LIVING WITHIN THE ENVIRONMENT

WASTE MANAGEMENT AND RESOURCE RECOVERY STRATEGY 2022-2026

Lithgow CITY COUNCIL

Surrounded by Nature · Steeped in History

OUR PLACE OUR FUTURE

To deliver best practice waste services and facilities to continuously improve landfill diversion rates and transition towards a circular economy.

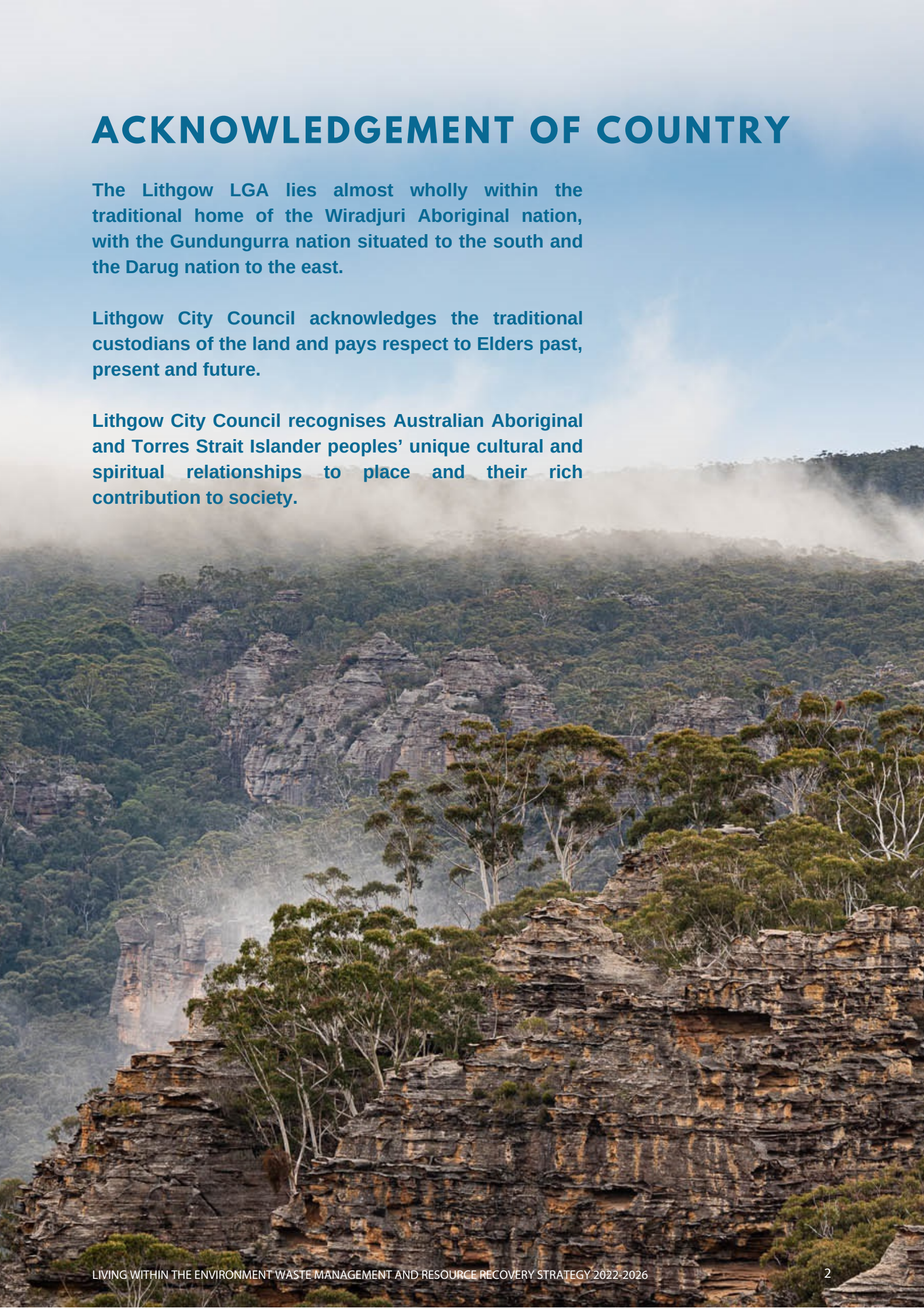
To empower and educate the community, to protect the local environment and to support the local economy.

ACKNOWLEDGEMENT OF COUNTRY

The Lithgow LGA lies almost wholly within the traditional home of the Wiradjuri Aboriginal nation, with the Gundungurra nation situated to the south and the Darug nation to the east.

Lithgow City Council acknowledges the traditional custodians of the land and pays respect to Elders past, present and future.

Lithgow City Council recognises Australian Aboriginal and Torres Strait Islander peoples' unique cultural and spiritual relationships to place and their rich contribution to society.



Lithgow City Council would like to acknowledge the contribution made to the development of this document by MRA Consulting Group.

CONTENTS

ACRONYMS AND ABBREVIATIONS

ABS	Australian Bureau of Statistics
AHW	Absorbent Hygiene Waste (from kerbside audit data image on page 27)
AWT	Alternative Waste Treatment
C&I	Commercial and Industrial Waste
C&D	Construction and Demolition Waste
CDS	Container Deposit Scheme
CPI	Consumer Price Index
CRC	Community Recycling Centre
EfW	Energy from Waste
EPA	Environment Protection Authority
FOGO	Food Organics and Garden Organics
LCC	Lithgow City Council
LGA	Local Government Area
MRF	Materials Recovery Facility
MSW	Municipal Solid Waste
POEO Act	NSW Protection of the Environment Operations Act 1997
WARR	Waste Avoidance and Resource Recovery
WASM	Waste and Sustainable Materials Strategy

MESSAGE FROM THE MAYOR

Councillor Maree Statham
Mayor

Lithgow City Council's 'Living Within the Environment' Waste Management and Resource Recovery Strategy 2022-2026 is a most important document. This is because the manner in which Council plans for and manages waste has social, environmental and economic implications.

The objectives in this strategy will inform and guide the actions that Council will take to deliver new and best practice in waste management and the provision and operation of waste infrastructure. The goals are to ensure equitable access of cost-effective waste services across the community, protect the environment and consider new economic opportunities that are available by recognising waste as a resource.

MESSAGE FROM THE GENERAL MANAGER

Mr Craig Butler
General Manager

The management of waste is an essential and rapidly changing function of local government. Waste is now considered a resource with benefits arising from keeping materials in circulation longer (the 'circular economy') rather than being thrown away after use.

The Lithgow City Council 'Living Within the Environment' Waste Management and Resource Recovery Strategy 2022-2026, identifies and addresses the key challenges for waste management and resource recovery in Lithgow and with it guides the steps Council takes to transition to a circular economy.

The Strategy provides a foundation for Council to consider opportunities in waste management and resource recovery. This could facilitate investment in businesses and industries of the future, while also ensuring waste services meet the needs of the community in ways which are equitable and sustainable.

BACKGROUND

Located within the traditional homelands of the Wiradjuri, Gundungurra and Darug nations, the relatively large Lithgow Local Government Area (LGA) covers an area of 4,551 square kilometres on the western ramparts of the Blue Mountains, approximately 140 kilometres from Sydney. Although the LGA is in close proximity to Sydney, it is a predominantly rural area that is characterised by its rugged and highly biologically diverse landscape of World Heritage Listed National Parks, steep escarpments, deep valleys, rolling hillsides, lakes and bushland. National parks and state forests cover nearly two thirds of the area and historic towns and rural villages are home to a relatively small and widely dispersed population of an estimated 20,854 residents in 2021 (Profile.id, 2022).

Lithgow City Council (Council) and the community are committed to ensuring that the local environmental, social and economic characteristics of the Lithgow LGA determine the decisions that will shape a sustainable future for all our communities. Planning for waste management and resource recovery is an essential aspect of community sustainability.

Council recognises that waste is a resource. The value of waste as a resource is increasing. Waste is also a cost. The cost of waste disposal and wasting resources is also increasing. Council is committed to providing best practice waste services and infrastructure to maximise the resource potential of waste, while managing the costs of waste, to ensure the sustainability of all our communities.

Consistent with this commitment to sustainability, Council recognises that waste has major potential as a resource industry of the future. As the local economy transitions from coal mining and power generation, investment in new industries and business is necessary. This Strategy outlines how Council will explore waste related industry and business investment opportunities for generating jobs and economic growth in the local government area.

The 'Living Within the Environment' strategy outlines a proactive approach to local waste management and resource recovery. This approach aims to ensure actions are taken now so that Council and the community can take advantage of best management practices today and benefit from the associated environmental, business and industry opportunities of tomorrow. Council and the community recognise that there are enormous opportunities for technology, entrepreneurship and innovation to address waste challenges. There is less awareness of how the way we address waste challenges can significantly contribute to ensuring the sustainability of all our communities.

This strategy explains how Council will address waste management and resource recovery challenges to contribute to the sustainability of all our communities.

1. INTRODUCTION

Waste management and resource recovery are recognised as a significant issues at National, State and Local Council levels.

Issues in waste management and resource recovery affect the entire local community. The solutions to these issues are generating new directions and new opportunities in waste management and resource recovery.

The direction of waste management is towards avoiding waste and recovering resources. Used products and materials are being recognised as valuable resources to be returned to productive use, rather than thrown away after use. This is known as the 'circular economy'.

There are new opportunities emerging as technological developments are improving resource recovery and recycling possibilities and this is, in turn, generating the potential to improve environmental outcomes and to create new business and industries with associated employment in local communities.

Lithgow City Council is committed to finding solutions to local waste issues that are consistent with the local community's priorities. Diversion from landfill is of particular relevance for Lithgow as we operate our own landfill sites. Resource recovery prolongs landfill life and maximises the value of the landfill asset.

The Waste Management and Resource Recovery Strategy (Strategy) is titled 'Living Within the Environment' in recognition of the community's prioritisation of developing new opportunities for economic growth as the local economy transitions, whilst protecting the natural environment.

The aims of the strategy have informed the Strategic Vision:

Strategic Vision

To deliver best practice waste services and facilities
to continuously improve landfill diversion rates and transition
towards a circular economy.

To empower and educate the community,
to protect the local environment and
to support the local economy.

INTRODUCTION

The Lithgow LGA has already made progress in taking steps to avoid waste and recover resources. Key achievements from the previous strategy include the remediation of rural landfill sites, the management of the Lithgow Solid Waste Facility reverting to Council and the construction of a new resource recovery centre.

The objectives in the 'Living Within the Environment' strategy will determine the ongoing actions that Council will take towards delivering best practices in waste management and infrastructure to ensure equitable access, cost-effective services, protection of the environment and new economic opportunities for all our communities.

The NSW Environment Protection Authority (EPA) has released Stage 1 of the NSW Waste and Sustainable Materials Strategy (WASM). The WASM Strategy outlines the actions to be taken over the next 6 years to deliver long term objectives across the state of NSW.

Lithgow Council's Waste Strategy aligns with the objectives of the NSW WASM Strategy and sets out the way Lithgow City Council will progress towards achieving the long-term NSW target of an average 80% recovery rate from all waste streams by 2030 and the mandated separate collection of food and organics waste from all NSW households by 2030.

Targets:

Average 80% recovery rate from all waste streams by 2030

Separate collection of food and garden organics by 2030

The outcomes from this strategy will provide the structural changes to infrastructure and services that will enable Lithgow Council to progress towards these targets.

While there will be some improvements in recovery rates during this strategy period, the targets will not be achieved during this strategy period; however, the endorsement of the above targets by Council in this strategy sets the direction for the process of continuous improvement in waste management in the LGA.

INTRODUCTION

The purpose of this strategy is to:

1. Identify the strategic objectives that Council will focus on over the next four years.

2. Identify the goals, actions, timeframes and measurements that will be used to achieve the strategic objectives.

3. Inform the planning and delivery of services, facilities and infrastructure for waste management and resource recovery within the Lithgow LGA over the next four years.

4. Establish a direction for investigating the possibilities for future investment in waste and resource recovery industry and business in the LGA.

The strategic objectives, targets and actions are determined by asking the key questions:

1. "What are the key challenges for the Lithgow LGA?"

2. "Where are we now?"

3. "Where do we want to be?"

4. "How do we get there?"

The answers to the questions are based on:

- The waste hierarchy principles and circular economy model,
- The national and state government policy context,
- The current waste situation within the LGA,
- The current and future waste challenges within the LGA,
- Community priorities,
- Council realities,
- Regional co-operation frameworks, and
- Best practice in the waste industry.

This paper is available on Council's website at: https://council.lithgow.com/council/ipr/

2. STRATEGIC VISION

To deliver best practice waste services and facilities
to continuously improve landfill diversion rates and
transition towards a circular economy.

To empower and educate the community,
to protect the local environment and
to support the local economy.

2.1 THE STRATEGIC FRAMEWORK

The six elements of the strategic framework:

1. The strategic vision will be achieved through answering the four strategic questions.
2. The answers to the four strategic questions provide four strategic objectives.
3. The four strategic objectives will each be realised through achieving key goals.
4. The level of achievement of the key goals will be measured against set targets.
5. The set targets provide a measurable outcome within a timeline that will be reported.
6. The reported outcomes will be used to review the answers to the four strategic questions to provide an iterative process of continual improvement.

This strategic framework of objectives, goals and targets will establish how the strategic vision will be achieved in the four years from 2022-2026.

The Four Strategic Questions:

1. "What are the key considerations for Lithgow?
2. "Where are we now?"
3. "Where do we want to be?"
4. "How do we get there?"

The Four Strategic Objectives:

- Objective 1 – Deliver Best Practice Waste Services
- Objective 2 – Continuous Improvement of Facilities
- Objective 3 – Community Education and Empowerment
- Objective 4 – Measurement and Reporting

THE STRATEGIC FRAMEWORK

The Strategic Targets

Each of the objectives will result in changes that will contribute towards Council achieving the waste-diversion targets set by the NSW government.

Achieving the targets relies on the participation of the whole community, including Council, residents, visitors and businesses.

The series of actions identified in this strategy are aimed at empowering all of the community to achieve the strategic vision and contribute to the sustainability of all the communities within the Lithgow LGA.

This strategic framework is established within a context of guiding principles that structure waste management and resource recovery in Australia.

Targets:

Average 80% recovery rate from all waste streams by 2030

Separate collection of food and garden organics by 2030

3. GUIDING PRINCIPLES

3.1 The Principles that Guide Policy

Planning for waste management is guided by well-established principles and models. At all levels of government in Australia, policies are structured by:

- the waste hierarchy, and
- the circular economy.

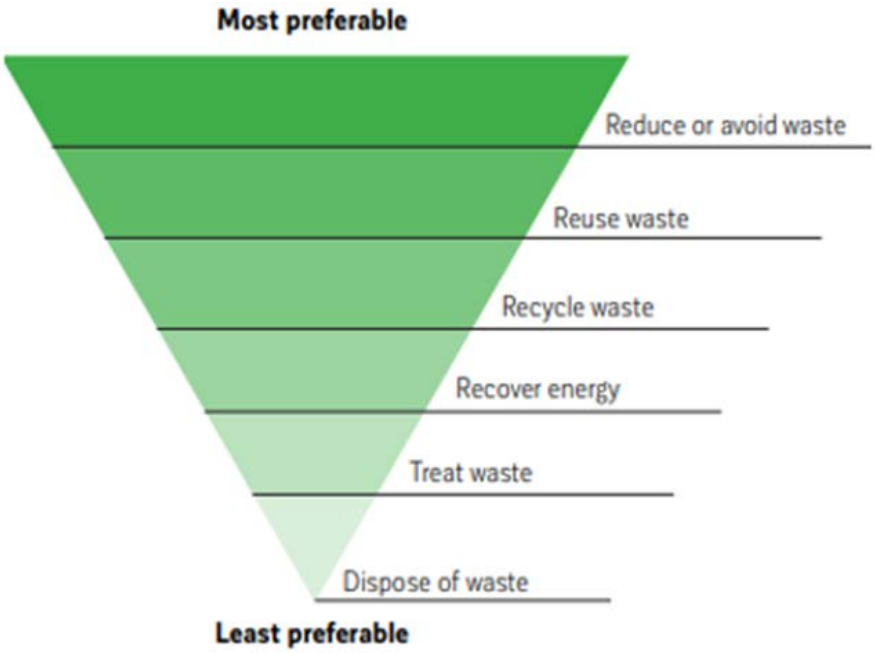
3.1.a The Waste Hierarchy

The waste hierarchy is the core conceptual framework. The waste hierarchy is the principle that is the foundation for waste policy at all levels of government in Australia (Figure 1).

The waste hierarchy framework establishes the priorities in managing waste, based on environmental impact and sustainability.

The waste hierarchy pyramid represents the options for managing waste within a framework that prioritises the achievement of the preferred outcome of avoiding and reducing waste and seeks to reduce the least preferable outcome of disposing of waste.

Figure 1: The waste hierarchy



GUIDING PRINCIPLES

The priorities of the Waste Hierarchy

- Reduce or avoid waste:

  The most preferable outcome is to reduce waste and waste related impacts at each point in the supply chain. Avoiding waste requires consideration of both what and how much is consumed to find ways to reduce consumption, such as through sharing community equipment.

- Reuse waste:

  The second preference is to extend the life of products and materials. Reuse includes considerations of what is used, such as using reusable cups, bags and buying second hand items and, repurposing items that are no longer useful for their original purpose.

- Recycle and compost waste:

  The third preference is to create new products from used products. Recycling and composting reduces the need to extract new resources to make products.

- Recover energy:

  The fourth preference is to offset greenhouse emissions from conventional electricity generation. This process converts to energy the products and materials that do not have higher order uses within the waste hierarchy.

- Treat waste:

  The fifth option is to process waste to alter its form. This often refers to reducing the hazardous properties of materials.

- Disposal of waste in landfill:

  The least preferred option in the hierarchy is disposal of residual items that cannot be used at a more preferable level of the waste hierarchy. As this is the least preferred method to safely dispose of waste, the aim is that only a small portion of waste will require this method of disposal.

3.1.2b The Circular Economy

The circular economy model establishes the actions and relationships that deliver the outcomes under the waste hierarchy.

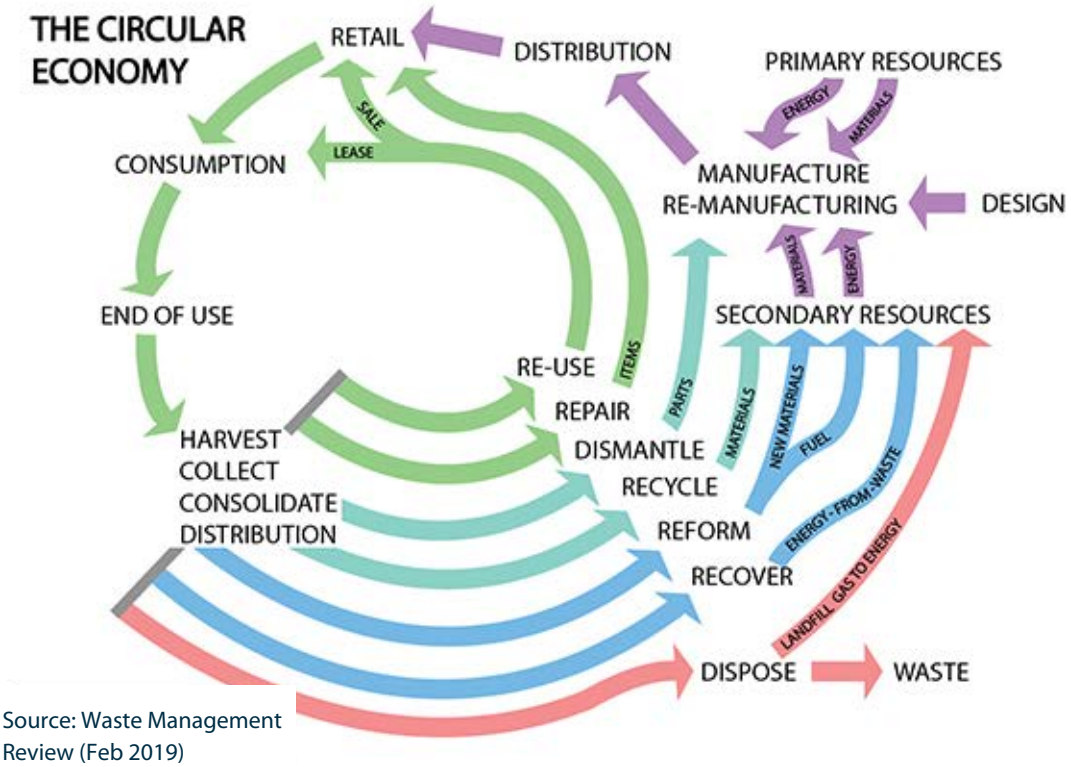
The model (Figure 2) shows the supply chain as a network of pathways that are designed to circulate materials within their highest order uses, minimising waste and environmental impact.

The Processes of the Circular Economy:

- Products are designed by manufacturers to integrate new and secondary materials and to be able to be disassembled.
- Retailers are open to selling second hand and remodelled items.
- Consumers, including businesses and councils, buy recycled products and select the optimal recovery pathway for used items.
- Councils optimise resource and energy recovery at waste facilities.

The circular economy model (Figure 2) engages all stakeholders in optimising resource outcomes.

Figure 2: The Circular Economy Model



Source: Waste Management Review (Feb 2019)

4. THE POLICY CONTEXT

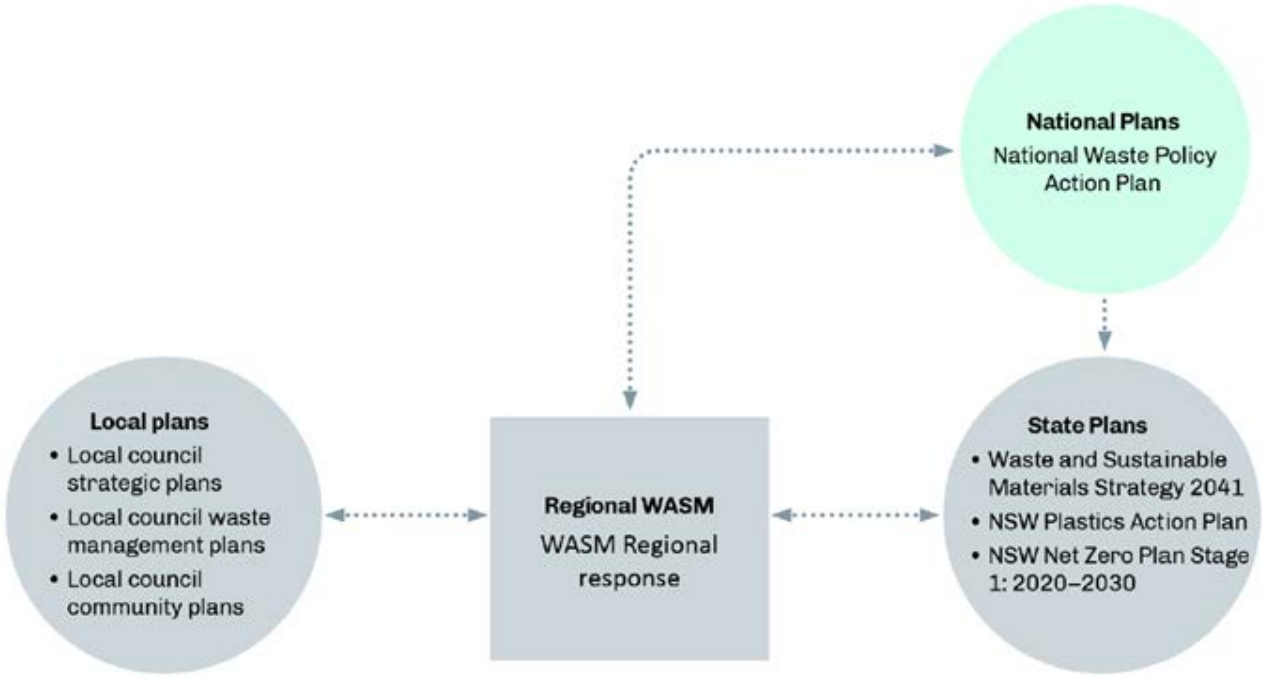
The guiding principles determine the national, state, regional and local policies and strategies. National, state, regional and local policies and strategies collectively form a framework.

- The national policies establish the guiding principles and targets that guide national efforts.
- The state and regional policies and strategies cascade from the national policies.

This waste policy framework provides the context for Lithgow City Council's waste strategy. Council's waste strategy is also set within the context of the Community Strategic Plan and consistent with other Council strategic plans.

The policy framework is illustrated in Figure 3, below:

Figure 3: The National, State and Local Council Waste Management and Resource Recovery Framework (EPA, 2022)



4.1 Key Policies

The key policies are set out below:

Table 1: Current legislation and government policies relating to waste management for Lithgow City Council

Legislation/Policy	Short Description/Relevance to Lithgow City Council
Australian Government (Commonwealth)	
National Waste Policy Action Plan 2019	The Action Plan supplements the 2018 National Waste Policy, setting targets and actions to guide investment and national efforts. The targets relevant to Lithgow LGA include: • 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.
Recycling and Waste Reduction Act 2020	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: • 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 • Remaining waste products, including mixed paper and cardboard, by no later than June 2024.
New South Wales (State)	
Protection of the Environment Operations (POEO) Act 1997	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.
NSW Waste Avoidance and Resource Recovery Act 2001 (WARR Act)	The WARR Act is the primary Act governing resource recovery in NSW and defines the Waste Hierarchy. The objectives of the WARR Act include efficient use of resources and resource recovery.

Legislation/Policy	Short Description/Relevance to Lithgow City Council
NSW Waste and Sustainable Materials Strategy 2041 (Stage 1: 2021-2027)	The new NSW Waste and Sustainable Materials Strategy provides a framework for waste management in NSW. The initial Stage 1 targets have been set to be achieved by 2030: • 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%. 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.
NSW Waste from Energy Policy Statement 2015	The NSW Energy from Waste Policy statement outlines the policy framework and technical criteria that apply to facilities proposing to recover energy from waste in NSW.
NSW Waste from Energy Policy Statement 2021	The Energy from Waste Infrastructure Plan guides strategic planning for future thermal energy from waste facilities to ensure infrastructure is located in areas that best address the state's waste management needs until 2041, and where it maximises efficiencies for waste innovation, management and energy recovery. The Plan identifies four Priority Infrastructure Areas: 1. West Lithgow Precinct, 2. Parkes Special Activation Precinct, 3. Richmond Valley Regional Jobs Precinct, and 4. Southern Goulburn Mulwaree Precinct.
Local Government Act 1993	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.
NSW Circular Economy Policy Statement: Too Good To Waste 2019	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: • 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. The Circular Economy Policy Statement provides a framework for Lithgow City Council to review and transition operations to meet circular economy goals.
NSW Illegal Dumping Strategy 2017-21	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).

5. STRATEGY SUITE

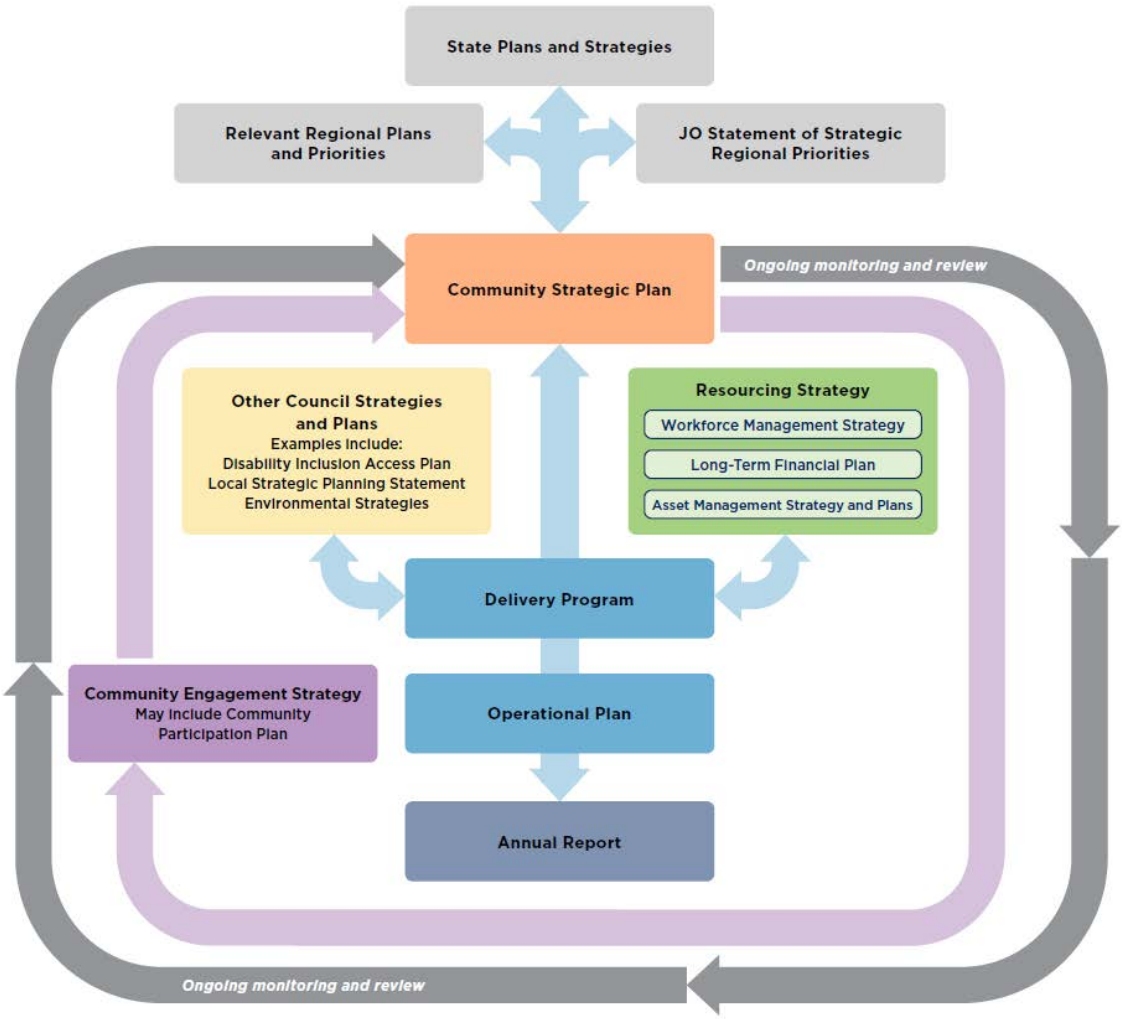
The national and state policies guide council strategies.

The NSW Government has established an Integrated Planning and Reporting (IP&R) framework to guide the way councils in NSW plan for the future.

The IP&R framework is based on the community's priorities and establishes a structure of integrated visions, goals and actions to achieve these priorities.

Figure 4 illustrates the IP&R framework to show how actions to achieve community priorities are delivered through a suite of strategic plans that are integrated within a council's Community Strategic Plan. The Community Strategic Plan is, in turn, established within the context of State plans and strategies.

Figure 4: The NSW Integrated Planning and Reporting (IP&R) Framework (OLG, 2022).



5.1 Lithgow City Council Community Strategic Plan

The vision in the Lithgow City Council Community Strategic Plan 2027 is to be:

A centre of regional excellence that:

- Encourages community growth and development, and
- Contributes to the efficient and effective management of the environment, community and economy for present and future generations.

To achieve this vision, Council has a suite of strategic plans that are integrated with the Community Strategic Plan. The Waste Management and Resource Recovery Strategy sits within the suite of Council's strategic plans.

As part of its work towards achieving the goal of the Community Strategic Plan, Council also participates in relevant regional collaborative forums.

The regional and Council strategies and plans that touch on waste, informing its priorities and shaping internal responsibilities, are shown in Table 2:

Table 2: Regional and Council strategies relating to waste management for Lithgow City Council

Local and Regional Strategies	
Lithgow City Council Community Strategic Plan	Council is endeavouring to maximise investment that will create local jobs and a path for the economic transition of the LGA, from coal, to the resource industries of the future. Council is investigating investment from government and waste resource related industries and businesses. This Waste Strategy is part of a transition plan that aims to ensure the future sustainability of all the communities in the LGA through identifying opportunities for investment and development in waste resource industries, businesses and initiatives that support cost-effective and sustainable waste diversion.
NetWaste Regional Waste Strategy 2017-2021	NetWaste is a collaborative environmental management forum compromised of 25 Councils in the central and western regions of NSW, including the Lithgow LGA, covering a total area of 310,000 square kilometres and a population of more than 400,000 people. NetWaste delivers on collaborative waste projects and education strategies providing an opportunity to share resources and knowledge, and to coordinate planning at regional and sub-regional levels. Their 2017-2021 strategy focused on supporting investment in infrastructure, promoting innovation, improving recycling behaviour, developing new markets for recycled materials and reducing litter and illegal dumping. The NetWaste Regional Waste Strategy is being updated in 2022 and will be finalised after the Lithgow Waste Strategy. Council is actively involved in NetWaste and the two strategies will align.

6. LITHGOW COUNCIL WASTE CHALLENGES

6.1 Challenges for Waste Management in the Lithgow LGA

Lithgow LGA faces specific challenges for waste management. Through identifying, addressing and managing these challenges, this strategy will provide for the waste services, infrastructure and community engagement that is required to ensure the sustainability of future waste services.

The primary challenges facing the Lithgow LGA and the consequences of these challenges are summarised in Table 3, below. These challenges frame the development of the Strategy's objectives and actions.

Table 3: Challenges for waste management in the Lithgow LGA

Challenge	Issues arising
Out of area disposal	There is a significant challenge managing out of area waste due to the gate fee price differential between neighbouring councils (particularly levy paying areas in Blue Mountains and Sydney) and Lithgow Council. • The problem is exacerbated with unsupervised sites in rural areas where waste can be unloaded without inspection and for free. • Ratepayers will be liable for the waste levy if waste from the regulated areas is disposed of in the Lithgow LGA.
Illegal dumping at rural waste facilities	In addition to out of area waste: • Prohibited items and quantities are disposed of at unsupervised rural facilities. • Ratepayers are subsidising commercial waste disposal (and Council is forgoing revenue at Lithgow SWF) as 'commercial' waste is regularly disposed of at rural sites.
Illegal dumping outside of waste facilities	There are examples of asbestos being disposed of in rural areas, which can be hazardous to human health. There is also evidence that commercial operators dump waste in rural areas.
Increase in waste volumes	Since 2017, Wallerawang landfill annual volumes increased from 2,000 tonnes to 4,250 tonnes. • 15-18% annual increase in waste volumes at transfer stations (except Tarana).
Incidents	There is the potential for serious incidents to occur from prohibited waste disposal where supervision is not present. This places the community who use these facilities in danger.

7. WHERE ARE WE NOW?

7.1 Population and Demographics

The Lithgow LGA covers an area of approximately 4,551 square kilometres at the edge of the western side of the Blue Mountains and the eastern side of the Central West region. The Lithgow LGA is characterised by its large geographical area, low population density, natural beauty, industrial heritage and economic transition town status.

The relatively close proximity to Sydney and availability of road, passenger train and freight rail transport connections to Sydney and, also, to other major regional towns, contributes to a range of key industries including primary production, coal mining, power generation, manufacturing and tourism. Attracting new industry and business investment, which is compatible with the protection of the significant natural and cultural assets of the LGA, is a priority for the community as the local economy transitions from reliance on the coal mining and coal power generation industries.

Figure 5: Map of NSW with Lithgow LGA

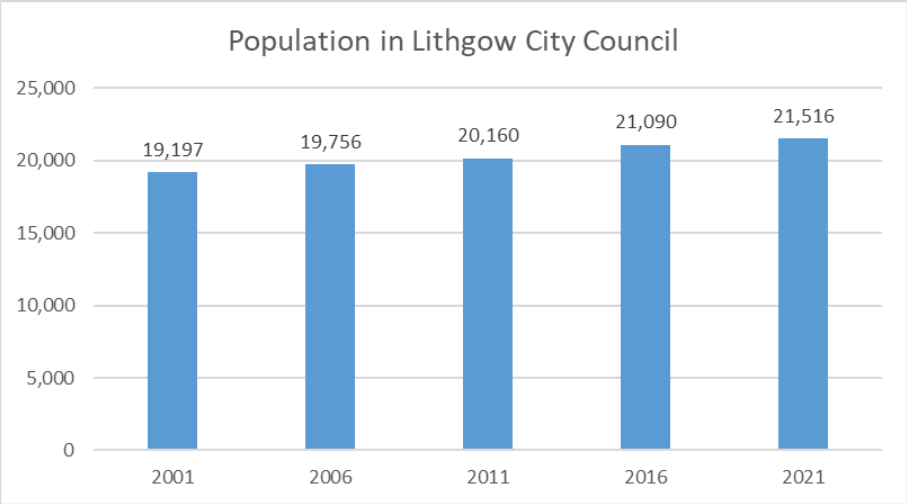
Figure 6: Map of Lithgow City Council LGA

POPULATION AND DEMOGRAPHICS

The population of an estimated 20,854 residents in 2021 (Profile. id, 2022) live in a range of rural and urban settlements. Within the LGA there is the urban centre of Lithgow, the two townships of Portland and Wallerawang, numerous villages, hamlets and rural localities. The population has varied proximity and accessibility to the Lithgow urban centre due to the natural landforms, such as mountains and valleys and, the availability of road infrastructure.

Population data using ABS census data from the past 20 years can be found in Figure 7, and shows the population growth rate since 2011 has been 0.65% per annum.

Figure 7: Lithgow LGA historic resident population (ABS, 2022*)



Wallerawang Garbage Depot - northern boundary

*Australian Bureau of Statistics, Region Summary: Lithgow (C) [Data by Region], accessed 25 February 2022.

7.2 Waste and Resource Recovery Collection Summary

There are 10,238 (ABS, 2022) households in the Lithgow LGA. Approximately 8,300 households have access to a kerbside waste collection service (81%).

Council provides a kerbside collection service to urban residents in the LGA for general waste, co-mingled recycling, bulky waste and bulky green waste. Other information regarding the services Council offers is located in Table 4.

The cost of these services for ratepayers is covered through the annual Domestic Waste Management Charge (DWMC). The DWMC includes free disposal at all Council waste facilities in the LGA for municipal solid waste (MSW), with the exception of asbestos, mattresses and tyres.

The Lithgow Solid Waste Facility charges gate fees for commercial waste and asbestos, mattresses and tyres.

Households without a kerbside collection service have a reduced DWMC and can self-haul domestic waste to the Council operated transfer stations and landfills free of charge.

The kerbside waste collection contract is currently with JR Richards and expires in November 2023, with an option to extend the contract for a further two years at Council's discretion and, if extended, would expire in November 2025.

WASTE AND RESOURCE RECOVERY COLLECTION SUMMARY

Table 4: Summary of kerbside waste services provided by Council

Collection service	Location collection/ drop off	Bin size collection size	Service frequency	Collector	Contract expiry date
Residual waste	Kerbside	240L	Weekly	JR Richards	2023 +2
Co-mingled recycling	Kerbside	240L	Fortnightly	JR Richards	2023 +2
Bulky waste	Kerbside	Maximum 3 cubic metres/ collection	twice per year	JR Richards	2023 +2
Bulky green waste	Kerbside	Maximum 1 cubic metre/ collection	4 times per year	JR Richards	2023 +2
Chemical waste	Drop off at the Lithgow Council Works Depot		Annually	Organised through NetWaste	
Mattress, metal and tyre recycling	Drop of at Lithgow Solid Waste Facility		Drop off	Recycling Contract with Molycopy360	
Supervised burial of asbestos	Lithgow Solid Waste Facility				

7.3 Waste and Resource Recovery Data, Composition and Performance

7.3.1 Overall Waste and Resource Recovery Data

In financial year 2020-2021, the Lithgow City Council (LCC) collected/received 50,332 tonnes combined of Municipal Solid Waste (MSW), Commercial and Industrial (C&I) waste and Construction and Demolition (C&D) waste. Table 5 illustrates the changes to waste generation and recycling rates from FY16-17 to FY20-21.

The introduction of clean fill recycling in the C&D stream has resulted in an increased overall recycling rate in FY20-21. The significant increase in waste generation in FY19-20 is a result of 5,900 tonnes of bushfire waste, including 3,200 tonnes of asbestos.

Table 5: Summary of Lithgow LGA waste generation (MSW, C&D, C&I) and recycling rate

Financial Year (FY)	Total collected/ received (tonnes)	Total waste per capita (kg)	Recycled (tonnes)	Disposed (tonnes)	Recovery rate
FY 16-17	54,842	2,548	2,180	52,662	4%
FY 17 – 18	47,969	2,229	2,495	45,475	5%
FY 18 – 19	50,371	2,340	2,173	48,198	4%
FY 19 – 20	55,312	2,570	2,756	52,557	5%
FY 20 – 21	50,332	2,338	4,498*	45,834	9%

*4,498 tonnes included recycled material for earthworks at the RRC

7.3.2 Where Does the Waste Come From?

Waste in the LGA is classified into three types:

1. C&D - Construction and Demolition

   C&D is solid waste that results from the demolition, erection, construction, refurbishment or alteration of buildings.

2. C&I – Commercial and Industrial Waste

   C&I is solid waste generated by businesses and industries; including shops, restaurants, offices and institutions such as schools and hospitals.

3. MSW - Municipal Solid Waste

   MSW is solid waste from households and local government operations. This is the sort of waste that is collected in Council's weekly household kerbside bin collection service and that is permitted to be disposed of at waste facilities, by residents, for free.

Figure 8: Waste Collected in the LGA by Waste Type, Financial Year 2020-2021

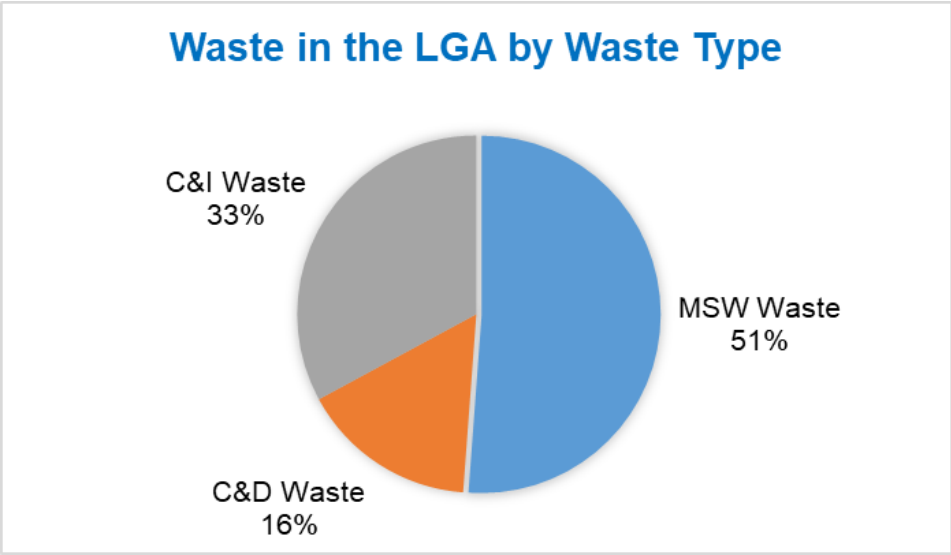


Figure 8 shows that, at present, the MSW waste type makes up the largest proportion of waste collected in the LGA. C&D and C&I waste collections are only accepted at the Lithgow Solid Waste Facility.

7.3.3 Where is the Waste Collected?

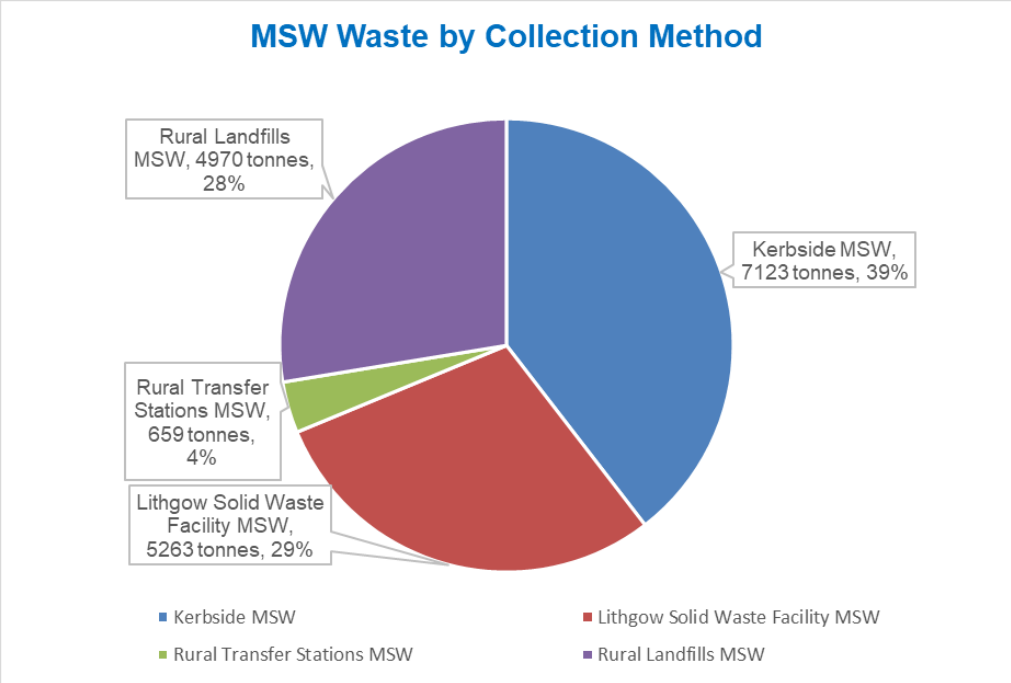
C&D and C&I waste collections are only accepted at the Lithgow Solid Waste Facility.

MSW Waste in the local government area is collected through the following collection methods:

- kerbside collection services,
- transfer stations,
- rural landfills, and
- Lithgow Solid Waste Facility.

Figure 9 shows the quantity of MSW waste and the percentage of total MSW by collection method.

Figure 9: Summary of MSW Waste by Collection Method, Financial Year 2020-2021



7.3.4 Projected Waste Generation

In order for Council to prepare for the future, waste generation tonnages have been projected to the year 2030 using the average rate of population growth in the LGA between 2011 and 2021 (0.65% per annum growth), from the base year of FY20-21 (50,253 tonnes of MSW/C&I/C&D).

The estimated total waste generation for the LGA in the year 2030 is 53,270 tonnes.

7.3.5 Kerbside Waste Composition

What is in our red bin?

Figure 10: Lithgow LGA residual waste composition
Source: EC Sustainable Pty Ltd 2021.

What is in our yellow bin?

Figure 11: Lithgow LGA co-mingled recycling waste composition
Source: EC Sustainable Pty Ltd 2021.

7.3.6 Summary of the Kerbside Bin Waste Composition

An audit of kerbside bins in October 2021 found:

In the red bin

The average household (hh) produced 12.67kg/wk of residual waste which was placed into the red bin. This includes on average:

- 12% recyclables which are accepted in the yellow bin (1.48kg/hh/wk),
- 33% garden organics (4.22kg/hh/wk), and
- 25% food organics (3.12kg/hh/wk).

In the yellow bin

The average household produced 2.91kg/wk of recycling which was placed into the yellow bin, where:

- 11% (0.32kg/hh/wk) was identified as contamination – i.e. materials which are not accepted in the yellow bin.

Recovery and diversion rates for kerbside waste

- The resulting recovery rate of all the recyclables generated was 64% with the missing 36% (1.48kg/hh/wk) being incorrectly placed into the red bin.

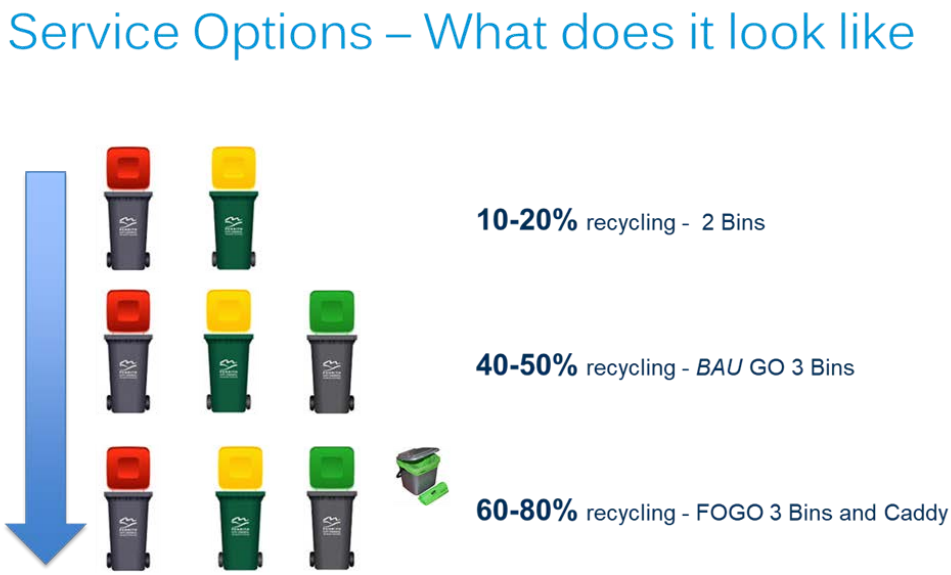
- The overall landfill diversion rate (percentage of total waste stream diverted from landfill) was 17%, i.e. households are diverting 17% of the materials they generated away from landfill.

- The potential landfill diversion rate, if all recyclables were correctly placed in the current 2-bin system, is 26%, and if all the garden organics were captured in a 3rd bin this could rise to 44% and if the 3rd bin also accepted food waste, this could be 70%*.

*It should be noted that these potential diversion rate figures are for reference only, as it is unrealistic to consider that 100% of the materials generated will be placed into the correct bin.

7.3.7 Potential Recycling Rates for Different Service Options

Figure 12: Comparison of recycling rates by service options

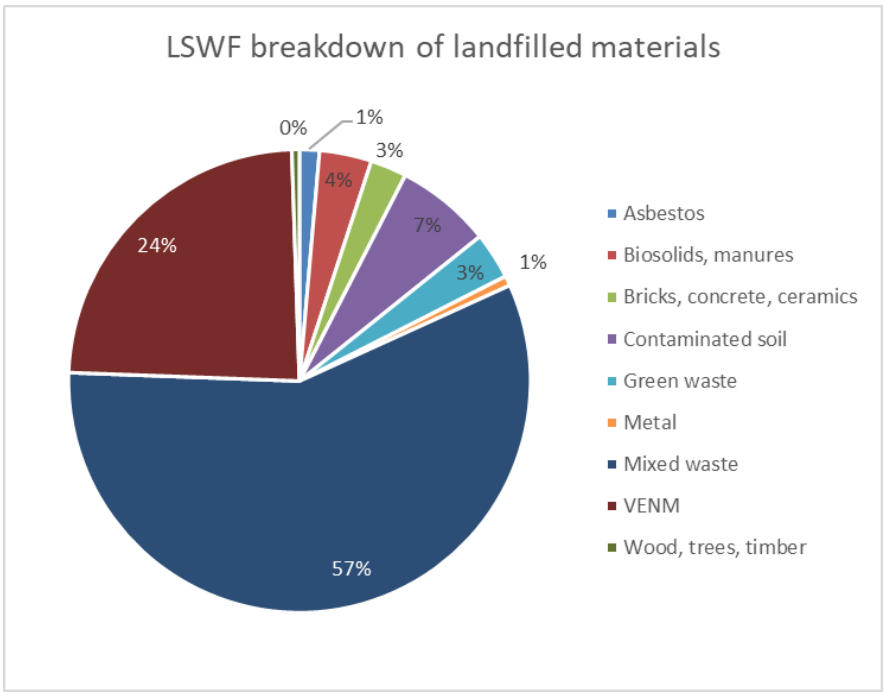


BAU - Business as Usual
GO - Garden Organics
FOGO - Food Organics and Garden Organics

7.3.8 Waste Composition at the Lithgow Solid Waste Facility

Figure 13, below, highlights the main material types being disposed of at the Lithgow Solid Waste Facility in 2020/21.

Figure 13: Percentage of material types being disposed of at the Lithgow Solid Waste Facility in 2020/21



7.3.9 What Does Our Waste Data Tell Us?

There are a number of trends in the MSW waste data that indicate potential opportunities for improved waste management.

Council's 2-bin kerbside system achieves a diversion rate (17%) in line with state averages for this type of system. This indicates that when suitable recycling options are provided, residents will use these options.

The addition of a 3rd bin (green bin/FOGO) has the potential to increase kerbside recycling from 17% to ~60%. Based on the diversion rate for a 2-bin system, the provision of a green bin will likely be well utilised by residents.

Whilst a kerbside service is provided to 81% of households, only 39% of total household generated waste is collected by the kerbside service (see Figure 9). The remainder of the waste (61%) is self-hauled to the waste facilities. It is noted that these figures are MSW only – they exclude commercial waste (C&I and C&D) delivered to Lithgow SWF and charged a gate fee.

Overall LGA diversion is impacted by the amount of waste delivered directly to facilities where the waste ends up in landfill rather than recycled. Improved recycling facilities (and correct use by residents) at LSWF and rural sites has the potential to significantly increase landfill diversion rates.

Portland Garbage Depot

7.4 Waste and Recycling Infrastructure

Council currently operates four landfills and five transfer stations. The primary site is the Lithgow Solid Waste Facility (SWF) with the remaining sites servicing the rural areas. A new Resource Recovery Centre (RRC) is under construction at Lithgow SWF and is expected to be operational in 2022. Detailed information about Council's waste and recycling infrastructure can be found on the 'Lithgow City Council Waste Info App' or online at https://council.lithgow.com/waste-recycling/waste-management/.

7.4.1 Lithgow Solid Waste Facility

Lithgow Solid Waste Facility includes a gatehouse, weighbridge, landfill and resource recovery operations. Recycling currently includes paper/cardboard, motor oil, mattresses, tyres and solar panels. Green waste is mulched and used on site. The new RRC will increase resource recovery operations. The Lithgow Solid Waste Facility is the only facility in the LGA that accepts commercial waste, construction and demolition waste and asbestos.

The facility has a supervised weighbridge and is open 7 days per week.

Lithgow Solid Waste Facility - green waste mulching

7.4.2 Rural Landfills

Council currently operates three rural landfills within the LGA:

1. Capertee Garbage Depot – An unsupervised site without a weighbridge, it accepts household waste only and is planned for closure in FY23/24.

2. Portland Garbage Depot – Presently this unsupervised site without a weighbridge is being upgraded for supervision. This landfill accepts household waste only and is planned for closure in FY26/27.

3. Wallerawang Garbage Depot – An unsupervised site without a weighbridge, it accepts household waste only and is planned for closure in FY22/23.

7.4.3 Transfer Stations

Council currently operates five transfer stations within the LGA:

1. Angus Place Transfer Station – This facility accepts household general waste, scrap metal & co-mingled recycling.

2. Glen Davis Transfer Station – Currently a temporary site while a new site is under construction, it accepts household general waste only. Co-mingled recycling will be included in the new site.

3. Hampton Transfer Station – This facility accepts household general waste, co-mingled recycling & paper/cardboard.

4. Meadow Flat Transfer Station – This facility accepts household general waste & co-mingled recycling.

5. Tarana Transfer Station – This facility accepts household general waste, co-mingled recycling & paper/cardboard.

A site at Blackmans Flat has a development consent but is not predicted to be required until 2040.

Meadow Flat Transfer Station

Tarana Transfer Station

7.4.4 Container Deposit Scheme (CDS)

In 2017, the NSW Government introduced the Return and Earn container deposit scheme (CDS) aimed at reducing drink container litter as well as increasing the recycling rate of these containers. As at January 2022, over 6.7 billion drink containers have been returned for processing and recycling in NSW. A CDS reverse vending machine can be found at Lithgow Valley Plaza on the corner of Lithgow Street and Bent Street.

7.5 Initiatives, Education and Achievements

Council is continuously improving the ways in which waste is managed and resources recovered within the LGA and there have been many achievements in the last 5 years. Raising community awareness about waste makes a significant contribution to increasing the rate of recycling and reuse of materials. Council has promoted resident engagement and waste education at multiple levels including Councillors, school aged children, and the wider community. Some of the initiatives undertaken in the last 5 years are listed below.

7.5.1 Community Engagement

NetWaste

Council actively participates in NetWaste activities. NetWaste is a voluntary regional waste group formed in 1995 to provide collaborative approaches to waste and resource management. Covering almost 40% of the state, benefits are delivered to 25 member councils in regional NSW.

NetWaste is funded primarily through the EPA and delivers outcomes beyond regional service arrangements, through targeted waste management projects, education and community engagement programs, and member Council enablement. NetWaste delivers significant benefits to Lithgow Council including regional contracts, education programs and shared information.

Lithgow City Council 'Waste Info' App

In 2017, Council introduced the 'Waste Info' app which provides the following services:

- A personalised bin collection calendar with optional bin day reminders,
- A quick guide to the bin system and an alphabetised list of materials and how to dispose of them,
- Information about Council's services and waste facilities including maps and directions,
- Frequently asked questions, contact details and a 'report a problem' form, and
- Optional notifications to find out about the latest waste information from Council.

By the end of 2021, approximately 3,328 people had downloaded the 'Waste Info' app.

Social media engagement

Council has endeavoured to reach more people by maintaining an active social media presence. Across Council's Facebook page, website and online newsletter, as well as through the local radio station, Council has provided information regarding bulky and green waste collections, the Household Chemical Cleanout and education initiatives.

7.5.2 Community Education

'Get Grubby' Program

In 2021, Council offered free subscriptions to the 'Get Grubby' program for schools, early learning centres and families.

The program is an online subscription containing activity kits and educator guides designed to encourage active participation in early childhood sustainability learning.

Eleven centres in Lithgow LGA have signed up for this program. The Families Program is designed for families with young children and contains a monthly email containing sustainability tips and fun activities. Over 50 families in the Lithgow LGA have enrolled

Primary school 'We are Waste Wise' art competitions

Conducted in both 2020 and 2021, Council runs the 'We are Waste Wise' art competition, for schools within the LGA, to encourage children to think about how they manage waste.

Council has invited primary school children to create original drawings based around waste related themes. In 2020 the theme was 'Our Place, Our Future' and in 2021 the theme was 'Get Grubby and Thrive'.

The program has been successful with 145 participants over the two years.

Community Waste Education Workshops

In 2021, Council offered free online courses delivered by 'Less Mess' on reducing food waste and de-cluttering. These courses had 87 participants across the NetWaste region.

Additionally, Council supported the Police Citizens Youth Club permaculture course for young people by kickstarting the permaculture course with the supply of materials for the compost hub.

7.5.3 Achievements

Lithgow City Council grant projects 2016 – 2021

Over the last 5 years, Council has been successful in winning almost $750,000 in grant funding through the NSW EPA Waste Less Recycle More program which has allowed Council to conduct several projects on landfills and transfer stations. These grants have contributed to safer disposal of hazardous materials, reduction in illegal dumping, reduction in stockpile contamination and increased resource recovery in the region. A summary of achievements is provided in Table 6, Table 7 and Table 8 below.

Table 6: Lithgow City Council grant projects 2016 - 2021

Site	Grant Cost	Outcome
Lithgow Solid Waste Facility	CRC Operations Fund Program $148K Trust $60K Council	Assists households in NSW to safely dispose of materials that are potentially a hazard to the environment or public health or are problematic for safe collection and disposal.
Lithgow Solid Waste Facility	EPA's Bushfire Recovery Program for Council Landfills $231,784 EPA grant	Funds for installation of a tarpaulin based Alternative Daily Cover (ADC) system. The ADC will improve environmental performance on the site and reduce the need for Virgin Excavated Natural Material (VENM) to be applied as daily cover. Reducing the use of VENM for daily cover preserves VENM (for final capping and future emergencies) and preserves landfill capacity.
Wallerawang and Portland Landfill	Landfill Consolidation & Environmental Improvement Grant Round 1 Stream 2 $64 930 Trust	Funds for the upgrade of perimeter fences to chain wire mesh and 2 strands of barbed wire and installation of CCTV. These security improvements help to prevent unauthorised access, contain windblown litter, reduce illegal dumping, limit contamination of stockpiles and increase resource recovery.
Cullen Bullen Landfill	Landfill Consolidation & Environmental Improvement Grant $196K Trust $59K Council	Funds to assist Councils in the consolidation and closure of regional and rural landfills. The Cullen Bullen landfill was closed in February 2020 and rehabilitation was formally completed in July 2021. The benefits include improved resource recovery in the region, cessation of leachate generation, improved stormwater quality, reduced fire risk and windblown litter.
Glen Davis Landfill	Landfill Consolidation & Environmental Improvement Grant $105K Trust $35K Council	These funds assisted with the closure of the landfill at the end of 2019 and the construction of a temporary transfer station on the landfill site. In 2022 remediation of the landfill site is underway. Community consultation regarding the location of a new transfer station has commenced.

Table 7: Lithgow Solid Waste Facility key achievements 2017 - 2021

Achievement	Cost if applicable	Description
Clean water diversion drains	~$150k	Construction of two clean water diversion drains to improve water management. This also created additional landfill capacity.
Gatehouse security improvements	~$30k	Installation of cameras and intercom to screen loads and prevent unlawful and out of area waste.
Mattress and tyre recycling		Commenced mattress and tyre recycling – to date have diverted ~175t mattresses and ~56t tyres. Taken off site for recycling.
Lithgow City Council commenced in-house operation of the Lithgow Solid Waste Facility		This facility was managed under contract for 25 years. Under Council management the improvements include: • Improved road maintenance for site access, • Improved site layout, • Improved stormwater quality, • Reclamation of stormwater for dust suppression, • Increased recycling (see below), • Reduction in windblown litter, • Reduction in fire risk, • Commercial benefits of retaining gate fees, and • Control over investment in infrastructure and services for the community.
Commencement of the construction of a Resource Recovery Centre	~$4M	Completion is expected in 2022. Benefits include: • CRC (listed above under the grant information), • Improved amenity and safety, • Improved sorting and resource recovery facilities, and • Promotion of source separation.

Table 8: Achievements at landfills and transfer stations 2017 - 2020

Location	Achievement	Description
Angus Place	Landfill closed and remediated. Replaced with a transfer station.	Improved environmental protection through minimising leachate risk, reducing fire risk, improving storm water quality, reducing litter and increasing recycling by including co-mingled recycling bins on site. The community benefits from improved site accessibility.
Tarana Transfer Station	A new transfer station was constructed at Tarana.	Improvements in location, road access and site layout provide better accessibility for residents. Increased recycling by including co-mingled and cardboard recycling bins on site.
Site security	Additional remote solar cameras.	Prevention and regulatory action for unlawful disposal and out of area waste. Includes staffing for monitoring and enforcement.

8. WHERE DO WE WANT TO BE?

Council is committed to meeting its responsibilities under the national and state policies to ensure the Lithgow community maintains the opportunity to determine its own decisions regarding waste management and resource recovery within the LGA and is building resilience to outside influences.

8.1 Federal and State Government Targets

In the National Waste Policy Action Plan 2019, the Department of Agriculture, Water and the Environment implemented the following targets 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.

8.2 NSW Government Targets

Council endorses the NSW Government targets for waste management presented in the latest NSW Waste and Sustainable Materials Strategy 2041 (Stage 1: 2021-2027).

These targets have been incorporated into the Strategy where appropriate, with consideration given to the regional context of the Lithgow LGA. The State Government targets are displayed in Figure 14.

Figure 14: NSW Government Targets

Source: NSW Department of Planning, Industry and Environment 2021.

8.3 Endorsed Lithgow City Council Targets

Lithgow City Council will progress towards achieving the long-term NSW target of an average 80% recovery rate from all waste streams by 2030 and the mandated separate collection of food and organics waste from all NSW households by 2030.

Targets:

Average 80% recovery rate from all waste streams by 2030

Separate collection of food and garden organics by 2030

8.3.1 Introduction of a FOGO Service

The NSW Waste and Sustainable Materials 2041 Strategy has mandated that all Councils across NSW provide a food organics and garden organics (FOGO) collection service by the year 2030. While the average 80% recovery rate is a target for 2030, the FOGO service must be implemented by 2030.

This mandate requires that each household has a green waste bin, akin to a compost bin, for the disposal of both food waste and garden waste. The environmental benefits of a FOGO collection service are significant. These benefits include the potential for landfill emissions reductions, landfill diversion and the production of useful compost material.

The transition to a FOGO service will be gradual and will include extensive community education regarding what can be put into the FOGO bin and why this new service is mandatory. A comprehensive and extended community engagement campaign is required for the introduction of a FOGO service to be successful. Council anticipates that the transition will commence in financial year 2023 – 2024 as proactive implementation will make it possible to introduce a service that is cost effective and best fits the community needs.

The introduction of a FOGO service will contribute towards achieving the average 80% recovery rate from all waste streams by 2030.

9. HOW WILL WE GET THERE?

Council has identified four priority objectives around which the Strategy has been built.

Each objective is supported by key goals and actions.

The actions to achieve the goals will be implemented over the next four years.

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.

9.1 The Objectives:

1. Deliver best practice waste services
2. Continous improvement of facilities
3. Community education and empowerment
4. Measurement and reporting

The key goals and actions under each objective are summarised in the chart below:

Summary of the Strategy

VISION STATEMENT

To deliver best practice waste services and facilities to continuously improve landfill diversion rates and transition towards a circular economy.

To empower and educate the community, to protect the local environment and to support the local economy.

OBJECTIVE 1

Deliver best practice waste services

GOALS

1. Review kerbside services to ensure service levels meet community expectations and are fair and equitable.
2. Rationalise rural landfills and transfer stations according to best practice waste management.
3. Develop an implementation plan for FOGO.
4. Improve climate change resilience in waste services.
5. Monitor and evaluate emerging technologies and opportunities for improved waste management.

KEY ACTIONS

1. Review kerbside services in preparation for a new waste services contract.
2. Close and rehabilitate the Wallerawang landfill.
3. Rehabilitation maintenance and monitoring at former landfill sites.
4. Construction of a transfer station at Glen Davis and rehabilitation of the former landfill site.
5. Develop an implementation plan for FOGO.
6. Improve emergency preparedness to ensure continuity of services during and following a natural disaster.

OBJECTIVE 2

Continuous improvement of facilities

GOALS

1. Commence operation of the Resource Recovery Centre.
2. Comply with all relevant legislation, licences and guidelines pertaining to waste services and facilities.
3. Progressively update Lithgow Solid Waste Facility to meet required regulatory and industry standards.
4. Maximise diversion and prolong landfill life.
5. Improve supervision and monitoring at Council's landfills and transfer stations.

KEY ACTIONS

1. Finalise construction and commence operations at the Lithgow Resource Recovery Centre.
2. Implement an internal audit program to monitor waste facility performance against licence conditions and legislation.
3. Undertake capital works as required at Lithgow Solid Waste Facility to improve environmental performance.
4. Undertake material separation on site to match available recycling markets.
5. Establish site supervision and/or monitoring capacity at all of Council's landfills and transfer stations.

OBJECTIVE 3

Community education and empowerment

GOALS

1. Educate the community in the availability and correct use of the waste services and facilities available within the Lithgow Local Government Area.
2. Educate and empower the community to achieve the targets in the NSW Waste and Sustainable Materials Strategy 2041.

KEY ACTIONS

1. Continue the annual primary school engagement (e.g. art competition).
2. Develop the LGA waste information flyers.
3. Educate the community on the use of the Resource Recovery Centre.
4. Develop an education program for the implementation of the new FOGO service.
5. Ensure the website contains up-to-date information on waste services.
6. Ensure effective communication during and after natural disasters.

OBJECTIVE 4

Measurement and reporting

GOALS

1. Continue to improve collection and reporting of waste data.
2. Use measurement and reporting of key waste statistics to help achieve targets in Council's waste strategy.
3. Ensure all statutory reporting obligations are met.

KEY ACTIONS

1. Undertake annual kerbside audits.
2. Report key waste statistics.
3. Complete all statutory reporting for waste services and facilities within the required time frames.

9.2 How Progress Will Be Measured

To ensure that the goals are achieved, Council has established a timeline which identifies deadlines for the key goals. The timeline provides Council with a clear measure of whether the Strategy is on track. Additionally, 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 the objectives of the Strategy.

9.2.1 Timeline

The timeline on the following pages outlines the indicative timeframe for key actions under the Strategy.

Cullen Bullen Landfill - prior to rehabilitation

Cullen Bullen Landfill - rehabilitation

Waste Strategy Timeline

Action	2022	2023		2024		2025		2026	
Objective 1 Deliver best practice waste services									
1. Review kerbside services in preparation for a new waste services contract.									
2. Close and rehabilitate the Wallerawang landfill.									
3. Rehabilitation maintenance and monitoring at former landfill sites.	Ongoing								
4. Construction of transfer stations and rehabilitation of the former landfill sites.		Glen Davis							
		Primary rural transfer station							
			Capertee						
5. Develop an implementation plan for FOGO.									
6. Improve emergency preparedness to ensure continuity of services during and following a natural disaster.									
Objective 2 Continuous improvement of facilities									
1. Finalise construction and commence operations at the Lithgow Resource Recovery Centre.									
2. Implement an internal audit program to monitor waste facility performance against licence conditions and legislation.									
3. Undertake capital works as required at Lithgow Solid Waste Facility to improve environmental performance.		Leachate barrier system							
			Stage 1 rehabilitation						
4. Undertake material separation on site to match available recycling markets.	Ongoing								
5. Establish site supervision and/or monitoring capacity at all of Council's landfills and transfer stations.	Portland								
Objective 3 Community education and empowerment									
1. Continue primary school engagement (e.g. art competition).									
2. Develop the LGA waste information flyers.									
3. Educate the community on the use of the Resource Recovery Centre.									
4. Develop an education program for the implementation of the new FOGO service.									
5. Ensure the website contains up-to-date information on waste services.	Ongoing								

Action	2022	2023	2024	2025	2026
6. Ensure effective communication during and after natural disasters.	As needed				
Objective 4 Measurement and reporting					
1. Continue to improve collection and reporting of waste data.	Ongoing				
2. Use measurement and reporting of key waste statistics to help achieve targets in	Ongoing				
3. Ensure all statutory reporting obligations are met.	Ongoing				

9.2.2 Key Metrics

Metric	Unit of measurement
Service delivery	
Regional transfer stations	Tonnes waste collected per annum
Bulky waste collection service	2 per annum
Bulky green waste collection service	4 per annum
Annual household chemical cleanout event	Kg collected annually
Kerbside FOGO service	Kerbside FOGO service introduced
Waste generation and diversion rates	
Resource recovery rate (diversion from landfill)	Percentage of waste recovered by weight
Waste generation per capita	kg/person/yr
Recycling (yellow bin and green bin) contamination rate	Percentage of contamination in commingled recycling and organics bin by weight
Waste (red bin) contamination rate	Percentage of recyclables (and organics) in red bin by weight
Waste landfilled	Tonnes landfilled per annum
Landfill emissions	Tonnes CO2-e/year
Engagement and education	
Community engagement	Number of community events and attendance rates where available
Participation in NetWaste programs and meetings	Number of meetings attended per year

10. DEFINITIONS

Domestic waste - Domestic waste is the general waste produced in undertaking daily activities in the home environment. This is the sort of waste that can be disposed of by households in the regular Council kerbside bin collection service.

Circular economy - The Circular economy is a model of production, consumption and re-use. The circular economy model illustrates that, after the use or consumption of an item, resources can continue to circulate in the economy. The circular economy model prioritises sustainability not just profitability which is prioritised in the alternative linear model of production consumption and disposal. Recovering resources at the end of a product's life and reusing the retrieved resources in production, reduces waste and reduces the demand for raw materials thereby reducing the demands on the environment.

Commercial and Industrial Waste (C&I) - C&I is solid waste generated by businesses, industries (including shopping centres, restaurants and offices) and institutions (such as schools, hospitals and government offices) but not C&D waste or MSW.

Construction and Demolition Waste (C&D) - C&D is solid waste that results from the demolition, erection, construction, refurbishment or alteration of buildings other than buildings related to chemical, mineral, container and waste processing facilities and infrastructure development construction. Construction and demolition waste includes materials such as: bricks, concrete, paper, plastics, glass, metal and timber.

Community Recycling Centre (CRC) - A CRC is a permanent drop-off centre for some common household wastes that cannot be disposed of in landfill and are, therefore, not collected in council kerbside waste and recycling services. Items that can be taken to a CRC include batteries (car and household batteries), fire extinguishers, gas bottles, fluorescent globes and tubes, motor oils, other oils, paint and smoke detectors.

E-waste - E-waste, or electronic waste, refers to the disposal of items that have a battery or a plug that connects to the electricity supply to power the item. E-waste items include computers, monitors, printers, keyboards, televisions, DVD and CD players, mobile phones, power tools and kitchen appliances.

Municipal solid waste (MSW) - Municipal solid waste is solid waste from households and local government operations. This is the sort of waste that is collected in Council's weekly household kerbside bin collection service and includes the waste collected by councils from municipal parks and gardens, street sweepings, council engineering works and public council bins (source https://www.epa.nsw.gov.au/

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