



WASTE MANAGEMENT STRATEGY AND ACTION PLAN

2023-2043



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A MESSAGE FROM THE MAYOR

Waste Management Strategy and Action Plan 2023-2043

As our townships grow, so too does the possibility of greater waste production.

Over the next 20 years Dungog shire's population – and therefore waste production – is tipped to grow by more than 45%.

I firmly believe that we have a collective responsibility to protect our environment and preserve our natural resources for future generations. Waste management plays a vital role in achieving these objectives, and this strategy sets out a comprehensive roadmap to guide us on this crucial journey.

Our vision spans two decades, and aims to create a cleaner, greener, and more sustainable Dungog for all. By focusing on the initiatives set out in the following pages, we will take significant strides toward achieving our long-term goals. These initiatives have been


carefully developed, taking into account the unique needs of our environment and community well-being. We can achieve this by reducing the environmental impact of our waste and using resources more efficiently.

Council's 2014 Strategy was intended to be a 10-year strategy, however changes and developments within the waste management space necessitated a need to review the Strategy ahead of the intended timeframe.

Dungog Council's Waste Management Strategy represents a significant milestone in our commitment to sustainable waste management and environmental stewardship. It outlines our strategic direction for waste services in the coming years, while aligning with the overarching goals of the National Waste Policy Action Plan 2019, Waste and Sustainable Materials Strategy 2041 and the Hunter Regional Circular Materials Strategy 2022-2027.

You may not give much thought to your regular waste service, but the vital function it plays in the community is the backbone of council's service delivery. A sustainable waste management system is achieved by reducing the environmental impact of the shire's waste and using our resources more efficiently.

Arguably the most important service delivery we provide at Council, waste services form the lifeblood of a community, ensuring cleanliness, health, and environmental sustainability. It is a basic community function. Services like these make a difference to the day-to-day lives of shire locals. It's not only our job to do this well, but also our responsibility to do it sustainably.

A person wearing a white uniform is holding a clear plastic bottle over a row of recycling bins. The bins are lined with green, purple, and blue bags. The background is slightly blurred, showing an indoor setting with a window and some plants.

The Strategy also identifies how Dungog Shire Council can create the highest positive impact and ensure long-term security of its waste and resource recovery services.

GLOSSARY

Terminology	Definition
ABS	Australian Bureau of Statistics
AWT	Alternative Waste Treatment
C&D	Construction and Demolition
CDS	Container Deposit Scheme
C&I	Commercial and Industrial
CPI	Consumer Price Index
CRC	Community Recycling Centre
EfW	Energy from Waste
EPA	Environment Protection Authority
EPR	Extended Producer Responsibility
ERF	Emissions Reduction Fund
FOGO	Food Organics and Garden Organics
GO	Garden Organics
HJO	Hunter Joint Organisation
KPI	Key Performance Indicator
LGA	Local Government Area
MRF	Materials Recovery Facility
MUD	Multi-Unit Dwelling
MSW	Municipal Solid Waste
NWP	National Waste Policy
POEO Act	NSW Protection of the Environment Operations Act 1997
SUD	Single Unit Dwelling
TAC	Technical Advisory Committee
WARR	Waste Avoidance and Resource Recovery
WaSM	Waste and Sustainable Materials Strategy (NSW)
WMRC	Waste Management and Recycling Centre

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PURPOSE

The purpose of this document is to outline Dungog Shire Council's strategic direction for waste and resource management for the Dungog LGA. The Dungog Waste Management Strategy and Action Plan 2023-2043 (the Strategy) will embrace a 20-year vision while focusing on the initiatives required in the 5-year period from 2023-2028.

This Strategy:



Interprets national and state policy into our local context.



Allows for resource prioritisation by identifying priority actions.



Highlights challenges to be overcome at a local and regional level



Supports future funding applications and requirements.



Sets out objectives and outcomes to be achieved

Dungog Shire Council's vision is:

A sustainable waste management system that enables the community to improve environmental and community well-being by reducing the environmental impact of waste and using resources more efficiently.

The Strategy is designed to support the National Waste Policy Action Plan 2019, the NSW Waste and Sustainable Materials Strategy 2041 and the Hunter Regional Circular Materials Strategy 2022-2027. The Strategy also identifies how Dungog Shire Council can create the highest positive impact and ensure long-term security of its waste and resource recovery services.

1 WHERE WE ARE TODAY

1.1 Our Services



- Dungog Shire Council currently offers a regular 2-bin kerbside service and an annual bulky and green waste clean up service.
- The Dungog Waste Management & Recycling Centre operates a licensed landfill which has a lifespan till at least 2030.

1.1.1 Kerbside collections summary

Dungog Shire Council provides the following collection services¹, **Table 1**, to residents, and some businesses, in the LGA.

Table 1: Summary of kerbside waste services provided by Dungog Shire (SUDs, MUDs and commercial)

	Collection service	Bin size options	Service frequency
	Residual waste (Red bin)	240L	Weekly
	Mixed recycling (Yellow bin)	240L	Fortnightly
	Metal Waste & Bulky Waste	2m ³	Annually
	Green Waste	2m ³	Annually

¹The collection services are contracted to JR Richards & Sons. The contract expiry is October 2025



1.1.2 Waste Management and Recycling Centre (WMRC)

Dungog Shire Council operates a solid waste class 2 licenced landfill at the WMRC in Short Street, Dungog. The WMRC accepts most solid waste including green waste and asbestos (asbestos only accepted under specific conditions).

In addition to landfilling, the WMRC provides dedicated areas for the separation and recovery of various waste materials including:

- Paper and cardboard;
- Dry recyclables;
- Cup rescue
- Return and Earn (Dungog)

- Ferrous and non-ferrous metals;
- Waste oil;
- DrumMuster chemical containers;
- E-waste;
- Batteries and gas bottles;
- Garden waste;
- Mattresses; and
- Salvaged items for resale at the landfill second hand shop.

Modelling conducted indicates that if no change was made to Council's waste management activities, and growth followed the predictions of the NSW Government, the WMRC landfill would be completely exhausted as early as 2030.

Once the landfill reaches capacity a range of rehabilitation and monitoring operations will be required to be undertaken to ensure the old landfill does not pose an ongoing threat to the surrounding environment, and to potentially allow the site to be utilised for other purposes.

Activities to extend the operational life of the landfill, such as a FOGO service or daily operational improvements, will be prioritised. Appropriate provisions have been included as part of Dungog Shire Council's long-term financial planning for closure and rehabilitation of the landfill.

WHERE WE ARE TODAY

1.1.3 Programs and Initiatives

1.1.3.1 Education programs

Education regarding waste is a significant factor in changing people's behaviour towards recycling and reuse of materials. Between 2017 and 2023, Council has conducted education workshops with schools and the community. The education programs have ranged from:

- waste behaviour,
- use of beeswax wraps to reduce single-use plastics, and
- eco-cleaning workshops.

Community Outreach Programs

- Early learning Waste Education Outreach Program

Key deliverables from the above outreach programs are:

- Recycling Rules
- The Wrap on Wrapping
- The Science of Sorting
- It's a Wormy World
- Caught on Composting
- Food for Thought
- Being Resourceful
- Litter, Litter, Everywhere

1.1.3.2 Illegal dumping

Dungog Shire Council has partnered with the Hunter/Central Coast Regional Illegal Dumping (RID) squad to investigate and regulate illegal dumping in the LGA. The number of illegal dumping incidents in Dungog Shire LGA have remained relatively low since 2017. However, regulatory action under the Protection of the Environment Operations Act 1997 is undertaken by Council when illegal dumpers are identified, with penalty notices and clean-up notices issued.

1.1.3.3 Soft plastics collection

Dungog Shire Council has partnered with community groups to facilitate the collection of soft plastics and diversion of this waste stream from landfill.

At present, the current locations for drop off points is the Dungog Waste Management facility at Short Street Dungog. Additional drop off locations will be reviewed on an ongoing basis to meet operational and supply and demand for soft plastics. Council continues to liaise with industry to engage with plastic diversion programs.

Council has installed a soft plastic and paper baler at the WMRC to facilitate the processing of these materials.

1.2 Forecast & Performance



- Dungog Shire Council's population & waste generation will grow by ~45% by 2041.
- The current municipal recycling rate is ~23%.
- The introduction of a food organics & garden organics service could potentially increase recycling by 25%.

From 2021 to 2041, **Figure 1**, Dungog Shire Council's population & waste generation will grow by 45.6%².

Approximately 96%³, **Figure 2**, of households are single-unit dwellings (SUDs) and 2.5% are multi-unit dwellings (MUDs). As Dungog Shire Council's population begins to grow the increasing population and potential densification of dwellings will contribute to greater waste generation.

Figure 1: Population and waste generation forecast

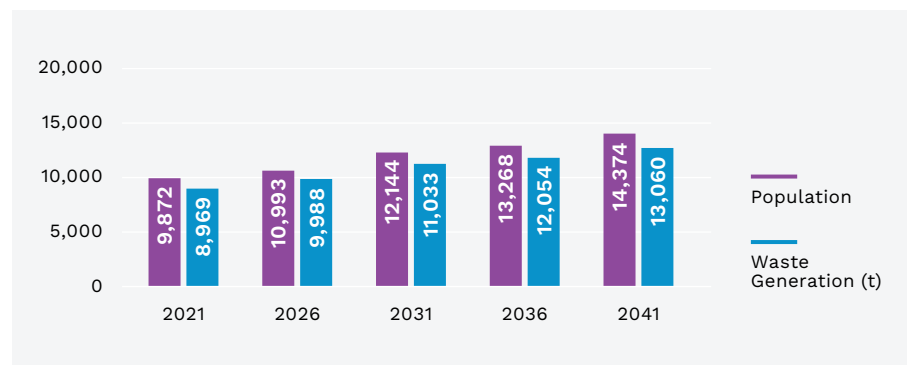
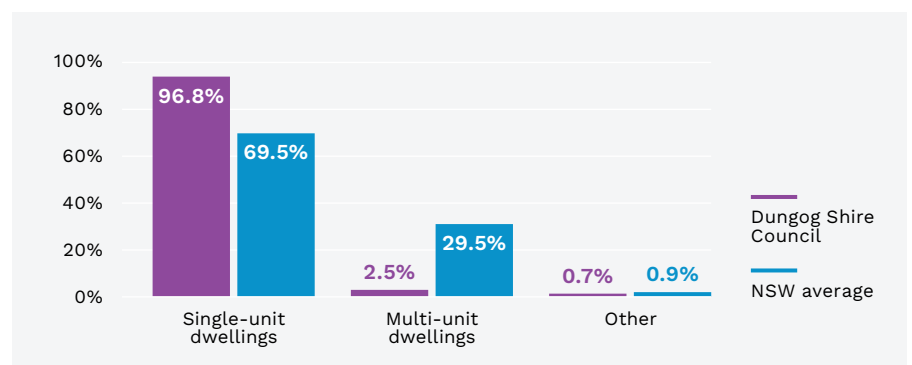


Figure 2: Dwelling structures profiles⁴



² Population projections <https://www.planning.nsw.gov.au/research-and-demography/population-projections/explore-the-data>
Waste generation data <https://www.epa.nsw.gov.au/-/media/epa/corporate-site/resources/wastestrategy/22p3760-2020-21-lg-waste-resource-recovery-data-appendix.xlsx?la=en&hash=B4E2A1F56E5D45FD4853BF41D19789234C8F8A31>

³ Dwelling structure profile <https://www.abs.gov.au/census/find-census-data/quickstats/2011/LGA12700>

⁴ Other is classified as a caravan, cabin, houseboat, improvised home, tent, or house/flat attached to a shop/office.

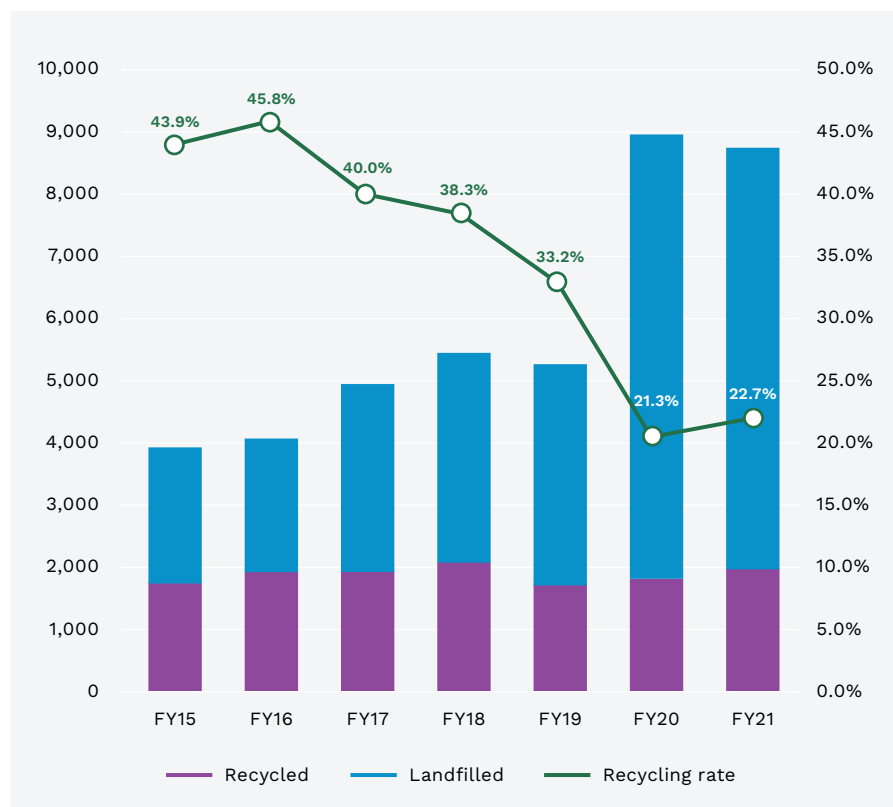
WHERE WE ARE TODAY

1.2.1 Historical performance

In financial year (FY) 21, Dungog Shire Council collected 8,780 tonnes of waste through residential kerbside collections (general waste and commingled recycling) and drop-off material at Dungog's Waste Management and Recycling Centre (WMRC).

Figure 3 illustrates the changes to waste generation and recycling rates from FY15 to FY21. Data prior to FY20 was primarily based only on kerbside collection services while FY20 onwards includes the reporting of drop-off material at the WMRC. There is opportunity to improve consistency of waste data reporting and significant potential to improve resource recovery and landfill diversion.

Figure 3: Historical waste generation and recycling rates



Regional Migration

NSW has been experiencing a period of internal migration from the Sydney Metropolitan Area to regional areas. Dungog Shire LGA has experienced this growth and has already exceeded historical population projections. The continued migration out of Sydney into regional areas will likely result in an increased rate of population growth.

The Australian Government Centre for Population has found that there has been a net shift in migration away from urban cities in favour of regional areas, due to the impacts of the COVID-19 pandemic.

1.2.2 Compositional waste audit findings

Dungog Shire Council engaged MRA Consulting to conduct an audit, in June 2021, of domestic kerbside residual waste and mixed recycling across the Dungog Shire LGA. The composition of the residual and mixed recycling streams is presented below in **Figure 4** and **Figure 5**.

Figure 4: Residual waste (red bin) composition

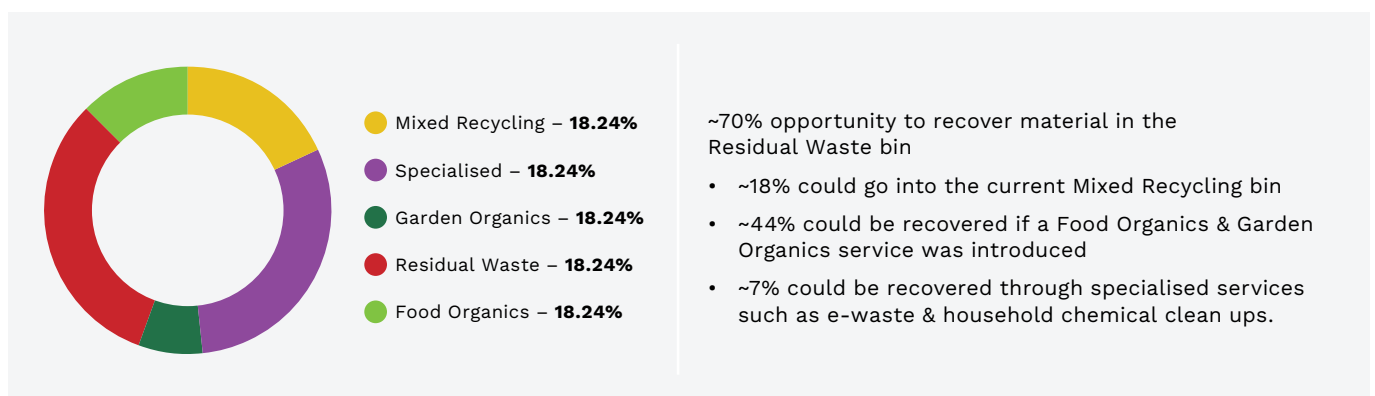
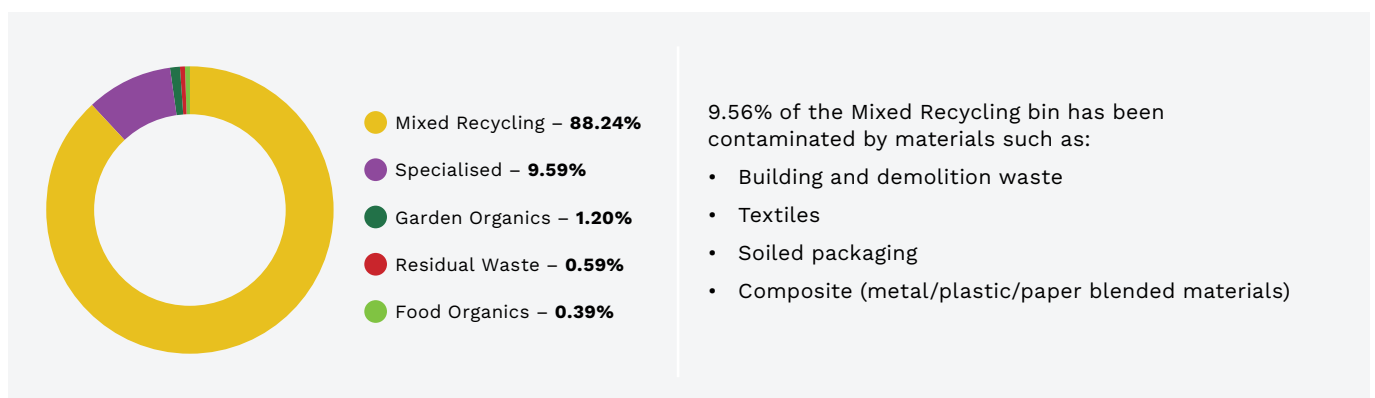


Figure 5: Mixed recycling (yellow bin) composition



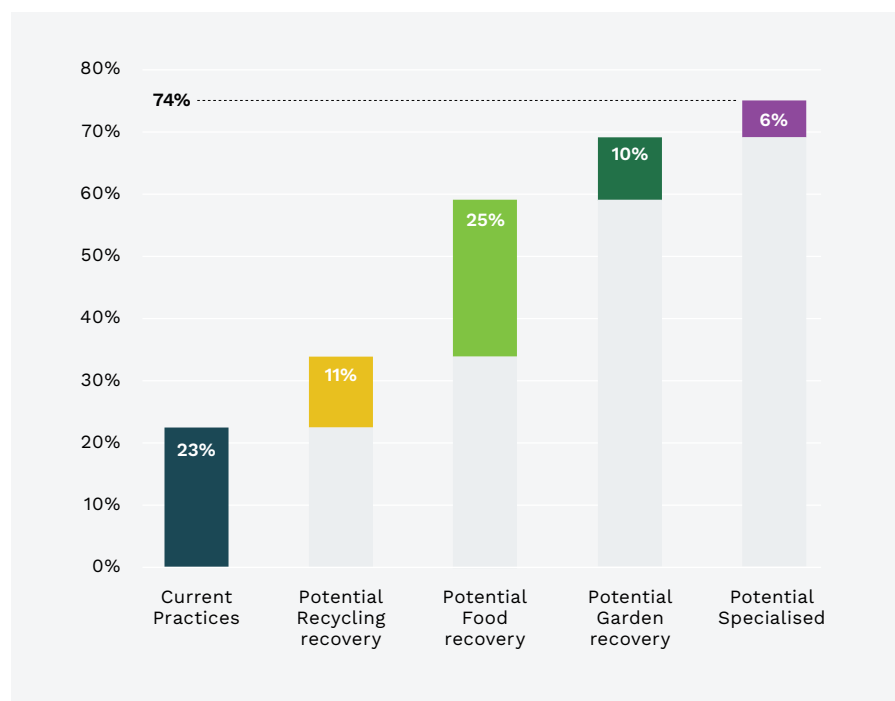
WHERE WE ARE TODAY

1.2.3 Recycling improvement roadmap

The audit data provides Dungog Shire Council an indicative roadmap towards improving the LGA's recycling rate from 23% to potentially 74%.

Figure 6 demonstrates that the greatest improvement area would be the introduction of food organics capture which would improve recovery by 25% or 35% when combined with garden organics for a Food Organic and Garden Organics (FOGO) service.

Figure 6: Recycling rate improvement roadmap⁵



⁵ Note: The opportunities found in the compositional waste audits are used to develop the improvement roadmap. The roadmap is dependent on the composition presented when conducting the audits. The roadmap also assumes a 100% capture rate of the material and are aspirational indicators. Typically, capture rates for food organics is 50%, garden organics is 75% and recycling is 80%.

1.3 Community Expectations






- Increasing trend for residents requiring larger recycling bins
- Community motivation to introduce an organics service
- Passionate community developing behaviour change initiatives for residents and businesses through plastic free Dungog program

In anticipation of the development of the Dungog Waste Management Strategy, a community Survey was developed and distributed to all residential properties in the Dungog LGA in 2021. The survey sought to gain understanding of the community's use and satisfaction with current services, and desire for new services.

The survey was conducted online and promoted on Council's social media pages and through posters displayed within Dungog town centre. In total, 257 surveys were completed, with the results summarised below together with data from the previous waste survey conducted when preparing the Dungog Shire Council Waste Strategy 2014-2024.

Table 2: Community survey summary for residual waste bin, recycling bin and bulky waste

	 Residual Waste Bin	 Recycling Bin	 Bulky Waste
Bin Fullness	3% place excess waste in recycling bin	16% place excess recycling in the residual waste bin as their recycling bin capacity was not sufficient up from 7%	N/A
Collection Satisfaction	76% satisfaction down from 97%	77% satisfaction down from 93%	65% satisfaction down from 85%
Other Considerations	Respondents noted they would consider downsizing of bin if a separate organics bin was introduced	78% are not willing to pay more for a weekly recycling	Requested at least two collections per year, or free tip pass to improve flexibility and street amenity

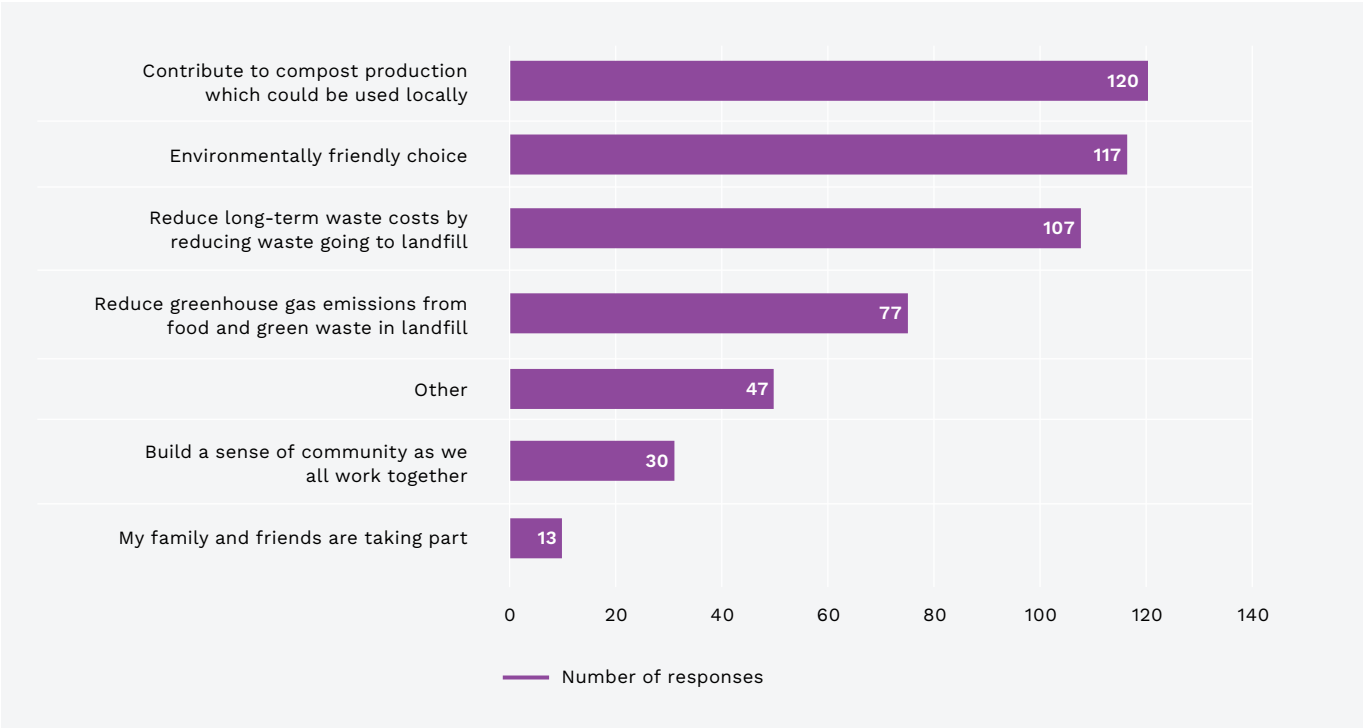
The purple text references figures from 2014 community survey

WHERE WE ARE TODAY

1.3.1 Community motivations

The primary motivation for residents’ use of a new green-lidded (organics) bin service is the opportunity for local use of compost, followed by being the environmentally friendly choice and reducing long-term waste costs. **Figure 7** summarises the responses received to the key motivation for accepting an organics service. Many respondents that chose the “Other” option currently compost their own organic waste. This is reflected in the 64% of respondents who never dispose of green waste at the Dungog Waste Facility.

Figure 7: Motivations to introduce an organics service



Almost half (48%) of respondents to the 2021 community survey said they were willing to pay for an additional green waste collection service: a significant increase from 9% in the 2014 survey. This reflects increasing community sentiment regarding the importance of recycling organic material. When asked about a compulsory or voluntary green waste service, 42% of respondents stated a preference for a non-compulsory service within rural areas, with suggestions of a user-pays system.

Residents also expressed a desire for:

- Easier access to recycling facilities for:
 - Return & Earn items
 - Mattresses
 - Soft plastics
 - E-waste
 - Hazardous waste
- Annual e-waste and chemical clean out days.
- Improved capture of materials at second-hand shop at Dungog Waste Management Facility, including building materials.
- Free drop-off of green waste and recycling at Dungog Waste Management Facility.
- Increased school waste education.
- Increased frequency of public bin emptying, especially at the skate park.

1.3.2 Community initiatives

The community within the Dungog Shire LGA have demonstrated their passion for the environment and for resource recovery through many community initiatives. Most notably, the Plastic Free Dungog initiative has promoted waste awareness through 'Boomerang Bags', a group of residents which up-cycles fabric into reusable bags, produce bags, cutlery tote bags and bees wax wraps. Additionally, in 2019 Dungog became the world's first takeaway coffee cup rescue

town. Over 200kg of single use drink cups and lids have been collected and upcycled into items such as carpark bump stops and bike rails.

The Plastic Free Dungog initiative has led to behaviour change in the local community and industry, with over 45 local businesses awarded a Blue Planet or Green Planet status for their commitment to a circular economy through removing single use plastics and other sustainable practices.



Source: <https://www.abc.net.au/news/2019-07-03/dungog-drops-single-use-plastics-for-good-of-the-planet/11272234>

WHERE WE ARE TODAY

1.4 Key Challenges



- The Hunter region's key challenges is support to develop long-term, local waste and resource recovery infrastructure, and understanding a pathway to achieve the ambitious state & federal target of 80% recovery by 2030.
- Dungog shire council's key challenges are the introduction of a food organics service by 2030 and long-term planning for its landfill infrastructure.

1.4.1 Regional Challenges

The Hunter Joint Organisation (HJO) has developed a Regional Circular Materials Strategy⁶. Within this Strategy, regional challenges have been articulated through a PESTLE analysis. The analysis provides a macroscopic view of challenges faced in the region with the majority of the challenges interdependent upon each other.

A prioritisation exercise was conducted by Regional Waste Group members to understand the greatest challenges for each Council that would be best solved at a regional level over the next 5 years. The top 10 key challenges are highlighted, in order of priority in **Figure 8**.

Figure 8: Regional challenge summary

	P Political	E Economic	S Social	T Technology	L Legal	E Environment
2	80% by 2030	4 Security of end-markets	Population growth	Emerging CE technologies/business models	6 Regulatory compliance	7 Food waste collection by 2030
1	Political support planning and infra	Transport cost of waste out of region	Community participation	Data management	Emissions reduction & net zero by 2050	Litter & illegal dumping
3	Levy hypothecation	Grant funding	8 At-source contamination	5 Landfills and EfW		9 Impacts of extreme weather events
		10 Recycled content procurement				Increase use of recycled plastics Problem waste – design out and manage

⁶ Regional Circular Materials Strategy; https://www.hunterjo.com.au/wp-content/uploads/2023/02/Regional-Circular-Materials-Strategy_Hunter-and-Central-Coast_-2022_27.pdf

The highest consensus as to where the Hunter JO could have the greatest regional impact were the following two challenges:

Table 3: Key Regional Challenges

	Regional Challenge	Description
1	Political support for planning and investment in infrastructure	<p>Greater political support at the local, state and national level is required for waste and recycling infrastructure by providing funding for the significant capital investment required for new infrastructure, improved planning to fast-track critical infrastructure, protect existing infrastructure from urban encroachment, and modernise existing infrastructure to enhance capabilities.</p> <p>The Hunter Region will require the following additional infrastructure⁷:</p> <ul style="list-style-type: none"> • Organics: Three small to medium-sized (10,000 to 70,000 tpa) in-vessel or outdoor-aerated composters to cater for food organics and garden organics by 2030. Two medium-sized (30,000 tpa) anaerobic digesters to cater for food organics) by 2030. • Residual Waste: Additional landfill capacity to accept >300,000 tpa or a medium-scale waste to energy facility by 2040. • Mixed Recycling: The lower Hunter region faced the closure of its only Materials Recycling Facility (MRF) in Gateshead in 2020⁸, which was processing ~80,000 tpa of yellow bin recyclable materials. Material is now sent to the Central Coast or to Sydney.
2	Achieving the State & National Target of 80% resource recovery by 2030	<p>The Australian Government, through National Waste Policy and Action Plan, and the State Government, through the NSW Waste and Sustainable Materials (WaSM) Strategy, has set an ambitious target of 80% average resource recovery rate from all waste streams (MSW, C&I, C&D) by 2030.</p> <p>Since the current (2020/21) average regional MSW recovery rate is 42%⁹, and C&I is in a similar position, there is a significant gap for the state, regional and local councils to resolve within only 8 years.</p>

⁷NSW Waste and Sustainable Material's (WaSM) Strategy – Guide to Future Infrastructure Needs

⁸<https://www.newcastleherald.com.au/story/6626016/hunter-recycling-going-to-sydney-after-gateshead-processing-plant-closes/>

⁹Regional Circular Materials Strategy; https://www.hunterjo.com.au/wp-content/uploads/2023/02/Regional-Circular-Materials-Strategy_Hunter-and-Central-Coast_-2022_27.pdf

WHERE WE ARE TODAY

1.4.2 Local Challenges

Dungog Shire Council has considered the National Waste Policy Action Plan 2019, the NSW Waste and Sustainable Materials Strategy 2041 (Stage 1: 2021-2027), and relevant government policy and regulation (Appendix 1). The following targets have been identified as relevant to this Strategy:

- Reduce total waste generated in Australia by 10% per person by 2030,
- 80% average recovery rate from all waste streams by 2030,
- Significantly increase the use of recycled content by governments and industry,
- Halve the amount of organic waste sent to landfill by 2030, and
- Make comprehensive, economy-wide, and timely data publicly available to support better consumer, investment, and policy decisions.

This Strategy will implement measures to support the movement toward these targets where feasible with consideration given to the regional context of the Dungog LGA.

Figure 9: Dungog challenge summary

P Political	E Economic	S Social	T Technology	L Legal	E Environment
80% by 2030	Security of end-markets	Population growth	Emerging CE technologies/business models	Regulatory compliance	1 Food waste collection by 2030
Political support planning and infra	Transport cost of waste out of region	Community participation	Data management	Emissions reduction & net zero by 2050	Litter & illegal dumping
Levy hypothecation	Grant funding	At-source contamination	2 Landfills and EfW		Impacts of extreme weather events
	Recycled content procurement				Increase use of recycled plastics Problem waste – design out and manage

In addition to meeting State and Federal policy targets, Dungog Shire Council has identified two key challenges to address to create highest positive impact and ensure long-term security of waste management services.

Table 4: Key Local Challenges

	Local Challenge	Description
1	Implementing council food waste collection service by 2030	<p>The National Food Waste Strategy and the NSW WaSM Strategy set out targets of halving food waste to landfill and achieving net zero emissions from organics in landfill by 2030. The NSW WaSM also commits to:</p> <ul style="list-style-type: none"> - food and garden organics collection from all NSW households by 2030 - food waste collection from targeted businesses and other entities that generate the highest volumes of food waste, including large supermarkets and hospitality businesses, by 2025. - Councils and businesses will need to ensure they have access to infrastructure to process food waste, implement a collection service and support the new recovery stream with appropriate education. <p>Preventing food waste from being disposed of in landfill, and instead providing a bin service for composting both food and garden organics offers significant environmental benefits. These benefits include the potential for landfill gas emissions reduction, landfill diversion, extended landfill life and production of a compost material.</p>
2	Understanding long-term landfill requirements and role for alternatives such as Energy from Waste	<p>According to the NSW WaSM Strategy – Infrastructure Needs Guide, the Hunter will need to plan for additional landfill capacity to accept >300,000 tpa of residual waste by 2040.</p> <p>Landfills are a depleting and essential infrastructure for the foreseeable future. Improved diversion rates will help extend the life of existing infrastructure, however, the Hunter Region, through the Regional Circular Materials Strategy, is looking at understanding the long-term landfill requirements and the role of alternatives, such as Energy from Waste. This is critical for planning and needs to be understood early.</p> <p>Dungog Shire Council will also need to consider the long-term plan for our landfill. Modelling around the landfill has indicated that at current waste generation and population growth rates the landfill could be completely exhausted by 2030.</p> <p>Areas where there is opportunity to significantly extend the life of the landfill include:</p> <ul style="list-style-type: none"> • The adoption of a Food Organics and Garden Organics (FOGO) service could contribute to the life extension of the landfill by at least 6-8 years. • Improving and monitoring daily operational processes (compaction and daily cover management) at the landfill. • Review of the landfill design to increase overall capacity. <p>Long-term planning will also be required for the closure of the landfill to:</p> <ul style="list-style-type: none"> • Ensure there are appropriate financial provisions to rehabilitate the site and on-going monitoring. This needs to be regularly reviewed to re-validate aftercare costs and provisions are accurate. • Plan post-closure uses for the site. • Decide on alternative options for Dungog LGA's residual waste to ensure service continuity.

2 WHERE DO WE WANT TO GET TO

This Strategy lays the groundwork for innovation and transition in the future, Council will be managing operational challenges, investigating options and opportunities for the future of waste management, introducing a FOGO service, and continuing to provide important waste services for the community.

2.1 Our Vision

Dungog Shire Council has a highly engaged community that is dedicated to transforming its waste management practices and grow its capacity to implement recycling and reuse initiatives. The vision for this Strategy is to continue the positive work progressing towards better waste management and a circular economy.

Our vision is:

A sustainable waste management system that enables the community to improve environmental and community well-being by reducing the environmental impact of waste and using resources more efficiently.

2.2 Our Mission

The strategic vision will be achieved through:

- Strong **environmental stewardship** ensuring the environment is put first and foremost and circularity is adopted to minimise waste and use our resources more efficiently.
- **Empowerment of our community through education**, high levels of engagement and evidence-based data.
- **Optimising our service & infrastructure capabilities** by enhancing our operations and balancing cost with customer expectations.



3 HOW WILL WE GET THERE?




3.1 Our Strategic Framework

The strategic framework uses the mission statements to form three key priorities:

1. **Environmental stewardship & circularity**
2. **Community education & empowerment, and**
3. **Optimise service & infrastructure capabilities.**

Each priority is affiliated with:

- **Success Measures** – How would we track success to know we're on the right path?
- **Key Outcomes** – What would success look like if the priority was achieved?

Vision Where are we heading?	A sustainable waste management system that enables the community to improve environmental and community well-being by reducing the environmental impact of waste and using resources more efficiently.		
Priorities How will we be successful in achieving our vision?	 Environmental stewardship & circularity	 Community education & empowerment	 Optimise service & infrastructure capabilities
Success Measures How do we measure success?	Municipal Recovery Rate	Community knowledge & participation	Community & customer satisfaction
Key Outcomes What does success look like?	<p>Improved resource recovery.</p> <p>Significantly reduce food waste to landfill.</p> <p>Reduced overall waste generation.</p> <p>Reduced impact to environment and human health.</p>	<p>Improved community knowledge.</p> <p>High level of community participation in waste reduction initiatives.</p> <p>High level of participation in, and knowledge of, services offered to community</p>	<p>Long-term security of waste and resource recovery infrastructure and services.</p> <p>Cost-effective services.</p> <p>High level of customer satisfaction.</p> <p>Improved data collection and reporting.</p>

3.2 Measuring Success

To ensure successful delivery of the Strategy, clear measures need to be established to ensure it is on track. Relevant performance metrics have been identified to allow Council to monitor both the community's response to the changes made as part of the Strategy, as well as Council's progress on delivering on the outcomes of the Strategy.

The progress of the Strategy will be measured using the key metrics identified in the table below. Year 1 will be used as a baseline for all the key metrics with improvements measured against each consecutive year.

Table 5: Key metrics for measuring progress

Metric	Unit of measurement	Data Source
Municipal recovery rate	Percentage of waste recovered by weight.	LGA WARR Report
Community knowledge & participation	Standardised survey to measure community waste management knowledge and participation of services.	Annual Survey
Community & customer satisfaction	Percentage of community and customer satisfaction or Net Promotor Score.	Annual Survey

3.3 Achieving the Outcomes

This Strategy provides a 20-Year framework for achieving Dungog's vision of improving environmental and community well-being by reducing the environmental impact of waste and using resources more efficiently.

An Action Plan (Appendix 2) will be developed every 5 Years with 4 planning cycles being implemented over the life of the Strategy.

Review Period	Document			
20 years	Dungog Waste Strategy: 2023-2043			
5 years	Action Plan – Cycle 1	Action Plan – Cycle 2	Action Plan – Cycle 3	Action Plan – Cycle 4

APPENDIX 1

GOVERNMENT POLICY & REGULATORY FRAMEWORK

The following table summarises the current government policies and regulatory frameworks at the Commonwealth, NSW and Dungog Shire Council levels which will influence the development of the Dungog Waste Management Strategy and Action Plan.

Legislation/ Policy	Short Description/ Relevance to Dungog City Council
Australian Government (Commonwealth)	
<i>National Waste Policy Action Plan 2019</i>	<p>The Action Plan supplements the 2018 National Waste Policy, setting targets and actions to guide investment and national efforts. The targets relevant to Dungog LGA include:</p> <ul style="list-style-type: none"> • Ban the export of waste plastic, paper, glass, and tyres, commencing in the second half of 2020, • Reduce total waste generated in Australia by 10% per person by 2030, • 80% average recovery rate from all waste streams by 2030, • Significantly increase the use of recycled content by governments and industry, • Phase out problematic and unnecessary plastics by 2025, • Halve the amount of organic waste sent to landfill by 2030, and • Make comprehensive, economy-wide, and timely data publicly available to support better consumer, investment, and policy decisions.
<i>Recycling and Waste Reduction Act 2020</i>	<p>The Commonwealth Government has outlined a timeline to ban the export of waste plastic, paper, glass, and tyres, that have not been processed into value added materials:</p> <ul style="list-style-type: none"> • All waste glass by January 2021; • Mixed waste plastics by July 2021 and unprocessed single plastic polymers by July 2022; • All whole tyres including baled tyres by December 2021; and <p>Remaining waste products, including mixed paper and cardboard, by no later than June 2024.</p> <p>The waste export bans have the potential to impact on Dungog Shire Council's commingled recycling in the short term, likely in the form of increased processing costs for the upcoming commingled recycling contract.</p>

Legislation/ Policy	Short Description/ Relevance to Dungog City Council
New South Wales (State)	
<i>Protection of the Environment Operations (POEO) Act 1997</i>	<p>The POEO Act is the state's principal environmental protection legislation. The Act defines 'waste' for regulatory purposes, lays out management and licensing requirements for waste operations and establishes offences. The associated Regulation includes Resource Recovery Exemptions and Orders to support the reuse of permitted waste for alternative purposes.</p>
<i>NSW Waste Avoidance and Resource Recovery Act 2001 (WARR Act)</i>	<p>The WARR Act is the primary Act governing resource recovery in NSW. The objectives of the WARR Act are to promote:</p> <ul style="list-style-type: none"> • The most efficient use of resources, including resource recovery and waste avoidance; • A reduction in environmental harm, including pollution through waste; • A consideration of the resource management hierarchy through avoidance of unnecessary resource consumption and disposal; and • Resource recovery, which includes reuse, reprocessing, recycling, and energy recovery. <p>The WARR Act defines the Waste Hierarchy, which ranks waste management options in order of general environmental desirability. The waste hierarchy is intended for use alongside other assessment tools, such as cost benefit analysis, to guide decision-making.</p>
<i>NSW Waste and Sustainable Materials Strategy 2041 (Stage 1: 2021-2027)</i>	<p>The new NSW Waste and Sustainable Materials Strategy provides a framework for waste management in NSW. The strategy outlines four key directions for the future of waste management:</p> <ol style="list-style-type: none"> 1. Generate less waste by avoiding and 'designing out' waste, to keep materials circulating in the economy; 2. Improve collection and sorting to maximise circular economy outcomes and lower costs; 3. Plan for future infrastructure by ensuring the right infrastructure is located in the right place and at the right time; and 4. Create end markets by fostering demand for recycled products in NSW (particularly glass, paper, organics, plastics, and metals) so that recovered materials re-enter our economy and drive business and employment opportunities. <p>The initial Stage 1 targets have been set to be achieved by 2030:</p> <ul style="list-style-type: none"> • Reduce total waste generated by 10% per person; • Have an 80% average recovery rate from all waste streams; • Phase out problematic and unnecessary plastics while tripling plastics recycling rates; • Halve the amount of organic waste sent to landfill and achieve net zero emissions from organics sent to landfill, and • Overall litter reduction target of 60% <p>The NSW Strategy guides the development of Council's resource recovery targets, especially for organic waste through mandating Food Organics Garden Organics (FOGO) services for all of NSW by 2030.</p>

Legislation/ Policy	Short Description/ Relevance to Dungog City Council
New South Wales (State)	
NSW Landfill Levy	<p>The Waste Levy applies to the regulated area of NSW, of which Dungog Shire is included. Landfills in regulated areas are required to pay a contribution for each tonne of waste received at the facility. The aim of the levy is to drive a reduction in the amount of waste being landfilled and promote recycling and resource recovery.</p> <p>The 2023-2024 Waste Levy rate, which applies from 1 July 2023, is \$94.00/tonne in the regional levy area. Under current regulations, the levy will increase every year in line with the Consumer Price Index (CPI).</p>
NSW Waste from Energy Policy Statement 2015	<p>The Energy from Waste (EfW) Policy Statement outlines the policy framework that applies to facilities that thermally treat waste for energy recovery in NSW. Facilities seeking to recover energy by thermally treating waste or waste-derived materials must ensure the process:</p> <ul style="list-style-type: none"> • Poses minimal risk to human health and the environment; • Is not prioritised over waste management options higher up on the waste hierarchy, i.e., avoid, reuse or recycling options; and • Meets international best practice techniques.
<i>Local Government Act 1993</i>	<p>Defines how Councils may exercise their powers and the manner in which Councils are managed and financed. With respect to waste management, Councils must make and levy an annual charge for the provision of domestic waste management services (s. 496). Council charges for domestic waste management must be calculated so as to not exceed the reasonable cost to the council of providing those services.</p>
Waste Less Recycle More Initiative (WLRM) 2014-2021	<p>The WLRM grant program provided funding for organisations, including Councils, to improve their management of waste and recovery of resources.</p> <p>Phase 1 of WLRM provided \$465.7 million over the period July 2012 to June 2017, focusing on funding new, large-scale waste and recycling infrastructure, recycling facility upgrades, drop off centres, food and garden organics processing and recycling innovations. Phase 2 of WLRM commenced on 1 July 2017, with the capacity to award \$337 million over four years. Additional grants are planned to be released following the 2021 publication of the 20-Year NSW Waste and Sustainable Materials Strategy 2041.</p>

Legislation/ Policy	Short Description/ Relevance to Dungog City Council
New South Wales (State)	
NSW Circular Economy Policy Statement: Too Good To Waste 2019	<p>The NSW Circular Economy Policy Statement was developed by the NSW Government to provide clear directions and principles to direct the NSW economy's transition to a circular economy. The NSW Circular Economy Policy Statement lists seven key principles to lead the transition towards a circular economy in NSW:</p> <ul style="list-style-type: none"> • Sustainable management of all resources; • Valuing resource productivity; • Designing out waste and pollution; • Maintaining the value of products and materials; • Developing new solutions for resource efficiency; • Creating new circular economy jobs; and • Fostering behaviour change through education and engagement. <p>The Circular Economy Policy Statement provides a framework for Dungog Shire Council to review and transition operations to meet circular economy goals.</p>
NSW Illegal Dumping Strategy 2017-21	<p>The NSW Illegal Dumping Strategy 2017-21 provides a framework for the NSW EPA and partner organisations (including local councils) to reduce illegal dumping in NSW by 30% by 2020. The NSW EPA updated the Illegal Dumping Strategy action table to provide a revised set of actions to achieve the set targets in the last two years of the Strategy (2020-21).</p> <p>Dungog Shire Council has partnered with the Hunter/Central Coast Regional Illegal Dumping (RID) squad to investigate and regulate illegal dumping in the LGA.</p>
NSW Litter Prevention Strategy 2019-2022	<p>The NSW Litter Prevention Strategy 2019-2022 has been developed with the key objective to reduce the volume of litter by 40% by 2020. The latest report card published in 2019 showed that NSW has reduced the volume of litter by 35%. Dungog Shire LGA has many litter prevention initiatives including Boomerang Bags, single-use cup upcycling and the Return and Earn initiative.</p>

Legislation/ Policy	Short Description/ Relevance to Dungog City Council
Hunter Region	
Regional Circular Materials Strategy, Hunter and Central Coast, 2022-2027.	<p>This Strategy interprets national and state policies for our regional context and looks to local plans to develop regional strategic priorities and to identify common issues to be solved at a regional level.</p> <p>Key priorities include:</p> <ul style="list-style-type: none"> • Strategic collaboration to solve regional problems • Avoid or reduce waste generation by enabling the circular economy • Recover resources by supporting improved infrastructure and operations • Protect the environment through improved problem waste management and disaster resilience.
Dungog Shire Council	
Dungog Shire Council Community Strategy Plan 2030	<p>The Dungog Shire Community Strategy Plan is a key component of the Integrated Planning and Reporting Framework that was developed to improve transparency, accountability, and sustainability for the Dungog Shire community.</p> <p>A key theme of the Plan is the natural environment, within this theme the Council sets out the theme of minimising the production of waste while effectively managing waste that is produced. The Plan calls for the promotion of recycling practices in homes, workplaces, development sites and public places.</p>

APPENDIX 2














ACTION PLAN 2023-2028

The Dungog Waste Management Strategy is supported by the following Action Plan that covers the period 2023-2028.

Council will review and update key actions as appropriate to ensure the desired outcomes are being achieved, and to provide flexibility to respond to changing technology, policy, market, or infrastructure developments.

The Action Plan provides indicative timing of the delivery of key actions. Dungog Shire Council will actively apply for additional external funding (such as state government grants) that align with the Strategy which may accelerate the delivery of actions.

The Action Plan is categorised into the four areas and aligns to the strategy priorities as follows:

	 Environmental stewardship & circularity	 Community education & empowerment	 Optimise service & infrastructure capabilities
1 Prepare for the needs of the future			
2 Develop infrastructure master plan			
3 Improved current waste management operations			
4 Develop & deploy a long-term behaviour change plan			

	Action	Why	When
1. Prepare for the needs of the future – [Understand our current and future services]			
1.1	Conduct a review of current council waste and recovery services.	To balance costs against customer/ community expectations.	Short-term (1-2 years)
1.2	Conduct detailed scenario modelling and business case development of potential future services to determine an optimal delivery pathway.	To inform how council will deliver any future services and inform what facilities will need to be incorporated into the infrastructure master plan.	Short-term (1-2 years)
1.3	Review current waste contract and retender services as appropriate.		
2. Develop infrastructure master plan – [Design for the services of the future]			
2.1	Determine the location of potential future resource recovery infrastructure e.g. organics facility, community recycling centre, determined through prior studies.	To secure access to core waste management and resource recovery services through appropriate infrastructure planning.	Short-term (1-2 years)
2.2	Create a long-term landfill cell development progression plan and a staged landfill closure and rehabilitation management plan.		Short-term (1-2 years)
2.3	Review and design appropriate environmental controls for current and future infrastructure e.g. landfill gas, stormwater, leachate management.	To maintain regulatory compliance and minimise environmental, social, and health impact of waste infrastructure on the local surroundings and community.	Short-term (1-2 years)
2.4	Develop a site buffer management plan to ensure current and future impacts of waste and recovery operations are appropriately mitigated.	To prevent housing encroachment near the site, particularly in lieu of significant population growth and changes in housing types/zoning.	Mid-term (3-4 years)
2.5	Review, plan and obtain relevant planning approvals and licenses for future operations.	To secure approvals to develop new infrastructure or introduce new services.	Mid-term (3-4 years)

Action		Why	When
3. Improve current waste management operations – [Continual improvement of current operations]			
3.1	Review and optimise the Dungog Waste Management Facility to ensure operational excellence.	To extend the landfill lifespan and operate in a safe and cost effective manner.	Ongoing
3.2	Review and improve waste data capture and reporting processes, including EPA levy reporting.	To achieve greater transparency for Council's operations, for ease of monitoring, reporting, and identifying improvement opportunities.	Ongoing
3.3	Ensure and maintain compliance with relevant regulations.		
3.4	Deliver an Environmental Improvement Program at Dungog Waste Management Facility, based on master plan designs.	To proactively undertake works that lead to environmental improvements and a reduction in pollution, consistent with legislative obligations.	Mid/long-term (3-5 years)
3.5	Establish disaster resilience and continuity planning for services.	To improve local preparedness and response capacity, and minimise the impact of disasters on the community and environment.	Mid/long-term (3-5 years)
4. Develop and deploy a long-term behaviour change plan –[Understand our community/customers and support positive behaviour changes]			
4.1	Maintain an ongoing waste audit program for our kerbside (red, yellow, green bin), bulky waste services and public place bins.	To understand our waste behaviours and unlock opportunities in our red bin and decrease contamination in our resource recovery (yellow/green) bins.	Ongoing (Every 2-3 years)
4.2	Develop and undertake an ongoing community/customer survey program to monitor awareness of services and satisfaction against service levels.	To understand where improvements can be made to community/customer satisfaction levels.	Ongoing (Annually)
4.3	Develop and implement a waste reduction plan for residents and businesses, and work with stakeholders to identify and pilot innovative solutions.	To support both State and Federal targets (10% reduction in MSW), extend the landfill lifespan, and reduce the pressure on other infrastructure	Ongoing (New plan after each waste audit)
4.4	Provide annual targeted education initiatives to improve recovery of recyclable materials currently in the red bin, and decrease contamination in recovery services. Monitor and prioritise based on data from the ongoing waste audit program.	To support both State and Federal targets (80% recovery of MSW and 50% food waste diversion from landfill), extend the landfill lifespan, and prevent contamination of recovery streams.	Ongoing (New plan after each waste audit)
4.5	Develop FOGO education plan and implement to coincide with roll out of the service.	To maximise adoption of the FOGO service, minimise contamination and achieve 50% food waste diversion from landfill target.	Mid/long-term (3-5 years)



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