

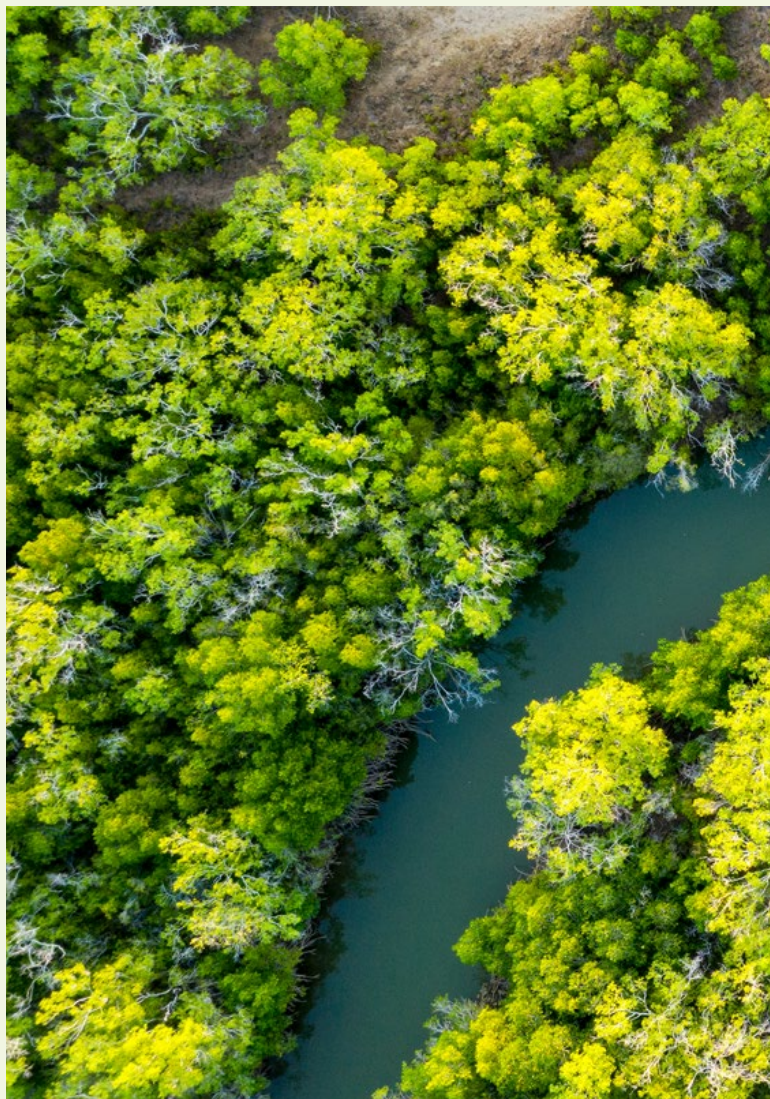
Waste Management Strategy 2022-2031

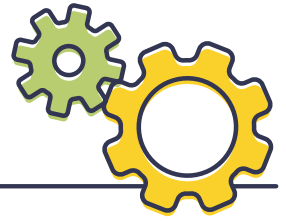




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“Striving to improve the lifestyle of residents and involving the community in decisions that affect their lives.”

– Belyuen Community Government Council

Acknowledgement of Country

Wagait Shire Council and Belyuen Community Government Council acknowledge the Larrakia people as the Traditional Owners of all the land and waters of the Greater Darwin region.

The Councils also acknowledge and pay respect to the seven Belyuen clan groups, the Emmi, Wadjiginy, Kiuk, Malak, Mendtha, Marriamu and Maranunggu.

“Growing Together”

– Wagait Shire Council



1. Introduction

Wagait Shire Council and the Belyuen Community Government Council are located on the eastern side of Cox Peninsula, some 130km and 120km respectively from Darwin by road. Both communities are also accessed via the Mandorah Darwin ferry that commutes from Cullen Bay to Mandorah Jetty across Darwin Harbour.

The Waste Management Strategy has been developed to guide the Wagait Shire Council and Belyuen Community Government Council planning for waste management into the future. This includes ensuring improved resource recovery, recycling and waste management across the region. The strategy sets a clear vision and pathway for the investigations required and infrastructure and service improvements to be considered.

The preparation of the Strategy included consultation and stakeholder engagement that occurred to identify and understand opportunities and constraints for the Waste Management Strategy. Information gathered has been considered as part of the preparation of the waste management strategy and a future waste facility in the locality.





2. Strategic Planning Framework

The Wagait Shire Council and Belyuen Community Government Councils' strategic planning framework provides the basis for the setting and delivery of each Council's priorities. The Waste Strategy (Strategy) informs the delivery of programs within this strategic planning framework of each Council in the short, medium and long term.

Both Councils have robust strategic frameworks and policies that support and promote for effective and planned waste management. This is identified as a key component for service delivery and planning in the short, medium and long term for both councils and its residents.

As identified in key council strategic planning documents, the vision of the Wagait Shire Council is to sustain and nurture the lifestyle of residents and visitors. This will be achieved through sustainable improvements to economic, cultural and environmental opportunities that lead to creating an involved and supportive community, promoting investment, ensuring accessibility and encouraging respect for the shire's natural assets. Specific to waste, the Wagait Council Shire Plan 2021-2022 details its approach to waste management as:

“To maintain compliance with national environmental health standards through the collection and disposal of resident's domestic waste, hard waste and green waste, provided locally or by a waste collection service contractor that is efficient and sustainable. Council supports cost-effective waste management strategies that emphasise waste reduction, reuse of materials and recycling programs for community residents and visitors.”

As identified in key council strategic planning documents, the vision of Belyuen Community Government Council is to improve the lifestyle and quality of life of the residents of Belyuen; and involve the community in decisions that affect their lives. The Belyuen Community Government Councils' Shire plans identifies the need for a:

“Waste Management Plan to plan deliver for waste management services that reduce the risk of harm to the community, are environmentally sustainable and include waste management strategies for waste reduction, reuse and recycling”

A key priority of the Belyuen Community Government Council Shire plan is for the Council to:

“Continue to advocate for regional waste management facilities including a transfer station on the Cox Peninsular”



3. The Waste Management Strategy

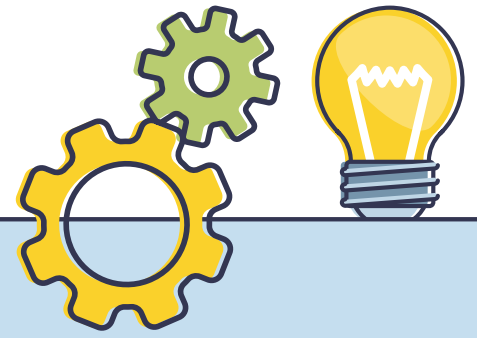
Waste is a significant environmental issue. Disposal of waste consumes land, produces pollution to the atmosphere, soil and groundwater, and represents a loss of potential resources including embodied energy and materials¹. Poor environmental outcomes and increased costs to the community will occur in the absence of appropriate management practices and regulatory monitoring of waste streams.

There are particular constraints to improving waste management across the Territory, and the challenges vary in nature and scale across regions. Regional towns with smaller populations face economic constraints to implementing standard recycling and resource recovery practices. In the case of Wagait Shire Council and Belyuen Community Government Council, their unique demographics and location some 130km from the Regional Waste Management Facility (Shoal Bay) presents transportation costs and barriers that must be overcome through a tailored waste strategy. In the case of Belyuen Council, waste management can also be a difficult task where education and improved services are required to stimulate ownership of waste, and to elevate its status as an essential service to protect community health.

The Waste Management Strategy has been developed to guide the Wagait Shire Council and Belyuen Community Government Council planning for waste management into the future. This includes ensuring improved resource recovery, recycling and waste management across the region. The strategy sets a clear vision and pathway for the investigations required and infrastructure and service improvements to be considered.

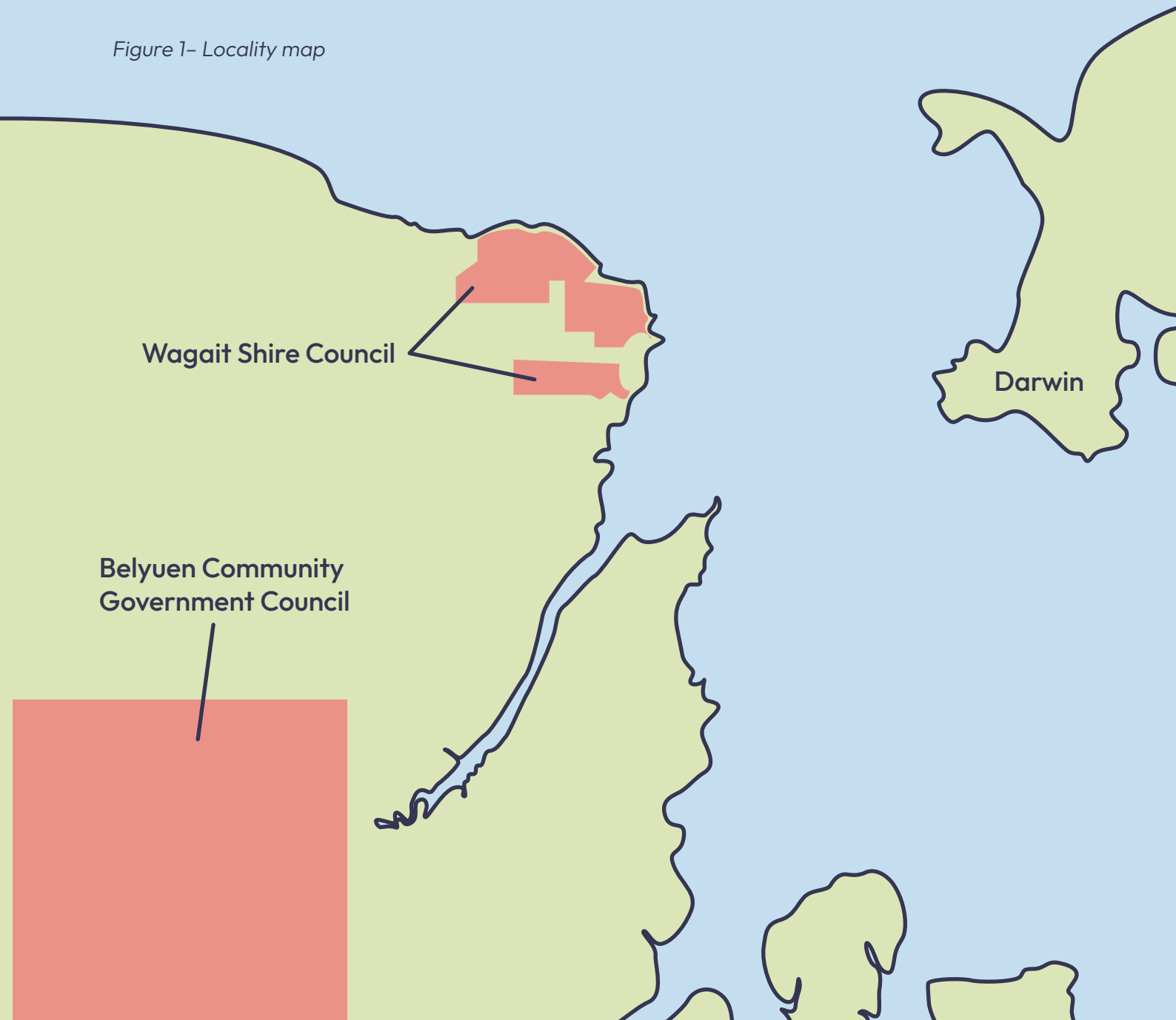


4. Wagait and Belyuen Community



Wagait Shire Council and the Belyuen Community Government Council are located on the eastern side of Cox Peninsula, some 130km and 120km respectively from Darwin by road. Both communities are also accessed via the Mandorah Darwin ferry that commutes from Cullen Bay to Mandorah Jetty across Darwin Harbour.

Figure 1- Locality map





Wagait Shire Council

Wagait Shire is located 5km west of Darwin and is a 12-minute ferry ride or a 138 km drive from Darwin city. The township of Wagait Beach was established in the early 1960s with the first areas to be subdivided along the beachfront. Further subdivisions in the early 1980s resulted in the township layout and footprint seen today, with 388 rated property lots.

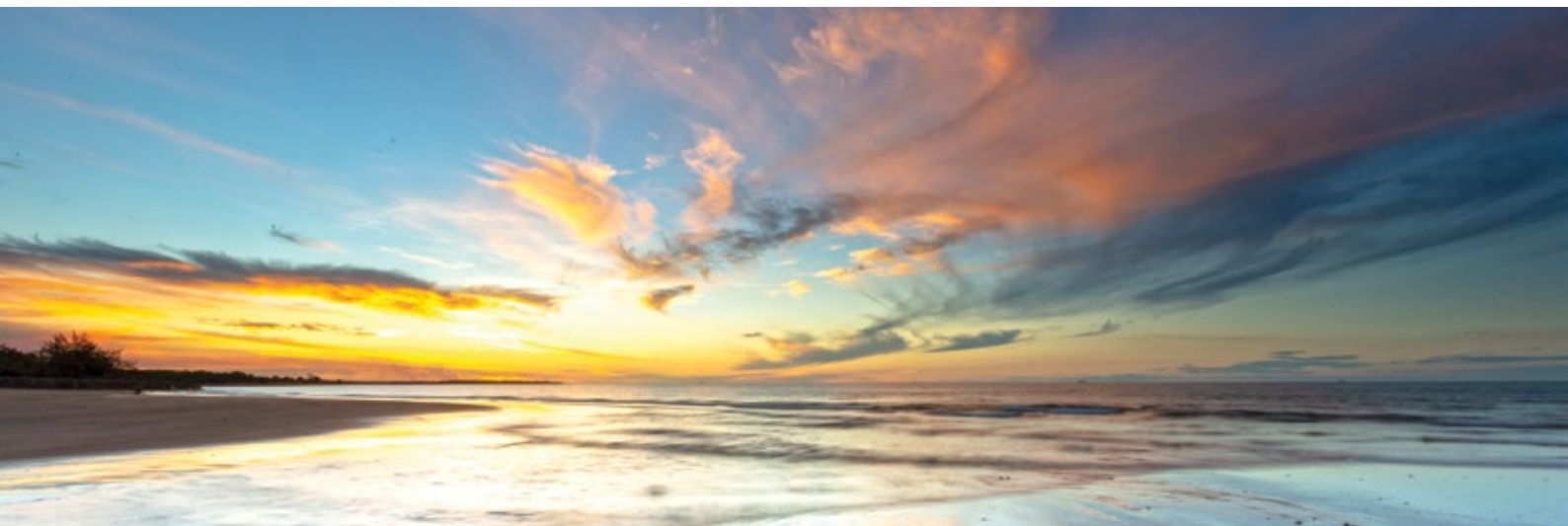
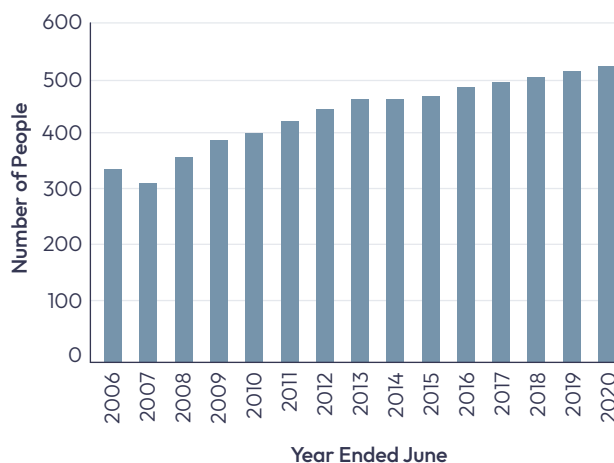
The Council was first established on 28 April 1995 as the Cox Peninsula Community Government Council and renamed Wagait Shire Council on 1 July 2008. The Council name was derived from the Cox Peninsula, which was named after Matthew Dillon Cox who was regarded as the Territory's first pastoralist after he applied for a lease over the Peninsula in 1869. The current title of the Shire Council identifies directly with the township of Wagait Beach, which is a traditional Larrakia name given to the area.

Wagait Shire covers an area of 5.62 km² and there are 14.1 km of internal roads. The estate faces the Timor Sea and has several significant coastal sites, both sacred and historical. Coastal reserves on the estate boundaries are Restricted Use Areas, which are currently protected and managed by the Crown Lands Office of the NT Government.

Key demographics and property statistics for the Wagait shire include:

- In 2021, the ABS Estimated Resident Population of Wagait Shire Council was 533 persons growing at an average of 2.41% per annum since 2011².
- The median age of residents is 48 years old.
- 8.6% of the residents are Aboriginal or Torres Strait islander.
- In 2016 the average household size was 2.24 persons per household, and this reduced to 1.99 in 2021³.
- 77% of households were purchasing or fully owned their home, 14.9% were renting privately, and 0.0% were in social housing⁴.

Estimated Resident Population (ERP)





Belyuen Community Government Council

The Aboriginal community of Belyuen was established as Delissaville and changed to Belyuen in 1975. Belyuen takes its name from a nearby waterhole known by that name. Belyuen community is represented by seven clan groups: Emmi, Wadjiginy, Kiuk, Malak, Mendtha, Marriamu and Maranunggu and Belyuen people are saltwater people. The Traditional Owners for Kenbi (the land surrounding Belyuen) on the Peninsula are Larrakia.

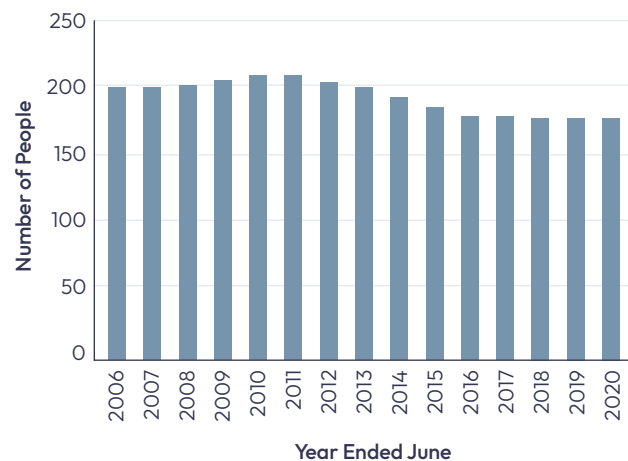
Belyuen was established as a Community Government Council on 28 August 1992.

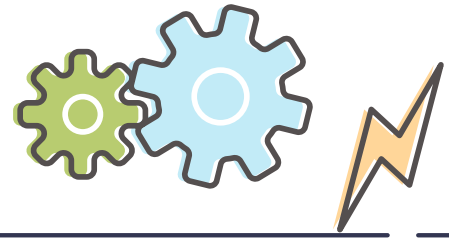
Key demographics and property statistics for Belyuen include:

- In 2021, the ABS Estimated Resident Population of Belyuen was 175 persons which has reduced by 32 persons (from 207) since 2011⁵.

- The median age of residents is 30 years old.
- 98.2% of the residents are Aboriginal or Torres Strait islander.
- In 2016 the average household size was 4.41 persons per household and 24.4% of households had at least 5 persons.
- 85.7% of households live in social housing⁶.

Estimated Resident Population (ERP)





4.1 Climate and Seasons

The Wagait and Belyuen locality has a tropical climate and has seven seasons according to the Gulumoerrgin (Larrakia) seasonal calendar⁷.

These include:

- Balnba (rainy season)
- Dalay (monsoon season)
- Mayilema (speargrass, Magpie Goose egg and knock 'em down season)
- Damibila (Barramundi and bush fruit time)
- Dinidjanggama (heavy dew time)
- Gurrulwa (big wind time)
- Dalirrgang (build-up).

The average annual rainfall is 1,800 mm with rainfall at its highest between December and March and humidity over this period averaging between 70–80 per cent. Rainfall during July can be as low as 1mm.

The contracting seasons and rainfall disparity across the peninsula presents both challenges and opportunities for waste management.

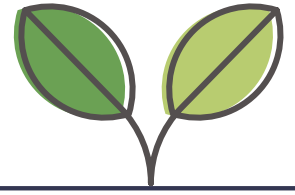
These include⁸:

- High-rainfall periods lead to significant plant growth, requiring large volumes of garden organics waste to be managed at certain times of the year.
- Significant rainfall events can lead to an erosion of nutrients and soil carbon.
- Extended low rainfall periods can decrease soil moisture, requiring dust management at waste and recycling facilities, and a reliance on irrigation in local agriculture.

As is the case across the NT, there is an opportunity for the development of local composting capacity and markets, to help retain soil moisture during the dry season and replenish soil carbon and nutrients during the wet season.



5. Future Population Growth



The Darwin Regional Land Use Plan 2015 identifies the essential characteristics and needs that will shape future development in the region and establish an overarching framework for that development. The plan presents a broad rational foundation for long term use and development of land and other natural resources, highlighting key regional policies that respond to the immediate and foreseeable issues associated with the region's natural environment and the human communities within it. The plan details that:

“The Cox Peninsula has extremely limited local freshwater resources (surface or groundwater). Further development on the peninsula will therefore depend on resolution of the land claim and major infrastructure investments, particularly to supply water. The regional plan anticipates long term development for a range of urban purposes including residential and associated community facilities and services, and commercial and industrial uses on the northern half of Cox Peninsula. The extent and timing of development will depend on strategies for the provision of the required essential services.”

To understand if development as referenced in the regional land use plan will occur within the lifespan of this waste strategy (10 years), liaison

occurred with both the Northern Territory Government Department of Infrastructure Planning and Logistics (DIPL), Lands Planning and Development Assessment Services Branch, primarily in relation to the anticipated growth and development in the region and for the planning requirements for the establishment of a future waste transfer station.

Lands Planning advised that the Darwin Regional Land Use Plan anticipates long term development for a range of urban purposes on the northern half of Cox Peninsula. The extent and timing of development will depend on the provision of reticulated services which are not currently programmed. Lands Planning advised that based on current information it is therefore unlikely that there will be any detailed area planning for growth in the short to medium term (at least 10 years).

With regard to future growth, both Wagait Shire Council and Belyuen Community Government Council note that with the resolution of the Kenbi Claim in recent years, consideration should be given to sustainable, contemporary and detailed regional development planning for the infrastructure required across the Wagait and Belyuen localities. Planning for sustainable growth should be undertaken in conjunction with all relevant stakeholders including Larrakia Development Corporation.



6. Stakeholder Engagement

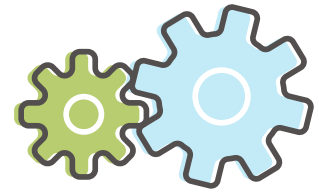
A key input to the strategy was the stakeholder engagement that was undertaken to identify and understand opportunities and constraints for the Waste Management Strategy. Information gathered has been considered as part of the preparation of the waste management strategy and a future waste facility in the locality. Over 20 various stakeholder groups were contacted, and feedback sought. Stakeholder engagement collated can be reviewed in the Stakeholder Engagement Summary Outcomes Report which is an Reference Document to this strategy. The development of the Strategy has included the following:

- Consultation with the waste, recycling and resource recovery industry in the Northern Territory
- Consultation with key stakeholders including:
 - Wagait Shire council
 - Belyuen Community Council
 - Litchfield Council
 - Local Government Association of the Northern Territory (LGANT)
 - Larrakia Development Corporation
 - Northern Land Council
 - Wagait Beach Progress Association
 - Business owners
 - Landowners of potential facility sites
 - Northern Territory Government Departments /corporations
 - Department Infrastructure, Planning and Logistics
 - Lands Planning
 - Development Assessment Services
 - Transport and Main Roads
 - Crown Lands Department
 - Mandorah Marine Facility
 - Department of Environment, Parks and Water Security
 - NT Environment Protection Agency
 - Power Water Corporation
 - Contractors / Other
 - Veolia – waste contractors
 - Core Lithium
- Review of relevant strategies, policies, plans, reports, policies, legislation and regulations
- Workshopping of the draft Strategy with Council Executives
- Waste Facility location considerations

It is anticipated that while the life of the strategy is for a 10-year horizon, the strategy actions and outcomes sought will be reviewed annually in line with Council corporate planning.



7. Current Waste Management Services



The Wagait and Belyuen Councils currently provide a range of waste management services to their respective communities, this occurs in accordance with relevant policy and historical service provision activities outlined below:

7.1 Wagait Shire Council Waste Management Policy

The current Wagait Shire Council Waste Management Policy aims to provide clear guidelines for the domestic waste collection services provided by Council and the usage of the Hard Waste and Green Waste Compounds by Wagait Shire residents, ratepayers and local contractors.

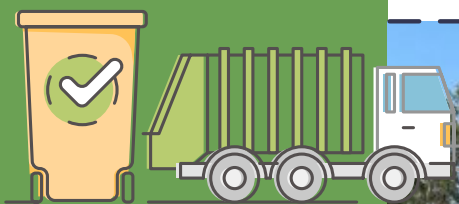
Belyuen Council does not have a formal waste management policy.

7.1.1 General (Kerbside) collection

Wagait Council provides a weekly general domestic waste collection service to the community via a third-party contractor. This collection occurs whereby waste is transported to the regional shoal bay waste management facility some 130km away by road transport. On commencement of the service which began in 2015, Council provides the opportunity to each property, the provision of one 240 (two hundred and forty) litre wheelie bin, registered to a property owner. Replacement bins can be purchased from the Council.

Belyuen Council currently provides a weekly general domestic waste collection service to the community via a third-party contractor. This has historically occurred intermittently and patronage of this service has generally been low for various reasons, including access to bins and poor awareness of services from residents, combined with the predominant use of a communal waste collections skip as the primary waste collection and management means in the community.

Wagait Shire Council



11,191

kerbside bin collections
in 20/21 financial year

11,723

kerbside bin collections
in 21/22 financial year





7.1.2 Green Waste

In the Wagait community, the designated Green waste collection area is an open cleared area on the North-East side of Cloppenburg Park (Section 50) Forsythe Rd. The compound opening hours are currently daylight hours. There is currently no charge to users dropping off green waste. Belyuen Council does not have a designated Green waste collection area.

7.1.3 Hard Waste Management

Wagait Council provides a hard waste collection area in the fenced compound located in front of the Council Workshop compound located at 142 (Lot 62), Wagait Tower Road. The Hard Waste Area is provided at no charge to users for either dropping off hard waste or collecting recycled hard waste items and is open on weekends only. The facility is managed as a drop off and sorting facility for goods received from the community, excluding toxic materials.

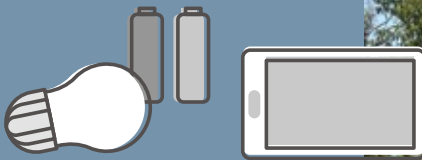
Outside of the opening hours, users can arrange to deliver hard waste to the compound by appointment. Appointments must be made with notice to Council two (2) days in advance and this may incur a fee. The facility is also utilised during pre-cyclone clean up events occurring annually prior to the commencement of the cyclone season. In October each year the site is cleaned up in preparation for cyclone season and any remaining items are sent to the Shoal Bay Waste Facility in hook bins.

Belyuen Council provides communal waste collection skips (2 x 9m³ bins) as the primary waste collection and management means in the community. Provision of skip bins is provided on an ad-hoc basis and are largely collected and replaced on a monthly basis.

7.1.4 Can disposal

“Envirobank’s” Cash for Containers mobile collection occurs several times a year via the Wagait Beach Supermarket and on occasion has collected up to 80,000 containers on a collection day.

Wagait Shire Council



32.89

tonne of collected hard waste in 20/21 financial year

54.66

tonne of collected hard waste in 21/22 financial year



8. Relevant Waste Management Policy

8.1 National Waste Policy 2018 / Action Plan 2019

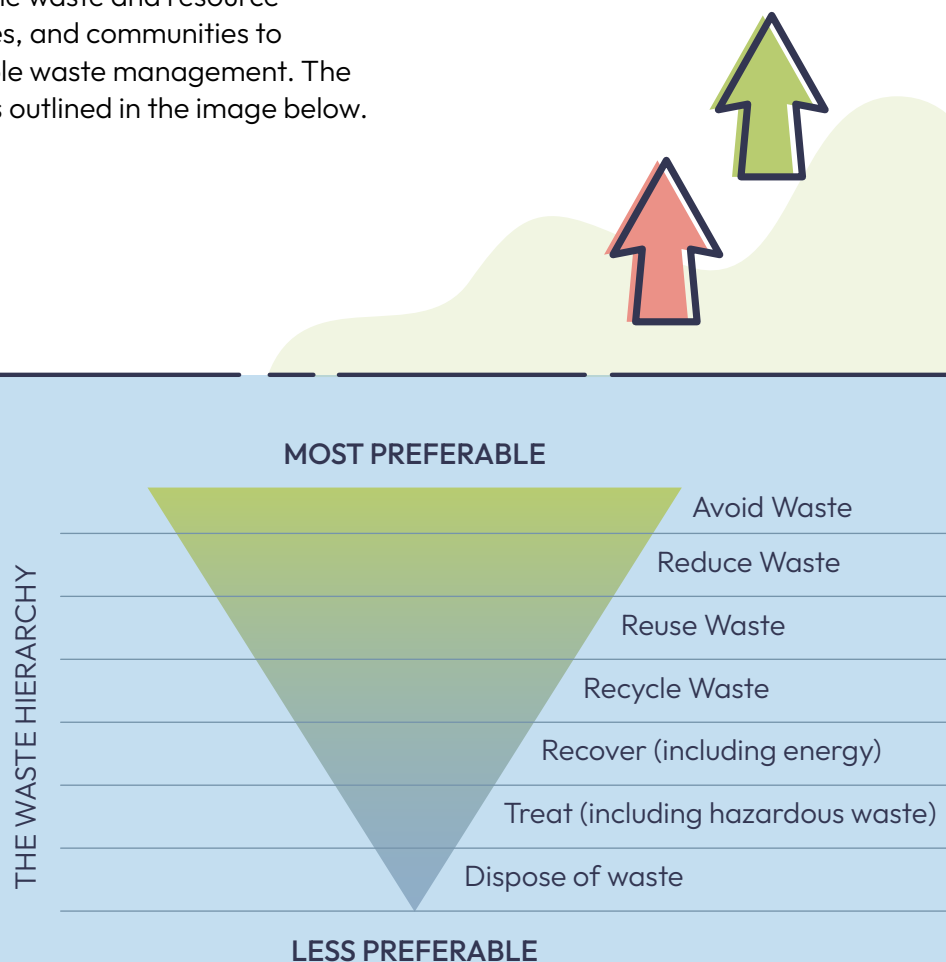
The 2018 National Waste Policy⁹ sets Australia's agenda for waste reduction to 2030 and seeks to:

- Respond to the challenges facing waste management and resource recovery in Australia;
- Reflects the global shift towards a circular economy
- Provides a framework for businesses to embrace innovation and develop technologies that create new opportunities.

The National Waste Policy sets a national framework for action by governments, the business sector, the waste and resource recovery industries, and communities to achieve sustainable waste management. The waste hierarchy is outlined in the image below.

The National Waste Policy Action plan drives implementation of our seven ambitious targets:

- Regulate waste exports
- Reduce the total waste generated by 10% per person by 2030
- Recover 80% of all waste 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
- Provide comprehensive and publicly available data to support better decisions.





8.2 The Northern Territory (NT) Circular Economy Strategy 2022-2027

The Northern Territory (NT) Circular Economy Strategy 2022-2027 is the NT Government’s plan to reduce, reuse and recycle waste into a value resource.

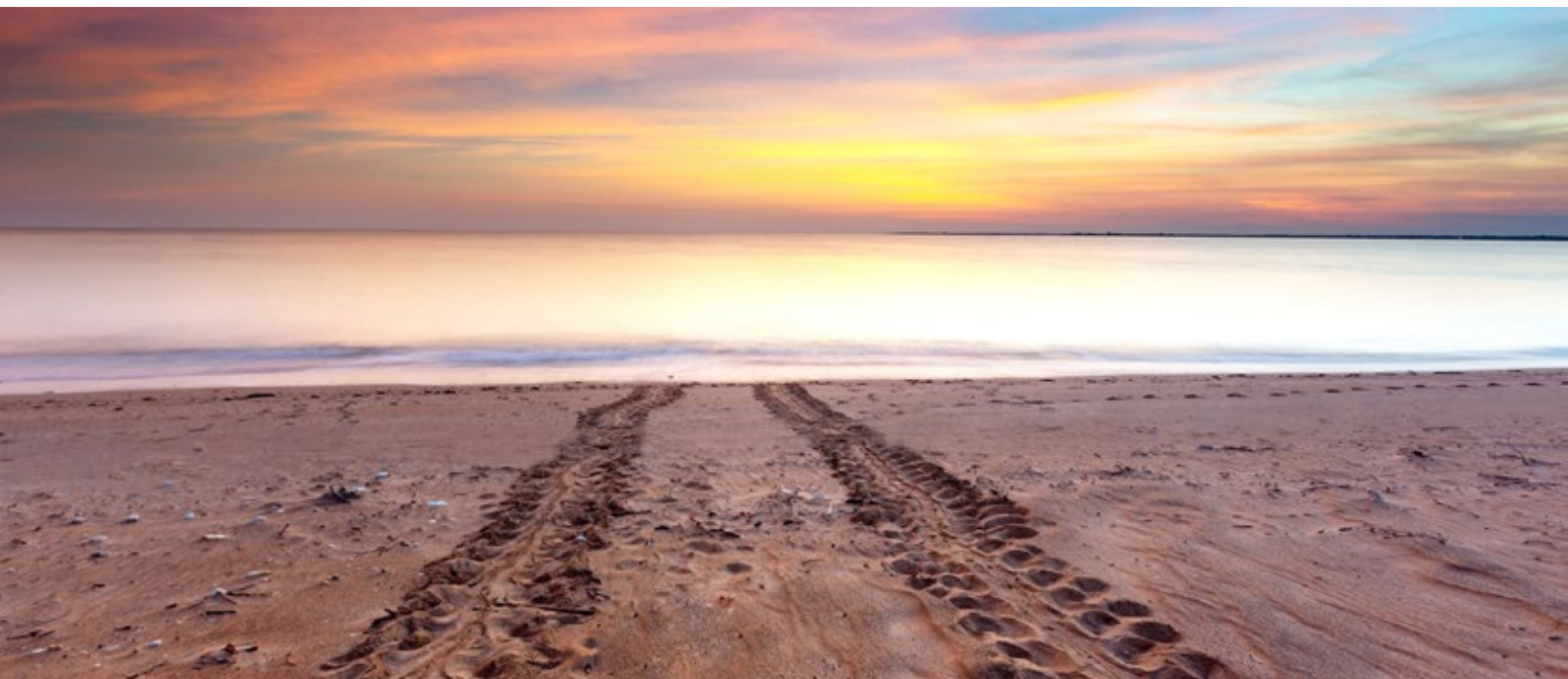
The strategy focuses on 3 key priorities:

- modernising the regulatory framework to protect the environment and create the right regulatory settings for growing the circular economy
- transitioning the Territory to a circular economy
- establishing the waste industry as a contributor to the Territory’s \$40 billion by 2030 vision.

Through enhanced collaboration across government, councils, industry and the community, the strategy aims to:

- encourage investment and business creation in resource, reuse and recycling
- phase out and ban problematic single use plastics by 2025
- encourage innovation and adoption of resource recovery and recycling technology through partnerships and collaborations with research institutions and industry
- strengthen the NT’s procurement framework to incentivise use of recycled materials in government funded projects and investigate achievable and cost effective targets for use of recycled content in building and civil construction.

The NTG Strategy acknowledges that *“its success (the strategy) depends on a coordinated, collaborative and innovative approach across all tiers of government”* and this highlighted the importance of a coordinated approach to waste management between councils and the Northern Territory Government.





A Circular Economy for Wagait and Belyuen

In the context of the Wagait and Belyuen Waste strategy the concept of the circular economy as it relates to waste is a key element. The concept of a circular economy is about changing behaviours toward waste generation, and to reduce our environmental impact. By maximising resource utility and incorporating the concept of circularity during production and consumption (i.e. not just focused on waste management), the circular economy boosts entire economies¹⁰. The concept is underpinned by an economic theory that keeps waste materials at their highest value in the economy for as long as possible.

The overarching principles underpinning waste management in a circular economy are to:

- avoid waste
- improve resource recovery
- increase use of recycled material and build demand and markets for recycled products
- better manage material flows to benefit human health, the environment and the economy

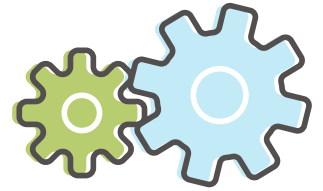
- improve information to support innovation, guide investment and enable informed consumer decisions.

The transition to a Circular Economy is a long-term initiative and concept and applicable to waste management from small communities like Wagait and Belyuen to regional and state-wide applications.

As relatively small and engaged communities, Wagait and Belyuen Councils have the opportunity to investigate and improve the existing waste management through various initiatives that promote the circular economy for waste management in the community.



9. Vision and Key Principles



Based on various inputs including stakeholder engagement, a review of policy and various strategies, the vision for Waste Management in the Wagait Shire Council and Belyuen Community Government Council is:

“To avoid waste creation by reducing, reusing and recycling waste streams”

9.1 Key principles

Achieving the vision of reducing waste creation is set by the following key principles:

- Reducing waste
- Reusing waste
- Recycling waste; and
- An improved Transfer Station, Recycling and Recovery Centre

9.1.1 Reduce waste

Reducing is simply creating less waste. It's the primary underpinning method for reducing costs and environmental impacts on the community from waste. By reducing waste generated, the waste problem is stopped at the source. For the Wagait Shire Council and Belyuen Community Government Council, reducing waste presents as the most effective waste management principle of the strategy.

9.1.2 Reuse waste

Reusing is taking old or unwanted items you might otherwise throw away and finding a new use for them. Reuse means using a product more than once, either for the same purpose or for a different purpose. Reusing waste is preferable to recycling because the item does not need to be re-processed before it can be used again which costs which reduces cost and environmental impact.

9.1.3 Recycle Waste

Recycling is an effective way to manage waste materials once they have been generated if they can't be reused. It prevents waste from being sent to landfill and makes waste into new goods or products. Effective recycling requires us to separate waste according to different materials so that they can be recycled efficiently.

9.1.4 An improved Transfer Station, Recycling and Recovery Centre

A key finding of research and engagement is the need for an improved Transfer Station, Recycling and Recovery Centre to service the communities. This is coupled with the largest challenge for the locality, being the distance to the regional Shoal Bay waste management facility some 130km away by road transport.

“A facility that embraces the waste management strategy vision will actively minimise waste transportation costs and impacts on the environment.”

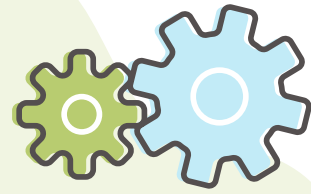
An improved Transfer Station, Recycling and Recovery Centre serves as a key enabler to achieving both the vision for the strategy and ensuring the community is adequately serviced into the future, and can achieve initiatives that are founded on the identified key principals. A facility that embraces the waste management strategy vision will actively minimise waste transportation costs and impacts on the environment.

As evident by the existing hard waste facility, the opportunity to recycle and recover is well received by the community and there is community demand for this service to develop and diversify into more of a local second-hand exchange point, with work-space for fixing, repurposing and upcycling items for re-sale, as well as a community education centre and collection point for waste stewardship programs, including e-waste.

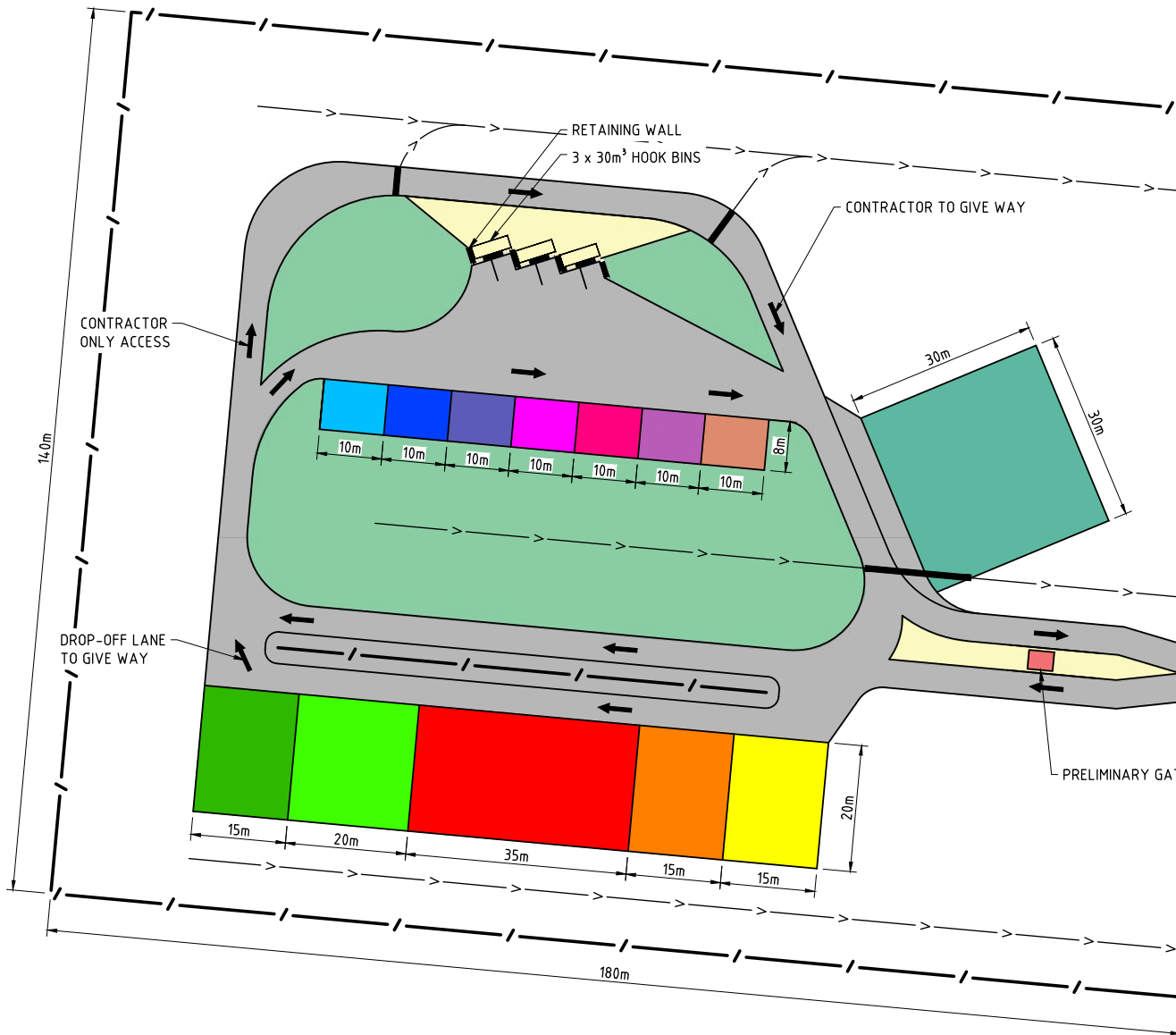
Facility Design Considerations

To enable its function as Transfer Station, Recycling and Recovery Centre and service the Wagait and Belyuen Communities, a facility should consider and incorporate the following:

- A suitable site to manage the hard waste generated of up to 700 residents (approx. 300 households).
- Flexibility to incorporate other waste streams from external sources including
 - Commercial Waste from supermarket and Country Club;
 - Potential general waste from Mandorah ferry development, Core lithium and possible tourist developments.
- Area to allow for the following waste and recycling inputs:
 - Heavy waste such as car bodies
 - Recyclables such as bottles and cans
 - Tyres
 - Waste oil
 - Gas bottles and fire extinguishers
 - Paints and chemicals
 - Batteries
 - White goods and scrap metal
 - Household waste and bio-bin location
- An area for re-using, recycling and buyback products
- An area designated to house a bio bin tiral
- An area for green waste collection and mulch production
- Can collection opportunities (permanent and/or on occurrence)
- Site security fencing
- Facility signage and operation details at entrance















Facility Design Layout Concept



PRELIMINARY

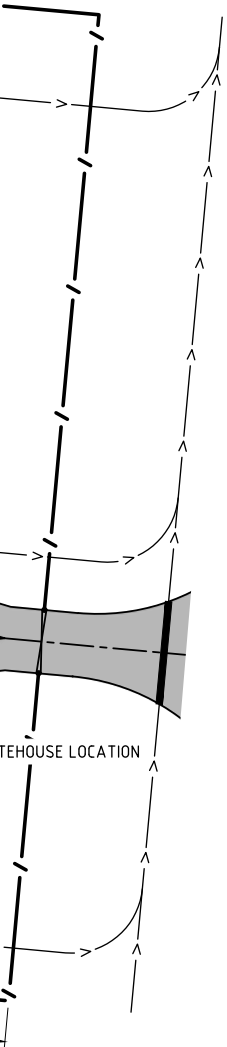
NOT FOR CONSTRUCTION

LEGEND

	PROPOSED ROAD NETWORK (5000m ² SHOWN)
	PROPOSED CONCRETE PAVEMENT (450m ² SHOWN)
	PROPOSED OPEN / LANDSCAPED SPACE (3600m ² SHOWN)
	PROPOSED GATEHOUSE HUT
	PROPOSED TIRES / WASTE OIL
	PROPOSED SCRAP METAL
	PROPOSED HEAVY WASTE
	PROPOSED GREEN WASTE/MULCH PRODUCTION
	PROPOSED GREEN WASTE PICKUP/SALES
	PROPOSED WHITE GOODS
	PROPOSED GAS BOTTLES / FIRE EXTINGUISHERS
	PROPOSED BATTERIES / PAINTS / CHEMICALS
	PROPOSED RECYCLABLES
	PROPOSED BIO-BIN LOCATION
	PROPOSED HOUSEHOLD WASTE
	PROPOSED CAN COLLECTION AREA
	PROPOSED SECOND HAND SHOP
	PROPOSED DIRECTION OF TRAFFIC
	PROPOSED RETAINING WALL EXTENTS
	PROPOSED DIRECTION SWALES/DRAINS
	PROPOSED CULVERT UNDER PAVEMENT
	PROPOSED FENCED AREA

NOTES

1. SCALE. THE WASTE TRANSFER FACILITY IS A SMALL SCALE WITH AN APPROXIMATE THROUGHPUT OF 500 TONNES/YEAR WITH GROWTH UP TO 2000 TONNES/YEAR.
2. DRAINAGE. OPEN UNLINED DRAINS AROUND THE FACILITY AND CULVERTS AT THE ACCESS.
3. ROADS. TWO COAT SEAL FOR ALL ROADS AND HARD STANDS.
4. WATER. SERVICES FOR WATER THROUGHOUT SITE.
5. WASTE WATER. ON-SITE SEPTIC AND TOILETS.
6. ELECTRICAL. POWER TO GATEHOUSE.
7. LIGHTING. GATEHOUSE LIGHTING ONLY.
8. COMMUNICATIONS. FIBRE TO GATEHOUSE AND CCTV CAMERAS AT GATEHOUSE.
9. STRUCTURES. SHELTER/ROOF OVER GATEHOUSE AND RETAINING WALL FOR GENERAL WASTE.
10. LANDSCAPING. DRY LAND GRASSING. NO IRRIGATION. GATE PRIOR TO GATEHOUSE. FENCE AROUND SITE.





Facility Location Considerations

Ideally, a transfer station should be sited as close as possible to the centroid of the population served, in order to minimize user travel and maximize convenience. This is essential to ensuring high levels of patronage and viability of a facility. In the case of the Wagait and Belyuen Councils, a key stakeholder feedback theme was convenience with suggestions that a facility should not be too isolated from the Wagait Shire community (within a 5-10 min drive was suggested) but being offset and setback to avoid any potential amenity impacts. It was also noted that the Mandorah ferry service often brought residents of Belyuen through Wagait Shire, and therefore a facility on the main route would be convenient for both the majority of users in Wagait, but still maintain convenience for Belyuen residents.

Other considerations include:

- The location of a facility should be located along a major transport route and have ease of access for users. Roads to a transfer station site and within the site should be designed to provide all-season, all-weather access. **A location within 1km of Cox peninsula road or Charles Point Road (sealed) is preferred.**
- A future facility should consider the NT EPA - Guideline: Recommended Land Use Separation Distances¹¹ for waste facilities whereby, **the location of a facility which will include hard waste must be a minimum of 500m separation from existing residential and developed areas.**
- Sufficient area should be provided for existing needs and buffers, but also for potential future expansion. A land area for the facility based on its proposal layout should be no less than 2.5 HA in area.

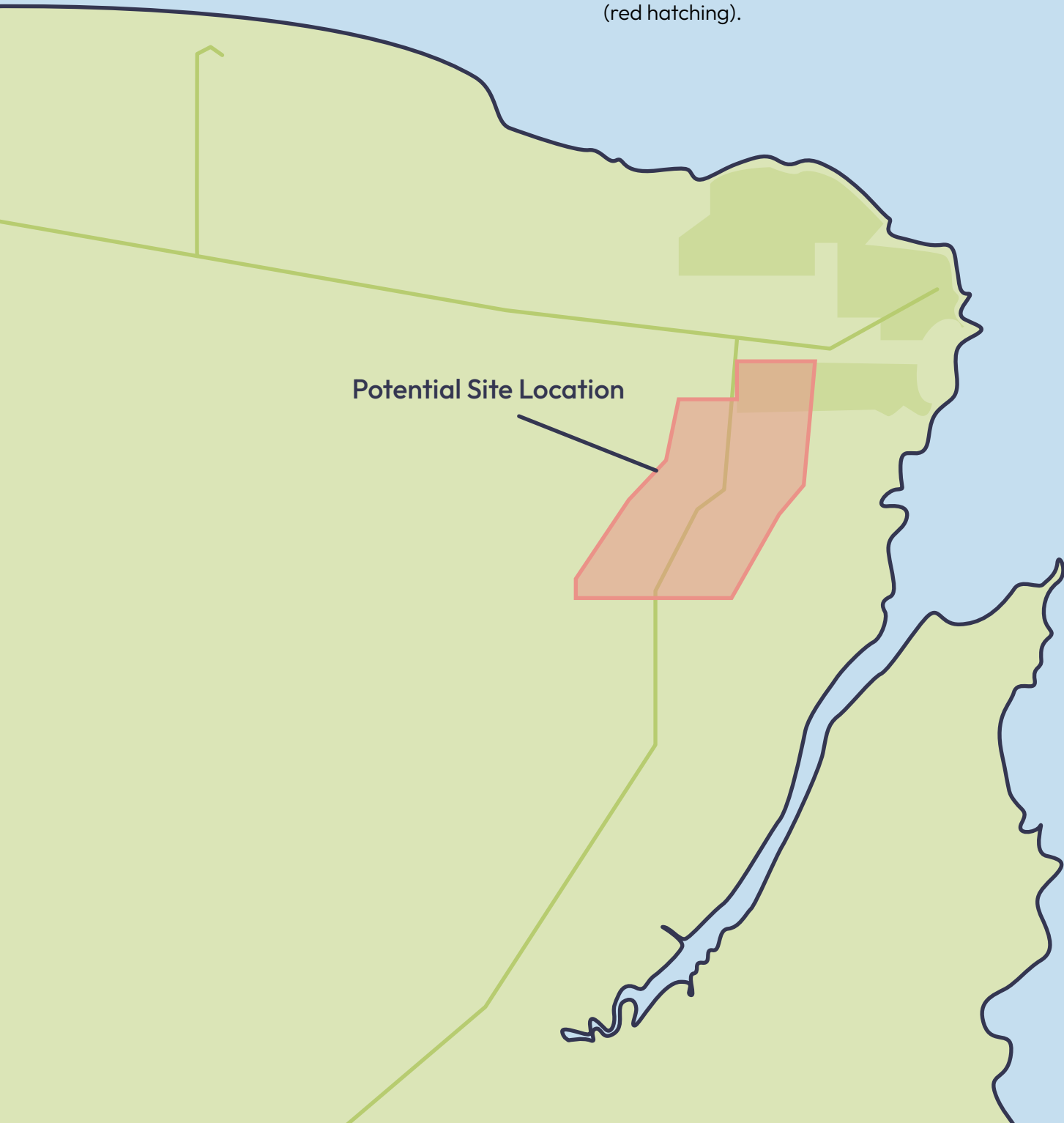
Facility Land Tenure

Various land tenure exists on the peninsula including freehold, vacant (Future Kenbi Freehold Land), Crownland, Aboriginal Land. As part of the Kenbi Land Claim, part of the land in the Wagait area will be granted as freehold title to the Larrakia Development Corporation. All the other land under claim will be granted as Aboriginal Land under the Aboriginal Land Rights Act. Effectively this means that all future land development on Kenbi land will need to be negotiated with the Northern Land Council. With consideration to the above, stakeholder feedback with the Northern Land Council revealed no interested from the Land Council in locating a facility on Kenbi land. Given the complexity that tenure resolution will involve, and based on stakeholder feedback and willingness and interest in facilitating the project, it is recommended the facility be located on Freehold land. This does not prevent the Wagait and Belyuen Councils from extending an EOI across all tenures to progress the project, but **for the purpose of securing a location in a timely and cost-effective manner, freehold tenure for the site should be pursued for a site location.**



Facility Shortlisted Preferred Locations

Based on the below location and land tenure considerations the following map identifies possible suitable site locations for a facility (red hatching).





Capital Expenditure QS Cost Estimate Summary

Item	Estimate \$
Construction Cost	3,767,00
Consultant and Authority Fees	264,000
Project Contingency	404,000
NT Built Levy	5,000
Total Project Cost (excluding GST)	4,440,000

Estimate Inclusions

- 10 x 10m Second hand shop building comprising 70m² open roof only building and 30m² enclosed building
- For toilet, kitchen, and office
- All pavements to be 2 coat bitumen aggregate seal or concrete as drawn
- Design development contingency 10%
- Escalation in costs to a construction start within 12 months of the date of this estimate
- Consultant and authority fees
- Project contingency 10%
- NT Build levy

Estimate Exclusions

- Asbestos or contamination removal
- Rock excavation
- FF&E to buildings
- Mains services upgrades
- Solar power system
- Emergency power generator
- Green waste mulch production buildings, plant, and equipment
- Roadworks upgrades
- Escalation in costs to a construction start beyond 12 months of the date of this estimate
- GST

NOTE: Complete Capex QS Cost Estimate is a reference document to this strategy



Operational Expenditure QS Cost Estimate Summary (First Year Base)

Item	Estimate \$
Routine Cleaning	58,500
Routine Landscaping	21,108
Routine Repairs & Maintenance	24,485
Periodic Asset Replacements & Refurbishments	Excl
Insurances	26,440
Utilities	12,400
Plant & Equipment	118,080
Staff (operational, management and administration)	420,000
Pick-up, Transport and Disposal Fees for Waste Exiting the Facility	72,828
Contingency	75,384
Escalation to Year 1 of Operations (within 18 months of the date of this estimate)	7,775
Total Project Cost (excluding GST)	837,000

This estimate is based on the following documents:

- Byrne preliminary concept site plan titled 'Wagait Shire Council Waste Facility', NT22043, SK001/B, 1 sheet, dated 11/8/22
- Estimated of total shire waste generation via B. Shand email 26/8/22

This estimate is a budget order of cost estimate of expected first year annual operational costs based on the above limited documentation only. Reasonable assumptions on the operation requirements of the facility have been made – details of which can be found in the attached estimate.

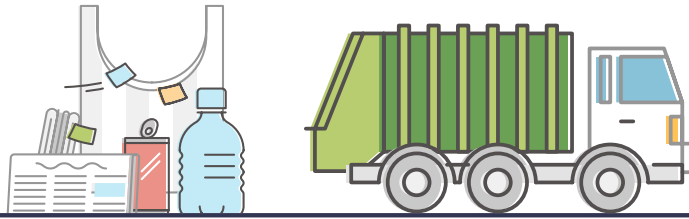
This estimate has assumed competitive market pricing for all components of the facilities operations.

Estimate Inclusions

- Green waste mulch production plant and equipment
- Pick up, transport and disposal fees for waste exiting the facility
- Contingency 10%
- Escalation in costs to year 1 operations commencing within 18 months of the date of this estimate

Estimate Exclusions

- Periodic asset replacements & refurbishments
- GST



Other Considerations for a Facility

Required Development Approvals

In terms of planning requirements for a Waste Transfer Station, NTG Development Assessment Services advised that this Land Use will be defined as **'Industry-General'**, and therefore an **Exceptional Development Permit** (dependent on the zone of the site) or a **Rezoning application** would be required.

Required Waste Licenses/ Approvals

Required licenses and permits for a future waste management facility will largely depend on the nature of the facility and waste it will manage. The operation of Transfer Facility will require an **Environment Protection License/Approval (EPA/EPL) under the Waste Management and Pollution Control (WMPC) Act 1998**. Relevant activities for a waste transfer station will be associated with Listed Waste collection, transporting, storing, or re-cycling. An EPA is granted for works associated with the construction phase of these activities and an EPL is granted for the operational phase of these activities. Should it be determined that a future facility will handle listed waste (typically - waste 'oils'; 'acidic solutions or acids in solid form' and 'lead, lead compounds' in the form of used lead-acid batteries; and tyres) then a construction approval and operating license may apply to the proposed activity.

Potential Interim Improved Recycling Facilities ('Re-Discovery Centre')

It has been highlighted in this strategy and from stakeholder engagement that an improved Transfer Station, Recycling and Recovery Centre is preferred and should be the medium to long term goal of both Councils. However, this will be subject to further investigation and ultimately funding assistance. Whilst a new facility in its entirety may not be able to be implemented initially in the short term due to costings, there remains potential for an interim opportunity to relocate the recycling component of the existing hard waste on to an interim site in the short term.

Under council advice and decision, this has been identified to potentially occur on the un-used, secure, Caretaker compound at Cloppenburg Park. The site contains a structure which has a solid roof and access to power and water. The compound has not been used for





more than 18 months and could be revitalised into a fit-for-purpose ‘Re-Discovery Centre’.

This is consistent with the priorities of 1.1 Maintenance and Upgrade of Parks in the Wagait Shire Council 2021–22 Shire Plan (page 11).

A potential Re-Discovery Centre would provide the community with:

- Opportunities for local employment and ‘men’s shed’ type activities
- An alternative hub for trading, markets and other community activities
- A drop-off centre for recycling and e-waste
- A workshop for providing local environmental solutions
- A meeting and learning place to build awareness about recycling and waste-stewardship
- Self-esteem and community pride associated with participation in the value-chain

Modifications to increase capacity and versatility of the site include:

- Seeking appropriate approvals from NTG EPL (Transport) and EPA and Development Assessment
- A concrete slab under the existing roof structure (approx 13mx10m)
- Steel screens attached to the sides of the structure, laser cut with local design for airflow
- Roller door shutters for wet season protection
- Industrial fans and fluorescent lights
- An entry ramp at the front of the structure to allow easy access for unloading

*Artists Impression of ‘Re-Discovery Centre’
concept: Credit TROPPO Architects*



10. Waste Management Initiatives








Based on the vision and key principals of the Waste strategy, the following waste management initiatives are proposed:

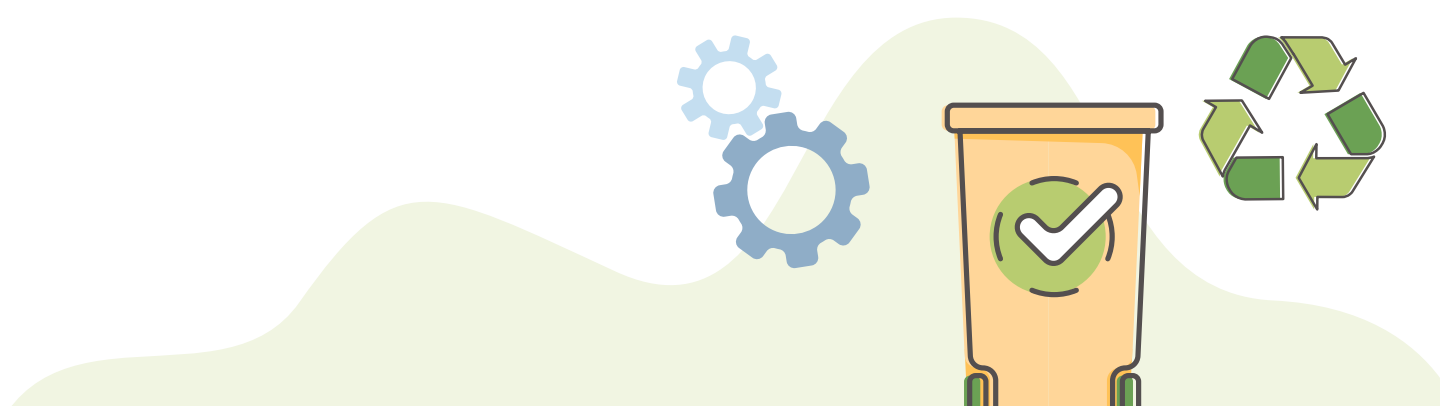
Initiative 1: Waste and Recycling Education and Service Improvements

Best practice waste management encourages Councils to actively review and improve kerbside bin services to better match services to household sizes and needs and improve opportunities for recycling and waste reduction.

Education initiatives remain the key tool for changing behaviour and improving the effectiveness for waste and recycling programs, including avoiding and reducing waste and increasing household recycling. Education and effective engagement serve as the best tool for Councils to understand improved waste management practices and review and update policies/procedures to drive behaviour change.

As relatively small and engaged communities, Wagait and Belyuen Councils have the opportunity to investigate and improve the existing waste and kerbside collection behaviour and services through education and engagement initiatives.

	Reduce	Reuse	Recycle	Transfer Station, Recycling and Recovery Centre
1.1 Tailored waste education program to be delivered in Wagait and Belyuen communities and schools				
1.2 Wagait and Belyuen Community kerbside improvement survey				





Initiative 2: Pilot programs and trial initiatives

As an outcome of stakeholder engagement completed as part of this strategy, a number of reoccurring suggestions emerged for possible waste related initiatives applicable to the Wagait and Belyuen Councils. The concept of pilot programs or trials are demonstrated to broaden understanding of the generation, collection of usage of waste and ultimately, divert resources from landfill. In addition to learning more about the types of items put out for collection or disposal, pilot programs can assist the Councils to determine their suitability at a broader scale and allow education programs to consider findings. Securing opportunities for grant funding and private sector sponsorship can enable the enactment of pilot programs at limited cost to the Councils.

A Bio Bin is a compost bin that manages organic waste, including food. The Bio bin concept seeks to safely remove hazardous and odorous elements from organic waste material, whilst recycling the waste into a safe, environmentally friendly and rich organic compost / fertiliser. Home composting also presents as an effective way to reduce households' food waste going to landfill. Nearly half (47%)¹² of all waste from households is organic waste and eligible for home composting. Composting keeps these materials out of landfill – which is better for the environment, your garden and the dump site.

As per the decision of Wagait Council, an opportunity exists to deliver an 'Re-Discovery Centre' trial (recycling centre) at the former caretake compound at Cloppenburg Park. Feedback from residents has also suggested the need for a green waste mulch trial to reuse green waste for use in the community. The delivery of these initiatives and collection of data and utilisation serves as key inputs to the future of a new Transfer Station, Recycling and Recovery Centre.

	Reduce	Reuse	Recycle	Transfer Station, Recycling and Recovery Centre
2.1 Bio Bin trial/home compost trial				
2.2 Interim 'Re-Discovery Centre' trial				
2.3 Green waste mulch trial				



Initiative 3: Transfer Station, Recycling and Recovery Centre

An improved Transfer Station, Recycling and Recovery Centre is a crucial part of the journey of waste management in the community and key to achieving the vision of the Wagait and Belyuen Council Waste Management Strategy.



A suitable and effective Transfer Station, Recycling and Recovery Centre will allow an opportunity to sort and screen waste before landfill and will be critical to increasing the amount of waste recycled, reducing transportation costs of waste to the regional Shoal Bay landfill and ultimately minimise the impact on the environment.

	Reduce	Reuse	Recycle	Transfer Station, Recycling and Recovery Centre
3.1 EOI program for establishment and operation of transfer and recycling centre				
3.2 Identification of preferred site				
3.3 Prepare business case and funding pathway				
3.4 Establishment of Transfer Station and Recycling Centre				

11. Strategy Outcomes and Actions

To achieve the vision and initiatives of the Strategy the following outcomes and actions are proposed. It is noted that capital and operations costs are indicative for budgetary purposes unless specified otherwise.

Initiative 1: Waste and Recycling Education and Service Improvements

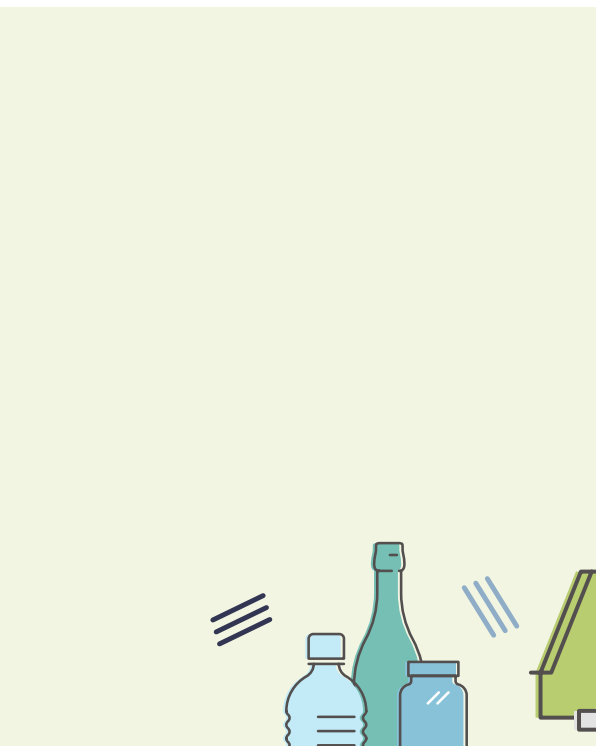
	Short Term (0-3 years)	Medium Term (4-6 Years)	Long Term (7-10 Years+)
1.1 Tailored waste education program to be delivered in Wagait and Belyuen communities and schools			
OUTCOME			
Avoid and reduce household waste into kerbside bins and reduce waste generation			
ACTIONS			
1.1.1 Commission audits to understand bin composition (weight and percentages) to undertaken kerbside collection waste and opportunities to avoid unnecessary waste and identify recycling / innovative use opportunities.			
1.1.2 Identify potential collaboration/private partnership/funding opportunities to deliver initiative.			
1.1.3 Based on audit outcomes, engage expertise to develop education programs to improve public awareness and understanding of waste and recycling improvement opportunities.			
1.1.4 Deliver education program bi-annually in the community and schools (Wagait and Belyuen)			
CAPITAL COST CONSIDERATION:	NIL	NIL	
ANNUAL OPERATIONAL COST CONSIDERATION:	\$5,000 (audits)	\$5,000 (audits)	
	\$5,000 (Education material and programs)	\$5,000 (Education material and programs)	





Wagait Shire Council participates annually in programs such as **Plastic Free July** and the **Darwin Harbour Clean-up**



	Short Term (0–3 years)	Medium Term (4–6 Years)	Long Term (7–10 Years+)
1.2 Investigate and improve Wagait and Belyuen Community kerbside collection service			
OUTCOME			
Better understand community expectations for service level for kerbside collection.			
ACTIONS			
1.2.1 Prepare and enact community survey for ideas and considerations for kerbside collection – ie: frequency, day, bin size etc.			
1.2.2 Based on feedback, Council consideration of changes to services levels (if required).			
1.2.3 Implement changes to kerbside collection post Council decision.			
1.2.4 Review service levels bi-annually			
CAPITAL COST CONSIDERATION:	NIL	NIL	
ANNUAL OPERATIONAL COST CONSIDERATION:	\$2,000 (Survey)	\$2,000 (Survey)	



Initiative 2: Pilot programs and trial initiatives

	Short Term (0–3 years)	Medium Term (4–6 Years)	Long Term (7–10 Years+)
2.1 Bio Bin trial/home compost trial			
OUTCOME			
Reduce food waste products going into kerbside bins, associated transport costs and landfill waste to promote compost creation and reuse.			
ACTIONS			
2.1.1 Prepare an EOI for a Bio Bin trial to establish costs and service available.			
2.1.2 Seek grant funding and sponsorship (if Req) to enact trial.			
2.1.3 Monitor and collect data on trial and user survey			
2.1.4 Review program and consider permanent establishment			
CAPITAL COST CONSIDERATION:	\$5,000 (EOI preparation)	NIL	
ANNUAL OPERATIONAL COST CONSIDERATION:	NIL	NIL	





	Short Term (0–3 years)	Medium Term (4–6 Years)	Long Term (7–10 Years+)
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2.2 Interim ‘Re-Discovery Centre’ trial



OUTCOME

Deliver an interim ‘Re-Discovery Centre’ trial at the former caretake compound at Cloppenburg Park.

ACTIONS


- 2.2.1 Investigate requirements and seek approvals (if required) for interim site utilisation.
- 2.2.2 Deliver works at site to enable use to occur.
- 2.2.3 Prepare operational plan to enable interim ‘Re-Discovery Centre’ trial to occur with utilisation monitoring, data capture and seek community feedback on trial

CAPITAL COST CONSIDERATION:	\$75,000*
ANNUAL OPERATIONAL COST CONSIDERATION:	NIL (in house)

*Based on WSC Meeting 20211116 resolution

Artists Impression of ‘Re-Discovery Centre’ concept: Credit TROPPO Architects



	Short Term (0–3 years)	Medium Term (4–6 Years)	Long Term (7–10 Years+)
2.3 Green waste mulch trial			
OUTCOME			
Undertake a green waste mulch trial to reuse green waste for use in the community.			
ACTIONS			
2.3.1 Seek approvals for interim site utilisation (if required).			
2.3.2 EOI to contractors to undertake mulch creation from green waste.			
2.3.3 Record utilisation, volumes created and uptake data capture and seek community feedback on trial.			
CAPITAL COST CONSIDERATION:	NIL		
ANNUAL OPERATIONAL COST CONSIDERATION:	\$10,000 (Contractor cost cap for trial)		





Initiative 3: Transfer Station, Recycling and Recovery Centre

	Short Term (0–3 years)	Medium Term (4–6 Years)	Long Term (7–10 Years+)
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3.1 EOI program for establishment and operation of a Transfer Station, Recycling and Recovery Centre



OUTCOME

Prepare a select Expression of Interest for a Transfer Station, Recycling and Recovery Centre.

ACTIONS

- 3.1.1 Prepare an EOI for the establishment of a Transfer Station, Recycling and Recovery Centre for Council endorsement.
- 3.1.2 EOI to seek feedback on tenure and operational considerations for a facility.
- 3.1.3 Issue EOI to shortlisted site representees/landowners.

CAPITAL COST CONSIDERATION: **\$5,000**
(EOI preparation)

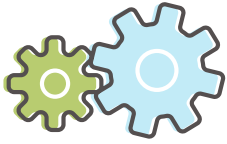
ANNUAL OPERATIONAL COST CONSIDERATION: **NIL**





	Short Term (0-3 years)	Medium Term (4-6 Years)	Long Term (7-10 Years+)
3.2 Identification of preferred site			
OUTCOME			
Identify a preferred site for the Transfer Station, Recycling and Recovery Centre.			
ACTIONS			
3.2.1 Based on an assessment and interview process identify preferred site			
3.2.2 Consider operational options in responses and consider operational options (I.E. Contractor managed or Council managed)			
3.2.3 Secure site via in principle agreement with landowner			
3.2.4 Present operational assessment options to Council for consideration			
CAPITAL COST CONSIDERATION:	NIL	SUBJECT TO LAND PURCHASE OR LEASE	
ANNUAL OPERATIONAL COST CONSIDERATION:	NIL	NIL	





	Short Term (0–3 years)	Medium Term (4–6 Years)	Long Term (7–10 Years+)
3.3 Prepare business case and funding pathway			
OUTCOME			
Confirm funding and management model for facility.			
ACTIONS			
3.3.1 Prepare a detailed business case for facility establishment (detailed capital and operational cost consideration)			
3.3.2 Include funding environment scan assessment (grants, rating, PPP etc)			
3.3.3 Enact funding program			
CAPITAL COST CONSIDERATION:		\$5,000 (Business Case preparation)	
ANNUAL OPERATIONAL COST CONSIDERATION:	NIL	NIL	
	Short Term (0–3 years)	Medium Term (4–6 Years)	Long Term (7–10 Years+)
3.4 Establishment of Transfer Station, Recycling and Recovery Centre			
OUTCOME			
Deliver a Transfer Station, Recycling and Recovery Centre			
ACTIONS			
3.4.1 Upon funding, deliver a Transfer Station, Recycling and Recovery Centre			
3.4.2 Monitor and collect data on trial and user survey			
3.4.3 Review programs and consider annual improvements			
CAPITAL COST CONSIDERATION:	\$4.4M*		
ANNUAL OPERATIONAL COST CONSIDERATION:	\$837,000* (Annual)	\$837,000* (Annual based on first year)	

#refer to reference documents

Reference Documents:

- Waste Management Strategy Stakeholder Engagement Summary Outcomes Report
- QSNT Opex Cost Estimate – Aug 22
- QSNT Capex Cost Estimate – Aug 22

Endnotes

- 1 NT Waste management Strategy
- 2 Australian Bureau of Statistics, Regional Population Growth, Australia (3218.0).
Compiled and presented by .id (informed decisions)
- 3 ABS estimated population statistics
- 4 ABS 2016
- 5 Australian Bureau of Statistics, Regional Population Growth, Australia (3218.0).
Compiled and presented by .id (informed decisions)
- 6 ABS 2016
- 7 Lorraine Williams, Judith Williams, Maureen Ogden, Keith Risk, Anne Risk and Emma Woodward. 2012. Gulumoerrgin Seasons (calendar): Larrakia, Darwin - Northern Territory. CSIRO Ecosystem Sciences, Darwin, NT.
- 8 CoD Waste and Resource Recovery Strategy
- 9 <https://www.awe.gov.au/sites/default/files/documents/national-waste-policy-2018.pdf>
- 10 CSIRO Australia
- 11 NT EPA Guideline: Recommended Land Use Separation Distances - October 2017
- 12 Waste Account, Australia, Experimental Estimates

