



Local Waste management Plan
Woorabinda Aboriginal Shire Council

2023-2028

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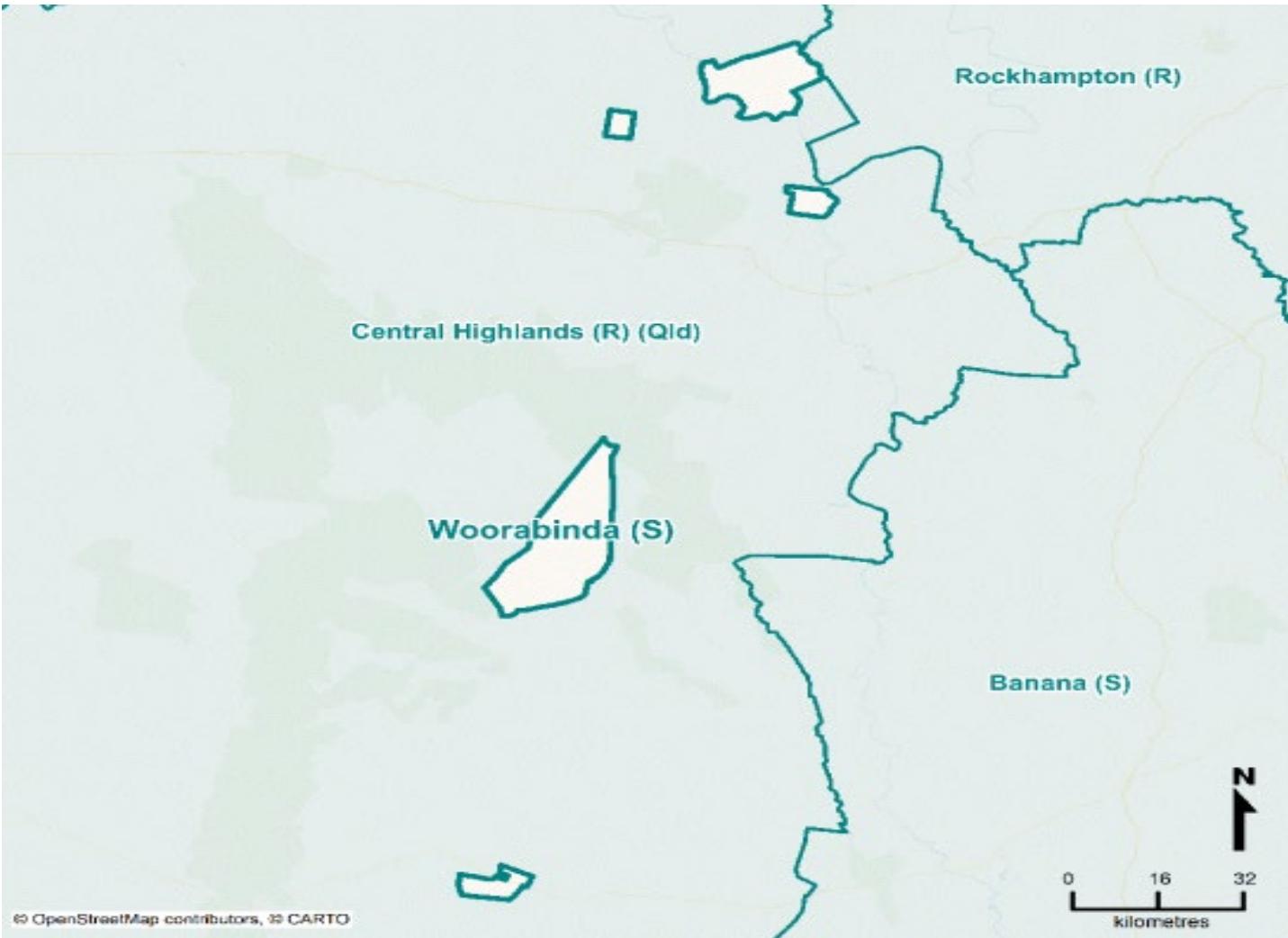
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Executive Summary

Remote and regional councils in Australia are facing major challenges with waste reduction and recycling, with limited resources available to them to participate in recycling. Woorabinda Aboriginal Shire Council is no exception. Woorabinda Aboriginal Shire Council (Council) provides essential waste management services to its community and is seeking to create a more sustainable approach to waste management, with a view to position the Council well for the future.

Council is seeking to develop a Local Waste Management Plan (Plan) focussed on responsible financial management, reducing waste sent to landfill, protecting human health and the environment, promoting community awareness, and improving data management.

The Plan aims to transition Woorabinda towards achieving the principles of a circular economy by reducing waste to landfill and providing long term recycling options. Proposed strategies include:

1. Community engagement and waste and litter education programs
2. Data collection to make better-informed decisions
3. Infrastructure-need analysis
4. Separation of recyclables, promoting composting and green waste reuse
5. Investigating regional approaches for recyclables items,
6. Developing household chemicals storage and treatment disposal plans.

Conducting cost benefit analyses will inform the overall effectiveness of the Plan. The Local Waste Management Plan will be reviewed every five years. Action plans any strategies will be implemented which will be monitored and updated annually. The Plan not only meets Council's legal obligations but also supports the State's waste reduction targets, extends landfill life, reduce costs, manages environmental risks, and contributes to the resource recovery industry that can stimulate economic activity and jobs in the region.

1. Introduction

1.1 What is a Local Waste Management Plan and Why Do We Need One?

Woorabinda Aboriginal Shire Council (Council) is facing major challenges with waste reduction and recycling, with limited resources available to them to participate in recycling. The Council provides essential waste management services to its community and is seeking to create a more sustainable approach to waste management, with a view to position the Council well for the future.

In the 2021-22 financial year, Queensland produced approximately 9.26 million tonnes of waste, with an overall resource recovery rate of 51.5%¹. This is below the national resource recovery performance of 63%². Over the past 5 years, the amount of waste being sent to landfill in Queensland has decreased due to various recycling efforts. However, local governments continue to clean up significant amounts of littered and illegally dumped waste at a cost of over \$34 million in 2021-22.

A Local Waste Management Plan provides a roadmap to guide how Council will manage waste in a cost effective, responsible and sustainable way; while serving the community and meeting its obligations under Queensland's *Waste Reduction and Recycling Act 2011* (the Act).

The Act requires all Queensland local governments to have a waste reduction and recycling plan. This Local Waste Management Plan has been developed by Woorabinda Aboriginal Shire Council (Council) to meet these legislative requirements and demonstrate Council's commitment to delivering environmentally and financially responsible waste management that is fit for purpose for the Council community and region.

In addition to its legal obligations, Council has an important role to play in supporting the State waste reduction targets, by increasing reuse and recycling and thereby reducing the quantity of waste going to landfill. The Queensland Waste Management Strategy provides the following waste reduction targets by 2050:

- 25% reduction in household waste
- 90% of waste is recovered and does not go to landfill
- 75% recycling rates across all waste types (as percentage of total waste generated)

¹ Recycling and Waste in Queensland Report: <https://www.qld.gov.au/environment/circular-economy-waste-reduction/data-reports/recycling-waste#section-keyfindings>

² National Waste Report 2022 <https://www.dcceew.gov.au/sites/default/files/documents/national-waste-report-2022.pdf>

The benefits of developing and adopting a Local Waste Management Plan for the Woorabinda Aboriginal Shire are significant and are likely to include:

- Extending landfill life
- Reducing operational and ongoing management costs
- Effectively managing operational and ongoing risk of environmental impacts and other liability issues and
- Providing a feedstock for the resource recovery industry that could in-turn increase economic activity and jobs in the region.

1.2 Relationships across Strategies/Plan

Diagram ESSP

1.3 Respecting Country - Key Outcomes

Diagram ESSP

1.4 Local Waste Management Plan Themes

Council is seeking to develop a Local Waste Management Plan to improve its waste management practices by reducing cost and limiting environmental impacts. It is not a quick fix, but it is achievable by setting clear goals and targets over an agreed timeframe. The major themes for the Local Waste Management Plan include the following:

- Responsible financial management
- Reducing waste to landfill
- Protecting human health and environment
- Community awareness
- Data management

The above themes have been developed to directly support Council's waste management vision, **Council's corporate plan goals and objectives**, and the Queensland Waste Management and Resource Recovery Local Waste Management Plan.

Theme 1 - Responsible Financial Management

Managing waste is a significant business activity for Council with substantial costs associated with delivering quality services and maintaining essential facilities in the region. Council is committed to ensuring that waste services and facilities are operated efficiently and cost effectively while meeting the needs of the community.

To ensure that reliable and responsible waste management services continue to be provided into the future, Council has assessed likely future needs and is proactively planning for them. Any

decision to change waste services or facilities needs to carefully consider future needs and challenges and accurately assess the benefit and viability of those changes.

Theme 2 - Reducing Waste to Landfill

The benefits of reducing waste to landfill are significant and range from cost savings to Council, through to better environmental outcomes and providing new economic opportunities in recycling and reuse industries.

The waste hierarchy provided in the Queensland Waste management Strategy sets out an order of precedence for managing waste as denoted in Figure 1. This Local Waste Management Plan principally supports the hierarchy through initiatives to help reduce waste, divert waste from landfill and reuse or recycle where possible.

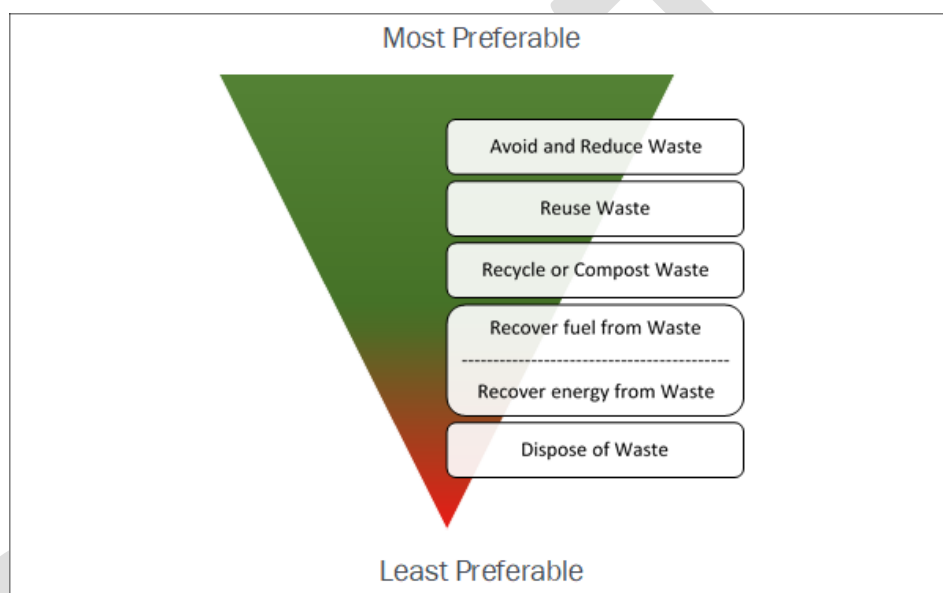


Figure 1 – QLD Waste Local Waste Management Plan: Waste and Resource Management Hierarchy

Theme 3 - Protecting Human Health and Environment

Litter, illegally dumped waste, and waste collected and managed by Council all have the potential to impact on the health of the community and the environment. For this reason, it is essential that waste is managed effectively to minimise the risk to human health and the environment.

Theme 4 - Community Awareness

Community awareness activities play an important role in reducing waste disposed to landfill and in reducing littering and illegal dumping. An informed community can also assist Council to detect dumped waste early before it can cause environmental, public health or amenity issues.

Theme 5 - Data Management

Waste disposal data is essential for Council to assess its performance against the Plan and for future decisions regarding waste services and facilities. For this reason, Council will continually improve the collection and management of waste related data.

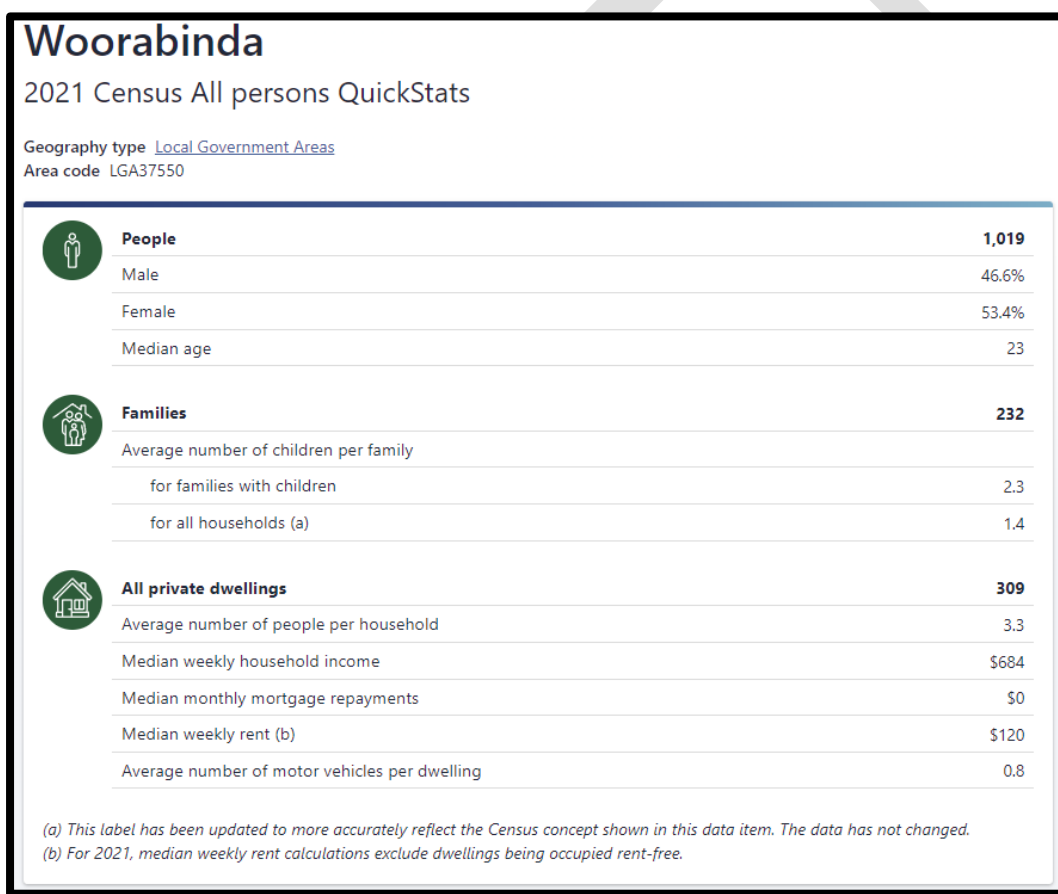
2. Regional Snapshot

Woorabinda Aboriginal Shire Council is situated in Central Queensland, approximately 130km southwest of Rockhampton and 500km north of Brisbane. It is surrounded by the Central Highlands Regional Local Government Area. Woorabinda is situated on the traditional lands of the Wadja and Gungaloo Aboriginal people. Figure X below shows the Woorabinda Local Government Area in proximity to nearby Local Government Areas:

Figure X: Woorabinda Location

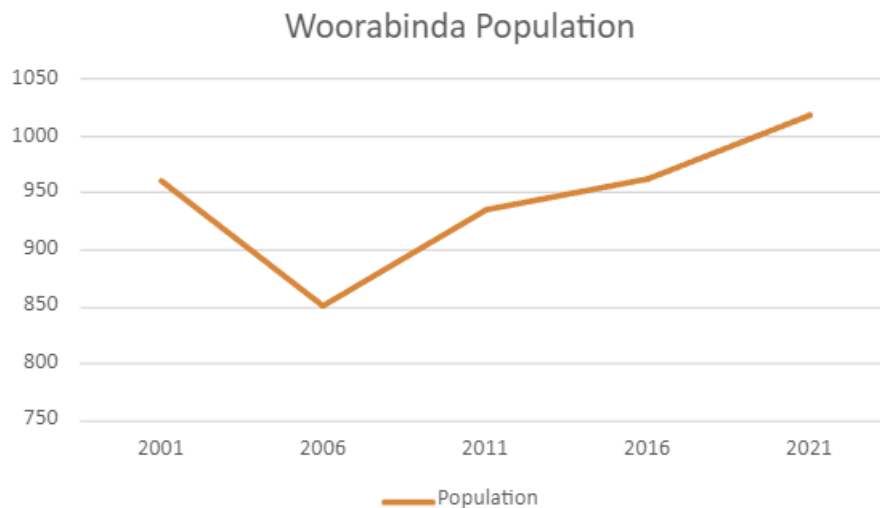
2.1 Population

Figure X shows an overview of statistics for Woorabinda from the 2021 census:



91.6% of people in Woorabinda identify as Aboriginal and/or Torres Strait Islander. Of the reported labour force, 16.5% reported that they worked in Local Government Administration, and 16.5% reported that worked in the Primary Education industry.

Figure X shows Woorabinda's population (sourced from the Australian Bureau of Statistics census) since 2001. Since 2006, Woorabinda has seen a steady increase to its population. In the past 5 years, Woorabinda saw a 6% population growth.



Source: <https://abs.gov.au/census/find-census-data/quickstats/2021/LGA37550>

2.2 Waste Generation

In 2017-18, Aboriginal and Torres Strait Islander Councils produced nearly 23,700 tonnes of waste, average 2.7 tonnes/annum per household with limited recycling. (Respecting Country- April 2021 LGAQ). In 2020-21, Woorabinda Aboriginal Shire Council (DES Annual Survey Data 2020-21) produces nearly 990 tonnes of waste, averaging 2.75 tonnes/annum per household. An estimated 15% of waste generated in Woorabinda is stockpiled for recycling.

The following statistics are derived from the 2020-21 DES Annual survey data;

Table X – Total Waste Generation

Waste Source	Tonnes
Municipal Solid Waste	788
Commercial and Industrial Waste	100 (estimated)
Construction and Demolition Waste	100 (estimated)

Table X – Waste Source Breakdown

Waste Source	Tonnes
General waste collected from households	450
Street and public place bins	65
Domestic Self-Haul	52
Kerbside bulk waste collection	5
Residents drop off green waste	50
Kerbside Pick-Up of green waste	50
Litter removed from waterways	2
Illegally dumped waste	10
Litter collected from council roadside	50
Litter collected from parks and public places	50
Biosolids	4
Total municipal waste collected by council	788
Commercial waste collected by council	100

It is estimated that the management of illegally dumped waste/litter/etc. accounts for 13% of all waste generation in Woorabinda, at an estimated cost of \$63,000 per year.

Table X – Waste Types

Waste Type	Percentage	Tonnes
Paper and Cardboard	10%	88.4
Organic Compostable Waste	45%	397.8
Beverage Containers	5%	44.2
Other Waste	40%	353.6

Table X – Waste Destination

Destination	Percentage	Tonnes
Stockpiled for Recycling	15%	150
Landfill	85%	838

2.3 Waste Management Capital and Operational Expenditure

<<>>

3. Current Waste Management Approach

3.1 Waste Services and Infrastructure

The Woorabinda Aboriginal Shire Council community is currently serviced by landfill and kerbside waste collection services. Despite the challenges of a small population, Council provides weekly household waste collection and an accessible landfill facility to the entire community.

The following provides an overview of the current services, facilities and volumes associated with Council waste operations.

3.1.1 COLLECTIONS

Council provides 240L wheelie bins for mixed general waste collection services in Woorabinda Aboriginal Shire Council region. The collection extends to 5 days a week to every household. There are no recycling collection services. This service is provided to both commercial and residential customers.

3.1.2 WASTE MANAGEMENT FACILITY

Council currently operates one landfill approximately 3.2km southeast of the main town. As shown in Figure X:



FIGURE X: LOCLAITY OF WASTE MANAGEMENT FACILITY

The waste management facility is not manned full time and has no gate house or weighbridge. The fully fenced site is 25ha in area. The current landfill pit is a below-ground disposal facility.

Council has a permit to operate a landfill located at Baralaba Woorabinda Road, Woorabinda. The associated Environmental Authority (EA) is EPPR00700713, which covers the following parcels of land: Lot 135/SP241206 and Lot 139/SP241206. The EA allows up to 2000 tonnes of waste to be landfilled at the landfill facility per year. The site is currently accepting around 990 tonnes of waste per year. An aerial image of the landfill is shown in figure x:



FIGURE X – AERIAL VIEW OF WASTE MANAGEMENT FACILITY

The land parcel has available space for constructing future disposal pits. The below ground capacity for the site is estimated at ----- years. Beyond this, Council will need to consider either disposing waste above ground or extending the footprint of the landfill into land available to the existing site.

All waste collection services and Resource Recovery facilities need to be provided by Council in an environmentally responsible manner and in compliance with their EA conditions and associated legislation. EA Licence conditions and legislation can change over time and could potentially impose increased requirements on resource recovery operation, landfill management, landfill monitoring and the provision of waste collection services. Council will continue to be alert to any changes and respond appropriately to each change.

3.1.3 RECYCLING/RESOURCE RECOVERY

The remoteness of Woorabinda's landfill facility within Queensland has historically meant that recovery of recyclables has been unviable. Consequently, most recyclables are landfilled along with the general waste. Green waste is currently stockpiled and periodically burned at the landfill.

At the Woorabinda landfill facility, the main recyclables currently being separated for recycling are scrap metal, concrete, tyres, car bodies, and green waste. These recyclable items have not been removed from the site for a long time. Figure X shows current recycling stockpiling and disposal practices at the waste management facility.





FIGURE X – CURRENT RECYCLING PRACTICES

3.1.4 REGULATED WASTE

Clinical waste from the health sector is not currently sent to the landfill facility. It is collected by a private contractor for treatment and safe disposal.

There is currently no waste management plan for household chemicals or other limited regulated waste. Council will need to develop and implement a waste management plan for these types of waste.

3.2 Community Gardens

Council currently maintains a community garden in the heart of the Woorabinda Township. Many years ago Woorabinda had a large farm that Aboriginal people had to tend to and sold the produce to non-Indigenous people in Brisbane. The produce won many awards and it is a memory that many of the Elders hold dear.... The community garden was established about a year ago and interest in the community continues to grow. Young children receive a dollar (\$1.00) to bring this kitchen scraps to donate to the compost and there is more interest now in the hospital and other businesses donating their food scraps as well. more info needed here.



FIGURE X – COMMUNITY GARDEN

3.3 Litter and Illegal Dumping

Littering and illegal dumping pollutes our environment and can diminish the use, enjoyment, and value of our public places—potentially making areas appear dirty and uncared for, unpleasant to be in, and less likely to be used and enjoyed. Litter dropped in streets, along the side of the road, or in bushland can be washed or blown into creeks and rivers, polluting land, waterways, and ocean environments. Dumped waste can also be hazardous, cause pest problems and spread weed seeds.

Historically, Woorabinda has experienced few problems with litter or illegal dumping. It is estimated that the management of illegally dumped waste/litter/etc. accounts for 13% of all waste generation in Woorabinda, at an estimated cost of \$63,000 per year.

3.4 Waste Levy

In 2019, Queensland introduced a Waste Levy on all waste generated from levy zones and interstate. The following year, Queensland reported a 20% reduction in overall waste handling. This was partially due to impacts from the Covid pandemic, however waste from interstate sources has been significantly less than in years prior to the Waste Levy.

The levy acts as a price signal to promote waste reduction and discourage disposal as the first option. The waste levy aims to:

- Reduce the amount of waste going to landfill
- Encourage waste avoidance
- Provide a source of funding to enable better resource recovery practices
- Provide certainty and security of feedstocks for advanced technology
- Facilitate industry investment in resource recovery infrastructure.

Although Woorabinda Aboriginal Shire Council is not within the levy zone, it needs to charge the waste levy if it accepts waste that was generated from within the levy zone or interstate.

3.5 Risks Associated with Current Practices

There are a number of risks associated with the current waste management practices that this Local Waste Management Plan aims to address:

- Possible increase in environmental compliance requirements and associated future costs
- No strategy for dealing with household chemicals or limited regulated waste
- Environmental incident – emission, release, fire etc
- Inability to accurately quantify waste data
- Incorrect disposal of regulated wastes
- Public liability - injury
- Lost opportunity to influence behaviour and reduce waste
- Lost landfill airspace
- Future landfill clean up cost
- Increased landfill rehabilitation cost
- Lost employment opportunities

4. Strategic Options for Waste Management into the Future

A range of strategies can be implemented to improve landfill compliance, efficiency, and effectiveness and to reduce the quantity of waste being landfilled.

4.1 Community Engagement and Waste Education Programs

By implementing a community waste education program, Council could reduce the quantity of waste going to landfill and the costs associated with that disposal. Education programs aim to change behaviour by raising awareness of 'why' and 'how' to manage waste better, thereby creating a desire in the community to think about their actions and giving them the practical solutions to implement in their daily lives.

An education program in Council could:

- Increase participation in proposed recycling schemes e.g. Containers for Change, scrap metal recycling, batteries, tip shop.
- Reduce the incorrect disposal of problem wastes such as lead-acid batteries, farm chemical containers and waste oil.

- Reduce contamination of existing recycling streams e.g. incorrect items for the Containers for Change Program.
- Increase revenue from scrap metal collection and recycling.
- Reduce the quantity of garbage placed out for collection or taken to facilities.
- Increase the beneficial reuse of organics by mulching, composting and worm farming.

Simple, low-cost education options include:

- Providing up to date waste and recycling information on Council's website with links to useful websites such as Containers for Change and Planet Ark's website, Recycling Near You.
- Operating a waste-wise information stall at local events.
- Displays and presentations at libraries, schools, or community groups on composting or other waste related topics.

Other considerations:

- Additional cost and operational activities required by Council to implement recycling opportunities and promote them to residents.
- Currently there is no financial incentive (e.g. gate fees) to support behaviour change encouraged by education campaigns
- Community support for the introduction of waste education programs

4.2 Reduce Waste Volumes to Landfill

By reducing the volume of waste going to landfill, Council can slow the rate of filling and consequently reduce the capital costs associated with excavating new landfill cells and their ongoing management. A range of strategies can be implemented to reduce the quantity of waste being landfilled; these are detailed in the following sections.

When considering whether to recover certain recyclables, the net environmental benefit also needs to be considered along with the financial viability of doing so. An assessment such as this would need to be repeated periodically as markets and other conditions change.

4.2.1 INFRASTRUCTURE AND OPERATIONS REVIEW

A review of current practices identified the following items Council could review/implement:

- Design and construct a resource recovery facility incorporating a gate house, security fence and gate including security cameras at the landfill facility.
- Design and construct future landfill cells in compliance with the current legislative requirements.
- Improve the effectiveness of the plant and equipment with the view to improve resource recovery, landfill management and compliance.
- Improve the supervision of the landfill to reduce illegal waste disposal from neighbouring council area and to improve landfill compliance
- Clean up the legacy waste collected at the landfill and around the community, such as concrete, scrap metal, etc.
- Develop and implement Environmental Management Plan and Site Management Plan for the landfill facility.

- Investigate procurement, training and operation of new plant equipment required for landfill clean up, and long term viability and sustainability of the landfill and waste management services.
- Investigate household hazardous waste storage shed for safe storage and disposal
- Assess kerbside waste collection vehicle with a view to improve efficiency and effectiveness of kerbside collection services.
- Undertake an audit of the landfill facility to ensure compliance with the Environmental Authority conditions.
- Promote and expand community garden including the use of locally generated mulch and compost

4.2.2 WASTE SEPARATION AT THE RESOURCE RECOVERY FACILITY (LANDFILL)

Separate recycling collection points could be provided at the resource recovery facility where it is feasible to do so. Items that could be considered include green waste, paper/cardboard, scrap metal, concrete, wet concrete, timber, other items suitable for a tip shop.

Council-collected green waste and source separated self-haul green waste could be stockpiled separately and mulched for use in community gardens and/or parks and gardens. This would allow for clean untainted mulch product on community garden and Council plantings. Partial or complete composting of mulch could be considered to reduce weeds and pathogen risk.

Improved monitoring and control of green waste stockpile to allow the mulching and beneficial reuse of organic matter (and compliance with environmental licence).

Considerations

- Haulage costs of moving recyclables from the Woorabinda region to material processors such as cardboard baler could be considerable and make this option financially unviable.
- Risks associated with contamination of mulch i.e. weeds, pests, chemicals, and dangerous objects.
- Likely to be considerable contamination of recyclables at unsupervised site.
- Community consultation would need to be conducted to gauge the community's desire for source separated recycling
- Could motivate behaviour change around waste generation and recycling
- Increased community education required to ensure adoption and correct use of separate collection points.
- Additional collection/storage points and signage required.
- Initial and ongoing community education would be required to ensure the adoption and correct separation of recyclables.

4.2.3 CONTAINERS FOR CHANGE

Queensland's container refund scheme, Containers for Change, gives people an incentive to collect and return containers for recycling, in exchange for a 10-cent refund payment.

The scheme helps to:

- reduce the amount of drink containers that are littered

-
- increase Queensland's recycling rate.

It also provides benefits to social enterprises and communities across the state by creating new job, recycling and fundraising opportunities. Council is considering setting up a Containers for Change beverage container refund point at a convenient location to the community.

This would produce a fantastic result for recycling and would return considerable amount back to the local community. The benefits to Council and the community by supporting this scheme further include fewer containers to landfill, the cost of landfilling will reduce correspondingly, and more money will be returned to the community through the refund scheme.

Signage and community education would be required to ensure community adoption and only eligible containers are placed in bins.

4.2.4 TIP SHOP

Tip shops sell quality used, recycled and second-hand products salvaged from waste management facilities. The proceeds from tip shops are usually returned to the community or in some cases a local not-for-profit operates the facility for Council, with proceeds being used by the charity to provide services in the community. A tip shop at Woorabinda Waste Management Facility, or other suitable location, could reduce waste disposed to landfill, encourage a culture of reuse and recycling, and provide financial benefits to the local community.

Considerations

- Public liability risk associated with selling faulty items
- Risk of theft of tip shop items or cash
- Costs associated with repair, and the tidy presentation of items
- Cost associated with providing facilities to house a tip shop
- Community acceptance and support for tip shop
- Community awareness of tip shop required
- Contractual arrangements with charity need to be clear with suitable KPIs and accountability

4.3 Green Waste Reuse

Green waste generates greenhouse gasses when it is disposed of in a landfill or burnt. Opportunities exist for Council to better manage this waste so it can be used as a resource that will benefit the community. The most common way to manage green waste is to mulch or compost it. The mulch or compost can then be sold, given away to residents, or used on Council plantings and community garden. To do this safely and to produce a quality product, Council would need to prevent contamination of the collected green waste. This could be achieved through a range of methods such as:

- Collecting clean green waste generated by Council or local contractors separately and mulching this periodically.

-
- Council purchasing a mulcher and using it to immediately mulch pruning during council maintenance of parks etc. This mulch can be used on Council plantings to reduce the quantity of mulch currently being purchased for this purpose.
 - Periodically running kerbside green waste collections that are immediately mulched as mentioned above.
 - Increasing supervision of green waste disposal at Woorabinda Management Facility to allow mulching or processing into partly composted product.
 - Collecting clean green waste separately to allow for mulching and reuse on Council plantings.

4.3.1 COMMUNITY GARDENS

Community Gardens provide a range of social, health, environmental, and economic benefits to individuals and communities, making them valuable assets for promoting sustainable and resilient communities. Some of the key benefits of the community gardens include:

- Beneficial use of locally generated garden mulch, food organics and compost to the soil to feed plants and reduce water consumption.
- Increased access to locally produced, fresh, healthy, and affordable food options, especially in remote communities that have limited access to grocery stores or fresh produce.
- Engaging in garden activities can improve physical health by providing opportunities for exercise, reducing stress, and promoting mental wellbeing.
- Community building and social connections.
- Environmental benefits. Gardens absorb carbon dioxide, reduce landfill gas and leachate generation, and improving air quality.
- Provide food security and resilience in times of crisis, such as natural disasters or economic downturns.
- Community gardens enhance the visual appeal and aesthetics of neighbourhoods, transforming vacant or unutilised spaces into vibrant green areas.
- Promotes pride in the local area

4.3.2 COMPOSTING

Green waste delivered to landfills and food waste from residential and commercial wheelie bins contribute significantly to the overall quantity of waste disposed in landfill. As well as taking up valuable space in landfill, organic matter as it breaks down produces the potent greenhouse gas. It is also the main contributor to leachate generation from landfills. Keeping organics out of landfill makes sense from both an environmental and financial viewpoint; while the beneficial reuse of organics, through composting and mulching, can improve plant health, reduce water use, reduce fertiliser needed and protect valuable topsoil from erosion. These benefits can also reduce costs and improve environmental outcomes.

Encouraging business/ household organic recycling through education; and/or the provision of domestic compost bins or worm-farms can reduce the food organic component in wheelie bins and green waste being taken to landfills.

Considerations

- Community education required
- Smells and vermin problems
- Contamination
- Stormwater management

4.4 Littering Reduction

Littering and illegal dumping costs Queensland communities millions of dollars each year in waste management and clean-up expenses, which could otherwise be used for important community services or amenities. The prevention and management of litter and illegal dumping is an important activity for Council to ensure residents retain pride in their area and the region remains an attractive tourist destination.

Actions Council could take to support the reduction of litter and illegal dumping include:

- Continuing to provide and maintain street bins, street cleansing operations, waste collection services and easy to access waste facilities.
- Removing dumped waste quickly, to prevent other people dumping there.
- Providing anti-litter awareness and education programs.
- Accepting the delegations under the Waste Reduction and Recycling Act which allow Council officers to have enforcement powers, in relation to litter and illegal dumping.
- Conducting investigation and enforcement activities in relation to litter and illegal dumping offences.
- Joining forces with other neighbouring councils to apply for the State Government's Hotspots program.
- Council will also apply for access to funding through the Queensland Government Funding program, to assist with the cost of monitoring, acting on and preventing illegal dumping activities in the region.

Considerations

- Different messages may be required for different community groups.
- Additional costs associated with education, monitoring and removal of waste.

4.5 Regional Approach to Waste Management

Collaboration with adjacent local governments can create efficiencies or economies of scale to allow services to be delivered that may not otherwise be possible. Council could engage contractors on a regional basis for periodic collection or local processing of:

- Cardboard
- Tyres
- Green waste
- E waste
- Waste oil
- Batteries
- Household hazardous waste

- Scrap metal



- Concrete.
- Littering and illegally dumped waste.

The Queensland Government is encouraging Councils to submit joint applications with neighbouring local governments for the State Hotspots program. Regional applications could increase Council's likelihood of successfully obtaining funding and would allow councils in the region to pool resources and provide a coordinated approach.

A cost/benefit analysis would be needed to demonstrate that the benefits outweigh any additional administrative requirements of regional collaboration.

4.6 Data Collection

Quality waste data is essential for Council to make informed decisions on the provision of waste services and facilities. Quality data can initially provide a baseline of current waste generation quantities and types that in the future can allow the effectiveness of education or operational changes to be measured against.

In addition, some data collection is required by the environmental licence for the landfills, such as keeping records on regulated waste, e.g. lead-acid batteries removed from any of Council's waste facilities.

There are improvements that can be made to the type, quality and completeness of waste data collected, particularly at the Woorabinda Waste Management Facility.

4.7 Fees and Charges Review

In addition to covering some of the costs associated with managing waste, landfill disposal fees provide a means of encouraging certain behaviours in commercial and other landfill users. Charging fees to dispose of some or all types of waste can encourage businesses and other landfill users to reduce, reuse and recycle before considering disposal. Consequently, waste disposal fees can reduce the volume of waste being landfilled, reduce Council's waste management costs and

provide further revenue to manage the landfill facility. Waste disposal fees are a form of polluter/disposer-pays model, where the community are not left to pay for managing the waste of the neighboring councils.

A possible consequence of imposing waste disposal fees can be an increased incidence of illegal dumping from people wanting to avoid charges. This needs to be considered when reviewing and changes to fees and charges.

4.8 Landfill Design and Construction

Landfill cell closure is a major cost for a poorly planned waste management facility, and minimising the footprint of landfill cells early in a waste facility's lifecycle can result in greatly reduced future costs. Above ground waste disposal helps to extend the useful life of Council's existing landfill footprint and minimise capping capital costs and cell construction costs. It minimises the amount of contaminated land that Council creates and extends the useful life of a site, thereby reducing site rehabilitation and relocation costs.

Future landfill cells should be designed and constructed in compliance with relevant legislative requirements to reduce environmental risks and future landfill clean-up costs. Currently, the cells go approximately 3m into the ground. With this option, waste would continue to be disposed of up to 3m or more above the ground.

4.9 Summary of Strategic Options

Design and construct future landfill cell including consideration for above ground landfill	<ul style="list-style-type: none"> • Extends the life of existing sites and minimise capping capital costs • Reduce design and construction costs of new landfill cell • Minimises amount of contaminated land • Reduce relocation costs 	<ul style="list-style-type: none"> • Community may be displeased due to aesthetic issues • Windblown litter • Unsightly • Possible stormwater management issues
Reduce waste collection services	<ul style="list-style-type: none"> • Potential for reduced waste volumes, increased reuse and recycling of waste (home composting, source separated organic waste, containers for change). • Increased revenue if occupiers pay for an additional bin/s 	<ul style="list-style-type: none"> • Community backlash at having collection services reduced • It may not be possible for Council to remove additional bins, so waste collection staff would need to check they are collecting the right number of bins at every property
Waste separation at the landfill site	<ul style="list-style-type: none"> • Increase landfill life due to reduced quantity of waste disposed of to landfill. • Improved environmental outcomes from recycling rather than disposing. • Opportunity to reduce contamination of currently collected materials e.g. green waste • Motivate behaviour change around waste generation and recycling 	<ul style="list-style-type: none"> • Cost of transporting recyclables to material processors could be considerable. • The environmental benefits of avoiding waste to landfill may be outweighed by the environmental costs of transporting the recyclables to material processors. • Contamination of collected materials may be considerable, particularly at unsupervised sites. • Risks associated with contamination • Education campaign would be required to ensure site users separate recyclables • Additional collection/storage facilities and signage required • Additional operational activities required to manage the orderly collection, storage and transport of recyclables

Kerbside collection of garden and Food organic for selected properties	<ul style="list-style-type: none"> • Reduces amount of waste going to landfill • Beneficial use of organics in community gardens and council facilities (parks and gardens, open space) 	<ul style="list-style-type: none"> • Additional capital and operating cost
Containers for Change	<ul style="list-style-type: none"> • Already successfully operating in other places • Provides revenue for local community • Motivates behaviour change • Minimal cost to provide additional collection points if required 	<ul style="list-style-type: none"> • Contamination issues and ongoing management
Community gardens	<ul style="list-style-type: none"> • Benefits of returning organics to the soil to feed plants and protect topsoil • Benefits of local produce • Community engagement • Maintained pride in local area 	<ul style="list-style-type: none"> • Additional collection cost of food and garden organics
Education programs	<ul style="list-style-type: none"> • Increase participation in currently available recycling schemes e.g. Containers for Change, scrap metal recycling, batteries, tip shop • Increased revenue from scrap metal collection and recycling. • Reduce the risk of incorrect disposal of problem wastes such as lead-acid batteries, farm chemical containers and waste oil. • Reduce contamination of existing recycling streams e.g. incorrect bottles for the Containers for Change Program. 	<ul style="list-style-type: none"> • Additional cost and operational activities required Council. • Limited recycling opportunities to promote to residents. • Currently there is no financial incentive (tip fees) to support behaviour change encouraged by education campaigns

	<ul style="list-style-type: none"> • Reduce the quantity of garbage bins placed out for collection or taken to facilities. • Increase the beneficial reuse of organics by mulching, composting and worm farming 	
Tip Shop	<ul style="list-style-type: none"> • Reduce waste disposed to landfill • Encourage a culture of reducing, reusing and recycling • Provide financial benefits to the local community. • Provide a source of quality used, recycled and second-hand products to residents. • Could encourage repair cafes and the broader repair of broken items. 	<ul style="list-style-type: none"> • Public liability risk associated with selling faulty items • Risk of theft of items or cash • Possible additional costs associated with providing facilities or operating tip shop • Community awareness of tip shop required • Contractual arrangements with charity need to be clear to prevent problems
Composting	<ul style="list-style-type: none"> • Reduce waste disposed of to landfill • Prevent greenhouse gas emissions • Reduce the generation of leachate from decomposing organic matter • Encourage a culture of reducing, reusing and recycling • Benefits of returning organics to the soil to feed plants and protect topsoil 	<ul style="list-style-type: none"> • Costs associated with community education • Cost of providing compost bins or worm farms (optional) • Complaints regarding pests or smells from poorly maintained compost bins. • Budget implications.
Green waste reuse	<ul style="list-style-type: none"> • Same benefits as composting above • Prevent the release of greenhouse gasses from burning. 	<ul style="list-style-type: none"> • Risk of spreading weeds or pests. • Hazardous items in mulch • Cost associated with monitoring the stockpile of green waste to reduce contamination. • Contaminated product may be unusable • Cost of mulching may be considerable

Litter reduction	<ul style="list-style-type: none"> • Reduced pollution and better environmental outcomes • Presents aesthetically pleasing and enjoyable environment to be in • Maintains an attractive tourist destination • Maintained pride in local area • Prevents further littering • Reduces clean-up costs • Prevents pest problems and weed spread 	<ul style="list-style-type: none"> • Additional cost of actions to minimise littering
Regional approach	<ul style="list-style-type: none"> • Improved likelihood of accessing State funding for litter and illegal dumping. • Economies of scale by procuring services collectively • Improved cooperation with neighbouring councils 	<ul style="list-style-type: none"> • Benefits need to outweigh any additional administrative requirements of regional collaboration
Data collection	<ul style="list-style-type: none"> • Identify opportunities to increase reuse and recycling • Report achievements in waste initiatives • Highlight problem areas • Measure progress against waste management objectives and targets • Identify successful waste management processes • Future planning • Reporting 	<ul style="list-style-type: none"> • Budget implications • Manpower
Fees and charges review	<ul style="list-style-type: none"> • Provides a financial incentive for behaviour change. • Encourages a culture of reducing, reusing and recycling • Increase revenue for managing waste. 	<ul style="list-style-type: none"> • Increased fees may increase illegal dumping. • Without a weighbridge it is more difficult to determine the waste quantity to ensure correct charging.

	<ul style="list-style-type: none"> Introduces a polluter/disposer- pays model, where the community is not paying for managing the waste of others. Reduces waste disposed of in landfill. 	<ul style="list-style-type: none"> Mixed waste loads increase complexity of charging. Charges cannot be levied at un-staffed sites.

5. Preferred Strategic Approach and Implementation

5.1 Summary of Actions Required to Support Local Waste Management Plan Delivery

1.1 Consider landfilling above ground at Woorabinda Waste Facility to reduce the need for a new landfill and reduce capital establishment costs by utilising existing infrastructure.	2.1 Review opportunities to remove tyres, cardboard, concrete and timber for recycling to avoid wasting valuable airspace.	3.1 Develop and implement a litter management Plan to ensure litter and illegally dumped waste is removed in a timely manner.	4.1 Develop a community awareness plan that addresses waste reduction, recycling, litter and illegal dumping to support the local waste management plan	5.1 Develop, implement and review data collection, management, and reporting practices.
1.2 Consider reviewing Council's waste collection service with a view to improve efficiency and cost effectiveness.	2.2 Support the establishment of a Containers for Change collection site.	3.2 Take appropriate enforcement action for illegally dumped waste	4.2 Develop and implement community awareness program to promote containers for change, community gardens, home composting and source separation of organic waste.	5.2 Ensure records are kept of the quantities of waste and recycling.
1.3 Ensure efficient and effective landfill operations to maximise the life of landfill.	2.3 Improve management of green-waste stockpile, to allow a quality mulch product for use by Council and residents.	3.3 Ensure landfill is operated in accordance with the Environmental Authority.	4.3 Waste education- Continually review Council's waste reduction initiatives and litter information in print and on Council's	

			website to ensure it is up-to-date and supports the local waste management plan.	
1.4 Continue to review overall provision of waste services with a view to increasing efficiency and cost effectiveness.	2.4 Review market opportunities for potential recyclable items.	3.4 Ensure landfill is progressively capped and revegetated to minimise environmental risk.		
1.5 Investigate and implement full cost pricing model/ full cost recovery for waste services through disposal fees.	2.5 Initiate and set up recycling drop off at the landfill site	3.5 Develop, implement and review site-based management plan for the landfill site to ensure safety and environmental compliance		
1.6 Investigate the establishment of regional collaborations to collect and manage waste.	2.6 Identify and set up public place recycling opportunities	3.6 Develop, implement and review stormwater management plan.		
	2.7 Engage community groups to set up and manage tip shop at the landfill			

	2.8 Consider supporting community garage sale			
	2.9 Initiate and promote home composting			
	2.10 Promote community gardens			
	2.11 Set waste reduction and recycling targets			

5.1.1 THEME 1 – RESPONSIBLE FINANCIAL MANAGEMENT

Managing waste is a significant business activity for Council with substantial costs associated with delivering quality services and maintaining essential facilities in the region. Council is committed to ensuring that waste services and facilities are operated efficiently and cost effectively while meeting the needs of the community.

1.1	Design and construct future landfill cell	Investigate landfilling options including above ground at Woorabinda Waste Facility to reduce the need for a new landfill cell and reduce capital establishment costs by utilising existing infrastructure.	Continue to investigate landfilling above ground	If feasible, landfilling to proceed above ground
1.2	Waste collection service	Consider reviewing Council's waste collection service with a view to improve efficiency and cost effectiveness.		
1.3	Landfill operation	Ensure efficient and effective landfill operations to maximise the life of landfill.	Review the design and operation of Woorabinda waste facility with the view to increasing airspace	
1.4	Improve efficiency	Review overall provision of waste services with a view to increasing efficiency and cost effectiveness.	Continue to review overall provision of waste services with a view to increasing efficiency and cost effectiveness	
1.5	Full cost pricing	Investigate full cost pricing model/ full cost recovery for waste services through relevant fees and charges for waste services.	Continue to investigate and implement full cost pricing model/ full cost recovery for waste services.	Ongoing review of the effect of implemented pricing model
1.6	Regional collaboration	Investigate the establishment of regional collaborations to collect and manage recyclable waste.	Continue to investigate and implement feasible	Implement feasible regional waste collaborations

			regional waste collaborations	

5.1.2 THEME 2 – REDUCING WASTE TO LANDFILL

The benefits of reducing waste to landfill are significant and range from cost savings to Council, through to better environmental outcomes and providing new economic opportunities in recycling and reuse industries.

2.1	Recycling opportunities	Investigate opportunities to remove tyres, scrap metal, cardboard, concrete and timber for recycling to avoid wasting valuable airspace if economically viable.	Review opportunities and identify market opportunities for the recycling of tyres, scrap metal, cardboard, concrete and timber	Continue to review market opportunities for tyres, scrap metal, cardboard, concrete and timber
2.2	Container refund	Support the establishment of a Containers for Change collection site.	Review container refund locations and their effectiveness	
2.3	Green waste recycling	Investigate to improve management of green-waste stockpile to allow a quality mulch product for use by Council and residents if economically viable.	Continue with investigation to improve management of green-waste stockpile to allow a quality mulch product for use by Council and residents and identify market opportunities for the use of mulch	Continue to review market opportunities for compost and mulch

2.4	Recycling collections	Investigate market opportunities to collect recyclables if market exists.	<ul style="list-style-type: none">Review the viability of recycling collection optionIdentify and implement market options for recyclable items	<ul style="list-style-type: none">Continue to review market opportunities for recyclable itemsReview kerbside organic waste separation and the cost benefits
2.5	Recycling drop off centres	Initiate and set up recycling drop off at the resource recovery facility if market exists.	Continue to review recycling options	
2.6	Public place recycling	Investigate, identify and set up public place recycling opportunities to collect marketable items		
2.7	Tip shops	Engage community groups to set up and manage tip shop at waste facilities		
2.8	Community garage sale	Consider supporting community garage sale		
2.9	Home composting	Initiate and promote home composting	Continue to promote home composting and reuse of compost	
2.10	Promote community gardens	Promote community gardens by providing mulch/organics.	Continue to provide mulch/organics to community gardens	
2.11	Set waste reduction and recycling targets.	Set waste reduction targets and continue to achieve them		

5.1.3 THEME 3 – PROTECTING HUMAN HEALTH AND THE ENVIRONMENT

Litter; illegally dumped waste; and waste collected and managed by Council all have the potential to impact on the health of the community and the environment. For this reason, it is essential that waste is managed effectively to minimise the risk to human health and the environment.

3.1	Litter management Plan	Develop a litter management plan to ensure litter and illegally dumped waste is removed in a timely manner.	Review litter management plan to ensure litter and illegally dumped waste is removed in a timely manner.	
3.2	Illegal dumping	Take appropriate enforcement action for illegally dumped waste		
3.3	Environmental compliance	Ensure landfills are operated in accordance with the Environmental Authority.		
3.4	Landfill closure	Ensure landfill is progressively capped and revegetated to minimise environmental risk.		
3.5	Site based management plan	Develop, implement and review site-based management plan for the landfill to ensure safety and environmental compliance	Continue to review site management plan	
3.6	Stormwater management	Prepare and review landfill stormwater management plan.		

5.1.4

5.1.5 THEME 4 – COMMUNITY AWARENESS

Community awareness activities play an important role in reducing waste disposed of to landfill and in reducing littering and illegal dumping. An informed community can also assist Council in detecting dumped waste early before it can cause environmental, public health or amenity issues.

4.1	Community awareness	Develop a community awareness plan that addresses waste reduction, recycling, litter and illegal dumping to support the Local Waste Management Plan.	Continue waste education program to targeted audience to improve recycling and waste avoidance Review community awareness plan	
4.2	Waste education	Continually review Council's waste and litter information in print and on Council's website to ensure it is up-to-date and supports the Local Waste Management Plan.		

5.1.6 THEME 5 – DATA MANAGEMENT

Quality waste disposal data is essential for Council to assess its performance against the Plan and for future decisions regarding waste services and facilities. For this reason, Council will continually improve the collection and management of crucial data from the Woorabinda Waste Facility.

5.1	Data collection	Continue to improve the data collection, management and reporting practices.		
5.2	Data management	Ensure records are kept of the quantities of materials collected and sent for recycling		

5.2 Performance Measures

Theme 1 Responsible Financial Management	Ensure that the waste management operations costs do not increase by more than the yearly growth rate & CPI	CPI & Growth rate
Theme 2 Reducing Waste to Landfill	Significant quantities of recyclable materials are diverted from landfill.	Recycled materials rate
Theme 3 Protecting Human Health and the Environment	Site-based management plans are being adhered to	Quarterly assessment of compliance with site-based management plan
Theme 4 Community Awareness	Community awareness plan to address waste reduction, recycling, litter and illegal dumping	Community feedback on education and information provided
Theme 5 Data Management	<ul style="list-style-type: none">Quantities of waste to landfill have been benchmarked.Disposal records are complete and accurateQuantities of recyclables diverted being recorded	Biennial review of data

Appendix 1. Waste Data Summary

>>>>>>>>>>Attach Excel spreadsheet>>>>

Appendix 2. Project Budget Estimates

>>>>>>>Attach Budget Estimates>>>>>>>>

GLOSSARY

Construction and Demolition waste (C&D)	Waste generated from construction and demolition work. Includes concrete, bricks, timber, steel, clean fill, tiles, lino, carpet, gyprock/plasterboard, insulation, electrical and plumbing waste.
Contaminant	<p>A contaminant can be:</p> <ul style="list-style-type: none">• A gas, liquid or solid; or• An odour; or• An organism (whether alive or dead), including a virus; or• Energy, including noise, heat, radioactivity and electromagnetic radiation; or• A combination of contaminants
Contamination	Release (whether by act or omission) of a contaminant into the environment or waste stream
Dispose	Disposal of waste only if there is no viable alternative
Landfill	Disposal of waste materials through burial
Recover	Recovery of waste resources, including the recovery of energy
Recycle	Recycling of waste resources to make the same or a different product
Reduce	Reducing waste generated and disposed of
Reuse	Items that do not require processing and are in suitable condition and quality to be reused in its original form e.g. furniture, household items.
Tip shop	A designated area for the reuse and sale of salvageable items to the public
Transfer Station	A Council facility which receives waste for temporary storage. The waste can be sorted or consolidated and then removed and transported for further processing including recycling or disposal at a landfill facility

Waste	<p>The Environmental Protection Act 1994 defines waste as:</p> <ul style="list-style-type: none">a) Left over, or unwanted by-product, from an industrial, commercial, domestic or other activity:b) Surplus to the industrial, commercial, domestic or other activity generating the waste. <ul style="list-style-type: none">• Waste can be a gas, liquid, solid or energy, or a combination of any of them.• A thing can be waste whether or not it is of value• The administering authority may approve a resource, or a stated type of resource, for subsection (l) if it considers the resource, or type of resource, has a beneficial use other than disposal
Waste Avoidance	<p>Avoid unnecessary consumption of products created using natural resources, waster, energy, and financial cost resulting in unsustainable waste disposal.</p>