held in our City)
- Review internal policy documentation relating to waste management
- Optimise existing contracts and plan for future waste procurement

NEW INITIATIVES

- Adopt waste hierarchy, product stewardship & circular economy principles in all decision-making
- Plan and prepare to mitigate future waste levy increases on our City's waste management costs and future rate rises
- Develop community waste education which supports participation by businesses and residents from culturally & linguistically diverse backgrounds
- Evaluate the opportunity to provide waste collection services for medium high-density development (MHDD) and small businesses
- Review and change technical standards and procurement practices to maximise recycling performance in the construction and maintenance of City infrastructure
- Maximise economic and job opportunities from future circular economy and waste industry growth as part of our City's economic development

Our kerbside diversion rate in 2016 was around 50%. Achieving this will require a year on year improvement of around 3% over the life of the Waste Management Strategy.

WATCH/LEARN/PILOT/SUPPORT

- Identify waste activities impacted by the new Waste Reform Bill and how this may affect our City's waste management activities and costs
- Consider waste management during consultations on the new State-wide Planning and Design Code
- Keep a watching brief on waste-to-energy opportunities for disposal of metropolitan Adelaide's waste and implications local economic development
- Stay informed on State Government initiatives to manage household hazardous waste
- Monitor and review new waste collection technologies that could improve diversion and save our City money
- Monitor updating of our City Emergency Response Plan to ensure waste risks are addressed
- Support community led waste initiatives

ASPIRATIONAL

- Provide guidance for developers on construction and demolition waste recycling, site contamination and waste fill in new developments
- Explore opportunities for new uses of the (former) Cavan landfill site
- Expand support and involvement with community organisations and not-for-profit groups undertaking waste reduction or recycling services/projects
- Assess and/or mitigate greenhouse gas emissions from waste services and activities
- Road-test and assess new kerbside and waste management technologies that could improve diversion and reduce waste management costs
- Develop a public place waste management strategy
- Benchmark Council's waste management performance with other councils
- Pilot voluntary alternative arrangements for general waste collection
- Develop management systems that improve our line-of-sight to all Council waste activities

Future Decision-making

Our Waste Management Strategy will not be static.

It will need to change and evolve in response to:

- Initiatives in this Strategy being achieved,
- Community expectations,
- Improvements in technology and industry capability,
- New legislation or policy coming into effect,
- Changes in the resources available to us, and
- Opportunities or challenges being identified.

When this happens, we will decide on a course of action using the same vision, principles and questions as have been used to develop this Strategy. These are set out on page 5.


DRIVER
MUST
CHECK
DAILY
WEEKLY

PART 2

Will tell you more about the things that have informed the development of our Waste Management Strategy; such as the strategic context for our waste services, the services we currently provide and how these are performing, what we understand as the drivers and opportunities for this Strategy, and who our stakeholders are.

Strategic Context

Managing waste occurs in strategic, legislative and regulatory contexts at the Australian, State and Local Government levels. This section describes how each of these shape and inform our Waste Management Strategy.

State and National

Waste management is governed by many State and Commonwealth Government laws and policies that dictate and shape how our City must, can or should provide its waste management services in metropolitan Adelaide (see Table 1). Some of these directly affect how we are permitted to manage our waste services and activities by:

- Prescribing our responsibility for administering and/or providing waste management services to ratepayers, including cost recovery (for these services);
- Enabling us to own and operate waste assets;
- Mandating a weekly rubbish kerbside collection service;
- Requiring disposal of waste according to the Waste Hierarchy (Figure 2)
- Requiring that a three-bin kerbside collection (waste, recycling and organics) be provided to avoid 'treating' waste before landfill disposal;
- Prescribing which materials can be disposed of to landfill and those that are banned;
- Responsibility for protecting public health, policing illegal dumping and litter and noise nuisances;
- That waste assets (we own or operate) are licensed and managed to protect the environment; and
- Ensuring new urban development provides equitable access to services and is ecologically sound and sustainable.

Other laws and policies which influence how our City undertakes its waste services and activities, and how much these cost, include:

- The State's Solid Waste Levy on landfill disposal (set at $87 per tonne for 2017-18); which financially incentivises diversion from landfill to recycling and re-use;
- State Government Waste Strategy policy objectives, that promote:
  - Implementation of the Waste Hierarchy (Figure 2);
  - Landfill diversion targets (Figure 3);
  - Economic development of the waste industry;
  - Consideration of Waste to Energy (WtE) opportunities; and
  - Adopting Circular Economy principles to minimise waste generation (Figure 4);
- Product Stewardship schemes, that influence the availability and cost of disposal for certain waste items (e.g. TVs, tyres);
- Renewable energy, climate change policies, and greenhouse gas reduction schemes which influence whether WtE is an attraction option, our City's cost for landfill disposal or our use of renewable fuels and low emission waste collection vehicles; and
- Guidelines and codes around design, operation and management of waste assets and how resource recovered products can be reused.

Figure 2:
Waste Management hierarchy (Zero Waste SA, 2016).
This hierarchy dictates the order or preference or priority for how waste should be managed. Avoiding waste is best, disposing of waste should be the last resort.

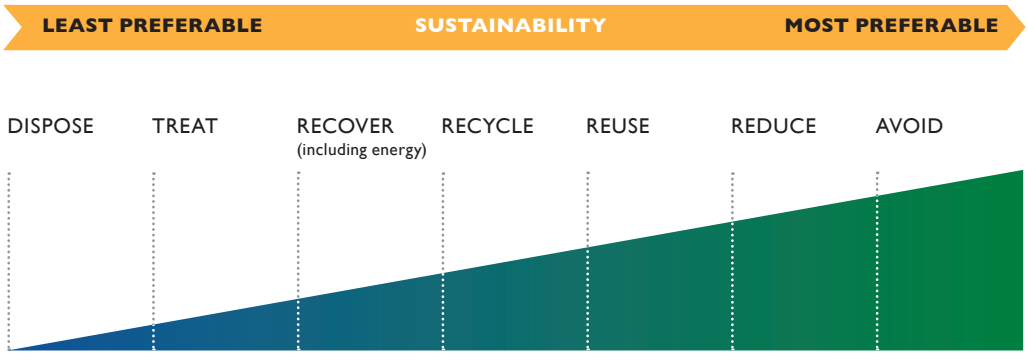


Figure 3:
State Waste Strategy 2015-2020 targets relevant to the Municipal sector.
These include State targets to reduce waste disposal to landfill, waste generation, and landfill diversion targets for waste generated by Councils.

LANDFILL DIVERSION TARGETS – MUNICIPAL SOLID WASTE (MSW)

YEAR	METROPOLITAN (% DIVERSION)	NON-METROPOLITAN
2009 (baseline)	55	Not applicable
2012	60	Maximise diversion to the extent practically achievable
2015	70	Maximise diversion to the extent practically achievable
2020	70*	Maximise diversion to the extent practically achievable

Figure 4:
The Circular Economy
(Source: Green Industries SA, Benefits of a Circular Economy in South Australia. Summary Document).

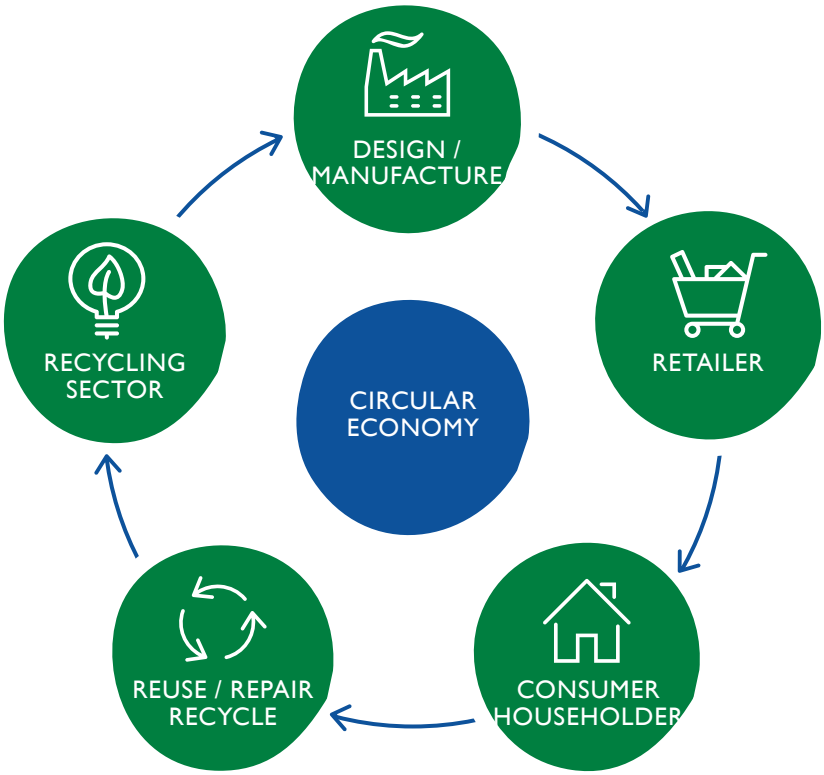


Table 1:
State and Commonwealth legislation and policies that govern and/or influence City's waste management responsibilities or services (as at 2017).

STATE LEGISLATION & POLICY	COMMONWEALTH LEGISLATION & POLICY
Environment Protection Act 1993 - Environment Protection Regulations - Environment Protection Policies - EPA Standards, Code of Practice & Guidelines Local Government Act 1999 Green Industries SA Act 2004 - State Waste Infrastructure Plan - Better Practice Guide, Waste Management for Residential and Mixed-Use Developments - State Waste Strategy 2015-2020 Climate Change and Greenhouse Emissions Reduction Act 2007 - SA's Climate Change Strategy 2015-2050 Public Health Act 2011 - SA Public Health Plan 2013 Local Nuisance and Litter Control Act 2016 - Local Nuisance and Litter Control Regulations Planning, Development and Infrastructure Act 2016 - City Development Plan	Hazardous Waste Act 1989 National Environment Protection Council Act 1994 - National Environment Protection Measures Renewable Energy (Electricity) Act 2000 National Greenhouse and Energy Reporting Act 2007 National Waste Policy Product Stewardship Act 2011 - Product Stewardship schemes Carbon Credits (CFI) Act 2011

At the local level

City Plan 2030

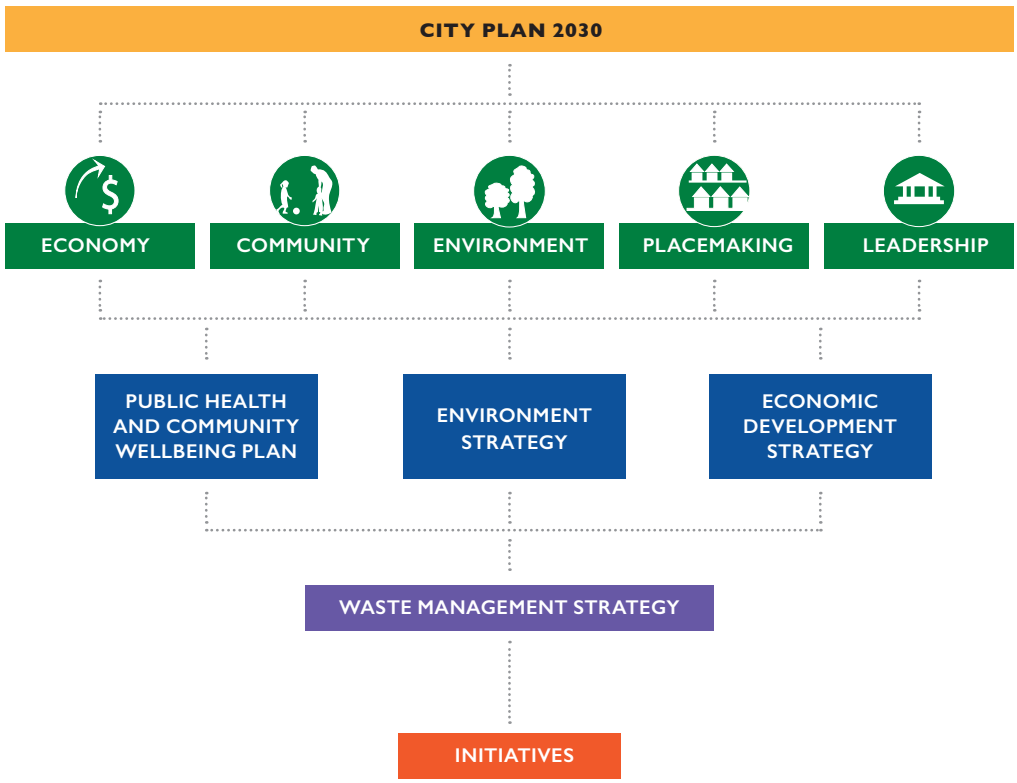
City Plan 2030 sets out our vision for the City of Port Adelaide Enfield as **'a City that values its diverse community and embraces change through innovation, resilience and community leadership'.** It is based around five key result areas: our economy, our community, our environment, placemaking, and leadership.

Figure 5 illustrates the Waste Management Strategy in our Council's own strategic context. As shown, it contributes to each of the City Plan themes, and while it links principally to our Environment Strategy and Public Health and Community Wellbeing Plan there are numerous cross-connections and integration across a range of other existing and planned strategies, programs and projects.

In addition to these strategic documents (and the initiatives they give rise to), our Council undertakes a range of activities and roles relating to waste on an ongoing basis. These include:

- Providing education and information on waste services
- Environmental health services that protect public health
- Providing Community safety services, including the removal of illegal dumping
- Planning and development services that ensure waste management provision and impacts are considered as part of approving proposed economic and urban developments
- Identifying opportunities for waste management to support future economic prosperity

Figure 5: Relationship between City of Port Adelaide Enfield strategic plans.



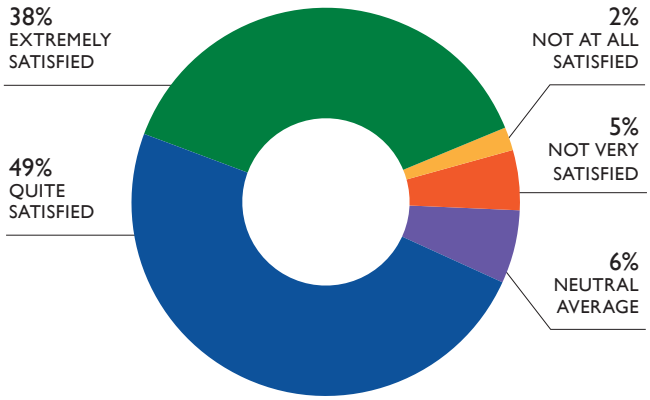
Community Expectations

Like most South Australians, our City's residents, businesses and visitors expect that the environment they enjoy will be sustained for future generations. Recent surveys have shown that residents of our City are largely satisfied with our waste services (see Figure 6) and many are willing to participate in recycling activities.

Many projects and activities led by community groups seek to minimise waste, particularly where it can cause litter and pollution of local waterways, and improve the reuse and recycling of waste materials (instead of landfill disposal).

An exemplar of our City residents' keen interest in waste management is the Port Environment Forum. This Forum comprises of community members, local interest groups, and business representatives that advocate and undertake projects on environmental, social, heritage, or development issues of local interest.

Figure 6:
Resident satisfaction with Council's waste and recycling services from survey in 2014 *(KESAB & the City of Port Adelaide Enfield Council, 2014).*



A Changing City Landscape

As in many areas of Metropolitan Adelaide, the proportion of higher density developments approved in our City has grown significantly over the past decade.

This urban transformation is encouraged by the State Government's 30-Year Plan for Greater Adelaide and existing and newly proposed Development Plan Amendments (DPAs) that allow more urban infill and higher density housing along transport corridors and in suburbs undergoing urban renewal.

Recent examples of these developments in our City include:

- **Lightsview** – a new suburb that includes a higher proportion of smaller allotments and medium to higher-density housing; and
- **New Port Quays** – multi-storey apartments on the Port River completed in 2014.

These higher-density developments are often not well suited to standard kerbside collection services. They require alternative approaches to storage and removal of waste, usually involving larger bins and waste collection vehicles.

In response to this, the State Government has recently developed a Better Practice Guide to assist local governments and developers in navigating some of the waste management challenges associated with these types of development (Zero Waste SA, 2014).

Local Waste Industry

Our City is an area of major importance for the waste and recycling industry in Metropolitan Adelaide and South Australia. It is home to the Wingfield Waste and Recycling Precinct, and more than 40 waste and recycling businesses and organisations (including not-for-profits) have operations in our City or close by (see Figure 7). This includes the City's own waste collection, waste disposal, recyclables, and street litter bin contractors.

As much as half of Metropolitan Adelaide's waste and recycling (tonnages) may pass through our City on its way to landfill disposal or for resource recovery and recycling. These businesses and organisations make an important annual economic contribution to the City (Table 2).

Placemaking and Tourism

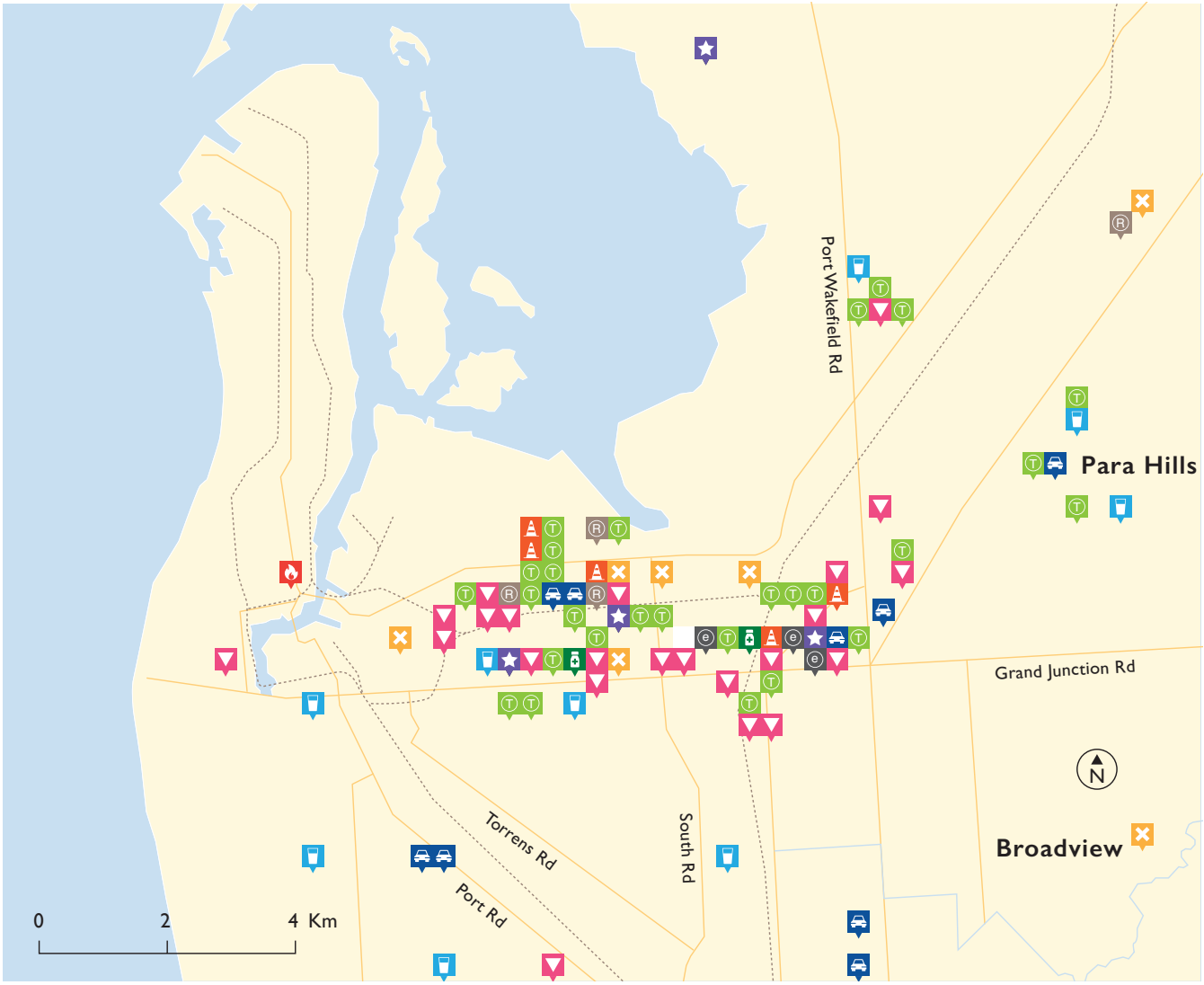
Our City is home to some of the State's finest historical buildings and landmarks, together with a wealth of parks, cultural facilities, markets, beaches and recreational areas - including the Port River and Barker Inlet marine areas, where the nationally acclaimed Adelaide Dolphin Sanctuary is located.

The perceptions of people who live, work or visit our City are likely to be affected by how well we manage waste and litter, and the type of waste infrastructure employed in these areas. When we manage our waste well, this is likely to positively affect community pride and wellbeing, and have flow on effects in attracting greater visitor numbers, retaining businesses and generating new economic activity in our City.

Table 2:
Estimated economic contribution of local waste and recycling industries in City of Port Adelaide-Enfield. *Based on data reported in the draft State Waste and Resource Recovery Infrastructure Plan (Zero Waste SA, September 2016).*

Gross industry turnover	$400-500 Million
Contribution (value added) to Gross Regional Product (GRP)	$100-150 Million ($200-250 Million if multiplier effects considered)
Employment	1400-1500 jobs (potentially 2000-2500 jobs when the economic multiplier effect is considered).

Figure 7:
Location of waste and recycling sites for recyclers / re-processors across Wingfield/Dry Creek areas in City of Port Adelaide Enfield. Reproduced from draft SA Waste and Resource Recovery Infrastructure Plan (Zero Waste SA, September 2016)



LEGEND

- Construction & Demolition Processing Facility
- Drop off Facility
- E-Waste Processing Facility
- Energy from Waste Facility - Combustion
- Hazardous Waste Facility
- Material Recovering Facility
- Medical Waste Disposal
- Other
- Other Processing Facility - Medium Tech
- Transfer Station
- CDL Deposits

Current Waste Services and Performance

Services provided

While our most visible waste service is kerbside collection, Council also provides a wide range of other waste management services across our City (Table 3). These include information and education to residents and businesses, hard waste collection, drop-off services, resolving illegal dumping, managing and removing litter from public places, ensuring new developments plan for waste management and supporting the development of our local waste industry. We also have responsibility for disposing of waste generated through the maintenance and construction of city infrastructure (like parks and roads), and the remediation and monitoring of a former landfill site (at Cavan) used by our City some years ago.

Table 3:
Overview of Council waste management activities and responsibilities.

SERVICE / ACTIVITY	DESCRIPTION
1. Kerbside collection services	· Up to 60,000 residential and business properties entitled to waste collection services · Weekly 140L rubbish, fortnightly 240L recycling and organics collection (residential only) · 50,000 tonnes collected annually, 50% diversion to recycling · Waste Line for residents with queries or seeking advice · Organising the purchase and supply of bins
2. Waste & recycling disposal	· General waste – Landfill disposal · Recycling – Disposal via Material Recycling Facility · Organics – Disposal via Composting and mulching
3. Hard waste collection services	· Up to 4 free annual at-call hard and e-waste collections per residential property · Limits on types and volume of items apply · Disposal: Landfill (some primary sorting may occur)
4. Drop-off waste services	· Garden waste can be dropped off free at a local waste depot · Free e-waste drop-off available at local waste depot
5. Public litter bins, general littering, events	· Collection of public place litter bins · Waste collection to community events in the City
6. Illegal dumping	· Regulating and removing illegal dumping (including community education)
7. Waste disposal from Council sites	· Disposal of waste from Council buildings and sites
8. Municipal infrastructure	· Disposal of construction waste from City built infrastructure · Organic waste from parks, gardens and street sweepings
9. Waste infrastructure	· Post-closure management of Cavan Landfill
10. Public information and awareness	· Web site · Other waste information resources and community education activities
11. Development & planning	· Development controls on waste management for new developments · Development controls on waste industry development
12. Economic development	· Economic development support to businesses and local waste industry

Quality of Services

Council currently provides residents with one of the most comprehensive waste service offerings in Metropolitan Adelaide (see Table 4, information provided by Colby Industries 2017). We are one of only several metropolitan councils that provide free food caddies and compostable bags to assist residents to place food scraps in our kerbside food waste collection. We were one of the first to introduce (free) at-call collection of hard waste (and e-waste), and unlike many others we provide residents with an unlimited free drop-off service for bulk garden waste.

Table 4:
Kerbside collection services provided by councils in metropolitan Adelaide, including diversion (recorded in 2014-15).

NUMBER OF COUNCILS	RUBBISH COLLECTION	RECYCLING COLLECTION	ORGANICS COLLECTION		DIVERSION FROM LANDFILL
			SERVICE PROVISION	FOOD ORGANICS	
City of Port Adelaide Enfield City 4 other Metropolitan councils	✓ Weekly	✓ Fortnightly	✓ Mandatory, Fortnightly	✓ Council Supported	49-58%
10 Metropolitan councils				✓ Ratepayer Opt-in	36-53%
1 Metropolitan council			✓ Mandatory, Monthly	✗	42%
3 Metropolitan councils			✓ Ratepayer Opt-in, Fortnightly		34-45%

NB Not all councils support mandatory provision of organics bins to residents. Not all councils supply a kitchen caddy and/or make available compostable bags. Information in this table is based on council Web site or other published information (as at December 2016).

Performance

We collect a range of waste and recycling data to monitor our diversion performance; particularly for our kerbside collection where waste diverted from landfill can deliver large cost savings (recycling is up to $100 per tonne cheaper than landfill disposal).

Our kerbside diversion for 2015-16 was just below 50%. This compares well with the performance of other metropolitan Adelaide councils (see Figure 8). However despite the quality and range of services, our City's kerbside diversion performance has not changed substantially over the past five years (see Figure 9).

When diversion from landfill achieved from other waste management activities is considered (such as our drop-off services, hard waste, etc.) our diversion level rises to just above 50% (Figure 9).

Improving the range and frequency of data we collect across our waste and recycling activities will be important in identifying areas we can improve diversion.

Cost

Managing waste accounts for at least 10% of our City's expenditure each year ($12m in 2016-17) each year. This figure does not include costs associated with waste managed outside of our Waste Management team, such as the removal ***and regulation*** of illegal dumping, or disposing of waste created in the building and maintenance of our City's assets (see Figure 10). Around 90% of our direct waste management budget is spent on the collection and disposal of waste from the kerbside.

We spend similar amounts per rateable property (around $210) to other metropolitan Adelaide councils, and less than some other councils with lower performance (see Figure 8).

Resourcing

Like many metropolitan councils, we contract external organisations to undertake waste and recycling collection and disposal services on our behalf, and undertake some of our community education activities.

Many individuals and teams across Council are in some way involved in delivering our City's waste management services and activities (see Figure 11). In addition, our Waste Management Leader plays a specialist role in providing advice to residents, rate-payers and staff; procuring and managing waste contracts; and planning new initiatives.

Figure 8: Diversion performance and waste management spend per ratepayer for the City of Port Adelaide Enfield when compared with other Metropolitan Adelaide councils.

The size of the bubbles reflects the relative sizes (no. of ratepayers) for each Council.

Represents the City of Port Adelaide Enfield Council.

Data: 2015/16.

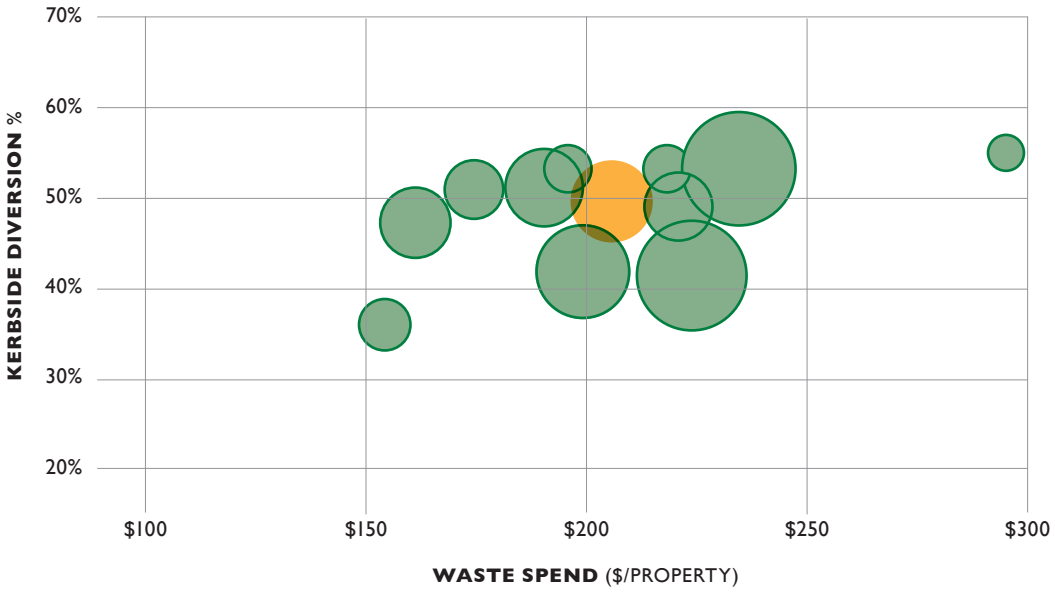


Figure 9:
Kerbside diversion performance for the City of Port Adelaide Enfield since 2010/11, and diversion performance when other waste and recycling streams are also considered

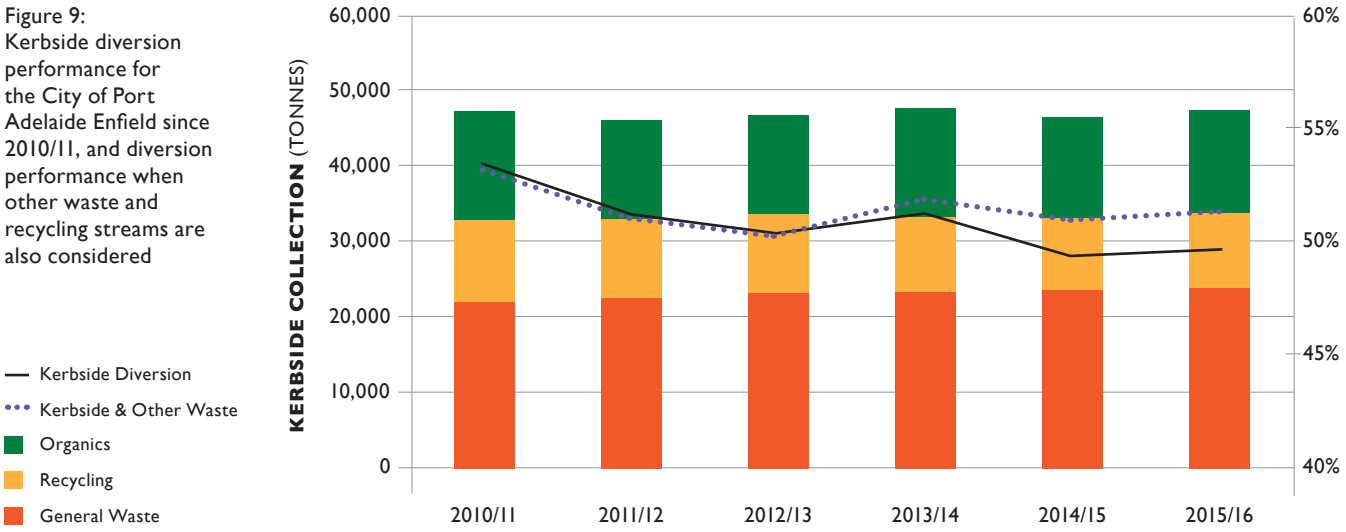


Figure 10:
Councils expenditure component on waste management (City of Port Adelaide-Enfield, 2016):
(a) as part of overall expenditure; (b) waste expenditure component break-up.

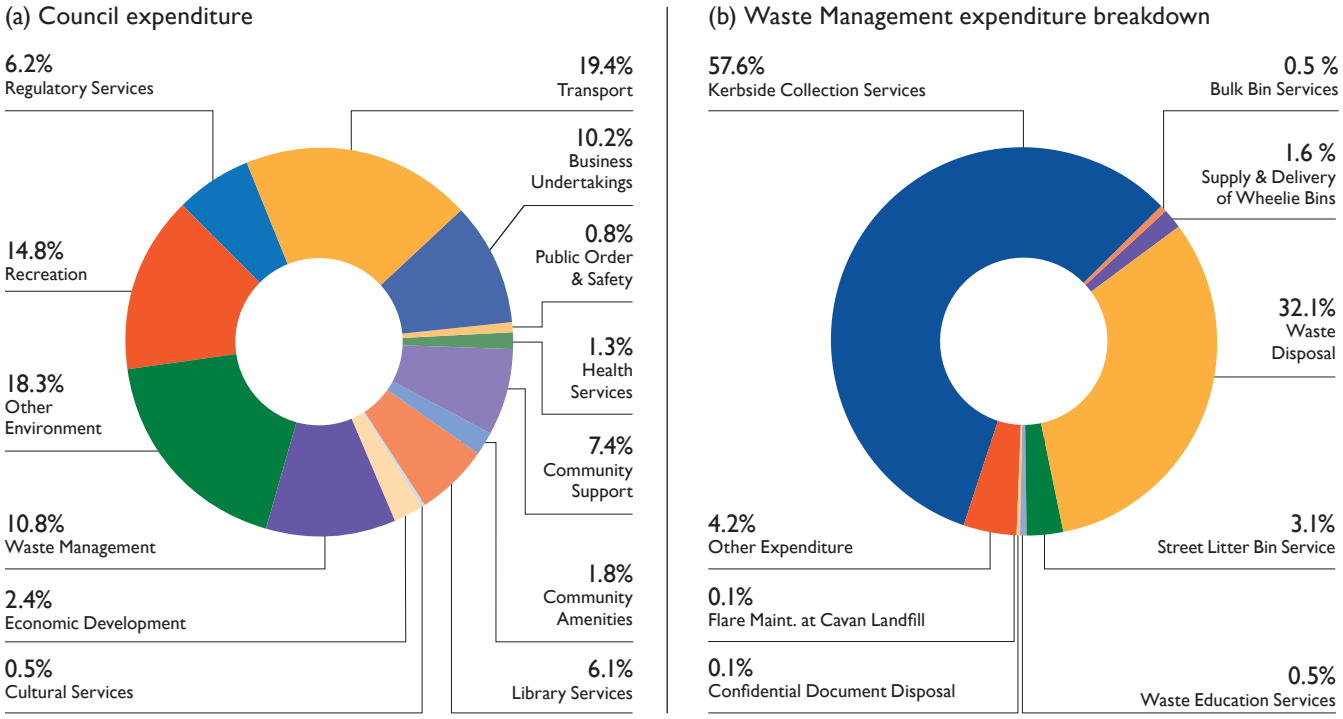


Figure 11:
City resources involved with delivering waste management services.

Future Drivers and Opportunities

What's been included in our Waste Management Strategy has been influenced by a broad range of future drivers and opportunities.

This section tells you a little more about each of these.

Regulation and policy changes

There has been significant recent change in government laws and policies that regulate or affect our waste services, and further changes during the life of this Waste Management Strategy are likely. Some of these changes have or may significantly affect the cost and service obligations our Council incurs in providing waste services. Table 5 provides a range of examples.

Table 5:
Examples of recent and future or potential regulation and policy changes affecting how the City

RECENT LEGISLATIVE AND POLICY CHANGES	IMPACT
Local Nuisance and Litter Control Act 2016	Greater responsibility and costs for councils to manage illegal dumping and litter
South Australian Waste Strategy 2015-2020	Diversion target for municipal sector of 70% by 2020
Planning, Development and Infrastructure Act 2016	New development planning framework that may change council powers
Waste Levy increase	To rise annually to over $100/tonne by 2020 for metropolitan councils, increasing landfill disposal cost
FUTURE OR POTENTIAL LEGISLATIVE AND POLICY CHANGES	**POSSIBLE IMPACT**
Environment Protection (Waste Reform) Amendment Bill 2016	New obligations for waste industry, that may add to flow-on cost impacts for council services
New Product Stewardship schemes	These schemes will expand, providing opportunities for recycling of difficult waste streams
Reintroduction of Carbon pricing	If re-introduced, this would affect landfill disposal, waste collection and recycling costs
Weekly kerbside collection	This mandatory requirement could potentially be relaxed
Services to high density housing	Councils may be obliged to provide suitable services for these types of development or rate rebates if not provided
Rate increase caps	If introduced, councils may need to review waste management services in light of the resources available to them
Additional waste levy increases	Beyond 2020, the Waste Levy could rise further

Solid Waste Levy rises

A recent regulatory change with the most pronounced effect on our City's waste management costs is the Solid Waste Levy rise, which increases the costs of landfill disposal.

For kerbside collection alone, the current increase in the Waste Levy to over $100 per tonne by 2020 could add over $1m to our City's annual waste bill (see Figure 12).

This cost could be substantially reduced by improving diversion from landfill disposal (as suggested in Figure 12). Disposal for recycling can be up to $100 per tonne less than landfill.

Optimising Waste service contracts

Much of our City's waste management costs are for contracts with service providers (see Table 6).

The biggest of these contracts (kerbside collection and recycling disposal) will expire in 2020, presenting an important opportunity for our City to potentially reduce costs and further improve waste collection services.

Figure 12:
Potential changes in City's kerbside collection and disposal costs (from 2016/17) as the Solid Waste Levy (for metropolitan Adelaide) rises to above $100 per tonne by 2020-21 if (a) no changes are made, contracts remain the same and diversion remains at 50%; or (b) kerbside diversion is lifted to 60% and our collection and recycling disposal contract is optimised during its renewal in April 2020.

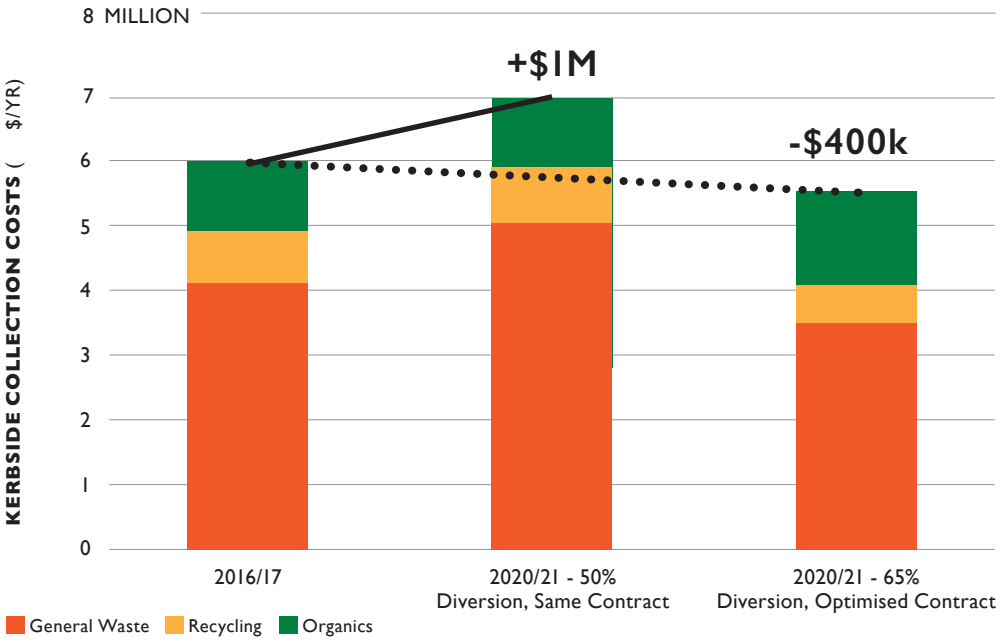


Table 6:
City's four largest waste management contracts.

CONTRACT	VALUE	END DATE
Kerbside collection contract (including disposal of recyclables)	$6-8M	20 April 2020
Waste (landfill) and Organics Disposal contract	$3-5M	30 June-2024
Street Litter Bin Services	$300-400k	30 April 2023
Bin Supply Contract	$200-300k	30 June 2017

Figure 13:
Bio-basket food caddy and compostable bags used for food waste collection

Community engagement and participation

The State Waste Strategy has set a Municipal diversion target of 70% by 2020 (see Figure 3). Improving landfill diversion will help our City's keep waste management costs affordable (Figure 12).

Our residents want improved environmental sustainability and value-for-money from the rates they pay. They also make the most important contribution towards our City's diversion performance, through their disposal choices when using kerbside collection and the City's other waste services.

As a City we can positively influence diversion improvements by engaging with our community to provide information, encouragement, and/or incentives to modify waste disposal choices and improve diversion.

Food waste

Food waste represents 30-50% of waste in our residential general waste bins. Our City added food waste to its organics kerbside collection service in 2010, by delivering to all residential properties a kitchen caddy (see Figure 13) and roll of 150 compostable bags. Each year in April through May an additional roll of 150 compostable bags are delivered to residential properties.

It was anticipated that this service feature would significantly improve kerbside diversion; however despite residents telling us they are willing to participate, this does not appear as yet to have translated into increased diversion of food waste from general waste bins.

Food waste still represents a significant opportunity for our City to significantly improve diversion if we can implement appropriate changes in services that improve outcomes.

Table 7: Examples of innovative waste collection technologies

INNOVATIVE TECHNOLOGY	WHAT IT DOES	HOW MUCH COULD IT COST?
RFID tags on bins	Individual bin identification	$8M to convert the City's bin fleet (of 160,000 bins)
Bin weighing systems	Individual bin weighing during collection	Up-front cost and/or on-going higher collection costs to install on contractor's trucks
GPS tracking technology	Bin location and collection logistics tracking	
Cameras technology	Photo identification of bins and/or their contents during emptying	
Advanced software for Geographical Information Systems (GIS)	Visualisation of waste and recycling collection performance data	Up to $100k to implement

Collaborating and building partnerships

Our City is surrounded by other councils with similar challenges and opportunities. Many State and Commonwealth Government agencies have a strong interest in the environmental benefits and economic development opportunities from waste management. Business and industry are looking to reduce waste management costs and improve sustainability. The local waste industry has an important stake in how the City manages its waste, future urban development, and creating new local economic growth opportunities. There are many local not-for-profits and entrepreneurs that participate in the waste and recycling industry that can assist our City with waste management, and who are pioneering new Circular Economy opportunities. There are community and residents groups keen to assist and contribute towards improving the sustainability of our City and its environs.

Collaborating and building partnership with others can help the City discover new ideas, learn from others' experiences, share resources, reduce waste management costs, support local community aspirations and spirit, and encourage innovation, new economic development and job creating opportunities.

Placemaking, tourism and natural heritage

Public place bins, illegal dumping and litter management, and municipal waste infrastructure and operations, influence the aesthetics of our City's public environs, parks and gardens, heritage areas and natural environment.

We can use how we manage these services to enhance our aesthetics and place-making. These outcomes improve community spirit and wellbeing, and could help attract more tourism, visitors and businesses to the City area, supporting the local economy.

High density and mixed-use developments

More high density and mixed-use developments are being built in our City. Residents in these developments will expect to receive a collection service similar to those provided to other residents. This may require us to provide a different type of residential waste collection service (e.g. bulk bin collection), and guidance for developers on these services when designing these developments.

The type of waste service suited to higher-density developments may also suit small businesses. This could enable our City to improve the affordability of this service to higher-density developments and at the same time provide a cost-effective service to smaller businesses. Other advantages for our City in providing these services could include reduced traffic congestion, noise and pollution, as waste collection will be consolidated. There may also be opportunities to collaborate with other councils dealing with this same issue.

Our City could additionally provide guidance to developers on how to minimise demolition and construction waste generated by developments, and use of recyclable materials, which could improve sustainability outcomes.

Innovative technology

There are a range of innovative technologies becoming available for kerbside collection that can improve service delivery and diversion performance (e.g. Table 7). These technologies can provide data to help our City improve its diversion performance and service quality. Some metropolitan Adelaide councils have already adopted some of these technologies. However, there can be a significant cost to implement. It will be important to assess whether the benefits they provide outweigh these costs, and this may require field testing or trials before any wider implementation is considered.

Innovative approaches

There will be scope for our City to explore new and smart ways to improve its existing waste services and reduce costs.

One example is the current at-call hard waste collection service, where all hard waste collected is disposed to landfill. There may be opportunity to provide some routinely scheduled collections for collection of recyclable hard waste items.

Another may be to support residents placing their hard waste on the road verge for other residents to reuse (before collection for disposal).

Whilst weekly collection services for rubbish are mandatory for our City to provide, we could (in the future) reduce waste management costs by giving residents options to present their bins less frequently..

Innovative strategies for community engagement, like 'gamification' and offering financial incentives and rebates, could help lift diversion performance with very little investment.

Future economic opportunities

A recent Waste and Resource Recovery Infrastructure Plan prepared by the State Government (Zero Waste SA, September 2016) has projected substantial new investment in the State's waste and recycling industry over the next 30 years (Table 8).

This represents a significant opportunity for the waste and recycling industry in our City to grow and expand, providing jobs to residents, supporting other local businesses, and improving economic activity in the City area.

In addition, the State Government has recently released a report (Green Industries SA, 2017) projecting that the Circular Economy could create 25,700 jobs across the wider South Australian economy over the next 30 years. This could create further opportunities for our City's waste and recycling industry, as well as local entrepreneurs and not-for-profits to establish or attract new hi-tech businesses and jobs.

Our City can play an important economic development role in supporting local business and industry.

Leading by Example

As an organisation, we can inspire our residents by ensuring that we achieve best practice and minimise waste service costs at our own sites and in how we manage city activities.

For waste services provided at our own sites, we should look to minimise waste, maximise landfill diversion and recycling, measuring our performance, and report this back to our ratepayers.

We can show leadership in how we manage public place waste, by providing recycling options in high-traffic, tourism, recreational and heritage areas.

We could lead by example in our management of waste created during the building and maintenance of City infrastructure, by ensuring that demolition and construction waste is minimised and recycling is maximised. This may require us to review and modify technical requirements and standards specified for this infrastructure.

Waste-to-Energy

There is potential opportunity for Waste-to-Energy (WtE) to provide a more sustainable alternative to landfill disposal of rubbish. Interest has grown in WtE following increases in energy costs and the Solid Waste Levy. It is a technology already widely used elsewhere in the world.

However, there are commercial challenges and a preference to maximise resource recovery before implementing WtE in South Australia.

Nevertheless, alternatives to landfill technologies appear inevitable, and our City could be an ideal location in metropolitan Adelaide for a plant, that would bring new investment and jobs to our region.

Planning and policy

Given community aspirations and the importance of waste management to our City's budget, it should have a central-role in future City planning, and in the development of policy that informs and guides activities across our City.

Review and consideration should be given to where City planning, and its policy and other documents related to waste management can be strengthened.

Table 8:
Expected future investment in the State's local waste & recycling industry and the estimated number of jobs it could create

PERIOD	POTENTIAL INVESTMENT	NEW (DIRECT & INDIRECT) EMPLOYMENT CREATED
Next 10 years	$94Million	650 jobs
Next 30 years	$650Million	4,500 jobs

Our Stakeholders

Many stakeholders have an interest in our City's waste management activities and services (see Figure 13). They include our residents, ratepayers, not-for-profit organisations, community groups, Commonwealth and State Government agencies, local businesses and the local Waste and Recycling Industry.

These stakeholders play a range of roles, including as advocates and change agents that influence how our City manages its waste.

The importance of some stakeholders, particularly not-for-profits and entrepreneurial local businesses, could grow as waste management is transformed by Circular Economy principles.

These stakeholders can directly influence consumers by providing products and/or services that reduce waste generation and improve our diversion from landfill, by supporting longer-life or reusable products that are more recyclable, and/or can be shared and/or reused before disposal is necessary.

Residents, businesses and ratepayers are our City's most important stakeholders. They pay the rates that fund our waste management services, and equally importantly, their behaviour and disposal choices influence our City's waste management performance and costs.

Figure 13:
Key stakeholders in the City's waste management

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PART 3

Provides more information about each of the initiatives in our Waste Management Strategy, including (where relevant) the scope, initial steps and/or stages of implementation. It is based on advice provided by Colby Industries and associates during development of the Waste Management Strategy and is intended to serve as a 'starting point' for project teams and/or staff responsible for implementation.

Priority Initiatives

1. Increase our diversion of waste from landfill toward 65% by 2022

Council's current kerbside diversion rate is around 50% (2015-16 data). When other waste streams are considered, our City-wide diversion rate may be in the range of 50-55%.

Lifting the City's diversion from this level to 65% would require a 3% per year average improvement in diversion over the 5-year Strategy period. This would be challenging and involve substantial effort and careful planning by Council to make necessary changes to existing waste services within the constraints of existing contracts, staff resourcing, and budgets.

Increasing City-wide diversion performance from 50% to 65% could save us as much as $1m in future disposal costs per annum by 2022, and perhaps more if the Waste levy continues to escalate after 2020.

Lifting diversion could be staged as follows, with some of these steps supported by co-implementation of other Priority Initiatives.

1. **Benchmark current City-wide diversion** – This should be the starting point, to confirm what current performance is, by quantifying disposal to landfill and resource recovery of all the City's municipal waste streams. This step should be undertaken as part of broader efforts to improve Council's waste data collection.
2. **Identify diversion improvement areas** – For each of the City's waste streams, there are particular Initiatives as part of this Strategy that could improve diversion from landfill to resource recovery:
    - For kerbside collection, implementation of Initiative 2 (improving education and community engagement), particularly with regards to food waste will be important.
    - For hard waste collection, implementation of Initiative 5 (hard waste collection), may help to divert some of this waste stream from landfill disposal.
    - For waste collection from the City's existing sites, implementation of Initiative 8 (best practice waste collection for Council's own sites and activities) would contribute to diversion improvements.
    - Initiative 3 (explore partnerships with other councils) may provide ideas, expertise and lessons from other councils that could help the City.
    - The collection contract renewal in April 2020 may be important for achieving changes to kerbside collection that enable the City to deliver necessary improvements in this area.
3. **Plan and implement** – identified actions from Step 2.
4. **Resource**– implementation may require additional staff resourcing to manage and/or deliver as well as investment in advice and/or new equipment. Investigate whether additional resources can be secured from the State Government or other sources to assist proposed actions.
5. **Review and revise** – measure progress towards this target on an annual basis and plan new actions to further improve diversion performance for the following year.

2. Enhance community engagement, information and education to support increased waste diversion and recycling

Recent resident surveys demonstrate waste management and the quality of services provided is valued by community members. Most residents are aware of the importance of recycling to conserve natural resources.

This enthusiasm can be harnessed to encourage better disposal choices when using Council waste services so substantial and sustained diversion performance improvements can be achieved.

To achieve this goal, Council should first understand why our residents are not currently making better disposal choices and what information or support could help them do so. Only then can appropriate decisions and prudent investment be made in how to engage with residents to deliver real change.

Council may need to seek external expert advice to undertake this first step, and successfully implement any findings. It may need to increase the resources available for this work, including additional staff, and invest in training of these staff to support these activities.

As part of this Initiative, illegal dumping and litter management should be included, given the new responsibilities Council has for managing these waste streams under the Local Nuisance and Litter Control Act 2016. This work would support Initiative 4 (illegal dumping).

Council should develop a plan for how it will achieve this goal.

The investment by Council in this Initiative should be outweighed through cost savings if it can:

- Lead to significant diversion improvements in its waste services to residents; and/or
- Reduce illegal dumping and litter problems which Council must often clean up at its own cost.

3. Continue exploring partnerships with other councils that help the City to improve its waste management and reduce costs to ratepayers

Council already has well-established relationships with neighbouring councils. These relationships have been built through a range of mechanisms, including: organisational and/or individual staff membership and participation in a range of representative bodies (e.g. LGA, Waste Management Association of Australia (WMAA), KESAB Waste Educators Group, etc.); Council staff attendance at relevant events organised between or for councils or by the waste industry; and/or informal relationships established between City staff and those at other councils. The recent involvement of Council in the Council Solutions' Waste Procurement Initiative has helped to build valuable networks.

Continued investments should be made in staying informed of advances in waste management and/or relevant activities being undertaken by other councils which may help the City to improve the quality or diversion performance of its waste services. This could include strengthening relationships with other councils; taking a leadership role (where appropriate) in specialist municipal or council waste interest groups; or hosting/ participating in meetings or events to share learnings and knowledge.

4. Review and improve management of illegal dumping to reduce its incidence and meet (new) regulatory requirements

Under the Local Nuisance and Litter Control Act 2016 Council has new (additional) responsibilities for illegal dumping and litter management from 1 July 2017. In the first instance, Council has planned and budgeted for what it believes the compliance aspects of these new responsibilities will entail.

In the longer-term "prevention is better than cure" and additional work is needed to identify what can be done to mitigate illegal dumping and minimise litter problems. This would require research on what actions can cost-effectively achieve this goal and how to implement them. Community views and engagement on the issue should be sought through Initiative 2 (community engagement and education).

Council may need to improve data collection for monitoring and recording illegal dumping incidents and litter problems, to better understand patterns and motives of perpetrators.

There may need to be investment in community education as well as in signage and infrastructure in problem hot-spots to improve deterrence.

An important piece of this equation may be how Council manages its hard waste. This should be considered in conjunction with Initiative 5 (hard waste), to ensure that any change in this service does not inadvertently contribute to illegal dumping incidents and litter problems.

Likewise, liaising with other councils through Initiative 3 may assist in finding solutions and/or opportunities to collaborate and share resources, particularly with neighbouring councils.

A public place waste management strategy (see Initiative 29) may assist with addressing litter management problems.

5. Identify improvements to current hard waste collection service to ensure a timely and affordable service for residents which increases recycling

Council's current hard waste residential collection service allows up to 4 at-call free collections per property per annum. We are the only metropolitan Adelaide council that offers so many at-call free collections, with most others providing either 1 or 2 only. Waste collected by this service is sent to landfill.

When introduced in 2010/11 through its kerbside collection contract, Council allowed for a maximum of 75 hard waste collections per day (or 19,500 collections per year). Since this time, community demand has outstripped this contracted maximum, leading to delays of up to 12 weeks from the date the service is booked. Annual costs (collection and disposal) have risen to nearly $1.2 million per annum. If the contracted maximum for collections was relaxed, this cost could easily double or rise even more given community demand for the service. Furthermore, much of this material would continue being disposed to landfill, which is expensive, and little resource recovery or recycling would be achieved.

There are alternatives that could allow resource recovery to be achieved and keep the service affordable for the community whilst still providing a convenient at-call service available to residents when they need it. These alternatives could include:

- In addition to at-call collections, re-introducing a scheduled annual hard waste collection that includes staged collections of recyclable materials for resource recovery;
- Ensuring that all residents can access at least one (1) free at call collection per year, but providing additional at-cost collections for residents who require it;
- Organising an affordable hard waste drop-off service at a local waste depot that practises resource recovery, for residents that need additional hard waste disposal options; and/or
- Providing options for residents to present hard waste on their road verge and advertise it to other residents for reuse (instead of for Council collection only).

Council should investigate and explore these options for its hard waste collection services to see if improvements can be found that meet residents' needs, increase recycling outcomes, and keep the service as accessible and affordable as possible to the community.

6. Ensure that all services align with the *Environment Protection (Waste to Resources) Policy* (W2REPP) obligations to maximise resource recovery before landfill disposal

The South Australia Environment Protection (Waste to Resources) Policy 2010 (W2REPP) has introduced waste obligations that require that a *"person must not dispose of waste at a landfill depot"* that has not been *"subject to resource recovery processes carried out:*

(a) at an appropriate licensed material recovery facility or composting depot; or

(b) at some other facility that has been approved by the Authority for the purposes of this clause; or

(c) in accordance with the waste management hierarchy and to the extent reasonably achievable."

Exemptions to the above include council kerbside collection services that have recyclable waste and vegetative matter collections, and waste collected by council street sweeping or emptying of rubbish bins.

Despite these exemptions, however, Council should ensure that disposal of waste and recycling collected on its behalf genuinely reflects the spirit of these obligations, to ensure resource recovery of its waste and recycling, to the extent reasonably achievable, before landfill disposal.

In addition, the W2REPP prohibits disposal of certain waste items to landfill depots (except where it has been determined that it does not need to be subject to further treatment). Council should ensure that these prohibited items collected by its services are properly disposed of and do not end up in landfill.

This issue can be addressed by asking Council's waste collection and disposal contractors to verify and report how they are complying with the W2REPP, which should include identifying and quantifying the disposal fate of waste and recycling materials that they collect.

7. Review and improve data collection to better measure, inform and guide the City's waste management activities and services

Reliable and accurate data is key to Council understanding its waste management performance, including benchmarking itself with other councils, identifying where opportunities may exist for improvement, and understanding the costs and benefits for making changes and performance improvements.

Whilst Council collects a wide range of useful data from its waste management operations, there are gaps and opportunities to do more. For example, there is opportunity to use advanced analytics and geographical information systems to better analyse and understand waste data sets, which could better inform and guide Council on how to improve waste management outcomes and reduce costs. Where data permits, it could also enable residents to access data on their own kerbside waste and recycling performance.

The first step in addressing this issue should be for Council to undertake a review that considers the following.

1. What data Council collects now and how it is used and analysed to support waste management;
2. What gaps exist or additional or future data does Council need to collect measure and improve its waste management performance;
3. How should this data be collected, collated, stored and managed, to be accessible and useful to Council waste management staff, but also to protect privacy of residents;
4. What data analytics and / or reporting capabilities are required to transform this data into useful information that can inform or guide Council's waste management activities;
5. How can this data assist Council with future waste procurement;
6. What data could or should be made available to individual residents or the community at large, why and when would this be done, what are the implications of doing this, and what is the best mechanism available;
7. How do the above needs align to or fit in with Council's other data collection and business reporting systems; and
8. What investment is needed to make the changes recommended?

8. Review and implement best practice waste management for Council's own sites and activities (including community events)

Council should demonstrate best practice and efforts to minimise costs for waste services at its own sites, and in how it performs its other waste management responsibilities.

This will require a review of waste management across all Council sites and operations. The review should consider what best practice is in each case, including comparing it to the expectations that Council has for waste disposal practices by residents. The review should identify what changes can or should be made, bearing mind that such changes may increase the City's waste management costs.

9. Review internal policy documentation relating to waste management

Staff or contractors undertake waste management activities on behalf of Council utilise a range of written documents to guide information provision, decision-making, quality and timeliness of services, and other matters. These documents can take many forms, including as policies, guidelines, standards and/or management or operating procedures.

While such documentation does not guarantee high quality waste management or services Council should review its documentation to ensure:

- decisions about waste management services are made and communicated to residents, businesses and others fairly and consistently, and that dispute resolution processes are in place and followed;
- continuity of service provision;
- a good understanding of waste management activities across different areas of Council's operations;
- services and activities align with Council's legislative, strategic and operational requirements; and
- Council staff work together effectively to perform waste management activities, deliver services, and improve waste service performance.

10. Optimise existing contracts and plan for future waste procurement

Contracts with external service providers account for the vast majority of waste management costs incurred by the City. Where possible and appropriate Council should work with existing contractors to identify ways to increase diversion from landfill, improve services or reduce waste costs.

Council should review the limitations and/or opportunities of existing contracts to implement Initiatives proposed in this Strategy (or that might be otherwise developed).

Council's existing kerbside collection contract ends in April 2020. Whilst this is several years away, it is important for Council to prepare and plan early to achieve the best procurement outcome when this contract is renewed or tendered.

Achieving optimal procurement outcomes requires Council to understand clearly its future needs and the contract arrangements which might best serve these. Establishing and maintaining the collection and analysis of relevant data is an important precursor to this. Planning and preparation for future waste related contracts should:

- be undertaken with certainty about the collection services that Council requires: This reduces risk to both parties, and thus, should deliver improved pricing outcomes; and
- within a procurement framework that supports (i) ongoing improvement in diversion performance, (ii) responds to future service, technological or industry changes and (iii) encourages innovation, by providing flexibility to refine or evolve collection services over the contract term.

New Initiatives

11. Adopt waste hierarchy, product stewardship & circular economy principles in all decision-making

In all strategic planning, operational management, procurement, and delivery of waste services and activities Council's decision-making should adopt these principles:

- **Waste Hierarchy**
  Waste Hierarchy principles should be applied to disposal of waste and recycling from waste services and sites and/or when planning, approving and/or delivering all other services and activities.
- **Product Stewardship**
  Council should encourage or make it a requirement that suppliers of products and services minimise the product or service's environmental impact throughout all stages of its life cycle, including at end of life or service delivery.
- **Circular Economy**
  Council should plan and undertake services, activities and procurement so that the products and services used, and built infrastructure are designed to reduce resource inputs and waste generation through long-lasting design, maintenance, repair, reuse, remanufacturing, refurbishing, and recycling.

This initiative involves (i) ensuring Council staff involved in decision-making understand these principles and how they may apply to the decision (and/or offering training where this is not the case), and (ii) ensuring these principles are adequately addressed as part of Council decision-making processes. Council may wish to formalise these principles as a new or part of existing policies which can be referred to by staff during decision-making processes.

12. Plan and prepare to mitigate future waste levy increases in our City's waste management costs and future rate rises

Increases in the Solid Waste Levy to over $100 per tonne by 2020 could add over $1m to the City's annual waste management costs. Beyond 2020, there could be even further increases in the Solid Waste Levy. If nothing is done, these will significantly add to waste management costs and put pressure on rates.

Consequently, Council should plan for how it could or should deal with future Solid Waste Levy rises. This should include:

- Explaining how Waste Levy rises would or could impact on waste costs and Council rates if nothing is done; and
- Canvasing options to change or improve waste services to mitigate the impact of Solid Waste Levy rises on waste costs and Council rates, including what investments are needed, how waste services are charged for, and how these options might or would affect services provided to residents.

A valuable first step would be Council engaging with its community on how to deal with this issue. This is important because some of the potential options rely on the community's participation to be successful. For example, lifting diversion to reduce landfill disposal, requires residents to make better disposal choices at home.

Many options may prove controversial if attempts are made to introduce them without properly laying the groundwork with residents. This initiative should therefore consider the best approaches to community engagement to communicate recommended outcomes, and involve them in decision-making about which options Council should implement.

13. Develop community waste education which supports participation by businesses and new residents from culturally and linguistically diverse backgrounds

Community engagement and participation will be key to Council improving its future waste management performance: Influencing disposal choices residents make, and securing their support for changes to waste services will be necessary if Council is to keep waste services affordable.

However, there are areas in the City where many residents were not borne in Australia, and may speak another language at home or do not consider themselves fluent in English. There could be cultural differences in how some of these residents see waste management, including disposal choices they may make.

Council should review and consider how to successfully engage and communicate with its culturally & linguistically diverse (CALD) residents. This should be an important aspect of all future waste management related community engagement activities, and should be considered when implementing any new initiative.

14. Evaluate the opportunity to provide waste collection services for medium high-density development (MHDD) and small businesses

The proportion of multi-unit and higher density developments approved in the City has significantly grown over the past decade, and is expected to accelerate into the future. Council's standard kerbside collection service, however, is not suitable for many of these types of developments due to the greater volumes and types of waste generated (e.g. Council bins are too small and may not be practical, Council collection is not frequent enough, and/or there is no suitable location for bins to placed kerbside for collection).

Council should evaluate of the opportunity to provide waste collection services for medium high-density development and small business, including consideration of:

- Current and future numbers of these developments in the City, and where these are located;
- How these developments are currently serviced and what the respective costs;
- What waste diversion levels are being achieved in these developments, and how this affects the City's waste diversion performance – now and into the future;
- Whether these services can be offered to small businesses and could this reduce the costs of Council providing these services;
- Costs to Council of providing these services;
- The learnings from other councils that have introduced these services;
- The contractual, budgetary, planning and technical challenges in introducing these services to existing and future developments, and how could these be addressed or overcome; and
- The best timing and approach to introducing these new services to relevant developments across the City.

15. Review and change technical standards and procurement practices to maximise recycling performance in the construction and maintenance of City-owned infrastructure

An area Council could lead by example, improve diversion performance, and potentially reduce its costs, is in how it manages waste generated by Council-built infrastructure. This would require:

- Minimising construction and demolition (C&D) waste during these activities and maximising the recycling of these materials; and
- Incorporating maximum recyclable materials into new infrastructure as it is built.

Achieving this outcome may require the City to review and modify:

- Technical requirements and standards specified for City infrastructure; and
- Procurement practices for infrastructure.

The key steps towards achieving the above could include:

- Collecting data on Council's current waste reduction and diversion performance in Council-built infrastructure, including how this may influence construction or service costs;
- Identifying industry benchmarks or best practices for minimising C&D waste or maximising recyclable content in new City infrastructure; and
- Reviewing and amending current technical standards and procurement practices to incorporate and achieve the above.

16. Maximise economic and job opportunities from future circular economy and waste industry growth as part of our City economic development activity

Stakeholder consultation and investigations towards developing this Strategy identified substantial economic growth, job creation, and new business opportunities from future expansion of the State's waste and recycling industry and the Circular Economy.

Council can play an important economic support role for local waste and recycling businesses, including not-for-profit organisations, to assist them in capturing these opportunities, and in attracting entrepreneurs and new businesses seeking to establish and develop Circular Economy-inspired businesses.

This could include, as part of Council's overall economic development activity, working with these businesses and other stakeholders (e.g. government agencies) to:

- Gauge their interest and likely participation;
- Establish a working or steering group to identify what these opportunities are, what the economic benefits could be, which should be prioritised, and how Council, businesses and other stakeholders could work together to attract these opportunities to the City;
- Provide support and assistance in implementing the agreed actions; and
- Regularly reviewing the outcomes achieved and new opportunities as they arise.

Watch, Learn, Pilot, Support

17. Identify waste activities impacted by the new Waste Reform Bill and how this may affect our City's waste management activities and costs

The State Government recently released Draft Environment Protection (Waste Reform) Amendment Bill 2016. This Bill, if passed, will establish a range of new obligations for waste and recycling transport and depot operators, including expanded licensing requirements, stockpile management, data reporting, upfront payment of the Solid Waste Levy for material received, etc. Additional compliance costs may flow through to Council through its service contracts.

Council should review the current Draft Bill and consider what potential impact it may have on its current waste management services, activities and/or costs. It should keep a watching brief on the Bill in event of amendments or changes during its passage through Parliament.

18. Consider waste management during consultations on new State-wide Planning and Design Code being implemented by State Government

The *South Australian Development Act 1993* has recently been replaced by the *Planning, Development and Infrastructure Act 2016*. The new Act will centralise and streamline the development planning and approval process through a new State-wide Planning and Design Code. The implementation of the new development planning system will be staged and implemented over five years.

This may lead to the development and application of regional or State-wide development controls for waste management across metropolitan Adelaide. This has already been seen in some recent Development Plan Amendments (DPAs) introduced for areas of metropolitan Adelaide.

Council should ensure that its views and needs on waste management for the City are properly represented during any consultations with the State Government on the new State-wide Planning and Design Code.

19. Keep a watching brief on waste-to-energy opportunities for disposal of metropolitan Adelaide's waste and implications for local economic development

The possibility of a future Waste-to-Energy plant (WtE) in Metropolitan Adelaide for disposal of municipal general waste (instead of sending it to landfill) has been repeatedly raised by State Government and waste industry representatives. Some are suggesting that a new WtE plant could be built in the next 5 to 10 years.

The City is one of the optimal locations in metropolitan Adelaide for such a WtE plant. This plant could bring about an investment in the hundreds of millions of dollars, generate many construction jobs, and create on-going employment opportunities. However, it may also potentially generate community concerns.

In addition, some local industry and businesses are exploring smaller-scale WtE or bioenergy opportunities to meet their energy needs in the face of escalating energy costs. These smaller-scale WtE or bioenergy opportunities could be relevant to Council's own interests and operations, for example:

- It may need to consider planning approvals for proposed WtE or bioenergy plants that impact on its ratepayers or cause community concerns;
- It could be a source of waste material to a WtE plant; and/or
- It may be a customer for energy generated by such plants.

It is important that Council keep a watching brief on these developments, ensuring that staff are properly informed and prepared should a WtE or bioenergy plant be proposed within the City area. This includes being ready to support WtE or bioenergy projects that may create economic growth and new jobs for the City, as well as respond to any community concerns that might arise.

20. Stay informed on State Government initiatives to manage household hazardous waste

Households, local business and industry, as well as Council at its own sites, generate waste materials considered to be hazardous and not be able to be disposed of to landfill. It is important that City residents and businesses have affordable and convenient solutions for disposal of hazardous waste, and understand how to safely store and handle these materials. If these solutions do not exist, hazardous waste can become an illegal dumping problem that is expensive for Council to deal with, as well as a public health hazard.

Recently, the State Government announced it may build two dedicated hazardous waste drop-off sites in Metropolitan Adelaide, one in the South, and the other in the Northern Suburbs. The Northern Suburbs site could be in the City of Port Adelaide-Enfield; which would provide economic investment and jobs.

Council should monitor and remain appraised of developments and initiatives by the State Government to assist councils with managing hazardous waste.

21. Monitor and review new waste collection technologies and strategies that could improve diversion and save our City money

Stakeholder consultation and investigations towards developing this Waste Management Strategy identified that there are a range of new waste collection technologies that could potentially assist Council in improving diversion performance and/or reducing waste management costs. Examples include:

- RFID tags on bins and individual bin weighing to collect street-by-street data on diversion performance to help evaluate what initiatives / programs work well or not;
- Using cameras and GPS tracking (combined with or instead of RFID tags to collect this type of data);
- Geographical Information Systems (GIS) for data visualisation and analysis;
- Solar powered public place bins with compactors to reduce collection demands and costs; and
- Innovative communication and education strategies, including direct waste audit feedback, 'gamification' and offering financial incentives and rebates.

Adopting these new technologies or strategies can require investment, sometimes at substantial levels. Several other metropolitan Adelaide councils have trialled or introduced some of these new technologies and strategies. Where appropriate and feasible Council, should research these new technologies and/or strategies, maintain efforts to stay informed of trials conducted by other councils, and conduct its own trials with existing contractors or other waste companies to confirm performance and provide data for financial assessment (see Initiative 28 – waste management technologies).

22. Monitor updating of our City Emergency Response Plan to ensure waste risks are addressed

Council has an Emergency Response Plan that identifies the potential for waste spillage into wetlands and local waterways in an emergency, crisis, and disaster situation. It also provides information on how to respond to radioactive waste spills.

Council is undertaking a project to review and update its Emergency Response Plan. As part of this project, potential waste risks for the City should be reviewed to ensure the Emergency Response Plan properly addresses this issue. This should include:

- What types and where the greatest potential for a 'waste' disaster / emergency might be;
- What effects or outcomes these 'waste' disaster / emergency events might have;
- What would be the best response or approach to mitigating the effects of these 'waste' disaster / emergency events;
- What powers Council may have to respond to such 'waste' disaster / emergency events;
- Who could help, and how and who from Council should respond to 'waste' disaster / emergency events.

This review should refer to the recently prepared Disaster Waste Management Scoping Study for South Australia by Zero Waste SA that included advice and recommendations on what should be included in a 'disaster waste management plan'.

23. Support community led waste initiatives

Stakeholder consultation and investigations towards developing this Strategy identified a range of existing community-led waste initiatives. These include, for example, local composting networks, worm-farms and composting as part of community gardens, education initiatives, produce-swapping arrangements and the like. Wherever possible and appropriate Council should encourage, promote and support these initiatives.

Aspirational Initiatives

24. Provide guidance to developers on construction and demolition waste recycling, site contamination and waste fill in new developments

Council's Development Plan includes provisions to ensure that site contamination on new development sites are identified and assessed, including referral to relevant State and National standards and guidelines. It covers requirements for use of Waste Derived Fill and controls for how new developments should be designed so they minimise waste (including C&D)generation. However, there does not seem to be substantive policy guidance from Council about how it would prefer these issues are managed, and how planning applications should be assessed to determine compliance.

Council could review what type of guidance on these issues would be useful for developers, and develop this guidance in an appropriate form.

25. Explore opportunities for new uses of the (former) Cavan landfill site

Council is responsible for the operation and maintenance of the Cavan legacy landfill located in the City of Salisbury. Cavan landfill is Crown Land (owned by the State Government) that was leased and co-operated with the City of Prospect for rubbish disposal purposes. Under a Post Closure Management Plan (PCMP) the site was closed and capped in 2002 with a flare installed for landfill gas emission control. The landfill is currently subject to an Environmental Protection Authority (EPA) license. However, the EPA has indicated it is willing to review the need for the licence once certain site improvements are undertaken. There is also future opportunity to decommission the flare and remediate the site to a level suitable for development.

Council could consider if it can extinguish its on-going liabilities for Cavan Landfill and whether or not the site could be used for other purposes. This should involve engaging with the City's of Salisbury and Prospect, together with relevant State Government agencies, including Green Industries SA, the EPA, and the department responsible for planning and development, to identify the opportunity to utilise the site for other purposes during the PCMP period, with a view to transforming the land into an acceptable future development site. Council could take a lead in shaping this opportunity.

26. Expand support and involvement with community organisations and not-for-profit groups undertaking waste reduction or recycling projects/ services

Stakeholder consultation towards developing this Waste Management Strategy identified many not-for-profit and community organisations already working in the City area and involved in waste reduction and recycling activities. Examples included:

- Organisations such as Foodbank SA, OzHarvest and Second Bite which collects surplus food from businesses in the City area and distribute it to charities and community groups that provide it to people in need.
- Uniting Care Wesley – which operates a recycling facility for clothes and other items donated to its charity, which it then sells to generate revenue for other charity services it delivers.
- St Vincent de Paul, Goodwill, Red Cross and others – that operates shops accepting donations of clothing and furniture items that they sell to generate revenue for other charity services they deliver.
- The Port Adelaide Environment Forum – which comprises community members that advocate and undertake projects on environmental issues of local interest, including initiatives that seek to minimise waste, particularly where it can cause litter and pollution of local waterways, and improve the reuse and recycling of waste materials (instead of landfill disposal).

These organisations could be important contributors to Council's waste management activities, because of the valuable services they directly provide in waste management, and their role in encouraging, educating and assisting people to participate in environmental and sustainability improvement initiatives. A number of these organisations are already involved in the emerging Circular Economy, by providing reuse and sharing services.

There could be an opportunity for Council to work with these organisations, to support innovation and economic and job growth from their activities. This may include whether they can assist Council with its own waste management services and activities.

Council could establish a forum to engage with these organisations about such opportunities and how they might support the City in achieving its waste management objectives.

27. Assess and/or mitigate greenhouse gas emissions from waste services and activities

The South Australian Climate Change Strategy 2015-2020 includes targets to achieve a reduction in the State's greenhouse gas emissions and promote uptake of renewable energy.

This Strategy recognises that the waste sector contributes approximately three per cent of SA's greenhouse gas emissions. Most of these arise from breakdown of organic matter in landfill causing methane emissions, together with greenhouse gas emissions from transport vehicles, processes and/or equipment used for collection, processing, recycling and/or disposal.

Council could contribute toward the State's greenhouse gas reduction targets by reducing emissions from its waste management activities. The first step towards this goal could be to assess its own 'waste' carbon footprint. There are a variety of well-established tools, models and published information that would enable Council to conduct this assessment. This assessment would enable Council to identify and consider mitigation opportunities to reduce these greenhouse gas emissions.

28. Road-test and assess new kerbside & waste management technologies that could improve diversion and reduce waste management costs

Initiative 21 relates to the monitoring and review of new waste collection technologies that could improve diversion reduce waste management costs. This Initiative could extend to Council conducting its own trials with existing contractors or other waste companies to road-test alternative technologies and strategies. This testing could assist in:

- Obtaining experience with these technologies and strategies to confirm that they are suitable and practical for the City's requirements;
- Measuring and/or confirming performance gains in improving diversion, reducing waste costs, or providing better data to guide the City's waste management activities;
- Observing and/or measuring community experiences or perceptions of the new technologies and/or strategies; and
- Capturing real-world data for independent financial or business case assessment.

Given the significant investment that this type of testing can involve, it is important that it is properly planned and designed so that the correct data is accurately collected, and this data can be properly analysed so that results are meaningful and reliable. This may include involving a practitioner with knowledge and experience in experimental design and statistical analysis, to guide development of the testing program and to assist in analysing the results.

29. Develop a public place waste management strategy with local businesses and residents

Public place bins, illegal dumping and litter management, and associated council waste infrastructure and operations can significantly influence the aesthetics of the City's public environs, parks and gardens, heritage areas and natural environment.

Council can use how it manages these services to enhance the aesthetics and place-making in these areas. These outcomes can improve community spirit and wellbeing, help attract more tourism, visitors and businesses to the City, and in turn strengthen the local economy.

The importance of good waste management in public areas of the City, and particularly in tourism precincts, was brought up several times during stakeholder consultations. For public place bins, it was considered that these should designed sympathetically to the values and quality of the location, as well as public safety for use. Bins in highly trafficked and visible tourism or shopping areas, should be attractively presented and ideally integrated with surrounding urban infrastructure. It was suggested that alternative approaches by using larger in-ground bins with compactors may be a better solution to using existing mobile garbage bins.

The value of the Port River and the Port dolphins to the City's tourism industry was also noted by stakeholders. It was recognised that waste management, particularly strong illegal dumping and litter controls, played a key role in protecting these important City assets.

It was suggested that Council should have more public place bins for recycling. This would send a message that what Council expects residents to do at home is also practiced by Council.

Council could develop a public place waste management strategy, informed by consultation with local retail and tourism businesses and residents, to identify priority areas for high quality public place litter bins, and research best practice in the design of these installations, including recycling options.

30. Benchmark Council's waste management performance with other councils

Stakeholder consultation and investigations towards developing this Waste Management Strategy identified that there were some important differences between the City and other metropolitan Adelaide councils in the waste services provided, diversion performance achieved, and waste costs being incurred on a per ratepayer basis.

Council could seek to further understand the differences between its waste services, performance and costs with those of other similar Metropolitan Adelaide councils. This may assist in better understanding ways to enhance the quality of services, improve diversion performance, and/or reduce waste costs. Such an initiative should involve:

- Engaging the participation of other similar councils;
- Agreeing to share relevant data/information sets using common, agreed metrics to provide a reliable basis for comparison;
- Separately or jointly analysing this data/information;
- Reviewing the results together so as to avoid misinterpretation and understand where and why the results are different;
- Identifying what changes could be made to Council's waste services or activities as a result, and what improvements these might deliver; and
- Preparing a feasibility or business case for implementing these changes.

31. Pilot voluntary arrangements for general waste collection

Metropolitan Adelaide councils are presently required by law to provide access to weekly general kerbside waste collection for residential properties.

There is growing interest in whether this 'weekly' waste collection requirement could be relaxed to allow fortnightly collection instead. In 2013, the Fleurieu Regional Waste Authority (FRWA) conducted a trial of fortnightly waste collection in Victor Harbour. A change to fortnightly collection could encourage increased diversion and help to reduce Council's waste management service costs.

At present, there appear no immediate plans from the State Government to relax the weekly collection obligation, and no financial incentive within the scope of Council's existing waste management contracts. However, longer term Council may wish to explore trialling less frequent general waste collections on a voluntary basis with interested residents - to see if this can improve diversion outcomes. If this trial is undertaken, Council should ensure that contingencies are in place to prevent odour issues that might arise during hot weather, and provide alternatives for sanitary waste collection to residents with young families that may want to participate. Council should consider how participating residents could be incentivised or rewarded for improved diversion performance and reduced waste costs to the City (if achieved).

32. Develop management systems that provide improve our line-of-sight to all Council waste activities

During development of this Waste Management Strategy it was identified that some waste activities undertaken by Council were performed by staff in other departments under separate expenditure budgets.

To improve Council's line of sight to all Council waste activities Council could develop a unified framework for managing its waste activities which:

- Includes a waste management organisation chart - so that staff and management responsibilities for various waste activities are clearly understood;
- Delineates how different activities and responsibilities align to Council's Waste Management Strategy;
- Provides a mechanism for all staff involved with waste management to meet regularly to discuss their different activities and how they can or should be coordinated and/or improved;
- Provides a mechanism for the review of data and information requirements across activities to properly measure performance and understand waste management related costs; and
- Provides a common waste management reporting framework so that performance and cost data can be consolidated and reviewed on a regular basis.

PART 4

Provides the interested reader with more information about the approach used to develop our Waste Management Strategy, and how we will go about its implementation.

Stage 1

Stakeholder Consultation

Colby Industries, on our behalf, met with a broad range of people, groups and representatives of organisations with an interest in waste, or particular knowledge or expertise to contribute. They included:

- Organisations representing business and industry in our region
- Waste industry leaders working in and near our City
- Not-for-profit organisations that reuse waste or are involved in waste education
- Property developers
- The Port Adelaide Environment Forum and other interested community members
- Neighbouring local councils and regional council subsidiaries
- State Government agencies

Our own Elected Members and staff also contributed ideas and expertise during this phase.

The purpose of Stage 1 was to ensure we:

- Were properly informed about the strategic context for this work
- Understood the needs and challenges of local businesses, developers and not-for-profit organisations, as relevant to our waste services
- Gathered feedback (in addition to our resident surveys) about our current waste services and opportunities for improvement
- Identified issues, ideas and opportunities for Stage 2

Our Waste Management Strategy was developed in three stages, which are outlined below. We acknowledge the expertise and work undertaken by Colby Industries in developing the Strategy.

Stage 2

Issues Paper

Information and ideas gathered in Stage 1, together with a desktop literature review and independent analysis, were combined into an issues paper. This document summarised:

- The waste services and activities we provide and how we manage them
- Key issues and drivers that may dictate or influence how we deliver or manage waste services and activities in the future
- Initiatives that could be included in the Waste Management Strategy
- What the Strategy should contain and how it should be presented.

The purpose of Satge 2 was to gather all the possible ideas and information into one document which could be used to inform develop our draft Waste Management Strategy.

Stage 3

Prepare draft Waste Management Strategy

A project team (comprised of senior staff from across Council), supported by Colby Industries, agreed on a set of principles and questions to use in determining which of the possible initiatives and ideas identified in the Issues Paper could and should form our City's draft Waste Management Strategy. The principles and questions used to assess each initiative appear in the final Waste Management Strategy. Initiatives were ranked according to these, and categorised as: continuous improvement; new initiatives; initiatives which Council should watch, learn, pilot or support; and aspirational initiatives. The latter are considered important and will be undertaken if resources permit, additional funding is secured or circumstances change.

The Initiatives, together with the vision, principles and questions, and key material from the Issues Paper (about our current waste services and performance, the strategic context for the Strategy, and future drivers and opportunities) were written up as our draft Waste Management Strategy. The draft Strategy was then presented to Council and endorsed for community consultation.

Implementation of the Waste Management Strategy

After community consultation has concluded and changes are made to the draft Waste Management Strategy it will be taken to Council for their endorsement as a final document.

In the interim, work has commenced on reviewing aspects of our waste services and activities and making improvements so that we can be ready to implement the Initiatives approved in the final Waste Management Strategy.

Implementation of the Strategy will be overseen by a team of senior Council staff, with reports to Council's elected members on a periodic basis.

Further Information

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CITY OF
Port Adelaide Enfield