

Shoalhaven Waste Services

# Waste Reduction Management Strategy

2022 – 2027



# Acknowledgement of country



We acknowledge the traditional owners and custodians of this country and their continuing connection to the land through culture and community. We pay our respects to Elders past, present and future.

Version 4 – 30 November 2022

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## Executive Summary

This Waste Reduction Management Strategy 2022-2027 provides a comprehensive framework that guides Shoalhaven City Council's waste management actions over the next five years. It updates the previous Waste Reduction Management Strategy, dated 2017-2021, and seeks to continue responding to changing population, consumption, waste and technological trends. This Strategy also recognises the stringent enforcement of China's Operation National Sword policy which commenced in January 2018. This impacted the global waste and recycling landscape, resulting in bans on the export of certain recyclable materials from Australia, and consequently, a dramatic increase to the cost of recyclable processing.

Council's Waste Services Department manages kerbside collections of domestic waste, operates 10 Recycling and Waste Depots, and accepts commercial and building wastes from across the Shoalhaven local government area. Central to the Department's operations is the West Nowra Recycling & Waste Depot, which contains Council's only landfill site.

Recognising the limited landfill capacity at West Nowra, Council is investing in new technologies to significantly reduce the volume of waste to landfill. Over the past five years, these technologies have been rapidly evolving in response to projected increases in waste levels and growing concerns over the impact waste has on the health of humans and the environment. These projects are expected to be completed over the life of this Strategy and will ultimately divert a large proportion (>90%) of waste that is currently directed to landfill.

Complementary to these projects, Council delivers programs, policies and education about waste, and collaborates with industry and government to ensure effective best practice management of waste.

With positive actions supported by quality infrastructure and appropriate technologies, waste can be dealt with in a holistic manner, prioritised in accordance with the waste hierarchy, and become a valuable contributor to a circular economy. The circular economy is based on the fundamental principles of designing out waste and pollution, keeping products and materials in use and regenerating natural systems.

In accordance with a continued move towards a circular economy, this Strategy has the overarching objective as follows.

### Strategy Objective

To reduce waste generation, maximise recovery and minimise disposal

This Strategy has been developed in alignment with local, regional and State strategies and plans for waste management and is guided by four key directions:

- Direction 1: Deliver waste and recycling infrastructure to meet future needs
- Direction 2: Encourage behaviour change
- Direction 3: Engage with industry and government stakeholders
- Direction 4: Develop and deliver policies and programs

Each direction contains a series of actions for Council to implement which are further detailed in an Implementation Plan. These actions will seek to achieve the Strategy objectives to:

1. Reduce waste generation – measured through the extent of waste that is collected by Council and/or directed to Council's waste management facilities
2. Maximise recovery – measured through the proportion of waste that is recovered from the waste stream prior to entering landfill
3. Minimise disposal – measured by the amount of waste being disposed into landfill.

Throughout the implementation of the Strategy, flexibility in approach and ability to pivot and address unforeseen challenges within the waste industry will also be a key ingredient to achieving long term aims.

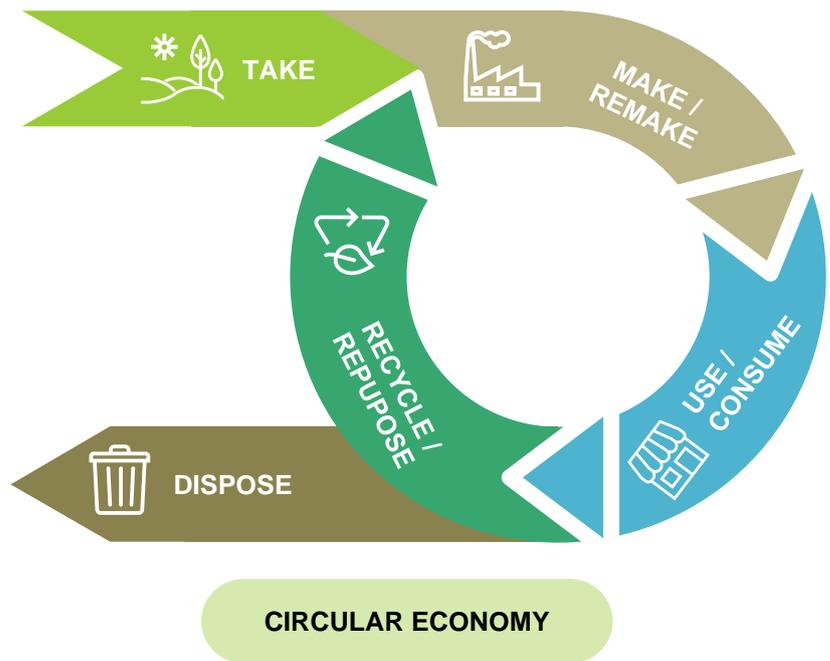
# 1. Strategy Objective

The objective of the Strategy is **to reduce waste generation, maximise recovery and minimise disposal**

This can be achieved by:



Central to meeting this objective is the adoption of the circular economy model. This model reflects Council's priorities for how waste is managed. It aims to reduce or eliminate resources taken from the environment, focusses on reusing goods and materials to avoid or eliminate the need for disposal. The circular economy model is a fundamental mindset change from a community that 'throws out rubbish' to a community that values our resources. It is represented as:



## 2. Key Measures

Key measures have been established to monitor progress in the implementation and ultimate success of the Waste Reduction Management Strategy 2022-2027. These will be monitored and reported on an annual basis and are supplemented by specific measures for each action as outlined in the Implementation Plan in Section 5.

These key measures are:

### Avoid the creation of waste

Implement waste education activities as identified in the *Waste Education & Communications Strategy 2022-2032*, increasing the number of participants in waste education programs and events annually.

Reduce **total kerbside waste and recycling** collected by 10% from 400kg (2021/2022), to 360kg per person per annum over the next 5 years.

### Reduce waste to landfill

Increase waste recovery from 40% to 90% over the next 10 years.

Reduce **total waste to landfill** from 644kg (2021/2022), to 200kg per person per annum over the next 5 years.



HUSKISSON RECYCLING & WASTE DEPOT

### 3. Context

#### 3.1 Shoalhaven Waste Services

Council's Waste Services Department manages kerbside collections of domestic waste, operates 10 recycling and waste depots, and accepts commercial and building wastes across the Shoalhaven local government area. The West Nowra Recycling & Waste Depot contains Council's only landfill site with nine Satellite Transfer Stations transferring waste to West Nowra for processing and, where applicable, landfilling.



Waste Services derives its income from three main sources:

- The annual 'Domestic Waste Management Charge' which provides funding for managing the domestic kerbside service
- Gate fees applied to incoming loads of waste dropped off at the 10 waste depots, and
- Ancillary income from sales of recyclables and for carbon offsets from the utilisation of landfill gas

It also activates partnership arrangements and seeks grants to assist in meeting project and program specific outcomes. Together this allows the Department to provide a range of waste services that go beyond waste collection, including green and bulky waste collections, educational activities and operation of Buy Back and Community Recycling Centre (CRC) facilities.

Together, these services contribute towards Waste Services' vision.

## Our Vision

Reduce and reuse – A world without waste

This Strategy also recognises that there may be numerous unforeseen challenges that are associated with waste management in years ahead. Examples of these from recent years have included:

- The strict application of China's National Sword policy in 2018, that essentially removed the ability for Australia (and other nations) to export recyclable waste to China for processing
- The cessation of Mixed Waste Organic Outputs (MWOO) sales in October 2018 by the NSW EPA, due to risks associated with chemical and physical contaminants
- The pause, and possible end, of Australia's largest soft plastic recycling program, REDcycle, in November 2022

These types of events have significant implications for waste management, impact on consumer confidence in the waste industry and mean that participants like Shoalhaven Waste Services must quickly pivot and respond. As these types of events can be unforeseen, it is important that the Service continues to be open to change and flexible in its approaches to waste management priorities.



**BERRY RECYCLING & WASTE DEPOT**

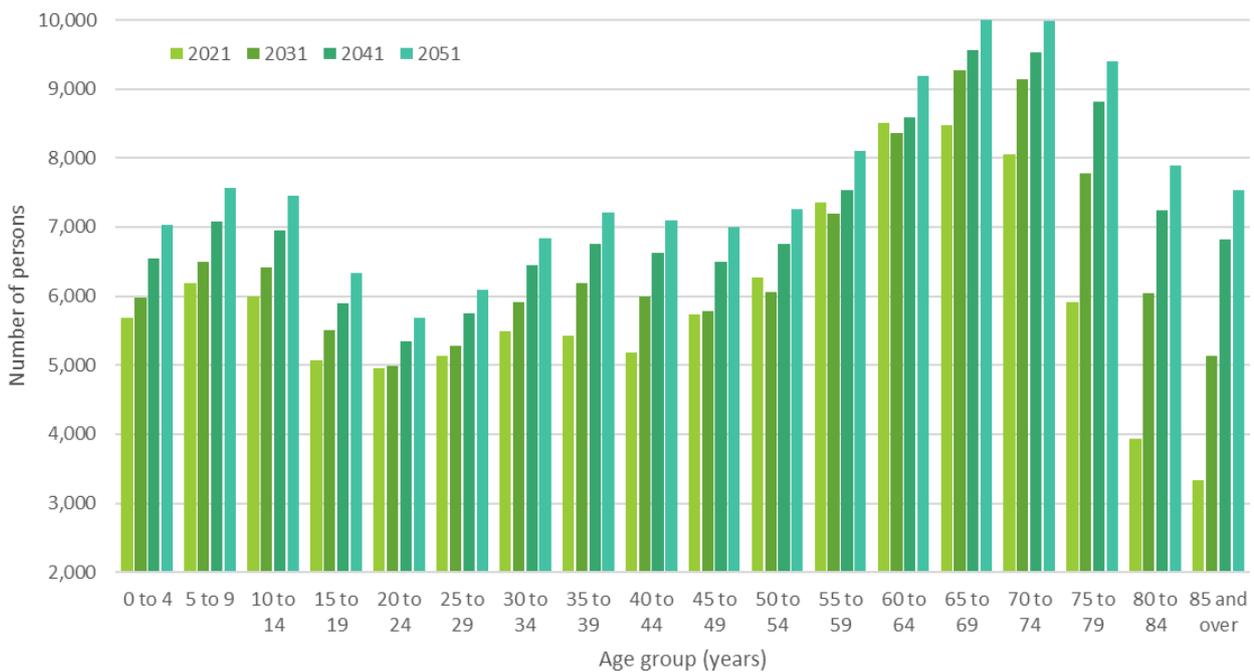
## 3.2 Future growth

In 2022, Council's waste facilities service a population of around 110,000 residents of the Shoalhaven. By 2051, this population is expected to grow to almost 140,000 people or approximately 27% over the next 30 years<sup>1</sup>. In particular, and as seen in many coastal regional locations, there is expected to be continued increases in resident population and sharp growth in residents aged over 65 years.

### PROJECTED POPULATION GROWTH



### POPULATION GROWTH BY AGE



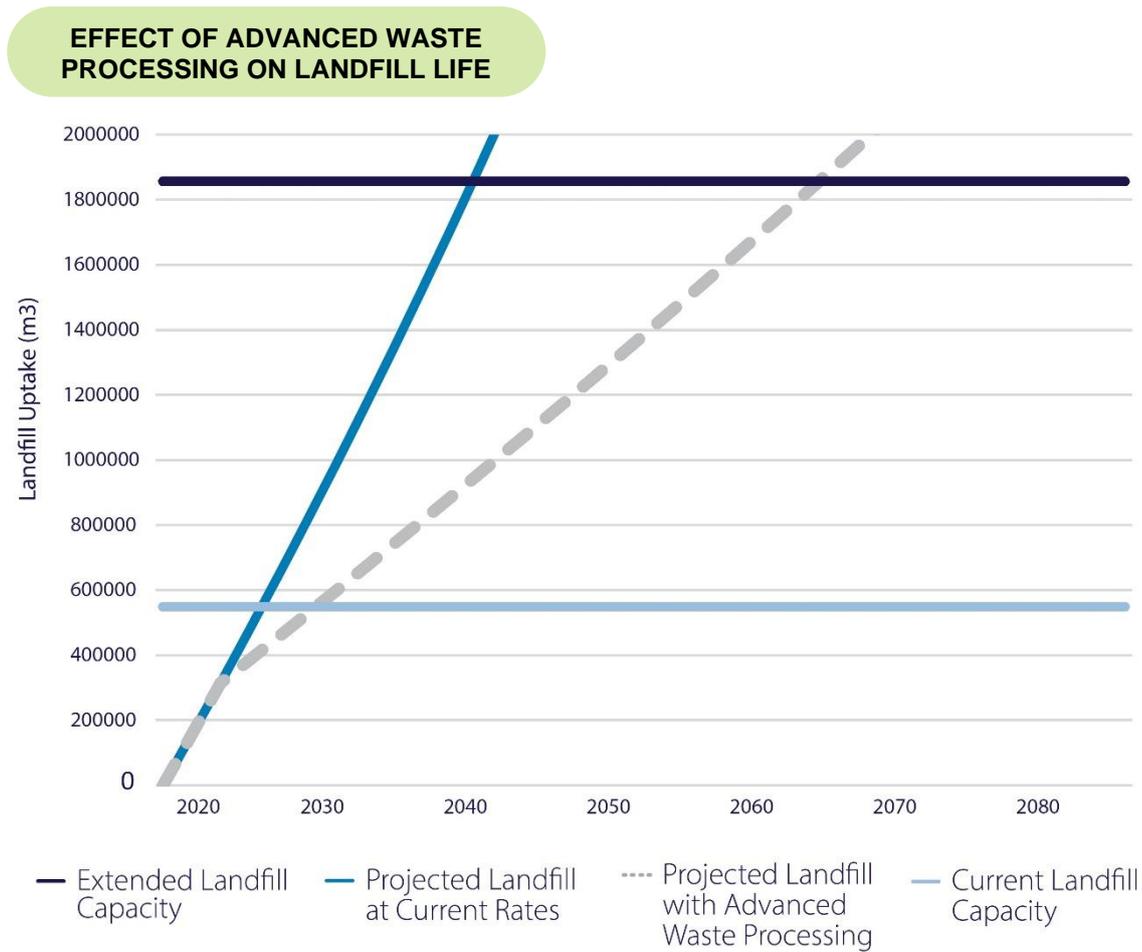
On top of growth anticipated from population increases, the *NSW Waste and Sustainable Materials Strategy 2041* also highlights that waste generation is outstripping population growth across NSW on a per capita basis<sup>2</sup>. There are various broader factors that influence waste generation rates, such as industry directions for packaging, education rates and socio-economic factors. Whilst many of these factors are beyond the scope and influence of Council, understanding future waste trends is imperative to inform future directions and achieving the outcomes of this Strategy.

<sup>1</sup> Refer <https://forecast.id.com.au/shoalhaven> - Accessed 23 September 2022

<sup>2</sup> Refer [https://www.dpie.nsw.gov.au/\\_data/assets/pdf\\_file/0006/385683/NSW-Waste-and-Sustainable-Materials-Strategy-2041.pdf](https://www.dpie.nsw.gov.au/_data/assets/pdf_file/0006/385683/NSW-Waste-and-Sustainable-Materials-Strategy-2041.pdf) - Accessed 23 September 2022

This forecast growth in waste generation over and above population growth, has the potential to place significant pressure on Council’s facilities, and is incorporated in planning for future waste needs. To do so, Council will work to influence individual preferences through waste education with a view to minimising the creation of waste (the most favourable outcome in the waste hierarchy), and to ensure that infrastructure is available and capable of matching processing needs.

Over the last five years Council has accelerated investments in engineering-based solutions, many of which will be operational within the life of this Strategy. These ‘Advanced Waste Processing’ technological investments will assist futureproofing the Shoalhaven against the projected increases in population and waste generation levels. This will place Council as one of the leading local authorities in dealing with waste across Australia.



## 3.4 Alignment with plans and policies

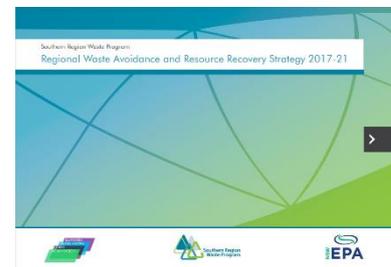
The importance of waste management planning, reducing waste generation and reducing waste to landfill, is recognised in many strategic policy documents. A number of these key documents are outlined below.



The Shoalhaven Community Strategic Plan (CSP) reflects the community's vision for the Shoalhaven and guides actions over the next 10 years.

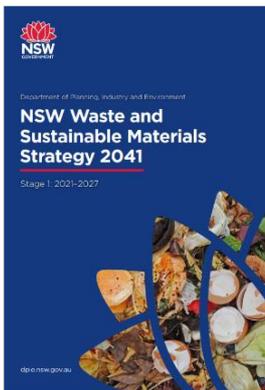
The CSP informs the more detailed Delivery Program and Operational Plans of Council, which capture specific waste actions and targets that have been considered in this Strategy.

The Illawarra-Shoalhaven Joint Organisation (ISJO) 'Regional Waste Avoidance and Resource Recovery Strategy 2017-2021' provides a collaborative direction for sustainable waste management. It sets regional targets for waste reduction under seven key themes which have influenced the targets set in this Strategy.



The NSW Waste and Sustainable Materials Strategy 2041 is the key State level strategy that sets out the long-term vision for managing waste, planning for infrastructure, reducing carbon emissions, creating jobs, and refocusing the way NSW produces, consumes and recycles products and materials.

The State Strategy clearly aligns with this Council Strategy to reduce waste through the following: *“Even if NSW significantly improves its waste avoidance and recycling performance, we will still need new capacity to manage residual waste. Our highest priority is to extend the life of our current landfills by reducing the volumes of waste we must manage, either through avoidance or recycling.”*



The *National Waste Policy 2018* provides a framework for collective, national action on waste management, recycling and resource recovery to 2030. It guides continuing collaboration between all Australian governments, business and industry with the objectives to:

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



### 3.5 Understanding waste streams

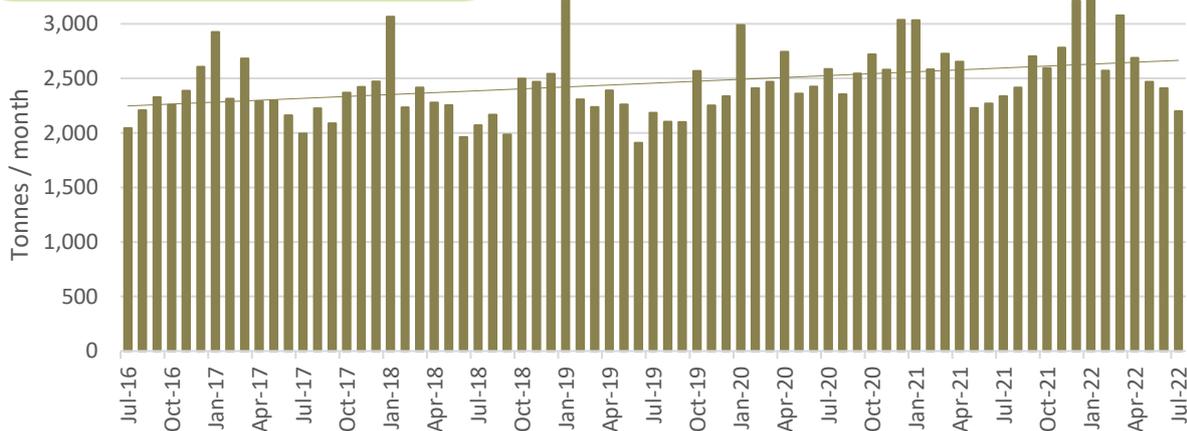
Council’s waste management facilities accept waste from a variety of sources being:

- Domestic kerbside
- Domestic drop off
- Commercial and industrial
- Construction and demolition

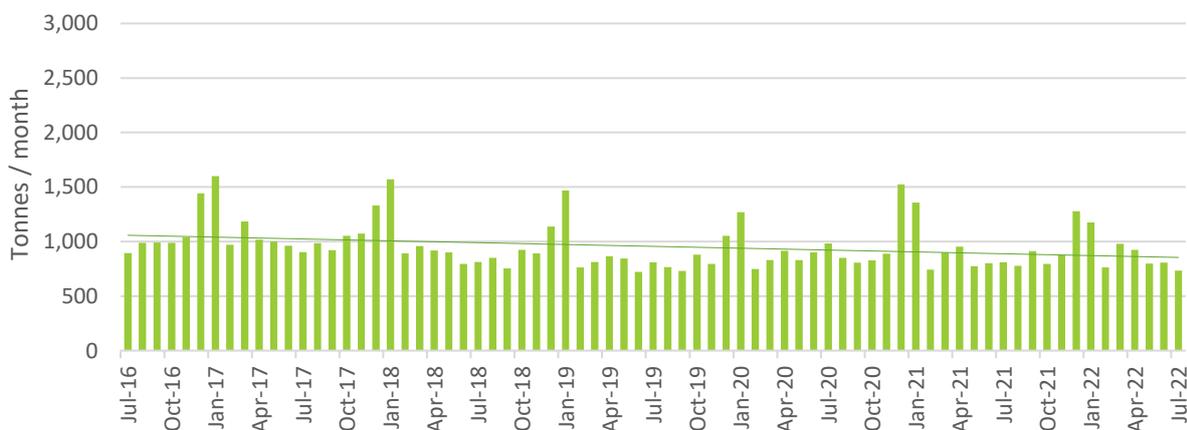
The domestic kerbside collection service is provided to every urban domestic premises in the Shoalhaven, approximately 57,800 services as of June 2022. The service includes a weekly landfill waste bin (options of 80, 120 or 240 litre red-lidded bin) and a fortnightly commingled recycling bin (240 litre yellow-lidded bin). Waste collected each month fluctuates widely. The waste bin collection has varied between 1,900 tonnes to just over 3,200 tonnes over the last five years, while the recycling bin collection varied between 700 tonnes and 1,600 tonnes, peaking over the January and Christmas periods.

These trends are shown in the charts below, including linear trendlines highlighting increasing landfill and decreasing recycling collection rates likely to be related to the introduction of the container deposit scheme (CDS) and increases in resident population during the covid pandemic period.

**MONTHLY KERBSIDE WASTE TO LANDFILL (INCL. TREND LINE)**

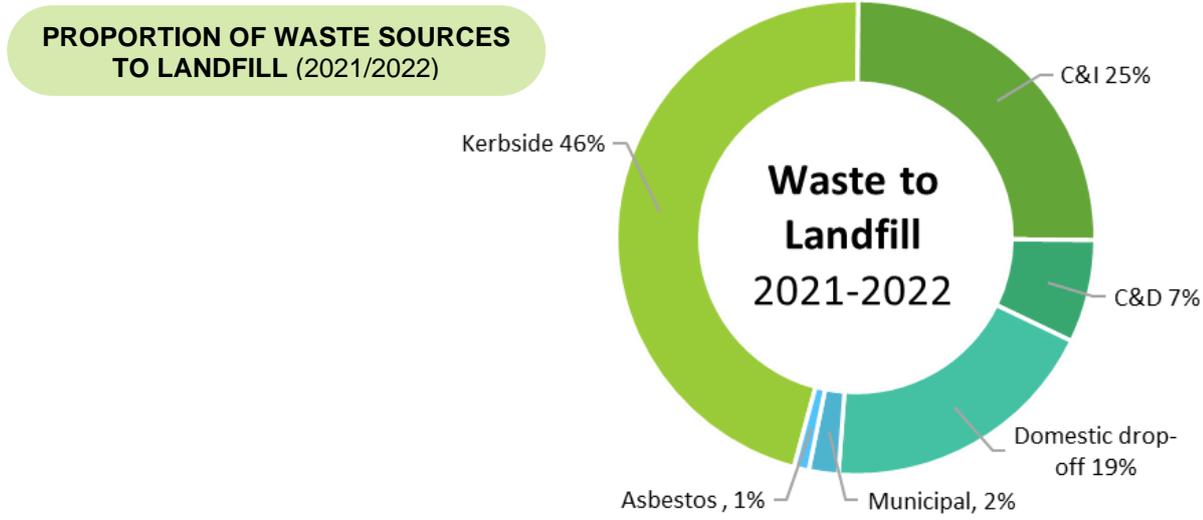


**MONTHLY KERBSIDE RECYCLING COLLECTED (INCL. TREND LINE)**



Commercial and industrial (C&I) and construction and demolition waste (C&D) is not collected by Council but is generally disposed of at Council’s waste facilities and landfill. This Strategy therefore incorporates the processing and disposal of these waste streams.

The break down between waste streams to Council’s facilities, excluding disaster waste that varies significantly between individual years, are shown below for the year 2021/2022.



This Strategy targets all waste streams that are managed by Council and provides specific actions relevant to most of them. More specifically Council collects, accepts or processes:

- Kerbside collected waste and household drop off waste (at the 10 transfer depots)
- Household hazardous waste, such as batteries, paints and chemicals
- C&I waste and C&D waste at some depots
- Asbestos waste at Ulladulla and West Nowra
- Bulky waste (for example furniture, whitegoods, garage/workshop items) and garden organic waste collected as an on-call service from the front gate
- A range of materials that can be reused, recycled or processed for reuse

Further to this, Council irregularly receives unusual waste streams, such as beached whale carcasses, post-disaster (fire, flood and storms) waste and remains of illegal dumping, which can be significant. Following the black summer bushfire events in 2019 / 2020, 18,000t of demolition waste was processed with 97% of this recycled, and the ongoing flood events in 2020, 2021 and 2022 generated the delivery of almost 9,000 tonnes of waste to Council’s facilities.



CRC, RECYCLING AND BUY-BACK SIGNAGE AT WEST NOWRA

## 4. Waste Reduction Management Directions

This section establishes the proposed directions that are to be used to deliver on the objective of the Strategy and to assist in working towards the vision of Shoalhaven Waste Services. The relationship between these is outlined below.



Each of the directions identified above are outlined in the following pages. This includes background information, desired outcomes and the actions that relate to each. The actions and measures of how each of the desired outcomes will be achieved are detailed in the Implementation Plan in Section 5.



**UTILISING ON-SITE WASTE REUSE TECHNOLOGIES**

## Direction 1: Deliver waste and recycling infrastructure to meet future needs

### Background

Technological and engineering-based solutions are rapidly evolving in response to growing waste levels and concerns about the impacts that waste has on human health, as well as the health of the environment. Many of these technologies have proven to be effective in significantly reducing waste to landfill and are increasingly being embraced worldwide.

In the Shoalhaven, the landfill facility at West Nowra is forecast to reach capacity within the next 10 years if the process for how waste is treated does not change. To avert the financial and environmental impacts associated with developing a new landfill site, Council has recognised that investment in waste reduction technologies is needed.

As a result, Council has invested significantly in advanced waste reduction technologies at West Nowra (a summary of current, ongoing and future endorsed investments is provided in Table 1). These investments are consistent with the overarching objective of this Strategy, to reduce waste generation, maximise recovery and minimise disposal, and thus will provide significant extension of the expected landfill life.

**Table 1: Investments at West Nowra Recycling & Waste Depot**

Investment	Purpose & Timing
Resource Recovery Facility (RRF) - Also known as the Bioelektra Facility.	Red bin mixed waste processing facility costing around \$88.5 million (privately funded). This state-of-the-art facility will be Australia's first Advanced Waste Treatment plant capable of diverting over 90% of mixed waste from landfill. Scheduled for completion by late 2023.
Materials Recovery Facility (MRF)	Yellow bin commingled recycling facility costing around \$23 million (Council funded). This modern, Council owned and operated facility will have up-to-date technology to maximise the highest quality in recyclable outputs while also maximising the recovery rate of those recyclable outputs. This is designed to provide flexibility in adapting to external pressures that affect the economics and management of recycling, improve Council's landfill diversion rate and assist in the transition towards a circular economy. Scheduled for completion by mid-2023.
MICROFactorie™	Developed in partnership with the University of NSW SMaRT Centre to remanufacture waste plastics into filament for 3D printing, and glass, mattresses and other textiles into "green" ceramic tiles, benchtops, and other forms of furnishings. Scheduled for completion by early 2023.
Glass processing facility	Allows Council to recover and wash previously rejected glass fines and return it to a saleable form as glass sand. Operational since 2021.
Resource Recovery Learning Centre (RRLC)	This new, fit-for-purpose facility is dedicated to improving on-site waste education and broader sustainability initiatives whilst showcasing the above technologies at West Nowra. The RRLC is the key education link between Council and community. Scheduled for completion in mid-2024.
Other smaller scale upgrade projects	Including rubber crumbing plant; major upgrade to landfill gas to power generators; installation of electrical batteries to enable solar capture from the new MRF building and landfill batters (north facing); installation of a Surface Activated Foam Fractionation (SAFF) leachate treatment system to provide clean wash water for the glass plant and proposed plastics washing plant. Timing ongoing.
Other infrastructure, machinery and plant requirements to support the waste and recycling operations.	Includes internal access roads; operational buildings; equipment such as vehicles, earthmoving and sorting equipment; gate and weighbridge facilities; fencing; signage; new lined landfill cells and much more. This supporting infrastructure is required for the broader operation of Council's waste management facilities and to ensure safe operations that meet regulatory standards. Timing ongoing.

Council will continue to investigate new and emerging technologies, as it works alongside leading researchers and academics to manage waste in the Shoalhaven. As new technologies are adopted, they will contribute to achieving the objective of this Strategy.

There is a need to continue to identify education opportunities to enable increased community understanding of their role - particularly given that there will be no change to kerbside waste collection services.

It is recognised that many of these technologies and investments are a significant change to traditional approaches to waste management. Some of these technologies will be an Australian first and are recognised within the industry as being state-of-the-art.

Education activities relating to technological investment will include:

- engagement during construction of the facilities to build knowledge and understanding of their use
- on-site tours and activities once facilities are operational, and
- broad messaging on new technologies and ways to engage with and maximise their value.

These new investments will be integrated across existing and new education programs. Promotion via the new Resource Recovery Learning Centre (RRLC) and online will result in Council being recognised as a leader in waste innovation. This can be strengthened through Council's presence at waste events and conferences that demonstrate effective local government waste management.

Other infrastructure needs are driven by compliance with environmental protection licencing (EPL) conditions, by 14 pieces of legislation and associated policy / guidelines that impact the operations and by needs identified in the Asset Management Plan (AMP). The AMP defines the services to be provided, how the services are provided and what funds are required for asset provision. As of May 2021, Waste Services assets contained within the AMP were valued at a replacement cost of more than \$57 million.

While long-term planning is critical to service delivery, there is also a need to consider future innovations and opportunities that may need to be delivered during the life of this Strategy.

## Desired Outcomes

Minimise waste to landfill

Maximise recycling

Increased community support and understanding of new waste technologies

Increased recognition of, and faith in Council as a leader in waste technology and processing

Essential infrastructure for operation of waste facilities provided

Future infrastructure responsive to local needs

## Key Actions

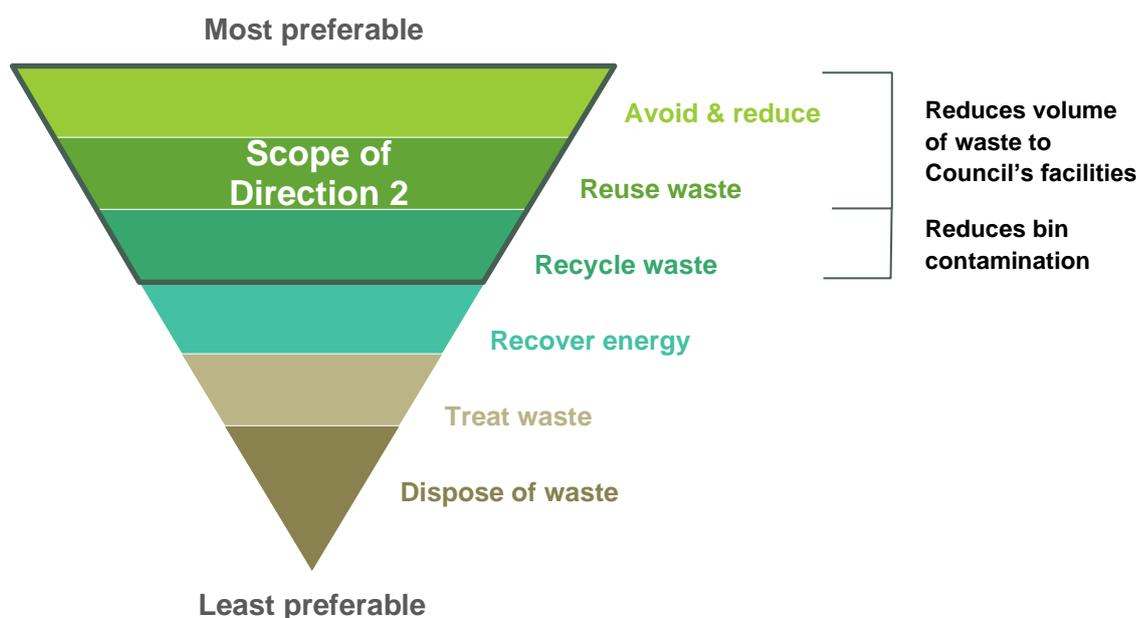
- 1.1 Implement and operate identified new technologies at West Nowra
- 1.2 Continue to identify and establish business cases for innovative technologies that support a circular economy
- 1.3 Educate the community on new waste technologies through the RRLC and implementation of Council's Waste Education & Communication Strategy
- 1.4 Improve West Nowra and Huskisson landfill security and amenity
- 1.5 Improve and/or implement gas capture technologies
- 1.6 Continually monitor and evaluate future infrastructure needs at all waste facilities

## Direction 2: Encourage behaviour change

### Background

Whilst Council has committed to significant technological investments to improve the treatment and disposal of waste received, it is only one part of an overall approach to waste reduction. As outlined in the 'Waste Hierarchy' graphic below, the most preferable and greatest impact in reducing waste to landfill is for individuals and businesses to avoid, reduce or reuse waste in the first instance.

This is the key objective and scope of Direction 2.



Community behaviour directly impacts the operations of Waste Services including the type and volume of waste disposed in landfill. Council acknowledges that it has a key role in influencing how individuals, households and businesses avoid or generate waste. Council recently developed a Waste Education & Communication Strategy that sets out a systematic approach on educating and communicating with the community on waste. It provides the basis for programs such as the Home Sustainability Workshops to continue which are recognised as being fundamental to an individuals' understanding of:

- the impact of their own behaviours
- their ability to minimise their waste generation
- the extent and type of waste that is disposed into landfill

Central to driving positive behaviour change in the Shoalhaven will be the development of the Resource Recovery Learning Centre (RRLC) – a purpose-built facility to be located at the West Nowra Recycling & Waste Depot. The RRLC is planned to be completed in mid-2024, with architectural design having commenced in September 2022 following a design competition (refer competition entry perspective designs and RRLC Vision statement overleaf).

Even with the best waste reduction practices and education activities implemented, Council acknowledges that almost all individuals and businesses in the area will continue to generate waste and use Council's services for its processing. Education therefore has the dual role of encouraging a reduction in consumption, increase in both avoidance and reuse, as well as reducing confusion on how to best dispose of waste. Targeted education that increases consumer knowledge of how to use their bins correctly will in turn reduce the overall level of contaminated waste that Council receives.

## Resource Recovery Learning Centre Vision

A regionally significant centre for waste education that integrates resource management, science, creativity and contemporary ideas to shape sustainability across the Shoalhaven in a leading, purposeful way



Graphics courtesy of TERROIR Architects

### Desired Outcomes

Increased resource recovery within individual homes and businesses

Reduction in the extent of waste collected by Council

Reduction of contamination of recycling streams

### Key Actions

- 2.1 Implement Council's Waste Education & Communications Strategy with a focus on its five key directions to:
  - Gain community support and understanding of new waste technologies
  - Improve resource recovery and reduce contamination
  - Raise awareness of environmental impacts of waste by creating a waste literate community
  - Support waste and resource recovery education for schools
  - Strengthen waste and resource recovery more broadly
- 2.2 Utilise circular design principles and outcomes within the RRLC – including education opportunities such as the gabion wall waste story concept
- 2.3 Work with community to establish localised litter campaigns for identified problem wastes – e.g., cigarette butts, soft plastics

## Direction 3: Engage with industry and government stakeholders

### Background

With waste generation forecast to increase and communities increasingly becoming environmentally aware, there is a need for solutions to waste management to be shared across all sectors and tiers of government. This need has been well recognised for many years, with collaboration between industry stakeholders, research institutions and government becoming more frequent.

Council works closely with several organisations on programs and research activities associated with reducing waste. These include:

- NSW Environmental Protection Authority
- Illawarra Shoalhaven Joint Organisation (ISJO) – delivering operational programs across member councils including the Regional Illegal Dumping Program, the Regional Waste Education Program and the Regional Litter Reduction program
- University of NSW SMaRT Centre – through a partnership to construct the MICROfactorie™ recycling facility that remanufactures waste plastics into filament for 3D printing, and glass, textiles, mattresses and lounges into “green” ceramic tiles and other forms of furnishings.
- University of Wollongong’s Innovation Campus – with research students utilising Council’s facilities and technologies as a base for academic collaboration
- University of Western Sydney – working with students researching the incorporation of waste glass into a decorative concrete
- Various recyclers and related providers in the industry who are seeking to use a clean, high-quality, sorted product in their production process

Through this range of external engagements, Council will continue to work towards evidence-based outcomes, sharing its experiences with the wider waste community. Partnerships and collaborations will continue to be an important component of holistically dealing with the broader issues of waste management and behaviour change. This approach allows Council to seek to establish itself as an industry leader at the forefront of best practice waste management.

Additionally, Council recognises the wealth of knowledge in communities and businesses in relation to waste related initiatives. Engaging with, and utilising where relevant, local knowledge can work to harmonise and coordinate local efforts. The balance between waste management technologies and waste education to facilitate long-term behaviour change, is well recognised.



The UNSW SMaRT Centre through its many research programs has created the phrase ‘mircorecycling science’ to describe their novel approach to researching innovative approaches and technologies to reform various waste streams into value added materials and products.

Based on this science, SMaRT has developed MICROfactorie™ technologies that use various, discreet modules to transform problematic waste materials, such as glass, textiles and plastics, into new value-added materials and products, such as engineered green ceramics for the built environment and plastic filament as a ‘renewable resource’ for 3D printing.

This modular technology is capable of harnessing value from our waste resources to deliver high-value materials and products. In partnership with Shoalhaven City Council, a Green Ceramics MICROfactorie™ is being constructed at West Nowra.

## Desired Outcomes

Greater collaboration between industry and government stakeholders

Innovative ideas and practices adopted through collaborative efforts

Increased recognition of Council as a leader in waste technology and processing

## Key Actions

- 3.1 Continue to work with ISJO to deliver a regional approach to waste issues and opportunities, including littering and illegal dumping.
- 3.2 Work with NSW Government, industry and academia to identify and realise innovation
- 3.3 Advocate for exemptions for Shoalhaven LGA from food and garden waste collection services
- 3.4 Build and maintain industry and academic connections to enable collaborative sharing of experiences



**WORKING WITH THE UNIVERSITY OF NSW SMART CENTRE**

## Direction 4: Develop and deliver policies and programs

### Background

In addition to developing infrastructure, education opportunities and connections within the industry, Council also designs and undertakes its own local programs and initiatives to work with local communities and businesses to reduce waste. These directions are closely aligned to the three focus areas of the State Government's *Waste and Sustainable Materials Strategy 2041*:

- Meeting our future infrastructure and service needs
- Reducing carbon emissions through better waste and materials management
- Building on our work to protect the environment and human health from waste pollution

Key actions to be pursued under this direction will be integrated with government funding priorities, but also reflect the needs of the local Shoalhaven community. Key program areas will include:

- Working with business to target key waste streams, helping them to reduce waste accumulation, improve reuse where possible, and ultimately to reduce the level of costly waste disposal
- Working with Aboriginal communities of the area to assist them to reduce waste on Aboriginal owned land and to assist with land clean up services
- Continue to develop and implement problem waste programs, such as the successful CRC program.

These targeted programs will be supported by other policies and directions that seek to influence broader sectors and industry participants. For example, Council will continue to drive the consideration of waste needs early in the land use planning through its planning controls and policies, and where feasible, introducing concepts such as circular design principles into the development process. These principles are central to the development and operation of the RRLC, providing a real-life example from which to base Council's own directions alongside other State Government guidance and advice.

Council will also engage with the State Government in the establishment of future servicing arrangements to understand the benefits of proposed coordinated procurement. In particular, the delivery of kerbside collection provides a key opportunity to integrate new technologies and explore opportunities to minimise waste entering landfill.

Through its programs and policies, Waste Services is well positioned to react to unforeseen circumstances that impact on waste management. These can respond to the needs of the community and be delivered through facilities such as the RRLC, or through various communication and partnership arrangements. Whilst the extent and type of responses will depend on the individual circumstances, Waste Service will continue to be well positioned to pivot its priorities to match these needs.

### Desired Outcomes

Effective policies and programs that reduce levels of problem wastes

Minimise waste to landfill

Increased resource recovery within individual homes and businesses

Increased community inclusion in best practice waste management behaviour

## Key Actions

- 4.1 Advocate for the use of circular design principles and outcomes in further development
- 4.2 Work with Aboriginal communities to reduce waste and assist with land clean up services
- 4.3 Work with business to reduce waste streams and improve reuse
- 4.4 Continue to develop and implement problem waste programs
- 4.5 Review contractor servicing arrangements with consideration of new procurement service options



**SHOALHAVEN HOME SUSTAINABILITY PROGRAM**

## 5. Implementation Plan

This Plan provides additional detail to the implementation of each Direction and associated Actions. This links actions to measures for implementation, timing of implementation and responsibilities.

Action	Measures	Timing	Responsibility	
<b>DIRECTION 1: DELIVER WASTE AND RECYCLING INFRASTRUCTURE TO MEET FUTURE NEEDS</b>				
1.1	Implement and operate identified new technologies at West Nowra	Technologies / projects implemented include:	Bioelektra / Shoalhaven Waste Services	
		<ul style="list-style-type: none"> <li>Resource Recovery Facility (RRF) - Also known as the Bioelektra Facility</li> </ul>		Open late 2023 + ongoing
		<ul style="list-style-type: none"> <li>Materials Recovery Facility (MRF)</li> </ul>		Open mid 2023 + ongoing
		<ul style="list-style-type: none"> <li>Glass ceramics MICROfactorie™</li> </ul>		Open early 2023 + ongoing
		<ul style="list-style-type: none"> <li>Glass processing facility</li> </ul>		Ongoing
<ul style="list-style-type: none"> <li>Resource Recovery Learning Centre (RRLC)</li> </ul>	Open mid 2024 + ongoing			
1.2	Continue to identify and establish business cases for innovative technologies that support a circular economy	Consider previously identified and new opportunities including (but not limited to):	Ongoing	Shoalhaven Waste Services / NSW Government
		<ul style="list-style-type: none"> <li>Rubber crumbing plant</li> <li>Installation of landfill gas to power generators</li> <li>Installation of electrical batteries to enable solar capture from the new MRF building and north facing landfill batters</li> <li>Installation of a Surface Activated Foam Fractionation (SAFF) leachate treatment system and wash water for the glass plant</li> <li>Proposed plastics washing plant, and</li> <li>Researching soft plastics processing alternatives</li> </ul>		
1.3	Educate the community on new waste technologies through the RRLC and implementation of Council's Waste Education & Communication Strategy	Implementation of Waste Education & Communications Strategy Actions including:	As required	Shoalhaven Waste Services
		<ul style="list-style-type: none"> <li>Develop education programs, that inform the broader community on the implications of the new waste technologies</li> <li>Integrate new waste technologies as they are developed into on-site education programs at the RRLC</li> <li>Showcase and promote Council's investment in waste technology, including at the RRLC and other Council facilities as appropriate</li> </ul>		

Action		Measures	Timing	Responsibility
1.4	Improve West Nowra and Huskisson landfill security and amenity	Work strictly in accordance with the Environmental Protection Licences and associated internal policies and procedures	Ongoing	Shoalhaven Waste Services
1.5	Improve and/or implement gas capture technologies	Work alongside landfill gas contractor to optimise the landfill gas field and maximise the extraction and utilisation of landfill gas	2023 / 2024	Shoalhaven Waste Services
1.6	Continually monitor and evaluate future infrastructure needs at all waste facilities	Utilise the asset management plan (AMP) to prepare inspections of current infrastructure, determine maintenance requirements and assess the need to new or replacement infrastructure	Ongoing	Shoalhaven Waste Services
DIRECTION 2: ENCOURAGE BEHAVIOUR CHANGE				
2.1	<p>Implement Council's Waste Education &amp; Communications Strategy with a focus on its five key directions to:</p> <ul style="list-style-type: none"> <li>Gain community support and understanding of new waste technologies</li> <li>Improve resource recovery and reduce contamination</li> <li>Raise awareness of environmental impacts of waste by creating a waste literate community</li> <li>Support waste and resource recovery education for schools</li> <li>Strengthen waste and resource recovery more broadly</li> </ul>	Implementation reported in accordance with applicable KPIs within the Waste Education & Communications Strategy	Ongoing	Shoalhaven Waste Services
2.2	Utilise circular design principles and outcomes within the RRLC – including education opportunities such as the gabion wall waste story concept	<p>Circular design principles are integrated into the architectural concepts and detailed design processes</p> <p>Interpretive information and examples are displayed throughout the RRLC complex</p> <p>Key highlight examples are used to promote the RRLC and circular design principles more broadly – e.g., gabion wall waste story concept</p>	Throughout RRLC design process and ongoing through operations	Shoalhaven Waste Services
2.3	Work with community to establish localised litter campaigns for identified problem wastes – e.g., cigarette butts, soft plastics	Work collaboratively within council (e.g., Rangers and Environmental Services), with NSW Government / ISJO to undertake a partnership approach to tackling place-based litter issues through prevention pilots and enforcement activities	As required	Shoalhaven Waste Services / Council / ISJO / NSW Government

Action	Measures	Timing	Responsibility
<b>DIRECTION 3: ENGAGE WITH INDUSTRY AND GOVERNMENT STAKEHOLDERS</b>			
3.1	Continue to work with ISJO to deliver a regional approach to waste issues and opportunities, including littering and illegal dumping	Continue to work with ISJO to deliver littering and illegal dumping programs and activities in accordance with associated agreements Identify and pursue other regionalised opportunities based on agreed directions and outcomes associated with Council's participation in ISJO	Ongoing Shoalhaven Waste Services / ISJO
3.2	Work with NSW Government, industry and academia to identify and realise innovation	Continue to drive innovative solutions that can help to meet gaps in resource recovery and relates waste activities, including through participation in the NSW Government Circular Innovation Fund	Ongoing Shoalhaven Waste Services / Academic partners / NSW Government
3.3	Advocate for exemptions for Shoalhaven LGA from food and garden waste collection services	Recognising that the development of the Shoalhaven RRF (also known as the Bioelektra facility) is negating the need for waste stream separation at point of collection, advocate for the exemption of the Shoalhaven (and others with advanced forms of waste recovery) from any requirements for separate food and garden organics collection	Short-term Shoalhaven Waste Services
3.4	Build and maintain industry and academic connections to enable collaborative sharing of experiences	Participate in regular industry events, workshops and conferences to share Shoalhaven's experiences with technologies, advancements and educational efforts to assist in improvement of industry collaboration Maintain membership of WMRR (Waste Management and Resource Recovery Association of Australia) and WCRA (Waste Contractors and Recyclers Association NSW)	Ongoing Shoalhaven Waste Services
<b>DIRECTION 4: DEVELOP AND DELIVER POLICIES AND PROGRAMS</b>			
4.1	Advocate for the use of circular design principles and outcomes in further development	Based on NSW Government tools and guidance, promote and encourage the increased use of circular design principles and practices Where appropriate, consider the development and enforcement of development requirements (e.g., Development Control Plan (DCP)) for circular design and in accordance with State guidelines where available – including review and renewal of current guidance Encourage the use of circular design in Council infrastructure projects more broadly, including the reuse of materials recycled and re-manufactured within the Shoalhaven	Long-term Shoalhaven Waste Services / Strategic Planning / City Services

Action		Measures	Timing	Responsibility
4.2	Work with Aboriginal communities to reduce waste and assist with land clean up services	In conjunction with the Aboriginal Communities Waste Management Program and Aboriginal Land Clean Up and Prevention program, work with other areas of Council, e.g., Ranger Services and Aboriginal communities, to facilitate land improvements and safe removal of waste.	As required	Shoalhaven Waste Services / Ranger Services / NSW Government
4.3	Work with business to reduce waste streams and improve reuse	In conjunction with NSW Government's Bin Trim program, work with local businesses to assist in the design and delivery of waste reduction and circular economy programs to assist small and medium enterprises to manage their waste more efficiently, reduce the amount of waste they send to landfill and reduce their carbon footprint.	Ongoing	Shoalhaven Waste Services / NSW Government
4.4	Continue to develop and implement problem waste programs	In conjunction with NSW Government identified programs, continue to develop and implement problem waste programs including: <ul style="list-style-type: none"> <li>• Household Chemical CleanOut events</li> <li>• Community Recycling Centres</li> <li>• DrumMUSTER</li> <li>• Sharps</li> <li>• E-waste</li> </ul>	Ongoing	Shoalhaven Waste Services / NSW Government
4.5	Review contractor servicing arrangements with consideration of new procurement service options	In conjunction with NSW Government joint procurement facilitation service, undertake a review in advance of new contractor servicing arrangements to establish effective value for money for Shoalhaven residents and businesses	As required	Shoalhaven Waste Services / Procurement and Stores