Riverina Eastern Regional Organisation of Councils

Regional Waste Management and Resource Recovery Strategy

2017-2021

reroc waste forum

Contents

Executive Summary

The Riverina Eastern Regional Organisation of Councils (REROC) is a voluntary association of fifteen local government bodies located in the eastern Riverina region of NSW. Originally formed in 1992 the aim of the organisation is to assist councils to operate more efficiently and effectively through working together to achieve economies of scale and scope and to provide members with a single representative voice.

REROC established the REROC Waste Forum in 1997 to undertake regional projects that addressed waste management and resource recovery issues. Since that time the Waste Forum has developed a series of four and five-year strategies to direct its activities. The NSW Government's continuing investment in the *Waste Less Recycle More* initiative is driving additional activity in waste management and resource recovery. This is providing new opportunities for councils and regional groupings of councils to implement new and innovative responses to waste management and resource recovery problems and challenges. This Strategy responds to those opportunities

This Strategy was developed in consultation with the member councils, it revisits and builds on the Waste Forum's Strategic Plan 2014-2021. We have continued with the Vision that the Waste Forum agreed to:

Building a sustainable region
through developing and encouraging
the implementation of best practice initiatives
in waste management and resource recovery.

Our Mission for the Strategy is to:

Achieve efficiency in waste management and resource recovery
by working collaboratively with all levels of government,
the community and business for sustainable outcomes

This Strategy was informed by kerbside bin audits that were undertaken by REROC Waste Forum in early 2017 in preparation for the introduction of the NSW CDS. The audit undertook a count of redeemable containers in kerbside recycling bins in all the REROC LGAs and looked at contamination levels in those bins.

In addition, data gathered in waste audits conducted in late 2013 has also informed the Strategic Objectives that have been adopted in the Strategy. Funding was provided by the EPA which allowed the Waste Forum to conduct kerbside bin audits in three LGAs; Coolamon, Cootamundra and Temora while audits of the transfer stations and landfills were conducted in Temora and Cootamundra.

Data obtained from a study of the Coolamon Organics' Recycling operations which was conducted in 2016 has also informed the approaches taken in this Strategy.

Distance, high transport costs, small population centres and low quantities of feedstock continue to throw challenges up to the implementation of sustainable waste management and resource recovery solutions. This requires that the Waste Forum identify innovative solutions and this approach is evidenced in many of the projects that have already been implemented by the Forum and will be implemented in the future.

This Waste Strategy focuses on six Key Themes, five of which mirror the themes contained in the *NSW Waste Avoidance and Resource Recovery Strategy 2014-2021.*

Six Themes have been adopted for the Plan which are as follows:

- Theme 1: Avoid and reduce waste generation
- Theme 2: Increase recycling and divert waste from landfill
- Theme 3: Manage problem wastes better
- Theme 4: Reduce litter
- Theme 5: Reduce illegal dumping.
- Theme 6: Council Capacity Building and Professional Development

We have developed Strategic Objectives for each theme:

1. Avoid and reduce waste generation

1.1. Encourage the community to practice waste avoidance and minimisation
1.2. Encourage the Commercial and Industrial sector to more effectively manage waste and resource recovery
1.3. Work with councils to implement best practice approaches to the operation of waste facilities
1.4. Improve data collection that measures waste generation and reduction

2. Increase recycling and divert more waste from landfill

2.1. Increase the opportunities for households to recycle organic waste
2.2. Increase levels of recyclables collected from households in the REROC region

3. Manage problem wastes better

3.1. Implement regional solutions for problem wastes
3.2. Facilitate and co-ordinate regional collections of problem wastes
3.3. Promote the use of the Safe Sharps site
3.4. Monitor developments for the disposal of other problem wastes

4. Reduce Litter

4.1. Implement the REROC Regional Litter Strategy
4.2. Promote NSW CDS: Return and Earn

5. Reduce illegal dumping

5.1. Implement the REROC Regional Illegal Dumping Strategy

6. Council capacity building and Professional Development

6.1. Increase councillor and council staff awareness and participation in sustainability initiatives
6.2. Offer opportunities for councillors and council staff to participate in Professional Development activities that increase their knowledge of waste management and resource recovery

Introduction

The Strategy will provide direction to the REROC Waste Forum and its individual member councils about waste management and resource recovery within the eastern Riverina region from 2017-2021. The REROC Region which covers over 42,000 sq kms making it slightly larger than Switzerland has a low population density, which results in very real challenges for managing waste and providing viable and sustainable resource recovery solutions.

The NSW Government's continuing investment in the *Waste Less Recycle More* initiative is driving additional activity in waste management and resource recovery. This is providing new opportunities for councils and regional groupings of councils to implement new and innovative responses to waste management and resource recovery problems and challenges. This Strategy responds to those opportunities, encouraging Member Councils to find new ways to rise to the challenge of managing waste and providing resource recovery solutions for the communities they represent.

REROC established the REROC Waste Forum in 1997 to undertake regional projects that addressed waste management and resource recovery issues. The Forum has been very successful designing and implementing a range of projects that have addressed infrastructure issues, waste avoidance measures and improved opportunities for resource recovery in the eastern Riverina.

The importance of working collaboratively has been evidenced in the number of regional projects that have been delivered by REROC, from the implementation of the regional e-waste collection to the establishment of waste oil collection facilities and the delivery of numerous environmental education programs across the region.

The availability of hard data on waste management and resource recovery remains a challenge for the Region and this impacts on decision-making, however this situation is improving. REROC conducted bin audits in late 2013 in Coolamon, Cootamundra and Temora and audits of the transfer stations and landfills were conducted in Temora and Cootamundra. Wagga Wagga conducted its own waste audit in 2012. REROC also conducted audits of household, kerbside recycling bins in all the REROC LGAs in early 2017, to inform council responses to the CDS. Finally, REROC funded a study of the Coolamon FOGO service in late 2016, to obtain data that could be used by other councils that were considering the introduction of a low-tech, low-cost FOGO service.

In addition, demographic studies of the region were also undertaken to inform the planning process.

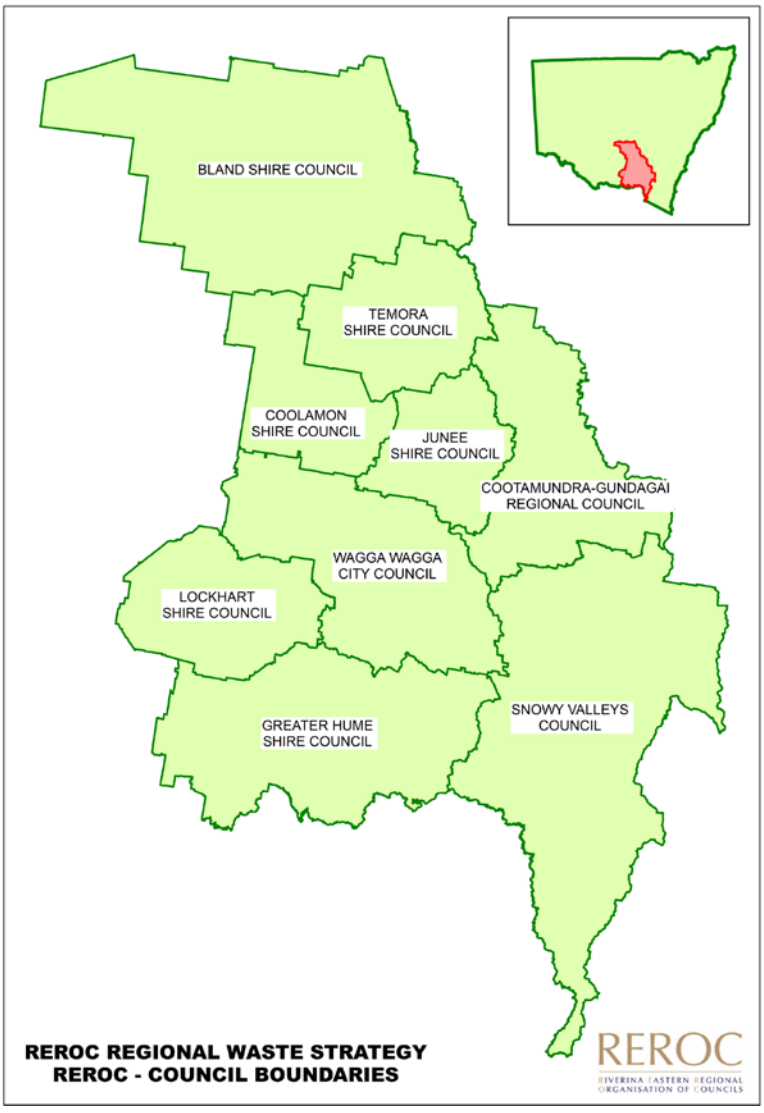
In order to facilitate the planning process, the Strategy was discussed at Waste Forum meetings with Member Councils encouraged to provide input to the planning process. The REROC Board will adopt the Strategy at board level to ensure that there is a high level of commitment to the Strategy's implementation.

Background

Riverina Eastern Regional Organisation of Councils

The Riverina Eastern Regional Organisation of Councils (REROC) is a voluntary association of eleven local government bodies located in the eastern Riverina region of NSW. Originally formed in 1992 the aim of the organisation is to assist councils to operate more efficiently and effectively through working together to achieve economies of scale and scope and to provide members with a single representative voice.

REROC's membership is comprised of nine General Purpose councils and two Water County Councils. Our members are the councils of: Bland, Coolamon, Cootamundra-Gundagai, Greater Hume, Junee, Lockhart, Snowy Valleys, Temora, and Wagga Wagga as well as Riverina Water and Goldenfields Water. REROC serves a population base of approximately 125,000 and encompasses an area in excess of 42,000 sq kilometres, an area slightly larger than Switzerland.



The region includes gateways to the Snowy Mountains through Tumut and Tumbarumba townships in the Snowy Valleys LGA, the flat, agriculture lands of Lockhart in the west and mining in the north of the Region in Bland Shire. This means that members must identify solutions that work both in mountainous, snowy terrains as well as for low plain-style landscapes. In addition, the REROC region encompasses the largest inland city in NSW, Wagga Wagga and some of the smallest communities in the State in Coolamon, Lockhart and Junee LGAs. Therefore, solutions that are developed for the Region, not just in waste management and resource recovery but across a range of local government operational areas must work across a very diverse membership.

The vast distances that the region covers means that transport is a significant consideration in many of the activities that REROC undertakes. There is virtually no public transport in most of the LGAs which means that services generally need to be close to population centres. Consequently, aggregating services is often not a viable solution for the Region because it results in the services being inaccessible for many residents. REROC is committed to ensuring access and equity for all the services offered in the Region, and this is evidenced in the implementation of the regional e-waste project in every LGA, ensuring that the Chemical CleanOut collection happens in every LGA every second year and that community education activities are delivered into all LGAs.

About the Region: Overview

At a Glance

REROC Councils	Area (sq kms)	Population	Pop. Density	Number of Households	Median Age	Median Wage $
Bland	8,558	5,959	0.70	2,914	41.9	36,186
Coolamon	2,430	4,342	1.79	1,811	44.8	40,495
Cootamundra - Gundagai	3,981	11,141	2.80	5,340	46	38,476
Greater Hume	5,749	10,378	1.80	4,534	42.9	38,920
Junee	2,030	6,230	3.07	2,329	39.1	43.283
Lockhart	2,896	3,025	1.04	1,412	45.9	39,647
Temora	2,802	6,071	2.17	2,816	45.2	37,804
Snowy Valleys	8,959	14,994	1.67	6,928	44.4	42,712
Wagga Wagga	4,826	63,428	13.14	26,096	34.6	45,720
Total	**42,231**	**125,568**	**2.97**	**54,180**		

Regional Demographic Profile

Based on 2016 ABS Data (full report is included in the Regional Demographics Section of the Plan)

As can be seen from the above the Median age for most of the LGAs in the Region is over 40 years of age while the median for NSW is 37.6 years. This indicates the aging nature of the population. Only Wagga Wagga has a median age that is significantly lower, and this can be attributed to the City being home to Charles Sturt University, as well as Kapooka Army Base and a RAAF Base at Forest Hill in the east of the City that also provides training to young recruits.

The median wage for every LGA in the Region is below the NSW median wage of $47,500, with Wagga Wagga again being closest to the State average. The City is home to a large number of public sector jobs, including a large health and education sector which would contribute to this result. The balance of the Region is heavily dependent on agriculture with health and retail providing the majority of the rest of the employment opportunities.

The biggest industries from an employment perspective are Health with 13% of employed persons working in the industry, the second is Agriculture, Forestry and Fisheries with 12% of the workforce engaged in the industry and retail with 10% of employed persons working in the field.

The largest occupational group in the Region are professionals with 9,074 describing themselves as working in this area in the 2016 Census, the next largest occupation is Managers with 8,994 persons and then technicians and trades' workers 8,075.

Waste and Resource Recovery: Overview

Kerbside Waste Collections

The LGAs in the REROC region provide the following kerbside services:

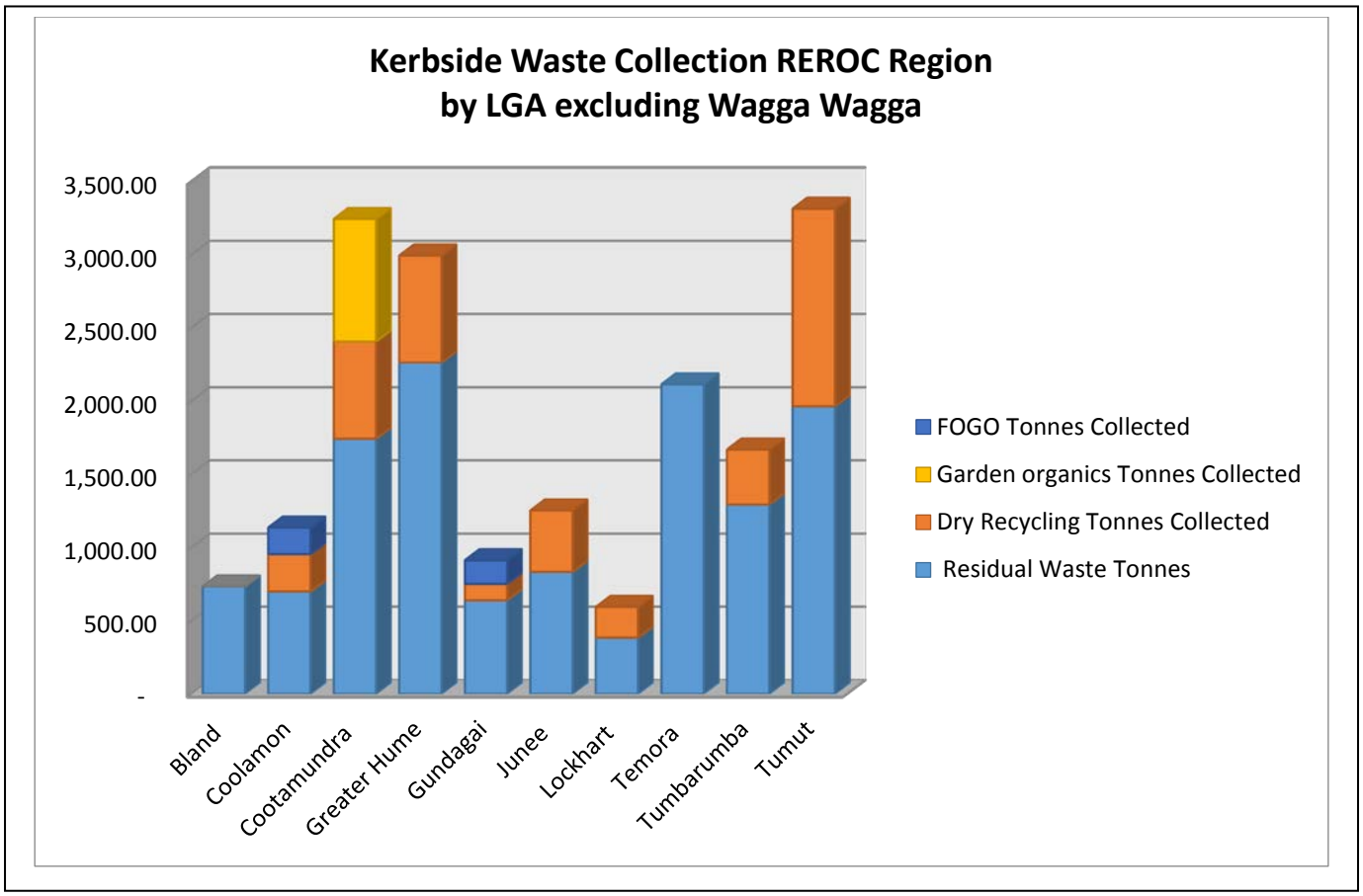
Bland:	Residual collection only
Coolamon:	Residual, recyclables collections, FOGO collections
Cootamundra-Gundagai:	Residual, recyclables collections, green waste, FOGO to be introduced in mid-2018
Greater Hume:	Residual and recyclables collections
Junee:	Residual and recyclables collections, FOGO collection
Lockhart:	Residual and recyclables collections
Snowy Valleys:	Residual and recyclables collections
Temora:	Residual collection only
Wagga Wagga:	Residual, recyclables and green waste collections, FOGO to be introduced in April 2018

Waste Profile by LGA

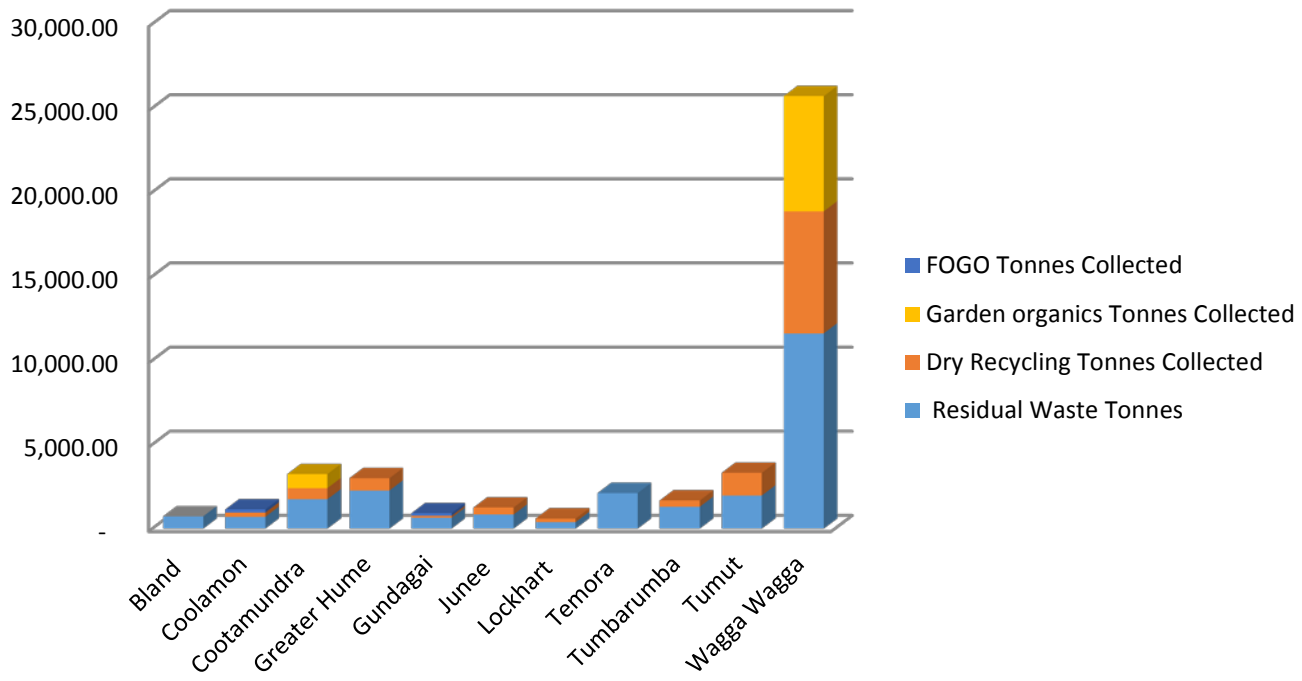
The volumes of waste and percentages of waste collected in the kerbside collections are shown in the following tables and graphs. In addition, as this Strategy also looks at illegal dumping statistics on the issue have been included. The data has been drawn from the 2015-2016 WARR Data supplied by the EPA which is pre-amalgamation data.

Council	LGA Properties	SUDS	MUDS	SUD RURAL	Non Res - Non Rateable	Other Dwelling (Caravan / Cabin / boat)	Vacant Lot / DP	Standard Waste Charge $	Annual Cost to Council $
Bland Shire	3,720	2,245	1,475	-	-	-	-	344	824,418
Coolamon Shire	2,855	1,631					369	265	225,000
Cootamundra Shire	4,437	2,961	287	202	39	-	-	368	1,423,011
Gundagai Shire	8,159	1,330					127	391	452,000
Greater Hume Shire	6,791	2,927			651		294	239	940,570
Junee Shire	7,759								
Lockhart Shire	1,446	827	7	105	126		99	348	410,407
Temora Shire	3,810	1,840	52	151	20	-	126	197	479,442
Tumbarumba Shire	1,910	1,190	50	15	655	-		440	-
Tumut Shire	4,480	4,196	284					350	1,568,000
Wagga Wagga City	23,873	22,085	1,788					294	7,433,533

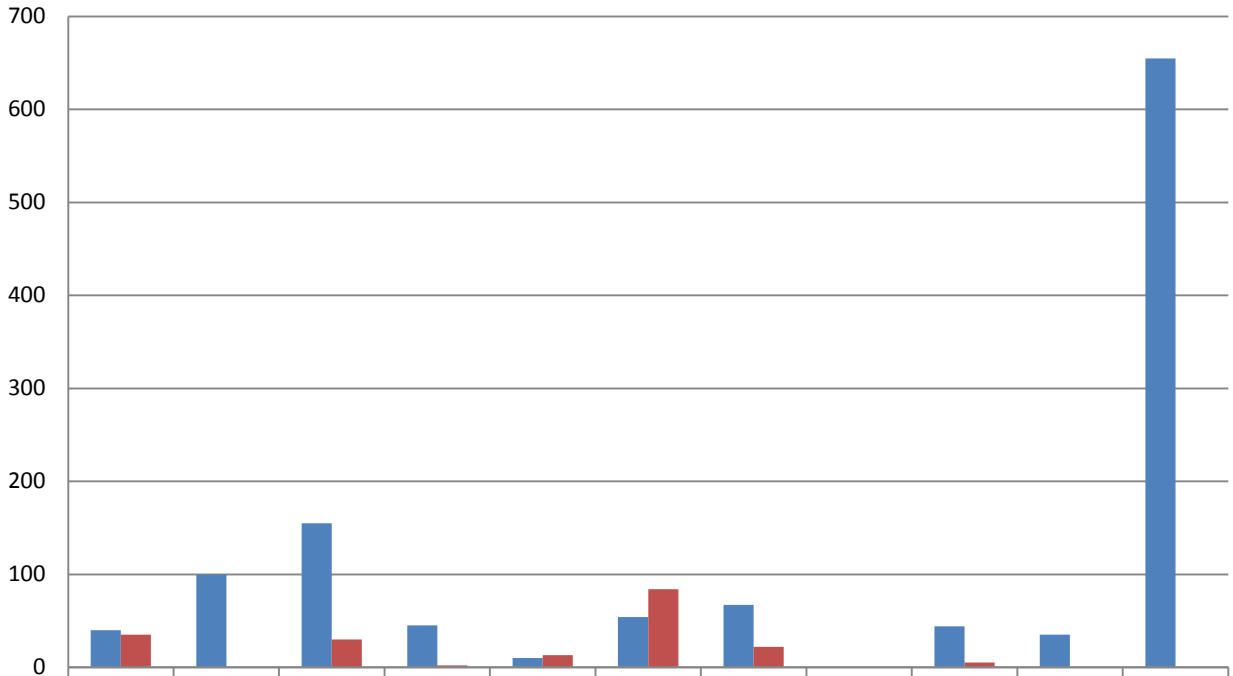
(source: 2015-2016 WARRA Data supplied EPA, pre-amalgamations)



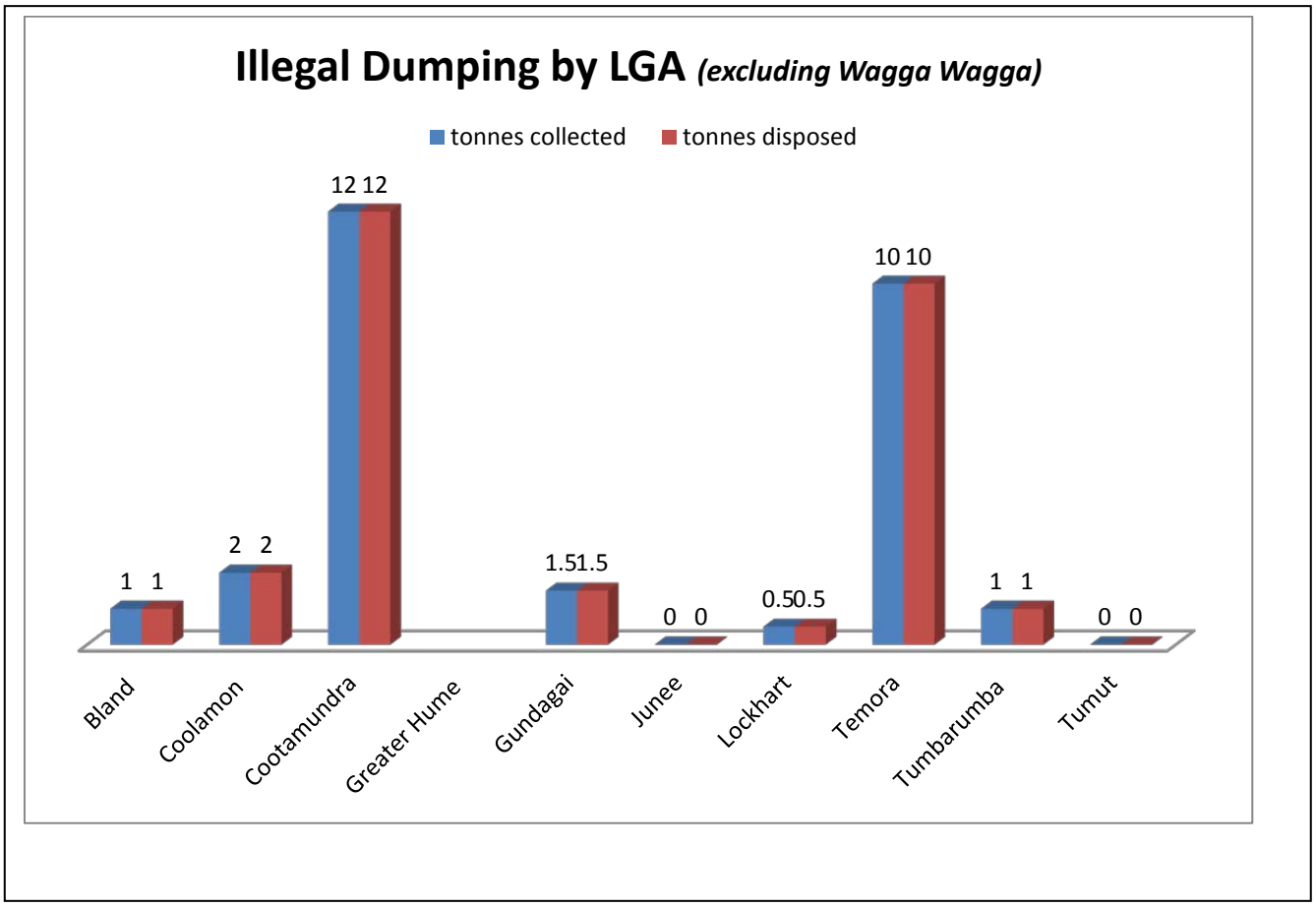
Kerbside Waste Collections REROC Region by LGA including Wagga Wagga

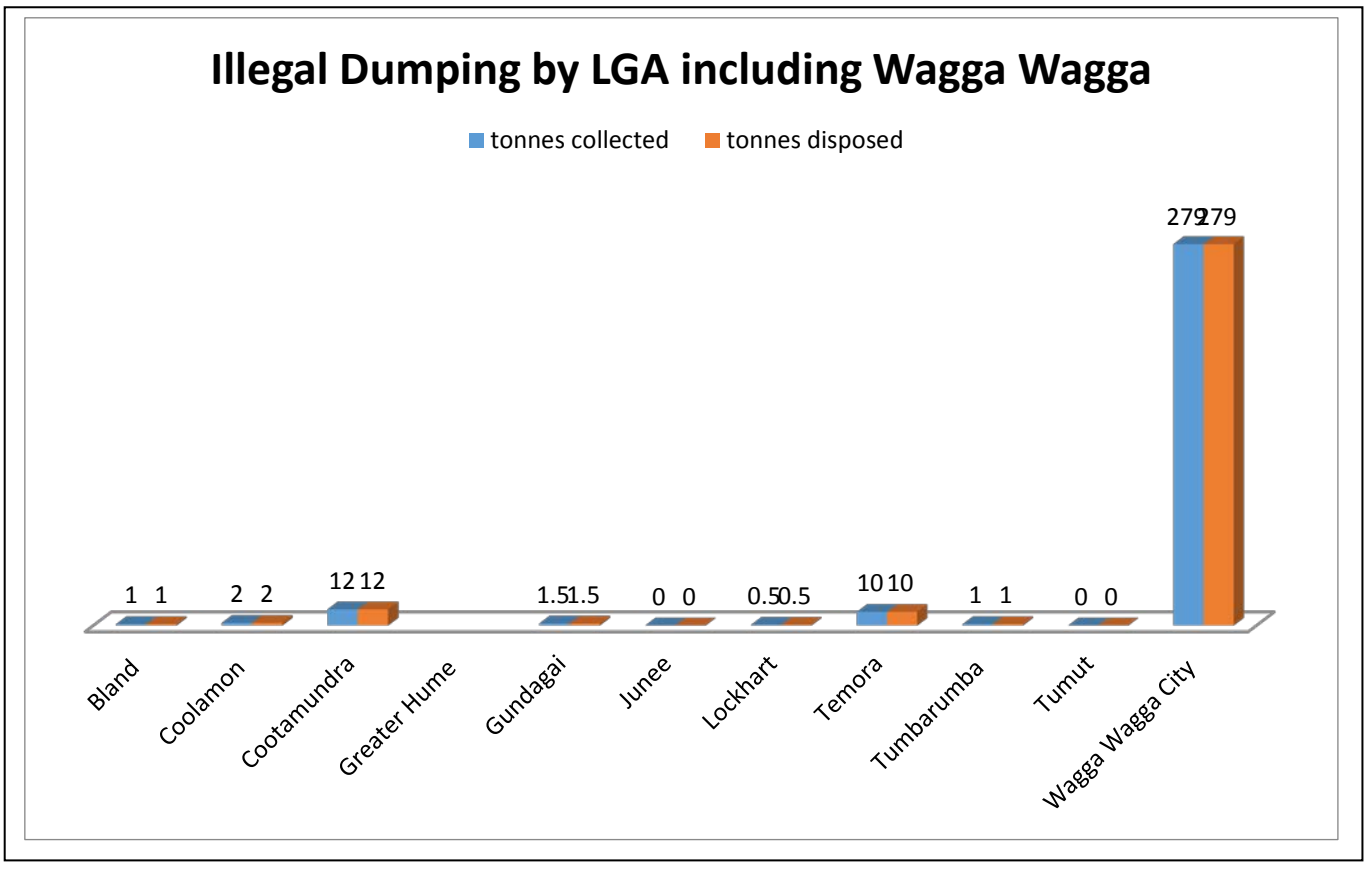


Public Place Waste Bins by LGA and Tonnes Collected *(where reported)*



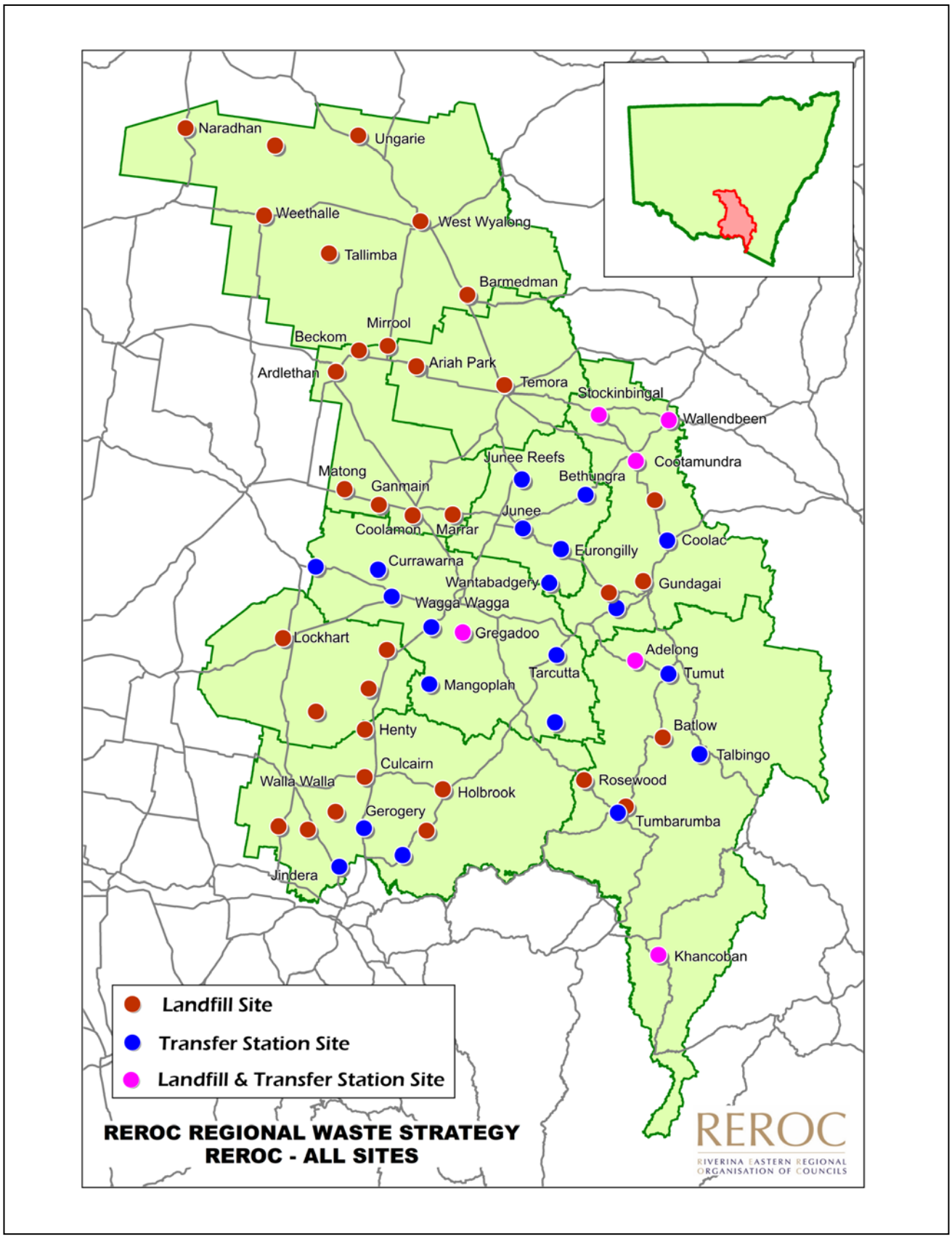
	Bland	Coolamon	Cootamundra	Greater Hume	Gundagai	Junee	Lockhart	Temora	Tumbarumba	Tumut	Wagga Wagga City
No. PP Bins	40	100	155	45	10	54	67		44	35	655
tonnes collected	35	0	30	2	13	84	22		5	0	0


Illegal Dumping by LGA (excluding Wagga Wagga)
tonnes collected
tonnes disposed
1 1
2 2
12 12
1.5 1.5
0 0
0.5 0.5
10 10
1 1
0 0
Bland
Coolamon
Cootamundra
Greater Hume
Gundagai
Junee
Lockhart
Temora
Tumbarumba
Tumut


Illegal Dumping by LGA including Wagga Wagga
tonnes collected
tonnes disposed
1 1
2 2
12 12
1.5 1.5
0 0
0.5 0.5
10 10
1 1
0 0
279 279
Bland
Coolamon
Cootamundra
Greater Hume
Gundagai
Junee
Lockhart
Temora
Tumbarumba
Tumut
Wagga Wagga City

Landfills and Transfer Stations

The landfills and transfer stations in the REROC region are mapped below:



Regional Arrangements

Landfills

Two landfills in the region operate regionally. The landfill operated by Wagga Wagga City Council which takes waste from Junee Shire and the Bald Hill facility which is used by Cootamundra-Gundagai and Snowy Valleys councils in an arrangement with two other non-REROC councils, Yass and Hilltops. The Bald Hill facility is privately operated; however, the licence is held by the Hilltops Council.

Regional Contracts

REROC manages regional contracts for the collection of the following waste:

- *Scrap Metal* – REROC has been letting regional contracts for the collection of scrap metal for 16 years. During that time approximately 20,000 tonnes of metal has been collected. The real value in the regional approach lies in the capacity of the arrangement to ensure that even the smallest council in the region has its metal collected and receives an income stream for it. Ten percent of the income that is raised through the contract is directed to the REROC Waste Forum where it is held aside to assist with the delivery of the regional infrastructure projects.

- *Chemical CleanOut* – every second year REROC organises a regional collection of Household Hazardous Waste. A collection is organised in each LGA in the REROC region usually in May or June. REROC has been instrumental in introducing CRC services at Bland, Coolamon, Cootamundra-Gundagai, Greater Hume, Junee, Lockhart, Snowy Valleys and Temora. We anticipate that this will have some impact on the amount of waste that is collected through the Chemical CleanOut in the future; however we remain committed to providing the collection service providing we are able to obtain funding for it.

- *E-Waste* – REROC has entered into a contract arrangement with MRI-PSO for the free collection of e-waste in each of the REROC member LGAs. The collections were introduced in June 2013 and have continued without interruption ever since. On average 10-15 tonnes of waste are collected each month. Under the contractual arrangements with MRI-PSO REROC arranges for the transport of the waste and MRI-PSO contributes to the cost. All the e-waste is sent to Kurrajong Recycling in Wagga Wagga where it is processed. The current contract between REROC and MRI-PSO and REROC ends in June 2018. MRI-PSO have advised that they would like to renew the arrangements, we anticipate that this will be for 2-3 years.

- *Waste Oil* – About 12 years ago REROC applied for and received funding from the Federal Government to establish waste oil collection facilities at 29 landfills that were then part of the REROC Region. Initially, REROC also contracted regionally for the collection of the waste oil but over time this arrangement has not continued with Member Councils making individual arrangements.

Waste Management and Resource Recovery in each LGA

The individual arrangements for each LGA are contained in the Profiles section of the Plan.

Vision, Mission, Strategic Themes and Objectives

Vision

Building a sustainable region
through developing and encouraging
the implementation of best practice initiatives
in waste management and resource recovery.

Mission

Achieve efficiency in waste management and resource recovery
by working collaboratively with all levels of government,
the community and business for sustainable outcomes

Themes

The Plan identifies six Theme Areas which mirror the NSW Reducing Waste: Implementation Strategy 2011-2015. The Themes are:

1. Avoid and reduce waste generation
2. Increase recycling and divert waste from landfill
3. Manage problem wastes better
4. Reduce Litter
5. Reduce illegal dumping
6. Council capacity building and Professional Development

Each Theme identifies Strategic Objectives to address identified needs and demands. The objectives that have been identified are as follows:

1. Avoid and reduce waste generation

1.1. Encourage the community to practice waste avoidance and minimisation
1.2. Encourage the Commercial and Industrial sector to more effectively manage waste and resource recovery
1.3. Work with councils to implement best practice approaches to the operation of waste facilities
1.4. Improve data collection that measures waste generation and reduction

2. Increase recycling and divert more waste from landfill

2.1. Increase the opportunities for households to recycle organic waste
2.2. Increase levels of recyclables collected from households in the REROC region

3. Manage problem wastes better

3.1. Implement regional solutions for problem wastes
3.2. Facilitate and co-ordinate regional collections of problem wastes
3.3. Promote the use of the Safe Sharps site
3.4. Monitor developments for the disposal of other problem wastes

4. **Reduce Litter**
   4.1. Implement the REROC Regional Litter Strategy
   4.2. Promote NSW CDS: Return and Earn

5. **Reduce illegal dumping**
   5.1. Implement the REROC Regional Illegal Dumping Strategy

6. **Council capacity building and Professional Development**
   6.1. Increase councillor and council staff awareness and participation in sustainability initiatives
   6.2. Offer opportunities for councillors and council staff to participate in Professional Development activities that increase their knowledge of waste management and resource recovery

A number of strategies have been developed for each objective. It is through the implementation of the strategies that the objectives will be met.

Themes, Strategic Objectives and Actions

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Theme 1: Avoid and reduce waste generation

Four Strategic Objectives have been identified to achieve this Theme:

1.1 Encourage the community to practice waste avoidance and minimisation;

1.2 Encourage the Commercial and Industrial sector to more effectively manage waste and resource recovery;

1.3 Work with councils to implement best practice approaches to the operation of waste facilities; and

1.4 Improve data collection that measures waste generation and reduction.

REROC recognises the importance of constantly educating the community about waste avoidance and minimization. It is through constantly reinforcing the messaging that behavioural change occurs. Our recent campaign *Recycle Night? Recycle Right!* has shown the importance of regularly reinforcing the message about managing waste with the MRFs involved reporting significant decreases in contamination when the advertising is being aired.

We will be identifying ways in which we can conduct localised education campaigns that build on State initiatives that promote waste avoidance and minimization. In addition, we will be identifying specific behaviours that can be effectively addressed on a regional level. We will also be looking for opportunities to partner with other organisations to get the "reduce waste" message out.

During the previous planning period REROC ramped up its engagement with schools through school visits, primarily using the King and Queen of Green shows (pictured right). It is important that we continue to deliver the message of waste less and recycle more to children, who are most likely to change their own behaviours and positively influence the behaviours of others in their households.

Above: The King and Queen of Green *deliver their message about the importance of reducing waste to primary school students*

The continuing growth and acceptance of industrial ecology provides opportunities for businesses to become more waste aware and in doing so improve their bottom line. *Circulate*, the EPA's new industrial ecology initiative provides opportunities for businesses to explore ways in which their waste could be re-used and to access other business' waste products for reuse. The Forum will explore ways in which the initiative can be implemented in the region.

The Forum has previously implemented *Bin Trim* in the region, and we will be looking at ways in which we can follow up with previous participants to build on the gains that they have already made and seek opportunities to implement further initiatives in this area.

It is also important to have quality resource materials available for businesses both in hard copy and online to assist them to make informed choices about how they manage waste. The Plan includes provision for the development of these resources which will be made available to businesses through our Member Councils and downloadable from the REROC Waste Forum website: www.reroc.waste.com.au.

We will continue to work on the implementation of best practices in the operation of the Region's waste facilities. Members have committed to improving the operation of their landfills, particularly their small rural landfills. The members have developed a strategy for that purpose with the goal of reaching best practice outcomes for their operation. The implementation of the strategy will be a priority for this Planning period.

Critical to the delivery of projects in this area is improved data collection and we will be exploring ways in which REROC working with its Member Councils and the EPA can improve data collection.

The strategies to be implemented are as follows:

Strategic Objective 1.1: Encourage the community to practice waste avoidance and minimisation

Action 1.1.1: Implement community education campaigns that promote waste minimisation and avoidance.

Action 1.1.2: Develop and implement school education programs that promote waste minimisation and avoidance.

Action 1.1.3: Form alliances and partnerships that assist in the promotion of best practice waste management and resource recovery.

Strategic Objective 1.2: Encourage the Commercial and Industrial sector to more effectively manage waste and resource recovery

Action 1.2.1: Design, develop and distribute resources to better inform businesses about the options and benefits of separating, recovering and reusing waste.

Action 1.2.2: Identify waste management and resource recovery programs and initiatives that could be implemented within the region.

*Action 1.*2.3: Form alliances and partnerships with industry bodies to assist in the promotion of best practice waste management and resource recovery.

Strategic Objective 1.3: Work with councils to implement best practice approaches to the operation of waste facilities

Action 1.3.1: Work with councils to implement the rural and regional landfill strategy.

Action 1.3.2: Support member councils to implement best practice management principles in relation to the operation of landfills and transfer stations.

Strategic Objective 1.4: Improve data collection that measures waste generation and reduction

Action 1.4.1: Work with councils to develop regional solutions for data collection.

Theme 2: Increase recycling and divert more waste from landfill

The Strategic Objectives for this Theme are:

2.1 Increase the opportunities for households to recycle organic waste; and

2.2 Increase levels of recyclables collected from households in the REROC region.

The Forum members recognise the importance of a sound and viable Foods Organics and Garden Organics (FOGO) waste collection and processing system to achieving significant reductions in waste to landfill. Consequently, over several years REROC has been involved in testing and supporting the implementation of FOGO collections.

From 2008 to 2010 REROC ran a Closed Loop Organics Recycling trial in collaboration with CSU. The trial was intended to demonstrate how a low-tech, low-cost option for processing organics could be achieved for small rural communities. CSU staff did all the on-ground works, while REROC met the cost of an agricultural economist to undertake a Cost-Benefit Analysis or the project. Our goal was to explore the feasibility of the low-tech option and to educate Member Councils through site visits and reports which will enable them to adopt the process in their own LGAs.

Following success of the CSU Trial, four of the REROC councils decided that they would pilot FOGO collections in their LGAs. This group project involved Coolamon, Junee, Cootamundra and Gundagai councils with REROC providing the administrative support and meeting the cost of the agricultural economic who undertook the Cost –Benefit Analysis. 200 households in each LGA participated in the Trial. As a consequence of the Trial Coolamon introduced a permanent service for their residents, this has been followed by Junee and Gundagai introducing similar services to for their residents. Cootamundra decided on a staged introduction which began with a green waste collection in 2014 and is planned to move to a full FOGO collection in mid-2018.

Above: one of the print advertisements for the Recycle Night? Recycle Right! *Campaign showcasing workers from Kurrajong Recycling*

The Waste Forum will continue to support the introduction of FOGO collections in all the Member Council LGAs. Our Garden Smart workshops have been a very successful way of encouraging home composting. These practical workshops which are run across the Region by trained horticulturalist Kerry Geale has been invaluable in addressing residents' concerns about composting and answering questions about how they can do better. The Workshops are a joint effort between REROC and the host council.

The Compost Doctor website is another way in which we aim to improve people's knowledge about composting. If someone has a problem with their composting they can "ask the Compost Doctor: a question and he will answer. The website uses smart technology whereby it records all the answers and questions, allowing the site to create a database of questions and answers for users.

In 2017 REROC addressed the growing concern amongst the three MRFs that service the Region, about the level of contamination in the kerbside recycling bin. A Study undertaken by Mike Ritchie and Associates in 2013 showed that In Cootamundra it was 17.45% well above the NSW State average of 5%, in Coolamon it was double the State average at 10.07% and in Wagga Wagga it was 13% again well above the State average. These results support the concerns expressed by the three local MRFs.

The launch of the *Recycle Night? Recycle Right* aimed to reduce contamination entering the recycling stream. The campaign was based on what we believed was the fact that people did not realise that in our Region their recyclables were sorted by hand. The campaign which ran on radio, television, print and through on-air talk shows has been very successful with all three MRFs advising that they have seen a downturn in the levels of contamination and an increase in the level of engagement from school children who come to the site for a tour,

Regional collection and processing facilities are important to reducing the cost of transporting waste for recycling and increasing opportunities to recycle. The region currently has several recycling and reprocessing facilities in operation including Renewed Metal Technologies (RMT), Southern Oil, Australian Native Landscapes (ANL) and Kurrajong Recyclers.

The strategies to be implemented are as follows:

Strategic Objective 2.1: Increase the opportunities for households to recycle organic waste

Action 2.1.1: Work with and support member councils to introduce sustainable organics' collection options for their LGAs.

Action 2.1.2: Raise awareness of the benefits of organics' recycling.

Action 2.1.3: Promote and educate households and the community about organics and home composting.

Action 2.1.4: Identify opportunities to access funding to support the introduction of new services and improve existing services.

Strategic Objective 2.2: Increase levels of recyclables collected from households in the REROC region

Action 2.2.1: Raise the awareness of households about the importance of separating, recovering and reusing waste.

Action 2.2.2: Reduce the level of contamination in household recycling collections.

Action 2.2.3: Explore and promote models that provide viable Public Place Recycling (PPR) options for member councils.

Theme 3: Manage problem wastes better

The Strategic Objectives for this Theme are:

3.1 Implement regional solutions for problem wastes

3.2 Facilitate and co-ordinate regional collections of problem wastes

3.3 Promote the use of the Safe Sharps site

3.4 Monitor developments for the disposal of other problem wastes

Hon Katrina Hodgkinson, former Member for Cootamundra at the Junee CRC in September 2016. The opening was for all the CRCs in the Cootamundra electorate which are located at: Bland, Coolamon, Cootamundra, Gundagai, Junee and Temora

The remoteness of many of the landfills in the REROC region make them prime targets for the illegal dumping of problem wastes. It is for this reason that the Waste Forum believes it is important that we are pro-active in identifying solutions for these wastes that ensures they are diverted from our landfills.

REROC will continue to facilitate, wherever possible regional collections of problems wastes. During the previous planning period REROC facilitated the construction of eleven Community Recycling Centres. The CRCs have been very successful, collecting over 51,300 kilograms of waste since opening in mid-2016.

CRCs are operating in West Wyalong, Coolamon, Cootamundra, Gundagai, Junee, Lockhart, Culcairn, Temora, Tumut and Tumbarumba. REROC also established a CRC in Urana which, because of council mergers, is no longer part of the REROC Region

REROC will continue to support the operations of these Centres and seek ways to increase their patronage. In addition, evaluations will take place with residents to obtain feedback on the operation of the facilities.

While the CRCs are collecting low toxic waste, it is important to continue to offer a disposal solution to residents for highly toxic wastes. Consequently, REROC will continue to offer its biennial Chemical CleanOut collection, providing appropriate funding is available from the EPA to support the service.

REROC will continue to facilitate the regional collection of ewaste. This activity has been enormously successful for the Waste Forum, with the REROC Region being one of the few regions in Australia to enjoy a fully-funded ewaste collection and disposal service under the auspices of the NTCRS.

Since entering into the regional contract arrangements in 2013 over 350 tonnes of ewaste has been collected and disposed of through Kurrajong Recyclers. The service has been supported by television and cinema advertising in the region, the response has been very positive and overall contamination levels have been low. Advertising for the service will continue over the planning period.

REROC's current contract with MRI-PSO for ewaste disposal will end during this planning period, we will be looking for a renewal of the contract to ensure the services that are provided to our councils continue.

REROC will also continue to lobby for collection targets for rural and regional communities. We remain concerned that without targets there is no requirement for Liable Parties to actually collect waste from regional areas, instead the legislation requires that they only provide a facility where ewaste can be dropped off,

The Waste Forum was the first group of councils to implement a group contract for metal waste collection and it totally changed the way that councils managed this waste product. Prior to the group tendering approach being taken, member councils, particularly those in the more remote locations, were paying contractors to take the waste away, now the waste generates an income for councils. We estimate in the last decade more than 20,000 tonnes of scrap metal has been collected.

The Forum has regularly gone out to tender for the collection of metal waste however in recent years the Forum has moved from 2-year contracts to one-off contracting. This approach has resulted in much higher prices for the resource because providers are not including a risk premium in their pricing as they done when we contracted over multiple years. The success of the one-off approach has ensured that it will continue through the next planning period.

Launched by the NSW Minister for Health, Hon Jillian Skinner in July 2011, *Safe Sharps* has met with great success. It is actively promoted by the NSW Department of Health and the NSW Diabetes Council as well as local government, diabetes health educators and community health organisations.

REROC regularly promotes the site at conferences and other forums and as consequence recognition of its benefits is growing. Currently there are 2,170 locations on Safe Sharps, most are in NSW.

The Forum has committed to Safe Sharps becoming a national resource and to that end will continue to promote it and seek opportunities to partner with State-based organisations until the Site achieves that level of coverage.

The Forum members will also be monitoring developments that address other problem wastes such as tyres and asbestos. This will include working with others to determine whether there are opportunities to develop regional collection contracts, regional storage solutions or regional processing solutions for these types of waste.

The strategies to be implemented are as follows:

Strategic Objective 3.1: Implement regional solutions for problem wastes

Action 3.1.1: Work collaboratively with Industry and member councils to deliver regional solutions for problem wastes.

*Action 3.*1.2 Identify opportunities to reduce the use of plastic bags in the region.

Strategic Objective 3.2: Facilitate and co-ordinate regional collections of problem wastes

Action 3.2.1: Identify specific waste streams suitable for regional collection contracts.

*Action 3.*2.1 Facilitate and co-ordinate a regional collection for problem wastes.

*Action 3.*2.3 Conduct regional Chemical CleanOut collections every second year, subject to EPA funding.

*Action 3.*2.4 Support the operation of Community Recycling Centres (CRCs) for the collection of low toxic wastes.

Strategic Objective 3.3: Promote the use of the Safe Sharps site

Action 3.3.1 Further develop alliances and partnerships with organisations that can assist in promoting the site.

Action 3.3.2 Expand the platforms used to advertise and promote the site to increase awareness.

Action 3.3.3 Work with State bodies to expand the service nationally.

Action 3.3.4 Upgrade Safe Sharps' user interface and platforms to enhance operability

Strategic Objective 3.4: Monitor developments for the disposal of other problem wastes

Action 3.4.1: Monitor developments in waste processing and resource recovery and identify new methods of recycling and reusing problem wastes.

Theme 4: Reduce Litter

The Strategic Objectives for this Theme are:

4.1 Implement the REROC Regional Litter Strategy

4.2 Promote NSW CDS: Return and Earn

Above: One of the litter bins that was installed as the first stage of the Waste Forum's Litter Reduction Strategy

REROC has developed a Regional Litter Strategy. It is the Waste Forum's intention that over the next planning period that key elements of the Strategy will be implemented building on the projects that have already been implemented.

Littering from vehicles remains a major issue in the Region as evidence by the volume of roadside litter. During 2017 the Waste Forum was successful in attracting funding for litter reduction which resulted in bins and signage being placed at traveller laybys and public toilets aimed at encouraging travellers to dispose of car litter responsibly. This was supported by a radio-based advertising campaign directed at visitors to the Region. This approach will continue during the next planning period.

The NSW Container Deposit Scheme (CDS) commenced in December 2017. The CDS is a litter reduction initiative and has enormous potential to reduce litter. REROC actively engaged in the roll-out of the Scheme and will continue during this planning period to find ways in which it can support and promote the effective implementation of the CDS.

The Strategies for this Theme are as follows:

Strategic Objective 4.1: Implement the REROC Regional Litter Strategy

Action 4.1.1: Develop an Action Plan for the implementation of the Strategy.

Action 4.1.2: Source funding to support the implementation of the Regional Litter Strategy.

Strategic Objective 4.2: Promote NSW CDS: Return and Earn

Action 4.2.1: Support the effective implementation of the CDS in the Region.

Theme 5: Reduce Illegal Dumping

The Strategic Objective for this Theme is:

5.1 Implement the REROC Regional Illegal Dumping Strategy

The Forum recognises that it has a role in reducing illegal dumping in the region. Identifying hotspots for illegal dumping is an important way of assisting councils to address the problem in their own LGAs.

The Forum has been encouraging councils to utilise the EPA's RID on-line tool in order to build data on illegal dumping and to identify regional hotspots. In addition, REROC, during the last planning period developed its Illegal Dumping Strategy, the Forum will continue to implement strategies from the Plan and to seek funding to assist us with implementation.

Our members recognise that it is important to form partnerships to deal with illegal dumping and to that end we will be looking to collaborate with other owners of public lands such as Local Land Services and Crown Lands as well as community groups such as Landcare to implement regional initiatives that address illegal dumping. The Forum will also be seeking opportunities through ***Waste Less Recycle More*** for funding to implement those initiatives.

The strategies to be implemented are as follows:

Strategic Objective 5.1: Implement the REROC Regional Illegal Dumping Strategy

Action 5.1.1: Identify the specific actions in the Strategy to be implemented.
Action 5.1.2: Source funding to support the implementation of the Regional Illegal Dumping Strategy.
Action 5.1.3 Collaborate with other owners of public lands to implement illegal dumping initiatives.

Theme 6: Council capacity building and Professional Development

The Strategic Objective for this Theme is:

6.1 Increase councillor and council staff awareness and participation in sustainability initiatives

6.2 Offer opportunities for councillors and council staff to participate in Professional Development activities that increase their knowledge of waste management and resource recovery

An important role for the Waste Forum is to encourage the professional development of council staff and councillors to ensure that they improve and build on their waste management and resource recovery knowledge.

Opportunities for professional development can be provided through field days, visits to waste and resource recovery facilities and through conferences and workshops.

Above; REROC CEO, Julie Briggs speaks about the NSW CDS at the No Time to Waste *Conference in June 2017*

Over the next planning period the Waste Forum will continue to facilitate access to professional development for staff and councillors which will include the continuation of the *No Time to Waste* Conference held every year in June.

The *No Time to Waste* Conference is directly aimed at rural and regional councils. It aims to bring high quality speakers to our Region to provide the latest information on waste management and resource recovery that can be applied to the operation rural and regional facilities and services.

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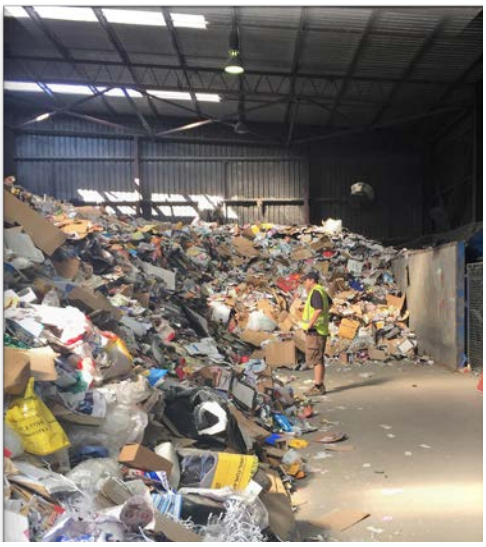
REROC consults with its Member Councils to ascertain what topics they are interested in hearing about and to identify appropriate speakers. We believe that it is vital that council staff and councillors have ready access to high level speakers through attendance at the Conference. Delegate registration is kept as low as possible recognizing the significant costs of travel and accommodation that conference attendance usually requires. The continuing sponsorship of the EPA is important to ensuring that delegate costs remain low.

In March 2017 the Waste Forum facilitated a visit to CDS redemption facilities in South Australia. The purpose of the visit was to better inform Member Councils about the operation of these facilities. At the time the visit was undertaken it was anticipated that councils would have a major role to play in the delivery of the CDS through the provision of Manual Collection Points. Although this role did not eventuate the visit to South Australia certainly allowed members to see the size of the operations and



Above: REROC Waste Forum Chair, Tony Donoghue looks for empty beverage containers in recycling collected at Mt Gambier.

allowed them to make better informed decisions about the level of involvement in the NSW Scheme. We will continue to facilitate opportunities for this type of professional development throughout the new planning period.

The Forum will continue to disseminate information on its activities and the activities of RENEW NSW to raise awareness of our activities and of the other Voluntary Regional Waste Groups operating in NSW.

The strategies to be implemented are as follows:

Strategic Objective 6.1: Increase councillor and council staff awareness and participation in sustainability initiatives

Action 6.1.1: Raise awareness of the Forum's activities and the activities of RENEW NSW through the promotion of local activities and participation in discussions on the future of waste and sustainability in NSW.

Action 6.1.2 Disseminate information about Waste Forum activities, initiatives and outcomes to the REROC Board, councillors and staff.

Strategic Objective 6.2: Offer opportunities for councillors and council staff to participate in Professional Development activities that increase their knowledge of waste management and resource recovery

Action 6.2.1: Facilitate and encourage participation in professional development on waste with REROC members, councillors and staff.

Strategic Framework and Actions

Vision				
Building a sustainable region through developing and encouraging the implementation of best practice initiatives in waste management and resource recovery.				
Theme	**Strategic Objectives**		**Actions**	
Avoid and reduce waste generation	**1.1**	Encourage the community to practice waste avoidance and minimisation	**1.1.1**	Implement community education campaigns that promote waste minimisation and avoidance
			1.1.2	Develop and implement school education programs that promote waste minimisation and avoidance
			1.1.3	Form alliances and partnerships that assist in the promotion of best practice waste management and resource recovery
	1.2	Encourage the Commercial and Industrial sector to more effectively manage waste and resource recovery	**1.2.1**	Design, develop and distribute resources to better inform businesses about the options and benefits of separating, recovering and reusing waste.
			1.2.2	Identify waste management and resource recovery programs and initiatives that could be implemented within the region
			1.2.3	Form alliances and partnerships with industry bodies to assist in the promotion of best practice waste management and resource recovery
	1.3	Work with councils to implement best practice approaches to the operation of waste facilities	**1.3.1**	Work with councils to implement the rural and regional landfill strategy
			1.3.2	Support member councils to implement best practice management principles in relation to the operation of landfills and transfer stations
	1.4	Improve data collection that measures waste generation and reduction	**1.4.1**	Work with councils to develop regional solutions for data collection

Increasing recycling and divert more waste from landfill	**2.1**	Increase the opportunities for households to recycle organic waste	**2.1.1**	Work with and support member councils to introduce sustainable organics' collection options for their LGAs
			2.1.2	Raise awareness of the benefits of organics' recycling
			2.1.3	Promote and educate households and the community about organics and home composting
			2.1.4	Identify opportunities to access funding to support the introduction of new services and improve existing services
	2.2	Increase levels of recyclables collected from households in the REROC region	**2.2.1**	Raise the awareness of households about the importance of separating, recovering and reusing waste
			2.2.2	Reduce the level of contamination in household recycling collections
			2.2.3	Explore and promote models that provide viable Public Place Recycling (PPR) options for member councils
Managing problem wastes better	**3.1**	Implement regional solutions for problem wastes	**3.1.1**	Work collaboratively with Industry and member councils to deliver regional solutions for problem wastes
			3.1.2	Identify opportunities to reduce the use of plastic bags in the region
	3.2	Facilitate and co-ordinate regional collections of problem wastes	**3.2.1**	Identify specific waste streams suitable for regional collection contracts
			3.2.2	Facilitate and co-ordinate a regional collection for problem wastes
			3.2.3	Conduct regional Chemical CleanOut collections every second year, subject to EPA funding
			3.2.4	Support the operation of Community Recycling Centres (CRCs) for the collection of low toxic wastes
	3.3	Promote the use of the Safe Sharps site	**3.3.1**	Further develop alliances and partnerships with organisations that can assist in promoting the site
			3.3.2	Expand the platforms used to advertise and promote the site to increase

				awareness
			3.3.3	Work with State bodies to expand the service nationally
			3.3.4	Upgrade Safe Sharps' user interface and platforms to enhance operability
	3.4	Monitor developments for the disposal of other problem wastes	**3.4.1**	Monitor developments in waste processing and resource recovery and identify new methods of recycling and reusing problem wastes
Reduce Litter	**4.1**	Implement REROC Regional Litter Strategy	**4.1.1**	Develop an Action Plan for the implementation of the Strategy
			4.1.2	Source funding to support the implementation of the Regional Litter Strategy
	4.2	Promote NSW CDS: Return and Earn	**4.2.1**	Support the effective implementation of CDS in the region
Reduce illegal dumping	**5.1**	Implement the REROC Regional Illegal Dumping Strategy	**5.1.1**	Identify the specific actions in the Strategy to be implemented
			5.1.2	Source funding to support the implementation of the Regional Illegal Dumping Strategy
			5.1.3	Collaborate with other owners of public lands to implement illegal dumping initiatives
Council capacity building and Professional Development	**6.1**	Increase councillor and council staff awareness and participation in sustainability initiatives	**6.1.1**	Raise awareness of the Forum's activities and the activities of RENEW NSW through the promotion of local activities and participation in discussions on the future of waste and sustainability in NSW
			6.1.2	Disseminate information about Waste Forum activities, initiatives and outcomes to the REROC Board, councillors and staff
	6.2	Offer opportunities for councillors and council staff to participate in Professional Development activities that increase their knowledge of waste management and resource recovery	**6.2.1**	Facilitate and encourage participation in professional development on waste with REROC members, councillors and staff

Action Plan

1.1 Encourage the community to practice waste avoidance and minimisation		
Actions		**Detail of Action**
1.1.1	Implement community education campaigns that promote waste minimisation and avoidance	1. Identify waste minimisation and avoidance issues that would respond to localised education campaigns. 2. Look for opportunities to continue existing education campaigns e.g. Garden Smart Workshops, Love Food Hate Waste or to implement a new initiative 3. Engage marketing expertise to assist with the design of the campaign 4. Identify partner organisations that can assist in getting the message to the community. 5. Implement and monitor the effectiveness of the campaigns
1.1.2	Develop and implement school education programs that promote waste minimisation and avoidance	1. Identify existing or new education programs that could be implemented in schools. 2. Design new programs and update existing programs. 3. Arrange primary school visits for waste education programs 4. Refresh and renew the content of Kindy Kits. 5. Distribute Kindy Kits to new Kindergarten students in the Region to promote the No Waste in my Lunchbox message. 6. Evaluate the effectiveness of the programs.
1.1.3	Form alliances and partnerships that assist in the promotion of best practice waste management and resource recovery	1. Identify community organisations that have an interest in waste management and resource recovery 2. Approach organisations to determine level of interest in forming partnerships 3. Identify projects that the organisations could assist in promoting 4. Consult with organisations about projects and project design to determine the projects they would like to implement 5. Implement selected projects and evaluate.
1.2 Encourage the Commercial and Industrial sector to more effectively manage waste and resource recovery		
Actions		**Detail of Action**
1.2.1	Design, develop and distribute resources to better inform businesses about the options and benefits of separating, recovering and reusing waste.	1. Consult with councils and MRFs to identify opportunities/needs for resources 2. Identify resources that would be suitable for use by businesses 3. Form partnerships with local business organisations to assist with the distribution of materials.

1.2.2	Identify waste management and resource recovery programs and initiatives that could be implemented within the region	1. Monitor EPA endorsed programs like Bin Trim and Circulate for opportunities to implement them in the region 2. Source funding to support the implementation of identified programs, 3. Work with councils and local business organisations to implement programs
1.2.3	Form alliances and partnerships with industry bodies to assist in the promotion of best practice waste management and resource recovery	1. Identify local business organisations and industry bodies operating in the Region 2. Identify communication channels that can be used to disseminate information on best practice. 3. Identify businesses that have adopted best practice approaches and showcase through case studies. 4. Former Bin Trim participants contacted to encourage them to participate in Case Studies.
1.3 Work with councils to implement best practice approaches to the operation of waste facilities		
Actions		**Detail of Action**
1.3.1	Work with councils to implement the rural and regional landfill strategy	1. Work with councils to identify projects that can be implemented by councils. 2. Develop and implementation timetable based 3. Source funding for projects 4. Work collaboratively with councils to implement identified projects.
1.3.2	Support member councils to implement best practice management principles in relation to the operation of landfills and transfer stations	1. Identify best practice initiatives that can be implemented in the Region. 2. Work with councils on improving performance and identify opportunities that lend themselves to delivery through regional contracts or services. 3. Showcase best practice initiatives at the No Time to Waste Conference. 4. Monitor and apply for regional grants that support the introduction of best practice initiatives.
1.4 Improve data collection that measures waste generation and reduction		
Actions		**Detail of Action**
1.4.1	Work with councils to develop regional solutions for data collection	1. Identify data hotspots for councils 2. Identify the reasons behind the problems with data collection. 3. Work with councils to identify possible solutions to the problems. 4. Explore and investigate opportunities to develop data capture solutions

2.1 Increase the opportunities for households to recycle organic waste		
Actions		**Detail of Action**
2.1.1	Work with and support member councils to introduce sustainable organics' collection options for their LGAs	1. Promote low-tech, low-cost composting solutions for rural councils 2. Where requested work with councils to develop feasibility studies for the introduction of processing facilities 3. Develop education materials on organics' recycling 4. Identify and implement training for staff 5. Identify opportunities for regional contracting in organics 6. Develop educational materials and advertising to support introduction of collections
2.1.2	Raise awareness of the benefits of organics' recycling	1. Work with councils to support the introduction of FOGO services in their LGAs 2. Run education programs for councillors and council staff and the community
2.1.3	Promote and educate households and the community about organics and home composting	1. Develop education materials about organics and home composting 2. Distribute materials through councils, local garden clubs and nurseries. 3. Evaluate the effectiveness of the materials
2.1.4	Identify opportunities to access funding to support the introduction of new services and improve existing services	1. Monitor and distribute information on funding opportunities to councils 2. Assist councils to prepare funding submissions 3. Look for opportunities for REROC to submit regional funding applications for multiple services
2.2 Increase levels of recyclables collected from households in the REROC region		
Actions		**Detail of Action**
2.2.1	Raise the awareness of households about the importance of separating, recovering and reusing waste	1. Continue to promote *Recycle Night? Recycle Right!* Message 2. Expand *Recycle Night? Recycle Right!* To include messaging on reusing waste 3. Identify opportunities to improve service provision and options for recycling in member councils and where appropriate implement trials
2.2.2	Reduce the level of contamination in household recycling collections	1. Continue to promote *Recycle Night? Recycle Right!* Message 2. Work with MRFs to expand the messaging for greater impact e.g. visits to MRFs by schools and service clubs 3. Work with MRFs to reduce the amount of product classified as contaminant 4. Evaluate the effe3ctiveness of the Recycle Night messaging including conducting another

		kerbside recycling audit.
2.2.3	Explore and promote models that provide viable Public Place Recycling (PPR) options for member councils	1. Identify options for introduction of PPR 2. Support the use of pilots to test PPR options 3. Identify possible funding sources to support the delivery of PPR
3.1 Implement regional solutions for problem wastes		
Actions		**Detail of Action**
3.1.1	Work collaboratively with Industry and member councils to deliver regional solutions for problem wastes	1. Monitor developments in relation to the delivery of problem waste collections by liable parties under the legislation 2. Form relationships with industry/liable parties to develop optimal collection arrangements for communities 3. Evaluate the effectiveness of collection arrangement and identify improvements to service delivery.
3.1.2	Identify opportunities to reduce the use of plastic bags in the Region	1. Workshop with Member Councils possible approaches to reducing plastic bag use 2. Identify projects that could facilitate the approaches 3. Cost the proposed projects 4. Work with Member Councils to select the most appropriate projects for implementation 5. Implement projects 6. Evaluation effectiveness of projects
3.2 Facilitate and co-ordinate regional collections of problem wastes		
Actions		**Detail of Action**
3.2.1	Identify specific waste streams suitable for regional collection contracts	1. Audit waste streams to identify which waste streams have sufficient critical mass to support regional contract 2. Determine whether there is sufficient demand for the waste stream to support a regional collection contract 3. Prepare tender documentation for the collection
3.2.2	Facilitate and co-ordinate a regional collection for problem wastes	1. Renew contract with MRI-PSO for the collection of ewaste 2. Renew MOU with Kurrajong Recycling for processing ewaste 3. Advertise Drop-off locations 4. Arrange for transport of ewaste from council drop-offs to Kurrajong Recyclers

		5. Identify need for scrap metal waste collection 6. Seek quotations for scrap metal collections 7. Monitor effectiveness of collections and record the amount of scrap metal collected.
3.2.3	Conduct regional Chemical CleanOut collections every second year, subject to EPA funding	1. Identify funding opportunities to conduct CleanOut collections 2. Make application for funding and obtain funding support from member councils if required 3. Seek quotations for the conduct of each CleanOut collection 4. Prepare promotional materials for distribution by councils 5. Monitor effectiveness of collections and record the amount of chemicals collected
3.2.4	Support the operation of Community Recycling Centres (CRCs) for the collection of low toxic wastes	1. Implement the CRC Communication and Education Plan 2. Monitor effectiveness of centres through community surveys and feedback 3. Promote and support the use of the Mobile Service 4. Facilitate training for councils that use the Mobile Service to ensure they can meet their reporting obligations for transfer of hazardous waste
3.3 Promote the use of the Safe Sharps site		
Actions		**Detail of Action**
3.3.1	Further develop alliances and partnerships with organisations that can assist in promoting the Site	1. Identify potential partnering organisations 2. Contact partnering organisations to discuss benefits of the site and to identify opportunities to work together 3. Provide resource materials to partnering organisations to assist in promotion
3.3.2	Expand the platforms used to advertise and promote the site to increase awareness	1. Identify potential platforms for advertising and promotion 2. Cost the delivery of promotion through those platforms 3. Select the most cost-effective platform or platforms for delivery 4. Implement promotional campaign
3.3.3	Work with State bodies to expand the service nationally	1. Identify State bodies that could assist in expanding the site nationally 2. Contact State bodies to explore opportunities to expand the site nationally 3. Work collaboratively with State bodies to introduce the site to the State 4. Monitor the effectiveness of the introduction of the site to the State
3.3.4	Upgrade Safe Sharps' user interface and platforms to enhance operability	1. Monitor changes in Operating Systems on the platforms that Safe Sharps operates 2. Engage consultant to upgrade Safe Sharps to meet new Operating system requirements 3. Engage consultants to improve user interface and user experience

		4. Engage consultants to improve back-end operability to respond to user requests
3.4 Monitor developments for the disposal of other problem wastes		
Actions		**Detail of Action**
3.4.1	Monitor developments in waste processing and resource recovery and identify new methods of recycling and reusing problem wastes	1. Subscribe to appropriate industry journals, attend conferences and workshops to monitor new developments 2. Disseminate information to Waste Forum members to determine which technologies could be adopted in the region 3. Lobby for the introduction of Product Stewardship responsibilities for problem wastes
4.1 Implement the REROC Regional Litter Strategy		
Actions		**Detail of Action**
4.1.1	Develop an Action Plan for the Implementation of the Strategy	1. Identify the Strategies to be implemented for each year 2. Undertake planning to develop the Action Plan 3. Implement the Action Plan
4.1.2	Source funding to support the implementation of the Regional Litter Strategy	1. Monitor funding opportunities for the implementation of the Strategy 2. Apply for funding
4.2 Promote NSW CDS: Return and Earn		
Actions		**Detail of Action**
4.2.1	Support the effective implementation of CDS in the region	1. Engage with consultations on the roll-out of the Scheme 2. Support Councils to consider opportunities to be part of the service delivery for the Scheme 3. Provide information on the Waste Forum website about the Scheme
5.1 Implement the REROC Regional Illegal Dumping Strategy		
Actions		**Detail of Action**
5.1.1	Identify specific actions in the Strategy to be implemented	1. Review Strategy with Councils and select the actions to be implemented

5.1.2	Source funding to support the implementation of the Regional Illegal Dumping Strategy	1. Monitor funding opportunities for the implementation of the Strategy 2. Apply for funding
5.1.3	Collaborate with other owners of public lands to implement illegal dumping initiatives	1. Meet with other owners of public lands to discuss illegal dumping problems 2. Develop collaborations that address those problems and that are in line with REROC's Illegal Dumping Strategy 3. Work with those partners to implement the strategies 4. Evaluate the effectiveness of the projects that are implemented.
6.1 Increase councillor and council staff awareness and participation in sustainability initiatives		
Actions		**Detail of Action**
6.1.1	Raise awareness of the Forum's activities and the activities of RENEW NSW through the promotion of local activities and participation in discussions on the future of waste and sustainability in NSW	1. Waste Forum represented at NSW Waste Conference and RENEW meetings 2. Seek opportunities to speak at conferences and workshops 3. Respond to inquiries and consultations on waste management and resource recovery 4. Update the REROC Waste Forum website
6.1.2	Disseminate information about Waste Forum activities, initiatives and outcomes to the REROC Board, councillors and staff	1. Use the local media to promote the projects and achievements of the REROC Waste Forum to community members 2. Seek opportunities to speak at conferences and workshops 3. Showcase Forum activities on the Forum website 4. Provide written and verbal reports at the bi-monthly REROC Board meetings 5. Include a report on Waste Forum activities in REROC's Annual Report
6.2 Offer opportunities for councillors and council staff to participate in Professional Development activities that increase their knowledge of waste management and resource recovery		
Actions		**Detail of Action**
6.2.1	Facilitate and encourage participation in professional development on waste with REROC members, councillors and staff	1. Organise Rural and Regional Waste Management Conference 2. Hold bi-monthly REROC Waste Forum meetings 3. Conduct visits to waste facilities, both inside and outside of the REROC region 4. Work with Member Council to identify relevant and accessible opportunities for Professional Development.

REROC Member LGA Profiles

reroc waste forum

REROC Member LGA Profiles

Bland Shire

Major Town: West Wyalong

Other Towns and Villages: Barmedman, Tallimba, Weethalle, Kikoria, Ungarie, Naradhan

Area: 8,558 sq kms

Population: 5,959

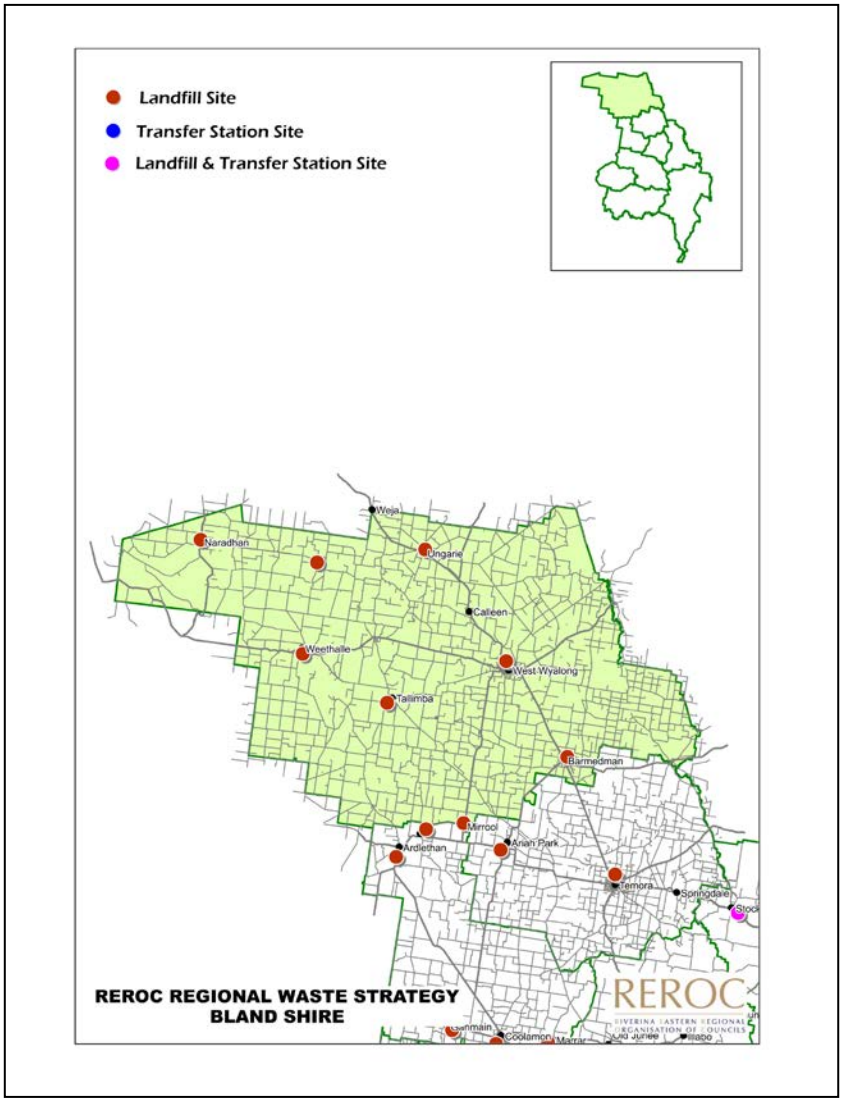
Median Age: 41.9 years

Number of Households: 2,914, average people per household 2.4

Median Household Income: $1,100 per week

Major Industries: Agriculture and farming, Pace Farms (poultry and eggs) and Barrick Gold Mine.

Employment: 9.1% worked in Sheep, Beef Cattle and Grain Farming. Other major industries of employment included Gold Ore Mining 7.4%, Other Grain Growing 7.8%, Sheep Farming (Specialised) 4.0% and Local Government Administration 3.9%.



Waste and Resource Recovery:

Kerbside Collections:

Residual: West Wyalong Landfill
Recyclables: No kerbside collection. Source separated drop-off at the landfill. Recyclables are processed at the MRF in Orange.
Green waste: No Collection

Landfills and Transfer Stations:

See map opposite.
Total Waste to Landfill p.a: 5,452 tonnes
E-waste – free drop off at CRC
Waste Oil – waste oil collection facility at Bland landfill
CRC at Bland landfill

Waste Processors and Services

None Operating

Coolamon Shire

Major Town: Coolamon

Other Towns and Villages: Ardlethan, Ganmain, Marrar, Matong

Area: 2,430 sq kms

Population: 4,342

Median Age: 44.8 years

Number of Households: 1,811, average people per household 2.5

Median Household Income: $1,169 per week

Major Industries: Agriculture and farming

Employment: 6.3% worked in Sheep, Beef Cattle and Grain Farming. Other major industries of employment included Grain Growing 7.3%, Local Government Administration 3.2%, Sheep Farming (Specialised) 2.9% and Higher Education 2.8%.

Waste and Resource Recovery:

Kerbside Collections:

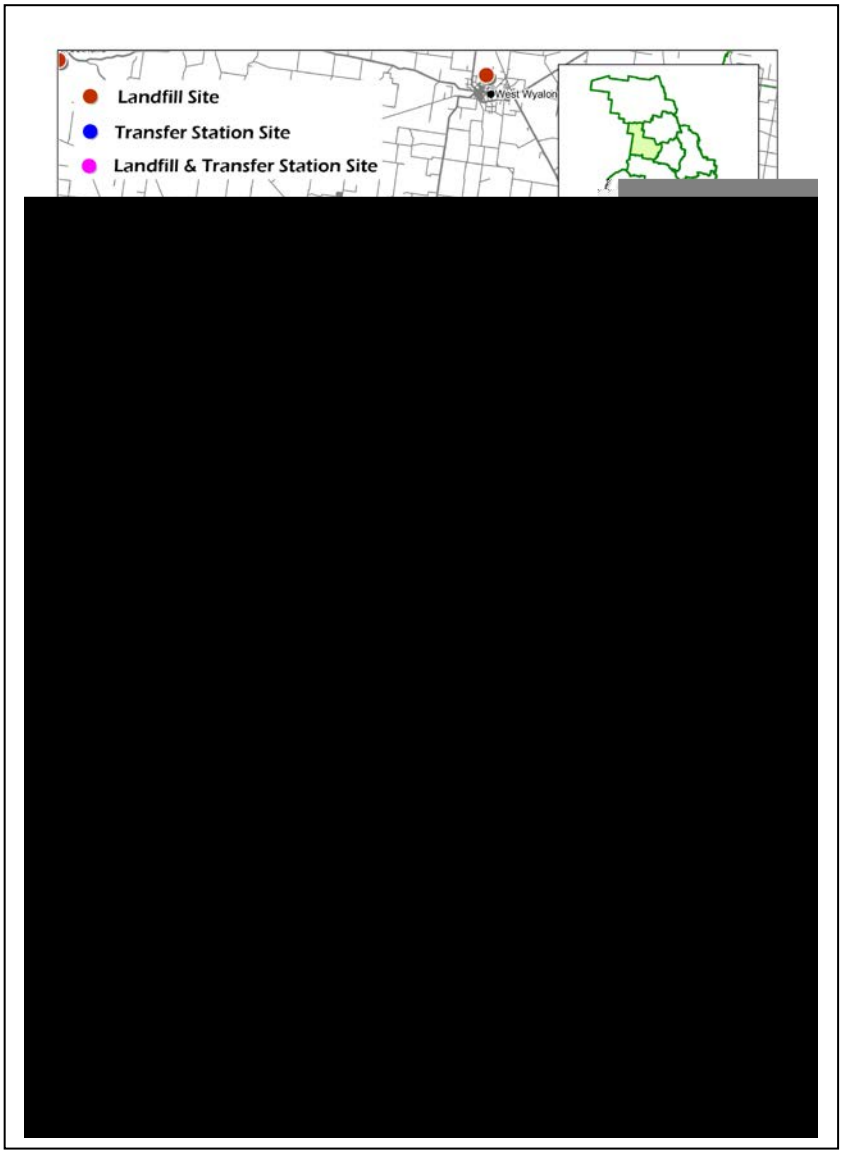
Residual: Landfill at Marrar
Recyclables: Processed at the Elouera MRF at Cootamundra
Green waste and Food Waste: Composted at the Coolamon Landfill

Landfills and Transfer Stations:

See map opposite.
Total Waste to Landfill p.a: 700 tonnes
E-waste – free drop off at CRC
Waste Oil – waste oil collection facility at Coolamon landfill
CRC at Coolamon landfill

Waste Processors and Services

Composting Facility – operated by Council at the landfill



Cootamundra-Gundagai

Major Towns: Cootamundra and Gundagai

Other Towns and Villages: Stockinbingal, Wallendbeen, Coolac, Muttama, Nangus, Tumbalong

Area: 3,981 sq kms

Population: 11,141

Median Age: 46 years

Number of Households: 5,340 average people per household 2.3

Median Household Income: $964 per week

Major Industries: Agriculture and farming, transport, abattoir

Employment: 7.0% worked in Meat Processing. Other major industries of employment included Sheep Farming (Specialised) 3.6%, Aged Care Residential Services 3.4%, Supermarket and Grocery Stores 3.1% and Local Government Administration 2.9%.

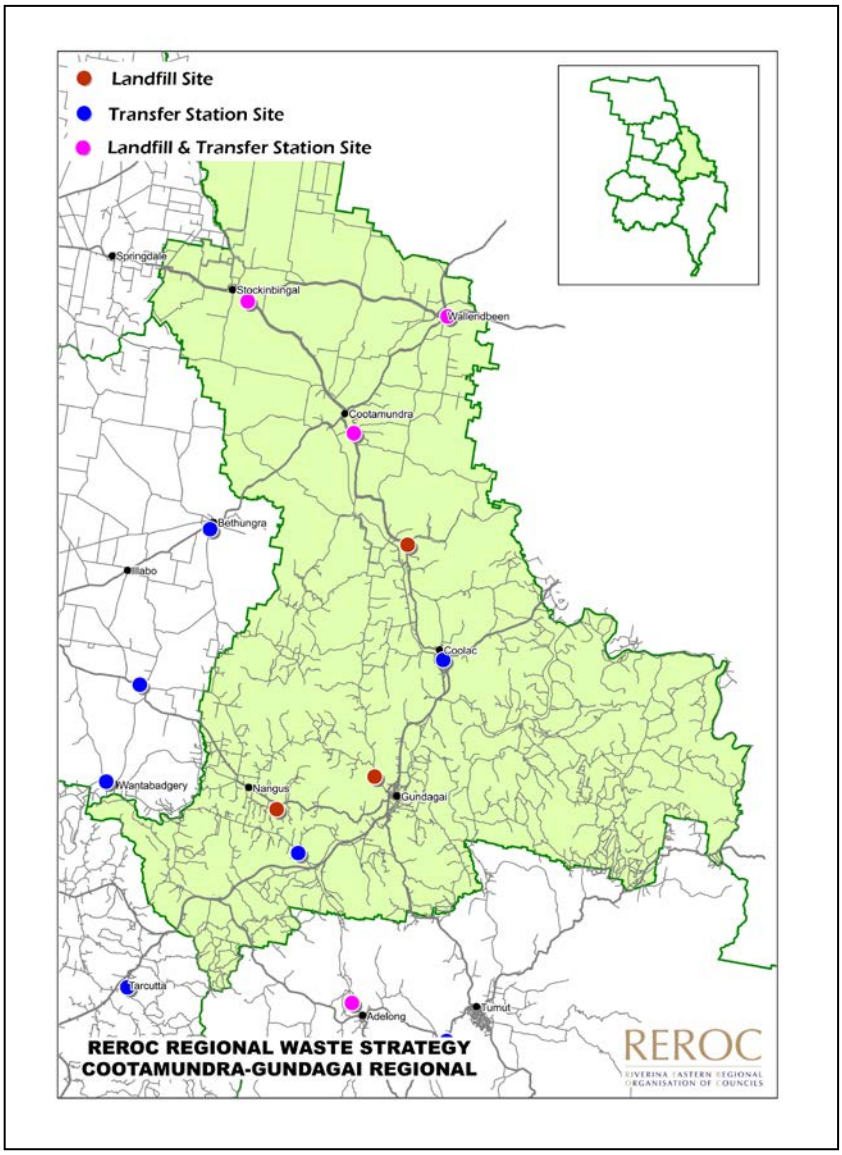
Waste and Resource Recovery:

Cootamundra:

Kerbside Collections:
Residual: Bald Hill Landfill
Recyclables: Processed at the Elouera MRF at Cootamundra
Green waste and Food Waste: will be introduced in mid-2018.

Landfills and Transfer Stations:
See map opposite.
Total Waste to Landfill p.a: 3000 tonnes
E-waste – free drop off at CRC
Waste Oil – waste oil collection facility at Cootamundra landfill
CRC at Cootamundra landfill

Waste Processors and Services
Composting Facility – will be operated by Council at the landfill once the organics kerbside is introduced.
Elouera Industries – operates a MRF at the Cootamundra Transfer Station



Gundagai:

Kerbside Collections:
Residual: Bald Hill Landfill
Recyclables: Processed at the Elouera MRF at Cootamundra
Green waste and Food Waste: council introduced a FOGO collection to Gundagai residents in 2015

Landfills and Transfer Stations:

See map opposite.
E-waste – free drop off at CRC
Waste Oil – waste oil collection facility at Gundagai landfill
CRC at Gundagai landfill

Waste Processors and Services

Composting Facility – operated by council at Gundagai waste facility

Greater Hume Shire

Major Towns: Culcairn, Holbrook, Henty, Jindera

Other Towns and Villages: Morven, Gerogery, Walla Walla, Brocklesby, Walbundrie

Area: 5,749 sq kms

Population: 10,378

Median Age: 42.9 years

Number of Households: 4,534 average people per household 2.5

Median Household Income: $1,168 per week

Major Industries: Agriculture and farming, transport

Employment: 3.4% worked in Sheep, Beef Cattle and Grain Farming. Other major industries of employment included Beef Cattle Farming (Specialised) 5.3%, Sheep Farming (Specialised) 3.5%, Hospitals (Excluding Psychiatric) 3.4% and Other Grain Growing 2.8%.

Waste and Resource Recovery:

Kerbside Collections:

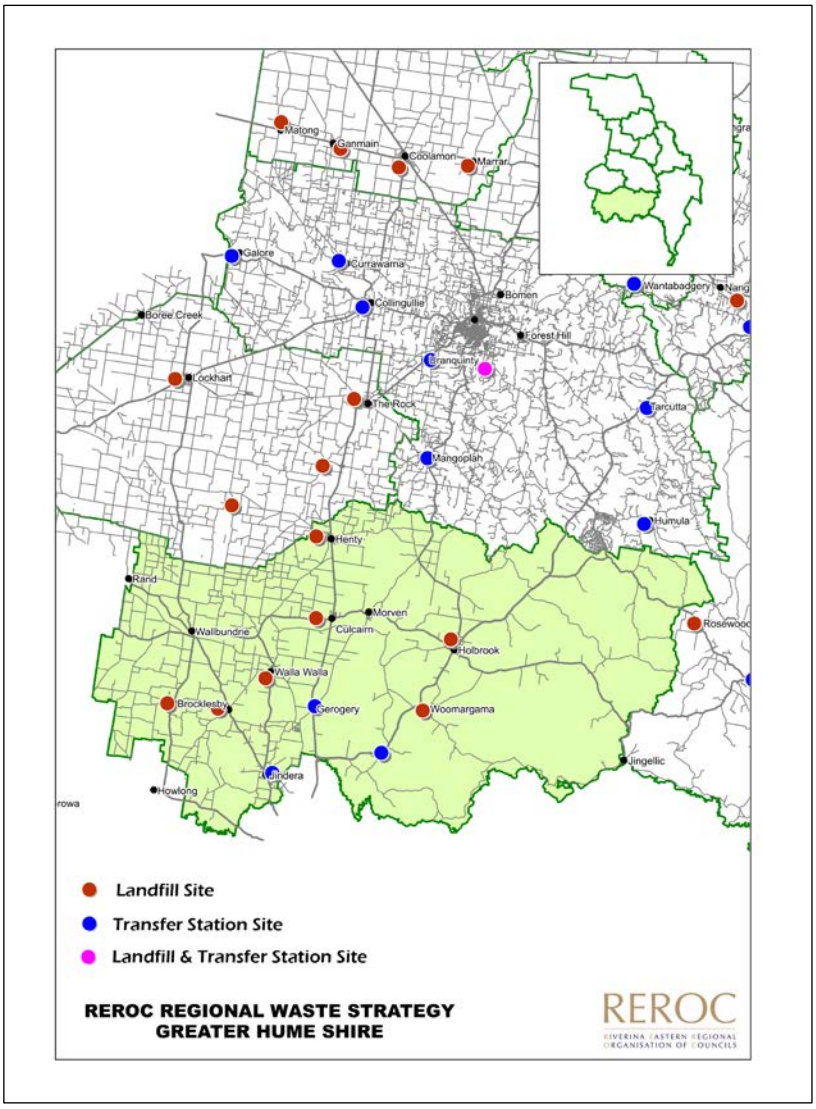
Residual: Culcairn Landfill and Holbrook Landfill
Recyclables: MRF in Albury

Landfills and Transfer Stations:

See map opposite.
Total Waste to Landfill p.a: <5000 tonnes
E-waste – free drop off at all waste facilities
Waste Oil – waste oil collection facility at Culcairn Landfill, Jindera Transfer Station, Holbrook Landfill, Burrumbuttock Transfer Station, Gerogery Transfer Station
CRC at Culcairn Landfill

Waste Processors and Services

None operating



Junee Shire

Major Town: Junee

Other Towns and Villages: Old Junee, Illabo, Bethungra, Wantabadgery

Area: 2,030 sq kms

Population: 6,295

Median Age: 39.1 years

Number of Households: 2,329 average people per household 2.5

Major Industries: Agriculture and farming, transport, abattoir, Liquorice Factory, Junee Gaol

Employment: 4.2% worked in Sheep, Beef Cattle and Grain Farming. Other major industries of employment included Correctional and Detention Services 5.6%, Meat Processing 8.3%, Sheep Farming (Specialised) 3.9% and Hospitals (Excluding Psychiatric) 3.0%.

Waste and Resource Recovery:

Kerbside Collections:

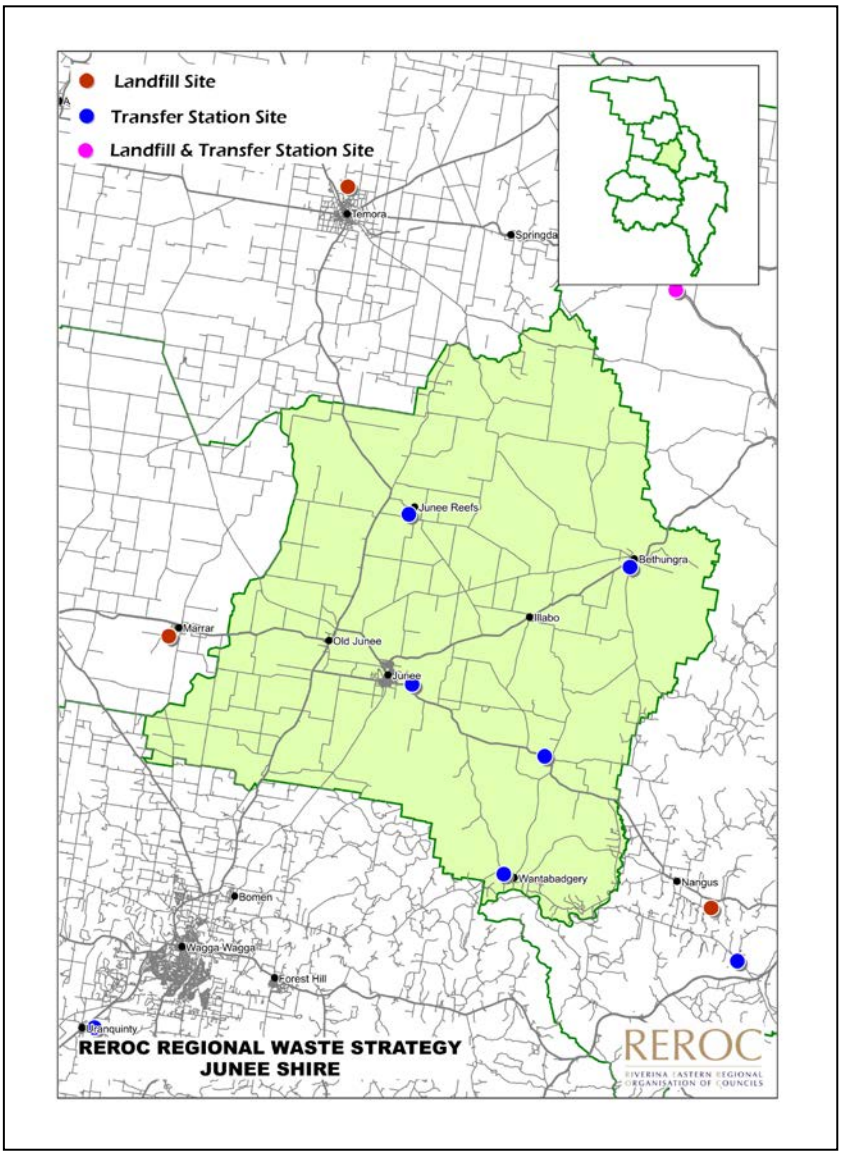
Residual: Gregadoo Landfill, Wagga Wagga
Recyclables: Processed at the Elouera MRF at Cootamundra
Green waste and Food Waste: collected from Junee and processed at the Junee Landfill.

Landfills and Transfer Stations:

See map opposite.
E-waste – free drop off at Junee Landfill
Waste Oil – waste oil collection facility at Junee Landfill
CRC at Junee Landfill

Waste Processors and Services

Composting Facility – composting of kerbside collected FOGO only.



Lockhart Shire

Major Town: Lockhart

Other Towns and Villages: The Rock, Yerong Creek

Area: 2,896 sq kms

Population: 3,025

Median Age: 45.9 years

Number of Households: 1,412 average people per household 2.5

Median Household Income: $1,114 per week

Major Industries: Agriculture and farming, transport

Employment: 11.1% worked in Sheep, Beef Cattle and Grain Farming. Other major industries of employment included Grain Growing 8.6%, Sheep Farming (Specialised) 5.5%, Hospitals (Excluding Psychiatric) 4.5% and Aged Care Residential Services 4.4%.

Waste and Resource Recovery:

Kerbside Collections:

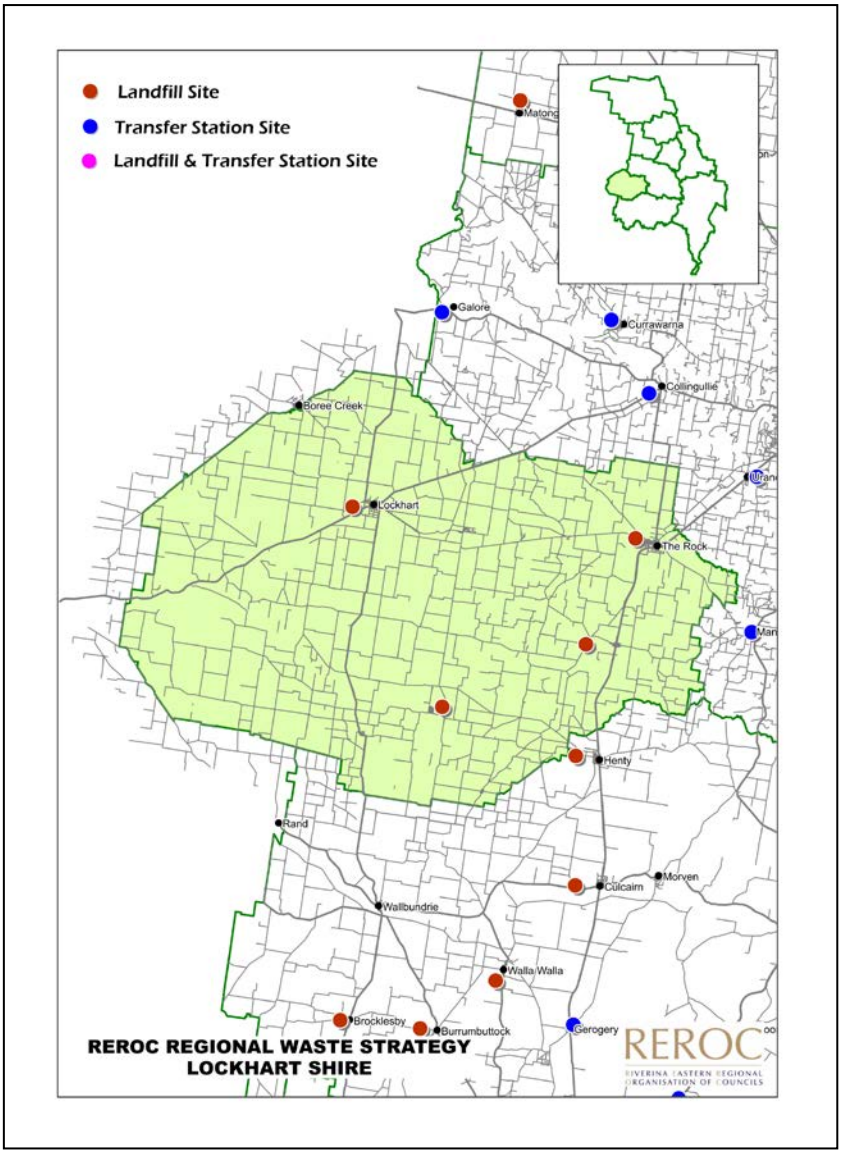
Residual: Lockhart Landfill and The Rock Landfill
Recyclables: Processed at the Kurrajong Recyclers' MRF at Wagga Wagga
Green waste and Food Waste: No Collection

Landfills and Transfer Stations:

See map opposite.
Total Waste to Landfill p.a: 600 tonnes
E-waste – free drop off at Lockhart Landfill
Waste Oil – waste oil collection facility at Lockhart Landfill
CRC at the Lockhart Landfill

Waste Processors and Services

None operating.



Snowy Valleys

Major Towns: Tumbarumba and Tumut

Other Towns and Villages: Khancoban, Rosewood, Batlow, Adelong, Talbingo, Brungle, Jingellic

Area: 8,959 sq kms

Population: 14,994

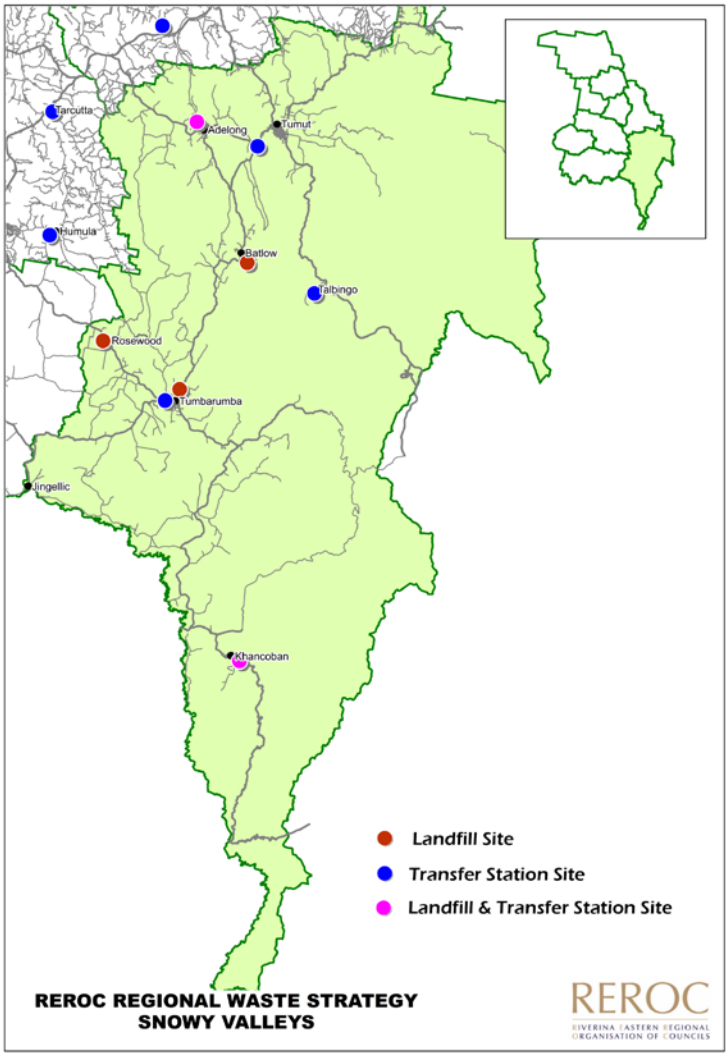
Median Age: 44.4 years

Number of Households: 6,928 average people per household 2.3

Median Household Income: $1,120 per week

Major Industries: Agriculture and farming, wine, forestry, Hyne Industries (timber processing), freight transport, Visy Pulp and Paper Mill, Carter Holt Harvey Timber processing, softwoods, particle boards and treated timber

Employment: 5.7% worked in Beef Cattle Farming (Specialised). Other major industries of employment included Log Sawmilling 3.4%, Supermarket and Grocery Stores 3.1%, Corrugated Paperboards and Paperboard Container Manufacturing 2.8% and Local Government Administration 3.6%.



Waste and Resource Recovery:

Tumbarumba:

Kerbside Collections:

Residual: Bald Hill Landfill
Recyclables: Processed at Valmar Support Services' MRF at Tumut
Green waste and Food Waste: No Collection

Landfills and Transfer Stations:

See map opposite.
E-waste – free drop off at Tumbarumba Landfill
Waste Oil – waste oil collection facility at Tumbarumba Landfill
CRC at Tumbarumba Landfill

Waste Processors and Services

None operating

Tumut:

Kerbside Collections:

Residual: Bald Hill Landfill & Belletes Private Landfill
Recyclables: Processed at Valmar Support Services' MRF at Tumut
Green waste and Food Waste: No Collection

Landfills and Transfer Stations:

See map opposite.
Total Waste to Landfill p.a: 2500 tonnes
E-waste – free drop off at Tumut Landfill
Waste Oil – waste oil collection facility at Tumut, Batlow, Adelong and Talbingo sites
CRC at Tumut Landfill

Waste Processors and Services

Australian Native Landscapes (ANL) – operate a composting facility

Temora Shire

Major Town: Temora

Other Towns and Villages: Ariah Park, Sprindale

Area: 2,802 sq kms

Population: 6,071

Median Age: 45.2 years

Number of Households: 2,816 average people per household 2.4

Median Household Income: $1,033 per week

Major Industries: Agriculture and farming, freight transport, Temora Aviation Museum, aviation

Employment: 6.5% worked in Sheep, Beef Cattle and Grain Farming. Other major industries of employment included Grain Growing 5.4%, Supermarket and Grocery Stores 4.2%, Local Government Administration 3.3% and Aged Care Residential Services 3.2%.

Waste and Resource Recovery:

Kerbside Collections:

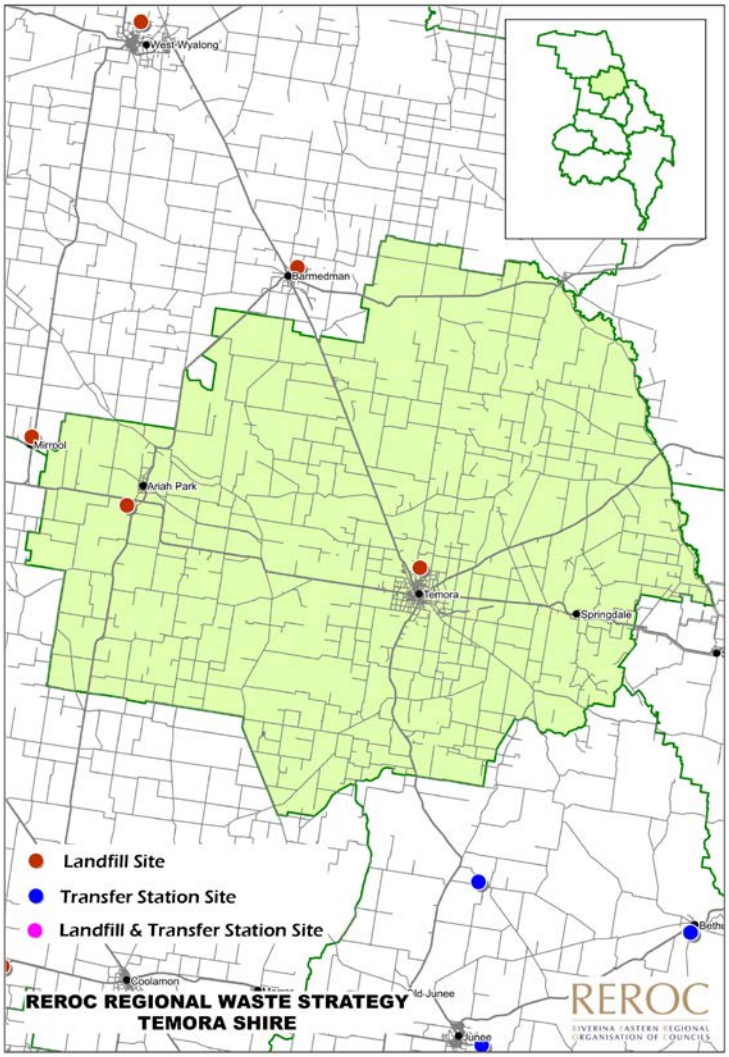
Residual: Temora Landfill
Recyclables: No collection, cardboard pick up once per month which goes to Visy at Tumut
Green waste and Food Waste: No Collection

Landfills and Transfer Stations:

See map opposite.
Total Waste to Landfill p.a: 3600 tonnes
E-waste – free drop off at Temora Landfill
Waste Oil – waste oil collection facility at Temora Landfill
CRC at Temora Landfill

Waste Processors and Services

None operating



Wagga Wagga City

Major Town: Wagga Wagga

Other Towns and Villages: Uranquinty, Ladysmith, Collingullie, Tarcutta, Mangoplah, Currawarna, Humula, Galore

Area: 4,826 sq kms

Population: 63,428

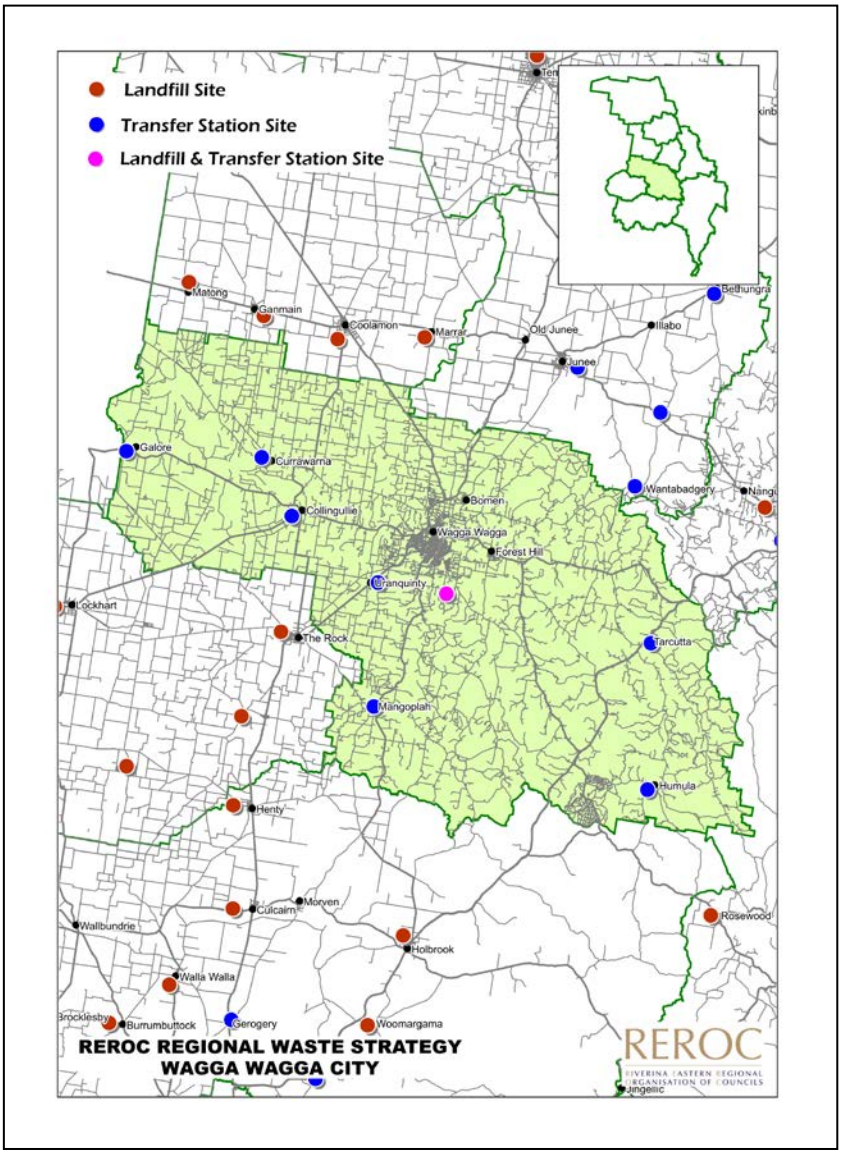
Median Age: 34.6 years

Number of Households: 26,096, Average people per household 2.5

Median Household Income: $1,354 per week

Major Industries: Charles Sturt University, Defence, food manufacturing, Teys Abattoir, health services, general manufacturing, agriculture and farming and road and rail freight.

Employment: 4.6% worked in Defence. Other major industries of employment included Hospitals (Excluding Psychiatric) 4.5%, Higher Education 3.1%, Other Social Assistance Services 2.4% and Secondary Education 2.4%.



Waste and Resource Recovery:

Kerbside Collections:

Residual: Gregadoo Landfill
Recyclables: Processed at the Kurrajong Recyclers' MRF, Wagga
Green waste and Food Waste: Processed at Gregadoo Waste Management Centre

Landfills and Transfer Stations:

See map opposite.
Total Waste to Landfill p.a: 70,000 tonnes
E-waste – free drop off
Waste Oil – waste oil collection
Cardboard and paper processing
Styrene foam processing
Scrap Metal separation
Refrigerated goods degassing
Mattress collection
Automotive battery collection
Paint collection facilities at landfill

Waste Processors and Services

Carbon Mate – green waste processing, located at Gregadoo Waste Management Centre
RMT – processes Used Lead Acid Batteries (ULABs) at Bomen
Southern Oil Refining – processes used oil at Bomen
Orbitas Resource Recovery – specialised transport of waste, particularly ULABs based at Bomen
Kurrajong Recyclers – operates a MRF, e-waste recycling and glass crushing in Wagga Wagga.
Wagga Scrap Metals
M & S Metals

Profile Regional Services and Processors

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Profile of Regional Services and Processors

Access Recycling
Barmedman and Wagga Wagga
- Collection of scrap metal over 10 tonnes

Australian Native Landscape
Tumut
- Composting Green waste

Carbon Mate
Gregadoo Waste Management Centre, Ashfords Rd, Wagga Wagga
- Composting Green waste

Elouera Recycling
Turners Land, Cootamundra
- Municipal Recycling Facility

Kurrajong Recyclers
Chaston St, Wagga Wagga
- Municipal Recycling Facility
- E-waste recycling and drop-off
- Glass crushing

Enirgi Power Storage
Unit 2 142-144 Hammond Avenue, Wagga Wagga
- Collection and transport of ULABs and other waste.

Renewed Metal Technologies
Bomen Rd, Wagga Wagga
- Used Lead Acid Battery Recycler

Southern Oil Refineries
Lewington St, Wagga Wagga
- Used Oil Reprocessing and Refining

Valmar Support Services - Pinecom Recycling
Tumut
- Municipal Recycling Facility

Visy Industries
Tumut
- Energy from Waste

CDS and Contamination in Kerbside Recycling Audit Results

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Riverina Eastern Regional Organisation of Councils (REROC)

Kerbside Recyclables Audit
Container Deposit Baseline and Contamination

May 2017

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Document verification

Date	Version	Title	Prepared by	Approved by
4/4/17	Draft V1.0	REROC Kerbside Recyclables Audit	Matt Allan and Mark Rawson	Mark Rawson
9/5/17	Final V1.0	REROC Kerbside Recyclables Audit	Matt Allan and Mark Rawson	Mark Rawson

The audit team of Rawtec and Dynamic 3E would like to recognise and thank the staff from each of the REROC councils for their assistance in the sample collection, providing a suitable location and other input to enable a successful audit process to be undertaken.

Executive Summary

Rawtec, in collaboration with Dynamic 3E, were engaged to conduct an audit of kerbside recycling bins from selected Riverina Eastern Regional Organisation of Councils' (REROC) Member Councils in New South Wales. Overall, 600 bins were collected and the materials within each bin separated into 22 categories and weighed (see Table 3).

Key findings from the audit include:

- On average, the volume of recyclables (including contaminants) was 10.7 kilograms per recycling bin. It was noted that some rural properties only present their bin when it is full and as such, this may be a slight overestimation of the average weight per bin for each fortnightly collection.
- The overall content of all audited bins was almost 40% Paper and Cardboard, around one third Glass Bottles and Jars, and just under 10% recyclable plastics.
- Contamination in bins ranged from an average of 6.2% at Coolamon which can be considered a low contamination rate, through to 24.5% at Junee, which can be considered a high contamination rate. The overall contamination rate was 13.5%.
- Container Deposit Scheme (CDS) items averaged almost 32 items per 240L bin. This is 8 times more than South Australian councils, which have had a similar scheme in place since 1977. It is worth noting that with this many CDS items per bin, the 10c CDS containers have the potential value of $2.7M per annum across all audited Councils.

Table 1: *Overall data by Council/ township*

Council/ Township	No. of bins collected	Ave weight per 240L bin	Contamination %	# CDS items per 240L bin
Coolamon Shire Council	50	9.6kg	6.2%	30
Junee Shire Council	50	8.1kg	24.5%	22
Cootamundra township	50	10.5kg	16.0%	24
Gundagai township	50	9.8kg	10.7%	29
Tumut/Tumbarumba (Snowy Valleys Council)	100	8.0kg	9.8%	35
Wagga Wagga Council	200	11.5kg	15.0%	31
Culcairn (Greater Hume Shire Council)	50	13.5kg	12.2%	38
Lockhart Shire Council	50	15.3kg	13.1%	46
Overall	**600**	**10.7kg**	**13.5%**	**32**

This audit provides baseline data for volume of recyclables, contamination and CDS data for selected REROC Councils. Potential implications of the CDS in NSW can also be considered, including a potential significant reduction in CDS items per 240L bin, which would lower the overall proportion of glass (due to a reduction in glass CDS) and increase the proportion of paper and cardboard in kerbside recycling bins.

Contents

1. Project Background

The Riverina Eastern Regional Organisation of Councils (REROC) is a voluntary association of nine General Purpose Councils and two water county councils located in the eastern Riverina region of NSW. Members of REROC include councils of: Bland, Coolamon, Cootamundra-Gundagai, Greater Hume, Junee, Lockhart, Snowy Valleys, Temora, Wagga Wagga, Goldenfields Water and Riverina Water[1].

In early 2017 REROC engaged Rawtec, in collaboration with Dynamic 3E, to undertake a kerbside recyclables' audit including an assessment of Container Deposit Scheme (CDS) items and contamination rates. Seven councils were nominated to take part in the audit, the participating councils were:

- Coolamon Shire Council
- Cootamundra-Gundagai Shire Council (note data was separated into Cootamundra and Gundagai townships)
- Greater Hume Shire Council (Culcairn township only)
- Junee Shire Council
- Lockhart Shire Council
- Snowy Valleys Council (combined Tumut/Tumbarumba), and
- Wagga Wagga City Council.

Rawtec was engaged to audit 600 kerbside recycling bins to establish a clear understanding of the breakdown of items in bins based on Council and overall. This included the number and weight of CDS items, the contamination in the bins and the proportion of each material type (e.g. cardboard, rigid plastics).

This document describes the process undertaken to achieve this, as well as an overview of the results and recommendations for further improvements based on the audit results.

[1] http://reroc.com.au/

2. Audit Methodology

The below audit methodology is based on The Guidelines for Conducting Household Kerbside Residual Waste, Recycling and Garden Organics Audits In NSW Local Government Areas 2008 (Department of Environment and Climate Change NSW, 2008).

2.1 Audit Sample

A total of 600 kerbside recycling bins were collected for the audit. The breakdown of bins collected for each Local Government Area (LGA) is provided below:

- Coolamon Shire Council – 50 bins
- Cootamundra-Gundagai Shire Council, separated into two districts:
    - Cootamundra – 50 bins
    - Gundagai – 50 bins
- Greater Hume Shire Council (Culcairn) – 50 bins
- Junee Shire Council - 50 bins
- Lockhart Shire Council - 50 bins
- Snowy Valleys Council – 100 bins
- Wagga Wagga City Council – 200 bins.

A number of townships within each region had their bins collected for the recycling audit. Simple random sampling was undertaking (in line with the 2008 Guidelines). Results by council/township are provided in the Appendices.

2.2 Audit Collection Days

Household kerbside recycling bins were collected by each council between 1st February and 16th March and sent to 8 separate locations where the materials were audited. The audit took 4 days (13th March – 16th March). This information is captured in Table 2 below.

Table 2: *Audit collection schedule*

Council	Location of audit	Bins collected	Collection date	Audit date
Coolamon Shire Council	Coolamon Landfill	50	1st Feb 17	13th Mar 17
Junee Shire Council	Junee Landfill	50	6th Mar 17 & 13th Mar 17	13th Mar 17
Cootamundra-Gundagai Shire Council	Cootamundra Waste Depot	50	7th Mar – 13th Mar 17	13th Mar 17
	Gundagai Waste Depot	50	9th Mar 17	14th Mar 17
Snowy Valleys Council	Tumut Waste & Recycling Centre	100	13th Mar 17 & 14th Mar 17	14th Mar 17
Wagga Wagga City Council	Kurrajong Recyclers	200	9th Mar 17 – 14th Mar 17	15th Mar 17
Greater Hume Shire Council	Culcairn landfill	50	16th Mar 17	16th Mar 17
Lockhart Shire Council	Lockhart Landfill/Transfer Station	50	16th Mar 17	16th Mar 17
Total	**8 locations**	**600**		**4 days**

2.3 Physical Audit

A designated area was set aside for the audit at each location. Audit samples were stored in piles or in bins, and items were then separated into 22 audit material categories (see Table 3 below). Note that the categories increased from 20 categories to 22 categories after two were added during the audit - expanded polystyrene and drink/liquid. Each category was weighed and results recorded. Photos were also taken (see Appendices), and notes recorded on contamination or to further elaborate on items in the 'miscellaneous' category.

2.4 Audit Data and Analysis

The data in this report includes key findings from the audit. This considers overall results as well as results broken down by Council. Recorded raw data from the physical audit is provided in the Appendices. It should be noted that the results from our analysis of audit waste data (including total and average volumes and compositions) may differ from actuals as the audit was conducted as a snapshot of a particular time period with only a representative sample of recycling bins used. A sample size of 50 bins for an LGA may not provide a representative audit result compared to actuals as this would be considered a small sample size. However, the overall data (i.e. 600 bins) is likely to be more representative of the overall results across all councils due to the greater sample size. In addition, the analysis does not factor in seasonal fluctuations or other annual trends.

Note that CDS stands for "Container Deposit Scheme", which is the title that will be used in NSW and for eligible beverage containers that receive a 10-cent refund[2] when taken to an approved collection depot or reverse vending machine. This is also titled "Container Deposit Legislation", although CDS will be used within this report to refer to these items.

Table 3: *Audit material classifications*

Material classifications	
1. Paper & Cardboard	12. Tin Cans
2. Glass Bottles & Jars	13. Tin Cans CDS (tally & weight)
3. Glass CDS (tally & weight)	14. Metals (pots & pans etc.)
4. Broken glass (>10mm)	15. Food
5. Mixed Hard/Rigid Plastics	16. Drink/ Liquid
6. Plastic CDS (tally & weight)	17. Green Organics
7. Soft / Film Plastics	18. Hard Waste
8. LPB (food & drink cartons	19. Hazardous Waste
9. LPB CDS (tally & weight)	20. Contamination / Residual Waste
10. Aluminium	21. Incorrectly Presented Recyclables (recycling in plastic bags)
11. Aluminium CDS (tally & weight)	22. Expanded Polystyrene

[2] http://www.epa.nsw.gov.au/waste/cds-intro.htm

3. Bin Audit Results and Analysis

3.1 Recycling bin volume and composition overall and for each council

The overall results are provided below including a comparison to a group of South Australian Councils and a breakdown of results by Council.

3.1.1 Overall results

Overall key findings are captured in Table 4 and Figure 2. In summary, the results were as follows:

- Overall, **600 bins** were audited from the 7 councils.
- Overall **contamination** was **13.5%,** which ranged from 6.2% at Coolamon up to 24.5% at Junee.
- The overall weight of all items was 6,427 kilograms across the 600 bins.
- This is an average weight of **10.7 kg** per 240L bin.
- The greatest proportion of material by weight was Paper& Cardboard (39.5%) followed by Glass Bottles and Jars (32.4%) and Mixed Hard/Rigid Plastics (8.6%).
- CDS data is included in section 3.2. This shows that overall averages per 240L bin were:
    - 9.7 glass container deposit items
    - 7.7 plastic container deposit items
    - 0.6 LPB container deposit items
    - 13.7 aluminium container deposit items
    - 0.0 tin container deposit items
    - A total of approximately 32 container deposit items per 240L bin.
- Contaminants included car oil in a plastic bottle at Coolamon (3.2kg), 18.4kg of clothing (Junee), 3.9kg of shredded paper in Cootamundra and Wagga Wagga, and over 8kg of unopened beer at Wagga Wagga. Almost 2% of all materials by weight were drink/liquid in bottles.
- No green organics were found in any of the samples, and only one LGA had Hard Waste (Wagga), and Hazardous Waste (Coolamon).

3.1.2 Results by Council

Table 4 on page 10 also shows a breakdown of the results by township as well as details on average weight per bin and contamination proportion by council in Figure 1. A detailed overview of the results by council can be found in the Appendices.

In summary:

- The average weight per 240L bin ranged from **8.0kg at Tumut/Tumbarumba** to **15.3kg at Lockhart** (see Figure 1 below). Lockhart and Culcairn were 43% and 26% greater than the average weight per bin across the other councils/ townships respectively. These outliers may be due to having a higher volume of recyclables per bin, or the collection of additional bins which was not recorded. It may also be due to the collection of bins (40% of total sample) from rural areas, as it was reported that residents from these areas present their bins less frequently but with a higher volume of material. As such, although the average weight per bin was higher in the audit, the weight generated per annum may be similar to the other councils.
- Contamination ranged from as low as **6.2% in Coolamon**, which can be considered a low contamination rate, through to **24.5% at Junee**, which can be considered a very high contamination rate (see Figure 1).
    - Junee's high contamination rate was predominately due to the higher proportion of residual waste which included over 18 kilograms of clothing, as well as a higher proportion of soft plastics (2.2% of total weight).
- There was also some variation in the proportion of recyclable materials by council/ township. For example:
    - Paper & Cardboard ranged from 30.6% at Junee to almost 50% at Gundagai.
    - Coolamon had a high proportion of glass CDS items compared to other councils and townships (almost 29% compared to a range from 14.7% at Gundagai through to 21.9% at Tumut).
    - Broken Glass (>10mm) ranged from 0.7% at Junee to 6.9% at Culcairn. Cootamundra had the second lowest proportion of Broken Glass (>10mm) with 2.2%. It was reported by the auditors that Junee and Cootamundra bins were collected and delivered by hand in individual bins rather than by truck, which may have lowered the proportion of broken glass in the sample.
    - Food contamination was generally quite low except for Junee, which had 2% contamination (all other councils/ townships had less than 0.8%).
    - There was some variance in drink contamination (liquid in bottles and cans) by council/ township. Culcairn and Coolamon only had 0.2% and 0.3% respectively, while Cootamundra and Gundagai had 4.4% and 3.3% respectively.
    - With the exception of Cootamundra, recycling presented in plastic bags was low, ranging from 0.0% (at Coolamon, Gundagai and Tumut/Tumbarumba) to 1.5% at Junee. However, Cootamundra's proportion was relatively high at 4.4%.

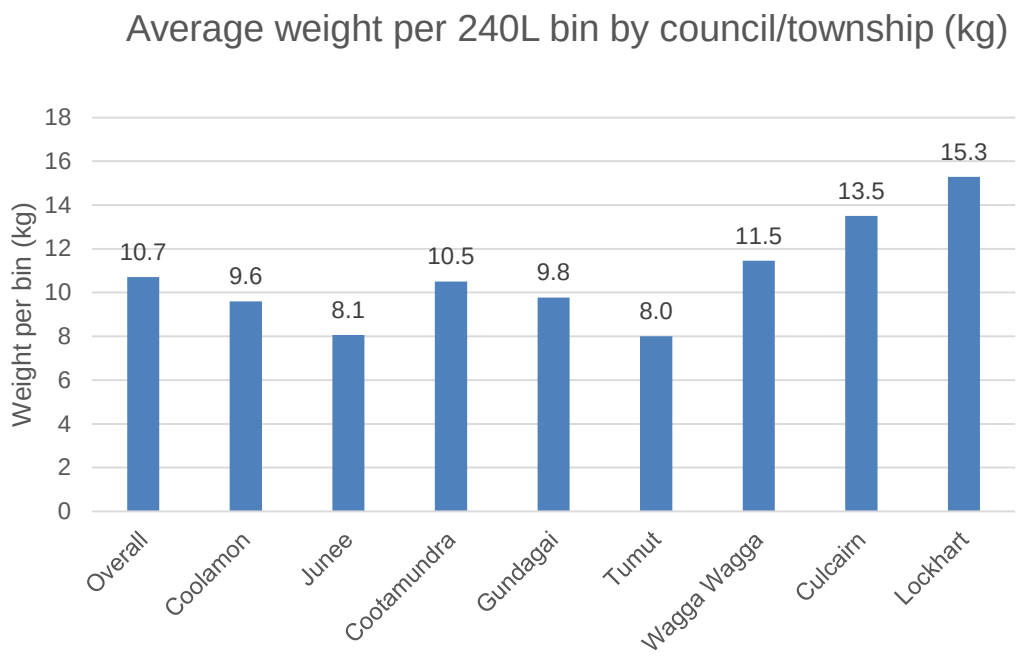


Figure 1: *Average weight and contamination percentage per 240L recycling bin by council/ township*

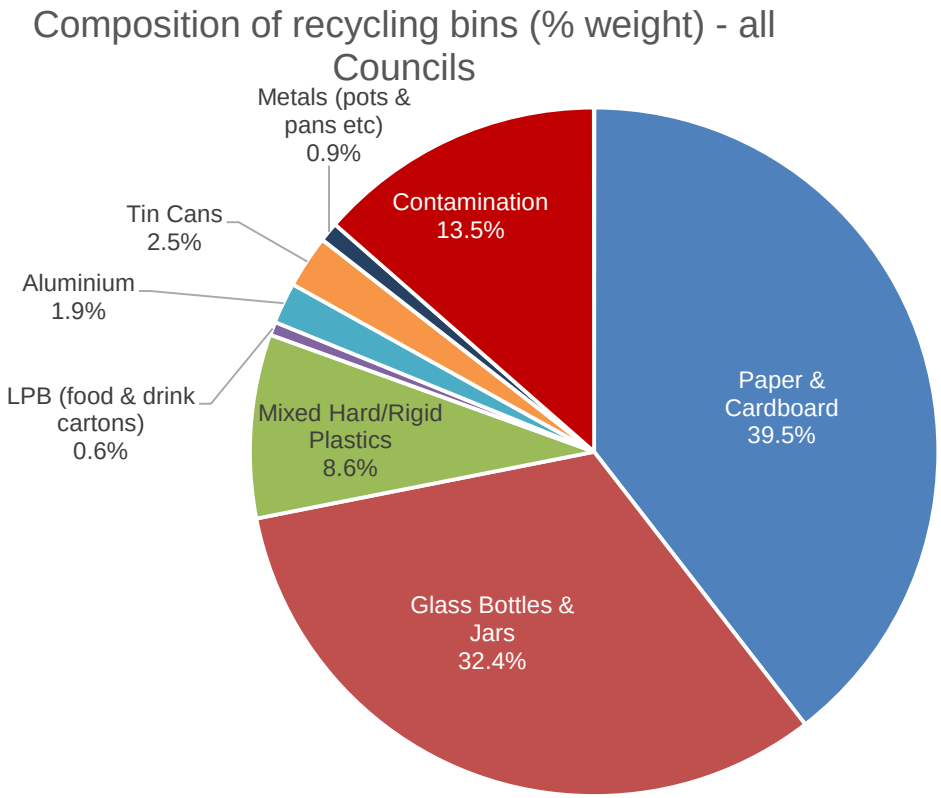


Figure 2: *Composition of all recycling bins*

Table 4: *Weight and Overall Percentage by Material Classification, comparing overall and each council. Note that values in table may not sum to totals due to rounding. Also note that percentages refer to the percentage weight of that classification compared to the overall weight within the respective council. Note faded blue = recyclables, faded red = contaminants*

		Overall		Coolamon	Junee	Cootamundra	Gundagai	Tumut/ Tumbarumba	Wagga	Culcairn	Lockhart
Average weight per bin (kgs)		10.7		9.6	8.1	10.5	9.8	8.0	11.5	13.5	15.3
Classification		**Weight (kg)**	**%**	**%**	**%**	**%**	**%**	**%**	**%**	**%**	**%**
1	**Paper & Cardboard**	2538.6	39.5%	32.2%	30.6%	42.0%	49.4%	34.3%	40.3%	45.2%	38.8%
2	**Glass Bottles & Jars**	613.2	9.5%	9.2%	10.3%	9.7%	6.4%	11.5%	10.7%	7.2%	7.6%
3	**Glass CDS**	1233.4	19.2%	28.9%	16.6%	18.3%	14.7%	21.9%	18.1%	16.0%	21.3%
4	**Broken glass (10mm +)**	235.5	3.7%	6.7%	0.7%	2.2%	3.2%	3.6%	2.9%	6.9%	4.0%
5	**Mixed Hard/Rigid Plastics**	405.1	6.3%	7.0%	7.4%	5.2%	7.6%	7.1%	6.0%	4.8%	6.6%
6	**Plastic CDS**	149.4	2.3%	2.2%	2.0%	1.9%	2.5%	3.7%	2.2%	1.9%	1.9%
7	**LPB (food & drink cartons)**	32.5	0.5%	0.3%	0.5%	0.7%	0.5%	0.5%	0.5%	0.5%	0.7%
8	**LPB CDS**	7.8	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	0.1%	0.2%	0.2%
9	**Aluminium**	6.4	0.1%	0.2%	0.1%	0.1%	0.2%	0.1%	0.1%	0.1%	0.1%
10	**Aluminium CDS**	117.0	1.8%	1.6%	1.7%	1.0%	2.0%	2.8%	1.6%	2.0%	2.1%
11	**Tin Cans**	159.5	2.5%	4.7%	2.5%	1.9%	2.5%	3.1%	1.8%	3.0%	2.5%
12	**Tin Cans CDS**	0.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
13	**Metals (pots & pans etc)**	59.0	0.9%	0.7%	2.9%	0.9%	0.2%	1.3%	0.8%	0.1%	1.2%
14	**Soft / Film Plastics**	53.4	0.8%	0.5%	2.2%	0.6%	0.9%	0.4%	1.0%	0.4%	0.7%
15	**Food**	26.9	0.4%	0.1%	2.0%	0.8%	0.1%	0.1%	0.5%	0.3%	0.0%
16	**Drink**	115.7	1.8%	0.3%	2.1%	4.4%	3.3%	1.2%	2.2%	0.2%	0.8%
17	**Green Organics**	0.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
18	**Hard Waste**	1.7	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%
19	**Hazardous Waste**	3.2	0.1%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
20	**Residual Waste**	616.2	9.6%	4.6%	16.5%	5.7%	6.3%	7.9%	10.9%	11.1%	10.3%
21	**Incorrectly Presented Recyclables (recyclables in plastic bags)**	47.1	0.7%	0.0%	1.5%	4.4%	0.0%	0.0%	0.3%	0.2%	1.2%
22	**Expanded Polystyrene**	5.6	0.1%	0.0%	0.2%	0.1%	0.2%	0.1%	0.1%	0.0%	0.1%
Total kg and %		**6427.1**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Total contamination		**869.8**	**13.5%**	**6.2%**	**24.5%**	**16.0%**	**10.7%**	**9.8%**	**15.0%**	**12.2%**	**13.1%**

3.2 Container Deposit Scheme analysis

A detailed analysis of the Container Deposit Scheme (CDS) items found within the audit is shown below. The audit assessed the total number of items, the average number of items per bin overall and by material type. The audit also made comparisons to SA data, and identified opportunities for improvement. This data is captured in Table 5 and Figure 3.

Table 5 includes the breakdown of each CDS stream and an overall figure. As can be seen in this table, over 19,000 CDS bottles and cans were found across the 600 bins in the audit samples. This included 2% LPB CDS (e.g. chocolate milk cartons) through to over 43% aluminium CDS. When compared to the breakdown in SA, the REROC sample appears to have similar levels of Glass and Tin CDS (31% and 0% respectively at REROC), a lower proportion of LPB and Plastic CDS (2% and 24% respectively), and a much higher proportion of aluminium CDS.

Table 5: *Container Deposit Scheme data, REROC and SA Councils.*

Classification	*Frequency (REROC)*	*Percentage of total CDS (REROC)*	*Percentage of total CDS (6 East Waste Member Councils) **
Glass CDS	5827	30.6%	32.5%
Plastic CDS	4609	24.2%	36.5%
LPB CDS	374	2.0%	7.4%
Aluminium CDS	8216	43.2%	23.6%
Tin Cans CDS	0	0.0%	0.0%
Total	19,026	100.0%	100.0%

** Note – SA Member Council data provided curtesy of East Waste*

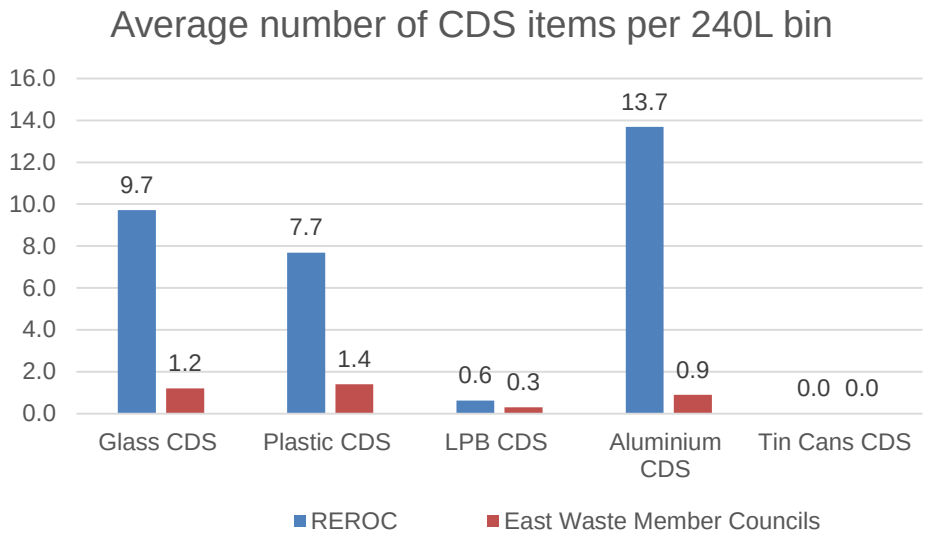


Figure 3: *Average number of container deposit items per 240L bin, REROC councils versus SA councils (SA Councils data provided curtesy of East Waste)*

Figure 3 on the previous page displays the average number of CDS items per 240L bin at REROC and SA councils. As can be seen in this figure, the amount of CDS items per 240L bin for REROC is considerably higher. This is unsurprising given South Australia has had the CDS

for many years and a high proportion of CDS is recycled through CDS depots instead of kerbside recycling.

This gives REROC councils some indication of the likely changes in the number of these items upon commencement of the CDS system in December 2017. The largest change is likely to be a considerable drop in glass CDS, which made up 19% of the overall recycling contents by weight in this year's audit. This will reduce the amount of glass recycled in local material recovery facilities, which may reduce MRF maintenance costs associated with glass fines. It may also lower the overall weight of contents collected through kerbside recycling.

Rawtec also conducted an analysis on the potential value of the 10c deposit CDS containers per year from kerbside recycling. This is summarised in the table below, and assumes fortnightly collection at a presentation rate of 70% per household per year (i.e. each household puts out their recycling bin 70% of the time it is due for collection) with an average of 32 CDS containers per bin. As can be seen in the table, the CDS containers have the potential value of $2.7M per annum across all audited LGAs (although note that it is unlikely that all CDS containers will remain in the kerbside recycling bins upon introduction of the scheme).

Table 6: *Potential value of CDS containers in kerbside recycling bins*

Council	Households per Council	10c CDS Containers per Annum	Potential Value of 10c deposit of CDS containers per year in kerbside recycling
Coolamon Shire Council	1,790	1,056,000	$ 105,600
Junee Shire Council	2,255	1,312,000	$ 131,200
Cootamundra-Gundagai Shire Council	5,276	3,072,000	$ 307,200
Snowy Valleys Council	7,103	4,128,000	$ 412,800
Wagga Wagga City Council	24,682	14,368,000	$ 1,436,800
Greater Hume Shire Council	4,423	2,560,000	$ 256,000
Lockhart Shire Council	1,134	672,000	$ 67,200
Total	**46,663**	**27,168,000**	**$ 2,716,800**

It is also worth highlighting that there were a number of CDS items with liquid inside. These were counted as residual waste, as the items would be sent to landfill rather than recycled. Although a count of these items was not undertaken, if these were emptied, additional CDS items would have been included in the above analysis and contamination levels would have reduced. Anecdotally, the number of filled drink containers appears much higher than the SA audit data. It may be that after years of having the scheme, SA residents are more proactive in emptying drink bottles prior to disposing them.

4. Conclusion and considerations for further improvement

An overall contamination rate of 13.5% can be considered a positive result for REROC, although there are opportunities for improvement. Contamination rates varied significantly by council/township, from 6.2% up to 24.5%. Targeting the councils/ townships with higher contamination rates could be important for reducing the overall contamination rates.

A significant difference between South Australian Councils and REROC was the number of CDS items per bin, with REROC averaging almost 32 items per 240L bin (compared to below 4 CDS items per 240L bin in SA). At 10c per container, this has the potential value of $2.7M across the audited Councils.

The South Australian data gives an indication of the possible impacts of the introduction of the CDS system in NSW. If residents choose to act to redeem the deposit, as is the case in SA, then it is likely the volume of CDS items in kerbside recycling bins will be significantly reduced. This may reduce the proportion of glass bottles and jars (SA had a lower proportion of this material compared to REROC), which will likely increase the proportion of paper and cardboard. This may be beneficial for the material recovery facilities that are processing the materials, as broken glass can be problematic.

4.1 Considerations for further improvement

Based on the audit data, considerations for further improvement include:

- Reducing contamination across all councils but prioritising those with high rates such as Junee, Cootamundra and Wagga Wagga.
- A problematic contaminant overall was liquid in drink containers. Problematic contaminants by council included recycling in plastic bags and liquid in drink bottles at Cootamundra, and soft plastics, clothing and food in containers at Junee.
- It will be important to consider the potential impacts of the CDS, which may include:
    - A significant reduction in the number of CDS items per 240L bin
    - A reduction in the proportion of glass bottles
    - A potential increase in the proportion of paper and cardboard
    - A potential reduction in drink bottles filled with liquid (which may reduce contamination).
- Continue to measure and compare the performance of REROC over time to assess recycling performance based on changes such as council or REROC campaigns and the introduction of the CDS in NSW.

Appendix One – Results by Council

Coolamon Shire Council

Overall results from this Council are summarised below.

Table 7: *Breakdown of information and photos, Coolamon Shire Council*

Area	Result
Bins audited	50
Contamination	6.2%
Ave weight per bin	9.6kg
Ave CDS items per bin	30.3
Location of audit	Coolamon Landfill
Key findings from the audit	• Lowest contamination rate of all councils (average was 13.5%); • Contamination included a bottle of motor oil; • Average CDS items per 240L bin (30.3) similar to overall average (31.7); • High proportion of glass bottles and jars compared to other councils.

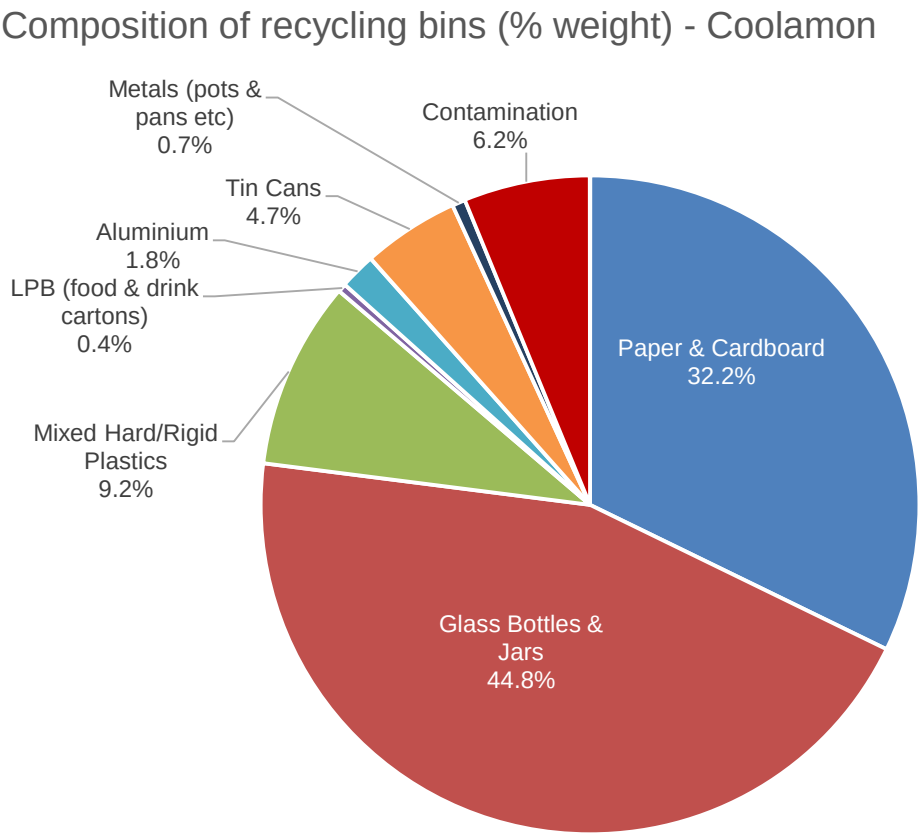


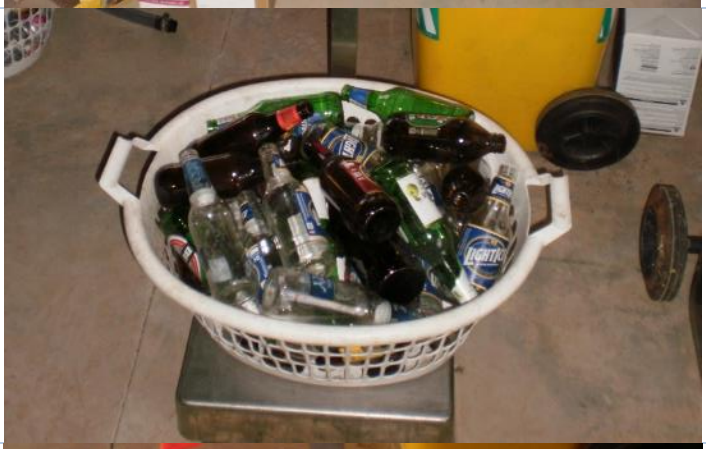
Figure 4: *Composition of audited recycling bins by classification (% weight, combining classifications where appropriate)*

Table 8: *CDS data for Coolamon Shire Council*

Classification	Tally	%	Items/bin
Glass CDS	666	44.0%	13.3
Plastic CDS	308	20.3%	6.2
LPB CDS	15	1.0%	0.3
Aluminium CDS	526	34.7%	10.5
Tin Cans CDS	0	0.0%	0.0
Total	1,515	100.0%	30.3

Table 9*: Raw data for Coolamon Shire Council (note CDL = CDS)*

		Coolamon	Total bins	50	
Average weight per bin (kgs)		9.6			
Classification		**Weight (Kgs)**	**Tally**	**%**	**%CDL**
1	**Paper & Cardboard**	154.48	0	32.2%	
2	**Glass Bottles & Jars**	43.96	0	9.2%	
3	**Glass CDL**	138.7	666	28.9%	44.0%
4	**Broken glass (10mm +)**	32.32	0	6.7%	
5	**Mixed Hard/Rigid Plastics**	33.64	0	7.0%	
6	**Plastic CDL**	10.56	308	2.2%	20.3%
7	**Soft / Film Plastics**	2.54	0	0.5%	
8	**LPB (food & drink cartons)**	1.62	0	0.3%	
9	**LPB CDL**	0.35	15	0.1%	1.0%
10	**Aluminium**	1.06	0	0.2%	
11	**Aluminium CDL**	7.48	526	1.6%	34.7%
12	**Tin Cans**	22.68	0	4.7%	
13	**Tin Cans CDL**	0	0	0.0%	0.0%
14	**Metals (pots & pans etc)**	3.12	0	0.7%	
15	**Food**	0.5	0	0.1%	
16	**Drink**	1.22	0	0.3%	
17	**Green Organics**	0	0	0.0%	
18	**Hard Waste**	0	0	0.0%	
19	**Hazardous Waste**	3.22	0	0.7%	
20	**Contamination / Residual Waste**	22.1	0	4.6%	
21	**Incorrectly Presented Recyclables**	0	0	0.0%	
22	**Expanded Polystyrene**	0.16	0	0.0%	
	TOTAL	479.71	1515	100.0%	100.0%

Photos - Coolamon			
Pile of recyclables, 50 x 240L bins, Coolamon			
Glass CDS bottles, Coolamon			
Tin cans, Coolamon			

Hazardous waste (residual waste) – motor oil, Coolamon	
Food and drink inside containers (residual waste), Coolamon	

Junee Shire Council

Overall results from this Council are summarised below.

Table 10: *Breakdown of information and photos, Junee Shire Council*

Area	Result
Bins audited	50
Contamination	24.5%
Ave weight per bin	8.1kg
Ave CDS items per bin	22.0
Location of audit	Junee Landfill
Key findings from the audit	• Highest contamination rate of all councils/ townships • Lowest proportion of Paper & Cardboard of all councils/ townships (30.6%) • Over 18 kilograms of clothing found in the sample • 1.5% of total content was recyclables in plastic bags (second highest of all councils/ townships

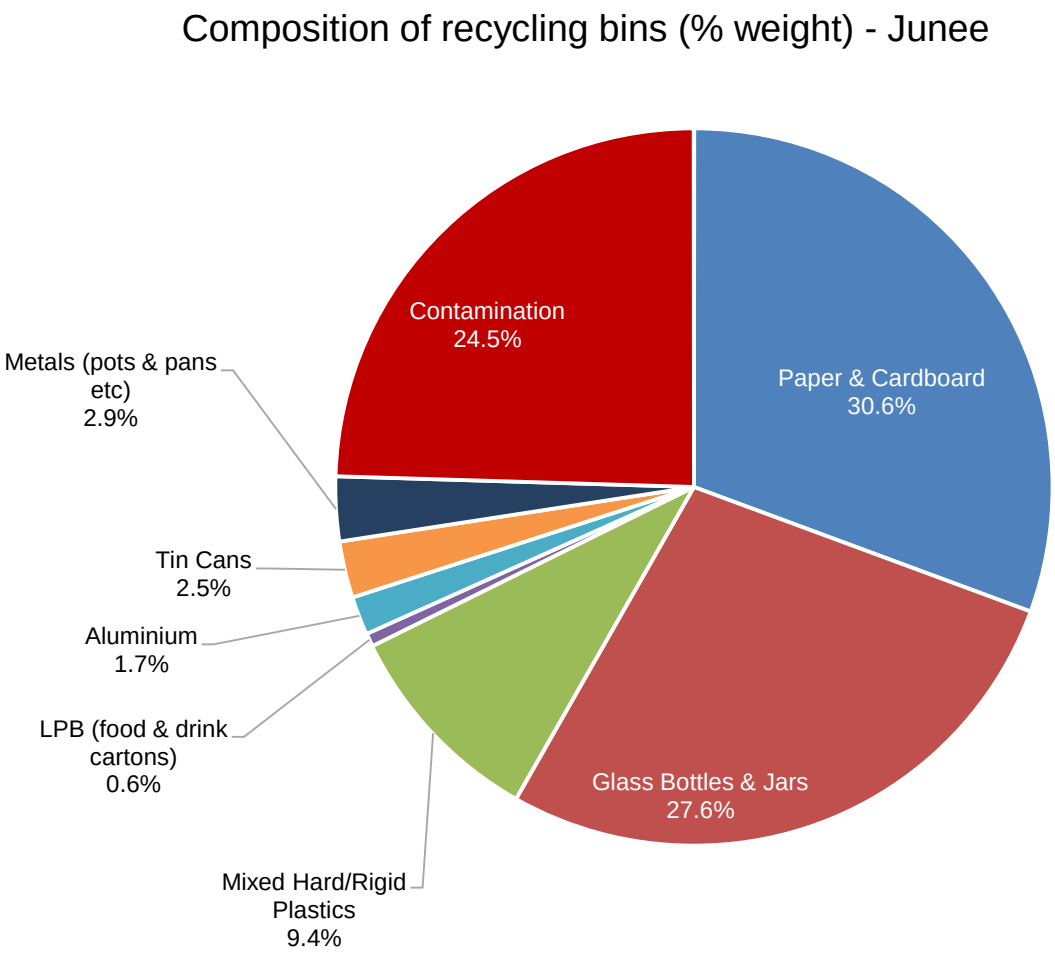


Figure 5: *Composition of audited recycling bins by classification (% weight, combining classifications where appropriate)*

Table 11: *CDS data for Junee Shire Council*

Classification	Tally	%	Items/bin
Glass CDS	322	29.3%	6.4
Plastic CDS	284	25.8%	5.7
LPB CDS	20	1.8%	0.4
Aluminium CDS	474	43.1%	9.5
Tin Cans CDS	0	0.0%	0.0
Total	1,100	100.0%	22.0

Table 12*: Raw data for Junee Shire Council (note CDL = CDS)*

		Junee	Total bins	50	
Average weight per bin (kgs)		8.1			
Classification		**Weight (Kgs)**	**Tally**	**%**	**%CDL**
1	**Paper & Cardboard**	123.5	0	30.6%	
2	**Glass Bottles & Jars**	41.4	0	10.3%	
3	**Glass CDL**	67	322	16.6%	29.3%
4	**Broken glass (10mm +)**	2.98	0	0.7%	
5	**Mixed Hard/Rigid Plastics**	29.9	0	7.4%	
6	**Plastic CDL**	8.14	284	2.0%	25.8%
7	**Soft / Film Plastics**	8.88	0	2.2%	
8	**LPB (food & drink cartons)**	2.14	0	0.5%	
9	**LPB CDL**	0.28	20	0.1%	1.8%
10	**Aluminium**	0.32	0	0.1%	
11	**Aluminium CDL**	6.68	474	1.7%	43.1%
12	**Tin Cans**	10.24	0	2.5%	
13	**Tin Cans CDL**	0	0	0.0%	0.0%
14	**Metals (pots & pans etc)**	11.72	0	2.9%	
15	**Food**	8.14	0	2.0%	
16	**Drink**	8.5	0	2.1%	
17	**Green Organics**	0	0	0.0%	
18	**Hard Waste**	0	0	0.0%	
19	**Hazardous Waste**	0	0	0.0%	
20	**Contamination / Residual Waste**	66.56	0	16.5%	
21	**Incorrectly Presented Recyclables**	6.2	0	1.5%	
22	**Expanded Polystyrene**	0.62	0	0.2%	
	TOTAL	403.2	1100	100.0%	100.0%

Photos – Junee Shire Council	
Pile of recyclables pre-audit, Junee	
Pile of clothing, contamination, Junee	
Recyclables presented in plastic bags, contamination, Junee	
CDS and other containers filled with liquid, contamination, Junee	

Cootamundra-Gundagai Shire Council

Overall results from this Council are summarised below.

Table 13: *Breakdown of information and photos, Cootamundra-Gundagai Shire Council*

Area	Cootamundra-Gundagai Shire Council	Cootamundra township	Gundagai township
Bins audited	100	50	50
Contamination rate	13.4%	16.0%	10.7%
Ave weight per bin	10.1kg	10.5kg	9.8kg
Ave CDS items per bin	26.0	23.5	28.5
Location of audit		Cootamundra Waste Depot	Gundagai Waste Depot
Key findings from the audit	• Cootamundra had a contamination rate approximately 3% higher than the average overall, while Gundagai's was approximately 3% lower. • The Townships had a similar average weight per bin which was in line with the average from all councils. • Cootamundra had a high proportion of recyclables presented in plastic bags and liquid in drink containers compared to Gundagai and other councils.		

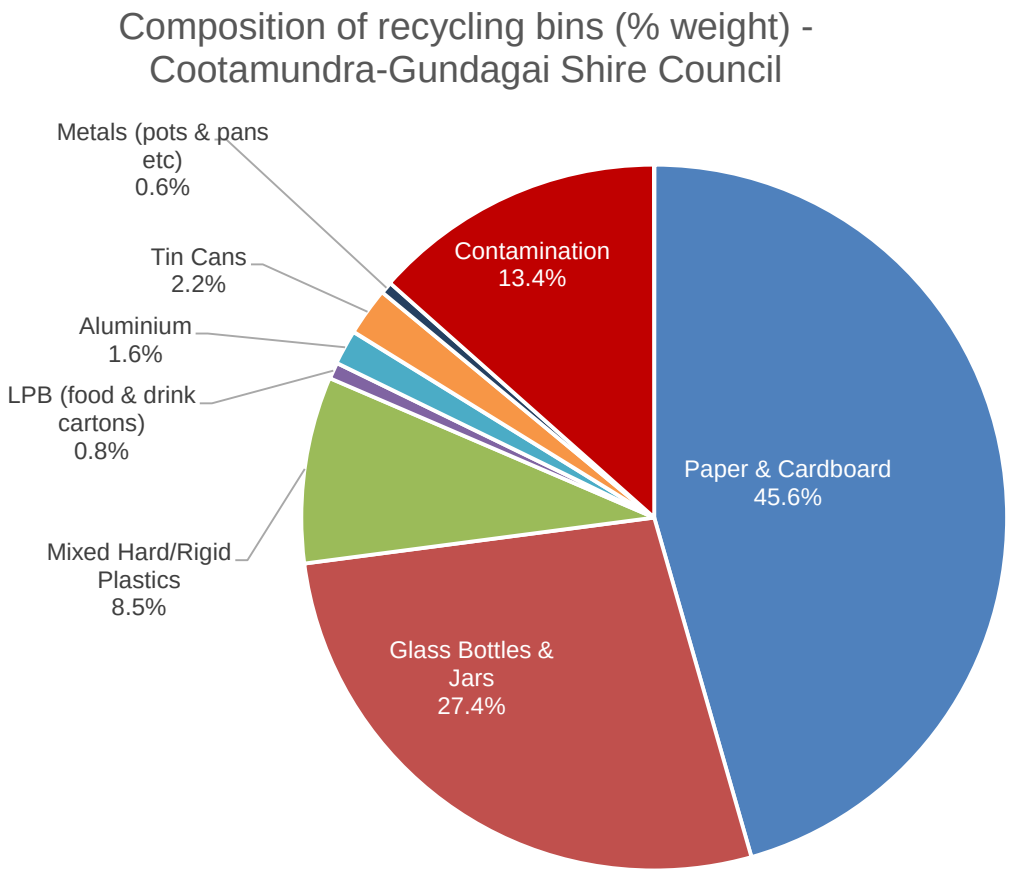


Figure 6: *Composition of audited recycling bins by classification (% weight, combining classifications where appropriate) – Cootamundra-Gundagai Shire Council overall*

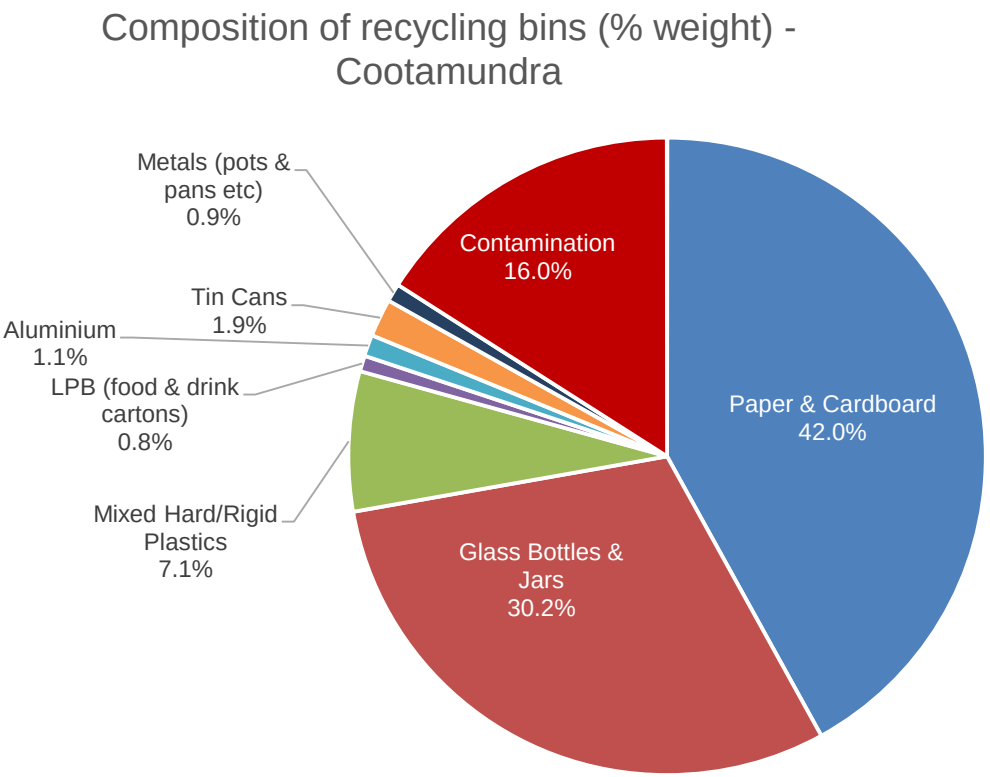


Figure 7: *Composition of audited recycling bins by classification (% weight, combining classifications where appropriate) – Cootamundra Township*

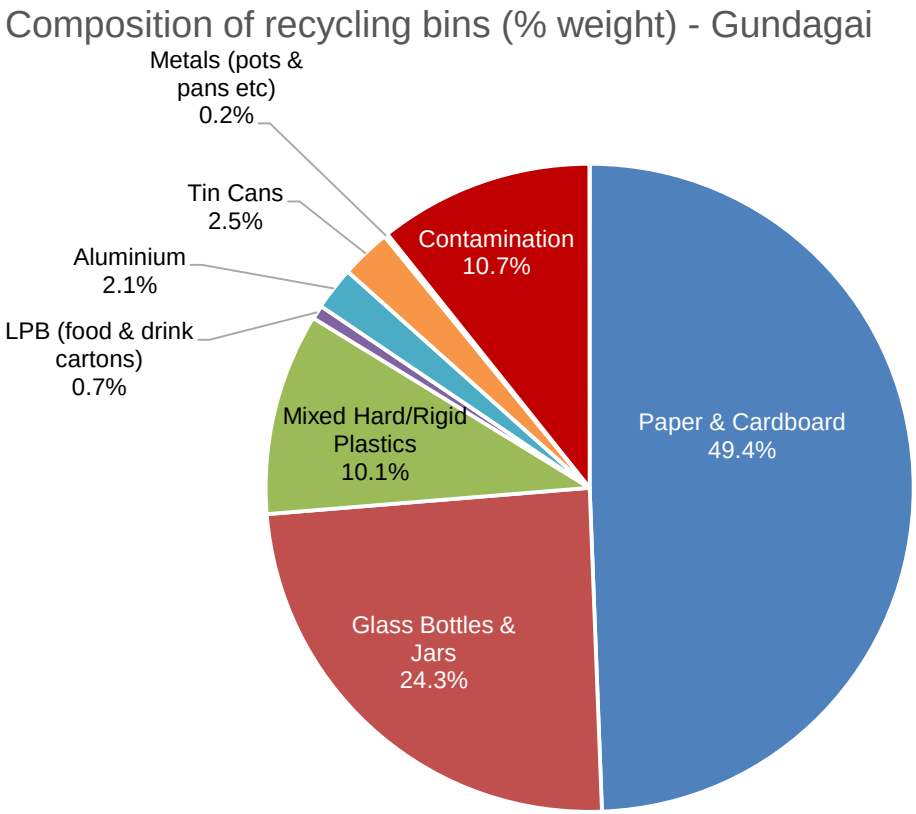


Figure 8: *Composition of audited recycling bins by classification (% weight, combining classifications where appropriate) – Gundagai Township*

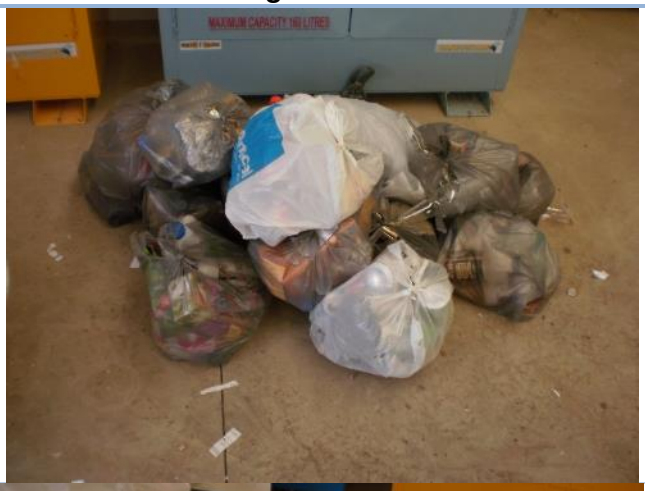
Table 14: *CDS data for Cootamundra-Gundagai Shire Council and by Township*

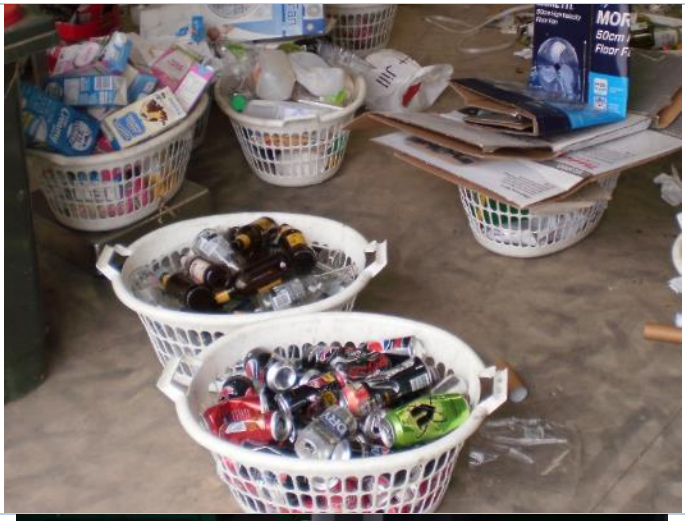
	Cootamundra-Gundagai Shire Council			**Cootamundra Township**			**Gundagai Township**		
Classification	**Tally**	**%**	**Items/bin**	**Tally**	**%**	**Items/bin**	**Tally**	**%**	**Items/bin**
Glass CDS	756	29.1%	7.6	438	37.3%	8.8	318	22.3%	6.4

Plastic CDS	731	28.1%	7.3	352	30.0%	7.0	379	26.6%	7.6
LPB CDS	83	3.2%	0.8	25	2.1%	0.5	58	4.1%	1.2
Aluminium CDS	1029	39.6%	10.3	358	30.5%	7.2	671	47.1%	13.4
Tin Cans CDS	0	0.0%	0.0	0	0.0%	0.0	0	0.0%	0.0
Total	2,599	100%	26.0	1,173	100%	23.5	1,426	100%	28.5

***Table 15**: Raw data for Cootamundra-Gundagai Shire Council (note CDL = CDS)*

		Cootamundra	Total bins	50		**Gundagai**	Total bins	50	
Average weight per bin (kgs)		10.5				9.8			
Classification		**Weight (Kgs)**	**Tally**	**%**	**%CDL**	**Weight (Kgs)**	**Tally**	**%**	**%CDL**
1	**Paper & Cardboard**	220.38	0	42.0%		241.4	0	49.4%	
2	**Glass Bottles & Jars**	51.04	0	9.7%		31.52	0	6.4%	
3	**Glass CDL**	96.12	438	18.3%	37.3%	71.62	318	14.7%	22.3%
4	**Broken glass (10mm +)**	11.56	0	2.2%		15.72	0	3.2%	
5	**Mixed Hard/Rigid Plastics**	27.16	0	5.2%		36.98	0	7.6%	
6	**Plastic CDL**	10.1	352	1.9%	30.0%	12.18	379	2.5%	26.6%
7	**Soft / Film Plastics**	3.26	0	0.6%		4.36	0	0.9%	
8	**LPB (food & drink cartons)**	3.58	0	0.7%		2.32	0	0.5%	
9	**LPB CDL**	0.64	25	0.1%	2.1%	1.1	58	0.2%	4.1%
10	**Aluminium**	0.34	0	0.1%		0.9	0	0.2%	
11	**Aluminium CDL**	5.38	358	1.0%	30.5%	9.58	671	2.0%	47.1%
12	**Tin Cans**	10.06	0	1.9%		12.24	0	2.5%	
13	**Tin Cans CDL**	0	0	0.0%	0.0%	0	0	0.0%	0.0%
14	**Metals (pots & pans etc)**	4.82	0	0.9%		0.82	0	0.2%	
15	**Food**	3.98	0	0.8%		0.3	0	0.1%	
16	**Drink**	23.3	0	4.4%		16.04	0	3.3%	
17	**Green Organics**	0	0	0.0%		0	0	0.0%	
18	**Hard Waste**	0	0	0.0%		0	0	0.0%	
19	**Hazardous Waste**	0	0	0.0%		0	0	0.0%	
20	**Contamination / Residual Waste**	30.04	0	5.7%		30.88	0	6.3%	
21	**Incorrectly Presented Recyclables**	22.86	0	4.4%		0	0	0.0%	
22	**Expanded Polystyrene**	0.38	0	0.1%		0.82	0	0.2%	
	TOTAL	525	1173	100.0%	100.0%	488.78	1426	100.0%	100.0%

Photos – Cootamundra-Gundagai Shire Council		
Recyclables presented in plastic bags, contamination, Cootamundra		
Liquid in bottles and other containers, contamination, Cootamundra		
Residual waste, Cootamundra		

A variety of separated recyclables including aluminium CDS, glass CDS cardboard and LDP, Cootamundra	
Polystyrene, contamination, Gundagai	
Residual waste, Gundagai	

Snowy Valleys Council (Tumut/Tumbarumba)

Overall results from this Council are summarised below.

Table 16: *Breakdown of information and photos, Snowy Valleys Council*

Area	Result
Bins audited	100
Contamination rate	9.8%
Ave weight per bin	8.0kg
Ave CDS items per bin	34.9
Location of audit	Tumut Waste & Recycling Centre
Key findings from the audit	• Snowy Valleys Council had no recyclables presented in plastic bags • Snowy Valleys Council had the lowest average weight per bin compared to all other councils • Snowy Valleys Council had a slightly lower proportion of Paper & Cardboard and a slightly higher proportion of Glass Bottles & Jars compared to the average • CDS count per bin and overall contamination was in line with the overall average.

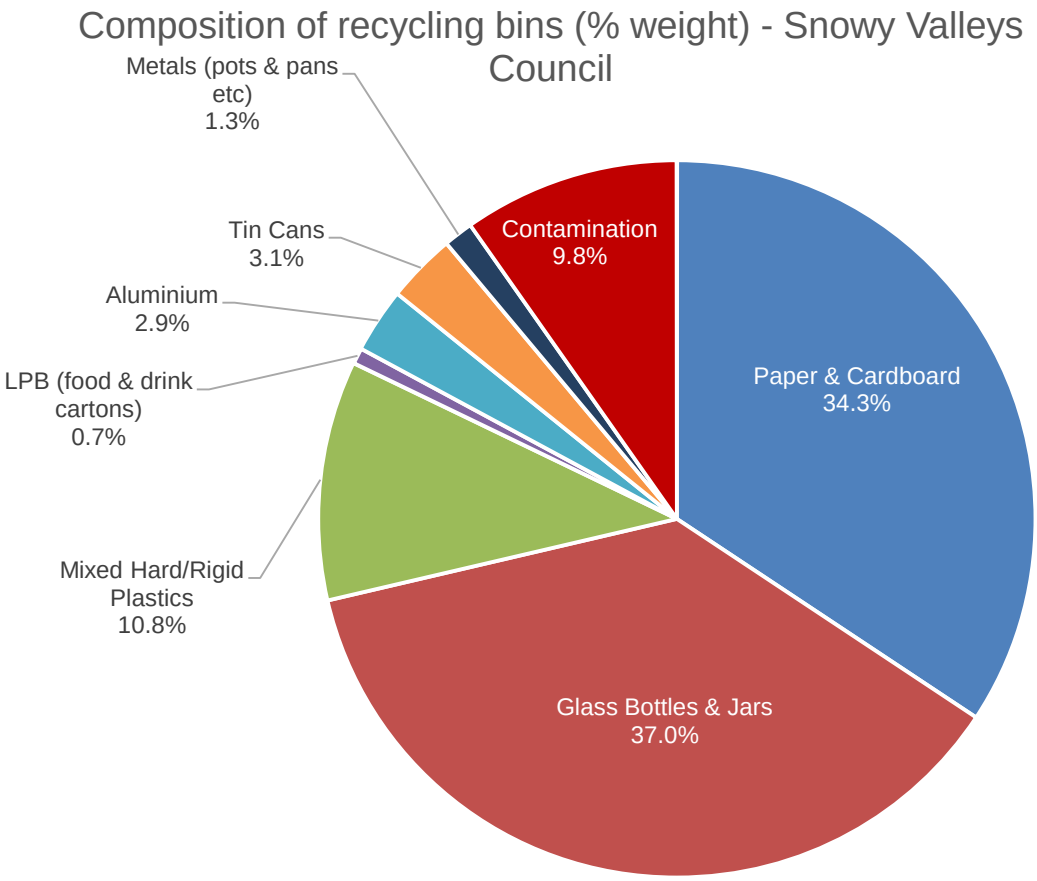


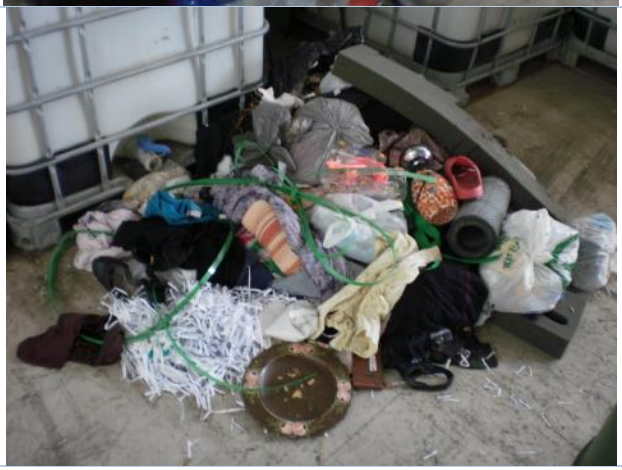
Figure 9: *Composition of audited recycling bins by classification (% weight, combining classifications where appropriate)*

Table 17: *CDS data for Snowy Valleys Council*

Classification	Tally	%	Items/bin
Glass CDS	847	24.3%	8.5
Plastic CDS	954	27.3%	9.5
LPB CDS	82	2.4%	0.8
Aluminium CDS	1606	46.0%	16.1
Tin Cans CDS	0	0.0%	0.0
Total	3,489	100.0%	34.9

Table 18*: Raw data for Snowy Valleys Council (note CDL = CDS)*

		Tumut	Total bins	100	
Average weight per bin (kgs)		8.0			
Classification		**Weight (Kgs)**	**Tally**	**%**	**%CDL**
1	**Paper & Cardboard**	274.6	0	34.3%	
2	**Glass Bottles & Jars**	92.26	0	11.5%	
3	**Glass CDL**	175.24	847	21.9%	24.3%
4	**Broken glass (10mm +)**	28.5	0	3.6%	
5	**Mixed Hard/Rigid Plastics**	56.6	0	7.1%	
6	**Plastic CDL**	29.84	954	3.7%	27.3%
7	**Soft / Film Plastics**	3.18	0	0.4%	
8	**LPB (food & drink cartons)**	4.1	0	0.5%	
9	**LPB CDL**	1.62	82	0.2%	2.4%
10	**Aluminium**	1.14	0	0.1%	
11	**Aluminium CDL**	22.28	1606	2.8%	46.0%
12	**Tin Cans**	24.94	0	3.1%	
13	**Tin Cans CDL**	0	0	0.0%	0.0%
14	**Metals (pots & pans etc)**	10.62	0	1.3%	
15	**Food**	0.7	0	0.1%	
16	**Drink**	9.92	0	1.2%	
17	**Green Organics**	0	0	0.0%	
18	**Hard Waste**	0	0	0.0%	
19	**Hazardous Waste**	0	0	0.0%	
20	**Contamination / Residual Waste**	63.44	0	7.9%	
21	**Incorrectly Presented Recyclables**	0	0	0.0%	
22	**Expanded Polystyrene**	0.82	0	0.1%	
	TOTAL	799.8	3489	100.0%	100.0%

Photos – Snowy Valleys Council		
Pile of recyclables, Snowy Valleys Council		
Tin cans, Snowy Valleys Council		
Residual waste, Snowy Valleys Council		

Wagga Wagga Council

Overall results from this Council are summarised below.

Table 19: *Breakdown of information and photos, Wagga Wagga Council*

Area	Result
Bins audited	200
Contamination rate	15.0%
Ave weight per bin	11.5kg
Ave CDS items per bin	30.6
Location of audit	Kurrajong Recyclers
Key findings from the audit	• Contamination in Wagga Wagga was approximately 2% higher than the average for all councils • The proportion of Plastic CDS was slightly higher than the average across other councils (3.7% compared to an average of 2.3%) • Wagga had the highest number of bins collected out of all councils that participated in the audit.

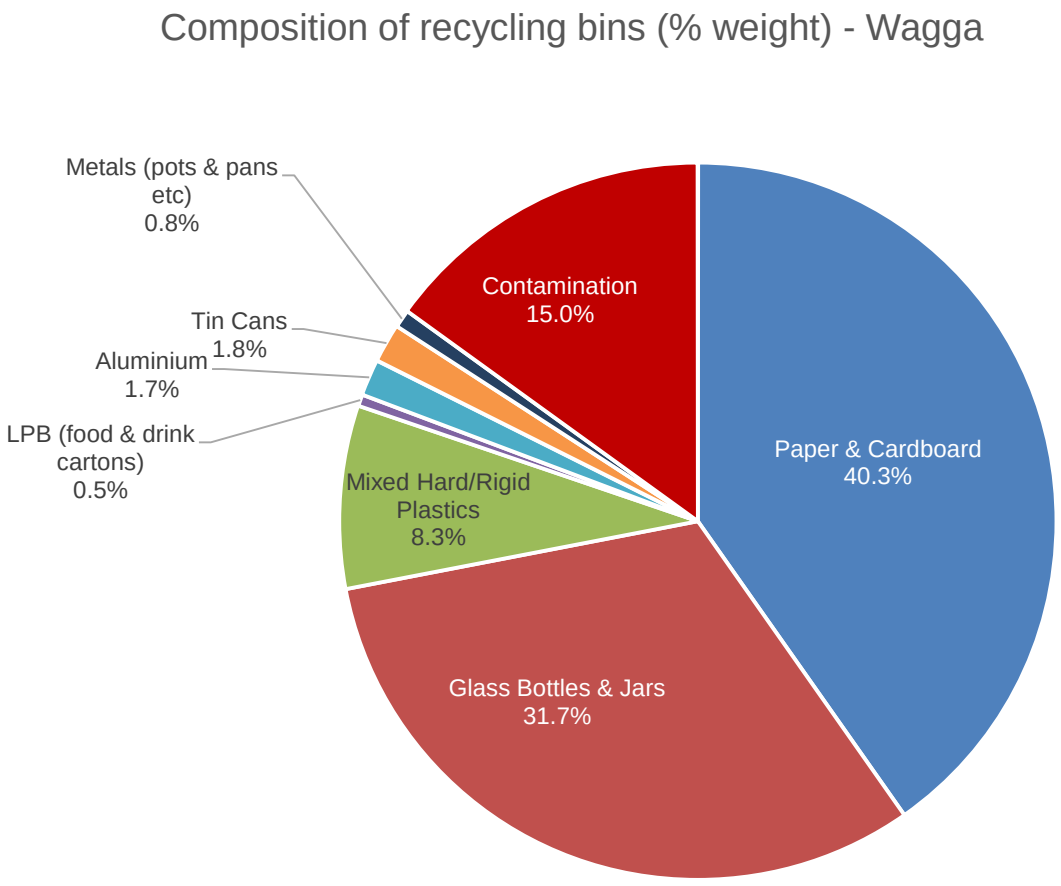


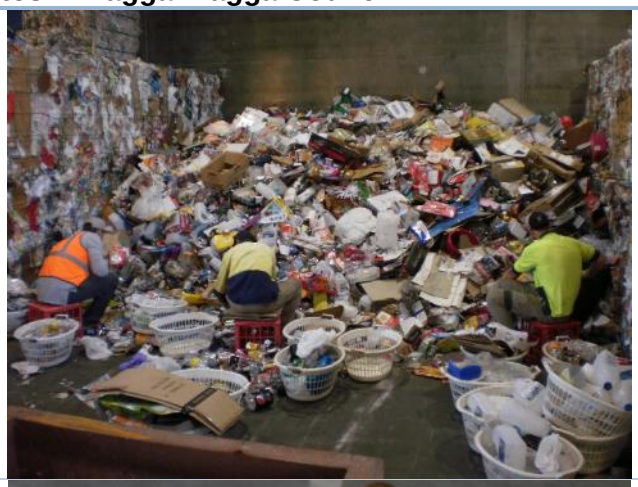
Figure 10: *Composition of audited recycling bins by classification (% weight, combining classifications where appropriate)*

Table 20: *CDS data for Wagga Wagga Council*

Classification	Tally	%	Items/bin
Glass CDS	1938	31.6%	9.7
Plastic CDS	1525	24.9%	7.6
LPB CDS	83	1.4%	0.4
Aluminium CDS	2583	42.1%	12.9
Tin Cans CDS	0	0.0%	0.0
Total	6,129	100.0%	30.6

Table 21*: Raw data for Wagga Wagga Council (note CDL = CDS)*

		Wagga	Total bins	200	
Average weight per bin (kgs)		11.5			
Classification		**Weight (Kgs)**	**Tally**	**%**	**%CDL**
1	**Paper & Cardboard**	922.3	0	40.3%	
2	**Glass Bottles & Jars**	245.6	0	10.7%	
3	**Glass CDL**	413.58	1938	18.1%	31.6%
4	**Broken glass (10mm +)**	67.04	0	2.9%	
5	**Mixed Hard/Rigid Plastics**	138.02	0	6.0%	
6	**Plastic CDL**	51.14	1525	2.2%	24.9%
7	**Soft / Film Plastics**	22.74	0	1.0%	
8	**LPB (food & drink cartons)**	10.52	0	0.5%	
9	**LPB CDL**	1.44	83	0.1%	1.4%
10	**Aluminium**	1.5	0	0.1%	
11	**Aluminium CDL**	36.34	2583	1.6%	42.1%
12	**Tin Cans**	40.26	0	1.8%	
13	**Tin Cans CDL**	0	0	0.0%	0.0%
14	**Metals (pots & pans etc)**	18.68	0	0.8%	
15	**Food**	11.2	0	0.5%	
16	**Drink**	49.44	0	2.2%	
17	**Green Organics**	0	0	0.0%	
18	**Hard Waste**	1.74	0	0.1%	
19	**Hazardous Waste**	0	0	0.0%	
20	**Contamination / Residual Waste**	249.72	0	10.9%	
21	**Incorrectly Presented Recyclables**	7.38	0	0.3%	
22	**Expanded Polystyrene**	2.28	0	0.1%	
	TOTAL	2290.92	6129	100.0%	100.0%

Photos – Wagga Wagga Council	
Recycling pile, 200 bins, Wagga Wagga Council	
Rigid plastics, Wagga Wagga Council	
Aluminium CDS, Wagga Wagga Council	
CDS and other bottles with liquid, contamination, Wagga Wagga Council	

Residual waste, Wagga Wagga Council			

Greater Hume Council (Culcairn)

Overall results from this Council are summarised below.

Table 22: *Breakdown of information and photos, Greater Hume Council*

Area	Result
Bins audited	50
Contamination rate	12.2%
Ave weight per bin	13.5 kilograms
Ave CDS items per bin	38.3
Location of audit	Culcairn Landfill
Key findings from the audit	• Greater Hume Council had the second highest volume of recyclable materials of all councils at an average of 13.5 kilograms per 240L bin. • Greater Hume Council also had the second highest average number of CDS items per 240L bin, at 38. • The contamination rate was slightly below the average for all councils/townships. • Greater Hume Council also had the second highest proportion of paper and cardboard of all councils/ townships.

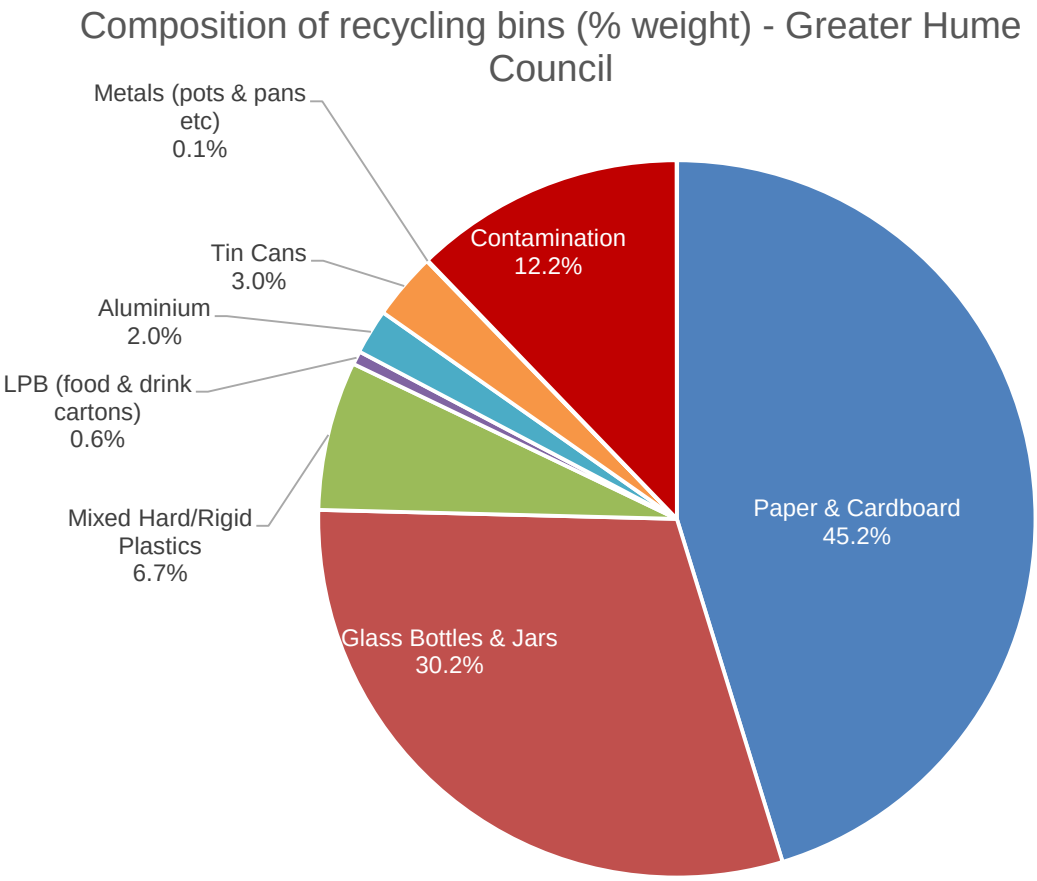


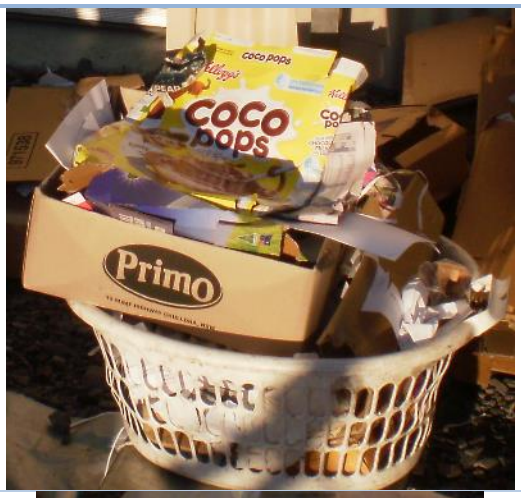
Figure 11: *Composition of audited recycling bins by classification (% weight, combining classifications where appropriate)*

Table 23: *CDS data for Greater Hume Council*

Classification	Tally	%	Items/bin
Glass CDS	555	29.0%	11.1
Plastic CDS	416	21.7%	8.3
LPB CDS	51	2.7%	1.0
Aluminium CDS	891	46.6%	17.8
Tin Cans CDS	0	0.0%	0.0
Total	1,913	100.0%	38.3

Table 24*: Raw data for Greater Hume Council (note CDL = CDS)*

		Culcairn	Total bins	50	
Average weight per bin (kgs)		13.5			
Classification		**Weight (Kgs)**	**Tally**	**%**	**%CDL**
1	**Paper & Cardboard**	305.38	0	45.2%	
2	**Glass Bottles & Jars**	48.92	0	7.2%	
3	**Glass CDL**	108.1	555	16.0%	29.0%
4	**Broken glass (10mm +)**	46.54	0	6.9%	
5	**Mixed Hard/Rigid Plastics**	32.2	0	4.8%	
6	**Plastic CDL**	13.06	416	1.9%	21.7%
7	**Soft / Film Plastics**	3	0	0.4%	
8	**LPB (food & drink cartons)**	3.08	0	0.5%	
9	**LPB CDL**	1.06	51	0.2%	2.7%
10	**Aluminium**	0.34	0	0.1%	
11	**Aluminium CDL**	13.32	891	2.0%	46.6%
12	**Tin Cans**	20.24	0	3.0%	
13	**Tin Cans CDL**	0	0	0.0%	0.0%
14	**Metals (pots & pans etc)**	0.38	0	0.1%	
15	**Food**	1.74	0	0.3%	
16	**Drink**	1.2	0	0.2%	
17	**Green Organics**	0	0	0.0%	
18	**Hard Waste**	0	0	0.0%	
19	**Hazardous Waste**	0	0	0.0%	
20	**Contamination / Residual Waste**	74.94	0	11.1%	
21	**Incorrectly Presented Recyclables**	1.44	0	0.2%	
22	**Expanded Polystyrene**	0.02	0	0.0%	
	TOTAL	674.96	1913	100.0%	100.0%

Photos – Greater Hume Council	
Paper and Cardboard, Greater Hume Council	
Glass CDS bottles, Greater Hume Council	
CDS with liquid, Greater Hume Council	
Residual waste (contamination), Greater Hume Council	

Lockhart Shire Council

Overall results from this Council are summarised below.

Table 25: *Breakdown of information and photos, Lockhart Shire Council*

Area	Result
Bins audited	50
Contamination rate	13.1%
Ave weight per bin	15.3kg
Ave CDS items per bin	45.6
Location of audit	Lockhart Landfill/ Transfer Station
Key findings from the audit	• Lockhart Shire Council had the highest volume of recyclables per 240L bin (this was reported to be due to rural properties waiting for their bins to fill before presenting them, as such the average weight per year may be similar to the other councils/ townships) • Lockhart Shire Council also had the highest number of CDS items per 240L bin (46). • The contamination rate was similar to the overall average.

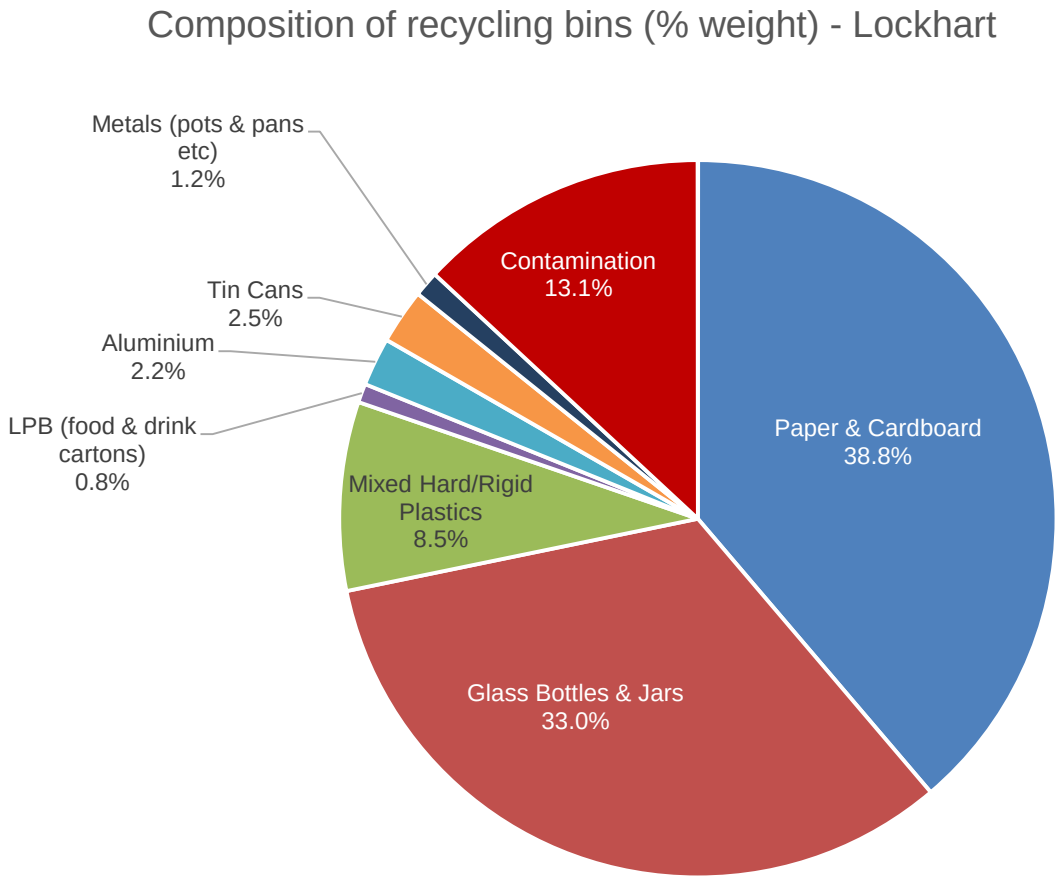


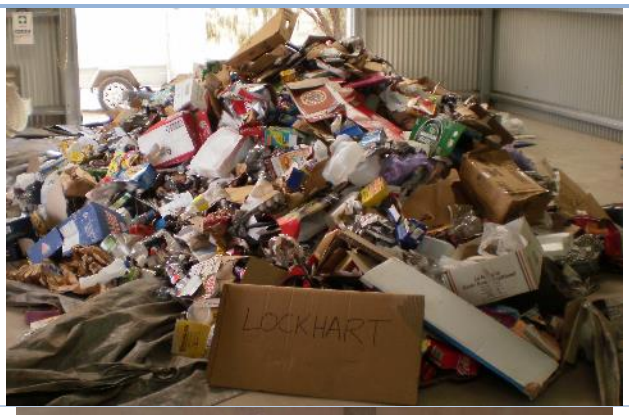
Figure 12: *Composition of audited recycling bins by classification (% weight, combining classifications where appropriate)*

Table 26: *CDS data for Lockhart Shire Council*

Classification	Tally	%	Items/bin
Glass CDS	743	32.6%	14.9
Plastic CDS	391	17.1%	7.8
LPB CDS	40	1.8%	0.8
Aluminium CDS	1,107	48.5%	22.1
Tin Cans CDS	0	0.0%	0.0
Total	2,281	100.0%	45.6

Table 27*: Raw data for Lockhart Shire Council (note CDL = CDS)*

		Lockhart	Total bins	50	
Average weight per bin (kgs)		15.3			
Classification		**Weight (Kgs)**	**Tally**	**%**	**%CDL**
1	**Paper & Cardboard**	296.54	0	38.8%	
2	**Glass Bottles & Jars**	58.48	0	7.6%	
3	**Glass CDL**	163	743	21.3%	32.6%
4	**Broken glass (10mm +)**	30.88	0	4.0%	
5	**Mixed Hard/Rigid Plastics**	50.56	0	6.6%	
6	**Plastic CDL**	14.42	391	1.9%	17.1%
7	**Soft / Film Plastics**	5.44	0	0.7%	
8	**LPB (food & drink cartons)**	5.14	0	0.7%	
9	**LPB CDL**	1.32	40	0.2%	1.8%
10	**Aluminium**	0.8	0	0.1%	
11	**Aluminium CDL**	15.92	1107	2.1%	48.5%
12	**Tin Cans**	18.86	0	2.5%	
13	**Tin Cans CDL**	0	0	0.0%	0.0%
14	**Metals (pots & pans etc)**	8.8	0	1.2%	
15	**Food**	0.36	0	0.0%	
16	**Drink**	6.06	0	0.8%	
17	**Green Organics**	0	0	0.0%	
18	**Hard Waste**	0	0	0.0%	
19	**Hazardous Waste**	0	0	0.0%	
20	**Contamination / Residual Waste**	78.48	0	10.3%	
21	**Incorrectly Presented Recyclables**	9.22	0	1.2%	
22	**Expanded Polystyrene**	0.46	0	0.1%	
	TOTAL	764.74	2281	100.0%	100.0%

Photos – Lockhart Shire Council	
Recycling sample, Lockhart Shire Council	
Polystyrene, contamination, Lockhart Shire Council	
Residual waste, contamination, Lockhart Shire Council	
Liquid in CDS plastic bottles, contamination, Lockhart Shire Council	

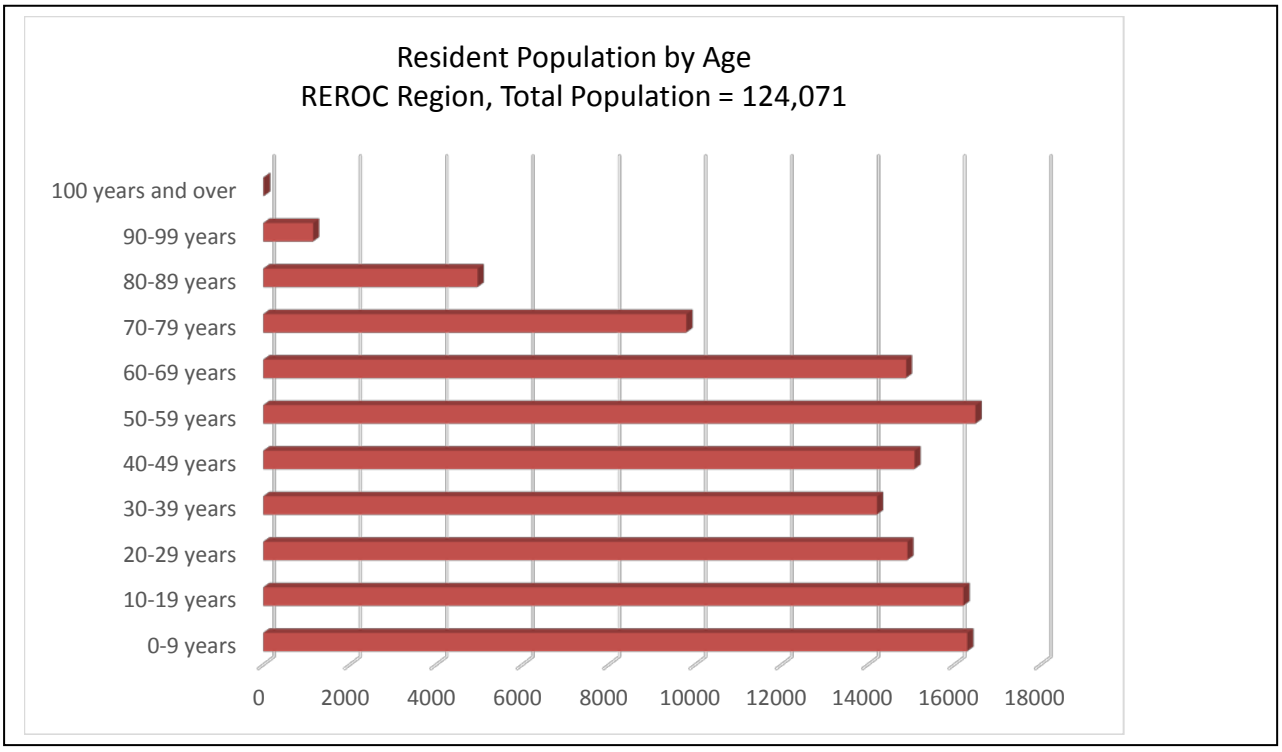
Regional Demographic Profile

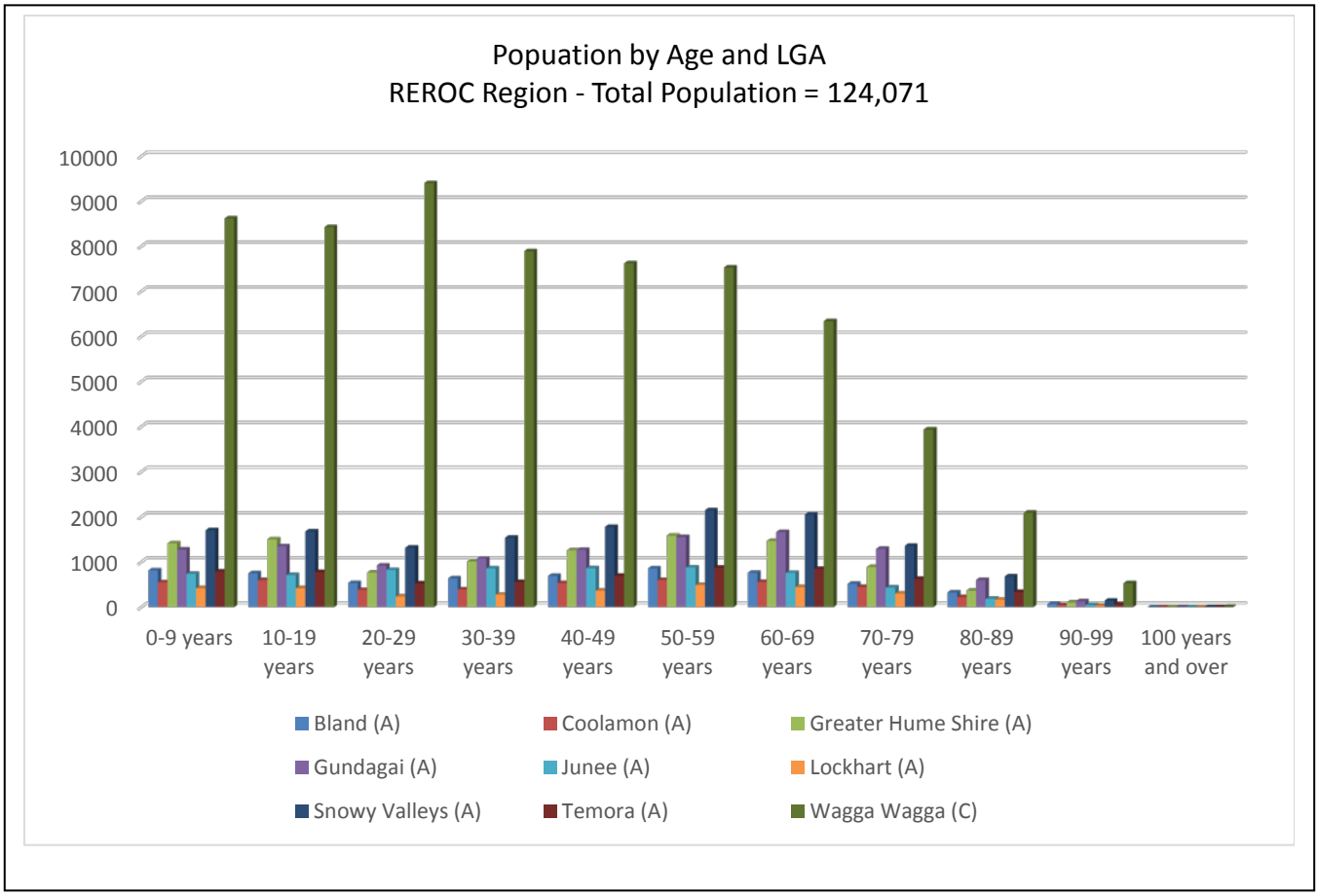
reroc waste forum

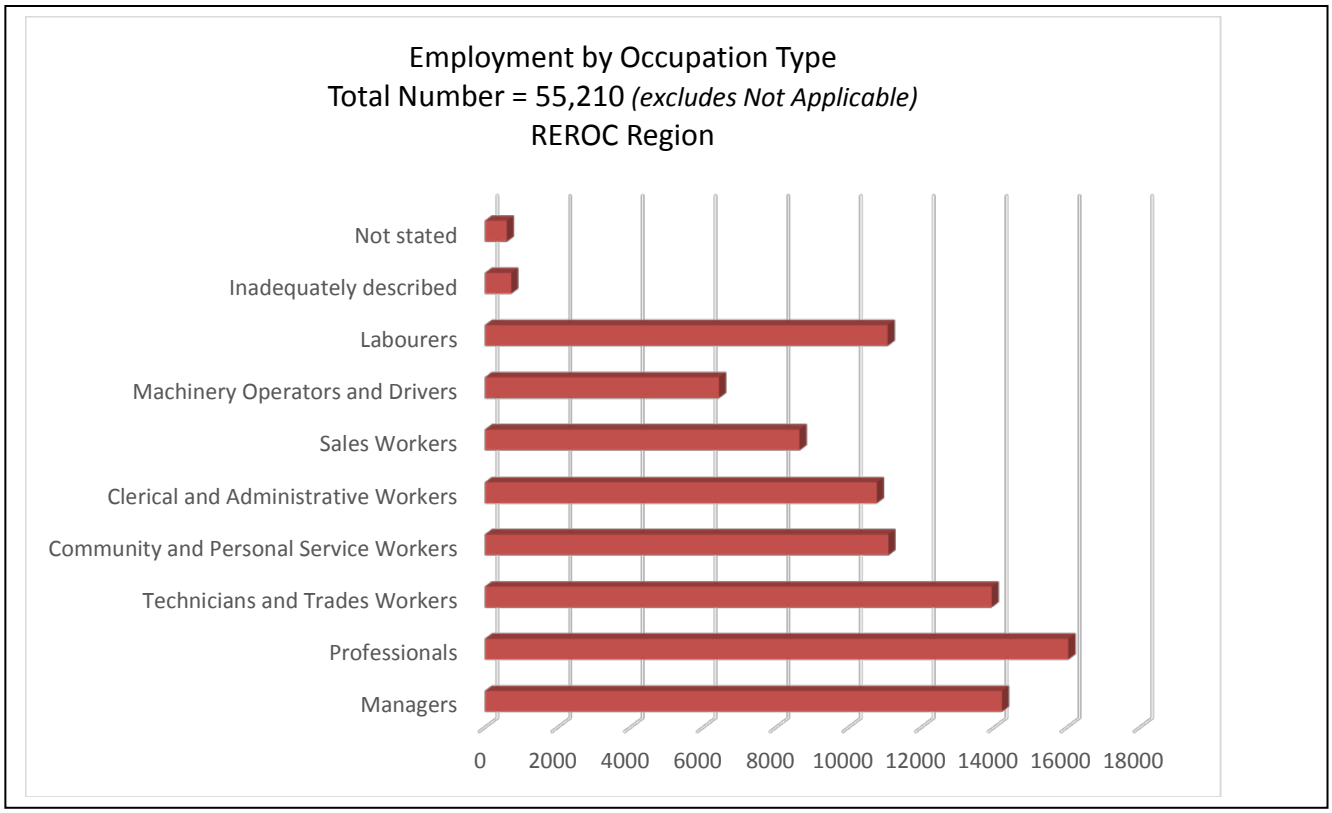
Regional Demographic Profile

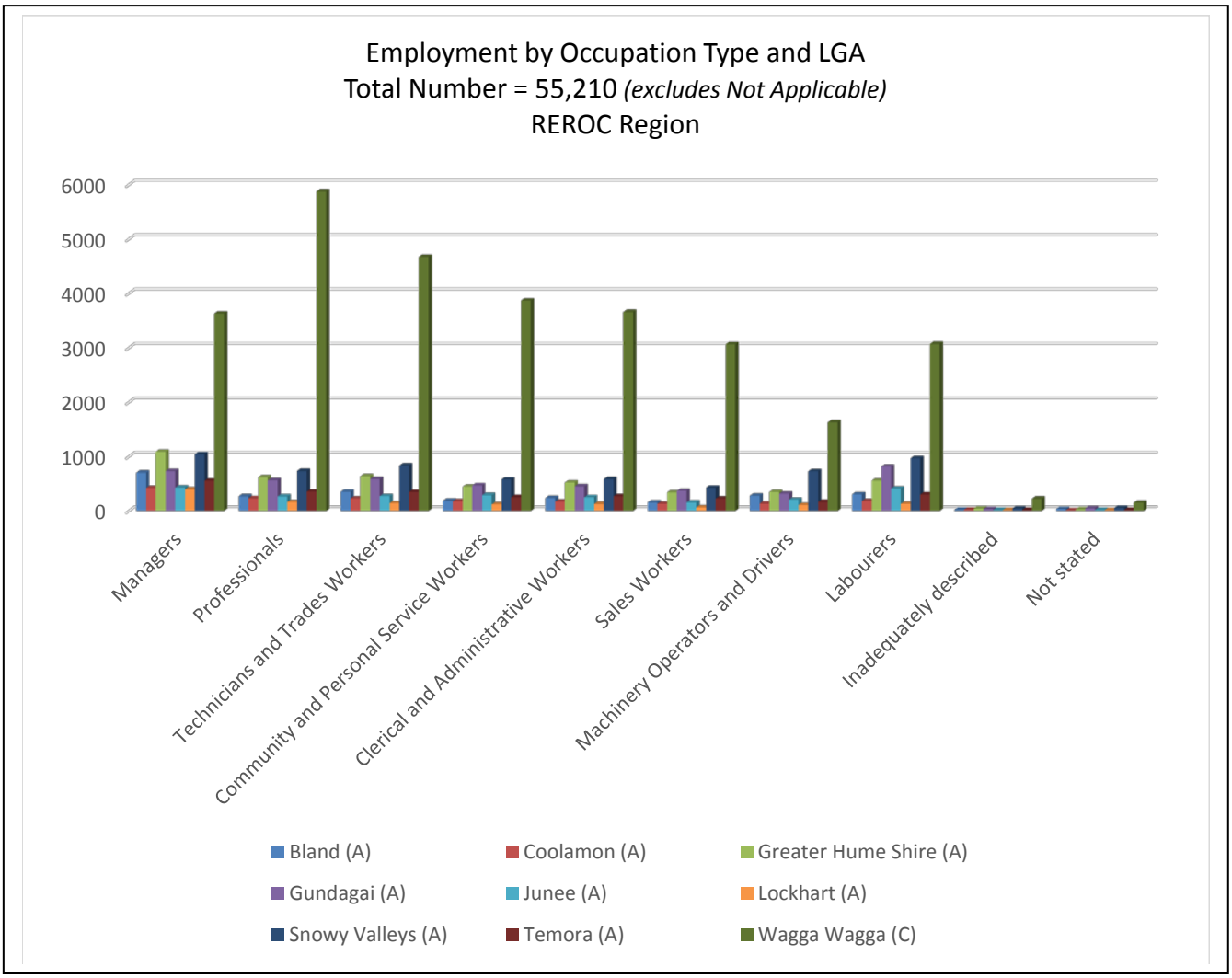
The following statistical information is drawn from the ABS 2016 census

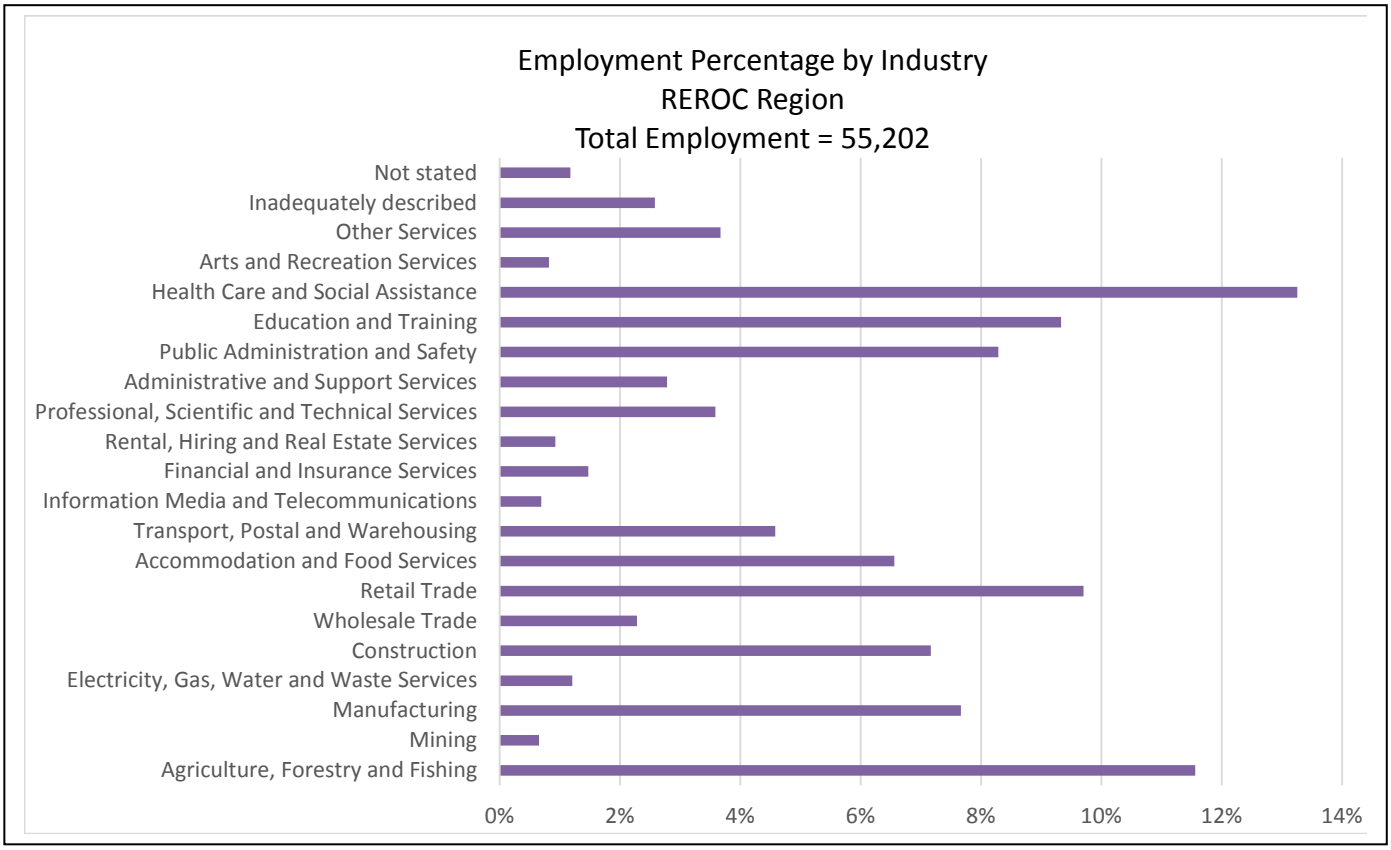
Note: At the time of the 2016 Census Cootamundra-Gundagai Council was known as Gundagai Council.

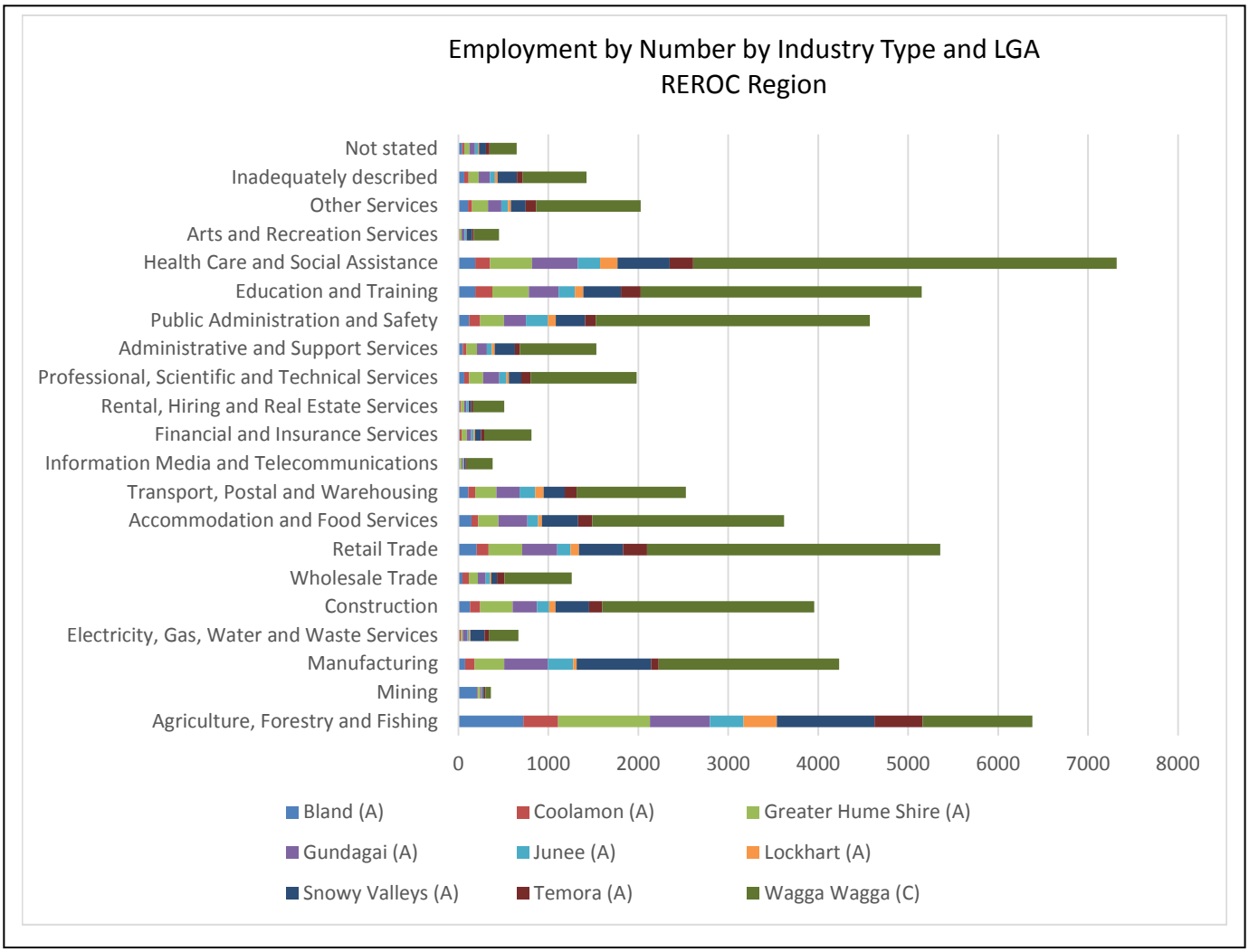


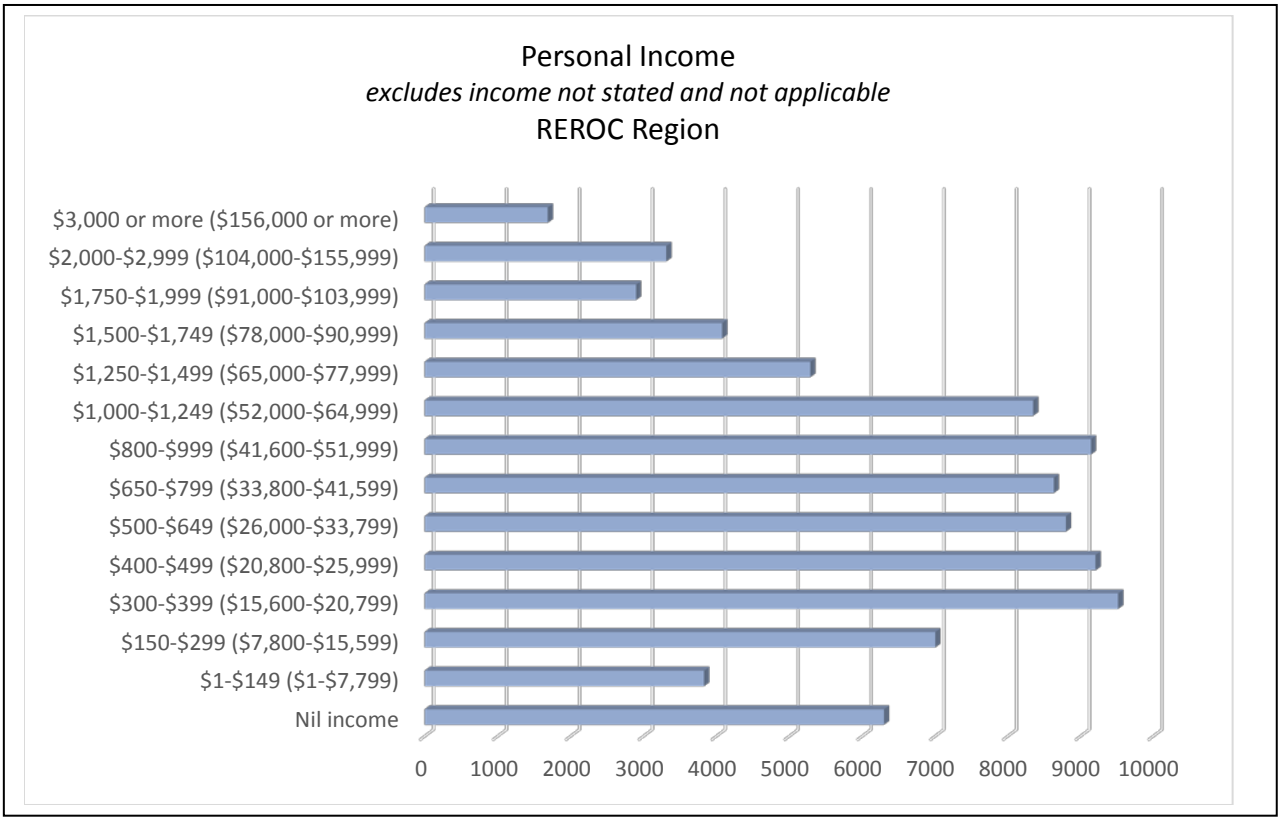


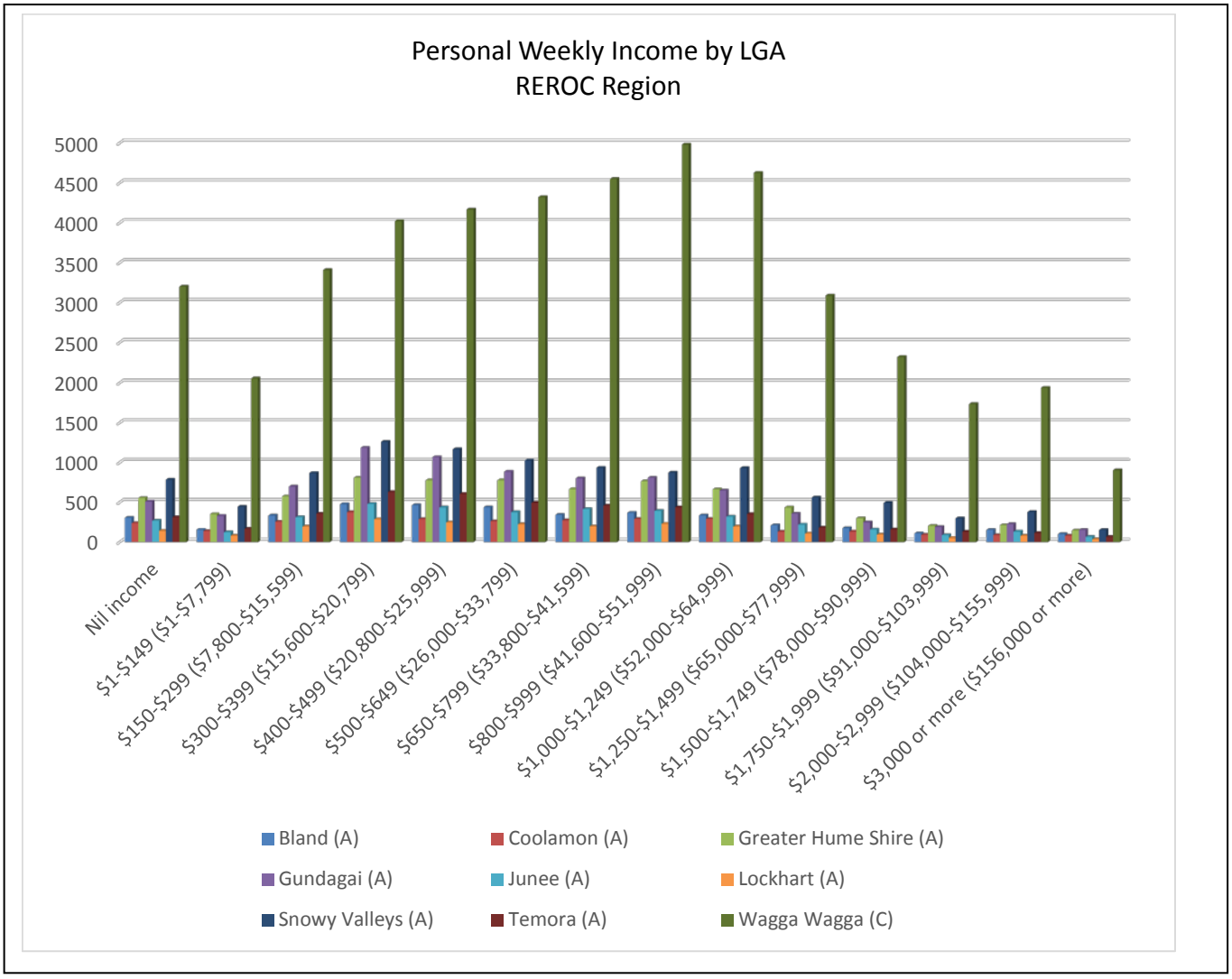

Employment by Occupation Type
Total Number = 55,210 (excludes Not Applicable)
REROC Region
Not stated
Inadequately described
Labourers
Machinery Operators and Drivers
Sales Workers
Clerical and Administrative Workers
Community and Personal Service Workers
Technicians and Trades Workers
Professionals
Managers
0
2000
4000
6000
8000
10000
12000
14000
16000
18000


Employment by Occupation Type and LGA
Total Number = 55,210 (excludes Not Applicable)
REROC Region
6000
5000
4000
3000
2000
1000
0
Managers
Professionals
Technicians and Trades Workers
Community and Personal Service Workers
Clerical and Administrative Workers
Sales Workers
Machinery Operators and Drivers
Labourers
Inadequately described
Not stated
Bland (A)
Coolamon (A)
Greater Hume Shire (A)
Gundagai (A)
Junee (A)
Lockhart (A)
Snowy Valleys (A)
Temora (A)
Wagga Wagga (C)


Employment Percentage by Industry
REROC Region
Total Employment = 55,202
Not stated
Inadequately described
Other Services
Arts and Recreation Services
Health Care and Social Assistance
Education and Training
Public Administration and Safety
Administrative and Support Services
Professional, Scientific and Technical Services
Rental, Hiring and Real Estate Services
Financial and Insurance Services
Information Media and Telecommunications
Transport, Postal and Warehousing
Accommodation and Food Services
Retail Trade
Wholesale Trade
Construction
Electricity, Gas, Water and Waste Services
Manufacturing
Mining
Agriculture, Forestry and Fishing
0%
2%
4%
6%
8%
10%
12%
14%


Employment by Number by Industry Type and LGA
REROC Region
Not stated
Inadequately described
Other Services
Arts and Recreation Services
Health Care and Social Assistance
Education and Training
Public Administration and Safety
Administrative and Support Services
Professional, Scientific and Technical Services
Rental, Hiring and Real Estate Services
Financial and Insurance Services
Information Media and Telecommunications
Transport, Postal and Warehousing
Accommodation and Food Services
Retail Trade
Wholesale Trade
Construction
Electricity, Gas, Water and Waste Services
Manufacturing
Mining
Agriculture, Forestry and Fishing
0
1000
2000
3000
4000
5000
6000
7000
8000
Bland (A)
Coolamon (A)
Greater Hume Shire (A)
Gundagai (A)
Junee (A)
Lockhart (A)
Snowy Valleys (A)
Temora (A)
Wagga Wagga (C)


Personal Income
excludes income not stated and not applicable
REROC Region
$3,000 or more ($156,000 or more)
$2,000-$2,999 ($104,000-$155,999)
$1,750-$1,999 ($91,000-$103,999)
$1,500-$1,749 ($78,000-$90,999)
$1,250-$1,499 ($65,000-$77,999)
$1,000-$1,249 ($52,000-$64,999)
$800-$999 ($41,600-$51,999)
$650-$799 ($33,800-$41,599)
$500-$649 ($26,000-$33,799)
$400-$499 ($20,800-$25,999)
$300-$399 ($15,600-$20,799)
$150-$299 ($7,800-$15,599)
$1-$149 ($1-$7,799)
Nil income
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


Personal Weekly Income by LGA
REROC Region
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
Nil income
$1-$149 ($1-$7,799)
$150-$299 ($7,800-$15,599)
$300-$399 ($15,600-$20,799)
$400-$499 ($20,800-$25,999)
$500-$649 ($26,000-$33,799)
$650-$799 ($33,800-$41,599)
$800-$999 ($41,600-$51,999)
$1,000-$1,249 ($52,000-$64,999)
$1,250-$1,499 ($65,000-$77,999)
$1,500-$1,749 ($78,000-$90,999)
$1,750-$1,999 ($91,000-$103,999)
$2,000-$2,999 ($104,000-$155,999)
$3,000 or more ($156,000 or more)
Bland (A)
Coolamon (A)
Greater Hume Shire (A)
Gundagai (A)
Junee (A)
Lockhart (A)
Snowy Valleys (A)
Temora (A)
Wagga Wagga (C)