

Port Pirie Regional Council

Waste and Resource Recovery Strategy
2019-2024



Port Pirie
Regional Council



Document verification

Date	Version	Title	Prepared/ Reviewed by	Approved by
10 Dec 2018	V1 (DRAFT)	Port Pirie Regional Council Waste and Resource Recovery Strategy (2019-2024)	Jarvis Webb and Mark Rawson	Mark Rawson
07 Jan 2018	V2	Port Pirie Regional Council Waste and Resource Recovery Strategy (2019-2024)	Chris Davey and Grant McKenzie	Mark Rawson
14 Jan 2018	V3	Port Pirie Regional Council Waste and Resource Recovery Strategy (2019-2024)	Jarvis Webb, Mark Rawson and Grant McKenzie	Mark Rawson
19 March 2018	V4	Port Pirie Regional Council Waste and Resource Recovery Strategy (2019-2024)	Jarvis Webb	Mark Rawson

Important notes

This document has been prepared by Rawtec Pty Ltd (Rawtec) for a specific purpose and client (as named in this document) and is intended to be used solely for that purpose by that client.

The information contained within this document is based upon sources, experimentation and methodology which at the time of preparing this document were believed to be reasonably reliable and the accuracy of this information subsequent to this date may not necessarily be valid. This information is not to be relied upon or extrapolated beyond its intended purpose by the client or a third party unless it is confirmed in writing by Rawtec that it is permissible and appropriate to do so.

Unless expressly provided in this document, no part of this document may be reproduced or copied in any form or by any means without the prior written consent of Rawtec or the client.

The information in this document may be confidential and legally privileged. If you are not the intended recipient of this document (or parts thereof), or do not have permission from Rawtec or the client for access to it, please immediately notify Rawtec or the client and destroy the document (or parts thereof).

This document, parts thereof or the information contained therein must not be used in a misleading, deceptive, defamatory or inaccurate manner or in any way that may otherwise be prejudicial to Rawtec, including without limitation, in order to imply that Rawtec has endorsed a particular product or service.



Forward

This Waste and Resource Recovery Strategy (Strategy) for Port Pirie Regional Council, although noting that it was a document due for review, could not have been undertaken at a more fortuitous time. The current waste sector across Australia, and indeed the developed world, is going through a period of major adjustment. This is in large part due to the 'China Sword' impacts and also because waste management for too long had been given limited attention. Looking forward, it is difficult to clearly determine what is the best direction for any particular organisation or government authority to take. Therefore, it is important to maintain flexibility with a focus on sustainable outcomes when planning future management of waste and recycling activities, so that challenges can be met and worthy opportunities that present can be enacted upon.

It is intended that this document, whilst outlining the identified potential options for Port Pirie Regional Council, can also be a reference document to provide guidance and background for those unidentified directions or prospects that may be just over the horizon.

The formulation of this document took into consideration the SA Waste and Resource Recovery Infrastructure Plan, the SA Waste Strategy and other related neighbouring council strategic documents to maximise its relevance regionally. It is likely that there is as much if not more opportunity to partner with other stakeholders, government or private industry, as there is locally. Maintaining a broader regional approach when considering activities or projects based on this document will provide more favourable funding support and better whole of community outcomes.

Waste management will continue to impact on this and every council in an increasingly significant way. The direction and measures taken over the coming years will shape the future context for the next generation of our community. It is important that the Port Pirie Regional Council aims high so that the sustainable legacy that we leave is the best that we can achieve, and we capitalise on the local opportunities for growth in development and employment for better waste and recycling management outcomes in the region.

Grant Mckenzie

Director Development and Regulation

Contents

1. Current services and facilities	1
Services	1
Facilities	1
Waste and resource recovery performance snapshot (17/18)	2
2. Current context and future drivers	3
External drivers	3
Internal drivers	4
3. Strategy	5
Mission	5
Guiding principles	5
Objectives	6
Strategies	6

Acronyms

MSW	Municipal Solid Waste
C&I	Commercial & Industrial
C&D	Construction & demolition



Recent achievements

1. Introduction of a three-bin kerbside recycling collection system
2. Construction of a regional scale waste transfer station
3. Landfill closure and ongoing rehabilitation
4. Successful free garden waste and hard waste drop-off days at the Port Pirie Transfer Station.
5. Fee structure change to pay-by-weight charges.

1. Current services and facilities

Services

Council provides its residents with a number of waste and recycling services.

Kerbside services

Council recently introduced a three-bin kerbside collection service (general waste, comingled recycling and garden organics recycling) to an estimated 8,900 residential, business and Council properties. On average, there has been an 80% uptake of comingled recycling bin and 40% uptake of garden waste bins.

Street sweeping

As part of Council's commitment to beautifying the city, street sweeping occurs in many locations. Organic wastes collected during street sweeping (e.g. leaves, branches, soil) is currently reused for remediation of the old landfill site.

Illegal dumping

The dumping of household rubbish is a recurring problem for Council, resulting in costs to the community associated with clean-up and disposal. Council provides illegal dumping collection and issues fines for caught illegal dumpers.

"Take the Pledge" educational campaign

Developed by KESAB, Council rolled out the "Take the Pledge" program with assistance from both KESAB and Veolia in 2016/17 where residents could commit to a 12 week program, where they could win a prize for having the lowest bin contamination and generated less waste.

Facilities

Council provides its residents with two transfer station/resource recovery centres.

Port Pirie Transfer Station

The Port Pirie Waste Transfer Station is a large modern facility set up by Council to service our regional commercial and residential needs.

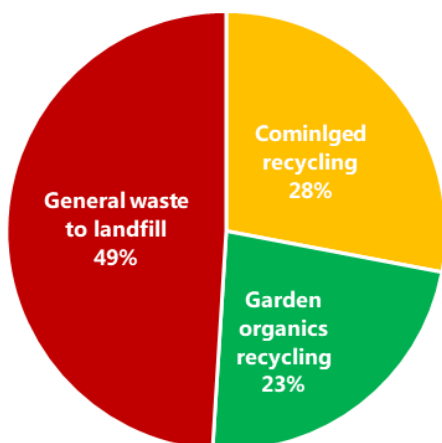
The facility receives, transfers (via bulk haulage to end markets) and processes, a wide range of waste and recyclable material including kerbside and transfer station dropped off mixed waste and recycling, street sweeping material, garden waste, cardboard, mattresses and lounges, whitegoods, e-waste (TVs, computers), tyres, gas bottles, oils, and construction/demolition material. The transfer station also provides 2 free garden waste disposal and two hard waste days per year, Council also supports Clean Up Australia Day with free disposal at its transfer stations.

Crystal Brook Transfer Station

The Crystal Brook Transfer Station provides a location for nearby residents to dispose of a number of waste and recycling streams (e.g. mixed waste, e-waste, scrap metal). Materials are either taken to the Port Pirie for bulk transportation or processing or where possible, removed directly from site under contract by a contractor to eliminate the need for double handling. No commercial access is allowed at this transfer station.

Waste and resource recovery performance snapshot (17/18)

Kerbside Collection Service



8,900 residential, business and Council properties

On average, there has been a recycling bin uptake of:

80% of residents with a comingled recycling bin

40% of residents with a garden recycling bin

Kerbside three bin service landfill diversion rate of approximately 51%

Port Pirie Transfer Station

22,000 tonnes
of waste and recycling through the transfer station per annum

Customers

21,500 transactions

across an estimated

20,800 vehicle movements per annum

Incoming kerbside service tonnes

3,550t from general waste bins

1,300t from comingled recycling bins

1,780t from garden organics recycling bins

1,400t from street sweeping organic material

Incoming transfer station drop off tonnes

3,550t mixed waste

1,500t garden recycling

7,750t mixed C&D, concrete, soil & rubble

300t scrap metal

Transfer station drop off streams landfill diversion rate of approximately 66%*

Onsite processing activities



16,000m³ of green waste shredded by a contractor for re-use on site as part of the remediation of the landfill.



8,000m³ of construction and demolition waste material has been crushed by a contractor into material suitable for road making. This material is used as road base on Council's road construction projects.

**Not including kerbside service waste and recyclables or street sweeping material*

Current waste and recycling industry overview

The national and international waste and recycling industry is currently going through a transition due to a number of recent events (e.g. China National Sword Policy).

These present current challenges, however, they also create future opportunities for local processing, reuse and remanufacturing of waste and recyclable material in the region.

2. Current context and future drivers

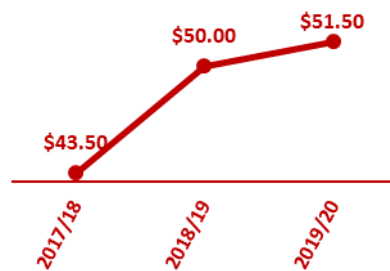
External drivers

Waste Management Hierarchy



The Waste Management Hierarchy is the nationally and internationally accepted guide that sets out the preferred order of waste, recycling and resource recovery management practices.

Solid Waste Levy



The Solid Waste Levy is paid on waste disposed of in landfill in South Australia. The non-metro Levy is currently \$50.50 per tonne and will rise to \$51.50 per tonne in 2019/20.

China Sword

Until recently, Australia relied on China as a market for its recovered recyclable material. (e.g. mixed paper and cardboard). In 2017, China introduced stricter quality standards for imported recyclables. As a result, low-grade recyclables flooded the market causing prices to drop significantly, threatening the economic viability of many recycling operations.

Circular Economy



A Circular Economy is a self-sustaining system driven by renewable energy and keeping material resources in use for as long as possible. This is a beneficial alternative to our current wasteful 'linear' economy that's based on the 'take, make, use and disposal of resources.

2015-2020 SA Waste Strategy

SA has a 2015-2020 Waste Strategy that provides overarching targets for managing waste and resources in SA, including:

- >35% reduction of landfill disposal from 2002/03 baseline by 2020.
- >5% reduction in waste generation per capita by 2020 (from 2015).

While not directly applicable, the 2020 landfill diversion targets for the Metro area of 70% for MSW, 80% for C&I, 90% for C&D by 2020 for provide a useful guide.

SA Waste and Resource Recovery Infrastructure Plan

SA's Waste and Resource Recovery Infrastructure Plan identified opportunities for infrastructure development in the region:

- Investment in equipment and facilities for compaction and bulk hauling to reduce transport costs to end markets.
- Reprocessing of E-waste and other metal-based streams at the local smelter.

Aspire 2027:Port Pirie Growth Plan

The city of Port Pirie has embarked on a bold plan to transform its economic base, environmental conditions and community facilities; increase the appeal of its towns and to change people's perceptions of the city. Plans and projects are in train to establish and promote Port Pirie as an attractive residential and business base with a view to attracting investment in the city.

It is important that best practice waste, recycling and resource recovery activities and projects are integrated into the plan.

Internal drivers

2018 Transfer Station Review

A recent strategic review of the Port Pirie Transfer Station identified that the facility is well laid out, reasonably efficient. The review also identified the facility has significant additional capacity for expansion and additional services including:

- Improvements to the layout and infrastructure of recycling drop-off locations to increase resource recovery, minimise traffic entering the main transfer station shed, reducing WHS risks.
- The capability to provide a greater array of services for example processing of problematic wastes e.g. mattress and tyres) for neighbouring Councils.

Key dates for waste and recycling services, contracts and facilities

The council currently has a number of key waste and recycling service contracts that are expiring within the next 5 years. An effort has recently been made to align contract expiry dates where possible, to capitalise on any synergies and costs saving by combining contracts, for when seeking these services beyond the current expiry dates. Key dates include:

- Renewal of the council's kerbside collection and transfer station bulk haulage contracts.
- Completion of the mulch capping layer of the existing landfill at the Port Pirie Transfer Station (expected by 2020).

Local employment opportunities

The Port Pirie Regional Council has ongoing commitment towards the growth of employment within the region.

Port Pirie Regional Council Development Plan

The Port Pirie Regional Council Development Plan, includes guidelines and principles of development control for planning waste management facilities, including the objectives including Minimisation of human and environmental health impacts, buffer zones, site locations, access requirements).

Aspire 2027:Port Pirie Growth Plan

The Port Pirie Growth Plan details the economic priorities and strategy and identified opportunities for addressing long term growth and structural change for the Port Pirie and the surrounding region.




3. Strategy

Mission

Deliver effective waste and resource recovery services to the Port Pirie region community and industry.

Guiding principles

We will utilise the following principles to guide the council's decision making and project and service development and delivery for waste, recycling and resource management.

<p>Circular economy</p>  <p>The diagram illustrates the circular economy cycle. It starts with 'RESOURCES' (represented by a tree and water drop icon) leading to 'MANUFACTURING' (represented by a factory icon). From manufacturing, the cycle goes to 'CONSUMPTION & USE' (represented by a smartphone icon), then to 'WASTE' (represented by a trash can icon), and finally back to 'RECYCLING' (represented by a recycling symbol icon), which feeds back into 'RESOURCES'.</p>	<p>Our guiding principles for the Circular Economy:</p> <ul style="list-style-type: none">• We continually strive to achieve the highest and best use for the materials received through all our waste and resource recovery related services and facilities services.
<p>Local processing</p>  <p>The map shows the coastal region of South Australia, specifically the area around Port Augusta, Whyalla, and Port Pirie. It highlights the local processing infrastructure and the flow of waste and resources within the region.</p>	<p>Our guiding principles for local processing:</p> <ul style="list-style-type: none">• We support local industry and community groups and members to undertake and provide valuable and sustainable waste, recycling and resource recovery projects and services.• We work with each of our regional councils to capitalise on the strengths and specialisations each, to drive and provide efficiency improvements and sustainable outcomes for managing waste and resources in the region.
<p>Innovation</p>  <p>The diagram shows a cluster of interconnected green gears, symbolizing innovation, technology, and the integration of different processes to improve waste and resource recovery.</p>	<p>Our guiding principles for innovation:</p> <ul style="list-style-type: none">• We provide up-to-date and beneficial information and resources to local industry and community on our waste and resource recovery performance, goals and achievements.

Objectives

The following objectives following performance indicators will be used to drive the design and implementation of our waste and resource recovery strategies.

Objective 1: Achieve regional best-practice in landfill diversion

Performance indicators:

- Increase kerbside MSW diversion from 51% to 60% by 2022
- Reduce the contamination rate of the kerbside comingled recycling bin to less than 10% by 2022.
- Divert 90% of non-kerbside/putrescible waste received at the Port Pirie Transfer Station by 2022.

Objective 2: Support innovative local processing, reuse and remanufacturing of waste and recyclable materials

Performance indicators:

- Council, residents and industry to purchase back 25% (by weight) kerbside recovered recyclables by 2024.
- Establish or support the establishment of at least one remanufacturing operation on the Port Pirie Transfer Station site .

Objective 3: Improve cost-effectiveness in service delivery

Performance indicators:

- Reduce overall cost per Serviced Entitled Premise by 5% by 2025 (from 2018 baseline).

Strategies

We will pursue the following five waste and resource recovery strategies (table below) to achieve our objectives. These are described overleaf.

Strategies	Objective		
	1	2	3
1. Introduce a form of food and garden organics recycling service for residents by 2022	✓		✓
2. Pursue opportunities to reuse, recycle or remanufacture recovered materials locally		✓	✓
3. Identify and capitalise on the strengths and specialisations of each of the councils in the Upper Spencer Gulf and neighbouring region, including joint procurement opportunities	✓	✓	✓
4. Identify and implement best practice education programs to the community and industry	✓		✓
5. Undertake improvements Port Pirie Transfer Station to enable greater cost effectiveness, increased resource recovery, increased facility efficiency, and reduce traffic and OHS risks.	✓		✓

1. Introduce a form of food and garden organics recycling service for residents by 2022

Audits of kerbside bins from around the state, have found that general waste bins can contain as much as 50% food waste items. Diverting this material from landfill can have many benefits, including recovery of valuable resources and reduction in greenhouse gases and leachate.

Diverting food waste can also have significant long-term financial benefits by reducing disposal to landfill costs (e.g. levy costs).

A common and effective way that councils have encouraged residents to divert food waste is to introduce a mixed food and garden organics (FOGO) recycling service. Diversion can also be greatly increased through additional mechanisms, including education and frequency changes for collection.

We will investigate and implement where viable, the following projects to meet this Strategy:

- ☐ Identify the requirements and feasibility for introducing a kerbside FOGO service for residents, including (but not limited to):
 - cost impacts on collection services.
 - options for processing FOGO via a commercial composter vs developing composting capabilities in the region.
 - engagement and education required to ensure acceptance of the service by residents and to encourage participation.
- ☐ Explore alternative options if introducing a FOGO services is not viable e.g. providing home composting equipment to interested residents.

2. Pursue opportunities to reuse, recycle or remanufacture recovered materials locally

The Port Pirie Transfer Station currently undertakes a number of waste processing activities including C&D and garden waste processing (see example images above). However, these streams are currently only used on site (e.g. for landfill cover) or by Council only. There is an opportunity to use more of this material locally by businesses and the community.

We will investigate and implement where viable, the following projects to meet this Strategy:

- ☐ Consider appropriate standards and quality controls to be able to provide or sell processed C&D waste and garden organics products back to the community. This includes controls for managing hazardous material (e.g. asbestos) or other contamination (e.g. plastics).
- ☐ Investigate the interest, processes involved and feasibility of council facilitating or provision of providing of a waste feedstock (e.g. shredded tyres) as a fuel for to the Nyrstar Smelter.
- ☐ Investigate areas to improve council's purchasing and procurement procedures and requirements, to increase the amount of locally processes material and recyclable content in councils good and services procurement.



3. Identify and capitalise on the strengths and specialisations of each of the councils in the Upper Spencer Gulf and neighbouring region, including any opportunities for joint procurement

Port Pirie, Whyalla and Port Augusta and neighbouring councils and their communities each have their own strengths and specialisations (e.g. local industries, inhouse experience, vicinity to other regions (e.g. metro, mining) and waste and recycling receival, transfer and processing capabilities. Collaboration in managing waste and resource management services and processes and developing stronger strategic arrangements, provides many benefits to the region's councils and their communities. This includes sharing of and maximising use of resources and enhancing staff skills and experience.

We will investigate and implement where viable, the following projects to meet this Strategy:

- ☐ Development of an Upper Spencer Gulf (and region) waste and resource recovery strategy.
- ☐ Development an Upper Spencer Gulf (and region) waste and resource recovery infrastructure plan, to identify current waste and resource recovery infrastructure capabilities and capabilities, and where investment is needed to achieve the objectives of the region's waste and resource recovery strategy.
- ☐ Undertaking of a joint procurement feasibility study for Upper Spencer Gulf and neighbouring councils to identify joint procurement opportunities and benefits.
- ☐ Undertake a joint tender development project with interested Upper Spencer Gulf and neighbouring councils.

4. Identify and implement best practice education programs to the community and industry

Waste education is needed to support recycling programs. For example, by:

- Educating residents about the benefits of recycling to the local economy and environment.
- Showing residents how to correctly sort their waste into the recycling bins.
- Raising awareness about the hidden costs of waste. For example, food waste which costs the average household over \$2,000 per year.
- Teaching residents how to reduce waste.
- Promoting local services that prevent waste, such as tool lending libraries.

We will investigate and implement where viable, the following projects to meet this Strategy:

- ☐ Continually improve council's waste and recycling education programs to meet what can be considered best practice (e.g. direction and guidelines from Green Industries SA).
- ☐ All major waste management contracts to include a specific Educational element within the specification.
- ☐ Encourage council's employees to investigate and adopt practices that will reduce Council's own waste generation.

5. Undertake improvements to the Port Pirie Transfer Station to enable greater cost effectiveness, increased resource recovery, increased facility efficiency, and reduce traffic and OHS risks

A recent review of the Port Pirie Transfer Station found:

- The facility is well laid out with reasonable source separation capabilities and is relatively efficient.
- The facility is a strategic resource recovery facility in the York Peninsula and Mid North Regions.
- The facility has the capability and capacity to provide a greater array of services for Port Pirie and neighbouring councils.

The review also identified a number of including opportunities to improve resource recovery, customer experience and reduce WHS and traffic risks.

We will investigate and implement where viable, the following projects to meet this Strategy:

- ☐ Undertake improvements to the layout of the of the facility and upgrade site infrastructure to provide designated drop off locations for recyclable materials accepted for free (e.g. cardboard, scrap metal) before the weighbridge.
- ☐ Diverting suitable mixed waste/non-putrescible waste dropped off at the transfer station to alternative fuel rather than landfill by 2021.
- ☐ Investigate and maximise the full usage opportunities for the facility/site, including potential to become a local depository for some hazardous waste streams from the region (e.g. asbestos, intermediate level repository), potential for renewable energy generation (e.g. solar on/around landfill), attracting alike business and industry to the site (e.g. waste processors).
- ☐ Investigate the feasibility of recovering additional recyclable material from non-putrescible waste received at the Port Pirie Transfer Station.
- ☐ Investigate viability of resale/salvage yard services.





info@rawtec.com.au

+(618) 8294 5571

11 Paringa Ave, Somerton Park, South
Australia 5044