From Waste to Resource

Waste Plan - 2023-2028





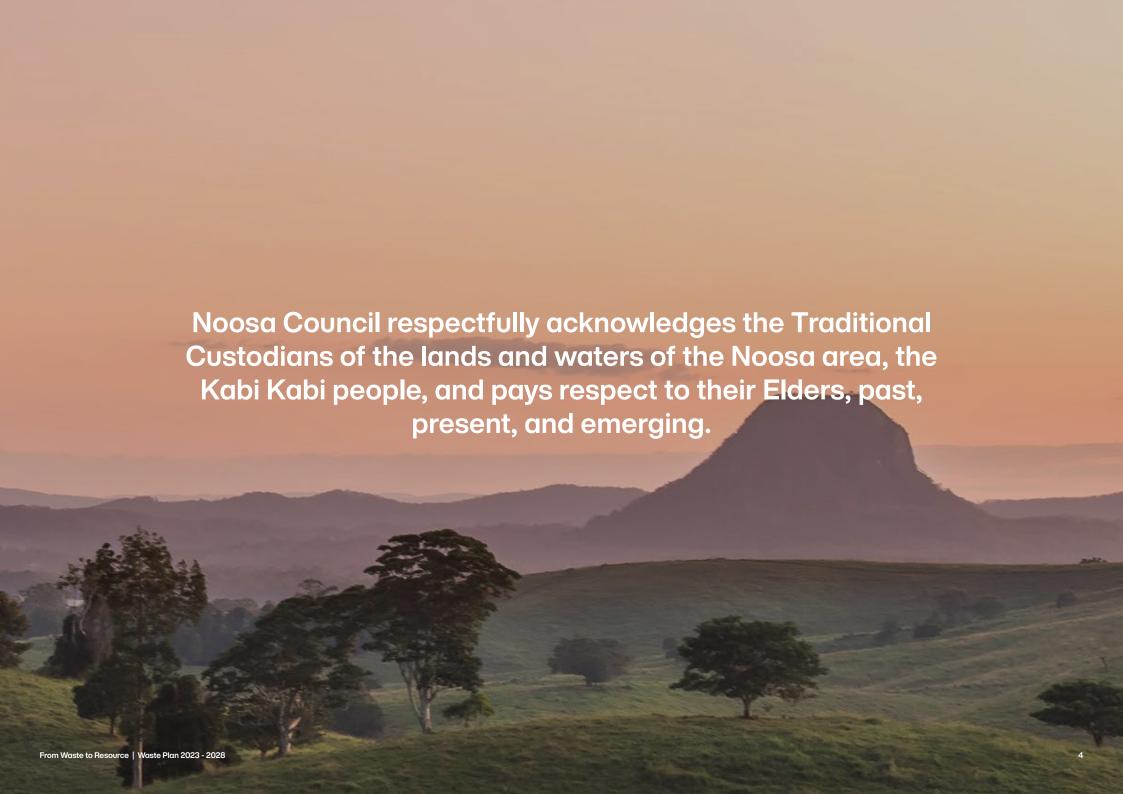


Boomerang Bags - Reusable shopping bags made from recycled fabrics

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Message from the Mayor



I'm pleased to present our From Waste to Resource Waste Plan 2023-2028.

This document, shaped with extensive input from you, our community, will ensure we keep pace with the rapid changes affecting the waste management industry.

Importantly, it gives us a blueprint to achieve a marked reduction in the volume of material sent to landfill by expanding our recycling capabilities and exploring new and exciting re-use opportunities.

Waste disposal and greenhouse gas emissions go hand-in-hand so by reducing our waste as a

community we can make a positive difference to the environment through lowered emissions.

Methane produced from the breakdown of organic material in our landfill currently accounts for more than 60% of Council's overall emissions.

The key to lowering these emissions is in reducing the volume of material winding up in our landfill in the first place.

Our From Waste to Resource Waste Plan 2023-2028 is the roadmap to get us there – a Plan we've all helped create.

I thank you for taking the time to provide the input that has ultimately shaped this important guiding document.

You told us of your overwhelming support for the Waste Hierarchy Principles that encourage avoidance of waste in the first place, reuse, recycling, the use of waste in the creation of energy, with landfill as a last resort.

These principles are all fundamental to this exciting new blueprint.

You also told us you felt strongly that we must all take personal responsibility for minimising waste, along with advocating to reduce waste at the source, and this will be an important ingredient in the success of this Plan.

While waste management is a major part of Council's core business, minimising the waste we send to landfill is something we can't do alone – it requires full community support.

Whether it's saying no to a bag next time you visit the shops, starting a compost bin for kitchen scraps or donating to charity - rather than simply binning – perfectly good items we no longer want or need, we all have a part to play.

We're fortunate to have an active and engaged community in Noosa, one that supports waste minimisation efforts and innovative waste management solutions.

As a community we've rallied before to improve our waste outcomes and we can again. Our community embraced the broad roll-out of the garden waste bin service in 2017, and this has helped divert a significant amount of organic waste from landfill. But there is more work to be done.

Compostable organics, such as kitchen scraps, thrown into general waste bins, account for 40% of the material we currently send to landfill, so over the next five years this will be a major focus for Council.

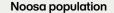
With programs such as the recent Give a Sheet for the Planet® textile recycling day, and our investment in a polystyrene thermal compaction unit as well as improvements to site operations, we've begun forging important circular economy in-roads, and with this waste management plan we continue that exciting journey.

The From Waste to Resource Waste Plan 2023-2028 ensures our waste operations are sufficiently versatile and flexible to allow us to quickly adapt to the new technologies constantly emerging to improve recycling and divert more waste from landfill. It will also ensure we rise to the challenge of meeting the state's ambitious local government recycling targets.

We look forward to delivering our waste goals in partnership with our community over the next five years.

QUICK FACTS

Waste in Noosa 2021/22



Visitors per year

56,587 1.8 MILLION

Eumundi Noosa Road Landfill (Landfill) Diversion



84,000 Total tonnes of waste received



45,000 Total tonnes of waste sent to landfill



39,000 Total tonnes of waste diverted from landfill



1,612,000 **General Waste**



Bins Collected in Noosa 2021/22

673,400 Recycling



405,600 **Garden Waste**



26,000 Commercial Bins

46% **DIVERSION**

State target: 61% by 2025

What was diverted from Landfill in 2021/22?



235 Tonnes On-sold at the Reviva Shop





Batteries 52 Tonnes Recycled Equivalent to the weight



E-Waste 119 Tonnes Recycled Equivalent to the weight of



Mattresses



Cardboard 372 Tonnes Recycled Equivalent to the weight



Metal Waste 3.500 Tonnes Recycled Equivalent to the weight of

Sources:

Department of Climate Change, Energy the Environment and Water, National Waste Report, 2020 ABS, 2007 Year Book Australia, 2007 & Waste Account, Australia 2010-11, 2014, Updated with 2018/19 data. Noosa Council Weighbridge Data 2021/22



Scrap metal at Landfill

More Recycling but also Producing More Waste

	Waste Generated (Tonnes)	Waste Recovered (Tonnes)	Waste Resource Recovery Rate	Waste Recycling Rate
Qld: 2006-2007	14.5 MILLION	5.3 MILLION	36.4%	33.5%
Qld: 2020-2021	15.1 MILLION	7.0 MILLION	46.7%	43.0%

Noosa Commercial & Industrial Recycling

5%

Contamination (2021)

Noosa Household Recycling Bin 6%

Contamination (2021)

QLD State Average

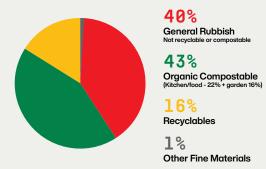
15%

Contamination (2021)

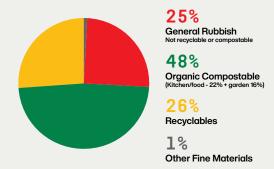
Source: Australian Government Dept of Climate Change, Energy, the Environment and Water, 2023, Waste and Resource Recovery Data Hub, available at https://www.dcceew.gov.au

What's in a Typical Noosa General Waste Bin?

Household



Commercial/Industrial



2019/20 Annual Bulk Kerbside Collection Stats

\$500,000

Cost to deliver the service and dispose to landfill



1 in 5 Uptake rate - 4 out of 5 ratepayers didn't use the service but still had to pay for it



Environmental damage - dumping of asbestos, batteries, chemicals etc.



4,000 person hrs to deliver



27,000km travelled in collecting items

850 TONNES

On average sent to landfill including recyclable materials

8

Source: Envirocom, 2022, Noosa Shire Waste & Recycling Audit 2021

What's the problem?

The most significant source of Council emissions (63%) is the Landfill owned and operated by Noosa Council that receives and manages the Noosa community's residential and commercial waste.



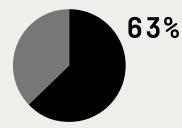
Methane gas is produced when organic matter (food, green waste, paper, etc) decays in landfill



Methane gas has a global warming potential of 28 (meaning it is 28x more potent than greenhouse gas emission than CO₂).



The Landfill site flares the methane gas, converting it into less harmful CO₂.



The emissions from the Landfill account for 63% of council's emissions! Removing organic matter aims to reduce emissions and future costs.

Landfill Site

49_{YRS}

Remaining landfill life

COUNCIL

\$147 PER TONNE

STATE GOVT WASTE LEVY

\$85 PER TONNE

Landfill costs 2020/21

\$9_{MILLION}

2020/21 council spend to extend a new landfill cell

543_{KG}

Amount of household waste the average Australian produces every year

Source:Department of Climate Change, Energy, the Environment and Water, National Waste Report 2022, available at www.dcceew.gov.au



Waste going to Landfill in Noosa

Key Drivers of the Waste Plan

The From Waste to Resource: Waste Plan 2023-2028 (the Waste Plan) has several key drivers. Adopting these drivers, Noosa Council will develop a comprehensive Waste Plan that meets legislative requirements, addresses environmental concerns, supports a circular economy and economic opportunities, and importantly, aligns with the Noosa community's values.

National and Queensland Waste Targets

In 2018, the Commonwealth Government endorsed the 2018 National Waste Policy, which preceded the National Action Plan 2019. The National Action Plan presents targets and actions to implement and guide the use of waste as a resource to 2030 and beyond. There are also targets in the Queensland Waste Management and Resource Recovery Strategy 2019. Refer Attachment 1 for more detail.

All Queensland local governments are required to have a Waste Reduction and Recycling Plan under the Queensland Waste Reduction and Recycling Act 2011 (the Act).

The Waste Plan will meet key objectives of the Act such as:

- Promoting waste avoidance, reduction and resource recovery actions.
- Reducing consumption of natural resources and minimising the disposal of waste by encouraging waste avoidance and the recovery, reuse and recycling of waste.
- Minimising the overall impact of waste generation and disposal.
- Encouraging shared responsibility for waste management and resource recovery by government, business, industry and the community.

Circular Economy and Economic Opportunities

Transitioning towards a circular economy, where waste is minimised and materials are reused and recycled, creates economic opportunities.

A principal motivator of the Waste Plan is ensuring that valuable resources will be conserved, reducing the need for raw material extraction including reliance on fossil fuels.

Greenhouse Gas Emissions

In 2019, Noosa Council declared a climate emergency - a strong statement in support of action on climate change.

The most significant source of Council emissions is the Landfill owned and operated by Noosa Council that receives and manages the Noosa community's residential and commercial waste.

Noosa Council's Zero Emissions Strategy sets an ambitious target of zero net emissions for the organisation by 2026.

Reducing landfill emissions is a critical driver of the Waste Plan.

"This is not about what it will cost to do this, it's about what it will cost in the long term if we don't."

- Waste Survey Respondent

"Take responsibility for their own waste reduction and recycling - Council should not be seen as the one responsible - we are responsible as citizens whether young or old."

- Waste Survey Respondent

Cost Savings

A waste levy was introduced by the Queensland Government on 1 July 2019, to reduce the amount of waste going to landfill, and to maximise resource recovery and recycling. Initially, the waste levy was charged to commercial operators but as of 1 July 2023 the levy will be applied to both commercial and domestic customers.

In the 2021/22 financial year, the State waste levy was \$85 per tonne (excl. GST). Separate to the State waste levy, every tonne of waste sent to landfill costs Council \$147 per tonne. Approximately 45,000 tonnes were sent to the Landfill, resulting in a total cost of \$6.6 million. Moreover, a landfill extension was constructed costing \$9 million.

The levy applies to various waste types, including municipal solid waste, construction and demolition

waste, and regulated waste. The levy does not apply to recyclable materials.

Waste costs are expected to increase. In the 2022/23 financial year, the State waste levy was \$95 per tonne, and the Council cost was \$162 per tonne. The State government levy will increase annually by \$10 per tonne, until it reaches \$145 per tonne on 1 July 2027.

There is a significant cost to sending waste to landfill. Every tonne of waste that can be reused and recycled is a cost saving and even has potential to create revenue through the sale of materials.

Innovation and Technological Advancements

Waste management practices are constantly evolving as new technologies and innovations emerge. A key driver of the Waste Plan is for Noosa Council to investigate the feasibility of innovative solutions for waste collection, treatment, and recycling. The Plan is intentionally designed as a five-year Plan (rather than 10 years) as it's anticipated that within the next five years there will be technological advancements in waste management that are likely to improve operational efficiency and environmental outcomes. This includes infrastructure improvements such as the new Sunshine Coast state-of-the-art Materials Recovery Facility that is due to be completed by the end of 2023. The facility will be equipped with the latest technology sorting equipment to allow more types of products to be recycled.

Environmental Stewardship

In 2007, Noosa Shire was awarded UNESCO Biosphere Reserve status, which recognised the community priority of managing environmental sustainability in balance with community needs. A key ethic driving the Waste Plan is stewardship - actively taking actions to conserve and protect the environment for the benefit of current and future generations.

Community Engagement and Participation

Noosa residents are an active and engaged community, evidenced by the number of business and community organisations working towards sustainability goals of reduced emissions and waste avoidance, reuse, and recycling. The Noosa community is a major voice in the push for waste minimisation.

The "Your Say" waste survey responses indicated strong support from the community for Council to implement solutions which aim to divert as much waste from landfill as possible.

This is nothing new - the implementation of the garden waste bin collection services introduced in 2017 was a recommendation of the Noosa community waste jury.

Business and community waste reduction initiatives, recycling programs, and sustainable practices continue to drive support for innovative waste management solutions in Noosa.

"Give residents the opportunity to recycle everything. There are best practices abroad, towns that recycle everything they use. That is the model I think we should strive to achieve. Council should lead by providing the opportunities. Residents should follow by doing their part: recycle whatever they use. Two principles should be followed:

- Recycling should be easy, easy access, well organised.
- 2. Everyone (including business) pays for their own waste disposal. This creates an incentive to actually reduce waste.

In the end, we can talk about recycling all we want (and we should), but reducing our waste is the only sustainable solution."

- Waste Survey Respondent

Public Health and Safety

Proper waste management plays a crucial role in maintaining public health and safety and is an important component of the Waste Plan, particularly in relation to hazardous waste disposal, avoiding contamination, fire prevention, and the safe handling of waste materials.

Personal Responsibility

A crucial aspect driving the Waste Plan is personal responsibility. This involves taking ownership of items that are no longer needed and being mindful of unnecessary consumption. This approach is in line with both the Queensland Government Waste Avoidance and Resource Productivity Strategy 2014-24 and the Australian Government National Waste Policy Action Plan 2019. In that context, and consistent with current practices in the region, Noosa Council does not support bulk kerbside collection. While this service may appear convenient, it comes at a significant cost and contributes to substantial amounts of recyclable materials (such as wood, metal, cardboard, e-waste, etc.) ending up in landfill due to the complexities and expenses involved in sorting. Additionally, bulk kerbside results in unsightly streets and poses health and safety risks. Of particular concern is the improper disposal of hazardous materials like asbestos, batteries, and chemicals. Bulk kerbside collection elevates the risk of litter and micro-litter finding its way into the ocean through stormwater systems.

Council is committed to assisting residents in managing their bulky waste responsibly. Council will be developing tailored information about responsible disposal of bulky items. This information will be available by calling Council's customer service, visiting the Council website or downloading the Noosa specific Recycle Mate App, which will direct residents to relevant service providers who can handle the collection of bulky goods. This approach promotes responsible waste management while minimising adverse financial and environmental impacts.



Bulk kerbside collection 2019 - dumping of asbestos and microlitter in the environment

Community Feedback

The Waste Plan is built on a strong commitment to engage and collaborate with the community in managing waste now and into the future. Valuable feedback was obtained through the "Your Say" Waste Survey, which attracted 624 responses during the period 13th February to 26th March 2023. Opportunities for face-to-face conversations were created through pop-up events at Noosaville and Cooroy libraries, Pomona markets, and Noosa farmers markets, as well as a family movie night. Presentations and meetings were also organised with key stakeholders.

Results of the community feedback¹ are included below:

People in Noosa stated the following were very important to them when it comes to managing waste now and into the future:

PROTECTING OUR ENVIRONMENT - REMOVING LITTER FROM RIVERS AND OCEANS

78%

MAKING SURE WE DON'T CREATE PROBLEMS FOR FUTURE GENERATIONS

67%

REDUCING WASTE AT THE SOURCE & EDUCATING PEOPLE ON HOW TO BECOME SUSTAINABLE CONSUMERS

62%

OWNERSHIP OF THE PROBLEM
- PEOPLE TAKING PERSONAL
RESPONSIBILITY FOR THE WASTE
THEY GENERATE

57%

CLIMATE CHANGE - REDUCING GREENHOUSE GAS EMISSIONS

55%

Top 10 comments/ideas (in order of importance) on how to reduce waste going to landfill included:

01	Enhance recycling education and waste management behaviour change programs
02	Advance sustainable waste management strategies and innovation for a circular economy
03	Enhance waste management infrastructure, accessibility, and affordability of waste disposal
04	Advocate for government action and regulations to promote sustainable packaging and waste reduction
05	Promote corporate responsibility for sustainable waste management
06	Community-driven composting solutions
07	Incentivise responsible waste management and behaviour change
08	Implement a household and business organic waste collection service
09	Address tourism-related waste
10	Annual bulk kerbside collection

Residence: Noosa residents – 85%, Business owner – 7%, Live outside Noosa Shire – 8%, Interstate visitor – 0.3%, International visitor – 0.2%.

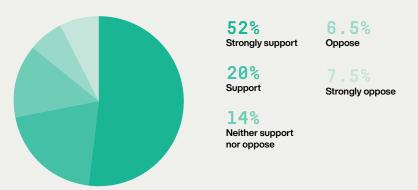
Dwelling Type: Free standing home (suburban) – 65%, Free standing home (rural) – 23%, Unit/townhouse – 10%, Other – 2%. Age: 80 years and older – 2.5%, 70-79 -12%, 60-69 – 18%, 50-59 – 15%, 40-49 – 18%, 30-39 – 10%, 20-29 - 2%, 10-19 – 23%, 10 years and under – 0.3%.

Gender: Female – 65%, Male – 33%, Non binary – 2%.

85%

of respondents are concerned about organic compostable material currently going into landfill

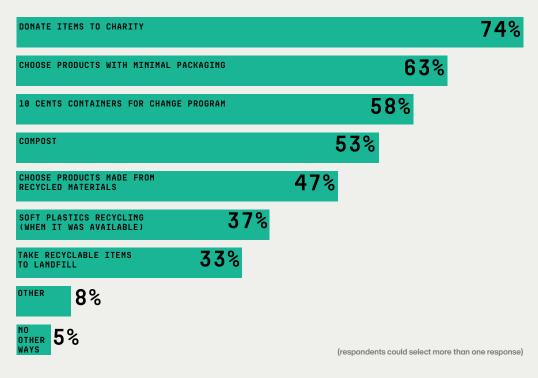
Thoughts on potentially diverting food waste from the landfill general waste bin



Feedback on one thing members of the Noosa community could do to improve waste management. Top 5 comments included:

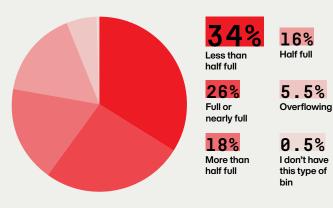
01	Implement effective waste sorting practices, take the initiative to educate oneself about recycling methods and actively seek opportunities for item reuse and repair
02	Adopt a waste reduction approach by practising mindful purchasing, avoiding excessive packaging and plastic, and embracing reusable alternatives such as takeaway containers and coffee cups
03	Reduce organic waste to landfill by composting
04	Take ownership and personal responsibility for managing and minimising your waste generation
05	Create a cleaner environment - Take action to pick up and prevent litter

Other ways people in Noosa reduce items going to Landfill

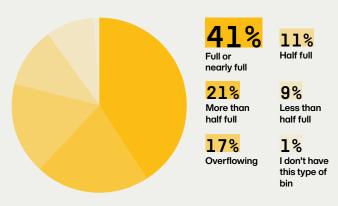


In a typical waste cycle (excluding Christmas or other peak times) how full do your bins get?

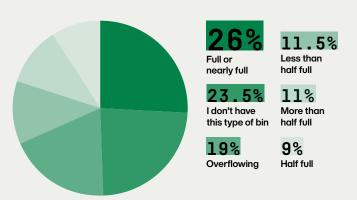
General Waste Bin



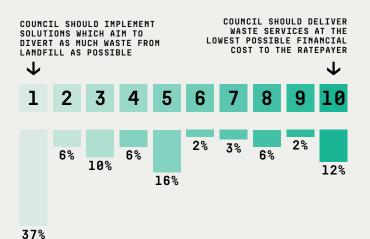
Recycling Bin



Garden Waste Bin



How should Council manage waste?



Top 4 factors that impact your ability to recycle more items:

34%	l can't find a recycling bin when I'm out in public eg park, beach, shops.
29%	I'm not sure if it can be recycled.
27%	My recycling bin is full.
22%	Nothing.

Top 4 things that would help with recycling:

45%	Clear information on packaging about what can be recycled.
42%	Trust – are my items really recycled?
39%	Up to date information on the bin about what can & can't go in.
36%	A weekly collection service of my recycling bin.

People in Noosa are confident and careful about what goes in which bin





50%

of respondents are extremely careful about what goes in which bin (43% are quite careful)

Waste solutions

Solutions may mean households and/or businesses have to put in some extra effort



STRONGLY AGREE 46% AGREE

10% UNSURE

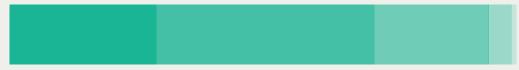
5% DISAGREE 1% STRONGLY DISAGREE Ratepayers might have to pay more in short-term waste costs to invest in new technologies or processes



379 AGREE 23% UNSURE

15% DISAGREE 8% STRONGLY DISAGREE

Solutions should produce sufficient revenue to reduce the costs to ratepayers



29% STRONGLY AGREE

43% AGREE

22.5% UNSURE

4.5% DISAGREE

1% STRONGLY DISAGREE People need to take responsibility for the items they no longer want or need



39%
AGREE

10% UNSURE

4% DISAGREE 1% STRONGLY DISAGREE

Feedback on one thing Noosa Council could do to improve waste services (in order of importance). Top 10 comments included:

01	Bin services (landfill, recycling & green waste) capacity & frequency comments
02	Organic waste collection
03	Effective recycling solutions e.g. recycling all types of materials and making recycling convenient, accessible and transparent
04	Empower waste education and behaviour change initiatives
05	Annual bulk kerbside collection service

06	Waste facilities comments - free/reduce fees, vouchers, increase fees, set-up and waste contract review
07	Compost - encourage home composting & worm farms, provide compost bins to households, support community composting options.
08	Implement innovative solutions for sustainable waste management
09	Increase the number of public place landfill & recycling bins in parks, beach areas, and popular tourist destinations
10	Advocate for plastic waste reduction practices and policies

Vision

In Noosa, a future is envisioned where the circular economy and zero waste are championed, resources are valued, and nature is protected. Harnessing the principles of the waste hierarchy, Noosa will ensure it continues to lead by example as a community committed to sustainability, environmental stewardship, and responsible waste management.

The vision for the Noosa Waste Plan is:

By 2035, Noosa will be a recognised leader in the transition towards a circular economy and zero waste to landfill.

Principles

The waste hierarchy refers to a set of principles setting priorities for the management and reduction of waste. It has been adopted worldwide and promoted by international bodies, such as the European Union and the United Nations. The waste hierarchy principles underpin the Waste Plan and provide a framework for waste management practices encouraging avoidance, reusing, recycling, waste to energy, and as a last resort - disposal of waste.

The Waste Heirachy

01 - AVOID	maximum conservation of resources
02 - REUSE	reusing materials
03 - RECYCLE	recycling & reprocessing materials
04 - RECOVERY	energy recovery prior to disposal
05 - DISPOSAL	zero conservation of resources

AVOID: The first and most important step in the waste hierarchy is waste avoidance. This involves minimising waste generation at its source by reducing packaging, promoting sustainable consumption patterns, and using resources efficiently. Avoidance prevents the creation of waste in the first place.

REUSE: The next step in the waste hierarchy is the promotion of reuse. Reusing items or products extends their lifespan and reduces the need for new products. This can involve repairing, refurbishing, or repurposing items to give them a new lease on life. Examples of reuse include donating unwanted clothing, using refillable water bottles, or buying second-hand furniture.

RECYCLE: Recycling converts waste materials into new products or materials. This step involves collecting, sorting, and processing waste materials to extract valuable resources for manufacturing. In Australia, various recycling programs exist for materials like paper, cardboard, glass, plastic, and metals. Recycling reduces the need for virgin resources, saves energy, and decreases the amount of waste sent to landfills.

RECOVERY: If waste cannot be avoided, reused, or recycled, the next step is recovery. Recovery involves extracting energy through processes such as energy recovery by generating a gas and/or heat which can be utilised as a source for power/fuel - and offset the need for energy generated from fossil fuels.

DISPOSAL: The final step of the waste hierarchy is disposal, which includes methods such as landfilling. Disposal is the last resort - only when all other options have been exhausted.

Actions

The actions outlined in the Waste Plan support the principles of the waste hierarchy and revolve around three main themes: waste avoidance, waste reuse and recycling, and the circular economy. Actions are presented for listing purposes and are not organized according to priority or significance.

Theme 1: Waste Avoidance

Waste avoidance involves actions to minimise waste generation through personal responsibility and consideration for future generations. This includes advocating for sustainable practices by supporting State and Federal government bans and stewardship schemes and collaborating with waste avoidance and litter prevention programs. The implementation of these actions will foster a culture of waste avoidance and responsible consumption.

Objectives	Minimise the generation of waste.
Outcomes	Reduced waste collected. Reduce waste from its source.

Actions

1. Personal Responsibility	1.1 Encourage common values and attitudes through a positive local communication campaign. Drive local sustainable production and consumerism to bring about voluntary behaviour change achieving community-wide personal responsibility of waste generation and cultivate a waste avoidance community attitude.
	1.2 Achieve consistency in the Sunshine Coast region in the disposal of bulky items by connecting the community with accredited platforms and organisations specialising in recycling of second-hand goods, unwanted item collection and sustainable disposal. Develop a central resource detailing service providers to assist with bulky item collection.
	1.3 Investigate waste behaviour change and recognition programs (residential and business) e.g. Living Smart, Plastic Free Noosa etc.
2. Advocacy	 2.1 Advocate and support Federal and State government bans and schemes: Single-use plastics ban (5 year roadmap for action on single-use plastic items) Expand Containers for Change (wine and spirits) Draft E-Products Action Plan (solar PV and battery, TV, mobile phones etc.)
	2.2 Promote product stewardship schemes and priority product list so manufacturers are responsible for the entire lifecycle of products. Refer Attachment 3 Product Stewardship Scheme and Priority Product list (this list is not exhaustive).
	2.3 Promote certified sustainable accreditation programs relevant to waste management.
	2.4 Lobby for end-of-life waste codes (new technologies).
	2.5 Lobby for diversion benchmarking data to be available to compare against other councils.

3. Litter Avoidance 3.1	Implement innovation in roadside litter prevention and illegal dumping with the aim of preventing litter from entering rivers and waterways.
3.2	Collaborate with litter prevention programs and initiatives e.g. Noosa Integrated Catchment Authority, Take 3 For The Sea, Clean up for the Hatchlings, Beach clean-ups etc. Ensure information is recorded in the Australian Marine Debris Database.

Success Measures	15% Avoidance by 2030.
Key Performance Indicators	Reduce the average Noosa household waste per year from the Australian average household waste per year from 543kg¹ to a target of 461kg per year.

¹Department of Climate Change, Energy, the Environment and Water, National Waste Report 2002, available at www.dcceew.gov.au

Theme 2: Waste Reuse and Recycling – Planning. Infrastructure. Operations.

The Waste Plan centers around the crucial aspects of planning, infrastructure development, and operational strategies for waste reuse and recycling. These components form the fundamental basis for numerous actions aimed at improving waste management. As part of these efforts, a Draft Masterplan for the Landfill is currently being developed. While the implementation of the Masterplan extends beyond the timeframe of this five year Waste Plan, it will play a vital role in guiding the planning, infrastructure, and operations necessary for effective waste reuse and recycling. Additional details regarding the Draft Masterplan can be found in Attachment 2: Eumundi Noosa Road Landfill Draft Masterplan - Overview.

Objectives	Waste reuse and recycling.
Outcomes	Infrastructure and operations to support Waste reuse and recycling of materials.
	Planning, infrastructure and operations are geared to produce quality products for a market driven end use.
	Reduction in waste related greenhouse gas emissions.
	Contamination reduction – correct material in the correct bin.
	Improve waste avoidance, reuse and recycling.
	Best-in-Class environmental compliance.

Actions

1. Food Waste	1.1 Continue to progress food waste treatment investigations inclusive of, but not limited to, the following technologies: In-Vessel Composting and Anaerobic Digestion. Convert food waste into energy and/or compost including establishing markets by promotion and education. Refer Attachment 2.
	1.2 Review bin infrastructure and collection frequency (residential and commercial) to support food waste infrastructure.
	1.3 Implement a food waste campaign to reduce food waste at the source.
	1.4 Conduct education and consultation on the environmental benefits and expanded waste processing capabilities of a food waste collection service e.g. a food waste collection service can process items that are unable to go in a home composter such as meat (cooked and raw), dairy products, seafood, and compostable coffee cups and take away containers.
2. Wood Waste	Continue to progress wood waste processing including biochar technologies and/or woodchip. Refer Attachment 2.
3. Garden Waste	3.1 Continue to investigate improvements to the processing of green waste to enhance the value of the end product (e.g. compost) from the 14,890T/year green waste that is currently being mulched.
	3.2 Continue to support and promote community composting and worm farming workshops.
	3.3 Review bin infrastructure and collection frequency (residential and commercial) to support infrastructure and capture rates.
4. Construction & Demolition Waste	4.1 Promote the establishment of material exchange platforms where construction companies can share surplus or unused building materials.
	4.2 Continue to divert Council construction waste from landfill for reuse and investigate new waste streams to divert.
	4.3 Audit material make-up of construction and demolition skip bins and identify opportunities for reuse and recycling.

5. Precinct Waste Management	5.1 Review precinct waste management and opportunities for innovation. Inclusive of bin ratios, compaction bins, bin level sensors, logistics and collections technology. Potential to reduce traffic and emissions associated with waste collection in popular areas.
	 5.2 Visitor waste behaviour change Develop and implement a peak period (Christmas, Easter) waste avoidance, reduction, reuse and repair – annual campaign. Support existing visitor sustainability organisations and programs e.g. Tourism Noosa's Plastic Free Noosa and Tread Lightly Programs. Waste free events: Review Noosa Council's sustainable events policy to encourage waste free events. Review and modernise Council event bin covers.
6. Waste Contract	Incorporate reuse and recycling targets, and infrastructure into future waste management contracts. Examples include: Trucks (electric/gas/hydrogen/other). Peak period waste. Innovation and future proofing.
7. Waste Pricing	Review and model waste charging and budgeting to reflect waste diversion improvements via infrastructure, residential and business activities. Review budget against the cost implications including an offset value for greenhouse gas emissions from landfill.
8. Reuse & Repair	 8.1 Promote programs that help residents and businesses repair items and/or rehome unwanted goods. Examples include: Advisory System for Process Innovation and Resource Exchange (ASPIRE). Reviva Noosa repair workshops. Buy, Swap, Sell online platforms e.g., Facebook Marketplace, eBay, Gumtree. Community Garage Sale Trail. Men/women sheds.
	8.2 Investigate reusables schemes (takeaway cups and containers). Preference for reusable before recyclable.
9. Recycle	9.1 Continue to collect and recycle existing waste streams.
	9.2 Continue to investigate additional waste stream recycling equipment and collection options as they develop. E.g. polystyrene processing (Refer Attachment 4) and Reverse Vending Machine.
	9.3 Continue to raise awareness of correct recycling practices through educational programs and materials and investigate new mechanisms e.g. Noosa specific Recycle Mate App.
	 9.4 Continue to support existing recycling programs and investigate emerging initiatives. Examples include: BlockTexx (Refer Attachment 5). Simply Cups. Containers for Change. TerraCycle. Garage Sale Trail.

10. Education	10.1 Continue to improve waste education programs in schools including landfill tours and in-class presentations. Support schools to develop site specific waste strategies. Support existing schools programs e.g. Kids in Action, EE Hub etc.
	 10.2 Continue to promote waste awareness campaigns: National Recycling Week. Plastic Free July. Clean-up Australia.

Success Measures	Improved overall waste diversion by 2030. Improved contamination rates in all streams of waste by 2030.
Key Performance Indicators	Year on year improvement in tonnes diverted, calculated as a percent of total tonnes controlled. 80% overall diversion by 2030. Contamination rates across all streams improved by 40% by 2030.

Theme 3: Circular Economy and Economic Opportunities

Actions to develop a circular economy will unlock economic opportunities by maximising resource efficiency, supporting local businesses, and promoting sustainable practices that reduce reliance on the extraction of fossil fuels.

Objectives	Utilise waste and its associated infrastructure as a resource and source of revenue.
Outcomes	Minimise the use of virgin materials to create products.
	Reduce the cost to the community of landfilling material that could be utilised as a resource with potential revenue generation.

Actions

1. Landfill Site – Diversification	 Identify opportunities for other uses of the landfill site and materials. For example: Continue to develop the feasibility of solar power production on Council's waste assets. Utilise current waste assets and generate quality products to support the development of circular economy. 		
2. Advanced Manufacturing	Attract advanced manufacturing business and start-ups to utilise resources for circular economy.		
3. Circular Economy Collaboration	Collaborate with regional partners and other Councils for solutions, markets and resources. Examples include: Farmers. Councils. Unitywater. Industry and business. State and Federal Government.		
4. Council Operations	Advocate for supply resources to go back into Council projects where applicable including reviewing material standards for application.		
5. Employment	Promote the creation of employment in the Noosa Shire through opportunities in the circular economy.		

Success Measures	Improved waste diversion by 2030.
	Value-add business attracted to the Noosa Shire.
Key Performance Indicators	Year on year improvement in tonnes diverted, calculated as a percentage of total tonnes controlled. 80% overall diversion by 2030.
	Contamination rates across all streams improved by 40% by 2030.

Monitoring, Evaluation and Improvement

Monitoring and evaluation will enable data-driven decisions and adjustments to the Waste Plan actions.

Actions will be reviewed every two years to ensure the approach remains appropriate in respect of legislative, political, economic, scientific, technological and social contexts.

The table below highlights the Waste Plan objectives and associated outcomes as well as the success measures and key performance indicators.

Table 1: Waste Plan Monitoring and Evaluation

Theme	Outcomes	Success Measures	Key Performance Indicators
1. Waste Avoidance	Reduce waste collected Reduce waste at its source	15% waste avoidance by 2030	Reduce the Noosa average household waste per year from the Australian average household waste per year from 543kg¹ to a target of 461kg per year.
	Tibubbb Mubib ut its 500.00		Single use plastic ban could yield 3.6%² diversion rate.
			 Glass diversion via Containers for Change could yield 2.4%³ diversion rate.
			 Love Food Hate Waste campaign raised awareness, relating to 27.1%⁴ less household organic waste into landfill.
2. Waste Reuse and	Infrastructure and Operations	Improved waste	29% of kerbside waste in Noosa is food waste, equating to approximately 4000 tonnes a year.
Recycling	to support waste reuse and	diversion by 2030	2400 – 3000 tonnes a year of wood waste targeted for diversion.
	recycling of materials. • Planning, Infrastructure and		 Targeted removal of garden waste from general waste bin could relate to a further reduction in greenhouse gas emissions of 800 tonnes of carbon dioxide.
	operations are geared to produce quality products for a market driven end use.		 22.2% of waste generated in Noosa is construction and demolition waste. Based on state performance 78% could be recovered, representing 17% of Council's total waste. Targeted approach to streams not already recovered like metals, plaster and masonry.
	Reduction in waste related	lucus and	
	greenhouse gas emissions.	 Improved contamination 	Contamination across all streams improved by 40% by 2030. Output land the stream street of 40% and attack and across all streams improved by 40% by 2030.
•	Contamination reduction – correct material in the correct bin.	rates in all streams of waste by 2030	 General recycling education equates to 1% reduction in contamination for every \$1 spent per household.⁵ Targeted campaign for the 1.8M visitors to the region each year. Detailed review of contamination rates, waste types and volume increase for monitoring purposes to be generated.
	Improve waste avoidance, reuse and recycling		
3. Circular Economy &	Minimise the use of virgin	Improved waste	80% of the total tonnage controlled, diverted from landfill by 2030.
Economic Opportunity	materials to create products.	diversion by 2030	• Utilising recovered materials requires less resource and energy compared to virgin materials. Current emissions in
	Reduce the cost to the	Attracting value	the manufacturing sector accounts for 11% of Australia's total carbon footprint.
	community of landfilling material by utilising waste as a	adding businesses and employment to	Target business sectors closely aligned with waste to resource including:
	resource with potential revenue	the region	Electricity, Gas, Water and Waste
	generation.	3	Professional, Scientific and Technical Services.
			Target is to increase the share by 15% by 2030.

¹Department of Climate Change, Energy, the Environment and Water, National Waste Report 2022, available at www.dcceew.gov.au ²MRA Consulting, Noosa Action Plan Benefits Analysis, 2023.

⁵Lbid

⁶Lbid

³ Lbid

⁴Lbid

Funding

Funding of actions must align with the waste hierarchy principles of avoidance, reusing, recycling, waste to energy and, as a last resort, disposal of waste. Programs, projects and actions that are most likely to make a significant contribution to the achievement of success measures will be prioritised. Initiatives that do not align to the underlying ethic of environmental stewardship or move away from the concept of personal responsibility are unlikely to receive favourable consideration.

Waste Plan actions will be progressed through Council's annual budget process via the allocation of operating and capital funds and the provision of adequate resources (people and systems).

It will be important to consider full-cost pricing of waste management, environmental, social and governance elements during the next phase of Council's waste journey.

Opportunities for grants from other tiers of government will be sought to assist in the delivery of the actions as well as the consideration of partnership arrangements.

Noosa Council joined the Council of Mayors South East Queensland (COMSEQ) in 2022 which should be a key source to access State funding.

The cost of waste management to the ratepayer can be greatly reduced if individuals and business invest their time in good waste management at home and at work.

For example community feedback has suggested:

- Implement effective waste-sorting practices, selfeducate on recycling methods and actively seek opportunities for item reuse and repair.
- Adopt a waste reduction approach by practicing mindful purchasing, avoiding excessive packaging and plastic, and embracing reusable alternatives.
- 3. Reduce organic waste to landfill by composting.
- 4. Take ownership and personal responsibility for managing and minimising your waste generation.
- 5. Create a cleaner environment take action to pick up and prevent litter.

Attachment 01: National Waste Policy, Plans and Queensland Waste Strategy

National Government

In 2018 the Commonwealth Government endorsed the 2018 National Waste Policy which preceded the National Action Plan released in 2019. The National Action Plan presents targets and actions to implement and guide the use of waste as a resource to 2030 and beyond. The plan supports National packaging targets and impediments to a circular economy for waste in Australia and thus making Australia more responsible for its own waste.

The circular economy principles for waste as per the National Action Plan 2019 are as follows:

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

The targets for the National Action Plan are as follows:

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

Queensland Government

In 2019, the State Government endorsed the Queensland Waste Management and Resource Recovery Strategy 2019, to better manage waste in Queensland. The overview of the Strategy states the following:

"The Strategy presents a strategic plan for a better way of managing waste in Queensland, by harnessing the potential value of resources that have traditionally been discarded. The Strategy's three strategic priorities will guide the transition to a more circular economy, reduce the amount of waste disposed of to landfill, or illegally, and provide a more sustainable source of end-of-life products and materials to create new products. The Strategy will be accompanied by a series of action plans that detail the implementation of the strategic priorities, including timeframes and responsibilities."

The Strategy focuses on three strategic priorities to support the shift away from the current practices in material considered as waste.

- Reducing the impact of waste on the environment and communities.
- 2. Transitioning towards a circular economy for waste.
- 3. Building economic opportunity.

The targets for the Queensland Waste Management and Resource Recovery Strategy 2019 include:

- I. Average landfill diversion of 65% for all waste streams by 2025.
- 2. 25% reduction in household waste by 2050.
- 3. 90% of waste is recovered and does not go to landfill by 2050.
- 4. 75% recycling rates across all waste types by 2050.
- 5. Halve the amount of food waste generated by 2032.
- 6. Divert 80% of the organic material generated from landfill by 2032.
- 7. Achieve a minimum organics recycling rate of 70% by 2032.

South-East Queensland Waste Management Plan (CoMSEQ)

In 2021 the Council of Mayors of South East Queensland (CoMSEQ) finalised its waste management plan. Noosa became a member of the CoMSEQ group in 2022 and has been actively involved in working collaboratively with the other member Councils to review shared infrastructure to change the way waste is managed. The CoMSEQ Waste Plan is underpinned by the following:

- 1. Developed as a collaborative approach to SEQ waste.
- 2. Endorsed by all Councils.
- 3. Backed by State with funding to support strategic implementation (i.e. not competitive).

The Plan focuses on three areas of actions towards 2030:

- 1. Optimising comingled recycling.
- 2. Removing organic waste from landfill and recovering it.
- 3. Optimising the treatment of residual municipal waste.

The objective of the Plan is to identify the set of levers, and the most appropriate sequencing of those levers, that would best enable all SEQ Councils to:

- 1. Optimise the economics of waste management operations.
- 2. Encourage local economic development and job creation.
- 3. Meet or move towards State targets relating to household waste generation, recycling, and landfill diversion by 2050.
- 4. Maintain or achieve high levels of citizen satisfaction with waste management services.

Attachment 02: Eumundi Noosa Road Landfill Draft Masterplan - Overview

Noosa Council is now initiating a significant transformation of its Eumundi Noosa Road Landfill (Landfill) site into a renewable resource and energy hub.

This is in tandem with changing State and Federal laws, as well as evolving community standards that demand higher waste diversion and reuse over traditional landfill practices.

Such a strategic shift will address multiple environmental and economic challenges while promoting sustainability, and the creation of jobs in the region.

The need to rethink waste management practices stems from the recognition that emissions generated from decaying organic matter, predominantly food waste, running at an alarming 4000 tonnes a year, contributes to approximately 63% of Council's total carbon footprint.

By adopting resource recovery methods, Council will significantly reduce resources (being viewed as waste) and going to landfill as well as reduce greenhouse gas emissions and mitigate environmental impacts.

To realise the Waste Plan vision, Council is exploring a range of technologies, each specifically tailored to target different waste streams.

These plans are subject to approvals and feasibility studies but are already in the early planning phase.

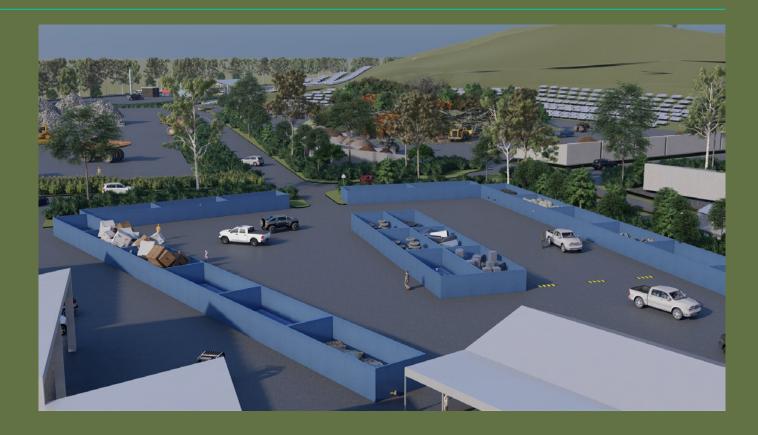
- 1. Food waste processing: Implementing processes such as anerobic digestion, or in-vessel composting will convert food waste into valuable resources such as biogas and fertiliser, which in turn could generate a revenue stream from the process's outputs. This approach not only diverts waste from landfill but also harnesses the potential resource contained within the waste as well as reduce greenhouse gas emissions associated with landfilling organic matter. Food waste collection potentially has an impact on collection frequencies and bin infrastructure for households and commercial sites (to be further investigated).
- 2. Biochar production from waste untreated timber: Investigating the implementation of biochar production techniques. Biochar is a charcoal-like substance created from organic matter. It provides a range of benefits. It serves as a soil amendment, enhancing soil health and fertility by improving nutrient retention and moisture management. In addition, biochar plays a crucial role in carbon sequestration, aiding in the capture and long-term storage of carbon dioxide, thereby mitigating climate change impacts.
- 3. Composting of green waste: Given the annual volume of approximately 20,000 tonnes of green waste received at the Landfill site, Council is investigating the establishment of a composting facility. This facility would allow Council to efficiently convert green waste into nutrient-rich compost, which can then be utilised in various applications, such as agriculture and landscaping, thereby closing the organic waste loop.
- 4. Eumundi Noosa Road Landfill & Pomona/Cooroy Transfer Station redevelopment: To drive resource recovery for both residential and commercial waste, the modernisation of the existing Landfill and Pomona & Cooroy Transfer stations are critical. A state-of-the-art facility will facilitate efficient sorting and processing of waste, enabling the diversion of recyclable and reusable materials from landfill. Implementing advanced waste management techniques at the Landfill will optimise resource recovery and contribute to a circular economy.
- 5. Solar energy: A solar farm with battery storage capability is proposed to further maximise the environmental and economic potential from the Eumundi-Noosa Road landfill site, built onto available areas of the existing landfill.
- 6. Advanced manufacturing: A key proposal to attract local reuse and recycling businesses to work on site with potentially discounted access to raw materials and or cheap electricity/gas to allow businesses to actively participate in the circular economy.

This means repurposing waste products in the manufacturing of new items, thereby stimulating the local economy and generating employment opportunities.

The proposed Draft Masterplan represents a long-term commitment to promoting waste diversion, renewable energy generation, and the circular economy.

This will require collaboration with neighbouring councils and businesses to leverage collective expertise and resources.

By adopting these sustainable practices, Council will lessen the financial burden of the waste levy on ratepayers while achieving significant environmental and economic benefits – contributing to a cleaner and greener future for Noosa.



Timeline

		•	Eumundi Noosa Road Landfill capping complete 2024 Waste infrastructure feasibility studies Noosa Council adopts <i>From Waste to Resource: Waste Pan 2023-2024</i>
	2024	٠	Noosa Council Waste and Collection Contract review Installation of solar panels on capped Landfill (subject to feasibility study outcomes
	2025	٠	Queensland Government waste diversion target – 61%
	2026	٠	Noosa Council net zero emissions target New Noosa Council Waste and Collection contract
2025	-2028	٠	Compost site/Biochar site/Anaerobic digestion plant (subject to feasibility study outcomes)
		٠	Stage 1 Landfill site reconfiguration
	2028	٠	Noosa Council Corporate Plan – 90% of all garden and food waste removed from Landfill
	2029	٠	Stage 2 Landfill site reconfiguration
	2030		Noosa Council Environment Strategy – All garden and food waste removed from Landfill

Attachment 03: Product Stewardship Schemes and Priorities

Product stewardship is an approach to managing the impacts of different products and materials on the environment and human health and safety. Product stewardship schemes help to manage these impacts over a product's lifecycle. These schemes can be:

- industry-led voluntary schemes
- co-regulatory arrangements between industry and government
- mandatory schemes under law.

The Australian Government also works with industry on potential industry-led voluntary action; or where products and materials may be considered for schemes in the future.

Current schemes

TVs and computers

Work with industry to run a national recycling scheme for TVs, computers, printers and related hardware.

Oi

The Australian Government provides industry incentives to increase recycling of used oil.

Co-regulatory arrangements

Mobile phones

MobileMuster collects and recycles mobile phones, batteries, modems and accessories. This includes running public awareness campaigns to increase uptake in recycling of unused and damaged mobile phones.

Tyres

Tyre Stewardship Australia manage the national Tyre Product Stewardship Scheme. The scheme promotes the development of viable markets for tyre-derived products.

Large plastic bags

Big Bag Recovery collects and recycles bags used for products over 15kg or 15L that would otherwise be sent to landfill.

Batteries

The Battery Stewardship B-cycle Scheme is a national battery collection network that recovers and recycles used hand-held batteries. It also raises public awareness on battery safety and disposal options.

Aluminium cladding

Ecoloop takes used aluminium cladding and recycles it into new materials for local manufacturers.

Plastics and packaging

The Australian Packaging Covenant Organisation (APCO) administers the Australian Packaging Covenant and works with industry members from across the packaging supply chain to design more sustainable packaging that can be reused and recycled.

Plastic paint pails

Dulux Project Earth recycle and remanufacture used Dulux brand plastic paint pails from commercial and industrial work sites.

Priority products

Each year the Minister for the Environment announces the Minister's Priority List.

The list names products and materials that need urgent product stewardship action.

Minister's Priority List 2022/23

- Photovoltaic systems
- Electrical and electronic products
- Oil containers
- Child car seats
- Clothing textiles
- Problematic and unnecessary single use plastics
- Mattresses
- Plastics in healthcare products
- End-of-life tyres

For more information visit https://www.dcceew.gov.au

Attachment 04: Polystyrene Recycling

In 2023, following the success of a six-month trial, Noosa Council installed an Expanded Polystyrene Thermal Compaction Unit at the Landfill to address the issue of polystyrene waste.

How it works?

The thermal compaction unit operates by heating and compressing used polystyrene waste. This process reduces the size of the waste by 90% and transforms it into small solid bricks. These bricks can be conveniently transported and used to create new products, thereby reducing the demand for new polystyrene materials.

Win-Win

Recycling polystyrene at the landfill, not only saves landfill space but also prevents harmful particles from entering the natural environment. The installed unit can process up to 1 tonne per day, correlating to 66m³ in volume of polystyrene. This is a positive step towards reducing environmental pollution and promoting sustainable waste management practices. Once the polystyrene has been recycled it can be sold for \$400-\$600 per tonne.



POLYSTYRENE READY FOR RECYCLING



RECYCLED POLYSTYRENE READY FOR REPURPOSING

Attachment 05: BlockTexx Textile Recycling

'Give a Sheet®' for the planet

In Australia, textile waste has become a significant contributor to landfill with the average Australian discarding around 23 kilograms of textiles per year (ABS, 2001). To combat this issue, the residents of Noosa have embraced the Give a Sheet® for the planet initiative, breathing new life into preloved clothing and household textiles.

Preloved clothing is given to Vinnies, an organisation dedicated to assisting those in need. Other textiles including sheets, towels, pillowcases, tea towels etc. are provided to BlockTexx, a leading textile recycling company.

Textiles are transformed into valuable, high-grade recycled materials. This process enables Australian manufacturers to utilise the recycled textiles and create new products. The recycled materials find applications in various industries, including hydro-mulch, geosynthetic fabrics, and building materials.

In 2022, as part of the Give a Sheet® for the planet event, the Noosa community diverted 3.2 tonnes of textile waste from ending up in landfill. Again in 2023, the community continued their support with 1.6 tonnes of clothing donated to Vinnies and 818 kilograms of textiles sent to BlockTexx for recycling.





TEXTILE RECYCLING



From Waste to Resource Waste Plan 2023 - 2028

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