



CANBERRA REGION
JOINT ORGANISATION

Regional Waste and Sustainable Materials Strategy

2022-27

9 December 2022



Acknowledgment of Country:

We acknowledge Country and pay respect to the Traditional Owners and Custodians of the land and waters across South East New South Wales. We recognise and honour their ancient cultures and their spiritual, cultural and physical connections with land, waters and community.

For over 70,000 year this Country has been inhabited and cared for by First Nations people from various mobs and dialects. We pay our respects and gratitude for their stewardship and for sustaining this land where we live, work, and visit. Their connection and understanding of the natural and cultural landscape is seen and heard through art, song, dance, and storytelling practices. We recognise the importance of these First stories, the contemporary stories of displacement, and the continued journey of self-determination in Australia.

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Acronyms

ACCUs	Australian Carbon Credit Units
ACT	Australian Capital Territory
APCO	Australian Packaging Covenant Organisation
C&D	Construction and Demolition
C&I	Commercial and Industrial
CALD	Culturally, and linguistically diverse
CDS	Container Deposit Scheme
CE	Circular economy
CRC	Community Recycling Centre
CRJO	Canberra Region Joint Organisation
CSP	Community Strategic Plan
DA	Development Application
DPIE	Department of Planning, Industry and Environment
DWM	Domestic Waste Management
DWMC	Domestic Waste Charges
EPA	Environment Protection Authority
EPL	Environment Protection Licence
EVs	Electric Vehicles
FO	Food Organics
FOGO	Food Organics Garden Organics
GHG	Greenhouse Gas Emissions
GMAC	General Managers' Advisory Committee
GO	Garden Organics
Ha	Hectares
ICT	Information and Communications Technologies
IoT	Internet of Things
L	Litre
LF	Landfill
LGA	Local Government Area
LGNSW	Local Government NSW
MRF	Materials Recycling Facility
MSW	Municipal Solid Waste
MUDs	Multi-Unit Dwellings

NSW	New South Wales
ORF	Organics Recycling Facility
PEF	Processed Engineered Fuel
PV	Photovoltaic Solar panel
RCG	Recycled crushed glass
RDF	Refuse Derived Fuel
RENEW	Regional Network for Effective Waste Management
RRC	Resource Recovery Centre
RVM	Reverse vending machine
t	Tonnes
TBL	Triple Bottom Line
TfNSW	Transport for NSW
WARR	Waste Avoidance and Resource Recovery
WARR Strategy	Waste Avoidance and Resource Recovery Strategy 2017 – 2021
WaSM	NSW Waste and Sustainable Materials Strategy 2041: Stage 1 – 2021-2027
WMF	Waste Management Facility
WTS	Waste Transfer Station

Executive Summary

Canberra Region Joint Organisation (CRJO) works in partnership with a voluntary group of ten councils (member councils) and two associate members. The CRJO Regional Waste and Sustainable Materials Strategy 2022-27 (the Strategy) and the Action Plan aligns with the goals and strategic direction of the NSW Waste and Sustainable Materials Strategy 2041- Stage 1: 2021-2027 (WaSM) and replaces the CRJO Regional Waste Strategy (2018-2023). It seeks to further improve regional waste management and encourage sustainable use of materials into the future.

The Strategy approaches resource recovery and an emerging circular economy (CE) by offering a dynamic, and adaptive framework which is responsive to changes at the regional, State and national level and beyond. It will guide and align the region with the NSW WaSM Strategy whilst retaining as much of the social, economic, and skills-based benefits of local transformation of waste as possible.

Key to delivering optimal regional outcomes and aligning with government policy objectives and funding initiatives is the identification of opportunities for improved regional outcomes. The Strategy considers how the region can:

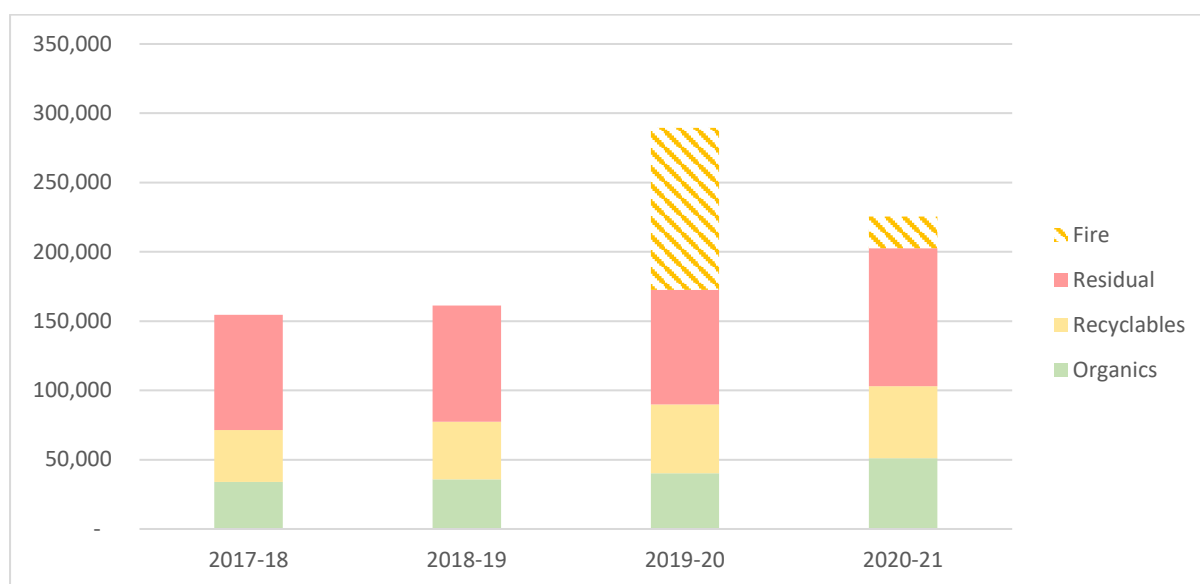
- Identify opportunities to provide existing waste services more efficiently and consider the viability of services provided by member councils in the region;
- Identify opportunities for member councils to utilise waste assets and resources in the most efficient manner to maximise waste avoidance, reduction and resource recovery;
- Review existing regional co-operation and co-ordination activities;
- Identify opportunities to deal with problem wastes in the area;
- Consider regional community education strategies; and
- Explore emerging or innovative waste management developments.

The guiding principles presented in the Strategy provide the basis for driving change within the waste management and resource recovery industry. The principles addressed here influence the approaches to facilitate greater diversion of waste from landfill, guide better practices and improve performance. The principles include the internationally recognised circular economy and waste hierarchy, along with state-based initiatives of net zero emissions and sustainable procurement.

The CRJO region lies in South-Eastern NSW and surrounds the ACT. It encompasses a total area of 63,000km² with a total population of 305,000 and approximately 125,000 households

(CRJO Profile.id). The population increased approximately to 810,000 with a total area of 70,000km² if inclusive of the associated CRJO members (ACT and Wagga Wagga City Council).

Like many other parts of the State, current trends and projected material generation is anticipated to increase for the foreseeable future. To slow, or reverse, this increase, CRJO will actively pursue projects that strive to achieve the NSW State WaSM Targets as outlined within this Strategy. However, at this stage, across the three main material streams within the region; recyclables, organics and residual waste, that overall generation of material continues to increase.



CRJO Total Material Streams from 2017-18 to 2020-21

(Source: NSW EPA WARR Data, excluding ACT and Wagga Wagga City Council)

Across the period shown above, organics and residual (red-lid bin) waste has continued to increase while kerbside recycling remained relatively consistent. It is anticipated that with the mandated introduction of Food Organics and Garden Organics (FOGO), residual waste volumes will slightly decline as organics are captured within the new system. Furthermore, the significant waste related impact of the 2019-20 bushfires caused at least 150,000 tonnes of additional waste which was managed by the impacted member councils.

The direction of this Strategy has been formed through engagement and consultation with all member councils to facilitate and deliver opportunities for local and/or regional improvement across the CRJO. The member councils believe that improvements can be gained in the future from:

- A collaborative approach to education, planning, strategy development, delivery and funding assistance;
- A collaborative approach to procurement of services and infrastructure;
- Utilising innovative and realistic technologies to create environmental, social and economic benefits and efficiencies;
- A collaborative approach to infrastructure and services needs analysis such as infrastructure capacity, emissions reductions and risk mitigation;
- Transitioning to a more circular economy;
- Planning for a more resilient emergency and disaster waste management on a regional scale;
- Understanding material flow and having greater data accuracy, accountability and transparency; and
- Continue to facilitate a regional advocacy role on regulatory changes and funding opportunities.

Based on the strategic direction, the following vision is adopted for the Strategy:

To protect our regional communities and optimise economic development through better resource recovery and waste management.

Delivering the Strategy will be achieved through the implementation of the Action Plan. The Action Plan outlines the projects and initiatives required to improve waste management, resource recovery and circular performance within the CRJO region. The Action Plan is a standalone document which is supported by the Strategy and demonstrates alignment with the NSW WaSM Priorities while also presenting opportunities for funding across the next 5 years.

1 Introduction

Canberra Region Joint Organisation (CRJO) works in partnership with a voluntary group of ten councils (member councils) and associate members the ACT Government, Wagga Wagga City Council and Canberra Airport. CRJO member councils are:

- Bega Valley Shire Council;
- Eurobodalla Shire Council;
- Goulburn Mulwaree Council;
- Hilltops Council;
- Queanbeyan-Palerang Regional Council;
- Snowy Monaro Regional Council;
- Snowy Valleys Council;
- Upper Lachlan Shire Council;
- Wingecarribee Shire Council;
- Yass Valley Council.



Figure 1-1: Location CRJO Member Councils and Associate Members

CRJO membership provides a unique platform for the local councils to collectively pursue regional benefits and improve outcomes within these locales, including facilitating close regional cooperation, resource sharing, and cultivating shared investment and infrastructure development opportunities.

The CRJO Regional Waste and Sustainable Materials Strategy 2022-27 (The Strategy) and the implementation plan (Implementation Plan) aligns with the goals and strategic direction of the NSW Waste and Sustainable Materials Strategy 2041- Stage 1: 2021-2027 (WaSM) and replaces the CRJO Regional Waste Strategy (2018-2023). It seeks to further improve regional waste management and encourage sustainable use of materials into the future.

During the development of the Strategy, the member councils were engaged and consulted through a variety of means including one-on-one online meetings, face-to-face and online workshops, and presentations. The member councils provided valuable local input to assist in the preparation of a Strategy that addresses both regional and local needs relevant to the CRJO region.

1.1 Purpose

The Strategy approaches resource recovery and an emerging circular economy (CE) by offering a dynamic, and adaptive framework which is responsive to changes at the regional, State and national level and beyond. It will guide and align the region with the NSW WaSM Strategy whilst retaining as much of the social, economic, and skills-based benefits of local transformation of waste as possible.

The desired future vision, objectives and challenges of individual member councils underpins development of the Draft Strategic Direction and Vision for the Strategy. This includes identification of State waste management priorities including WaSM, regional strategic directions and regional / local priorities, funding, and resource availability.

The Strategy aligns with key WaSM-associated plans and frameworks including the *NSW Plastics Action Plan*, *Guide to Future Infrastructure Needs*, aligns with the National Waste Policy and Packaging Targets and addresses best-available, evidence-based regional and local data, plans and strategies.

Key to delivering optimal regional outcomes and aligning with government policy objectives and funding initiatives is the identification of opportunities for improved regional outcomes based on an evidence-based approach to improved regional infrastructure needs assessment and delivery and advancing these to support growth of a regional circular economy. The Strategy considers how the region can:

- Identify opportunities to provide existing waste services more efficiently and consider the viability of services provided by member councils in the region;
- Identify opportunities for member councils to utilise waste assets and resources in the most efficient manner to maximise waste avoidance, reduction and resource recovery;
- Review existing regional co-operation and co-ordination activities;
- Identify opportunities to deal with problem wastes in the area;
- Consider regional community education strategies; and
- Explore emerging or innovative waste management developments.

1.2 Document Structure

The Strategy document describes the policy setting, at a national, state, regional and local level. It then has a more detailed look at the current state of waste and resource recovery in the CRJO region, describing the strategic objectives of the new Strategy and how this will be delivered with specific actions over the next 5-year period.



Source: CRJO

2 Policy Context

The frameworks of regulations, policies, and guidelines, at the local, regional, state and national level, relevant to waste management, resource recovery and circular economy are presented in the following sections.

2.1 National Framework

The National Waste Policy – *Less Waste, More Resources* was released by the Department of the Environment and Energy in 2018 and provides a framework for collective action by businesses, governments, communities, and individuals until 2030. The policy identifies the following seven targets:

1. Ban the export of waste plastic, paper, glass and tyres, commencing in the second half of 2020;
2. Reduce total waste generated in Australia by 10% per person by 2030;
3. 80% average resource recovery rate from all waste streams following the waste hierarchy by 2030;
4. Significantly increase the use of recycled content by governments and industry;
5. Phase out problematic and unnecessary plastics by 2025;
6. Halve the amount of organic waste sent to landfill by 2030; and
7. Make comprehensive, economy-wide and timely data publicly available to support better consumer, investment and policy decisions.

2.2 State Framework

The NSW government released the *NSW Waste and Sustainable Materials Strategy 2041: Stage 1 – 2021-2027* (WaSM) as the first stage in a 20-year plan that focuses on the environmental benefits and economic opportunities to reduce waste, improve waste management, and increase material recycling.

The WaSM Strategy aims to reduce waste generated and increase recycling through adoption of the Targets outlined in Figure 2-1.

To achieve the WaSM targets of halving food waste to landfill and achieving net zero emissions from organics in landfill by 2030, the government will require the separate collection of:

- Food and garden organics from all NSW households by 2030; and
- Food waste from businesses that generate the highest volumes, including large supermarkets and hospitality businesses, by 2025.

Based on an assessment of waste and circular economy infrastructure needs over the next decade and beyond the government has identified three key areas to focus on – residual waste, organics, and plastics. Recovery and recycling infrastructure will need to keep pace with demand and to support this there will need to be investment in new and upgraded facilities from now to 2030 to prevent any shortfall in capacity.

Getting the right infrastructure in the right place will be critical to recover, reuse and extend the life of most materials. The WaSM *Guide to Future Infrastructure Needs 2021* reviews the waste infrastructure requirements in NSW to underpin change.



Figure 2-1: NSW WaSM Targets

(Source: NSW Waste and Sustainable Materials Strategy 2041: Stage 1 – 2021-2027)

The *NSW Plastics Action Plan* supports the NSW Waste and Sustainable Materials Strategy 2041. The *NSW Plastics Action Plan* will assist in delivering the following targets from the WaSM Strategy:

- Phase out problematic and unnecessary plastics by 2025;
- Reduce the total waste generated by 10% per person by 2030;
- Achieve an average 80% recovery rate of resources from all waste streams by 2030;
- Significantly increase the use of recycled content by government and industry;
- Reduce plastic litter items by 30% by 2025;
- Reduce the overall litter by 60% by 2030; and
- Triple the plastics recycling rate by 2030.

2.3 Regional Framework

There are 14 regional organisations across NSW which each supporting councils through better planning, economic development and service delivery. CRJO has several working groups including the Resource Recovery Working Group and Waste Education Working Group which are represented by the Waste Managers or Waste Education Officers respectively.

Resource Recovery and Waste Education Working Groups meet periodically to discuss operations, infrastructure and services all with an aim to boost regional collaboration, knowledge sharing and improve the resource recovery system within the region. The working groups, along with the preparation of this Strategy form the conduit between the member councils and CRJO, providing a voice to State and Federal Government and access to regionally supported grant funding programs.

2.4 Local Framework

The *Local Government Act 1993* sets out the legal framework, governance, powers, and responsibilities of councils in New South Wales. The Act sets out the functions of councils, including its service functions such as, providing community health, recreation, education & information services, environmental protection, and waste removal & disposal.

A *Community Strategic Plan (CSP)* is a key element within the integrated planning and reporting framework which all councils in NSW have a legislative obligation to adhere to. The CSP addresses four key questions for the community:

- Where are we now?
- Where do we want to be in ten years time?
- How will we get there?

- How will we know when we have arrived?

Along with a CSP, each of the member councils have a Waste and Resource Recovery Strategy which outlines the strategic and operational direction for waste management within its council. Where possible these framework documents for each member council were considered and utilised to inform and support the development of this regional Strategy.

A more detailed review of the policy context is provided within Appendix A.



Source: CRJO

3 Guiding Principles

The guiding principles presented in the Strategy provide the basis for driving change within the waste management and resource recovery industry. The principles addressed here influence the approaches to facilitate greater diversion of waste from landfill, guide better practices and improve performance. The principles include the internationally recognised circular economy and waste hierarchy, along with state-based initiatives of net zero emissions and sustainable procurement.

3.1 Circular Economy & Waste Hierarchy

NSW is transitioning to a circular economy over the next 20 years. A circular economy aims to 'close the loop on waste' by minimising what we throw away and using and reusing our resources efficiently, making them as productive as possible. It is an alternative to the traditional linear economy (take, make, use, dispose), which refers to taking resources, making goods that are then bought and used to then be disposed of as waste (Figure 3-1).

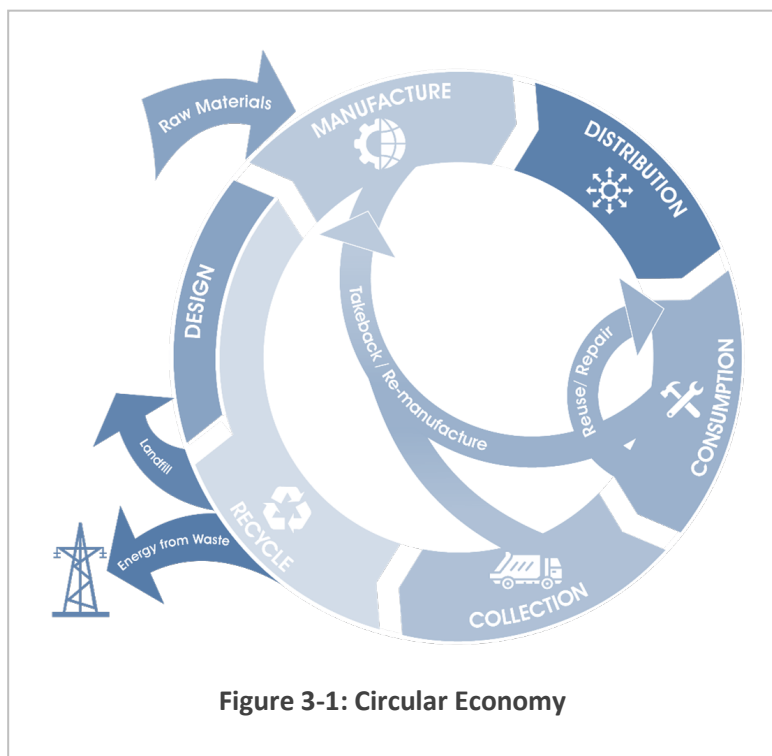


Figure 3-1: Circular Economy

The *NSW Circular Economy Policy Statement* (NSW EPA, 2019) guides the ambition and approach to a circular economy and establishes seven principles to maximise the use and value of resources including:

- Sustainable management of all resources;
- Valuing resource productivity;
- Design out waste and pollution;
- Maintain the value of products and materials;
- Innovate new solutions for resource efficiency;
- Create new circular economy jobs; and
- Foster behaviour change through education and engagement.

Benefits of implementing a circular economy concept include job creation, reduction in carbon emissions and improved resource efficiency.



The Waste Management Hierarchy is an internationally adopted principle and concept which lists waste management options in order of preference according to their sustainability and environmental impacts.

The Waste Management Hierarchy has been adopted within the Strategy as the basis for classifying and assessing the various resource recovery options which are being considered to assist CRJO to improve waste management across the region. As shown in Figure 3-2, options which achieve outcomes higher up the

Waste Management Hierarchy are preferred over those located further down the Hierarchy.

3.2 Net Zero Emissions

Climate change is affecting communities across Australia and across the globe. The NSW Government's *Net Zero Plan Stage 1: 2020-2030* is the foundation for the State's action on climate change and its goal to reach net zero emissions by 2050. It outlines the NSW Government's plan to act and protect our future in collaboration with industry, communities, and households. Delivery of the Plan is aimed at growing the economy, creating jobs, and reducing emissions to ensure New South Wales is well placed to prosper in a low carbon world.

The Plan aims to deliver a 50% cut in emissions by 2030 compared to 2005 levels as the first stage to achieving net zero emissions by 2050. By reducing emissions, local councils can help to increase the resilience of their communities and act as a catalyst for NSW to meet its net zero emissions goals.

NSW councils have a key role in the shift to net zero emissions as leaders, place makers and through their connection to local communities. Local councils can support the transition through reducing their own emissions across their operations and through the provision of essential services such as waste management, transport, planning and infrastructure for their residents and businesses.

3.3 Sustainable Procurement

Sustainable procurement takes into consideration the economic, environmental, social and governance impacts of any purchase with the four factors referred to as the quadruple bottom line and relate to a total purchase cost, and not just the upfront dollar expense (LGNSW, Sustainable Procurement Guide).

In terms of the sustainable procurement practices, the following emphasise the entire life cycle of the product or service:

- Devising strategies that reduce demand and extend the life of the product;
- Planning what happens with a product at the end of the contract – i.e. how will it be reused, recycled, treated or disposed;
- Considering costs over the life of the product or service and policies in the planning process;
- Encouraging sustainable solutions and innovation in tenders; and
- Measuring and improving sustainability throughout the life of the procurement.

Approaching procurement sustainably allows councils and the waste management and resource recovery industry to meet economic, environmental, social and governance requirements, while improving opportunities for a more circular system across the entire supply chain.



Source: CRJO

4 Where are we today?

CRJO has active member councils who collaborate and participate in knowledge sharing, initiatives and activities to improve overall waste and resource recovery performance within the region. Since the development of the former regional strategy, CRJO has implemented a variety of projects with success and provided strong waste related advocacy and guidance to member councils. The following section outlines the regional profile for CRJO, the challenges that have recently been faced by the member councils and a summary of key successes delivered within the group.

4.1 Regional Profile

The CRJO region lies in South-Eastern NSW and surrounds the ACT. It encompasses a total area of 63,000km² with a total population of 305,000 and approximately 125,000 households (CRJO Profile.id). The population increased approximately to 810,000 with a total area of 70,000km² if inclusive of the associated CRJO members, ACT and Wagga Wagga City Council.

Like many other parts of the State, current trends and projected material generation is anticipated to increase for the foreseeable future. To slow, or reverse, this increase, CRJO will actively pursue projects that strive to achieve the State WaSM Targets as outlined within this Strategy. However, at this stage, across the three main material streams within the region; recyclables, organics and residual waste, it can be seen from Figure 4-1 that overall generation of material continues to increase.

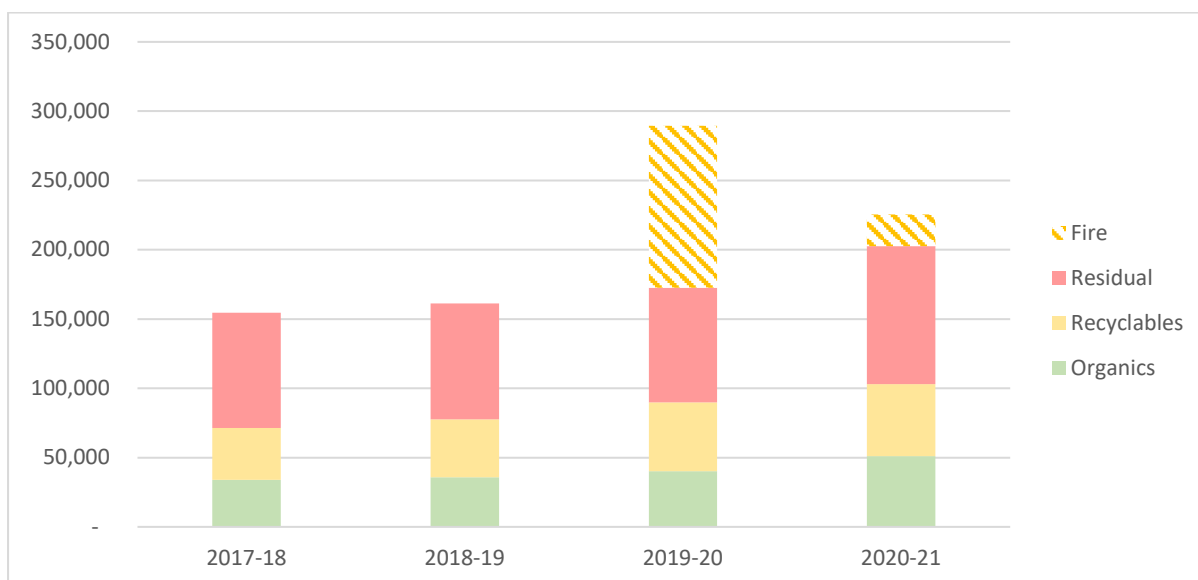


Figure 4-1: CRJO Total Material Streams from 2017-18 to 2020-21

(Source: NSW EPA WARR Data, excluding ACT and Wagga Wagga City Council)

Across the period shown in Figure 4-1, organics has continued to increase. The increase in this stream is expected to continue with the introduction of the mandate for FOGO collections across the State. Recycling remained relatively consistent however, had a significant increase in 2020-21 which may have been a result of the recycling efforts following the disasters in the region. Since 2018-19, the residual waste stream, which comprises more than 50% of the total material generated, has steadily increased resulting in a significant amount of waste being landfilled within the region. It is anticipated that with the widespread introduction of FOGO, residual waste volumes will slightly decline as organics are captured within the new system. At a more granular level, most member councils mirror these trends across all three streams as shown in more detail in Appendix B.

Furthermore, the significant waste related impact of the 2019-20 bushfires caused at least 150,000 tonnes of additional waste which was managed by 6 of the impacted member councils. As a result, this nearly doubled the amount of waste that had to be managed within the region during that period. Moreover, the impact on waste management services and infrastructure was likely greater, since not all impacted Councils had bushfire waste data available.

To obtain an understanding of the potential growth in material volumes into the future and to ensure that sufficient capacity exists within the region to manage this material, projections of the material streams were produced. The projections considered several factors including *Profile.id* population forecasts, the Department of Planning and Environment's (DPE's) population growth and the average growth in material generation for each member council based on recent material data trends.

For the three material streams (recycling, organics and residual waste), the mandated implementation of FOGO kerbside collections by 2030 was considered when developing the projections. However, it should be noted that several member councils already provide this service so the impact on the forecast is not as dramatic as expected. Figure 4-2 shows the material projections using the material trends average growth where FOGO is implemented by all remaining member councils in 2030. It is anticipated that some councils may implement the FOGO services prior to 2030, however, this presents the results if it was implemented as late as possible.

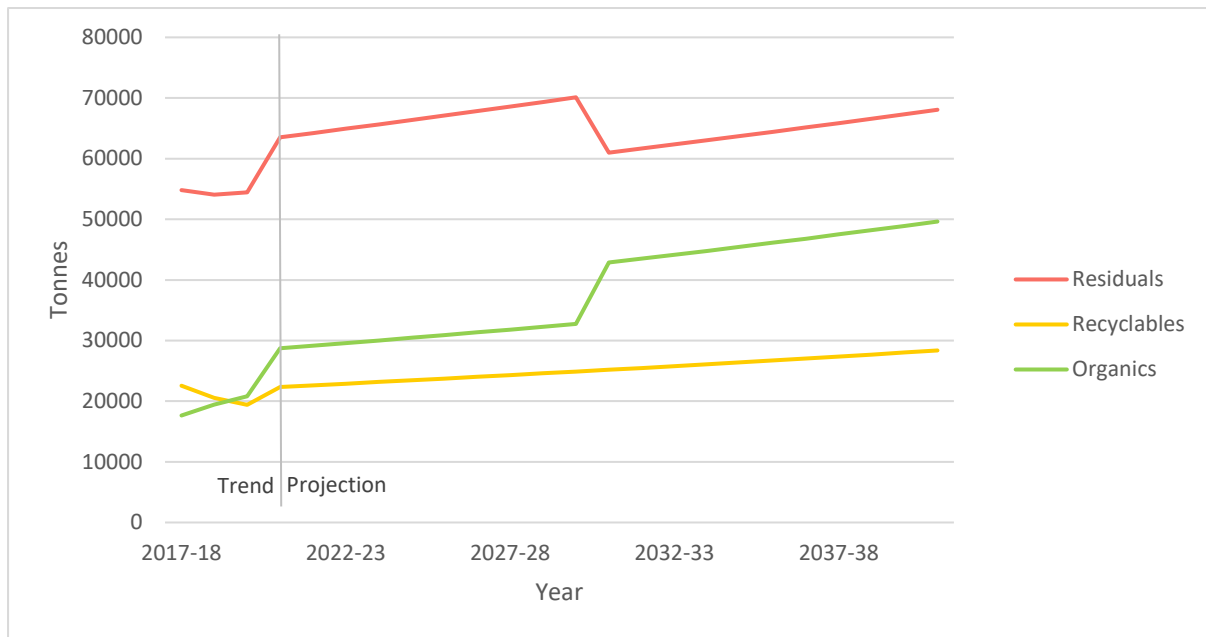


Figure 4-2: Material Projections to 2040-41

It can be seen from Figure 4-2 that the residual waste stream continues to be the largest of the three streams. Notably, this stream has the most potential to cause environmental harm, given its mixed composition. The residual stream should be the focus of several programs targeting it holistically, applying both waste hierarchy and circular economy principles.

The increase in FOGO tonnes is based on sourcing it from the residual stream, and this is reflected in Figure 4-2 which shows a mirrored decrease in residuals. The modelling assumed that 50% of organic material from the residual bin was captured, with residual bins containing approximately half organics across most member councils. Therefore, the increase in organics across the next 10 years will require strategic planning to ensure the region can efficiently and effectively manage this growing stream, noting that some capacity already exists.

The following table provides an indication of those member councils who have, and those yet to introduce, a three bin FOGO kerbside service along with the percentage of households serviced within the LGA. Please note data is from 2020/21 and household FOGO collection services may have increased for some member councils and households that do not have a kerbside collection service may have access to FOGO drop-off and processing services through resource recovery centres within their respective council area.

Table 4-1: Member Council FOGO Services

Member Council	FOGO Services (Y/N)	Households with service (2020/21)*
Bega Valley Shire Council	Y	51.8%
Eurobodalla Shire Council	N	-
Goulburn Mulwaree Council	Y	62%
Hilltops Council	N	-
Queanbeyan-Palerang Regional Council	Y	3.7%
Snowy Monaro Regional Council	Y	13.2%
Snowy Valleys Council	Y	Service available after 2020/21 WARR Data
Upper Lachlan Shire Council	N	-
Wingecarribee Shire Council	N	-
Yass Valley Council	N	

*Source WARR Data (2020/2021)

Each of the member councils play their part in contributing to the region’s performance, with further details regarding each council’s waste management services, infrastructure, challenges and aspirations detailed in Appendix C along with a summary of each member councils waste and resource recovery strategies. In addition, there is a brief profile summary regarding the CRJO Associate Members also within Appendix C.

4.1.1 CRJO Member Infrastructure

Table 4-2 provides a summary of the waste and resource recovery infrastructure managed by the member councils and the Associate Members. Further details can be found in Appendix C.

Table 4-2: Government Waste and Resource Recovery Infrastructure

CRJO	Government Entity	Waste and Resource Recovery Infrastructure	Landfill	RRC	Organic Processing	Tip Shop	CRC
Members	Bega Valley Shire Council	Central Waste Facility (near Bega)	✓				
		Merimbula Community Recycling Centre		✓	✓	✓	✓
		Bemboka		✓			
		Bermagui		✓		✓	
		Candelo		✓		✓	
		Eden		✓		✓	
		Wallagoot		✓		✓	
	Eurobodalla Shire Council	Surf Beach Facility	✓			✓	✓
		Moruya		✓		✓	
		Brou	✓			✓	
	Goulburn Mulwaree Council	Goulburn	✓		✓	✓	✓
		Marulan	✓				
		Tarago		✓			
	Hilltops Council	Victoria Street Facility			✓		
		Redhill Road Facility (Young)	✓				
		Boorowa			✓		
		Murrumburrah			✓		
		Galong			✓		
		Jugiong			✓		
		Bendick Murrell	✓				
		Bribbaree	✓				
		Frogmore			✓		
		Koorawatha	✓				
		Milvale	✓				
		Monteagle			✓		
		Murringo			✓		
		Reids Flat	✓				
		Rugby			✓		
		Rye Park	✓				
	Wyangala			✓			
Queanbeyan-Palerang Regional Council	Nerriga			✓			
	Braidwood			✓		✓	
	Bungendore			✓		✓	
	Bywong			✓			
	Captain Flats			✓			
	Queanbeyan			✓		✓	
Snowy Monaro Regional Council	Bombala		✓				
	Cooma		✓		✓	✓	
	Jindabyne		✓			✓	
	Adaminaby			✓			

CRJO	Government Entity	Waste and Resource Recovery Infrastructure	Landfill	RRC	Organic Processing	Tip Shop	CRC	
		Berridale		✓				
		Bredbo		✓				
		Delegate		✓				
		Nimmitabel		✓				
		Numeralla		✓				
Members	Snowy Valleys Council	Adelong		✓				
		Batlow		✓				
		Khancoban		✓				
		Talbingo		✓				
		Tumbarumba		✓			✓	
		Tumut		✓	✓*		✓	
	Upper Lachlan Shire Council	Waste and recycling centres at Crookwell		✓				
		Gunning		✓				
		Collector		✓				
		Taralga		✓				
		Bigga		✓				
		Tuena		✓				
	Wingecarribee Shire Council	Resource Recovery Centre (Moss Vale)		✓		✓	✓	
	Yass Valley Council	Binalong transfer stations		✓				
		Bookham transfer stations		✓				
		Bowning transfer stations		✓				
		Gundaroo transfer stations		✓				
Murrumbateman Landfill		✓	✓					
Wee Jasper transfer stations			✓					
Yass transfer stations			✓					
Associate Members	ACT	Landfill at Mugga Lane (Symonston)	✓					
		MRF at Hume		✓	✓*			
		Organics recovery facility constructed by 2025			✓*			
	Wagga Wagga City Council	Gregadoo	✓	✓			✓	
		Collingullie		✓				
		Currawarna		✓				
		Galore		✓				
		Humula		✓				
		Mangoplah		✓				
		Tarcutta		✓				
		Uranquinty		✓				

*Under Construction



Source: CRJO

4.1.2 Private Infrastructure

The following table outlines the relevant known recycling, organics or landfilling infrastructure operated within the region by private businesses. Further detail is provided in Appendix D.

Table 4-3: Known Private Waste and Resource Recovery Infrastructure

Material Activity	Type /	Known Infrastructure
Commingled or single stream dry recycling		<ul style="list-style-type: none"> • Endeavour Industries (Goulburn) • Kurrajong Recycling (Wagga Wagga) • Pact Group Holdings, Cleanaway Waste Management and Asahi Beverages (Albury) • Eloura Association (Young)
Organics processing		<ul style="list-style-type: none"> • Veolia Woodlawn (Tarago) • Martin Fertilizers (Yass) • Blue Ridge Quarry - Eurobodalla (Bodalla) • Landtasia (Mulloon) • Corkhill Bothers (Symonston, ACT)
Landfilling		<ul style="list-style-type: none"> • Bowral Waste Centre - Inert Landfill (Bowral) • Bellette's Bulk Bins - Landfill (Tumut) • Bald Hill Regional Quarry - Landfill (Jugiong) • Veolia Woodlawn - Landfill (Tarago) • Hi-Quality Waste Management - Landfill (Windellama)

In addition to the infrastructure listed above, it is suggested that CRJO approach and engage with large companies within the region such as Bega Cheese (Bega), Visy (Tumut) and others such as large universities and hospitals to commence discussion regarding a circular economy and how governments and private enterprise can work collaboratively to deliver circular objectives.

4.2 Regional Challenges

The CRJO region (excluding its Associate Members) encompasses 63,000km² of varying lands, mountains and coastline presenting a number of opportunities, along with a number of challenges. The member councils are faced with significant geographical and transport challenges due to dispersed decentralised localities, towns and cities which culminates in significant operational and service delivery costs to provide a suitable, sustainable waste and resource recovery service to the community.

During the preparation of this Strategy, the member councils were engaged and consulted to understand their challenges. The key challenges facing the member councils included the following:

- The cost of transport and/or the lack of economies of scale;
- The introduction of the FOGO mandate to all households including rural and remote areas;
- The financial and environmental risks associated with legacy landfills;
- The cost to service rural / remote communities with sustainable services and infrastructure;
- Uncertainty regarding long-term landfill capacity and alternatives/contingencies;
- Uncertainty regarding long-term processing capacity and contingencies;
- Lack of problem/hazardous Community Recycling Centre (CRC) services;
- Lack of local or regional level disaster and resilience planning;
- Difficulties in impacting or influencing construction and demolition (C&D) and/or commercial and industrial (C&I) behaviour change or landfill diversion;
- Inconsistent data accuracy and reporting requirements along with poor visibility of material produced within the private sector restricts circular projects; and
- Opposition to the development of Energy from Waste (EfW) by some councils within their local jurisdictions.

It can be seen that the member councils were in alignment with most of the challenges raised. The alignment between member councils demonstrates that the challenges are common and present several opportunities for this Strategy to identify solutions. Alignment on projects and programs will continue to facilitate collaboration between member councils which in turn can

create broader benefits. A workshop was held with member councils which raised these challenges and are summarised in Appendix E.

However, it should be noted that CRJO has member councils with a variety of waste and resource recovery capability, capacity and resources, and this often presents difficulties in identifying initiatives that suit everyone's needs and desires. The Strategy is therefore more flexible than past iterations and applicable to a range of specific council challenges and/or opportunities.

4.3 Past Performance

CRJO has been active in the last 5 years delivering a number of projects funded by State and Federal governments and supported by the member and associate members. Projects undertaken by CRJO have involved a variety of stakeholders and collaborators and have resulted in significant waste and resource capacity, improvements and performance within the region.

CRJO has been successful in attracting a range of grants which provided opportunities to run regional or sub-regional waste and resource recovery related projects. Table 4-4 outlines the recent programs that were run by the CRJO as part of the previous regional waste strategy.

Table 4-4: CRJO Projects

Project	Description	Funding (ex GST)
Household Chemical Cleanout events- yearly	Organise yearly household chemical cleanout events, +17 events/year	\$150,000/year covering 50% of costs
CRC Education funding	Promotional activities CRC- inclusive implementation of new CRC small drop off stations in 2021	\$60,000/year
CDS funding- one off fund	CDS promotion- providing free bins/signage etc to councils/charities/schools	\$50,000
School Waste Education	Assisting councils to provide waste education in schools throughout the region	\$40,000/year
Bin Trim Grant	Worked with a consultant to assess 400 businesses to increase diversion of waste from landfill → to more recycling	\$240,000
Food Donation Grant	Food Donation Officer improved regional networks of food donation charities and potential donors to increase food donation in the region and improve/strengthen the network in CRJO region	\$106,410
Bushfire Green Waste Assessment Grant	Assessing 2020 bushfire green waste volumes in 5 CRJO councils	\$50,000
Illegal Dumping Grant	Improve illegal dumping data: 4 councils (QPRC, HT, UL, Yass)	\$20,000
Litter Project Snowy Monaro	Improve infrastructure at rest stops along the Monaro Hwy to reduce litter	\$75,000
Workshops/training organised by CRJO	Landfill management training, litter enforcement, social media, community based social media, workplace chemistry, etc.	Funded from Regional Waste funding

Another key project was the development of the Regional Waste Prospectus 2020.

Regional Waste Prospectus 2020:

In partnership with the ACT government, CRJO drafted the Regional Waste Prospectus 2020, advocating for the needs of entire region to the Commonwealth to enable successful implementation of the Council of Australian Governments (COAG) waste export ban. The Prospectus sort to identify recycling projects, potential plant sites and seek funding from the Commonwealth to develop them, particularly facilities to sort mixed plastic materials, paper and cardboard and glass, and turn them into usable products.

Building on the successes of recent regional projects and feedback received from CRJO member councils together with the ACT, there is a strong desire to continue and increase performance through collaboration. This is designed to protect regional communities and optimise economic development opportunities through better resource recovery, waste management and circular approaches into the future.



Source: CRJO

5 Where do we want to get to?

The direction of this Strategy has been formed through engagement and consultation with all member councils to facilitate and deliver opportunities for local and/or regional improvement across the CRJO. This section presents the opportunities that were identified by the member councils, the Strategic Direction and Strategic Vision that were adopted based on the opportunities, along with acknowledging the Strategy's alignment with WaSM Priority Areas, Themes and Targets.

5.1 Opportunities for the Future

When consulted during the formulation of this Strategy, the member councils conceptualised several potential opportunities that would assist and improve waste and resource recovery services and infrastructure within the region. In particular, the following opportunities were raised:

- Consistent messaging and/or support from CRJO regarding waste and resource recovery across regional or sub-regional areas to promote the correct use of services, infrastructure and/or the implementation of FOGO;
- Undertake regional or sub-regional procurement projects to promote greater economies of scale and support the implementation, or improve existing services and/or infrastructure;
- Investigate options to share or collaborate in establishing waste management infrastructure on a sub-regional basis including landfills, MRFs or organics facilities and understand regional capacity to cater for future demands;
- Investigate possibilities to install landfill gas capture systems at landfills across the region to reduce emissions and alleviate amenity concerns;
- Monitor regulatory activities and seek guidance from the EPA regarding legacy landfill closure requirements and funding arrangements to support this;
- Explore the use of innovative technology, smart systems and artificial intelligence to generate greater efficiencies in services, infrastructure and/or data accuracy/capture;
- Commence planning and building resilience for emergency and disaster waste management by developing a database of temporary waste handling sites where material can be temporarily stored to facilitate sorting in order to preserve landfill airspace. There is a strong regional commitment to put in place better regional emergency arrangements and formal agreements on alternative disposal sites for resilient waste management during disasters;
- Investigate and map material flows across the region to assist in developing circular economy projects while also obtaining greater data accuracy, ensuring accountability and proving transparency to assist in making informed decisions while also simplifying any data reporting obligations;

- Commence planning for the development of a regional circular economy strategy and explore opportunities to implement sub-regional circular economy pilot projects that can be utilised to create new markets or inform future projects.

Furthermore, grant funding opportunities were seen as critical to improvement within the region as the cost to provide improved services and infrastructure was highlighted as a significant impediment by member councils.

These opportunities set the strategic outlook and guided the creation of the Strategic Direction and Vision for the Strategy.



Source: CRJO

5.2 Strategic Direction

The strategic direction shapes the vision of the regional Strategy. Through consultation with member councils, it is believed that improvements can be gained in the future from:

- A collaborative approach to education, planning, strategy development, delivery and funding assistance;
- A collaborative approach to procurement of services and infrastructure;
- Utilising innovative and realistic technologies to create environmental, social and economic benefits and efficiencies;
- A collaborative approach to infrastructure and services needs analysis such as infrastructure capacity, emissions reductions and risk mitigation;
- Transitioning to a more circular economy;
- Planning for a more resilient emergency and disaster waste management on a regional scale;
- Understanding material flow and having greater data accuracy, accountability and transparency; and
- Continue to facilitate a regional advocacy role on regulatory changes and funding opportunities.

5.3 Strategic Vision

Based on the Strategic Direction, the following vision is adopted for the Strategy:

To protect our regional communities and optimise economic development through better resource recovery and waste management.

5.4 WaSM Priority Areas and Themes

The Strategy has a 20-year horizon and aligns the Action Plan with the five year 'Stage 1' of WaSM from 2022 to 2027. The Strategy supports and aligns with the WaSM priority areas. By developing and implementing Strategic Objectives and Actions which successfully deliver outcomes sought by each priority area, CRJO will build capacity, reduce emissions and protect the environment. The Priority Areas are detailed in Table 5-1.

Table 5-1: WaSM Priority Areas

Priority Area	Context
Meeting future infrastructure and service needs	As waste volumes continue to grow, infrastructure and services will need to keep pace. We need to ensure we have the capacity to meet our critical future needs, such as residual waste capacity, as well as stimulating investment in a pipeline of innovation
Reducing carbon-to-atmosphere emissions from waste and its management	Transitioning to a circular economy means increasing our resource efficiency and reducing our carbon footprint. If we can make our materials more productive by improving their durability through design, reusing or repairing them, recycling and remanufacturing them or extracting their embodied energy, we can reduce our reliance on emissions-intensive virgin materials
Protection of the environment and human health	If poorly managed, waste can cause enormous damage to our natural environment and threaten the health and well-being of our community. Pollution from waste can be caused by littering, illegal dumping and mishandling of hazardous wastes, and it costs NSW millions of dollars each year. Maintaining strong regulations will help to stop this waste pollution, while engaging with businesses and consumers will help to drive positive behaviour change

(Source: NSW EPA Waste Delivery Plan)

In addition to the priority areas, the EPA nominated the categorisation of the regional strategies into the following four themes which encompass a broader scope for initiatives to deliver improvements across the State:

- Avoid or reduce;
- Recover resources;
- Protect the environment; and
- Strategic collaboration.

The Strategic Objectives (Section 6) and Action Plan summary (Section 7) are presented demonstrating alignment with the WaSM Priority Areas and/or Themes.

To provide further guidance for actions within the CRJO region, the following sub-theme were utilised to prepare a comprehensive Action Plan that addressed a wide variety of initiatives to assist all member councils deliver performance improvement across the region:

- CRJO Sub-Themes:

- Disaster resilience and waste management planning;
- Strategic planning for future waste and resource recovery infrastructure needs;
- Support for Aboriginal communities waste management;
- Managing plastic waste and pollution;
- Managing illegal dumping/asbestos contaminated materials;
- Local Government procurement actions to support a circular economy;
- Climate change and low carbon economies; and
- Regional waste education.

Utilising the Strategic Direction and Vision, while aligning with the WaSM priority areas and themes, will ensure the CRJO Regional Waste and Sustainable Materials Strategy is comprehensive and caters for all member councils needs and desires now and into the future.



Source: CRJO

5.5 Targets and KPIs

CRJO and its member councils fully support the targets within the WaSM Strategy. The targets are, however, often aspirational for regional/rural areas yet CRJO will strive to achieve the targets over the next 10 years. To support this notion, CRJO commits to the following targets and reporting against the associated key performance indicator (KPIs).

Table 5-2: Targets and KPIs

Target	KPI	#	Source Data
Advocate for the reduction of total waste generated by 10% per person by 2030	Annual reduction in waste generated per person	1	EPA WARR Reports
Advocate for an average recovery rate of 80% for residual waste, recycling and organics by 2030	Annual increase in recovery rate for residual waste, recycling and organics	2	EPA WARR Reports
Significantly increase the use of recycled content by governments and industry	Annual increase in the use of recycled content	3	Councils
Support the phase out of problematic and unnecessary plastics by 2025	Annual decrease in use of problematic and unnecessary plastics	4	Compositional Audits
Halve the amount of organics waste sent to landfill by 2030	Annual reduction in organics sent to landfill	5	Compositional Audits + EPA WARR Reports
Reduce plastic litter items by 30% by 2025	Annual reduction in plastic litter	6	EPA Litter Audits
Reduce the overall litter by 60% by 2030	Annual reduction in litter	7	EPA Litter Audits
Triple the plastic recycling rate by 2030	Annual increase in plastic recycling	8	Compositional Audits + EPA WARR Reports
Net Zero Emissions by 2050	Annual decrease in emissions	9	Councils

These targets provide clear guidance for the CRJO member councils to support and contribute to the WaSM targets and deliver reduced waste generation and improved recycling and resource recovery. The KPIs provide a metric to report against on an annual basis which demonstrates an ongoing contribution to the targets. The KPI reference number is utilised within the Action Plan.

To facilitate CRJO in getting where its wants to, Strategic Objectives and Actions were prepared based on input from the member councils who identified opportunities within the region to improve waste management and resource recovery services and infrastructure while aspiring to be leaders in the circular economy. The Objectives are detailed within the following section, while the Actions are detailed within the Action Plan, and demonstrate how the CRJO will achieve its objectives for the future.



Source: CRJO

6 Strategic Objectives

Regional groups across NSW are seeking to more actively collaborate through the WaSM Strategy and funding opportunities to streamline reporting requirements and create funding application synergies. In particular, the regional groups continue to collaborate by forming an aligned set of objectives. The following table (Table 6-1) presents the CRJO’s amended version of the Objectives that the Regional Groups composed as part of a demonstration of collaboration and alignment of regional strategies across the State. The Objectives align with other Regional Groups while also relating more specifically to the CRJO region based on feedback from the member councils.

Table 6-1: Strategic Objectives

WaSM Themes				Strategic Objectives	WaSM Priority Areas		
Avoid Reduce	Recover Resources	Protect The Environment	Strategic Collaboration		Meeting our future infrastructure and service needs	Reducing carbon emissions through better waste and materials management	Building on our work to protect the environment and human health from waste pollution
✓	✓			Advocate for the reduction of total waste generated by 10% per person by 2030		✓	✓
✓	✓			Actively work to reduce FOGO sent to landfill	✓	✓	✓
✓	✓			Investigate and support innovative circular solutions to regional waste management	✓	✓	✓
✓	✓		✓	Assist in building equity in waste and resource recovery programs	✓		✓
	✓			Advocate for an average recovery rate of 80% for residual waste, recycling and organics by 2030	✓	✓	✓
	✓	✓		Support the implementation of the NSW Plastics Plan		✓	✓
	✓	✓		Assist councils to achieve sustainable procurement outcomes		✓	✓
	✓		✓	Support future waste and resource recovery infrastructure needs	✓		✓

WaSM Themes				Strategic Objectives	WaSM Priority Areas		
Avoid Reduce	Recover Resources	Protect The Environment	Strategic Collaboration		Meeting our future infrastructure and service needs	Reducing carbon emissions through better waste and materials management	Building on our work to protect the environment and human health from waste pollution
		✓		Regionally collaborate to support the reduction of litter and/or Illegal dumping on the environment			✓
		✓		Support the NSW Govt to meet their target of net Zero emissions by 2050 through better waste and materials management	✓	✓	✓
		✓		Engage and educate the community to correctly dispose of problem and hazardous waste			✓
		✓	✓	Facilitate regional collaboration to improve, engage and educate regarding disaster resilience	✓		✓
			✓	Facilitate regional collaboration to plan new waste management initiatives and to improve current waste management practices	✓	✓	✓
			✓	Continue to foster effective communication and collaboration with all stakeholders	✓	✓	✓
			✓	Continue to advocate and contribute to policy decisions on behalf of the region	✓	✓	✓
			✓	Advocate for a user pays, waste management and resource recovery system	✓	✓	✓

The regional groups, CRJO and its member councils have developed a set of Strategic Objectives that are comprehensive across all waste, resource recovery and circular aspects while also aligning with the WaSM Themes and Priority Areas proposed by the State government. The Strategic Objectives for the CRJO, set the foundation for improvement across the region through the delivery of this Strategy and its associated Action Plan.

7 How are we going to get there?

Delivering the Strategy will be achieved through the implementation of the Action Plan. The Action Plan outlines the projects and initiatives required to improve waste management, resource recovery and circular performance within the CRJO region. The Action Plan is a standalone document which is supported by the Strategy.



Source: Stock

The Action Plan contains a variety of actions that address each of the WaSM Priority Areas and Themes, along with CRJO's sub-themes and assist the region to strive towards the WaSM Targets. The WaSM Themes have been utilised to structure the Action Plan.

Several actions address more than one WaSM Theme and therefore are shown more than once within the Action Plan summaries in the following sections. To provide clarity regarding duplicate actions across multiple Themes, the Actions have been numbered individually from 1 to 51, with the same reference number allocated to each action no matter which Theme it addresses.

The Action Plan provides an indication of the timeline for project delivery via a priority allocated to each action by the member councils. However, the timeline for delivery is a guide and can be altered where necessary if a relevant funding program becomes available. The timeline for delivery of each action is split into the following three phases:

- Year 1 (2022 - 2023);
- Years 2 to 3 (2024 - 2025); and
- Years 4 to 5 (2026 - 2027).

Each Action is listed a responsible entity. In most cases this is CRJO and the Regional Coordinator however, in other instances, a member council or group of member councils may be responsible. Distributing who is responsible places greater ownership on the projects while providing greater capacity to achieve more. Responsibility is largely influenced by the type of project or action, in particular, whether it's a local, sub-regional or regional initiative. However, collaboration will be critical and utilising the human and financial resources of the CRJO members will ensure greater success.

KPIs align with the WaSM targets and have been referenced 1 to 9 as outlined in Table 5-2. Each action within the Action Plan is allocated a KPI reference number. In some instances, actions may contribute towards more than one KPI and therefore, will reference several KPIs. CRJO is committed to reporting against the KPIs on an annual basis.

CRJO is committed to reviewing the Action Plan on an annual basis to adjust for changes to projects or timelines as funding, policy and/or industry changes occur, or to reevaluate targets and KPIs if necessary.

The Action Plan is a separate supporting document. The following table provides a summary of the Actions within the plan and how each action aligns with the WaSM Priority Areas and Themes.

Table 7-1: Actions Summary

WaSM Themes				#	Actions	WaSM Priorities		
Avoid Reduce	Recover Resources	Protect The Environment	Strategic Collaboration			Meeting our future infrastructure and service needs	Reducing carbon emissions through better waste and materials management	Building on our work to protect the environment and human health from waste pollution
✓			✓	1	Develop regional waste education guidance accessible to all councils, to support the correct use of recycling and organics.	✓		
✓			✓	2	Develop regional media accessible to all councils, to support the correct use of recycling and organics.	✓		
✓			✓	3	Facilitate the use of a shared resource for waste education.	✓		
✓			✓	4	Develop an interactive digital program for waste education.	✓		
✓			✓	5	Facilitate knowledge sharing/projects/lessons learnt within the region through online and face-to-face workshop/webinars supported by an online data portal/library.	✓		
✓			✓	6	Develop a regional waste education program in collaboration with ACT	✓		
			✓	7	Develop a procurement principles guideline (including ACCC requirements for regional projects)	✓		
			✓	8	Undertake composition audits.	✓		

			✓	9	Investigate Regional Waste Collection Software	✓		
			✓	10	Facilitate the use of a shared resource for procurement.	✓		
	✓		✓	11	Investigate and implement a regional procurement for metal collection, organics processing, concrete crushing, solar panel collection, kerbside collections and/or mattresses or any other key material stream identified.	✓		
			✓	12	Update CRJO Regional Waste Infrastructure Prospectus based on a waste perspective	✓		
	✓		✓	13	Develop a regional solution for FOGO processing.	✓	✓	
	✓	✓	✓	14	Establish a mobile CRC for Yass, Hilltops and Upper Lachlan	✓		✓
		✓	✓	15	Develop a business case for a regional landfill gas capture procurement	✓	✓	✓
		✓	✓	16	Implement a regional procurement for landfill gas capture	✓	✓	✓
		✓	✓	17	Investigate and map closed legacy landfills across the region.	✓		
			✓	18	Engage with EPA and advocate for an appropriately funded legacy landfill grant program	✓		✓
			✓	19	Investigate the feasibility of 'real time' waste reporting.	✓		
			✓	20	Investigate an online regional information and data collection, dashboard and hosting platform/portal.	✓		
			✓	21	Improve data capture and accuracy at WMFs without a weighbridge.	✓		

			✓	22	Conduct a 'lessons learnt' activity from recent natural disasters and develop a guidance document.	✓		✓
			✓	23	Develop an emergency Waste Management Plan Template for councils	✓		
			✓	24	Develop a Regional emergency Waste Management Plan	✓		✓
✓			✓	25	Collaborate with research institutions to develop circular economy opportunities via Think Tanks or similar	✓		
			✓	26	Undertake a regional material flow analysis	✓		
✓			✓	27	Develop a scoping study for circular economy projects	✓		
✓			✓	28	Develop a regional circular economy strategy	✓		
		✓		29	Alternative fuel collection vehicle study and trial.	✓	✓	
	✓	✓		30	Support the consolidation of landfills and closure or conversion into resource recovery centres.	✓		✓
			✓	31	Establish a proactive cross-jurisdictional committee with ACT NoWaste and Wagga	✓		
			✓	32	Establish a MoU with ACT NoWaste for joint funding and collaboration	✓		
	✓	✓		33	Regional Aboriginal communities waste management Strategy	✓		✓
				34	Fees, Charges & Landfill Levy Study - Comparison of member councils, explore harmonisation and impact the levy would have on the region.	✓		

		✓		35	True cost of Landfill study	✓		✓
				36	Solar public place compactor bin study and trials	✓		
		✓	✓	37	Cross Jurisdictional Illegal Dumping Awareness and Prevention Campaign	✓		✓
		✓	✓	38	Cross Jurisdictional Regional Illegal Dumping Strategy	✓		✓
		✓	✓	39	Cross Jurisdictional Regional Litter Prevention Strategy	✓		✓
	✓		✓	40	Facilitate and support the transition to, or improvement of, FOGO collections and processing programs.	✓		
		✓		41	Explore options for onsite collections from MUDs including residual, recycling and organics	✓		
✓		✓	✓	42	Support delivery of Single Use Plastic Ban through educational campaigns and advocate for plastic waste prevention			✓
	✓		✓	43	Explore opportunities to participate in a Textile Recycling Program.	✓		✓
	✓		✓	44	Investigate Microfactories and establish a trial facility within the region.	✓		
✓		✓	✓	45	Implement an asbestos awareness campaign and/or provide training/guidance regarding its correct management.			✓
✓	✓	✓		46	Explore plastic reduction and/or innovative processing opportunities.	✓		✓
	✓			47	Continue to investigate new recyclable material streams for councils and/or industry to develop markets and manage.		✓	

	✓		✓	48	Support councils to actively inform residents what happens with recycling streams and ensure evidence is publicly available through communications and education programs.		✓	
	✓	✓		49	Support the establishment, improvement and/or expansion of resource recovery centres and landfills to include Reuse/Buy Back (tip) Shops.		✓	✓
	✓	✓		50	Support the improvement of existing resource recovery centres and landfills to facilitate greater resource recovery and protection of the environment.		✓	✓
	✓	✓	✓	51	Monitor and assist in developing Extended Producer Responsibility (EPR) and/or Product Stewardship schemes.		✓	✓

APPENDIX A: Policy Context

A.1 National Framework

The Commonwealth Government has limited constitutional powers to engage directly in domestic waste management issues. This responsibility largely rests with State, territory, and local governments. The role of the Commonwealth Government has evolved in recent years as it has taken an increasingly strategic involvement in waste policy development.

National Waste Policy

The National Waste Policy – *Less Waste, More Resources* was released by the Department of the Environment and Energy in 2018 and provides a framework for collective action by businesses, governments, communities, and individuals until 2030.

The policy identifies five overarching principles underpinning waste management in a circular economy, including:

- Avoid waste;
- Improve resource recovery;
- Increase use of recycled material and build demand and markets for recycled products;
- Better manage material flows to benefit human health, the environment, and the economy; and
- Improve information to support innovation, guide investment and enable informed consumer decisions.

The policy guides continuing collaboration between all Australian governments, businesses, and industry. It does not remove the need for governments, businesses, and industries to implement tailored solutions in response to local and regional circumstances.

National Plastics Plan

Australia's *National Plastics Plan*, released on 4th March 2021 aims to drive a closed loop supply chain on plastics and address plastic waste in a multi-pronged way, proposing wide-ranging initiatives such as plastic-free beaches, new labelling guidelines, eliminating expanded polystyrene consumer packaging fill and food and beverage containers, and greater consistency in kerbside bin collections.

Actions to achieve these goals under the plan will:

- Phase out the most problematic plastics between July and December 2022 and introduce National Packaging Targets by 2025;
- Work to make beaches and oceans free of plastic;
- Introduce legislation to ensure Australia takes responsibility for its plastic waste;
- Invest to increase recycling capacity;
- Research to find new recycling technologies and alternatives to unneeded plastic; and

- Support the community to help Australia’s recycling efforts.

(Australian Government, 2021)

Australian Packaging Covenant Organisation (APCO) – 2025 Targets

The Australian Packaging Covenant Organisation (APCO) is the entity in charge of managing and administering the Australian Packaging Covenant (the Covenant), which is a document that sets out how governments and businesses share responsibility for managing the environmental impacts of packaging in Australia.

The Covenant is agreed between the APCO, representing industry participants in the packaging supply chain, and commonwealth, State, and territory governments, and endorsed by environment ministers.

In 2018 Australia established the 2025 National Packaging Targets. These targets have been established to create a new sustainable pathway for the way packaging is managed in Australia.

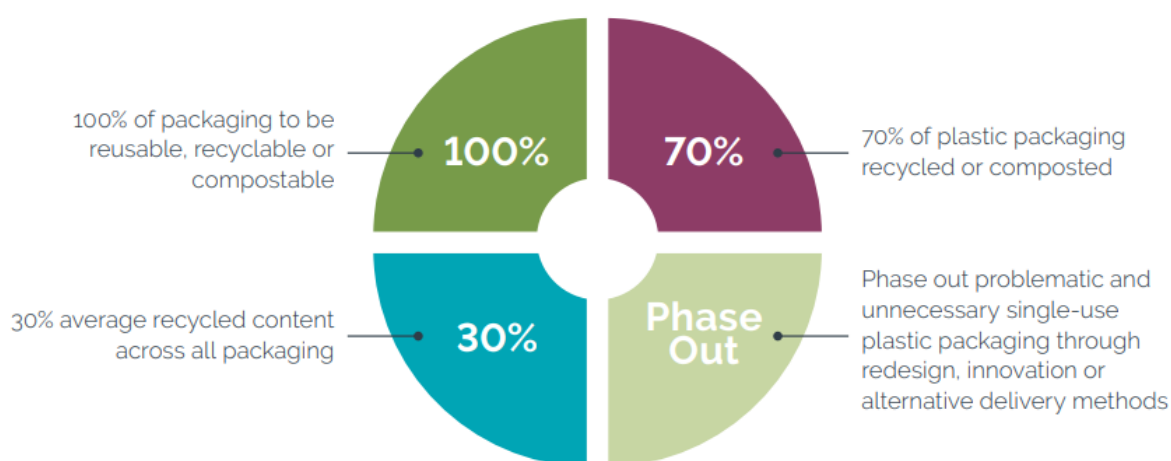


Figure: 2025 National Packaging Targets

Australian Packaging Covenant - National Waste Policy (environment.gov.au)

These targets will require a complete and systematic change in the way we create, collect, and recover product packaging. Targets will apply to all packaging that is made, used, and sold in Australia and are in line with broader sustainable packaging shifts that are taking place globally. These shifts are aiming to reduce the volume of material entering landfill, improve recycling rates, and increase the use of recycled material in future packaging.

The *Australian packaging consumption and recycling data 2018–19* report (APCO, 2021) shows improvements to packaging sustainability in a range of areas including a reduction in the volume of plastic (-6 percent) and an increase in the volume of recyclable packaging on market. Challenges continue to be the recycling rate of plastics, as whilst the recovery rate increased from 16 percent to 18 percent, significant progress is still required to meet the 2025 Target of 70 percent.

Emissions Reduction Fund

The Emissions Reduction Fund aims to reduce emissions by providing incentives for businesses, landowners, State and local governments, community organisations and individuals to adopt new practices and technologies. Legislation to implement the Emissions Reduction Fund came into effect on 13 December 2014.

There are many activities which are eligible to earn Australian Carbon Credit Units (ACCUs) under the scheme. One ACCU is earned for each tonne of carbon dioxide equivalent (tCO₂-e) stored or avoided by a project. ACCUs can be sold to generate income, either to the Government through a carbon abatement contract, or on the secondary market. The potential waste management activities that may earn ACCUs include the introduction of a new or expanded purpose-built facility for processing solid waste that would have otherwise gone to landfill, to process commercial, industrial, construction, demolition and/or Class I or II municipal solid waste or utilize an enclosed composting facility. Councils and/or private industry that undertake these types of projects in accordance with the approved emissions reduction methods can then sell the resulting ACCUs to the Clean Energy Regulator or an alternate buyer on the secondary market. Council may consider the benefits of this approach within its longer-term strategic direction.

Waste Export Ban

In March 2020, the Australian, State and territory governments, and the Australian Local Government Association agreed to regulate the export of waste glass, plastic, tyres, and paper while building Australia's capacity to generate high value recycled commodities and associated demand. The *Recycling and Waste Reduction Act 2020* and new rules made under the Act set out the export controls for each type of regulated waste material. Exporters need to hold a waste export licence and declare each export in line with the phased implementation dates below:

- All waste glass banned by 1 January 2021;
- Waste plastics banned between July 2021 and July 2022;
- All whole tyres including baled tyres banned by December 2021; and
- Mixed paper and cardboard banned by 2024.

Waste glass, regulated since January 2021 is either that recovered from an industrial, commercial, or domestic activity or a by-product of an industrial, commercial, or domestic activity. Phase one of the plastic exports rules, operational since July 2021, limit the export of waste plastics to that sorted into single resin or polymer type or processed with other materials into processed engineered fuel. From 1 July 2022 you cannot export plastic that has only been sorted - all plastics will need to be sorted and processed.

A.2 State Framework

The NSW State framework provide the objectives, requirements, and directions for the management of waste. The legislation describes the requirements for transporting, storing, processing, managing, recovering, and disposing of waste and recyclable material.

NSW Waste and Sustainable Materials Strategy 2041

In June 2021, the NSW government released the *NSW Waste and Sustainable Materials Strategy 2041: Stage 1 – 2021-2027* (WaSM) as the first stage in a 20-year plan that focuses on the environmental benefits and economic opportunities to reduce waste, improve its management, and increase material recycling. The NSW WaSM 2041 sets a long-term vision for managing waste, planning for infrastructure, reducing carbon emissions, and refocusing the way NSW produces, consumes, and recycles products and materials. The WaSM updates NSW's priorities for waste and resource recovery to reflect the *NSW Circular Economy Policy Statement*, the *Net Zero Plan Stage 1:2020–2030* and the *National Waste Policy Action Plan*.

To compliment the first stage of WaSM, the government also released the *NSW Plastics Action Plan* which sets out how problematic plastic materials will be phased out and the *NSW Waste and Sustainable Materials Strategy: A guide to future infrastructure needs* which sets out the investment pathway required to meet future demand for residual waste management and recycling.

WaSM makes the case for change on the basis that NSW creates around one-third of Australia's total waste, and this is forecasted to grow from 21 million tonnes to nearly 37 million tonnes by 2041. At current rates of generation and recycling, the residual waste landfills servicing Greater Sydney are likely to reach capacity within the next 15 years. The non-residual landfills will reach capacity within the current decade. In some regional areas landfill capacity is also likely to expire this decade.

Demand for recycled materials, particularly from the household and commercial waste streams, has steadily contracted with the closure of export markets. This has led to an oversupply of recycled materials and a corresponding decline in value, particularly for poorly sorted or hard-to-recycle paper and plastic.

In response to this the resource recovery industry has started to transition to more resilient business models, focused on value-adding and the production of high-quality, well-sorted recycled materials. As the prices for recycled material have declined but the cost of sorting and processing has increased, costs for councils, ratepayers and businesses are also under pressure.

In 2014, NSW set a target for landfill diversion of 75 percent of all waste by 2021. However, as of 2019/20, it had only reached 65 percent. Construction and demolition (C&D) recycling had performed the best at a rate close to 80 percent, followed by commercial and industrial recycling at 53 percent. Municipal solid waste diversion (mostly household waste) had plateaued at just over 46 percent (NSW EPA, 2020). WaSM was positioned as an opportunity to refocus efforts and target investment where it is most needed.

The WaSM aims to reduce waste generated and increase recycling through adoption of the Targets outlined in the below figure.



Figure: NSW WaSM Targets

(Source: NSW Waste and Sustainable Materials Strategy 2041: Stage 1 – 2021-2027)

The State government has also committed to:

- Developing a NSW regional litter prevention strategy before June 2023;
- Reporting annually on the progress towards meeting these targets prior to a review of WaSM in 2027;
- Establishing new indicators to track the progress of infrastructure investment and cost of waste services; and

- Developing a new measure of the emissions performance of waste and materials management which tracks performance across the lifecycle of materials.

Mandating FOGO separation for all households and some businesses

Both the WaSM and the accompanying infrastructure needs guide focus on better management of organic waste. In 2019 an estimated 2.5 million tonnes of organic waste (such as food organics, garden organics, timber, and textiles) was sent to landfill. Emissions from organic waste decomposing in landfill make up more than 2 percent of total net annual emissions in NSW. Methane emissions from the decomposition of organic material in landfills can last up to 25 years in the atmosphere. WaSM indicates that increased diversion of organics from landfill and processing technologies like composting and anaerobic digestion are an important first step towards reducing emissions from waste.

The amount of organic material going to landfill can be reduced by collecting it separately and processing it at specialised organic waste facilities. WaSM recognises that many councils already provide a separate bin to collect garden organics from households and some (less than a third) also collect food organics.

Other organic material, like textiles and timber, finds its way into household bins. Audits of residential kerbside residual waste bins in the waste levy area in NSW show that:

- The proportion of food and garden organics waste overall was 41 percent in 2019; and
- Councils that provided a separate food and garden organics collection service had a far lower proportion of these materials in the residual waste bin (25 percent) compared to councils with only garden organics (41 percent) or no organics collection (54 percent).

To achieve the WaSM targets of halving food waste to landfill and achieving net zero emissions from organics in landfill by 2030, the government will require the separate collection of:

1. Food and garden organics from all NSW households by 2030; and
2. Food waste from businesses that generate the highest volumes, including large supermarkets and hospitality businesses, by 2025.

The government has committed to consulting with councils, businesses, and service providers on the best way to transition to these new arrangements, including the need for phasing in new or grandfathering existing contracts, managing the different needs of high-density housing, and working with service providers to ramp up processing capacity.

To help with the transition, the NSW Government will invest \$65 million over five years from 2023. The funding will support the rollout of new collection services, the development of more

processing capacity and a state-wide education campaign that will help households adjust to the changes and improve their recycling habits.

Infrastructure Needs

The transition to the source-separated collection of food and garden organics from households and source-separated collection of food organics from selected businesses will significantly increase the volume of clean organics entering the recycling system. Accordingly, there needs to be a corresponding capacity to reprocess this material.

Based on an assessment of waste and circular economy infrastructure needs over the next decade and beyond the government has identified three key areas to focus on – residual waste, organics, and plastics.

Recovery and recycling infrastructure will need to keep pace with demand and to support this there will need to be investment in new and upgraded facilities from now to 2030 to prevent any shortfall in capacity.

WaSM sets out three priority areas:

1. Meeting future infrastructure and service needs as waste volumes grow;
2. Reducing carbon emissions through better waste and materials management; and
3. Building on work to protect the environment and human health from waste pollution.

Getting the right infrastructure in the right place will be critical to recover, reuse and extend the life of most materials. The *WaSM Guide to Future Infrastructure Needs 2021* reviews the waste infrastructure requirements in NSW to underpin change.

While investment will largely be driven by industry, the NSW Government will play a role to help investment in the right place at the right time. WaSM indicates that, commencing in 2021 the Government will undertake feasibility assessments and engage with the community, local government and business about the infrastructure investment needed to meet the demands. It will undertake a coordination role to attract the right investment at the right time. The early priority will be to ensure there is a pipeline of residual waste management infrastructure, but it will also target complementary recycling and reprocessing infrastructure to help meet capacity gaps. This will involve coordinating functions across government, such as investment attraction, planning, environmental licensing, and grant funding.

Plastics Action Plan

The NSW Plastics Action Plan supports the NSW Waste and Sustainable Materials Strategy 2041. The NSW Plastics Action Plan outlines a variety of actions to address plastic across all elements of the plastic lifecycle (production, consumption, disposal, and recycling) including the following:

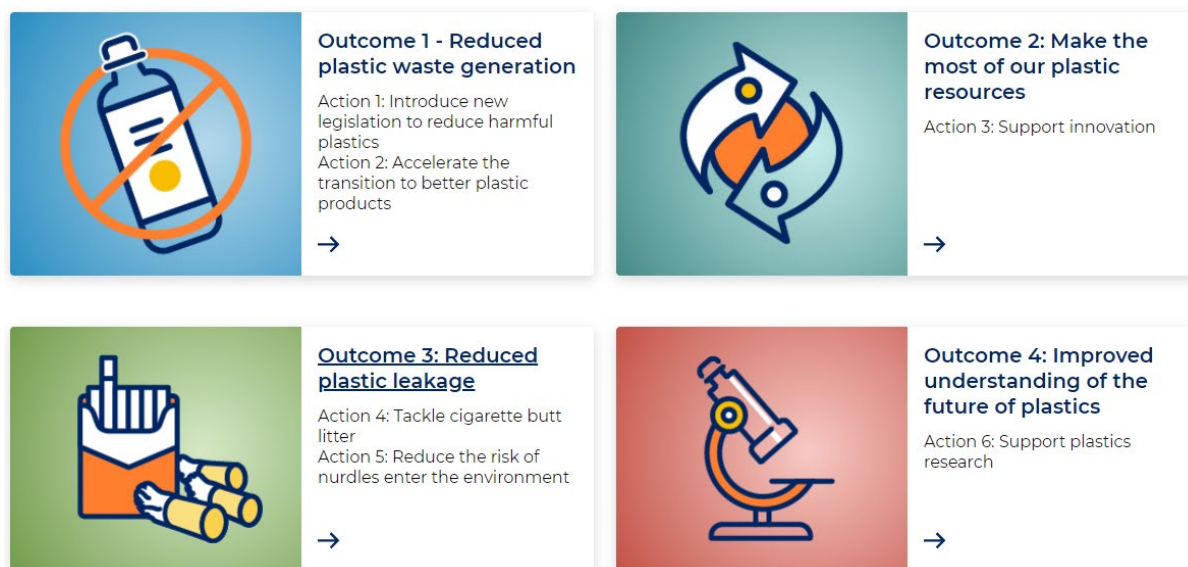


Figure: NSW Plastics Action Plan Actions

(Source: www.dpie.nsw.gov.au/our-work/environment-energy-and-science/plastics-action-plan)

There are four outcomes that will achieve better management of plastics, reduce the impacts on the environment and make the most of these resources, the outcomes are supported by six actions.

NSW Energy from Waste Infrastructure Plan

The *NSW Waste and Sustainable Materials Strategy 2041* commits to the adoption of a strategic approach to the role of thermal energy recovery from waste to ensure it protects human health and the environment and supports the transition to a circular economy. The recently released *NSW Energy from Waste Infrastructure Plan 2041* guides strategic planning for future thermal energy from waste facilities and outlines how the NSW Government will facilitate the establishment and operation of energy from waste infrastructure to manage genuine residual waste.

Waste can be thermally treated to recover the embodied energy in that material. The energy can be recovered as heat or as a solid, liquid, or gaseous fuel. These outputs can be used to generate electricity or used directly in machinery, vehicles, and industrial processes (NSW Government, 2021, pg. 2).

Energy proposals must represent the most efficient use of the resource, adequately manage the risks of harm to human health or the environment, and maximise the environmental, social, and economic benefits to communities.

‘Eligible waste fuels’ including biomass and residues are listed in Part 3 of the Policy Statement and defined in the Eligible Waste Fuels Guidelines. These are excluded from this Plan and

continue to be permitted across NSW where they comply with planning and regulatory frameworks.

The plan aligns with the *20-Year Vision for Regional NSW*. Thermal energy from waste facilities only be established, or permitted to operate, in key, identified priority infrastructure areas or by the exception listed as follows:

- West Lithgow Precinct;
- Parkes Special Activation Precinct;
- Richmond Valley Regional Jobs Precinct;
- Southern Goulburn Mulwaree Precinct; or
- At facilities that use waste, or waste-derived, feedstock to replace less environmentally sound fuels (including coal or petroleum-based fuels) thermally treated (or approved to be thermally treated) at the site, and the energy produced from the waste is used predominantly to power the industrial and manufacturing processes on-site, rather than exporting that energy to the grid.

The Southern Goulburn Mulwaree Precinct is located within the CRJO region within the Goulburn Mulwaree Council area and may pose opportunities for the member councils.

A.3 Regional Framework

CRJO

CRJO was formally established in 2017 when the NSW Parliament passed the *Local Government Amendment (Regional Joint Organisations) Act 2017*, to establish a network of joint organisations (JOs). The JOs are local government entities with legal powers to enable councils to work together at a regional level and with State agencies and other organisations to achieve better planning, economic development and service delivery outcomes in regional NSW. There are 14 regional organisations across NSW which each perform the functions similar to CRJO on behalf of their member councils. The groups are all coordinated by the NSW EPA through the RENEW NSW program.

CRJO has several working groups including the Resource Recovery Working Group and Waste Education Working Group which are represented by the Waste Managers or Education Officers respectively. The group is facilitated and coordinated by the Regional Waste Coordinator who is funded by the NSW EPA. The Regional Waste Coordinator reports directly to the CRJO's Executive Officer, who updates members on regional waste programs through the General Managers' Advisory Committee (GMAC).

Resource Recovery and Waste Education Working Groups meet periodically to discuss operations, infrastructure and services all with an aim to boost regional collaboration, knowledge sharing and improve the resource recovery system within the region. The working groups, along with the preparation of the Regional Waste and Sustainable Materials Strategy

2022-27 form the conduit between the member councils and CRJO, providing a voice to State and Federal Government and access to regionally supported grant funding programs.

South East and Tablelands Regional Plan 2041

The draft South East and Tablelands Regional Plan 2041 provides a long-term land use planning vision and framework for the region. It is developed in accordance with the *Environmental Planning and Assessment Act 1979* (EP&A Act) and is currently being reviewed.

Of particular note, the draft South East and Tablelands Regional Plan 2041 includes an objective (Objective 9) to 'Support the Development of a Circular Economy' and aligns with several aspects considered within this Strategy. The development of a circular economy is supported at a Federal, State and regional level and aligns with the Strategic Direction of this Strategy which seeks to transition to a more circular economy.

A.4 Local Framework

Local Government Act 1993

The *Local Government Act 1993* sets out the legal framework, governance, powers, and responsibilities of councils in New South Wales. Guiding principles for councils include:

- Carrying out functions in a way that provides the best possible value for residents and ratepayers;
- Planning strategically for the provision of effective and efficient services to meet the diverse needs of the local community;
- Working co-operatively with other councils and the State government to achieve desired outcomes for the local community; and
- Working with others to secure appropriate services for local community needs.

Councils may provide goods, services, and facilities, and carry out activities, appropriate to the current and future needs within their local community and of the wider public. The Act sets out the functions of councils, including its service functions such as, providing community health, recreation, education & information services, environmental protection, and waste removal & disposal. A council must also levy an annual charge for the provision of domestic waste management services for each parcel of rateable land for which the service is available.

Community Strategic Plans

A *Community Strategic Plan (CSP)* is a key element within the integrated planning and reporting framework which all councils in NSW have a legislative obligation to adhere to. This framework aims to streamline a council's operations and optimise the use of resources. The *CSP* addresses four key questions for the community:

- Where are we now?
- Where do we want to be in ten years' time?

- How will we get there?
- How will we know when we have arrived?

The implementation of the CSP is supported by a suite of integrated plans that include actions to support the strategies identified in the CSP. These include the following:

- Delivery program – 4 year plan that sets out the strategies from the CSP that will be priorities for the current council term
- Operational plan – annual plan containing detailed actions from the Delivery program
- Resourcing strategy – a suite of 3 key plans that support the implementation of the CSP focusing on finances, workforce and asset management.

Local Waste and Resource Recovery Strategies

Each of the member councils have a Waste and Resource Recovery Strategy which outlines the strategic and operational direction for waste management within its council. The documents currently being utilised for this purpose by each council are shown in the below table.

Table: Member council waste and resource recovery frameworks

Member Council	Title
Bega Valley Shire Council	Recycling Our Future 2018-28
Eurobodalla Shire Council	Eurobodalla Waste Strategy 2011-18 and Eurobodalla Waste Minimisation Policy (2022)
Goulburn Mulwaree Council	Waste Management and Disposal Policy (2017) and Strategic Business Plan Waste & Recycling (2017)
Hilltops Council	Waste Management and Resource Recovery Strategy (2021)
Queanbeyan Palerang Regional Council	Waste Strategy (2021)
Snowy Valleys Council	Zero Waste Strategy 2019-2030
Snowy Monaro Regional Council	Waste Management Strategy (2021)
Upper Lachlan Shire Council	2021 Planning an Integrated Water, Sewer, and Waste Strategy
Wingecarribee Shire Council	2019 Waste Services Review
Yass Valley Council	Waste & Recycling Strategy 2017 – 2027 (Draft)

Where possible these framework documents for each member council were considered and utilised to inform and support the development of this regional Strategy.

Furthermore, the waste related guiding documents from ACT and Wagga Wagga City Council were also considered namely; *ACT Waste Management Strategy - Towards a*

sustainable Canberra (2011-2025, and draft Wagga Wagga City Council Corporate Net Zero Strategy (2022).

APPENDIX B: Council Data

Residual Waste

Council	Tonnes				Waste Growth Rate (%)			
	2017-18	2018-19	2019-20	2020-21	2017-18 to 2018-19	2018-19 to 2019-20	2019-20 to 2020-21	Adopted (%)
Bega	12,524	11,827	11,008	11,783	0.94	0.93	1.07	0.98%
Eurobodalla	9,980	10,413	10,952	12,230	1.04	1.05	1.12	1.07%
Goulburn Mulwaree	10,409	12,966	11,633	17,399	1.25	0.90	1.50	1.21%
Hilltops	4,227	2,938	2,938	6,897	0.70	1.00	2.35	1.35%
Queanbeyan Palerang	15,647	15,292	20,287	16,014	0.98	1.33	0.79	1.03%
Snowy Monaro	7,647	8,495	4,770	5,643	1.11	0.56	1.18	0.95%
Snowy Valleys	3,546	4,311	150	7,690	1.22	0.03	51.27	1.10%
Upper Lachlan	4,920	2,850	3,035	4,518	0.58	1.06	1.49	1.04%
Wingecarribee	11,289	10,307	11,207	11,410	0.91	1.09	1.02	1.01%
Yass	3,020	4,346	6,729	5,847	1.44	1.55	0.87	1.29%
Total	83,208	83,744	82,710	99,430				1.10%

(Source: NSW EPA WARR Data, excluding ACT and Wagga Wagga City Council)

Recycling Waste

Council	Tonnes				Waste Growth Rate (%)			
	2017-18	2018-19	2019-20	2021-22	2017-18 to 2018-19	2018-19 to 2019-20	2019-20 to 2020-21	Adopted (%)
Bega	6,437	6,551	4,993	8,845	1.02	0.76	1.77	1.18%
Eurobodalla	6,219	6,151	6,461	7,727	0.99	1.05	1.20	1.08%
Goulburn Mulwaree	1,842	3,139	11,053	3,431	1.70	3.52	0.31	1.85%
Hilltops	1,021	1,038	993	2,947	1.02	0.96	2.97	1.65%
Queanbeyan Palerang	4,996	6,657	7,260	6,870	1.33	1.09	0.95	1.12%
Snowy Monaro	3,572	4,404	2,911	3,223	1.23	0.66	1.11	1.00%
Snowy Valleys	1,966	2,489	2,530	5,255	1.27	1.02	2.08	1.45%
Upper Lachlan	1,559	359	1,219	686	0.23	3.40	0.56	1.40%
Wingecarribee	6,771	8,673	9,412	8,724	1.28	1.09	0.93	1.10%
Yass	2,952	2,250	2,837	4,449	0.76	1.26	1.57	1.20%
Total	37,336	41,709	49,669	52,157				1.30%

(Source: NSW EPA WARR Data, excluding ACT and Wagga Wagga City Council)

Organic Waste

Organics	Tonnes				Waste Growth Rate (%)			
	2017-18	2018-19	2019-20	2020-21	2017-18 to 2018-19	2018-19 to 2019-20	2019-20 to 2020-21	Adopted (%)
Bega	5,513	7,049	7,137	15,379	1.28	1.01	2.15	1.48%
Eurobodalla	8,594	8,518	10,021	7,756	0.99	1.18	0.77	0.98%
Goulburn Mulwaree	1,727	3,055	2,478	2,927	1.77	0.81	1.18	1.25%
Hilltops	934	653	653	4,804	0.70	1.00	7.36	3.02%
Queanbeyan Palerang	5,401	7,231	10,429	6,910	1.34	1.44	0.66	1.15%
Snowy Monaro	1,792	1,027	642	1,070	0.57	0.63	1.67	0.95%
Snowy Valleys	-	-	-	150				1.25%
Upper Lachlan	-	150	200	400		1.33	2.00	1.25%
Wingecarribee	7,646	7,963	8,132	10,773	1.04	1.02	1.32	1.13%
Yass	2,439	150	600	800	0.06	4.00	1.33	1.80%
Total	34,046	35,796	40,291	50,968				1.48%

(Source: NSW EPA WARR Data, excluding ACT and Wagga Wagga City Council)

APPENDIX C: Member Councils & Associate Member Profiles

C.1 Bega Valley Shire Council

Bega Valley Shire Council (Bega Valley) is located on the south-eastern corner of the CRJO region with the Victorian border to the south, Snowy Monaro Regional Council to its west and the Eurobodalla Shire Council to the north. Bega Valley has a land area exceeding 6,200km², 66% of which is parkland. Its current population of 35,761 and is projected to increase to 38,138 by 2036.

Bega Valley has a three bin FOGO kerbside collection system with residuals and recycling being utilised by over 2/3 of resident households while FOGO is utilised by just over half. A key factor between the differing utilisation of the 3-bin system is associated with rural areas not needing the FOGO service. Problematic wastes that have been identified for Bega Valley are C&I, E-Waste, mattresses, road maintenance waste and soft plastics, with the availability of markets, for items recovered from these materials, a key challenge.

The Central Waste Facility is Bega Valley's main waste infrastructure located at Frogs Hollow near Bega. Additional smaller waste management facilities are located at Bemboka, Bermagui, Candelo, Eden, Merimbula and Wallagoot. The Merimbula facility houses both the Community Recycling Centre (CRC) and organics processing facility. Challenges regarding waste infrastructure include the establishment of long-term landfill space, organics processing practices and capacity, legacy landfills, leachate management and disaster waste.

In order to align with changing drivers within the waste industry and address waste management problems, Bega Valley's *Waste Management and Resource Recovery Strategy 2018-2028* outlines the council's themes and aspirations for the future including:

- Avoid and reduce waste generation;
- Increase recycling;
- Divert more waste from landfill;
- Better management of problem wastes;
- Reduce Litter;
- Reduce Illegal Dumping; and
- Review and develop Operations.

C.2 Eurobodalla Shire Council

Eurobodalla Shire Council (Eurobodalla) is located along the eastern boundary of the CRJO region with Bega Valley Shire Council to the south, Snowy Monaro Regional Council to the south-west and Queanbeyan Palerang Regional Council to the northwest. Additionally, while not a part of CRJO, the Shoalhaven City Council borders Eurobodalla to the north. Of council's 3,400km² land area, approximately 72% is undeveloped. The current population is 40,500 and is projected to increase to 45,500 within the next 15 years.

Eurobodalla has a three bin GO kerbside collection system with close to the maximum utilisation of services by each household. Increasing waste diversion is a challenge along with managing problematic types of materials including asbestos, C&D, C&I, disaster waste, E-waste, mattresses, solar panels, soft plastics, textiles and tyres.

The main waste facility for Eurobodalla resides at Surf beach. It operates a CRC and buy back shop as well as its landfill. Additional waste management are located at Brou and Moruya, both of which incorporate buy back shops. Eurobodalla is increasing its capacity for managing organics at Surf beach and its waste operations through the expansion of the WMF at Brou.

As a result of decreasing landfill space and an increasing population and tourism industry and the need for a sustainable waste management system council prepared the *Eurobodalla Waste Strategy 2011- 2018*, with the following themes and aspirations:

- Increase recovery and usage of materials in the three major waste streams and reduce waste;
- Increase the life of Councils waste management facilities;
- Reduce greenhouse gas emissions from waste facilities;
- Ensure Councils waste services are cost effective;
- Improve data collection of waste and recycling volumes;
- Educate the community on waste minimisation; and
- Develop future waste initiatives and additional improvements.

C.3 Goulburn Mulwaree Council

Goulburn Mulwaree Council (Goulburn Mulwaree) is located in the north-eastern area of the CRJO region with Queanbeyan Palerang Regional Council to the south, Upper Lachlan Shire Council to the northwest and Wingecarribee Shire Council to the northeast. Additionally, while not a part of CRJO, the Shoalhaven City Council borders Goulburn Mulwaree to the east. Goulburn Mulwaree is noted as having a land area in excess of 3,200 km², 69% of which is primary production and its current population of 32,138 is projected to increase to 37,702 by 2036.

In terms of waste services, Goulburn Mulwaree has a highly utilised three bin FOGO kerbside collection system with close to every household that possesses a residual bin also possessing a recycling and FOGO bin. It must be noted however that this figure represents just over 62% of the total households within the LGA. Recent challenges noted by council include transportation of waste, diversion from landfill of mixed waste and data availability/accuracy. Problematic wastes that have been identified for Goulburn Mulwaree are C&D, C&I waste and excess clean fill.

Goulburn Mulwaree has three waste management facilities in operation, located at Goulburn, Marulan and Tarago. Waste infrastructure within Goulburn Mulwaree will have increased

capacity and improved levels of services upon the completion of significant upgrades to the Goulburn Waste Management Centre including a Re-Use Hub (tip shop) and a CRC. The site currently has licence capacity to process up to 50,000tpa of organics.

In order to guide the future direction of the waste management operations of Goulburn Mulwaree, *The Strategic Business Plan- Waste & Recycling* was created. Within this document, the following themes were outlined for optimisation and/or improvement and have recently dictated council's strategic direction:

- Collections;
- Waste Disposal and Resource Recovery;
- Fees and Charges;
- Capital works; and
- Monitor and Review.

C.4 Hilltops Council

Hilltops Council (Hilltops) is located on the northwest corner of the CRJO region with the Upper Lachlan Shire Council to the east and Yass Valley Council area to the southeast. Hilltops is also bordered by other councils that are not part of CRJO: Cootamundra Gundagai, Temora, Bland, Weddin and Cowra. Hilltops current population is 19,216 and is projected to grow to 19,922 by 2036. Hilltops' land area exceeds 7,100 km² with approximately 98% of that area used for primary production.

The main waste management facility is located at Young with smaller facilities at Boorowa, Murrumburrah, Galong, Jugiong and smaller villages. Challenges identified within Hilltops include a lack of disposal/recycling options for problematic household waste (no CRC), several rural landfills and legacy landfills, limited landfill capacity and contingency and continued illegal dumping incidents (often from outside the CRJO region). Hilltops also utilises the landfilling services at the privately owned Bald Hill Quarry.

Hilltops has a three bin GO kerbside collection system with approximately half of residents utilising a recycling and GO bin. Hilltops has varying service offerings to its residents depending on their location within the local government area. Due to its location, Hilltops also experiences difficulties associated with the viable transportation of waste and management of problematic waste streams such as mattresses and tyres in particular.

Hilltops has undertaken recent community engagement and within the *Hilltops Waste Management and Resource Recovery Strategy* it is outlined how it will provide resource recovery and waste management services that meet community expectations, statutory obligations, fiscal responsibility and environment sustainability requirements. To this end, the following priorities were identified:

- Standardise waste services and fees across Hilltops - ensure they encourage waste minimisation and cost recovery;
- Upgrading waste management sites and ensuring safety, security and supervision are maintained;
- Redevelopment of other local and village landfill sites across Hilltops;
- Maintain licences for all relevant facilities;
- Remain an active member of regional waste groups;
- Waste minimisation practices and infrastructure; and
- Proactive management of problem wastes and illegal dumping.

C.5 Queanbeyan-Palerang Regional Council

Queanbeyan- Palerang Regional Council (Queanbeyan-Palerang) is located on the eastern boundary of the CRJO region with the Snowy Monaro Regional Council to the southwest, the ACT to the west, Yass Valley Council to the northwest, Upper Lachlan Shire Council to the northwest, Goulburn Mulwaree Council to the north and Eurobodalla Shire Council to the southeast. The land (5,300 km²) of Queanbeyan-Palerang is comprised of 54% primary production and contains a current population of approximately 63,400. This figure is expected to grow to 78,756 within the next 15 years.

Queanbeyan-Palerang has a mix of 3 bin kerbside collection systems with Braidwood, Bungendore and Captain Flats being provided with FOGO services while the remaining suburbs within the LGA receive only GO. It is anticipated that the remaining areas will transition to the FOGO service shortly. In relation to this service, Queanbeyan-Palerang is currently facing challenges associated with community expectations within new developments including a growing number of multi-unit dwellings (MUDs). Other key challenges identified by council include FOGO education and awareness, C&D waste capacity and recovery, green waste and FOGO management in rural areas and soft plastics recycling.

In addition to its landfill at Nerriga, Queanbeyan-Palerang has waste management facilities at Araluen, Braidwood, Bungendore which has a CRC, Bywong, Captain Flats, Majors Creek, and Queanbeyan where a CRC also resides. Challenges associated with batteries and fluorescent bulbs were identified along with the management of C&D waste.

In an effort to maximise landfill diversion and resource recovery within Queanbeyan-Palerang, council's *Waste Management Strategy 2019-2049* outlines the following strategic goals:

- Reducing total waste;
- Increasing average recovery rate from all waste streams;
- Increasing the use of recycled content;
- Phasing out problematic and unnecessary plastics;
- Reducing the amount of organic waste sent to landfill; and

- Improving community education.

C.6 Snowy Monaro Regional Council

Snowy Monaro Regional Council (Snowy Monaro) has a current population of 21,659 which is projected to grow to 21,885 by 2036. Snowy Monaro is located on the southern edge of the CRJO region with the Snowy Valleys council to the west, ACT to the north, Queanbeyan-Palerang Regional Council and Eurobodalla Shire Council to the northeast and Bega Valley Shire Council to the east. Snowy Monaro is noted to have a land area of approximately 15,100 km², 54% of which is primary production.

Snowy Monaro has three landfills located at Bombala, Cooma and Jindabyne; while six transfer stations are located at Adaminaby, Berridale, Bredbo, Delegate, Nimmitabel and Numeralla. Cooma and Jindabyne both have CRC services. Snowy Monaro experiences challenges in particular with the management of C&D and C&I waste across its jurisdiction. Additionally, it is noted that E-waste and soft plastics are problematic waste streams within the council area however, on a smaller scale than C&D and C&I waste.

Snowy Monaro has a three bin FOGO kerbside collection system with approximately 70% of households having a residual and recyclables bin while just over 25% have FOGO however, the current low utilisation of the FOGO service is explained by it only being available initially within the Cooma township as part of council's wider roll out.

In an effort to address past performance challenges, lack of consistency in services and facilities and increasing operating costs, the *Snowy Monaro Regional Council Waste Strategic Summary* outlines the following themes:

- Improve operational efficiency of waste management services and facilities;
- Optimise Councils waste management costs;
- Minimise the environmental impact of waste disposal, meeting NSW 20-year waste strategy targets; and
- Increase the accessibility and utilisation of waste facilities for residents.

C.7 Snowy Valleys Council

Snowy Valleys Council (Snowy Valleys) is located on the southwestern corner of the CRJO region with Yass Valley Council to the northeast, ACT to the east and Snowy Monaro Regional Council to the east. While not a part of CRJO, Snowy Valleys is also bordered to the west by Greater Hume, north-west by Wagga Wagga and north by Cootamundra Gundagai. Snowy Valleys has a current population of 14,901 spread across 8,900km², 59% of which is parks and reserves.

Snowy Valleys has recently implemented a three bin FOGO kerbside collection system with significant support for these services with high utilisation rates across each of the three collections. Six Resource Recovery Centres (RRCs) are currently active within the council area at Adelong, Batlow, Khancoban, Talbingo, Tumbarumba and Tumut with two CRC's located at the Tumut and Tumbarumba facilities. Council utilises the landfilling services at the privately owned Bald Hill Quarry. Council is also building a new organics processing facility at Tumut. Snowy Valleys geographic location presents challenges regarding the transportation of waste as well as the availability of markets for diverted materials. Other challenges experience by council includes legacy landfills, cost recovery, remediation of current sites and integrity/accuracy of waste data.

With the release of the *Snowy Valleys Council Zero Waste Strategy 2019-2030*, council has realised the business as usual approach is no longer viable financially, socially, technologically, environmentally or regulatorily. As such, the following themes are outlined within its strategy to transition from disposing waste to processing resources:

- Deliver waste education and advocate for behavioural change;
- Maximise resource recovery;
- Innovation and circularity;
- Data capture and intelligent decision making; and
- Service and infrastructure harmonisation and upgrade.

C.8 Upper Lachlan Shire Council

Upper Lachlan Shire Council (Upper Lachlan) is located on the northern edge of the CRJO region with Yass Valley Council to the southwest, Hilltops Council to the west, Wingecarribee Shire Council to the east and Goulburn Mulwaree to the southeast. Upper Lachlan is also bordered to the north by Cowra, Bathurst, Oberon and Wollondilly councils. Primary production utilises 91% of the 7,100km² land area and hosts a current population of 8,491.

Six Waste and recycling centres are currently active within Upper Lachlan located at Crookwell, Gunning, Collector, Taralga, Bigga and Tuena. Challenges experienced at the facilities include staff retention, data quality and, without a CRC, limited annual hazardous/problematic household waste collections. Additional problematic wastes to manage include gas bottles, mattresses and tyres.

Upper Lachlan has a three bin GO kerbside collection system that is uniformly utilised by approximately a third of the LGA. Transportation of waste and recycling is a substantial environmental and financial burden with recycling transported to Canberra and FOGO to also be processed outside the LGA.

Within *The Upper Lachlan Strategy Vision 2020*, the following approaches to minimise waste management risks and challenges were highlighted:

- Improving landfill operation, capacity and site security;
- Encouraging the minimisation of waste; and
- Conducting an assessment of sustainable waste management practices.

C.9 Wingecarribee Shire Council

Wingecarribee Shire Council is located on the north-eastern corner of the CRJO region with Goulburn Mulwaree Council to its southwest and the Upper Lachlan Shire Council to the west. Due to its northern location bordering, Wollondilly, Wollongong, Shellharbour, Kiama and Shoalhaven, it is the only CRJO council that pays the landfill levy. Wingecarribee's current population is 52,456 and is projected to increase annually by 1.5%. It has a land area of approximately 2,600 km², 75% of which is primary production or parkland.

Wingecarribee owns and operates one waste management facility, the Resource Recovery Centre at Moss Vale which manages a large variety of materials ready for sale, stockpiling, processing and/or transfer. Of note, the site contains a dual weighbridge, reuse shop, CRC and raised residual waste transfer station. The site accepts and manages both commercial and residential recycling and waste. Problematic materials for Wingecarribee include mattresses, hot water systems, inert waste and a growing number of solar panels. Council is formulating a master plan for the site to guide improvements for the next 15 years. 90% of households receive a three bin GO kerbside collection service with the residual and organics brought to the Resource Recovery Centre for consolidation and transfer.

Wingecarribee is currently preparing a new Waste Strategy with the following key themes being considered:

- Alignment with the focus areas outlined in the NSW WaSM and this CRJO Strategy;
- Waste avoidance, reduction and setting a landfill diversion target;
- Value of waste services;
- Domestic waste collection and processing (including bulky waste and FOGO);
- Contamination management in kerbside bins;
- Commercial and industrial waste;
- Construction and demolition waste;
- Litter and illegal dumping;
- Problem waste management;
- Waste education and information;
- Waste infrastructure;
- Regional collaboration; and/or
- Development controls for waste management.

C.10 Yass Valley Council

Yass Valley Council (Yass Valley) has a current population of 17,234 however, this is projected to increase to 27,315 within the next 15 years. Yass Valley borders the ACT to the north with Snowy Valleys Council to the south west, Hilltops Council to the northwest, Upper Lachlan Shire Council to the north east and Queanbeyan Palerang Regional Council to the southeast. Cootamundra Gundagai, (not part of CRJO), is to its west. Primary production accounts for 76% of the 4,000km² land area.

Yass Valley currently has a two bin kerbside collection system with approximately 60% of households utilising the service. There are waste transfer stations located at Binalong, Bookham, Bowning, Gundaroo, Murrumbateman, Wee Jasper and Yass. A small facility within Sutton accepts recycling only. Yass Valley utilises the privately operated Bald Hill Quarry for landfill services. Due to a lack of landfill contingency, residual waste management is recognised as a major potential challenge for the future.

Transportation and servicing costs, particularly for isolated rural communities, is a significant challenge across most facilities along with maintaining suitable site security. Additionally, small volumes of household hazardous wastes and the proximity to the ACT, has prevented the approval to establish a CRC in the area. Further challenging material streams include C&D waste, green waste contamination, timber and soft plastics.

In order to meet the levels of service required for waste services, the *Yass Valley Waste and Recycling Strategy 2017-2027* outlines the following principals and goals:

- Promote waste prevention, recycling, reuse , reprocessing and waste utilisation;
- Dispose of waste as a last resort;
- Apply user pays and polluter pays principals to waste management;
- Develop and maintain a Waste Management Strategy that reflects current practices and identifies future directions for Yass Valley Council;
- Promote effective commercial waste minimization practices;
- Eliminate landfills within the local government area of the Council;
- Increase integration with regional strategies and the use of regional facilities; and
- Minimise or avoid adverse effects on the environment.

C.11 South West Regional Waste Management Group

A sub-regional group called the South West Regional Waste Management Group was formed by CRJO members Yass, Hilltops, and Snowy Valleys councils along with Cootamundra Gundagai Regional Council. The group has a memorandum of understanding to utilise private landfill disposal services at Bald Hill Quarry near Jugiong. Recent challenges have resulted in the some of the CRJO councils raising concerns regarding the dependency upon one landfill

in the case of an emergency and the unknown long-term disposal security risks associated with short-term disposal contracts.

C.12 Associated CRJO Members

Australian Capital Territory (ACT)

The ACT is a large presence within the CRJO region with over 450,000 residents causing it to have significant influence on parts of the region. While not a formal member of CRJO, it is located between four member councils; Snowy Monaro, Snowy Valleys, Yass and Queanbeyan Palerang. Due to its proximity, residents of both the ACT and CRJO are found to travel between the two regions resulting in opportunities to share, align and optimise waste, resources recovery and circular services and infrastructure. Several CRJO member councils already utilise infrastructure within the ACT including a landfill at Mugga Lane and MRF at Hume, with the MRF to be fully replaced in the near future with best practice technology and services. The ACT is also proposing to establish an organics recovery facility by 2025 as it introduces FOGO kerbside collection services.

Through the preparation of this Strategy, it was apparent that the ACT, and in particular ACT NoWaste, values the engagement with the CRJO regional Waste & Resource Recovery Working group and will continue to support and collaborate with the member councils to create efficiencies across the region where possible.

The *ACT Waste Management Strategy 2011–2025* outlines the following four key outcomes to be delivered:

- Outcome 1: less waste generated;
- Outcome 2: full resource recovery;
- Outcome 3: a clean environment; and
- Outcome 4: a carbon neutral waste sector.

The ACT Government is currently preparing a waste and resource recovery education strategy and a circular economy strategy to guide improvements in these areas for the future. ACT NoWaste see this is an important aspect of its strategic planning prior to updating the current *ACT Waste Management Strategy 2011–2025* so that all can fully align and promote a circular economy for the future.

Wagga Wagga City Council

Wagga Wagga City Council (Wagga Wagga Council) is an associate member and as a result works closely with some of the member councils. Wagga Wagga is located adjacent to the western edge of CRJO with 95% of its area allocated to primary production. It too is a large regional centre with a current population of 67,860 which is projected to increase to 80,984 by

2036, providing further collaborative opportunities for CRJO member councils within close proximity.

Wagga Wagga Council has a 3 bin FOGO kerbside collection system with all households receiving the service, a Waste Management Centre at Gregadoo and waste transfer stations at Collingullie, Currawarna, Galore, Humula, Mangoplah, Tarcutta, and Uranquinty.

APPENDIX D: Known Private Infrastructure

D.1 Recycling

Endeavour Industries - Goulburn

A small MRF is operated by social enterprise Endeavour Industries in Goulburn, and accepts Goulburn Mulwaree Council's kerbside recycling along with other commercial customers within the area. Materials accepted include:

1. Cardboard and paper;
2. White office paper;
3. Recycling office paper;
4. Plastics 1-5;
5. Steel cans;
6. Aluminium Cans; and
7. Glass.

Kurrajong Recycling – Wagga Wagga

Kurrajong Recycling is a not-for-profit organisation based in Wagga Wagga which receives approximately 22,000 tonnes of recyclable materials per annum from Councils, businesses and the community within the region. Materials accepted at the facility include:

1. Household and business mixed recycling;
2. E-waste (TVs, computers and printers);
3. Container Deposit Scheme materials;
4. Selected plastics received (e.g. plastic bumper bars, drums, and twine); and
5. Bulk loads of cardboard.

Pact Group Holdings, Cleanaway Waste Management and Asahi Beverages – Albury

The group operates a recycling facility It is anticipated the facility will recycle the equivalent of one billion 600 millilitre PET plastic bottles each year.

Eloura Association - Young

A small MRF is operated by social enterprise Eloura Association in Young, and accepts Hilltops Council's kerbside recycling. Materials accepted include:

1. Cardboard and paper;
2. White office paper;
3. Recycling office paper;
4. Plastics 1-5;
5. Steel cans;
6. Aluminium Cans; and
7. Glass.

D.2 Organics

There are currently a number of council owned and operated organics facilities however, in addition, there are four privately operated organics processing facilities within the CRJO region including the following:

1. Veolia Woodlawn (Tarago) – 50,000 tpa (or more) licence capacity;
2. Martin Fertilizers (Yass) – 5,000 tpa licence capacity;
3. Blue Ridge Quarry - Eurobodalla (Bodalla) - 5,000 tpa licence capacity; and
4. Landtasia (Mulloon) - 5,000 tpa licence capacity.

It should be noted that the Veolia’s Woodlawn facility also operates as a landfill.

D.3 Landfill

Most of the member councils own and operate at least one landfill however, for those that do not, there are several landfills within the region that are privately owned and operated including the following:

1. Bowral Waste Centre - Inert Landfill (Bowral);
2. Bellette’s Bulk Bins - Landfill (Tumut);
3. Bald Hill Regional Quarry - Landfill (Jugiong); and
4. Veolia Woodlawn (Tarago) - Landfill.

D.4 Other Major Entities

There are a number of large major national or international companies operating within the CRJO region which presents opportunities for member councils to explore synergies regarding waste, resource recovery and circular approaches. The following companies are highlighted as potential collaborators now and into the future because of their significant influence and presence within the region:

1. Veolia (Tarago);
2. Bega Cheese (Bega);
3. Visy (Tumut);
4. CSIRO; and
5. Universities such as the University of Canberra, Australian National University or University of NSW which currently licences a form of microfactory technology.

APPENDIX E: Council Challenges

Workshop Results

Table E-1: Member Council Summary - Challenges

	Bega	Eurobodalla	Goulburn Mulwaree	Hilltops	Queanbeyan Palerang	Snowy Monaro	Snowy Valleys	Upper Lachlan	Wingecarribee	Yass Valley
Transport and/or economies of scale	Cost	Cost	Cost	Cost	Cost	Cost	Cost	Cost		Cost
FOGO mandate all households	Rural	LGA	Rural	LGA	Rural			LGA		
Legacy Landfills	Risk			Risk	Risk		Risk	Risk		
Rural / remote communities services	Cost				Cost		Cost	Cost	Cost	Cost
Landfill capacity and contingencies				Capacity			Capacity			Capacity
Processing capacity and contingencies						C&D, C&I			Inert	
CRC services				Desired				Desired		Desired
Disaster and resilience planning	Need to plan	Need to plan	Need to plan		Need to plan	Need to plan	Need to plan		Need to plan	
C&D and/or C&I diversion	Impact, Influence	Impact, Influence	Impact, Influence		Impact, Influence					Impact, Influence
Material flow and data accountability		Circular	Circular		Circular		Circular			Circular
Energy from Waste (EfW)			Opposed		Opposed					Opposed

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