Regional SA Waste and Resource Recovery Background Report

South Australian Regional Organisation of Councils

rawtec

Document verification

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Executive summary

The Legatus Group have been commissioned by the South Australian Regional Organisation of Councils (SAROC) to "develop a regional waste management strategy to enable the coordination of waste and recycling infrastructure across regions" in accordance with the action identified under *Theme 4: Financial Sustainability and Governance* in the *SAROC Annual Business Plan 2019-20.* Funding for this was made available by the Local Government Association (LGA) of SA and Greening Industries SA (GISA) with in kind support from the Legatus Group and the project Reference Group.

The Legatus Group in partnership with the University of South Australia (UniSA) are developing an economic model to support the strategy.

This report provides background data collected from a survey of regional councils. It summarises the survey responses and provides insights and key considerations for the strategy based on national and state targets and Rawtec's contemporary knowledge of the waste and resource recovery sector.

Summary of Regional SA

Regional councils collect an estimated 162,000 tonnes of waste and recycling from kerbside bins and 4,000 tonnes of hard waste.

An additional 185,000+ tonnes are managed at council transfer stations and resource recovery facilities each year. The main streams managed include, general waste, organics recycling, concrete and bricks, cardboard, ferrous metals and timber. Smaller volumes of materials include electronic waste, batteries, tyres, chemical drums and plastics.

Estimates from the 34 councils who responded indicates material collection, resource recovery and recycling is responsible for about 72 jobs (full time equivalent council employees) in Regional SA and is likely significantly higher.

Councils provided information on transport and processing/disposal costs. This was used to input into the UniSA modelling and determine average costs for five main recycling streams. The average costs have been provided as a guide for councils and are based on survey responses, assumptions and Rawtec experience.

Common challenges

Across the state, there are consistent themes in the challenges regional councils have managing waste and recycling:

- Distance to markets and large geographical council areas.
- Costs and resourcing:
  - Transport costs are closely linked to distance and volumes of materials.
  - Disposal and processing costs are often higher because of lower volumes.

  - Staff resources to provide education or monitor issues like dumping.
- Managing waste and recycling
  - Issues of dumping of waste or informal management on property.
  - Contamination in the comingled and organics recycling bin.
  - Managing secondary waste streams at transfer stations and the cost of processing/disposal.
  - Data collection and information availability on the volumes of material councils manage.

Common opportunities

Councils have many common opportunities to improve the way waste and recycling is managed to reduce costs, increase diversion from landfill and meet community expectations. While there can be differences between councils and regions, overall, common actions can be adjusted to suit most areas.

- Joint procurement of kerbside waste and recycling services to reduce costs and increase performance.
- Alternative kerbside collection models (alternative collection frequencies).
- Joint procurement of additional services for secondary waste streams.
- Organics recycling, including food waste to increase diversion from landfill and contribute to the circular economy.
- Community education to reduce contamination and increase source separation.
- Council ownership of key resource recovery infrastructure to influence services and costs.
- Purchasing materials with recycled content to support the SA circular economy.

Considerations for the strategy

The development of the regional waste and resource recovery strategy should consider a range of themes, policies and opportunities:

- The waste hierarchy - the internationally accepted order of manage waste and recycling. Avoid/reduce, reuse, recycle/compost, recover, treat and as a last resort dispose to landfill.
- Circular economy - redesigning systems and products so they can be repaired, disassembled and recycled to keep materials circulating in the system at their highest value
- Government strategies and policies
  - South Australia's Waste Strategy 2020-2025
  - Environment Protection Act 1993
  - Environment Protection (Waste to Resources) Policy 2010
  - SA landfill bans
  - National Waste Policy: Less Waste, More Resources 2018
  - National food waste strategy
  - Waste export ban

- Governance - collaboration and partnerships between councils does require a higher level of oversight, management and commitment. One successful model is establishing a regional waste authority under section 43 of the Local Government Act 1999 with multiple participating councils.
- Aligning council and regional strategies with the state strategy - some key directions for SA include:
  - no avoidable landfill by 2030.
  - implementing better contracting and monitoring of collection services to maximise council efforts, education and cost effectiveness
  - standardisation of collection contracts and mandatory reporting of collection data (using technology to collect and manage this information)
  - encouraging food and organics recycling services in all councils and supporting the national target of 50% reduction in food waste
  - maximising the performance of kerbside systems, reducing contamination and increasing source separation
  - encouraging councils to build support from their communities to explore different collection frequencies and variable pricing models.

Equipment and infrastructure

Councils identified various equipment and infrastructure to help manage waste and recycling in their region:

- Regional resource recovery centre or transfer stations to help regions cost effectively manage materials and store until suitable amounts for bulk transport and processing.
- A regional composting facility.
- Equipment to support transport efficiency - grinders, shredders, crushers, balers.
- Upgrades to facilities to increase efficiency and environmental compliance - weighbridge, containment bays, weatherproof skip bins, sorting tables; storage/sorting bins.

Skills and training

Councils identified skills and training opportunities in the surveys:

- Environmental protection compliance auditing and monitoring.
- Fire training specific to resource recovery facilities.
- Standard Operating Procedures for waste handling.
- Trade certificate in waste management for field staff (Cert 3 & 4).

Community education is another aspect that is very important and highlighted by many councils. This includes:

- Source separation of materials.
- Disposal pathways for materials, where and how they are recycled.
- The waste hierarchy.
- Food waste, home composting.

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Project summary

SAROC has commissioned a Regional Waste and Resource Recovery Strategy for Regional SA councils. The strategy aims to identify options for councils to contribute to the circular economy.

There are multiple stages to this project:

1. Background report (this report): Developed by Rawtec, this provides the background data collected from councils to support the economic model. It also provides the responses and insights from the councils and key considerations for the strategy based on survey responses, national and state targets and contemporary knowledge of the waste and resource recovery sector.
2. Economic model: Developed by UniSA to assist high-level decision making on regional opportunities and the viability of processing options of materials for councils.
3. Strategy document: The draft strategy will be developed by Legatus Group through consultation with the Reference Group, incorporating the background report and the findings from the economic modelling for consideration by SAROC

LGASA and GISA has provided funding for the project. Project management and development of the draft strategy is being led by the Legatus Group and supported through their partnership with UniSA. .

1.1. Data sources

Volumes of waste and recycling in Regional SA was gathered from two sources:

- Survey of regional councils distributed by the Regional LGA Executive Officers. A copy of the survey is included in Appendix 1: Council survey
- SA LGA General Information Return database.

Remote councils and unincorporated areas were not included in the project. Of the 47 regional councils included, 34 surveys were returned (66 per cent). Additionally, Limestone Coast LGA provided permission to use data from their member councils provided in a previous project with Rawtec. This meant 82 per cent of the regional SA population was captured.

Where information was not available, we developed a waste generation per person metric based on the survey return data and applied this to councils with missing data.

Based on the varying sources, not all volume data is from the same year, but volumes are indicative of what is produced in each council and region.

Summary of Regional SA

2.1. Kerbside waste and recycling volumes

Regional councils collect an estimated 162,000 tonnes of waste and recycling from kerbside bins and 4,000 tonnes of hard waste (Table 1).[1]

Table 1: Estimated kerbside waste and recycling by LGA Region

Region	General waste	Hard waste	Comingled recycling	Organics recycling
	tpa	*tpa*	*tpa*	*tpa*
Eyre Peninsula	10,800	500	1,300	-
Legatus Group	23,700	2,000	7,900	4,500
Limestone Coast	15,900	800	5,100	8,900
Murraylands Riverland	15,900	600	4,500	4,000
Southern Hills	17,700	-	8,700	12,000
Spencer Gulf Cities	12,500	200	3,700	4,500
Total	**96,500**	**4,100**	**31,200**	**33,900**

2.2. Transfer station waste and recycling volumes

Councils also receive and manage a range of waste and recycling streams at their transfer stations and resource recovery centres. Estimates of the volume of the most common materials is displayed in Table 2.

Table 2: Estimated waste and recycling collected at Council Transfer Stations by LGA Region

Region	General waste	Organics recycling	C&D*	Cardboard	Ferrous metals	Timber^
	tpa	*tpa*	*tpa*	*tpa*	*tpa*	*tpa*
Eyre Peninsula	8,600	1,700	3,600	1,100	1,000	800
Legatus Group	9,700	8,000	8,300	2,300	3,800	3,300
Limestone Coast	9,600	5,000	4,800	1,400	2,300	2,000
Murraylands Riverland	7,300	2,900	5,600	1,400	2,100	2,200
Southern Hills	12,000	8,400	11,800	1,200	3,400	1,900
Spencer Gulf Cities	22,200	11,500	11,000	500	1,400	1,300
Total	**69,400**	**37,500**	**45,100**	**7,900**	**14,000**	**11,500**

** concrete and bricks collected separately at the transfer station.*

^ untreated timber, suitable for mulching or composting.

[1] Waste volumes for each council were provided to the Legatus project team to support the modelling.

2.3. Employment

Estimates from the 34 councils that provided a response indicates material collection, resource recovery and recycling is responsible for about 72 jobs (full time equivalent council employees).

This does not include private contractors or the councils that did not provide a survey response. Additionally, some councils indicated no FTE staff but managing waste and recycling at some level is likely part time in these areas. Therefore the level of employment in reginal SA will be significantly higher.

2.4. Bulk transport and processing costs

Councils provided information on transport and processing/disposal costs. This was used to input into the UniSA modelling and determine average costs for five main recycling streams.

Multiple variables determine the price of bulk transport and processing costs, including:

- type and size of the vehicle/payload used to transport
- type and density of material
- volume of material
- distance travelled to facilities or for processors to travel to council facilities
- type of processing.

The average costs provided are a guide only and are based on survey responses, assumptions and Rawtec experience. The range of costs is significant and there can be large differences in costs between councils.

General waste

Table 5 provides guidance for general waste when it is bulk transported to a landfill.

Where councils have access to a metropolitan landfill their average disposal cost is around $40 per tonne (not including levy).

Table 3: Estimated average costs for bulk transport and disposal of general waste (excluding landfill levy).

Stream	Distance range[1]	Est. average transport cost[2]	Est. average disposal price for councils [3]
	kilometres	*$/tonne/km*	*$/tonne*
General waste	100 - 210 km	$0.25	$60 - $90 excluding levy
	210 - 430 km	$0.14	

1 Distance ranges are based on analysis of main council facilities and known disposal facilities.

2 Figure is based on two survey responses for Comingled Recycling Bulk Transport pricing response, reality checked against general waste responses and Rawtec experience

3 Disposal in landfill. Disposal cost range is based on +/- 20% of the average disposal cost from 16 responses (excluding the top and bottom 10% outliers)

Comingled recycling

Table 4 provides guidance for comingled recycling when it is bulk transported to and processed at an established materials recovery facility.

The price for councils to have this material processed has been highly variable and increasing in the past 18 months and can vary between councils. This range only represents a point in time and is not a reliable long-term figure.

Table 4: Estimated average costs for bulk transport and processing for comingled recycling

Stream	Distance range[1]	Est. average transport cost[2]	Est. average processing price for councils [3]
	kilometres	*$/tonne/km*	*$/tonne*
Comingled recycling	100 - 470 km	$0.25	$120 - $180
	470 - 760 km	$0.14	

1 Distance ranges are based on analysis of main council facilities and known processing facilities.
2 Average transport costs are based on one survey response and Rawtec experience
3 Processing cost range is based on +/- 20% of the average disposal cost from 20 responses (excluding the top and bottom 10% outliers).

Organics recycling

Table 5 provides guidance for organics recycling when it is bulk transported to and processed at an established commercial composting facility.

Table 5: Estimated average costs for bulk transport and processing for organics recycling

Stream	Distance range[1]	Est. average transport cost[2]	Est. average processing price for councils [3]
	kilometres	*$/tonne/km*	*$/tonne*
Organics recycling	100 - 220 km	$0.25	$40 - $60
	220 - 440 km	$0.14	

1 Distance ranges are based on analysis of main council facilities and known processing facilities.
2 No pricing provided in the survey, so figure is based on one survey response for Comingled Recycling Bulk Transport pricing response and Rawtec experience
3 Processing at an established composting facility. Processing cost range is based on +/- 20% of the average disposal cost from 13 responses (excluding the top and bottom 10% outliers)

Concrete and bricks

Table 6 provides guidance for bulk transporting concrete and bricks and the cost to council to have this material processed onsite by a construction and demolition (C&D) processor using mobile equipment.

Table 6: Estimated average costs for bulk transport and processing for concrete and bricks recycling

Stream	Distance range[1]	Est. average transport cost[2]	Est. average processing price for councils[3]
	kilometres	*$/tonne/km*	*$/tonne*
Concrete & Bricks recycling	0 - 80 km	$0.23	$60 - $90
	80 - 150 km	$0.10	
	150 - 220 km	$0.09	

1 Distance ranges are based on analysis of main council facilities and known processing facilities.

2 Average transport costs are based on one survey response and assumed vehicle costs of $150 hour and a 20-tonne payload.

3 Processing cost range is based on +/- 20% of the average disposal cost from five responses (excluding the top and bottom 10% outliers)

Cardboard recycling

Table 7 provides guidance for cardboard recycling when it is bulk transported to and processed at a cardboard processing facility. The estimated net price for councils is after the commodity value of the cardboard is applied to the processing costs. The final cost to councils will depend significantly on the transport costs.

Note this market has been highly variable in the past two years and there may be significant variation in what councils receive.

Table 7: Estimated average costs for bulk transport and processing for cardboard recycling

Stream	Distance range[1]	Est. average transport cost[2]	Est. average processing cost[3]	Est. revenue	Est. net price for councils
	kilometres	*$/tonne/km*	*$/tonne*	*$/tonne*	*$/tonne*
Cardboard recycling	0 - 220 km	$0.26	$40 - $60	$60 - $90	-$20 to -$30 *(rebate)*
	220 - 470 km	$0.22			
	470 - 760 km	$0.08			

1 Distance ranges are based on analysis of main council facilities and known processing facilities.

2 Average transport costs are based on five survey responses and Rawtec experience

3 Rawtec assumption for delivery to large commercial baler/exporter in metro Adelaide in current market conditions (cost includes unbaling and re-baling).

2.5. Waste and resource recovery facilities

Figure 1 show the locations of council waste and resource recovery infrastructure. It also includes the main commercial processing and disposal facilities (i.e. composting facilities, materials recovery facilities and commercial landfills).

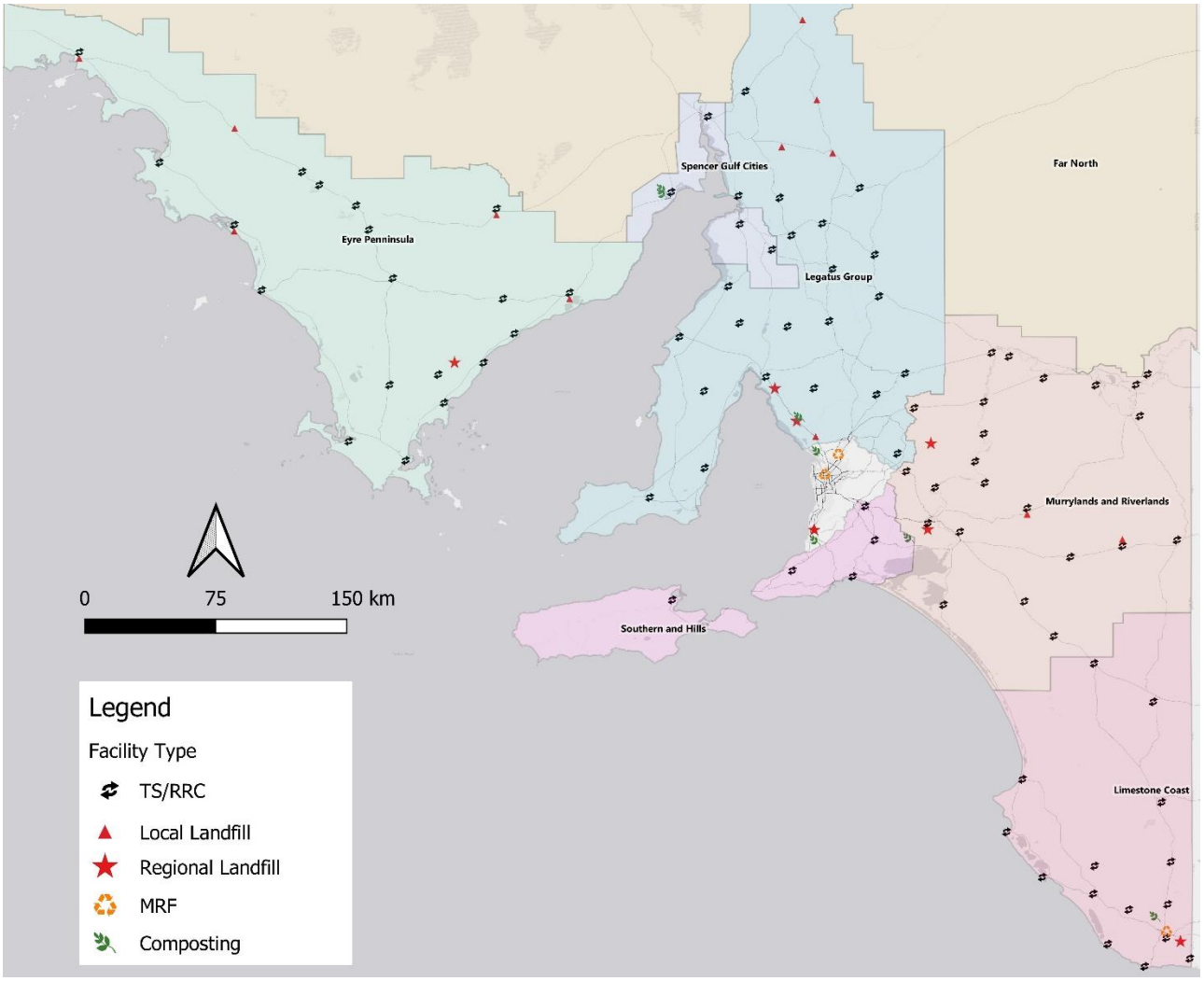

Figure 1: Location of council waste and resource recovery infrastructure and key processing/disposal sites

Common challenges

Across the state, there are consistent themes of the significant challenges regional councils face in managing waste and recycling.

3.1. Distance

Distance to processing/disposal/markets is one of the major challenges for regional councils and directly links to many other challenges.

Some regions have disposal options within their region, but very few have processing options for recyclables. Large distances from disposal and processing sites and markets for materials makes it difficult to collect and costly to manage. Most materials need to be transported out of the region.

Distance within council areas also creates challenges. Low population density and large geographical areas can make it difficult to provide broader services to communities, despite increasing community expectations.

3.2. Costs and resourcing

Costs are the second major challenge for regional councils.

Transport costs

Costs for transporting material is closely linked to distance and volumes. Smaller volumes mean less transport efficiencies and distances to processing locations can be significant.

Disposal and processing costs

Lower population and density mean lower volumes of materials are collected. Regional councils typically cannot benefit from economies of scale. This is especially true when they act individually and do not increase the aggregated tonnes with neighbouring councils.

Councils may also be limited in their ability to recover costs for managing waste and recycling. Community willingness to pay for appropriate services can be challenging and higher prices could lead to increase dumping or informal management.

Staff resources

Having adequate staff resources for waste and recycling along with skills and training and compliance requirements is another significant challenge. Lack of resources to deliver education to residents or to manage issues such as dumping, create flow on challenges.[2]

3.3. Managing waste and recycling

There are a range of challenges around managing waste and recycling in Regional SA.

Dumping of waste or informal management

Many councils face challenges of waste dumping or on property management of waste. This can especially be the case where councils try cover their own costs to manage materials which can lead to increasing costs for the community.

Contamination

Contamination of the comingled and organics recycling stream was identified by many councils as an issue. Resources to educate residents is often limited.

Some councils also identified the different messages applicable for metropolitan Adelaide compared to their own area (e.g. food in the organics bin, which is only a garden waste bin).

Secondary waste streams

Many regional councils have challenges with secondary waste streams, often coming from agricultural sources. This can be specific to a region and include:

- copper chrome arsenate (CCA) treated timber posts
- irrigation pipe
- plastics
- fish rope and nets
- tyres

Volumes that make processing of this material feasible can take time to stockpile and it is still a significant cost for councils. Other materials do not have a processing option (i.e. CCA posts) and become a problem waste stream.

Data collection and information availability

Many councils currently lack good information on the volume of materials they manage or is managed on their behalf. This can make it difficult to understand the true costs of the services and maintain transparency in service costs being charged by contractors.

[2] Note the issues identified have been taken up through Legatus Group in discussions with TAFE SA, Industry and LGA Training

Common opportunities

Councils have a lot of common opportunities to improve the way waste and recycling is managed to reduce costs, increase diversion from landfill and meet community expectations. While there can be differences between councils and regions, overall, there is a common set of options that can be adjusted to suit most areas.

4.1. Joint procurement of kerbside waste and recycling services

Joint procurement of waste and recycling services one of the biggest opportunities for regional councils. To reduce service costs neighbouring councils must cooperate. In our experience councils can typically look to save at least five per cent of their collection, transport and disposal costs through collaborating in a joint procurement process.

Multiple councils are already working together to achieve positive outcomes. Councils that work on their own will not achieve the best financial and environmental outcomes for their residents.

A competitive joint procurement tender process can lead to:

- more responses from the market
- lower collection and disposal and processing costs
- competitive and consistent bulk transport costs
- increased availability of services
- greater local investment and innovation
- increased transparency of costs and reporting.

Joint procurement still provides flexibility. It can be structured to allow:

- different services between councils
- different contract start dates (i.e. timing does not need to match perfectly)
- separate providers for services (e.g. different provider/contract for collection, transport and disposal/processing)
- a separate contract for each council
- councils to choose different contractors (if desired).

4.2. Alternative kerbside collection models

Regional councils can explore alternative kerbside collection models to reduce costs and improve landfill diversion.

Most councils currently collect general waste bins every week and comingled and organics recycling is mostly collected fortnightly (where these services are offered).

The collection of bins is a significant component of waste and recycling costs and exploring alternative frequencies could help to reduce costs and increase diversion from landfill. Regional councils have no legislative requirements on how often they

collect kerbside bins, unlike metropolitan Adelaide. Reducing the frequency of general waste collections can:

- reduce collection costs (where fortnightly comingled and organics recycling is already provided)
- help cover the cost to increase comingled and organics recycling services
- increase source separation
- reduce landfill costs.
- any changes to kerbside services/frequency needs to be carefully planned and include engagement/communication with the community. They must also be suitably resourced to create a good outcome.

Fleurieu Regional Waste Authority (FRWA) councils

Since 2016 the four FRWA councils have progressively switched to fortnightly collection of general waste, comingled and organics recycling. Overall, this is an increase in services for the community. They also implemented additional bin collections over summer to manage the peak tourist season. This system achieved 58 per cent diversion from landfill in 2019/20 while keeping costs down.

Standard bin service with alternative sizes or additional bins

If councils implement fortnightly services, they can provide options to households with special requirements (i.e. medical, nappies, large families) so they can match their needs. Most residents are provided a standard bin service and those that demonstrate a genuine need can access additional bins (Table 8).

Table 8: Standard service options and possible alternative options for residents to choose

Stream	Standard service	Options
General waste	140 litre bin collected fortnightly	2x 140 litre bins or a 240 litre bin collected fortnightly
Comingled recycling	240 litre bin collected fortnightly	2x 240 litre bin collected fortnightly
Organics recycling	240 litre bin collected fortnightly	2x 240 litre bin collected fortnightly

To manage costs, councils could place a price signal on additional bins. All households receive the standard service option and increased services cost more (i.e. cost recovery of providing the service). This does require waste and recycling costs to be separate charge in the rates notice and residents must renew annually. This allows residents to respond to any changing needs.

4.3. Joint procurement of additional services

Councils manage a range of secondary waste streams that can be expensive to process or dispose. This can include:

- metals
- concrete and bricks
- tyres
- treated timber
- plastics
- garden organics.

On their own, councils may not have enough volume of these materials to get competitive pricing for processing. Partnering with neighbouring councils and coordinating processing could increase the cost efficiency of these services (e.g. reducing travel and mobilisation/demobilisation costs for the contractor).

4.4. Organics recycling

Twenty-six regional councils currently offer residents an organics recycling service.[3] Organics recycling is a significant opportunity for councils with an established composting facility in their region or access to cost effective transport.

Sending material to a commercial composting facility has multiple benefits:

- Food waste can be placed into the kerbside organics bin. Food can be 30 per cent or more of the general waste bin and diverting it from landfill reduces disposal costs and provides environmental benefits.
- Reduced costs for managing green waste at transfer stations as there is no need for a mulching contractor to shred garden organics.
- More types of organic materials can be accepted, such as weeds, as the composting process will destroy seeds and pathogens from food waste.
- A valuable compost product certified to the Australian standard is produced that has many benefits for local agriculture/horticulture.

Councils that do not collect organics may be able to consider this service, especially if exploring alternative collection frequencies. Reducing general waste collection costs and bulk transporting green waste from transfer stations may increase the viability of an organics service.

When considering composting options, we recommended regions explore a partnership with the private sector to establish a facility. Composting is a biological process that needs to be closely monitored and controlled to meet product standards. A commercial composter will reduce council's risk, create a certified product and have established markets to distribute to.

3 Organics recycling services vary between councils and the service is often only offered to townships. Some only accept garden waste and only 14 councils accept food waste. 21 councils collect fortnightly and five only collect monthly.

4.5. Community education

Continuous community education is an important part of an effective waste and recycling system. Providing ongoing education can help to reduce contamination and increase landfill diversion, reducing costs for councils.

Where resourcing is a challenge, explore opportunities for a regional approach to education. Partnering with neighbouring councils or a waste authority (more detail below) can make education more efficient and cost effective.

Education can also be linked to the collection contractor's reporting system. Collection vehicles can be equipped with cameras and the driver to photographs contamination. A letter addressed to the household can be sent explaining what items can be placed into the bins and explain the correct disposal method.

4.6. Council owned infrastructure

It is beneficial for regional councils to own a key resource recovery infrastructure site in their council area that services the community (e.g. transfer station, resource recovery centre or bulk transport facility).

By owning a facility, councils have greater control over the services and costs for the community. Where the private sector controls key infrastructure, they may only provide services that provide a commercial return and they can set the price for managing materials. If there are no other alternative options in the region or nearby, then councils and the community can be locked into the arrangement.

Council does not necessarily need to operate the facility. They may choose to contract this to the private sector. However, maintaining ownership of the facility gives councils flexibility and control of the services for the region. If the private operator is not performing to the required standard, the contract can re-tendered.

4.7. Purchasing materials with recycled content

Materials are not truly recycled until they become new products. Councils can contribute to the local circular economy by purchasing products containing recycled materials (including bins, construction materials, fixtures, office and stationery, organic materials). This creates demand for recycled materials and encourages local processing and manufacturing, meaning materials recycled by councils have viable markets.

The Local Government Association of SA has prepared a list of suppliers of products containing recycled materials. Nine councils are participating in the Buying Back LGA Circular Procurement Pilot Project[4] to increase the demand for recycled materials in SA.

4 https://www.lga.sa.gov.au/sa-councils/part-of-your-everyday/waste-management

Considerations for the strategy

The development of the regional waste and resource recovery strategy should consider the following themes, policies and opportunities.

5.1. The waste hierarchy

The hierarchy is the internationally accepted order of waste and recycling management practices (Figure 2). Councils should base their waste and resource recovery systems on the waste hierarchy.

- Avoiding and reducing creating waste is the best option. It avoids initial purchase costs and the cost to dispose or process items.
- Reusing materials for as long as possible reduces purchasing and disposing of new/single-use items.
- Recycling or composting creates new products from valuable resources and reduces use of virgin materials.
- Recover captures and uses the energy value from materials that are difficult to recycle or cannot be recycled.
- Treat/dispose wastes resources and energy used to produce items are wasted when sent to landfill and have no more value.

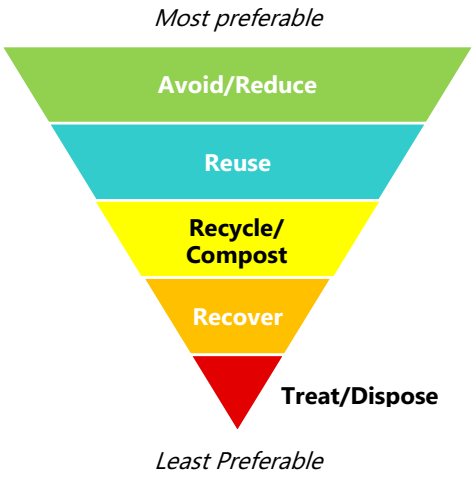

Figure 2: The waste management hierarchy

5.2. Circular economy

The circular economy involves redesigning systems and products so they can be repaired, disassembled and recycled to keep materials circulating in the system at their highest value (Figure 3). It is different from a "take, make, dispose" economy, which is unsustainable due to limited resources.

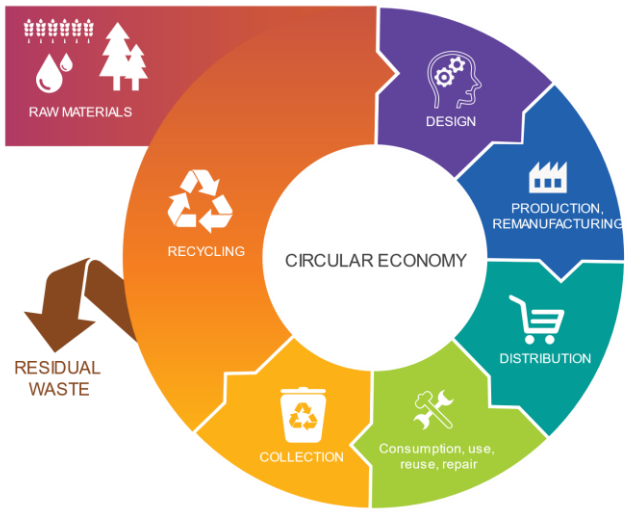

Figure 3: Features of the circular economy (Image Source: European Parliament)

5.3. Government strategies and policies

South Australia's Waste Strategy 2020-2025

The new state strategy was released in December 2020. It will includes targets of:

- no avoidable landfill by 2030
- five per cent reduction per capita waste generation (from 2020 baseline)[5]

Regional councils will also be asked to set targets in regional waste management plans.

Environment Protection Act 1993 and Environment Protection (Waste to Resources) Policy 2010

The 1993 Act specifies the management of waste and promotes resource recovery and ecologically sustainable development.[6] The objective of the policy is sustainable waste management by applying the waste management hierarchy consistently with the principles of ecologically sustainable development.[7]

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5 *South Australia's Waste Strategy 2020-2025 (Consultation Draft)*, 2020, 2020, Green Industries SA, https://www.greenindustries.sa.gov.au/south-australias-waste-strategy-consultation-draft-2020-2025

6 Environment Protection Act 1993, Government of South Australia, 2020, https://www.legislation.sa.gov.au/LZ/C/A/ENVIRONMENT%20PROTECTION%20ACT%201993/CURRENT/1993.76.AUTH.PDF

7 *Environment Protection (Waste to Resources) Policy 2010*, Government of South Australia, 2019, https://www.legislation.sa.gov.au/LZ/C/POL/ENVIRONMENT%20PROTECTION%20(WASTE%20TO%20RESOURCES)%20POLICY%202010/CURRENT/2010.-.AUTH.PDF

Landfill bans

Under the Environment Protection Policy multiple materials are banned from landfill. This includes aggregated paper and cardboard, glass packaging, metals, PET, HDPE, PP, LDPE, PVC and PS packaging and vegetative matter collected by councils. Other materials are also banned that councils should be aware of.[8]

National Waste Policy: Less Waste, More Resources 2018 and National food waste strategy

The national policy makes the circular economy the foundation of managing the nation's waste and recycling.

The Australian Government's national strategy is targeting a 50 per cent reduction in Australia's 7.3 million annual tonnes of food waste by 2030.[9]

Waste export ban

In January 2021, the first waste export ban comes into place. Progressively other materials will be banned until a total export ban of waste plastic, paper, glass and tyres is complete by July 2024. The ban will require materials to be processed in Australia and will create resources, jobs, innovative solutions and improve environmental outcomes.[10]

5.4. Collaboration

Collaboration between councils is one of the biggest opportunities, as discussed previously. With increasing costs and regulations, councils can no longer afford to work independently.

5.5. Governance

Partnerships between councils will require a higher level of oversight, management and commitment. It is also important to make sure that the costs and benefits are shared in an equal way. There are multiple ways that this can be achieved and each region may require a different approach.

One successful model is establishing a regional waste authority. An authority is a regional subsidiary established under section 43 of the Local Government Act 1999 with multiple participating councils.

There are different ways the group can operate and what the focus of the group will be. However, at minimum the employees are dedicated to managing waste and recycling services and contracts on behalf of the council and providing education to the community.

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8 Environment Protection (Waste to Resources) Policy 2010: Guidelines on handling wastes banned from landfills, SA EPA, 2012, https://www.epa.sa.gov.au/files/4771783_guide_banned_waste.pdf

9 *National Food Waste Strategy: Halving Australia's food waste by 2030*, Commonwealth of Australia 2017, https://www.environment.gov.au/system/files/resources/4683826b-5d9f-4e65-9344-a900060915b1/files/national-food-waste-strategy.pdf

10 *Waste Export Ban*, Commonwealth of Australia, 2020, https://www.environment.gov.au/protection/waste-resource-recovery/waste-export-ban

Regional waste authorities in SA

There are two regional waste authorities operating in South Australia:

- The Adelaide Hills Region Waste Management Authority includes the District Council of Mount Barker, Adelaide Hills Council, Rural City of Murray Bridge and Alexandrina Council.
- FRWA includes Alexandrina Council, City of Victor Harbor, Kangaroo Island Council and District Council of Yankalilla.

There are also multiple authorities in metropolitan Adelaide, include the Central Adelaide Waste and Recycling Authority, Eastern Waste Management Authority (East Waste) and the Northern Adelaide Waste Management Authority.

5.6. Aligning council and regional strategies with the state strategy

GISA released South Australia's Waste Strategy 2020-2025 in December 2020. This will move the state to higher resource recovery, waste avoidance and towards a circular economy.

For the first time, councils will be asked to set diversion targets for their regional waste management plans. These plans will need to be provided to GISA by 2023. Understanding current performance and determining actions will be needed to set achievable targets.

Some of the key directions for the state include:

- no avoidable landfill by 2030.
- implementing better contracting and monitoring of collection services to maximise council efforts, education and cost effectiveness
- standardisation of collection contracts and mandatory reporting of collection data (using technology to collect and manage this information)
- encouraging food and organics recycling services in all councils and supporting the national target of 50% reduction in food waste
- maximising the performance of kerbside systems, reducing contamination and increasing source separation
- encouraging councils to build support from their communities to explore different collection frequencies and variable pricing models.

The challenges for regional councils are acknowledged, but there are still significant opportunities to achieve positive financial and environmental outcomes.

Equipment and infrastructure

Councils identified various equipment and infrastructure that would help manage waste and recycling in their region:

- Regional resource recovery centres or transfer stations to help regions cost effectively manage and store materials until suitable amounts for bulk transport and processing.
- A regional composting facility.
- Equipment to increase transport efficiency - grinders, shredders, crushers and balers.
- Upgrades to facilities to maximise efficiency and environmental compliance - weighbridge, containment bays, weatherproof skip bins, sorting tables; storage/sorting bins.

Skills and training

Councils identified skills and training opportunities in the surveys:

- Environmental protection compliance auditing and monitoring.
- Fire training specific to resource recovery facilities.
- Standard Operating Procedures for waste handling.
- Trade certificate in waste management for field staff (Cert 3 & 4).

Community education is another aspect that is very important and highlighted by many councils. This includes:

- Source separation of materials.
- Disposal pathways for materials, where and how they are recycled.
- The waste hierarchy.
- Food waste, home composting.

A problem with current education highlighted the difference in messaging for metropolitan Adelaide and regional councils and how this can cause problems where services are not available (i.e. food waste in the garden organics bin).

Delivery of community education can be challenging for councils due to lack of resources. A cooperative approach via LGA regional groups could be a way to achieve effective and consistent education.

Appendix 1 - Council Survey

Regional SA Waste and Resource Recovery Strategy - Council survey

Information from this survey will help the South Australian Regional Organisation of Councils to develop a waste and resource recovery strategy for Regional South Australia. It aims to target the five largest waste streams managed by councils and identify if there are options to process materials in Regional SA.

Commercially sensitive data will be kept confidential to the project team. Any questions on this survey can be directed to Kristian Le Gallou, Consultant at Rawtec: 8294 5571 | kristian.legallou@rawtec.com.au

1) Council contact details

Council:		Phone:	
Name:		Email:	
Position:			

2) What waste and resource recovery systems or initiatives are working well in your council area?

3) How many people (FTEs) that Council directly employs are associated with material collection, resource recovery and/or recycling (permanent or casual staff)?

4) What are your specific challenges and barriers to implementing or managing waste and resource recovery in your council area? *Please list and rate its importance (add more rows where needed).*

Challenges:	1)	/10
	2)	/10
	3)	/10
Barriers:	1)	/10
	2)	/10
	3)	/10

5) What equipment/infrastructure or skills/training (including compliance) would help Council manage waste and resource recovery in the region?

Equipment/ infrastructure:	
Skills/training:	

6) Do you have waste and resource recovery strategies or plans specific to your council, or partnerships, strategies or plans with other councils? Please outline.

7) What key topics or considerations you would like considered for a regional waste and resource recovery strategy?

8) Contract details

	Stream	Service provider	Expiry Date (without extensions)	Extensions
Collection	Kerbside collection services			
Disposal/ Processing	General waste			
	Comingled recycling			
	Organics recycling			
Bulk Transport	General waste			
	Comingled recycling			
	Organics recycling			
	Other, please specify			
	Other, please specify			

9) Waste and recycling facilities

Please include current and any planned facilities. Feel free to include the gate rate information as an attachment.

Facility Name	Address	Capacity	Gate rate ($/tonne)

10) Waste and recycling streams and pricing

Please provide information into the table below, where you have it available. If you have any other significant volumes of separated materials, add these in the blank rows.

Material stream	Annual volumes	Processing/Disposal destination (% of annual volumes)				Bulk transport costs	Disposal/ processing costs	Commodity value received
	Tonnes or estimated volume	*Locally in Council area*	*Elsewhere in Regional SA*	*Adelaide*	*Interstate*	*$/tonne/km*	*$/tonne*	*$/tonne*
General waste - kerbside								
General waste - drop off								
Comingled recycling								
Organics recycling - kerbside								
Organics recycling - drop off								
C&D - bricks and concrete								
Cardboard - separately collected								
Metal - separately collected								
Timber - separately collected								

Thank you for taking the time to complete this survey. Please return to kristian.legallou@rawtec.com.au
If we have any follow-up questions about your response, we will contact you.

info@rawtec.com.au
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