



PORT STEPHENS
COUNCIL

WASTE MANAGEMENT STRATEGY 2021-2031





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INTRODUCTION

Like many communities across Australia, Port Stephens Council (Council) is facing challenges with the management of solid wastes. Changes in policy nationally and internationally are affecting many of these challenges in addition to greater community expectation for Council to manage waste in a more sustainable way.

Council recognises the importance of sustainable waste management services for its communities. Therefore, this Waste Management Strategy will guide the management of waste and resources and the delivery of services to the community over the next ten years and beyond.



Key Outcomes

Council is dedicated to progressing its waste management and resource recovery services and striving for better practice. The key objectives of the Strategy are to:

- 1** Address how Council can meet current targets set by the NSW EPA in the 2021-2041 Waste and Sustainable Materials Strategy by:
 - Investigating systems for the processing of our waste
 - Introduction of a third bin.
- 2** Identify opportunities for Council to utilise waste assets and resources in the most efficient manner to maximise recovery and provide waste services more efficiently through:
 - Regional cooperation and coordination
 - Service delivery.
- 3** Reduce the community's environmental footprint through:
 - Waste avoidance, reduction and resource recovery
 - Expansion of litter prevention and management initiatives
 - Community education.
- 4** Identify opportunities to reduce waste to landfill through:
 - Recycling of additional material through the procuring of waste technology
 - Use of alternate processing options/locations.



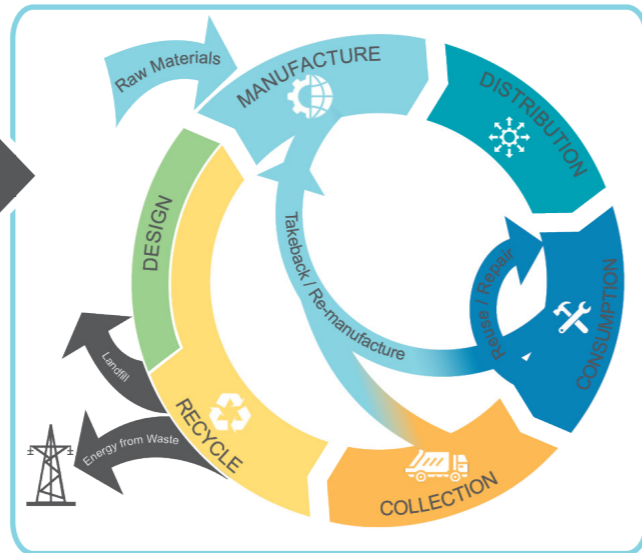
KEY DRIVERS

The NSW Waste Avoidance and Resource Recovery (WARR) Strategy aims to avoid and reduce waste generation, increase recycling, alter public behaviour through education and increase investment, innovation and improvement of environmental practices and divert more waste from landfill. In doing so, the NSW WARR Strategy includes specific waste diversion from landfill targets to achieve its objectives, as outlined below.

1 NSW WARR Strategy Diversion Targets	
Waste Type	2022 Diversion Target
Municipal Solid Waste (MSW)	70%
Commercial and Industrial (C&I)	70%
Construction and Demolition (C&D)	80%
Overall Diversion from Landfill	75%

Circular Economy

The circular economy is an alternative to the traditional, linear economy (take, make, use, dispose) which refers to taking resources, making goods that are then bought and used to then be disposed of as waste. Given there is a finite supply of natural resources which are getting increasingly harder and costlier to extract, these traditional processes result in unnecessary waste. A circular economy aims to 'close the loop' by recovering and reusing items that would otherwise have been disposed of and returning them to the economy – considering them as a valuable resource rather than waste.



Waste Management Hierarchy

The Waste Management Hierarchy has been adopted within this report as the basis for classifying and assessing the various resource recovery options which are being considered to assist Council to improve its waste management system. Options which achieve outcomes higher up the Waste Management Hierarchy are preferred over those located further down the Hierarchy. Notwithstanding this, options from each level of the Waste Management Hierarchy have been identified and assessed.



CURRENT WASTE MANAGEMENT SERVICES

Collection Services

There are approximately **34,721** properties within the LGA.

- 73%** of properties comprising single dwellings.
- 22%** multi-unit dwellings (MUDS).

Kerbside Collection

As required by section 496 of the Local Government Act 1993, a domestic waste service charge is applied to all developed residential properties, whether occupied or unoccupied, including land categorised as 'residential' and 'farmland'.

In 2020/21 services are provided to 33,030 domestic residences and 2,338 non-domestic services, including commercial services.



2 Kerbside Collection Service Summary			
Waste Stream	Standard Bin Size	Options	Collection Frequency
General Waste	240L	Nil	Weekly
Recycling	240L	360L	Fortnightly

On-Call Kerbside Collection of Bulky Items

Council offers each rate paying household access to two on-call kerbside collection of bulky waste/or garden organic items each financial year. Acceptable materials include:

- Furniture - chairs, cupboards, tables and similar (furniture containing glass is not accepted)
- Mattresses and mattress bases
- Electronic waste (e-waste)
- Appliances - fridges, washing machines and similar
- Scrap metal - fencing, hot water systems, BBQs
- Garden organics.

Materials are collected in a rear compactor collection vehicle and transported to the Salamander Bay Waste Transfer Station. Council sorts the material and recovers scrap metal and mattresses for recycling.

Public Place Waste Collection

Council provides and services approximately 598 public place waste and recycling bins which are located in CBD areas, streets, parks, reserves and sporting facilities.







Waste Management Facilities

Council owns and operates the Salamander Bay Waste Transfer Station, which includes a Community Recycling Centre. The following waste types are accepted at the facility.

Free Waste Type

-  Household recycling
-  Cardboard & paper
-  Metals
-  Electronic Waste
-  Paint
-  Gas Bottles
-  Fire extinguishers
-  Motor & other oils
-  Car batteries
-  Household batteries
-  Smoke detectors
-  Fluro globes & tubes

Paid Waste Type

-  General waste
-  Green waste
-  Tyres
-  Mattresses
-  Construction & demolition waste
-  Old furniture items

Waste Education


Council facilitates several waste education programs to support the current waste collection service and other waste initiatives within the community including:


-  Preparation and distribution of kerbside collection service calendar and information brochure.
-  Website and social media posts, including video campaigns and direct messaging.
-  Waste and recycling presentations, including truck visits, for pre-school and primary school children.
-  Visual audits of the recycling bin as a means for reminding residents what can and cannot be recycled.
-  Online and in-person workshops on decluttering, waste minimisation, upcycling and beeswax wraps.
-  Internal programs providing information on recycling within Council facilities and reducing waste.

The Small Acts Big Change program is a long-running initiative between councils in the Hunter and Central Coast to divert waste from landfill. The program website and Facebook page engages community groups, businesses and individuals via ideas and

informative reviews to understand that the small things people do can re-imagine the way we buy, use, and dispose of “stuff” for a better planet and better community.

Other Waste Services

 **Drop-off Days**
In addition to providing permanent drop off locations at the Salamander Bay Waste Transfer Station, Council offers residents free drop off days for green waste, chemicals, mattresses, tyres, and e-waste at various locations across the LGA.

 **Annual Chemical Cleanout**
Household chemicals and hazardous wastes can be dropped off by residents at the EPA funded annual chemical cleanout on specified dates which are advertised on Council's website. These items can also be disposed of free of charge at Salamander Bay Waste Transfer Station during opening hours.



WASTE DATA AND PERFORMANCE

Waste data is collected based on three distinct waste streams. These distinct, and regulated waste streams include:

Municipal Solid Waste (MSW)
MSW is solid waste from households and local government operations, including waste placed at the kerbside for collection and waste collected by councils from municipal parks and gardens, street sweepings, council engineering works and public council bins.

Commercial and Industrial (C&I) Waste
C&I waste is solid waste generated by business, industries (including shopping centres, restaurants, and offices) and institutions (such as schools, hospitals and government offices).

Construction & Demolition (C&D) Waste
C&D waste is solid waste generated from construction and demolition works, including building and demolition waste, asphalt waste and excavated natural material.

Current Generation



Waste Streams and Composition

Municipal Solid Waste

In 2019/20 a total of 37,412 tonnes of MSW was generated across the LGA. Of this, 16,377 tonnes were recovered, and the remaining 21,035 tonnes was landfilled resulting in an overall diversion rate of 44%.

3 Summary of Municipal Solid Waste Tonnes 2019/20				
	Tonnes Collected	Tonnes Landfilled	Tonnes Recovered	Diversion Rate
Red-lidded waste bin	25,859	17,951	7,908	44%
Yellow-lidded recycling bin	5,614	545	5,069	
On-call kerbside bulky waste	1,634	1,157	477	
Self-hauled	3,392	1,382	2,010	
Drop-off days	913	0	913	
TOTAL	37,412	21,035	16,377	

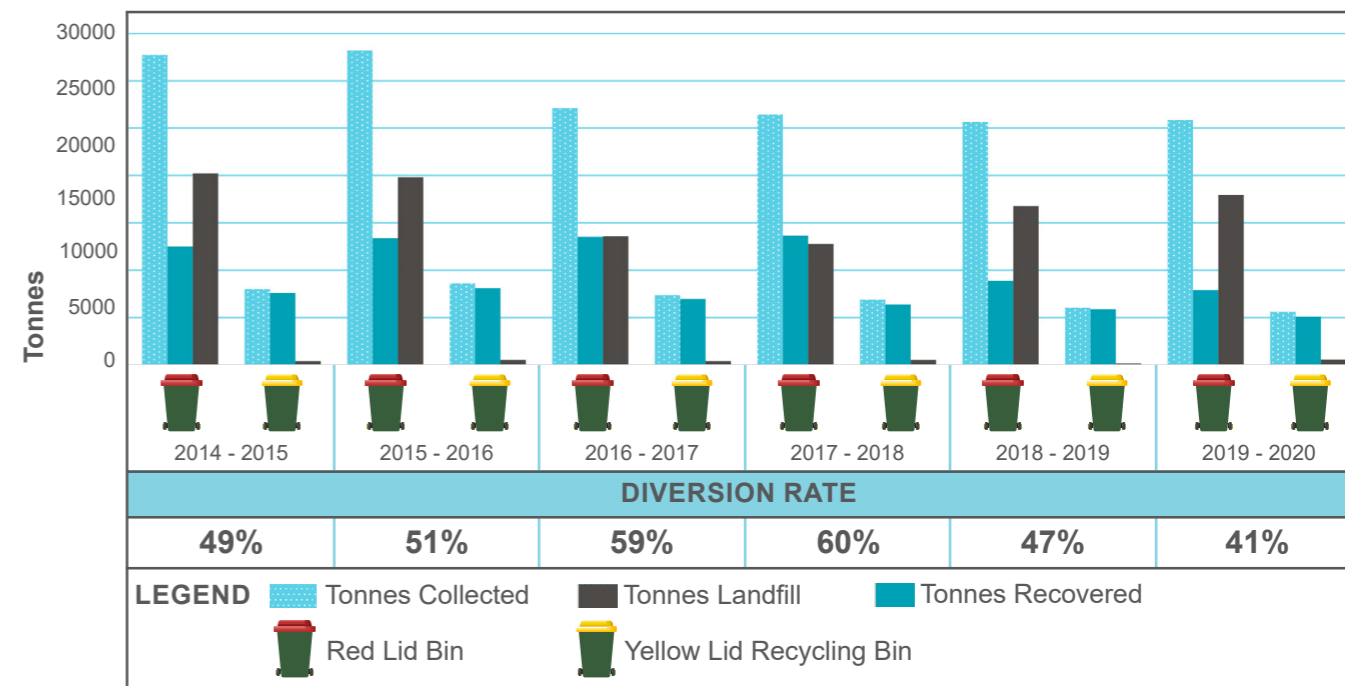
Kerbside Waste

In 2019/20 a total of 31,473 tonnes of material was collected at the kerbside as part of Council's kerbside collection service. The current kerbside collection system results in a kerbside diversion rate of 41%, which is well short of the NSW EPA target of 70% for MSW. It should be noted that Council's performance against the municipal solid

waste diversion target has been significantly impacted by the NSW EPA's ban on the application of mixed waste organic output (MWOO) to land. If the ban on MWOO was not implemented, Council's kerbside diversion rate would be 60%.

4 2019/20 Kerbside Tonnes & Diversion Rate				
	Tonnes Collected	Tonnes Recovered	Tonnes Landfill	Diversion Rate
Red-lidded waste bin	25,859	7,908	17,951	41%
Yellow-lidded recycling bin	5,614	5,069	545	
TOTAL	31,473	12,977	18,496	

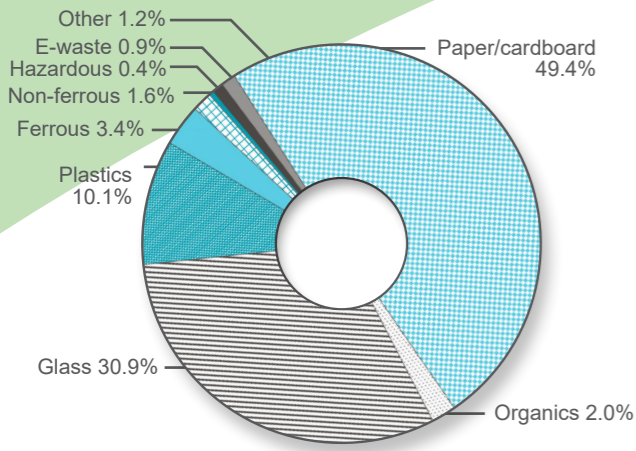
Annual Kerbside Tonnes & Diversion Rates 2014 - 2020



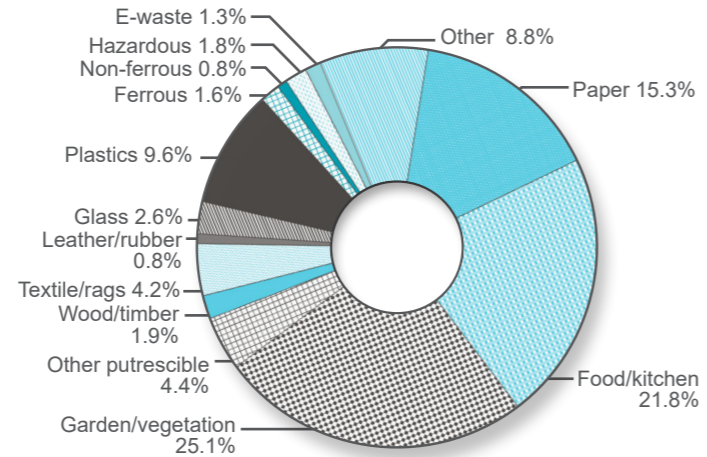
The slow decline in recycling tonnages collected at the kerbside may be a result of the Container Deposit Scheme, which has collected 5,676 tonnes since its introduction in December 2017.

Kerbside Composition

Composition of Yellow-lidded Recycling Bin (2020 audit)



Composition of Red-lidded Waste Bin (2020 audit)



Council has undertaken kerbside waste compositional audits of the yellow-lidded recycling and red-lidded waste bins in 2011, 2013, 2016, 2018 and 2020 with the objective of identifying the performance of the bin system, measuring trends, and planning reductions in waste to landfill.

The above graphs detail the composition of the yellow-lidded recycling bin and the red-lidded waste bin from the 2020 audit.

C&I Waste

In 2019/20 a 5,907 tonnes of C&I waste was received at the Salamander Bay Transfer Station. Of this, 1,436 tonnes (24%) were recovered for recycling or reprocessing. The remaining 4,471 tonnes (76%) was landfilled, resulting in a diversion rate of 24% for this waste stream.

C&D Waste

In 2019/20 a 641 tonnes of C&D waste was received at the Salamander Bay Transfer Station. The composition of this material consisted of two material types, bricks or concrete (44%) and ferrous (56%). All tonnes received were recovered for recycling or reprocessing, resulting in a diversion rate of 100% for this waste stream.

Performance Against State Diversion Targets

Council's performance against the Waste Diversion Targets set by the NSW EPA in the WARR Strategy for 2019/20 are detailed below. As previously mentioned, if the ban on MWOO was not implemented, Council's overall diversion rate would be 60%.

5 WARR Waste Diversion Targets		
Waste Type	2019/20 Council Diversion Rate	2022 Diversion Target
MSW	44%	70%
C&I	24%	70%
C&D	100%	80%
Overall Diversion from Landfill	56%	75%





COMMUNITY ENGAGEMENT

Community engagement has been identified by Council as a core aspect of the development of the Waste Management Strategy in order to allow community input and to ensure services delivered by Council match the community's expectations. It is seen as particularly important to ensure that the input from the key waste generators (the community) is obtained and utilised to help form future actions and recommendations moving forward.



Telephone Survey

400 completed response from a random sample of residents in the Port Stephens LGA.



92% of residents believe the current collection frequency of the red-lidded bin is appropriate.

40% of residents indicated that their red-lidded bin was full or overflowing when presented for collection.

30% indicated their bin was 75% full when presented for collection.



77% of residents believe the current collection frequency of the yellow-lidded bin is appropriate.

51% of residents indicated that their yellow-lidded bin was full or overflowing when presented for collection.

The following seven ideas were presented to respondents, who were asked to indicate whether they were supportive of the idea.

Idea	Supportive	Not Supportive	Other
Minimising the environmental, social and economic impacts of littering	97%	1%	2%
Encouraging waste avoidance and reuse behaviours to help generate less waste	92%	4%	4%
Expansion of waste and recycling education programs to the community	91%	5%	4%
Increasing recycling by recovering food and garden organics	90%	6%	4%
Increasing the range of recycling for the community and businesses	88%	6%	6%
Developing markets for the reuse, repair and re-selling of waste	87%	5%	8%
Prohibiting the use of single-use plastic bags	78%	16%	6%



Facebook Live Sessions

23,000 residents reached, sessions viewed for a total of 2,261 minutes.

Council facilitated a Facebook Live session to provide answers to those "burning" questions being asked by the community. During the live stream, the session reached 51 residents.

The post reached 23,000 people and the recorded version of the session was viewed for a total of 2,261 minutes. Overall, the sentiment was positive from the community.



Face-to-face Engagement

To discuss and obtain feedback on the proposed resident focused themes and initiatives.

Council undertook face-to-face engagement with members of the community. The purpose of these sessions was to provide attendees with the outcomes of the telephone survey and to discuss and obtain feedback on the proposed resident focused themes and initiatives detailed below.

6 Proposed Resident Focused Themes and Initiatives	
Themes	Initiative
Kerbside Collection Services	<ul style="list-style-type: none"> Introduction of alternative sizes of waste and recycling bins (140L) Greater promotion of the availability of a 360L recycling bin Introduction of a third kerbside bin for the collection of garden organics (GO) or Food Organics Garden Organics (FOGO) Consider transitioning to a user-pay on call kerbside bulky waste collection service
Drop-off Days	<ul style="list-style-type: none"> Reassess the number of drop-off days for garden organics and problem wastes
Littering	<ul style="list-style-type: none"> Implement Council supported anti-littering campaign Review locations and collection frequencies of public place bins
Single-use Plastics	<ul style="list-style-type: none"> Implement a local ban on single-use plastics Implement supporting education campaign for businesses, residents and visitors
Sustainable Events Policy	<ul style="list-style-type: none"> Introduce a Sustainable Events Policy that requires the use of recyclable or compostable packaging and source separation of waste collected at events
Expansion of materials collected at the Salamander Bay Waste Transfer Station	<ul style="list-style-type: none"> Soft plastics Polystyrene Textiles
Education Programs	<ul style="list-style-type: none"> Introduce and promote reuse, upcycling and repair workshops utilising the existing Tip Shop or local Men's Shed (or similar) Greater promotion of material accepted at the Salamander Bay Waste Transfer Station Promotion of anti-littering program Promotion of single-use plastics ban Promotion of Sustainable Events Policy



Online Survey

To determine levels of community support of the resident focused themes and initiatives.

IRIS Research undertook an online community survey to determine levels of community support of the resident focused themes and initiatives.

A total of 225 completed surveys were collected over this period.



PROPOSED RESOURCE RECOVERY OPTIONS

Based on the outcomes of the community engagement and review of Council's current services and waste management systems, the following resource recovery options were proposed for detailed analysis.



Avoid, Reduce, Reuse

- Integrated community education and behavioural change program
- Council Waste Minimisation Plan
- Litter prevention and management
- Business waste reduction.



Recover & Treat

Investigate the feasibility of implementing a third kerbside bin for the source separation and collection of garden organics (GO) or Food Organics Garden Organics (FOGO), including processing technology options.



Public Place Smart Waste Technology

- Smart sensors in new/existing public place bins
- Smart compactor bins
- Smart tree hubs
- Smart waste/recycling hubs trial
- Smart Cities Pilot and Action Plan.



Regional Collaboration Opportunity

Continue to work collaboratively with neighbouring councils and other stakeholders on regional and circular economy opportunities.



Recycle

Undertake a visual audit of material accepted at the Salamander Bay Waste Transfer Station to identify additional material for recovery.

Undertake a textiles collection and recycling trial.



Kerbside Collection Options

- Introduction of third kerbside bin
- Introduction of alternative bin sizes
- Promotion of 360L recycling bin
- Soft plastics recycling trial
- Kerbside bulky items collection assessment
- Commercial waste collections.



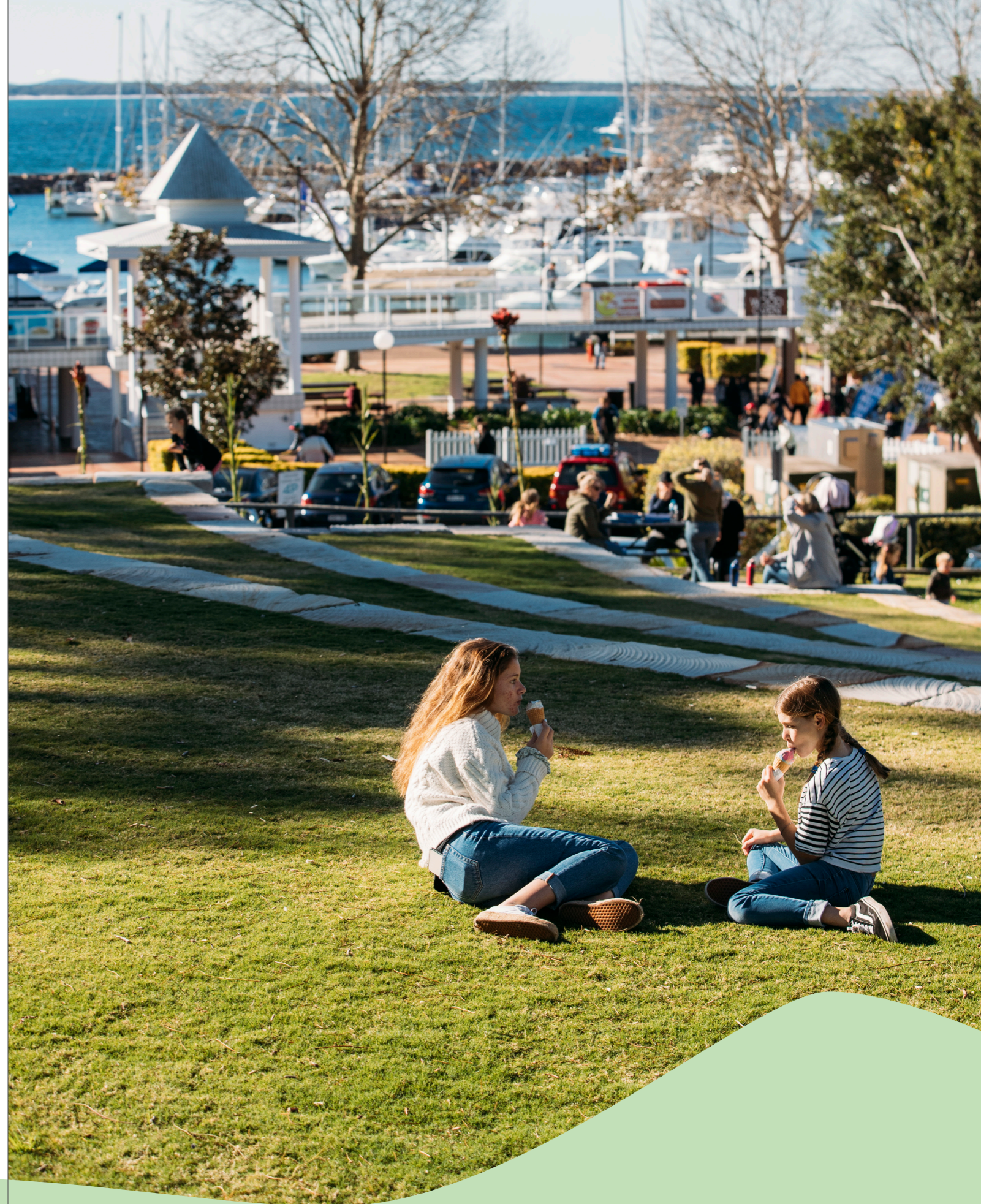
Free Drop-off Days Assessment

Undertake an assessment of the number of free-drop off days offered and consider alternative solutions.



Planning & Management

- Waste management planning controls
- Sustainable Events Policy
- Waste management services financial model review
- Waste data management
- Landfill Aftercare Management and Rehabilitation Works Plan
- Master Plan Salamander Bay Waste Transfer Station





PREFERRED WASTE MANAGEMENT SYSTEM

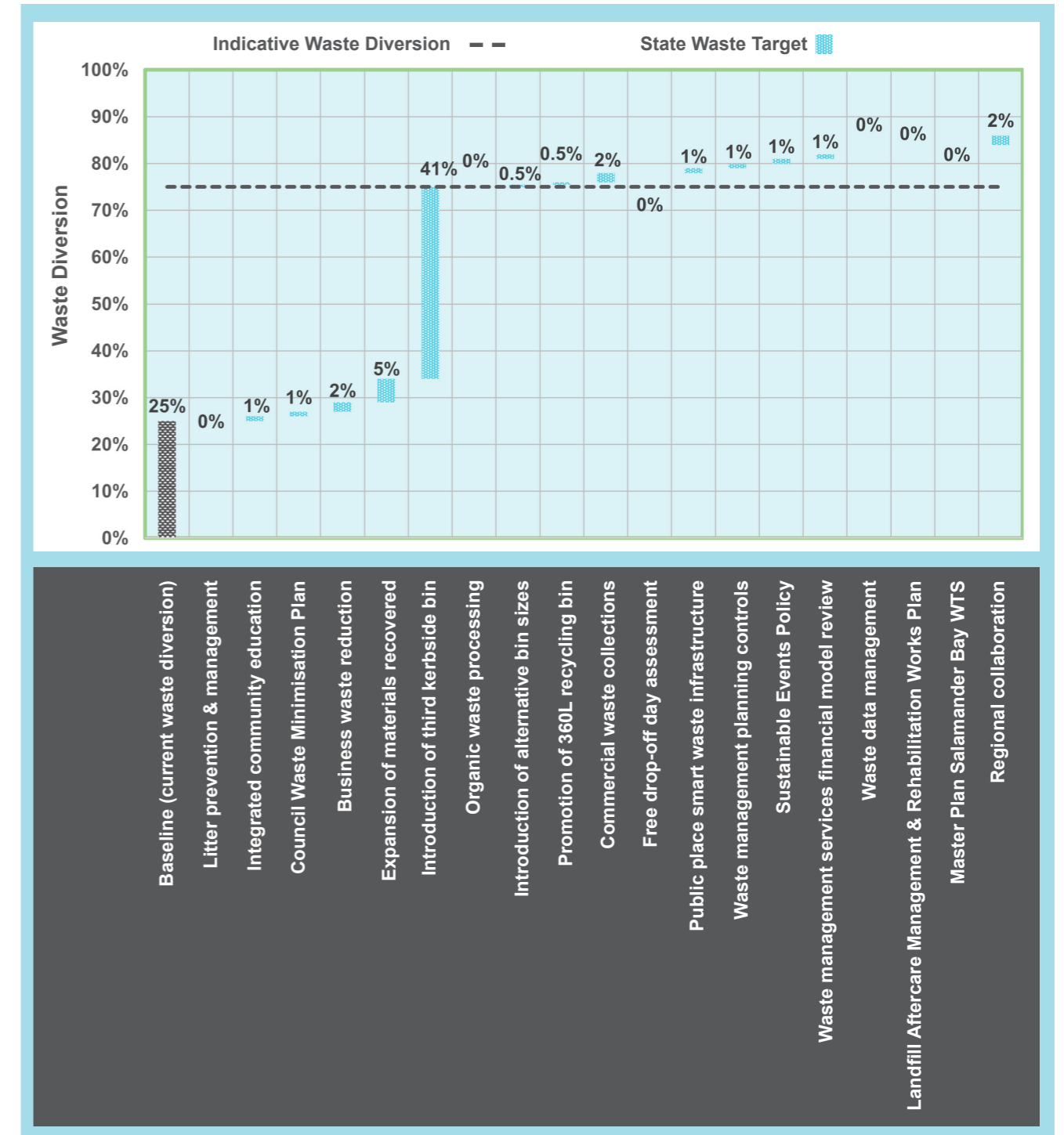
Following detailed analysis of the proposed Resource Recovery Options the Preferred Waste Management System is shown below.

7 Preferred Waste Management System		
Grouping	Options	
	Avoid, Reduce, Reuse	<ul style="list-style-type: none"> Litter prevention and management Integrated community education Council Waste Minimisation Plan Business waste reduction
	Recycle	<ul style="list-style-type: none"> Expansion of materials recovered
	Recover & Treat	<ul style="list-style-type: none"> Source separated organics collection Organic waste processing
	Kerbside Collection Options	<ul style="list-style-type: none"> Introduction of third kerbside bin Introduction of alternative bin sizes Promotion of 360L recycling bin Commercial waste collections
	Drop-off Days	<ul style="list-style-type: none"> Free drop-off day assessment
	Smart Waste Technology	<ul style="list-style-type: none"> Smart sensors in new/existing public place bins Smart compactor bins Smart tree hubs Smart waste/recycling hub trial Smart Cities Pilot and Action Plan
	Planning & Management	<ul style="list-style-type: none"> Waste management planning controls Sustainable Events Policy Waste management services financial model review Waste data management Landfill Aftercare Management and Rehabilitation Works Plan Master Plan Salamander Bay Waste Transfer Station
	Regional Collaboration Opportunities	<ul style="list-style-type: none"> Investigate regional opportunities



PERFORMANCE IMPROVEMENT

The waterfall diagram below illustrates Council's current waste diversion rate and how it would be impacted by the Preferred Waste Management System. The implementation of the Preferred Waste Management System has the potential to increase Council's current diversion rate from 25% to 84% which exceeds the state target.





IMPLEMENTATION PLAN

The following Implementation Plan has been developed to guide the delivery of the Preferred Waste Management System.

Time frames for implementation are based on:

- 0-3 years (short term)
- 3-5 years (medium term)
- 5-10 years (long term).

8 Implementation Plan			
Grouping	Option	Action	Timeframe
Avoid, Reduce, Reuse	Integrated community education	Explore the expansion of community education programs including the delivery of recycling, upcycling, repair, community farming, composting, and worm farming workshops.	Short
	Council Waste Minimisation Plan	Develop a Waste Minimisation Plan which aligns with Council's sustainability goals and formalises Council's commitment to sustainable waste management.	Short
	Litter prevention & management	Develop a one-stop web presence to advertise and provide information on upcoming local, regional, and state litter-related events. Consider provision of suitable equipment for some events such as waste collection bags and litter grabbers in exchange for data feedback from the event.	Short
	Business waste reduction	Investigate options available to divert food waste generated by businesses from landfill including supporting a food program. Explore the implementation of a local ban on single use plastics across the LGA.	Medium
Recycle	Expansion of materials recovered	Undertake a visual audit of material accepted at the Salamander Bay Waste Transfer Station to identify additional materials for recovery. Undertake a textiles collection and recycling trial.	Short
Recover & Treat	Source separated organics collection	Investigate the feasibility of implementing a third kerbside bin for the source separation and collection of garden organics (GO) or Food Organics Garden Organics (FOGO), including processing technology options.	Short
Kerbside Collection Options	Introduction of third kerbside bin	If feasible, introduce a third kerbside bin for the collection of GO or FOGO	Medium

8 Implementation Plan			
Grouping	Option	Action	Timeframe
Kerbside Collection Options	Introduction of alternative bin sizes	Investigate the introduction of a smaller suite of kerbside bins, including 80L and 140L, for those residents that generate minimal waste.	Short
	Promotion of 360L recycling bin	Actively promote the availability of the 360L kerbside recycling bin to ensure appropriate management of excess recyclables at the household level.	Short
	Commercial waste collections	Consider the expansion of a source separated organics collection service to businesses if the service is rolled out to residents. Such a service would be undertaken as Phase 2, with residential roll-out being considered Phase 1.	Medium
Drop-off Days	Free drop-off day assessment	Undertake an assessment of the number of free drop-off days offered and consider alternative solutions.	Short
Smart Waste Technology	Smart sensors in new/existing public place bins	Undertake a bin sensor installation trial at determined locations to explore ways to further utilise smart data in managing public place waste collections, routes, and reporting.	Short
	Smart compactor bins	Consider trialling the broader rollout of smart solar compaction bins to gain a clearer understanding of public place waste collections with the aim of increasing collection efficiencies and reducing collection costs.	Medium
	Smart tree hubs	Liaise with relevant Council departments regarding the implementation of smart tree hubs which integrate facilities such as smart bins, shade, seats, and tables, charging stations, solar power, sensors, lighting, public WiFi, greenery, and smart fountains.	Long
	Smart waste/recycling hub trial	Consider trialling smart waste hubs as a replacement for multiple commercial bin services in key areas that experience high pedestrian access and/or servicing issues.	Long
	Smart Cities Pilot and Action Plan	Implement a Smart City Pilot Project and Action Plan in collaboration with relevant Council departments and other key stakeholders.	Short



IMPLEMENTATION PLAN

8 Implementation Plan			
Grouping	Option	Action	Timeframe
Planning & Management	Waste management planning controls	Prepare and include a waste management chapter in Council's Development Control Plan (DCP) which will inform on the waste management requirements of the various types of development both during construction and ongoing management.	Medium
	Sustainable Events Policy	Develop a Sustainable Events Policy, in consultation with relevant stakeholders, that requires the use of recyclable or compostable packaging and source separation of waste collected at events. Support the implementation of the Policy with an education campaign for both stallholders and event attendees.	Short
	Waste management services financial model review	Undertake a review of Council's waste management financial model to ensure currency, auditability and incorporation of all operational and capital costs associated with Council's waste management services.	Medium
	Waste data management	Undertake a review of Council's current weighbridge recording system to ensure waste types are allocated against the correct stream and source (municipal, commercial & industrial and construction & demolition).	Short
	Landfill Aftercare Management and Rehabilitation Works Plan	Prepare Landfill Aftercare Management and Rehabilitation Work Plans for the decommissioned waste facilities located at New Line Road, Salamander Bay and Lemon Tree Passage that consider "best practice" monitoring and rehabilitation and future uses for the sites.	Short
	Master Plan Salamander Bay Waste Transfer Station	Prepare a Master Plan for the Salamander Bay Waste Transfer Station.	Medium
Regional Opportunities	Investigate regional opportunities	Continue to work collaboratively with neighbouring councils and other stakeholders on regional and circular economy opportunities.	Long





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