

Waste Strategy

2021 - 2031





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INTRODUCTION

The Shire of Broome Waste Strategy (the Strategy or BWS) has been developed to guide the direction and resourcing of waste management in the Shire of Broome for the next ten years. The Strategy was produced in line with the State's Waste Avoidance and Resource Recovery Strategy 2030 (WARR Strategy), the Kimberley Regional Waste Management Plan 2018-2023, the DWER Waste Plan Resource Kit and relevant Shire strategic documents.

PURPOSE OF THE WASTE STRATEGY

The purpose of the Broome Waste Strategy (BWS) is to provide a framework for effective, efficient, and sustainable management of waste within the Shire from 2021 - 2031.

OBJECTIVE OF THE WASTE STRATEGY

In line with the purpose of the BWS, the overarching objectives are as follows:

- Ensure waste is managed in a strategic, sustainable manner and is regulatory compliant.
- Provision of quality waste services for the community and visitors.
- Maximise cost effective waste diversion from landfill.
- Improve the economies of scale for waste services through collaboration with surrounding local governments and businesses.
- Ensure the delivery of waste services by the Shire is sustainable (including financial, operational, and environmental).

SHIRE OF BROOME

The Shire of Broome (the Shire) is located within the Kimberley region and covers an area of 56,000 km². It is 2,240 km by road north of Perth, 1,870 km west of Darwin, 1,280 km south of Indonesia and 3,000 km south of Singapore¹. The Shire has a permanent population of approximately 16,222².

Broome's major industries include tourism, pearling, aquaculture, pastoral and horticulture. In recent years, Broome has become a high-profile tourism destination. This trend has emerged on the back of improved air access, port infrastructure and telecommunications. Tourist visitation peaks in Broome in the dry season (April – October). Accompanying this is a spike in seasonal employment, primarily in the tourism and hospitality sectors. This volatility in the demand and supply of labour is a significant challenge for employers and employees.

¹ Broome Growth Plan

² 2016, ABS Quick facts

A total of 84 Aboriginal communities are located within the Shire, of which 78 are classified as remote (Local Government Advisory Board, 2008). Each community has its own separate waste system not managed by the local government authority.

The Shire operates a landfill and resource recovery site in Broome and provides kerbside waste collection and recycling services (through a contractor) to residents and businesses.

In April 2021 the Shire of Broome Council approved an integrated site for a new Regional Resource Recovery Park (RRRP) located 12km northeast of Broome on Cape Leveque Road. The new RRRP will consist of a Community Recycling Centre (CRC), best-practice Class III landfill and liquid waste components, as well as supporting site infrastructure. The Shire is currently in the process of seeking the relevant approvals applications for the RRRP, developing funding strategies for the project and commencing detailed design services. The Broome RRRP is planned to support the Broome community for the next 70 years and beyond'

Based on airspace utilisation rates, the remaining lifespan of the landfill is anticipated to be approximately five years from June 2021 with an anticipated closure sate of between November 2025 and December 2026 (ASK, 2021). This forecast is based upon current waste generation rates within the Shire and compaction rates achieved at the landfill. The most pressing challenge for the Shire is in managing the impacts of limited landfill airspace and the time needed to design and construct a new landfill site.

The Shire faces significant challenges for recycling due to its location including the availability of contractors and high transport costs to transfer recycled materials to their markets (e-waste, metals, tyres, batteries, gas cylinders). The Shire's low population generates small quantities of recyclable material resulting in poor economies of scale, often leading to higher unit costs for recycling and reprocessing.

The Shire however offers a significant number of services to increase recovery of resources from landfill including kerbside recycling collection and drop off services for a number of waste streams for recycling and or reprocessing including: construction and demolition waste, glass, cardboard, batteries, e-waste, waste oil, scrap metal, tyres, greenwaste, aluminium cans, fluorescent tubes, mobile phones, printer cartridges, plastics (1&2, flares and EPIRBS and whitegoods. The Shire processes a significant amount of greenwaste and concrete for use within internal projects.

DRIVERS AND INFLUENCERS

An important function of the BWS is to interpret and incorporate relevant legislation and policy that may affect waste management within the Shire. The following section discusses the relevant state, regional and local policy frameworks and issues that may impact waste management services delivered within the timeframe of the Shire's Strategy.

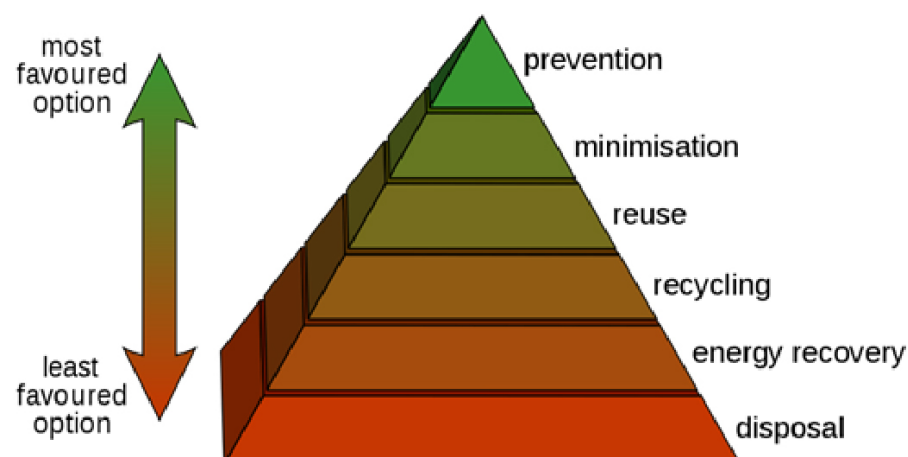
OVERSEAS AND FEDERAL POLICY AND TARGETS

The Australian Government's role in waste is focused on ensuring international obligations are met, supporting global environmental outcomes through cooperation and international engagement, and providing effective national leadership and coordination.

The regulation and management of waste and resource recovery in Australia is primarily the responsibility of state and territory governments. Local governments play an important role in providing household waste collection and recycling services, managing and operating landfill sites, delivering education and awareness programs, and providing and maintaining litter infrastructure.

The waste hierarchy is a policy approach which rates waste management strategies in ascending order of their general environmental desirability. The waste hierarchy is used alongside other tools (including economic, social and environmental assessment tools) to inform decision making. The waste hierarchy is embedded in legislation and policy across Australia.

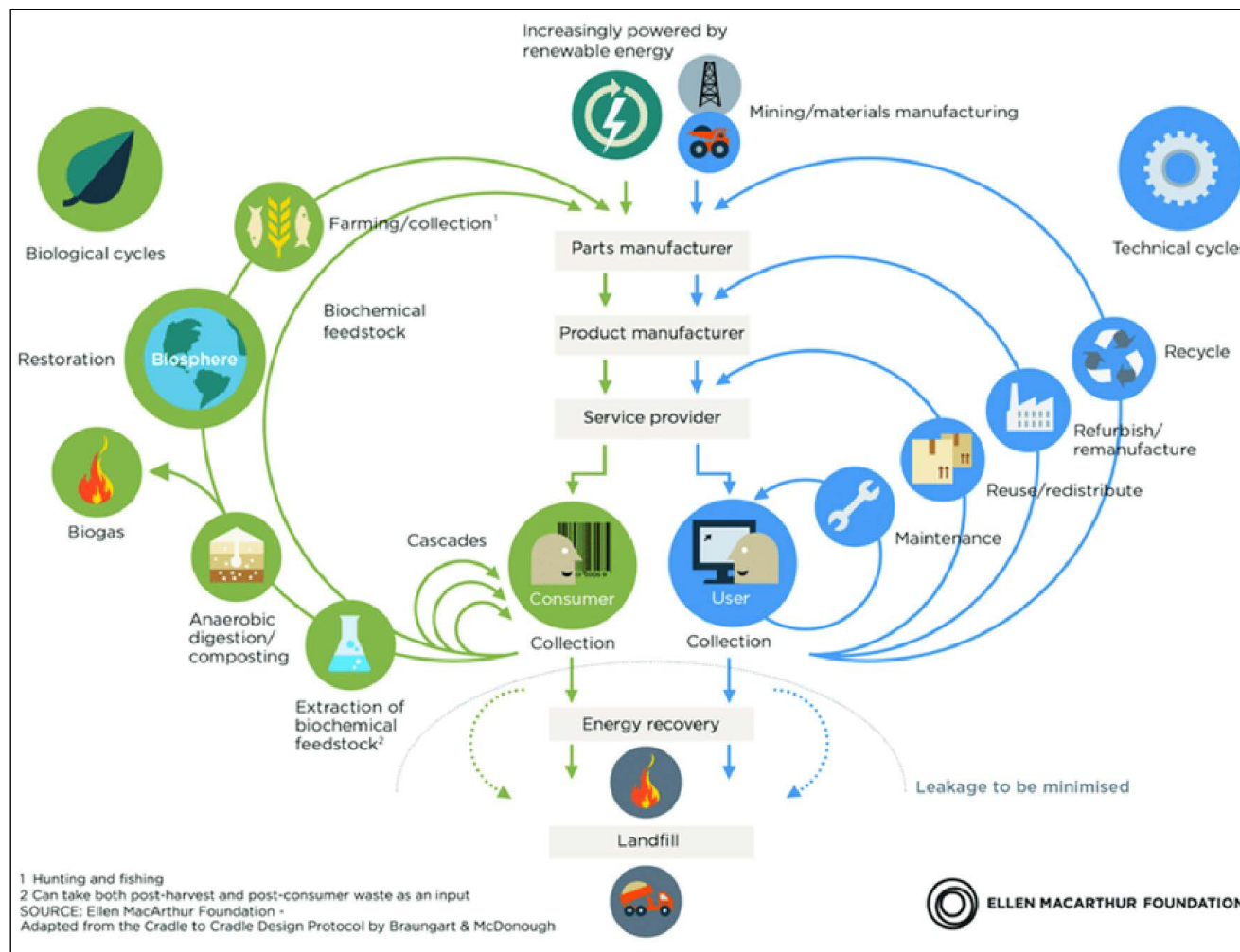
Figure 2.1 Waste hierarchy



National Waste Policy 2018: Less waste, more resources

The National Waste Policy embodies a circular economy, shifting away from 'take, make, use and dispose' to a more circular approach where the value of resources is maintained for as long as possible.

Figure 2.2 Outline of a circular economy (Ellen MacArthur Foundation)



The National Waste Policy's five principles underpin waste management, recycling and resource recovery in a circular economy and are reflected within the policy. These are:

1. Avoid waste:
 - a. Prioritise waste avoidance, encourage efficient use, reuse, and repair.
 - b. Design products so waste is minimised, made to last and can be more easily recovered.
2. Improve resource recovery:
 - a. Improve material collection systems and processes for recycling.
 - b. Improve the quality of recycled material produced.
3. Increase 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 policy is supported by a National Action Plan, with targets and actions to guide investment and national efforts to 2030 and beyond.

National targets:

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

All targets will be measured against baselines in the 2018 National Waste Report

The Western Australian Waste Strategy (Waste Avoidance and Resource Recovery Strategy 2030) aligns with the National Waste Policy and provides guidance as to the general direction of waste policy within Western Australia, and that which should drive local government decisions.

National Food Waste Strategy

The National Food Waste Strategy (2019) establishes a framework to half Australia's food waste by 2030.

Whilst the state governments have primary responsibility for managing waste, including food waste, local governments interact directly with their communities and have a significant role in organising waste collection and processing or disposing of food waste. Many local governments are taking steps to reduce food waste through a range of programs. The WA State Government is focused on food organics and garden organics (FOGO) as a priority and has mandated all local governments in the Perth and Peel regions with a consistent three bin kerbside collection system, which includes FOGO and kerbside collection by 2025.

China National Sword Policy

The viability of recycling packaging materials from households and businesses in Australia has been impacted by the more stringent contamination thresholds recently introduced by China for the importing of recycled materials.

Most separated recycling material previously sent from Australia to China does not meet the new contamination thresholds. This has led to a significant reduction in the value of recycled packaging materials which reduces the viability of recycling programs offered by local governments. This impact is greatest in locations, such as Broome, where the services face higher unit costs than metropolitan areas.

COAG Waste Export Ban

Waste plastic, paper, glass and tyres that have not been processed into a value-added material are subject to the export ban. The ban will be introduced in phased approach:

- All waste glass by July 2020
- Mixed waste plastics by July 2021
- All whole tyres including baled tyres by December 2021
- Remaining waste products, including mixed paper and cardboard, by no later than 30 June 2022.

This ban will have significant impacts on the market for packaging recyclables.

WESTERN AUSTRALIAN LEGISLATIVE AND POLICY CONTEXT

Legislation

Waste Avoidance and Resource Recovery Act 2007

Waste management is governed in WA by the Waste Avoidance and Resource Recovery Act 2007 (WARR Act). The primary objects of this Act are to contribute to sustainability and the protection of human health and the environment in Western Australia, as well as the move towards a waste-free society.

Waste Avoidance and Resource Recovery Levy Act 2007

The Waste Avoidance and Resource Recovery Levy Act 2007 (WARRL Act) puts in place a levy on all waste generated or landfilled in the Perth metropolitan region as an economic instrument to reduce waste to landfill and the levy rate is currently \$70 per tonne. Given this, landfill gate fees for general waste disposal in the Perth metropolitan area are between \$160 to \$210 per tonne.

Industry licencing/Better Practice

Waste infrastructure provided across WA is generally governed by an operating licence issued by the Department of Water and Environmental Regulation (DWER) which imposes standard conditions of approval and compliance required to maintain operations. 'Better practice' approaches for landfills as referred to in the WARR Waste Strategy are yet to be defined but will be developed as a priority.

Governing bodies

The Waste Authority

The Waste Authority is the statutory body with five members who are responsible for developing and implementing the long-term waste strategy for WA.

Department of Water and Environmental Regulation (DWER)

DWER focuses on environmental regulation, approvals and appeals processes, and pollution prevention.

GOVERNMENT POLICY

Our Priorities: Sharing Prosperity 2019

A target for waste recovery of at least 75 per cent of waste generated in Western Australia by 2030 is included as part of the liveable environment focus in the WA Government's Our Priorities: Sharing Prosperity. This target contributes to delivering a cleaner, more sustainable future by reducing waste.

Waste Avoidance and Resource Recovery Strategy 2030

The Waste Avoidance and Resource Recovery (WARR) Strategy 2030 was released in 2019 with a vision that Western Australia will become a sustainable, low-waste, circular economy in which human health and the environment are protected from the impacts of waste. The key focus of the strategy is to generate less waste, recover more value and resources from waste, and to protect the environment by managing waste responsibility.

Many of the targets, objectives and strategies (Figure 2.3) are relevant to the waste management activities of local government, with a number of targets relating specifically to municipal solid waste. Local governments can contribute to state-wide targets and are considered to be waste generators under both the 'community' and 'government and industry' categories. Targets for 'waste managers' also apply to local governments that operate waste services or facilities.

Figure 2.3 Objectives and State Targets (Waste Strategy 2030)

Objectives	Avoid Western Australians generate less waste.	Recover Western Australians recover more value and resources from waste.	Protect Western Australians protect the environment by managing waste responsibly.
State targets	2025 – 10% reduction in waste generation per capita 2030 – 20% reduction in waste generation per capita	2025 – Increase material recovery to 70% 2025 – All local governments in the Perth and Peel region provide consistent three bin kerbside collection systems that include separation of FOGO from other waste categories 2030 – Increase material recovery to 75% From 2020 – Recover energy only from residual waste	2030 – No more than 15% of Perth and Peel regions' waste is disposed to landfill 2030 – All waste is managed by and/or disposed to better practice facilities
Targets for waste generators	Community	Community	Community
	2025 – Reduction in MSW generation per capita by 5% 2030 – Reduction in MSW generation per capita by 10%	2020 – Increase MSW material recovery to 65% in the Perth and Peel regions, 50% in major regional centres 2025 – Increase MSW recovery to 67% in the Perth and Peel regions, 55% in major regional centres 2030 – Increase MSW material recovery to 70% in the Perth and Peel regions, 60% in major regional centres	2030 – Move towards zero illegal dumping 2030 – Move towards zero littering
	Government and industry	Government and industry	Government and industry
	Reduction in C&D waste generation per capita by 15% by 2025, 30% by 2030 Reduction in C&I waste generation per capita by 5% by 2025, 10% by 2030	C&D sector – Increase material recovery to 75% by 2020, 77% by 2025, 80% by 2030 C&I sector – Increase material recovery to 70% by 2020, 75% by 2025, 80% by 2030	2030 – Move towards zero illegal dumping
Targets for waste managers	Waste industry	Waste industry	Waste industry
	2030 – All waste is managed and/or disposed using better practice approaches	2030 – All waste facilities adopt resource recovery better practice	2030 – No more than 15% of Perth and Peel regions' waste is disposed to landfill 2030 – All waste facilities adopt environmental protection better practice

The WARR strategy includes specific resource recovery targets for the Metropolitan and Peel region and major regional centres for municipal solid waste (MSW). The cities of Albany, Busselton, Bunbury, Greater Geraldton and Kalgoorlie-Boulder, which are local governments outside the Perth and Peel region that have both a relatively large population and reasonable access to markets are defined as major regional centres for the purpose of the Strategy. Other major regional centres may be identified by the Waste Authority during the life of the WARR strategy. Currently the Shire of Broome is not defined as a major regional centre within the Strategy and does not need to meet these specific recovery targets for MSW, but rather will contribute towards the State-wide targets.

Whilst there is no legislative directive for rural and regional local governments outside Metropolitan and Peel region and major regional centres to meet WARR Strategy targets, it is expected by DWER that rural and regional governments be 'working towards' and 'aligning services and approaches' with the State Waste Strategy. Therefore, the Broome Waste Strategy serves to ensure the Shire is working towards achieving the approaches and outcomes as detailed in the WARR Strategy 2030.



Local governments within the Perth and Peel regions are required to prepare a waste plan outlining how waste services will achieve the WARR Strategy targets. At this point, regional local governments such as the Shire of Broome are not required to prepare and report on achievement of WARR Strategy targets. The date for implementation for regional local governments is yet to be determined.

Waste Avoidance and Resource Recovery (WARR) 2030 Action Plan

The WARR 2030 Action Plan clarifies the specific actions, responsibilities and collaborations to achieve the objectives of the WARR strategy. Table 2.1 summarises relevant actions from the WARR 2030 Action Plan.

Table 2.1 Summary of relevant actions from WARR 2030 Action Plan

Action Ref	Description
Action 1.9 Better practice uptake	In consultation with all relevant stakeholders, identify better practice priorities and develop, trial and publish relevant better practice guidance documents, and encourage their adoption.
Action 1.10 Better practice local government waste services	Develop and publish better practice guidance for food organics and garden organics (FOGO) kerbside services, vergeside waste collection services and drop-off facilities to support local government development of waste plans and their adoption of better practice.
Action 4.1 Waste Plans	In consultation with relevant State Government agencies, local government and communities, develop pragmatic guidelines for the design, maintenance and management of waste services and infrastructure in regional/remote communities, including Aboriginal communities.
Action 5.1 Waste Levy Review	Provide relevant local governments with written notice of the requirements to develop waste plans.
Action 5.6 Regulatory Framework	Review and update the regulatory framework for waste to ensure it is appropriate, reduces the environmental impacts and risks from waste management, and facilitates adequate processing facilities to process collected materials.

Table 2.1 Cont.

Action Ref	Description
Action 5.7 Regulatory Compliance	Review regulations and policies to create a reasonable risk of enforcement and ensure that entities that are compliant and apply better practice are not disadvantaged.
Action 6.1& 6.2 State Infrastructure Audit & Plan	Undertake an audit of existing waste infrastructure and a needs analysis to determine the waste infrastructure required to meet the objectives of the waste strategy. In consultation with State Government agencies, local government, and the waste industry, develop the State Waste Infrastructure Plan which addresses: <ul style="list-style-type: none"> • Different waste infrastructure options and technologies available to meet the objectives of the waste strategy • Land use planning instruments and issues • Environmental, planning and licence approvals processes.
Action 7.2 Mandatory reporting of waste data	Implement new reporting requirements under amendments to the Waste Avoidance and Resource Recovery Regulations 2008 and develop reporting guidance to provide support to local governments, recyclers and landfill operators.
Action 7.5 Reporting waste data	In collaboration with DWER, report local government waste data on the MyCouncil website to provide increased transparency around local government waste and recycling performance and encourage benchmarking and improved performance.
Action 8.2 Facilitate waste avoidance and recovery	Identify priority areas of need for funding, and establish a funding program(s) to support adoption of waste avoiding practices and behaviour and/or the recovery of resources from waste, with an emphasis on: <ul style="list-style-type: none"> • Focus materials • Reuse and low-waste alternatives • Community, government and industry initiatives that lead to waste avoidance and resource recovery • Increasing the uptake of better practice approaches
Action 8.3 Infrastructure support program	Develop and implement a recycling infrastructure support program that delivers funding and other support for the development of local resource recovery infrastructure

Waste plans

One of the headline strategies of the WARR Strategy 2030 is the implementation of local government waste plans that will provide a link between the WARR Strategy and local government waste management activities. Local governments will determine the most appropriate waste management solutions for their local communities, whilst contributing to WARR Strategy targets and objectives.

Local governments in the Perth and Peel regions, together with major regional centres are required to develop waste plans for the 2020-2021 financial year. All other local governments, such as the Shire of Broome, will subsequently be required to develop waste plans, however the date for implementation is yet to be determined.

Container deposit scheme 'Containers for Change'

WA's container deposit scheme (CDS) 'Containers for Change' commenced in October 2020 and is run by not-for-profit WA Return Recycle Renew Ltd. The CDS allows consumers to take beverage containers to a refund point to receive a refund of 10 cents. For communities without kerbside recycling services, it provides an opportunity to participate in recycling activities.

Waste Authority programs

The Waste Authority provides funding for programs to implement priority areas of the Waste Authority. Many of these funded programs and grants, however, currently have limited applicability outside the metropolitan area. With the introduction of a new WARR Strategy, it is likely that new funding streams will also be provided to assist local governments in meeting its requirements.

Current programs include:

Community and Industry Engagement (CIE)

The CIE program has been revised to provide support for recycling infrastructure and has two streams

Stream 1: CIE – Recycling Infrastructure Funding Stream

Stream 2: CIE – General Funding Stream

Figure 2.4 Example of three bin system



The program has limited application in rural and remote areas without local processing/recycling (composting) facilities.

National Television and Computer Recycling Scheme

The National Television and Computer Recycling Scheme was established in 2011 to provide households and small businesses with access to free industry-funded collection and recycling services for televisions and computers, including printers, computer parts and peripherals. The Shire of Broome commenced services under this scheme in 2018. Collection services are provided through an agreement with an e-waste recycling company TechCollect.

Household Hazardous Waste (HHW)

The HHW Program provides Local Governments with funding to assist with the collection, storage and disposal of HHW. There are currently eight metropolitan and five regional permanent facilities to drop off unwanted household chemicals at no charge.

Paintback

Paintback is a national product stewardship scheme for safe paint disposal and innovative reuse. The closest Paintback collection point is at the Cleanaway depot in Broome.

New Programs developed as part of the Waste Strategy Action Plan 2030

As detailed in **Section 2.2.3.3**, the Waste Strategy Action Plan 2030 contains actions which indicate funding may be released to support the recovery of resources from waste and the development of local resource recovery infrastructure. It is unknown at this point as to the details and timing of this potential funding stream.

Other opportunities for funding

Other funding sources may become available over the life of the Strategy that could assist the Shire in achieving better practice waste management outcomes for the community.

The Building Better Regions Fund (BBRF) invests in projects located in, or benefiting, eligible areas outside the major capital cities to create jobs, drive economic growth and build stronger regional communities into the future. Round four of the BBRF closed in April 2021. It is anticipated further rounds will become available.

Keep Australia Beautiful provide funding for projects that seek to change littering behaviour and work towards a litter-free Western Australia. Contributions up to \$10,000 are available for major initiatives or regional projects, and up to \$5,000 for local area projects.

Essential and municipal services upgrade program

Under this program, the State Government will progressively upgrade infrastructure in larger remote Aboriginal communities to standards comparable to other regional towns. This will enable the delivery of improved power, water and wastewater services, and municipal services such as road maintenance and waste collection. A future step may include handing the balance of the municipal services back to local government to manage.

The State Government has identified the first 10 remote Aboriginal communities to participate in the Essential and Municipal Services Upgrade Program. Eight of these communities are in the Kimberley region of which five are located within the Shire of Broome. These are Ardyaloon, Beagle Bay, Bidyadanga, Djarindjin, Lombadina.

Given the waste services and infrastructure situated at these communities has not been under local government care and control, any changes to bring this into Shire management will have significant cost and resource implications, should funding not be provided. A Dampier Peninsula Waste Management Plan and associated action plan has been completed by the Shire of Broome as an appendix to the Shire of Broome Waste Strategy.



EXISTING INFRASTRUCTURE, SERVICES AND ACTIVITY

There are a range of measures that local governments can use to avoid waste generation, increase recovery, and protect human health and the environment from the impacts of waste. DWER Waste Plan requirements are structured around these measures and include:

- Integrated planning and reporting
- Waste services
- Waste infrastructure
- Policies and procurement (contracts, local laws and policies, land use planning instruments and sustainable procurement)
- Behaviour change programs and initiatives
- Data collection
- Regional waste management
- Better practice approaches

The following section provides an overview of baseline waste data for the Shire and outlines the current waste management services provided in line with the DWER waste plan requirements.

POPULATION DATA

A breakdown of population within the Shire is provided in **Table 3.1**

Table 3.1 Shire population data (ABS, 2016)

Location	Permanent	Tourism equivalent*	Total
Shire of Broome	16,222	4,670	20,892
Broome (town)	13,984	4,670	18,654

** Tourist data taken from Tourism WA, Visitors Fact Sheets April 2018 – three-year average. Visitor nights divided by 365 to allow tourism numbers to be incorporated into population statistics.*

The population of the town centre of Broome (in addition to tourist population) is most relevant for waste generation and population projections for future infrastructure planning, given waste from Aboriginal settlements, pastoral stations, national parks, camping grounds and remote roadhouses is generally not being received at the municipal landfill.

WASTE QUANTITIES

Waste stream data has been compiled into the following categories:

- **Municipal Solid Waste (MSW)** – is primarily waste collected from households through kerbside waste and recycling collections. It includes biodegradable material, recyclable materials such as bottles, paper, cardboard and aluminium cans, and a wide range of non-degradable material including paint, appliances, old furniture and household lighting (National Waste Report, 2010). Municipal waste may include waste from small commercial premises or other similar activities where this is collected as part of the standard local government service (DWER census glossary).
- **Commercial and Industrial Waste (C&I)** – is waste produced by institutions and businesses including schools, restaurants, offices, retail and wholesale, including manufacturing (WARR 2030).
- **Construction and Demolitions Waste (C&D)** – is waste produced by demolition and building activities, including road and tail construction and maintenance and excavation of land associated with construction activities (WARR 2030).

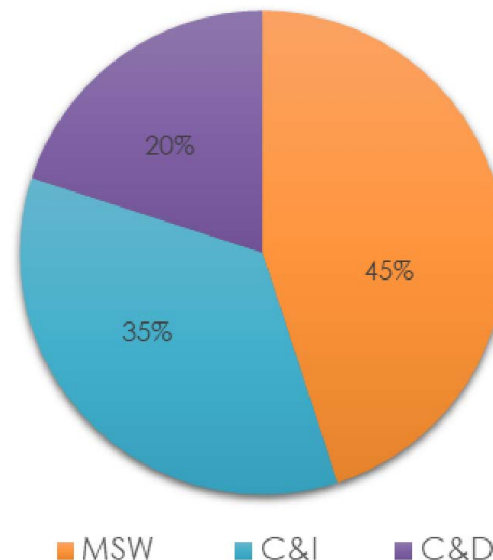
WASTE GENERATION RATES

The average annual quantity of solid waste that was managed by the Shire between 2015-2019 is 28,700 tonnes. **Table 3.2.** shows the estimated tonnage and percentage breakdown by waste type. This value does not include liquid waste, clean fill accepted at the landfill or any wastes that were generated and managed directly by industry (e.g. mine sites, pastoral stations, isolated tourism camps) with their own disposal sites.

Estimated tonnes of waste per year (rounded to nearest 100 tonne)			
MSW	C&I	C&D	Total
12,900	10,000	5,800	28,700
45%	35%	20%	100%

MSW, C&I and C&D waste streams comprised 45%, 35% and 20% respectively of the total waste generated in the region. **Figure 3.1** shows the percentage contributions by waste stream.

Figure 3.1 Percentage breakdown by material stream (2015-2019 four year average)



The Shire's total waste generation rate is estimated at 1,540 kg per capita with the MSW waste generation per capita at 690 kg. These rates have been calculated using the four year average waste data within the Shire divided by the town population.

The WARR Strategy includes a target to reduce per capita waste generation to the 2014–15 national average. This includes a reduction in MSW generation per capita by 5% by 2025 and 10% by 2030 (from 2014/15 generation rate) as shown in **Figure 2.3**.

The Shire's waste generation rates have been benchmarked against State values and the WARR Strategy targets. The values are based on an eight-year average (2010 – 2018 data). A breakdown of the State averages, together with the Shire's rates are shown in **Table 3.3**.

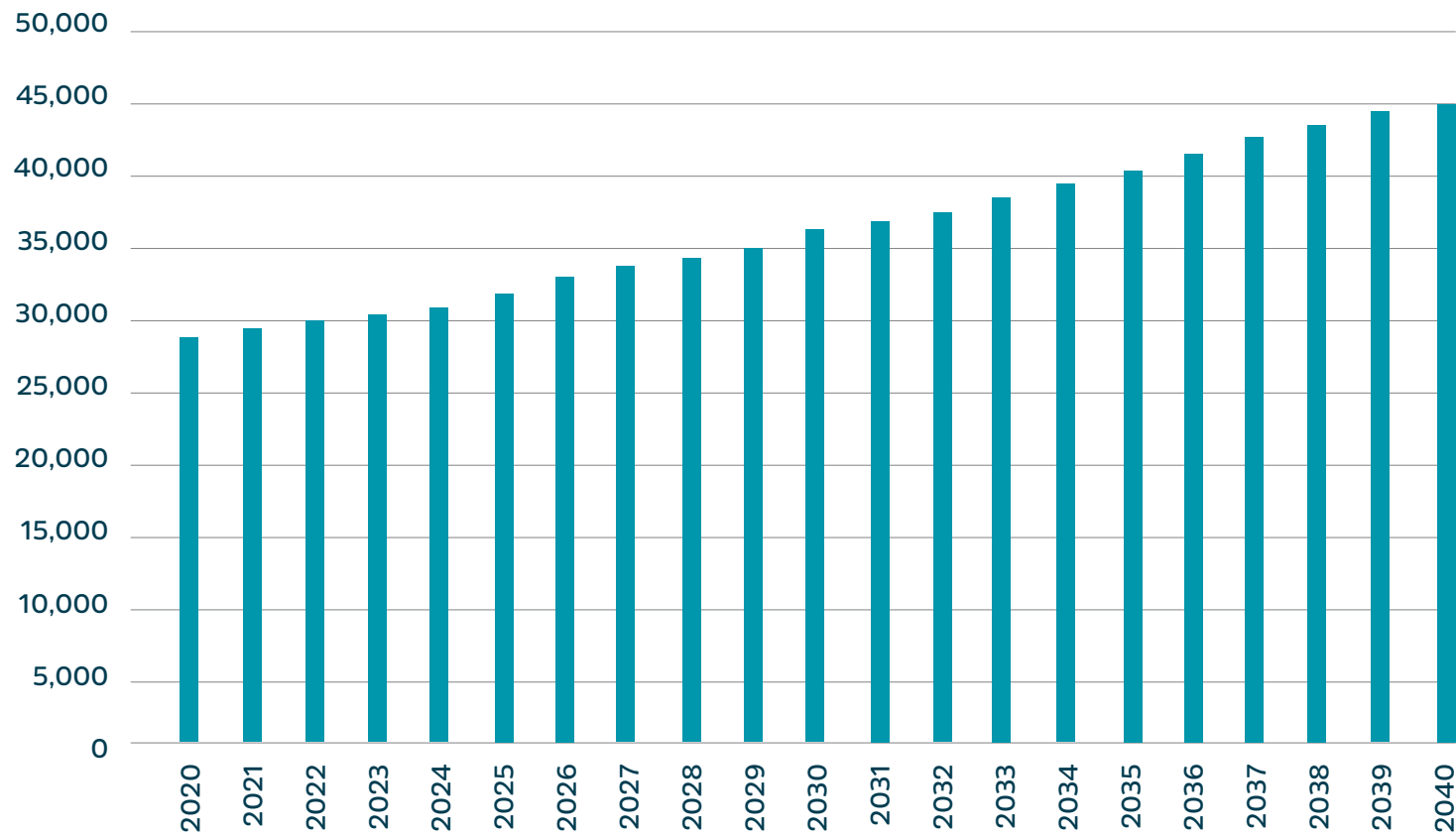
<i>Waste per capita values (Kg/person)</i>						
Waste Stream	WA Eight Year Average		WA Waste Strategy targets		Broome	Broome
	State -wide	State-wide % breakdown	2024/25	2029/30	average (2015-19)	% breakdown
MSW	630	27%	538	478	690	45%
C&I	666	29%	Nil	Nil	535	35%
C&D	1,023	44%	Nil	Nil	310	20%
Total	2,319	100%	Nil	Nil	1540	100%

Waste generation projections

Waste generation projections have been made for the next 10 years based on the population growth data provided by the Shire. A medium growth scenario of 2.3% has been adopted. For this projection it has been assumed that over the 10 year project, , tourist numbers and waste generation per capita will on average remain constant. COMMENT ON FORCASTS

The projection estimate results show approximately 36,000 tonnes per annum of waste being generated by 2030. This is an increase of 25% or 7,000 tonnes from the estimated average waste generation per annum for 2025-2019 of 28,700 tonnes per annum. **Figure 3.2** provides the total annual waste generation projection for the next 20 years until 2040. This does not include waste generated in the Dampier Peninsula.

Figure 3.2 Total waste generation predictions within the Shire of Broome to 2040



SHIRE RECOVERY RATE

The Shire offers numerous recycling options for the community. The four year average quantity of total waste recovery (2015 - 2019) for the Shire was approximately 9,700 tonnes. This represents an average total recovery rate of 34%. The total per capita diversion rate based on this data is 516kg per year.

Table 3.4 Average tonnes, percentage and per capita values of waste recycled within the Shire (2015-19)

	MSW	C&I	C&D	Total
Average tonnes of waste recycled	3,100	3,100	3,500	9,700
Average percentage diverted from landfill	24%	31%	60%	34%
Average per capita diversion from landfill (kg/person)	166kg	164kg	186kg	516kg

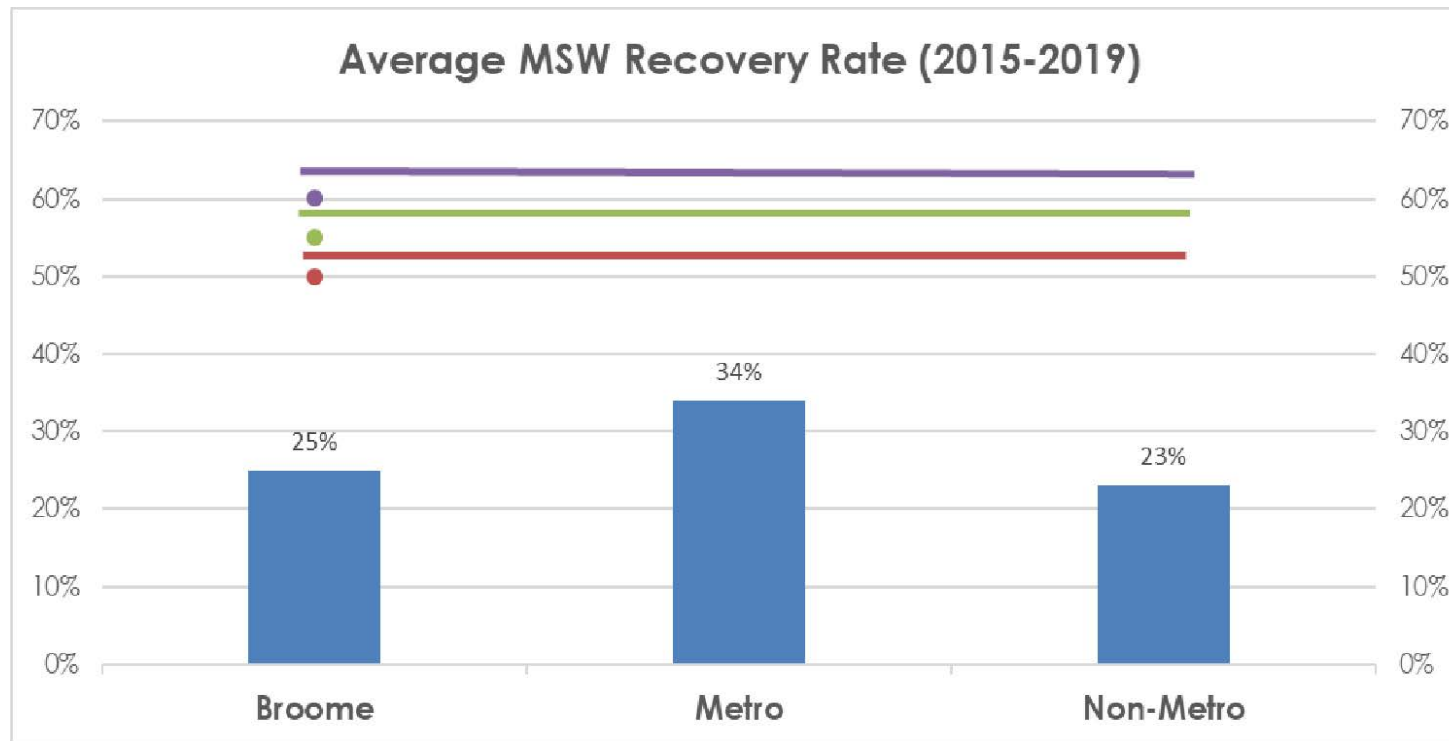


MSW recovery rate

An average of approximately 3,100 tonnes per annum of MSW was diverted from landfill in the Shire between 2015 - 2019. This represents an average recovery rate of 24% for MSW from the total MSW generated within the Shire. Most of the materials diverted were source separated materials dropped off at the facility (dry packaging recyclables and greenwaste) or from the kerbside recycling collection.

The WARR Strategy includes a target for local governments from the Perth and Peel regions and major regional centres to increase MSW material recovery to 50% by 2020, 55% by 2025 and 60% by 2030 for major regional centres as shown **Figure 2.3**. **Figure 3.3** shows the Shire's resource recovery rate compared to the WARR Strategy targets set for major regional centres. HOW DOES THIS COMPARE TO OTHER REGIONAL RECOVERY RATES? BLUE BOX NEEDS TO SAY SHIRE OF BROOME

Figure 3.3 Shire of Broome MSW recovery rate compared to recovery targets for 2020, 2025 and 2030



C&I recovery rate

An average of approximately 3,100 tonnes per annum of C&I material was diverted from landfill between 2015 - 2019. This represents an average recovery rate of 31% for the C&I waste stream managed by the Shire. All recovery is from source separated materials received at the facility (scrap metal, tyres, greenwaste, glass, and e-waste) and from material separated from mixed loads received at the facility by the Shire.

The WARR Strategy sets targets for industry for recovery of C&I streams to 70% by 2020, 75% by 2025, 80% by 2030. These targets are for the C&I sector and do not apply to the Shire.

C&D recovery rate

An average of approximately 3,500 tonnes per annum of C&D material was diverted from landfill between 2015 - 2019. This represents an average recovery rate of 60% for the C&D waste stream managed by the Shire. Of note, for 2018 - 2019, the Shire achieved a 99% recovery rate for C&D material as reported in the Shire's waste recording system. Recovery is attributed to the drop-off of source separated materials (e.g. concrete, steel and timber) and recoverable material separated from mixed loads where practicable.

The WARR Strategy sets targets for industry for recovery of C&D streams to 75% by 2020, 77% by 2025, 80% by 2030. These targets are for the C&D sector and do not apply to the Shire. WHAT DOES APPLY TO THE SHIRE?

INTEGRATED PLANNING AND REPORTING (IPR)

Integrated planning and reporting (IPR) guide the Shire's strategic direction and planning and gives local governments a framework for establishing local priorities and linking them with operational functions.

The Shire of Broome Strategic Community Plan 2021 – 2031 includes the delivery of waste services to support the achievement of its strategic objectives (Place: 'we will grow and develop responsibility, caring for our natural, cultural and built heritage, for everyone'. Strategic objectives are linked to operational functions through the Corporate Business Plans (CBP). The Shire's CBP 2021 – 2031 contains the following waste related actions:

- 5.3.5 - Facilitate implementation of the Buckley's Rd Landfill Closure Management Plan
- 5.3.6 - Provide a Regional Resource Recovery Facility
- 5.3.7 - Facilitate improved community participation in waste collection, recycling and 'clean up Broome' activities

The Broome Waste Strategy will fit within the Shire's IPR framework as an issue-specific informing strategy. An action plan has been generated from the Waste Strategy and will be included as part of the annual corporate business plan (CBP) review and any new expenditure required to implement actions will be incorporated into the Shire's CBP, long term financial plan, and annual budgets as appropriate.

Other existing strategies that inform the Shire's strategic direction include the following:

- **Kimberley Regional Waste Management Plan 2018 – 2028** (KRWMP). This plan provides strategies and actions to strengthen regional collaboration and cooperation in the delivery of waste management services and improve waste management practices across the region consistent with the WARR Strategy.
- **Kimberley Regional Planning and Infrastructure Framework 2015** (KRPIF). This plan provides an overall strategic context for land-use planning in the Kimberley region over the next 25 years. The KRPIF recognises improvements to waste management infrastructure and services as one of the key planning issues to be addressed for the Kimberley Region. The following opportunities have been identified in the framework to address future planning and provision of solid waste management services across the region. These include:
 - o Minimising solid waste and associated environmental impacts,
 - o Providing adequate collection and disposal capacity at the region's landfill sites and where necessary identify new sites,
 - o Identifying a suitable site for a regional/ sub-regional waste management facility as appropriate, and
 - o Maximising re-use and recycling of landfill materials in a sustainable manner using best practice technology and waste disposal minimisation.

A specific waste management infrastructure project identified by the KRPIF is to provide new solid waste management facilities, including the ability to handle increased recycling and liquid wastes, in regional centres including Broome, Derby and Kununurra.

WASTE SERVICES

Waste services provided by the Shire include kerbside collections, pensioner, drop off facilities, public place bins , litter and illegal dumping pick up together with the management of waste created by local government service provision. These services are summarised in **Table 3.5**.

These services can avoid waste generation, recover materials from waste, and protect human health and the environment from the impacts of waste. Maximising the efficiency of these services also ensures they are delivered with minimal impacts on Shire funding reserves.

Table 3.5 Shire of Broome waste services detail

Service	Type	Details	Notes/information/observations
Kerbside collections and EDUCATION	Waste	240L MGB weekly kerbside waste collection service Domestic premises (4939) Commercial premises (220) Service not provided outside of town of Broome Provided under contract	The collection contract will expire in June 2021 Bins are property of Council and individually numbered 12 Mile, Coconut Wells, Dampier Peninsula and areas south of Broome town do not receive a kerbside service
	Recycling	240L MGB fortnightly kerbside collection service Service is mandatory Domestic premises (4939) Commercial premises (1220) Provided under contract	Commenced in 2007 Transitioning to 360L recycle bin Recycling service mandatory in Shire for premises in collection area Current average contamination rates are 33% (18-19) Variance (low) 13% to (high) 55%. Issues with high contamination rates in certain areas of the Shire Needles in recycling causing challenges
	FOGO	Nil	Key headline target of WARR Strategy for metropolitan area No local composting companies yetViable end markets within the Shire for a FOGO derived product currently unknown
	Bulk waste	Consecutive free waste disposal weekends for bulk waste/ preparation for the cyclone season. Skip bin option for pensioners	Skip bin service recently introduced in Nov 2019; positive feedback received from community.
Drop off (Buckleys Road landfill)	Reuse and Recycle area	A reuse area for reusable household items provided at landfill site	Items are provided free of charge Service well utilised by the public
	Mixed waste	Bins for mixed waste provided	Introduced to restrict public access to tipping face
	Construction and demolition	For separated concrete, bricks and rubble materials Material relocated and stockpiled and adjacent resource recovery site.	C&D stockpiled over last 5-6 years The Shire recently crushed 20,000 tonnes of stockpiled material for use as road base around the facility Gate fees are structured to encourage source separation of C&D waste streams Contract for crushing of material recently finalised Shire looking to use material for rural roads building and maintenance
	Cardboard	Bins provided for cardboard and paper	Taken to recycling contractor for processing
	Car batteries	Collection point provided for car batteries	Stockpiled on site and collected by private contractor for recycling every quarter. Shire receives on averaae x tonne per year
	E-waste	Shire participates in the National Television and Computer Recycling Scheme (NCRS)	Service commenced 2018 Collection services are provided through an agreement with an e-waste recycling company TechCollect Shire receives on averaae x tonne per year
	Waste Oil	Free use to resident's only	Waste oil is collected by oil recycling company Approx 40,000L of waste oil was collected in 19/20

Service	Type	Details	Notes/information/observations
Drop off (Buckleys Road landfill)	Scrap metal	Collection area for residential and commercial sources Material relocated and stockpiled and adjacent resource recovery site	Domestic separated scrap metal is accepted free of charge The Shire generally receive annual returns from scrap metal due to market prices Collected from the facility twice per year for sale to market for reuse Shire receives on average x tonne per year
	Tyres	Tyres collected and relocated to Lot 400 for storage	Lot 400 has licence for acceptance and storage of 5000 tyres The Shire currently has a contract with a tyre recycling company for removal and recycling Shire receives on average x tonne per year
	Greenwaste	A collection point for clean greenwaste (branches, leaves) provided Material relocated and stockpiled and adjacent resource recovery site	Greenwaste routinely mulched Clean greenwaste is accepted free of charge for residents. Contamination of the stockpiles is not reported as an issue Mulch available free of charge to community (incl. domestic and commercial) Good utilisation by the community Significant amounts used by the Shire for parks and garden management Shire receives on average x tonne per year
	Aluminium cans	Collection point for aluminium cans provided	Cans sold to local recycling provider for further processing With the introduction of the CDS system, yields are likely to reduce through the return of some of these cans via CDS refund points
	Mattresses	Currently disposed to landfill	Opportunity to separate, downsize and remove the scrap metal to reduce landfill airspace
	Fluorescent tubes	Collection point for these waste types provided	Fluorescent tubes taken to local recycling provider. Free disposal for domestic sources Mobile phones sent by post to Mobile Muster. Collections points at the library, Council administration building and at the landfill. Free disposal domestic and commercial Printer cartridges sent to Planet Ark for recycling. Collection point at the library, Council Administration centre and the landfill. Free disposal domestic and commercial Batteries sent to Cleanaway for recycling in Perth. Collection points at the library, Council administration centre and the landfill. Free disposal for domestic sources.
	Mobile phones		
	Printer cartridges		
	AAA & AA batteries		
	Type 1&2 plastics	Collection point for separated plastics provided	Free disposal at Shire landfill for domestic sources Taken to local recycling provider where material is transported to Perth for recycling/reprocessing
	Glass	A collection point for glass provided Material relocated and stockpiled and adjacent resource recovery site	Material crushed and used to improve road drainage within the landfill
	Flares and EPIRBS	Collection point provided	Taken to Department of Transport who transport to Perth for disposal under Dangerous Goods Act
	Whitegoods	Collection point for whitegoods provided Material relocated and stockpiled and adjacent resource recovery site	Fridge and air conditioners degassed. Costs covered in disposal fee. Whitegoods added to steel stockpile

Service	Type	Details	Notes/information/observations
Drop off (Buckleys Road landfill)	DrumMUSTER	Drop of point provided for eligible agricultural and veterinary chemical containers	
Public Place	Waste	Waste bins are provided in strategic locations within the Shire on shire managed roads, Shire facilities and other shire owned/vested public reserves	Main Roads responsible for litter bins on roads outside of town Installation and maintenance of shire street litter bins managed by Parks and Gardens dept. Financial management of public place bins through Waste dept Bins serviced inhouse by Shire
	Recycling	Recycling bins recently installed on Shire managed roads (main streets) and new Shire managed parks	
	Litter and illegal dumping	Responsibility for management across the Shire spread across different agencies Shire is responsible for investigation, clean up and enforcement of littering and illegal dumping incidents on Shire owned/managed public reserves, bushland areas, vacant lots and roadside verges Management of illegal dumping on aboriginal reserves and in-town reserves is the responsibility of the Yawuru Park Council comprising Yawuru RNTBC, the Shire of Broome and the Department of Parks and Wildlife	Litter, illegal dumping, and amenity maintenance a significant issue in the Shire due to transient populations and vagrants Anecdotal evidence suggests that illegal dumping has increased in recent times (Shire of Broome, 2015) An audit previously undertaken in 2015 indicated Illegally dumped waste included: green waste (47%), household waste (20%), abandoned vehicles (12%) along with other amounts of domestic appliances, commercial waste, mechanical parts and animal carcasses Litter and illegal dumping managed by different work teams including rangers, waste, and parks and gardens A management fund exists for ongoing management of the Yawuru reserves. There are often limited funds available however for clean up of the illegal dumping, consequently the Shire is often involved in funding clean up with costs to Council ultimately passed onto residents. Ultimately regardless of tenure type, the owner / occupier is responsible for the removal of illegally dumped waste.
Local government waste	Greenwaste inert waste	Waste generated from Shire operations and services	Shire generates approximately 170 tonnes per year of greenwaste from its internal operations Inert material and greenwaste separated for resource recovery



Tip passes

The Shire provides a mix of passes for waste disposal as part of the services it provides. Domestic residents that pay for and receive a kerbside collection service receive six free passes a year for the disposal of household waste per year. Rateable properties that do not receive a kerbside collection do not receive free passes but are able to buy a domestic pass at \$149 per year. This pass provides for disposal of domestic waste at the landfill facility.

Aboriginal communities

A total of 84 Aboriginal communities are located within the Shire, of which 78 are classified as remote (Local Government Advisory Board, 2008). Each community has its own separate waste system not managed by the Shire of Broome. Waste management in remote aboriginal settlements can have issues such as inappropriate siting of facilities, lack of community awareness, language barriers, greater distance from other waste facilities and recycling markets, and challenging road conditions. As a result, waste management practices within communities are often poor, and can lead to health, social and economic problems for the communities.

Dampier Peninsula

The Cape Leveque Road and its tributaries links up Aboriginal communities, outstations and cattle / pastoral stations on the Dampier Peninsula with the main highway and forms the main rural road network throughout the Shire. Responsibility for the management of waste and litter in the region is spread across many stakeholders and dependent on land ownership/vesting. The Shire does not provide waste services within this area.

With the planned sealing of the Cape Leveque Road in 2020, traffic movements are likely to increase by up to 40 per cent by 2030 (KPP Business Development, 2018). The increase in visitors to the Peninsula is likely to result in more waste and litter being generated within the region.

In recognition of this, in 2020 the Shire of Broome engaged an external consultant to prepare a Dampier Peninsula Waste Management Plan (DPWMP) to guide the direction and delivery of sustainable waste management services into the future.

The central objectives of the DPWMP are focused on protection of human health and the environment, increasing resource recovery, meeting regulatory requirements, addressing concerns and preferences from stakeholders for future waste management within the region and maximising local economic development and employment opportunities.

To meet these objectives an action plan has been developed to guide stakeholders towards the delivery of sustainable waste management services for the region. The key action areas include:

- Undertake a hydrogeological investigation of existing community landfills to ascertain the impacts on groundwater and potable water sources.
- Waste data collection to facilitate effective planning of the waste system service needs and infrastructure requirements.
- Remediation of illegal and legacy waste and litter issues.
- Development of a best practice waste management system including coordinated collection services and disposal of waste at an appropriately sited, lined and managed landfill. The feasibility of establishing a network of waste and recovery centres (W&RC) to support the coordinated waste collection and disposal system should also be determined.
- The closure and rehabilitation of community landfills upon implementation of the new coordinated waste management system.
- Addressing stakeholder issues and concerns in relation to management of waste and litter from tourists to the Region.
- Development of processes for better management and control of waste from construction and demolition projects within communities.
- Better Practice management systems for small rural landfills that fall within and outside of the Environmental Protection (Rural Landfill) Regulations 2002.
- Development of an emergency waste management plan or protocol to ensure waste from emergencies and disasters that impact the region can be quickly and efficiently managed to protect residents on the Peninsula.
- Development of a multi stakeholder waste and litter working group to progress the actions of the DPWMP.
- Development of a multi stakeholder Dampier Peninsula Litter Strategy.

The DPWMP links government regulatory and policy requirements with the identified objectives for waste management service provision on the Dampier Peninsula to form an overarching strategic document to guide waste service delivery into the future.

The DPWMP was endorsed by the Broome Shire Council in April 2021. The Shire also resolved to have the DPWMP referenced as an informing document in the Shire of Broome Waste Strategy 2021-2031 and endorsed the Shire Chief Executive Officer to advocate state ministers to ensure the health of the communities on the Dampier Peninsula and address as a priority, the actions outlined in the Dampier Peninsula Waste Management Plan.

WASTE INFRASTRUCTURE

The number, type, capacity and location of key local government owned waste management infrastructure is required to understand the future need for different facility types. This section summarises the Shire's current and planned waste and recycling facilities.

Buckleys Road Waste Management Facility

The facility provides a waste disposal site for the Town and immediate community of Broome. As the only licenced landfill in the vicinity, it receives a combination of Municipal Solid Waste (MSW), Commercial and Industrial waste (C&I) and Construction and Demolition waste (C&D).



Table 3.6 Buckleys Road Waste Management Facility summary

Service	Details
Address:	Reserve 40813, Lot 228, Buckley Rd, Broome, WA 6725
Ownership:	Shire of Broome
Operator:	Shire of Broome
Period of use:	Unknown but vested to Shire for waste disposal in 1987 and licensed in 1997. Thought to be at around 30 years of use
Environmental Protection Licence:	L6912/1997/11
Licence class	Cat 64 – Class II putrescible landfill site (30,000 tpa) Cat 61 – Liquid waste facility (1,932 tpa)
Waste types received:	Clean fill; inert waste type 1; inert waste type 2; putrescible waste; special waste type 1 (asbestos wastes); special wastes type 2 (biomedical waste), grease trap and mineral oil liquid waste; and quarantine waste
Infrastructure on site	Ranger's compound Drop off areas, Class II landfill, Gatehouse and weighbridge Oil tank Sheds
Method of construction:	Combination of below and above ground cells.
Type of liner:	Unlined
Remaining operational life:	In 2019 a licence amendment was approved by DWER allowing above ground waste placement to within 15 meters of the premise's boundary. Based on extending the footprint of the existing disposal area to a 15m internal buffer and maintaining the gradients at 1(v):5(h), approximately 180,000m ³ of airspace is available. This results in a projected operational life of 4 to 5 years (as of Jan 2021)(LANDFILL CLOSURE PLAN). Adopting best practice operations including maximising waste compaction is essential to increase its operational life and ensure the Shire avoids the need to transport waste significant distances if the new landfill site is not operational in time.CURRENT COMPACTION RATE

Service	Details
Landfill footprint	<p>The existing waste mass is approaching the final landform as defined in the previous closure plan. The reduction of the internal buffers at the facility in line with the recent licence amendment has increased airspace capacity and allowed a new final landform to be developed for the landfill. As such, the final footprint for the site will be developed in two stages:</p> <p>Area A – the increased footprint and height of the existing above ground area.</p> <p>Area B – a contingency that would utilise the portion of the site currently used for resource recovery and gatehouse operations. NOT SHOWING A & B</p> <p>Figure 3.4 Facility final landform(ASK,2020)</p> <p>The map illustrates the proposed final landform for the landfill site. It features a central area labeled 'AREA B PROPOSED FINAL LANDFORM' with concentric contour lines indicating elevation. To the left, there are 'ENERGY DEVELOPMENTS' and a 'WEIGHBRIDGE'. The map includes a legend for 'EXTENT OF LANDFORM', 'DESIGN SURFACE LEVEL', 'MAJOR 5M CONTOUR', 'DESIGN SURFACE LEVEL', 'MINOR 1M CONTOUR', 'OUTER RING ROAD', 'INNER RING ROAD (HOT MARKS)', 'STORMWATER DRAIN', and 'SEDIMENT POND'. A north arrow is located in the top left corner. The map also shows a 'FENCE' line and a '15m BUFFER' zone. The bottom of the map contains a title block with the following information: 'BUCKLEY'S ROAD LANDFILL LANDFILL CLOSURE MANAGEMENT PLAN', 'SHIRE OF BROOME', 'AREA B TOP OF WASTE - FINAL LANDFORM', 'ASK-1907-10', 'DWG 003', and 'A'. Logos for 'ASK' and 'GREENATEC CONSULTING' are also present.</p>
Landfill Closure Management Plan	<p>Currently the majority of the landfill site is uncapped. A Landfill Closure Management Plan was produced in 2020 to guide the development and progressive closure of the site.</p>
Siting - Residential	<p>Residential receptors are located around the facility as follows:</p> <ul style="list-style-type: none"> • 660 m south east of the south east boundary corner, residential property at Locke Street • 900 m west of landfill, dwellings on Sands Street • 1700 m south of the boundary, dwellings on Fairway Drive <p>There are no sensitive receptors within 5 km to the north of the facility with this land being zoned for cultural and natural resources use</p>

Buckleys Road Resource Recovery Area

The Shire of Broome also operate a licensed Resource Recovery Area (RRA) to stockpile and process material. The premises is located approximately 500m south from the landfill. It is envisioned the facility will operate at this location until the Shire's new RRRP is constructed.

Table 3.7 Buckleys Road Resource Recovery Area summary

Item	Description
Address:	Reserve 51151 Lot 400 Buckley's Road, BROOME WA 6725
Ownership:	DEVELOPMENT WA
Operator:	Shire of Broome
Period of use:	Since 2014
Environmental Protection Licence:	L8852/2014/1
Licence class	Cat 13 – Crushing of building material (6,000 tpa) Cat 57 – Used tyre storage (5,000 tyres) Cat 62 – Solid waste depot (2,000 tpa) Cat 67A – Compost manufactured and soil blending (5,000 tpa)
Site activities:	Receipt of unprocessed greenwaste Mulching and composting of mulch Stockpiling and processing of inert waste (C&D) Stockpiling of scrap metal & car bodies Stockpiling of tyres Stockpiling of daily cover material & capping material for Broome refuse site.
Infrastructure on site	Commercial access only. No infrastructure

Planned waste and resource recovery infrastructure

Waste and resource recovery infrastructure planned for construction in the life of the BWS include the following:

Broome Regional Resource Recovery Park (RRRP)

The Broome RRRP is being planned to support the Broome community for the next 70 years and beyond. The RRRP will have key multiple elements including a Community Recycling Centre and best practice landfill (SOB, 2021).

The components of the facility is provided in Figure 3.5

Broome Community Recycling Centre (CRC)

The Broome CRC will include a separate domestic drop off area with sealed vehicle access and manoeuvring area.

Broome Liquid Waste Facility

This facility will include engineered liquid waste ponds to allow for the disposal and treatment of liquid waste.

Figure 3.5 RRRP components (SOB, 2021)



POLICIES AND PROCUREMENT

Local Government policies and procurement strategies can horizontally integrate waste management and resource recovery considerations through all facets of local government services and activities to contribute to the WARR Strategy objectives. **Table 3.8** details the Shire's current policies and procurement initiatives in relation to DWER's better practice guidance.

Table 3.8 Shire of Broome policies and procurement relating to waste

Activity	Detail	Provided?	Description
Waste Contracts	The Shire currently has numerous contracts for provision of waste services	Yes	Kerbside waste collection Kerbside recycling collection, processing & recycling education Various collection and processing contracts for recyclables (tyres, concrete, greenwaste, steel) Various consultancy projects
Local laws and policies	Waste Local Law	Yes	Waste Local Law currently nearing gazettal Currently being reviewed by the Joint Standing Committee on Delegated Legislation
	Emergency waste management plan	No	The development of waste contingency plans in case of disruption or disaster, which aim to protect public health and safety, avoid waste generation, reduce the risk of illegal dumping, consider better practice options for managing waste and increase recovery, will assist the Shire to ensure timely, appropriate and coordinated responses to emergency situations.
	Waste management plans	No	WALGA have developed a model local planning policy, planning conditions flow chart and guidelines for waste management plans to assist local government. These guidelines demonstrate how the Local Planning Development Approval process can assist in meeting the Shire's objectives for waste management.
	Litter and illegal dumping strategy	No	The Shire does not have a comprehensive litter strategy. Measures undertaken by the Shire aimed at contributing towards the zero littering and illegal dumping target include: (SOE, 2015) To maintain the current high levels of surveillance and forensic assessment of dumped rubbish To pursue enforcement action as appropriate if people dump rubbish illegally Continue to employ the full-time community clean-up crew to maintain and remove litter from parks, gardens, beaches and verges The Shire also operates the orange bag rubbish collection system where individuals can be provided with orange bags to place collected rubbish with public spaces. The Shire will subsequently collect the bags once full. The Shire fully supports and endorses the recent container deposit scheme introduced by the Government of Western Australia.

Activity	Detail	Provided?	Description
Land use planning instruments	Waste considered in local planning strategy	Yes	The Shire of Broome Local Planning Strategy (LPS) 2014 lists the following waste related priorities Strategy: Develop a best practice alternative waste treatment facility in line with the State Waste Strategy. Action: As a matter of urgency prepare a Resource Recovery Strategy which promotes the Western Australian Waste Strategy. Action: Undertake site selection studies for the future relocation of the existing waste management facility. Action: Create a synergy between the future landfill facility and power station for the storage of gas supply as currently exists within the existing landfill site. Of note the LPS is currently under review
	Local Planning Strategy identify current and future waste facility site		
	Local Planning Strategy identify buffers around existing and/or future sites to avoid land use conflict	No	
	Local Planning Schemes reflect the Planning and Development (Local Planning Schemes) Regulations 2015	No	Resource recovery facilities, waste disposal facility and waste storage facility are not defined as land uses and included in the zoning table (as per Planning and Development (Local Planning Schemes) Regulations 2015). The Shire's local planning scheme needs to be updated to reflect these changes.
Procurement	Sustainable procurement policy	Yes	The Shires Purchasing Policy includes an objective as follows: "The Shires purchasing activities will achieve sustainable benefits, such as environmental, social and local economic factors being considered in the overall value for money assessment;"
	Regional Procurement	Yes	No formal policy however the Shire may be able to improve financial outcomes through pursuing regional procurement where practicable for provision of some services.

BEHAVIOUR CHANGE PROGRAMS

The Waste Authority define behaviour change programs and initiatives as activities that:

- Increase awareness, skills and knowledge
- Provide consistent messaging
- Help people to use waste infrastructure
- Encourage the adoption of specific, positive waste behaviours and attitudes

Communication and engagement with waste generators and managers underpin many local government waste management activities and are vital to driving behaviour change needed to achieve the objectives and targets of the WARR Strategy.

The Shire currently participates in various resource recovery programs including the 'Garage Sale Trail' and the 'Great Australian cleanup'. However, the Shire has limited resources for the implementation and ongoing management of behaviour change programs. The current kerbside collection contract requires the contractor to provide some community education. This currently consists of adhoc 30 minute school talks as requested by schools on waste and recycling.

Broome's transient population and diverse cultural mix presents challenges for waste management education programs. There is a need to educate and involve the community (residential and commercial) about waste management issues and programmes. Unless the community understand the reasons for their actions, and can see genuine and attainable results, there is little motivation for changes in behaviour.

Given the significant role the Shire's waste generators play in minimising waste and the recovery of materials, ongoing waste education is vital to ensure the best possible outcomes are achieved by the Shire in relation to resource recovery and the Waste Strategy targets.

The Shire, in conjunction with the Kimberley zone Councils, has prioritised the development of a Regional Waste Officer position to progress and coordinate waste education and engagement across the region.

DATA AND INFORMATION

Data and information provide the key foundation for effective planning, monitoring, management and decision making in relation to waste management and resource recovery. The Shire has access to a wide range of data and information to inform decision making, however there is potential to improve data management further to ensure that any actions implemented as part of this Strategy are based on complete and correct information and assist with the evaluation of the actions.

Table 3.9 Shire of Broome waste data and information

Source	Details	Information
Waste data collection and reporting	Accurate data is required to comply with mandatory reporting requirements under WARR Regulations. Accurate data will also be needed to track progress towards achievement of the WARR Strategy targets. The Shire has a weighbridge and maintains a licence agreement with Mandalay for the provision of a gatehouse software system to capture waste inputs and outputs through the facility. Commercial loads are weighed, whereas domestic waste is not.	There is a reasonably high confidence in the accuracy of measurement and tonnage data given the weighbridge. However, waste data capture methods should be reviewed to ensure that waste generation, recovery and disposal performance can be assessed accurately, by waste stream and in a timely manner. The review should ensure waste data collection and reporting methods are consistent with better practice (mandatory reporting requirements under WARR Regulations).
Waste composition data	Limited audit undertaken in 2019 for Container Deposit Scheme	A comprehensive kerbside audit will assist in planning resource recovery initiatives. LAST AUDIT WAS IN 2011
Whole of life (WoL) operational cost of landfill	Full cost of waste services, facility operations, capping liabilities asset development and asset renewal has not recently been calculated.	WoL costs enable the accurate assessment of the economic feasibility of resource recovery initiatives over landfilling. If the whole of life costs is not covered by gate fee price structures, it is likely that domestic kerbside revenue is subsidising commercial waste disposal.
Financial analysis	A review of Shire income and expenditure has not been undertaken to ensure those that generate waste pay for its disposal. The Shire has a waste reserve established. The Shire has a long term financial plan (10 year)	Shire fees and charges could be reviewed to assess any cross subsidy and move to user pays principle. The Shire waste reserve and long term financial plan should be reviewed annually to ensure sufficient funds and/or funding sources have been identified for waste related projects.
Community opinion	Community opinion should be considered for the development of waste management strategies, plans and resource recovery measures for the Shires	Community opinion is not currently known however will be assessed as part of the community consultation for development of this Strategy.

REGIONAL WASTE MANAGEMENT

The concept of regionalisation is well recognised within the Kimberley to help to deliver successful waste management services. The Shires of Broome, Derby/West Kimberley, Halls Creek and Wyndham East Kimberley have been cooperating on regional waste management initiatives through the development of successive regional strategic waste plans since 2009.³

In 2019 the third iteration of the Kimberley Regional Waste Management Plan (KRWMP) was completed and endorsed by the four Councils. The purpose of the KRWMP is to provide strategies and actions to strengthen regional collaboration and cooperation in the delivery of waste management services and improve waste management practices across the region consistent with the WARR Strategy. The KRWMP is focused on the next five years, with the key action areas including data, infrastructure planning, strategic planning, regional collaboration and waste minimisation/resource recovery.

The Shires hold regular waste meetings (Waste TAG). This forum was set up to aid regional communication, cooperation and collaboration in relation to waste management issues and opportunities.

BETTER PRACTICE APPROACHES

The WARR Strategy defines better practice as approaches that are considered by the Waste Authority to be outcomes-focused, effective and high performing. Better practices have been identified based on evidence and benchmarking against comparable jurisdictions. The achievement of better practice forms part of the targets for local government all three objectives of the WARR Strategy. These targets include:

Avoid: all waste is managed and/or disposed using better practice approaches.

Recover: all waste facilities adopt resource recovery better practice.

Protect: all waste facilities adopt environmental protection better practice.

As identified in the WARR 2030 Action Plan, the Waste Authority is developing better practice guidance to support local government adoption of better practice. The better practice guidance, once developed, will have relevance to the Shire's existing services and facilities.

³ SWEK joined the regional waste management plan

COMMUNITY CONSULTATION

To guide the actions and outcomes of the BWS, a survey of the Shire's community was undertaken to better understand the community's knowledge and views on waste and recycling.

The survey was open for three weeks and advertised by the Shire of Broome through online avenues (e.g. Facebook, email, website) and face-to-face interactions (e.g. surveys conducted at local markets and businesses). The survey received 573 responses (approx. 4% of Broome population).

The survey was followed up by two online webinars. These webinars were held to collect further information about the community's views on waste and allow people a space to be heard if they had specific issues or questions they wanted to raise. Community members registered for the webinars at the end of the online survey and were asked to RSVP to the webinar event before receiving a Zoom link. Of the 89 people who showed interest in the webinars, 16 responded to the RSVP. Both workshops were held on Thursday 3 September. The morning workshop (10am) was attended by two community members and the evening workshop (5pm) was attended by six community members.

SURVEY RESULTS

The results of the consultation provide both qualitative and quantitative data to help develop the future of the Shire's waste services. A summary of the results is provided in below, while the complete results are shown in **Appendix A**.

Waste management is an extremely important issue and should be a priority action area

Almost all respondents rated waste avoidance and resource recovery issues as extremely important and there was near universal support (96%) for waste being a priority action area for the Shire.

Satisfaction with services is mixed

Most services received a satisfactory rating from the community.

Kerbside waste and recycling collection was satisfactory (86% and 74% satisfied, respectively), however, many comments revealed that the community was concerned about the frequency of the pickup and for the size of recycling bins (i.e. bigger recycling bins required). Although the Shire does have 360L recycling MGB option for residents, feedback from the consultation workshops indicated this is not widely known within the community. DATA

Litter management and illegal dumping was a major issue for community members, with 50% of respondents being unsatisfied by current litter management services. Respondents speculated that there was a lack of education and respect for the town which led to littering and illegal dumping behaviours. It was clear that many community members felt that the unkept look of public spaces and roadsides reflected badly on the town and tourists who visit. Clean-up crews of roadsides and public spaces were a high priority.

Education and engagement was another service which received an overall unsatisfactory review (52% unsatisfied) from the community. Respondents said that more information was needed, particularly about what should go in the bins, where to take materials for recycling, and what happens at the facility. Many residents commented that they believed kerbside recycling was taken straight to landfill. When discussed in the webinars, community members suggested more education and tours of the facility for the public and school groups.

Support for Kerbside pre-cyclone clean up and FOGO

A return to the original scheme of kerbside pre-cyclone clean up was called for by many respondents of the survey. They referred to the difficulty for people who were unable to get appropriate transport to participate in the current free weekend drop-off scheme as a reason to go back to the original system.

FOGO and Greenwaste kerbside services were supported by over 60% of the community.

Community believed that Resource Recovery is important but there is only some opportunity to recycle

Community members believed that there was only some opportunity to recycling in the Shire. There was significant interest in community engagement programs (like community gardens and organised beach clean-up events) to educate the community and encourage waste reduction.

People are willing to pay more for improved recycling

Survey outcomes indicated the community feel that costs for waste services provided by the Shire are 'about right'. There was support for paying for improved recycling with a significant portion of respondents (80%) willing to pay between \$2.50 and \$20 + per month. Comments made by community members made it clear that if there were any increases to costs, the Shire should communicate exactly how those costs would be used, with follow ups and evidence.

Future services and improvements

Survey respondents were extremely interested in a Shire Tip Shop and Repair Café, often mentioning similar services provided in Kununurra as a good example of what could be achieved.

Other services and improvements the community requested include:

- Education and engagement regarding all waste related issues
- Improved illegal dumping and litter management services
- Kerbside pre-cyclone clean up service
- FOGO or Greenwaste Kerbside service
- Kerbside services for 12 Mile and Coconut Wells
- Opportunity to recycle soft plastics
- Support of local businesses IN WHAT?



ACTION PLAN

An action plan has been developed to support the Broome Waste Strategy and provides a framework of actions for effective, efficient, and sustainable management of waste within the Shire from 2021 – 2031. The actions have been developed in line with the outcomes and approaches of State's Waste Avoidance and Resource Recovery Strategy 2030 (WARR Strategy), the Kimberley Regional Waste Management Plan 2018-2023, and the Shire's strategic objectives.



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