



Noosa Council

Waste Reduction and Recycling Plan

2016 – 2024

DRAFT



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Version 1.1
24 February 2016

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Endorsed by Noosa Council (10 March 2016 for public consultation)

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1. Executive Summary

This Plan is a statutory requirement under the *Waste Reduction and Recycling Act 2011* which states that all Queensland Local Governments must have a Waste Reduction and Recycling Plan to address its waste management.

The Plan is underpinned by the waste hierarchy. This internationally recognised hierarchy places waste reduction as the preferred option, followed by reuse, through recycling and recovery options to disposal as the least preferred.

The timeframe for the Plan is 2016 to 2024 which compliments the review of the Noosa Council waste contract; however the Plan will be reviewed at least every three years.

The Plan aims to meet or exceed the 2024 waste targets as detailed in the Queensland State Government's *Queensland Waste Avoidance and Recycling and Resource Productivity Strategy (2014-2024)*.

The Queensland Government strategy sets a target for all Queenslanders to reduce their overall generation of waste by 5% by 2024. The Strategy proposes a 55% recycling rate in domestic and commercial and industrial waste and an 80% recycling rate in construction and demolition waste.

The Plan identifies specific actions in the following areas:

- Garden waste and composting
- Waste reduction
- Landfill diversion
- Community education
- Local government activities

Council aims to lead by example as well as educate the wider community to reduce waste sent to landfill and increase resource recovery.



Fig 1: Noosa Hinterland, Paul Smith

In 2007 Noosa became Queensland's first UNESCO Biosphere Reserve. Biosphere reserves are sites that demonstrate innovative approaches to conservation and sustainable development.

In another first for Queensland, in early 2015 Noosa Council introduced a Community Jury to assist Council on their deliberations on waste minimisation, in particular "*what is the best option for minimising organic waste sent to landfill?*"

The Community Jury brought together 24 community members to consider, weigh up and develop recommendations on this issue.

Waste minimisation is an important topic for the Noosa community and an area in which Noosa Council prides itself on taking a proactive and innovative approach.

2. Introduction

2.1 About Noosa

Situated at the northern tip of Queensland's Sunshine Coast, Noosa Shire covers an area of 871km² and is home to more than 53,000 people. Noosa Shire is recognised as a UNESCO Biosphere Reserve through their Man and Biosphere (MAB) program and has a proud history of preserving its natural environment.

In 2008, Noosa Shire, Maroochy Shire and Caloundra City Councils were amalgamated however Noosa Shire Council was re-established as a local government on January 1, 2014.

2.2 Demographics

Key socio-economic data for Noosa include:

- Noosa is a relatively older community that is aging faster than SEQ and QLD.
- Since 2006, Noosa's population is growing at a slower rate (1.9% per year) than SEQ (2.3% per year) and QLD (2.2% per year).
- Given Noosa's economic and demographic structure the fastest growing sectors of the economy are health care and education.
- Noosa has lower household and personal income levels than SEQ and QLD.
- The average value of residential approvals in Noosa is 30% higher than SEQ and QLD.
- Residential building approvals in Noosa declined between 2007-2012 and then increased between 2012-2014.
- Noosa's population is ethnically uniform, with high levels of Australian born, English only speaking households.
- Noosa has higher levels of participation in primary and secondary education than SEQ and QLD.
- In terms of socio-economic advantage, Noosa is overall average with pockets of both disadvantage and wealth.

Source: AEC Noosa Community Profile and AEC Economic Profile (2015).

2.3 Population

According to the Queensland Government Regional Profile for Noosa Local Government Area, as at June 2014, the estimated resident population of the Noosa Shire was 53,052 with a median age of 46.9 years.

Other significant population data includes:

- From 2011 to 2036 the population of Noosa Shire is projected to increase from 51,038 to 61,842 people.
- Noosa is one of Australia's most popular holiday destinations, attracting 1.8 million visitors annually (approx. 90% domestic). (Noosa Visitor Survey, June 2012).
- Noosa's peak population during summer holidays is estimated at 65,000, which constitutes a 30% increase over the resident population (Qld Treasury & Trade, Nov 2013).

- Over 110,000 visitors overnighted in Noosa between January and March 2015, with a further 97,000 day visitors in the same period.

3. Waste Legislation

In Australia, the management of waste is primarily the responsibility of state and territory governments which regulate and manage waste in accordance with their respective legislation, policies and programs.

The Australian Government is responsible for national legislation, strategies and policy frameworks for waste, including obligations under international agreements.

Local governments have responsibility for waste management within their local areas as laid down by each state or territory.

Key national waste legislation, policies and schemes include:

- *National Environment Protection Council Act 1994*
- *National Greenhouse and Energy Reporting Act 2007*
- *Product Stewardship (Oil) Act 2000*
- *National Waste Policy- Less Waste, More Resources 2009*
- *Product Stewardship Act 2011*
- *National Television and Computer Recycling Scheme 2011*

Key Queensland waste legislation, strategies and covenants include:

- *Environment Protection Act 1994*
- *Environment Protection Regulation 2008*
- *Sustainable Planning Act 2009*
- *Australian Packaging Covenant 2010*
- *Waste Reduction and Recycling Act 2011*
- *Waste Reduction and Recycling Regulation 2011*
- *Queensland's Waste Reduction and Recycling Strategy 2010-2020*
- *Queensland Waste Avoidance and Resource Productivity Strategy (2014-2024)*

3.1 Requirement for a Waste Reduction and Recycling Plan

The Queensland Government *Waste Reduction and Recycling Act 2011* (WRRRA 2011) require local governments to prepare waste management plans, known as Waste Reduction and Recycling Plans (this document). The Plan must be reviewed at least every 3 years. Details of the local government obligations are contained in Appendix 1: *Waste Reduction and Recycling Act 2011*, Chapter 6.

3.2 Environmental Compliance

Municipal waste disposal at the Noosa Landfill and Resource Recovery Facility is authorised under the Queensland *Environmental Protection Act* via a 60 (1a) Environmental Authority with approval number EPPR01855314. The Environmental Authority has conditioned that releases of surface and groundwater must be managed from the site in accordance with a site specific Receiving Environmental Monitoring Program (REMP). The intent of the REMP is to provide an early alert for investigation into any waste water discharges and provide sufficient time for suitable actions to be implemented to prevent environmental harm. Noosa Council has sought to implement a REMP that is more responsive to site specific downstream environment values. Noosa Council underwent a series of negotiations from 2013 to the present to update the existing Environment Authority for the Landfill to reflect the more modern conditions applied under REMP. Noosa Council has commenced monitoring pursuant to the site specific REMP in late 2015.



Fig 2: Eumundi-Noosa Road Resource Recovery and Landfill Facility.

3.3 Waste Hierarchy

The waste hierarchy ranks waste management options from most preferable to least preferable.

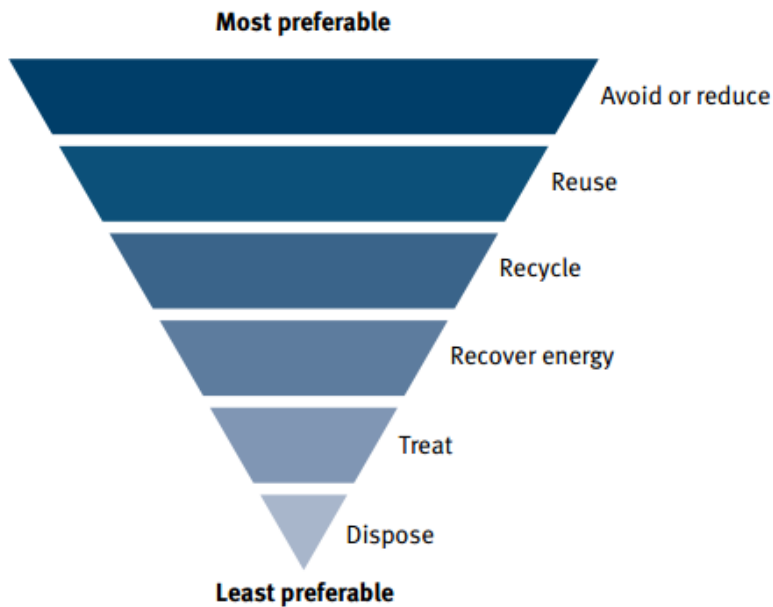


Fig 3: Waste and resource management hierarchy
Source: Qld Waste Avoidance and Resource Productivity Strategy (2014-2024)

Avoid and reduce is the highest priority and encourages the community, industry and government to reduce the amount of virgin materials extracted and used. The aim is to maximise efficiency and avoid unnecessary consumption through behaviours such as:

- choosing items with the least packaging or that require the fewest resources to produce
- Avoiding single-use materials or disposable goods
- Purchasing products that are recycled, recyclable, repairable, refillable, re-usable or biodegradable
- Composting leftover food rather than throwing it away.

Re-use, recycle, and recover are the next most preferred options. Many household and industrial items can be repaired, re-used, sold or donated to charities.

Recovering resources keeps materials in the productive economy and benefits the environment by decreasing the need for new materials.

Where further recycling is not feasible, it may be possible to recover the energy from the material where this is acceptable to the community.

Treat and Dispose is the least preferred option but the waste hierarchy recognises that some types of waste, such as asbestos or dangerous chemicals cannot be safely recycled.



Fig 4: Bulk Recycling Bins

4. Previous Studies

A number of waste trials, audits, studies and assessment have been conducted under both the Sunshine Coast Council and the newly formed Noosa Council. Relevant studies include:

- Organics Collection Trial – Peregrine Springs & Cooroy (Organic Force, February 2012).
- Sunshine Coast Council Assessment of Domestic Kerbside Waste Stream & Commercial and Industrial Waste Stream (EnviroCom, January 2012).
- Noosa Council Waste Management Scoping Study (Lloyd Consulting, April 2014).
- Noosa Council Waste Management Options Assessment (Golder Associates, November 2014).
- Noosa Council Waste Audit (Noosa Council, 2015).

Recommendations from key studies are contained in Appendix 2: Previous Waste Study Recommendations.

5. Waste Streams

In 2015, the Noosa community produced a total of 73,664 tonnes of waste. This included collected general municipal waste and recyclables and waste deposited at Council's three facilities (Noosaville, Cooroy and Pomona) and bulk kerbside collection.

Approximately 45% of Noosa's waste was diverted from the landfill. Table 1 below highlights the tonnes of waste by major resource that was diverted from landfill.

Table 1: Resources Diverted from Landfill 2015

| Resource | Tonnes |
|-----------------------------------|----------------|
| Garden waste (domestic & C&I) | 12,085 |
| Recyclables (kerbside collection) | 7,844.5 |
| Metal | 2,396 |
| Concrete | 9,891 |
| Timber | 672 |
| Bulk Cardboard | 370 |
| Batteries | 34.4 |
| Other | 54 |
| Total | 33346.5 |

Clean Fill

It should also be noted that Noosa Council also receives 17,311 tonnes of "Clean fill" material that is not included in the above table. This material is deposited at the Resource Recovery Centre and utilised within the landfill for operational management purposes. Although this is a beneficial re-use of a waste material it is not claimed by Noosa Council as diversion of waste from landfill.

Council Waste Activities

Noosa Council is also responsible for generating waste through its activities and facilities including the Tewantin administration building, Noosaville & Pomona depots, Noosa & Cooroy Libraries, the J theatre, the Leisure Centre and the Aquatic Centre.

In 2014/15 Council activities generated 1483.04m³ of waste of which 446.48m³ were diverted from landfill which equates to a 30% diversion rate.



Fig 5: Council Staff Recycling & Composting

Council has implemented a number of waste minimisation measures within the organisation as outlined in Table 2.

Table 2: Council Waste Minimisation Measures

| Waste | Waste minimisation measures |
|-----------------------------|--|
| Garden Waste | - Garden waste from Council parks is shredded and mulched. |
| Food | - Food waste bins are located in the kitchens of the administration building and libraries. Food waste is collected by NC staff and composted through worm farms. |
| Construction and Demolition | - Recycling bins for steel. - Construction and demolition waste is recycled at Ringtail Creek quarry. (In 2014/15, approx. 21000m ³ of concrete, asphalt, green waste, sand, and top soil was recycled as well as 5 tonnes of steel). |
| Paper & Cardboard | - All printers are set to default black and white double sided printing. - Digital culture – move towards efficiencies and paper reduction through online forms e.g My HR - Document destruction bins – paper is shredded and recycled through the Endeavour Foundation - Paper and cardboard recycling bins located at printers and centralised locations. - Printer cartridges are recycled. |
| Recycling | - Recycling bins provided in centralised locations. - Recycling bins provided at work stations. - Recycling bins provided at all Council events. |
| E-waste | - Computers and printers are rented and returned to supplier. |
| General Waste | - Removal of individual waste bins and replacement with mini |

| | |
|----------------------------|---|
| | desk bins and centralised general waste bins. - Procurement Policy. |
| Education/Behaviour Change | - Staff waste minimisation education via email, posters, lunchtime talks, movie screenings and composting demonstrations etc. |

6. Waste Collection

Noosa Council's Waste Management Service (WMS) is responsible for the delivery of high standard domestic and commercial waste and recycling collection systems for Noosa residents and businesses.



Fig 6: Waste Collection

The WMS is a significant business activity which operates in accordance with legislative requirements, relating to the size of expenditure the business generates and its impact on the local economy. Council must ensure that the competitive neutrality principle is applied when conducting its waste management activities. It should also be noted that Council is required under National Competition Policy principles and legislation to meet its full cost pricing obligations including achieving an appropriate return on investment for the waste management business commensurate with a return on capital and cost employed in the business.

Collection, resource recovery, and landfill services are provided through private sector contracts with the aim of maximising resource recovery and reducing waste to landfill in a cost effective manner. For more detail refer to Section 7 New Waste Contract 2017-2024.

6.1 Domestic Waste

General Waste

Domestic premises are provided with a 240 litre weekly waste bin service for all general waste including food waste and garden waste. Domestic kerbside waste generation for Noosa was calculated to be approximately 15kg/household/week (January 2012) and 14.5kg/household/week (June 2012).

An assessment of the composition of domestic waste is contained in Appendix 3: 2012 - Composition of the Northern Region Kerbside Domestic Waste Stream.

Recycling

A 240 litre fortnightly recycling service is provided. Comingled recycled materials include:

- Glass containers
- Aluminium and steel cans
- Recyclable plastics
- Clean paper and cardboard.

Recyclables are collected and transported to the recycling facility operated by VISY Recycling at Bli Bli. The Council pays a processing fee per tonne of recyclables delivered.

A waste audit undertaken in October 2015 identified, on average, the proportion of recyclables (paper/cardboard, plastic containers, glass, cans etc.) in general residential waste bins was 15%

(Noosa Council Waste Audit, Oct 2015) and the main source of contamination in recycle bins was plastic bags.

The following items are currently not recycled because there are no recycling facilities; it is cost prohibitive or there is insufficient storage capacity at the Resource Recovery Facility.

- Sheet plastic (commercial & industrial, domestic packaging)
- Polystyrene
- Foam
- Gyprock
- Plastic pots

Council will continue to monitor advances in recycling technology as well as the viability of recycling the above items.

There are also certain locations which pose difficulties for the collection of recycling including Noosa Main Beach and Hastings Street. Innovative solutions to overcome barriers to recycling services in these locations are being investigated.

Garden Waste

A 240 litre fortnightly voluntary garden waste service is provided at \$65/year (fee valid as of February 2016). In January 2015 there were 3426 services and by December 2015 there were 3975. The popular service has experienced a growth of 16% in service numbers from January to December 2015. The garden waste bin is collected fortnightly on the alternate week to the recycling bin service day. The garden waste bin accepts grass, weeds, offcuts and small branches (no food). In line with one of the recommendations from the Community Jury (refer to Section 10 Table 7 Community Jury Recommendations) , it is proposed to make the garden waste service compulsory to residents in urban areas from the commencement of the new waste contract in 2017.



Fig 7: Garden Waste Bin

Public Place Waste and Recycling

As of February 2016, there were 818 public place waste bins and 49 public place recycling bins. Public place recycling is currently operational in high profile public areas (excluding Hastings St) and at popular BBQ and picnic sites. In the next collection contract (commencing August 2017) Noosa Council will seek to convert many of the general waste bins to recycle bins and increase the collection frequency of recycle bins.

In addition Council has approximately 70 dog waste dispensers across the Shire. Investigations are underway to use compostable bags in the dog waste dispensers.



Fig 8: Public Place Recycling - Peregian Beach

6.2 Commercial Waste

General Waste

Commercial and industrial premises are provided with either:

- 240 litre waste bins
- 1100 litre low noise bins
- Bulk waste bins ranging in size from 1 cubic metre to 3 cubic metres
- Compactors ranging in size from 3 cubic metre to 23 cubic metres

Commercial waste bins are serviced anywhere from a weekly to daily.

Recycling

Commercial and industrial premises are provided with either:

- 240 litre recycling bins
- 1,100 litre low noise recycling bins

Commercial recycling bins are collected fortnightly, or where conveniently located (coastal area), a weekly service can be provided. To encourage segregation of recyclables occupiers are entitled to an equivalent recycling volume to the waste volume with no increase in waste charges.



Fig 9: Low Noise 1,100 litre Recycling Bin

In January 2011, Sunshine Coast Council commissioned EnviroCom to conduct a commercial recycling assessment.

The Noosa commercial recycling assessment of Transpacific-Cleanaway's 660L and 1100L rear lift bins revealed:

- Contamination rate – 6.57%
- Process loss rate – 18.68% (materials which are recyclable but are unable to be recycled e.g. glass fines, material less than 25mm)

The predominant recyclable materials were recyclable paper (56.3%), corrugated cardboard (33.3%), newspaper (9.6%) and magazines (7.5%).

Contaminants included glass fines (7.8%), bagged recycling (3.3%), bagged garbage (1.7%) and organic other (1.9%).

Garden Waste

The garden waste service is primarily designed for domestic premises but 240 litre bins can be supplied to commercial or industrial premises. There has been very little take-up of this service by the commercial and industrial sector. This may be due to limited generation of garden waste or because they have private garden maintenance services in place.

6.3 Summary of Waste Collection Services

A summary of domestic and commercial waste collection services is contained in Table 3 below.

Table 3: Summary of Waste Collection Services

| Description | Services | Frequency |
|---|--|-------------------------|
| Domestic Waste | 240L | Weekly |
| Domestic Recycling | 240L | Fortnightly |
| Domestic Garden (optional) | 240L | Fortnightly |
| Multi-Unit Developments Waste | 240L 1, 1.5, 2, 3 m ³ bulk bins 1100L low noise bins | Minimum weekly |
| Multi-Unit Developments Recycling | 240L 1100L low noise bins | Minimum fortnightly |
| Multi-Unit Developments Garden Waste (optional) | 240L | Fortnightly |
| Commercial Waste | 240L 1, 1.5, 2, 3 m ³ bulk bins 1100L low noise bins 3, 17, 19, 23 m ³ compactors | Minimum weekly |
| Commercial Recycling | 240L 1100L low noise bins | Minimum fortnightly |
| Commercial Garden Waste (optional) | 240L | Minimum fortnightly |
| Public Place Bins | 60L, 140L and 240L | Varied, daily to weekly |

6.4 Kerbside Bulk Waste Collection

Noosa Council reintroduced a long standing annual kerbside bulk waste collection service in 2014, allowing residents to dispose up to 3 cubic metres of waste on the footpath for collection. (The service had not been undertaken since 2009). The service is for bulky items such as discarded white goods, furniture and electronic equipment generally used in a household. The kerbside collection is for private houses and unit complexes only. Table 4 details the total bulk waste collected. Although kerbside items can be collected by individuals and reused, unfortunately e-waste, green waste and items which could be reused are currently sent to landfill due to mixing and compacting during collection which contaminates reusable items.

Due to its popularity, Council will continue to provide a kerbside bulk waste collection service but will examine ways to enhance recycling outcomes.

Table 4: Bulk Waste Collection

| | Total Waste Collected | Metal segregated and recycled | Waste sent to landfill |
|-------------|-----------------------|-------------------------------|------------------------|
| 2009 | 612 tonnes | Not available | Not available |
| 2014 | 1,501 tonnes | 315 tonnes | 1,186 tonnes |
| 2015 | 1,068 tonnes | 207 tonnes | 862 tonnes |

6.5 Litter and Illegal Dumping

In 2014/15 financial year, Noosa Council received 189 requests to investigate illegally dumped material and 103 requests to investigate littering. Council issued 15 warning letters, 7 Show Cause Notices, 11 Compliance Notices, and 11 Penalty Infringement Notices.

Surveillance of illegal dumping hotspots is undertaken to identify offenders. There are many unreported cases where the community or council outdoor staff clean up illegally dumped rubbish. The most common type of illegal dumping is green waste followed by mattresses and general household goods. There is limited commercial dumping.

Temporary signs have been developed and produced for short term use at hotspots and at the site of recently deposited rubbish. The intent is to convey the message that it is not only Council officers but the whole community that are being vigilant and creates the perception there is an increased likelihood of being seen and reported if you litter or illegally dump items. 20 sites were signed in the 2014/15 financial year.

Approximately half the sites identified are cleaned up voluntarily after investigations have been initiated. The amount of illegally dumped material has markedly decreased over the last two years.

7. New Waste Contract 2017-2024

The major waste services delivered under contract arrangements are broken into three separable portions and include:

- Collections – Domestic and commercial waste, recycling, and garden waste.
- Disposal - operation of Eumundi Rd landfill
- Resource Recovery – activities at Eumundi-Noosa Rd Resource Recovery Centre

Noosa Council will be entering into a new waste contract in June 2017. The waste contract is one of the Noosa Council's largest contracts and underpins most of the actions contained in this plan. Amongst other things, the new contract will include a mandatory fortnightly garden waste service in selected areas and may also include an improved waste collection service for the Hastings Street precinct.

8. Infrastructure

8.1 Resource Recovery Centre

Noosa Council's main Resource Recovery and Landfill Facility is located at Eumundi-Noosa Road in Doonan. There are also rural waste transfer stations and resource recovery facilities in Pomona and Cooroy. Resource recovery of self-hauled loads to these facilities is encouraged with no charge to deposit items such as cardboard, steel, batteries, green waste, concrete, timber.

The Eumundi Road facility recovers goods to be sold at the Brite Side "Tip Top Shop." Brite Side Industries includes the "Tip Top Shop" sales centre, plus three sheds with bicycles, whitegoods, furniture and other products that people have dumped, or donated for sale. Brite Side diverts and sells items from potentially going to landfill.

The "Tip Top Shop" also provides valuable training to skill unemployed people in carpentry, waste management, retail, and forklift driving.



Fig 10: Briteside 'Tip Top Shop'

Brite Side Industries has won multiple awards for its efforts, including two Leaping Frog Awards, a Premier's Environment Award and an Australian Business Quality Award for excellence in customer service.

Resource Recovery Pad

The Resource Recovery Pad at the Eumundi Road Resource Recovery Centre receives waste from commercial and industrial operators, skip operators, contractors and large trailer loads of self-hauled domestic waste. The waste is sorted and items such as steel, concrete and green waste are recovered and recycled.



Fig 11 Concrete Crusher



Table 5: Resource Recovery Facilities

| Transfer Stations | Availability | Waste Collected |
|-----------------------------|---|--|
| Eumundi-Noosa Road Landfill | Public – residents & commercial 7 days/ week | General waste Recyclables Green waste/ purchase mulch Asbestos Clean cover Construction and demolition waste Batteries and tyres Liquid waste Engine oils Steel, whitegoods Car bodies. Domestic goods disposal for re-sale at recycling market (e.g. books). |
| Pomona | Public – residents Fri-Sun 8am-1pm | General waste Recyclables Green waste/ Purchase mulch Engine oil Batteries & tyres Steel, white goods Liquid waste |
| Cooroy | Public – residents Fri-Sun 8am-1pm | General waste Recyclables Green waste/ Purchase mulch Engine oil Batteries & tyres Steel, white goods Liquid waste |
| Ringtail Creek Quarry | Private - Council Activities | Construction & Demolition waste Green waste |

8.2 Landfill

Capacity

The Eumundi-Noosa road landfill site commenced operation in 1986. The initial cells were not lined, however subsequent cells since 2007 (cells 2.1, 2.2 etc) have all been lined. As of 30 June 2014 the landfill life is expected to be 55 years. A new cell has been commissioned to open in 2016.

An estimate of landfill development stage life has also been calculated based on air-space availability using an approximate annual waste acceptance rate of 49,000m³ and a waste density of 0.68t/m³ (taking into account also the quantity of soils used in daily cover). (ATC Williams, Landform Development Plan, 2014).

Table 6: Staged Landforms Available Airspace

| Stage | Estimated Air-Space Capacity m ³ * | Estimated Landfill Life As at 30 June 2014 # |
|--------------|--|---|
| 1 | 96,600 | 1.9 years |
| 2 | 586,000 | 12 years |
| 3 | 461,000 | 9.4 years |
| 4 | 1,609,600 | 32 years |
| Total | 2,753,200 | 55 years |

* Based on June 2014 survey.

Landfill life based on an annual airspace consumption rate of 49,000m³

Methane Gas Extraction

In 2011 the Council entered a 20 year contract with LMS Generation Pty Ltd (LMS) for the provision of a methane gas flare on the Eumundi Rd landfill. A portion of the landfill is supplied with underground gas collection pipes to collect methane gas generated during the natural decomposition of organic waste.



The substantial infrastructure (underground collection pipes and gas flare) was provided at no cost to Council. In return, LMS has the rights to the gas generated on the landfill during the 20 year contract period. The captured methane gas is flared (burnt) to convert methane gas into carbon dioxide, with the resultant burnt gasses discharged to the environment. Carbon dioxide is also a greenhouse gas impacting on the environment. However it is preferable as it has only 1/20th the environmental impact of methane.

LMS receives carbon credits/revenue for the destruction of methane, which pays for the equipment installed. At the present time there is insufficient gas generated in the collection system to pay for the costs to generate electricity. If electricity generation becomes viable in the future the electricity generated and fed into the Noosa electricity grid would provide a revenue return to LMS/Council that would pay for the generator. This is a more desirable outcome instead of merely flaring the gas to the open atmosphere.

Fig 13: Flaring of Methane Gas

However, when organic waste is removed from the landfill this limits the methane generated in the future and may limit the future viability of electricity generation.

9. Education

In 2014-15, waste education was delivered by EnviroCom through the Waste 2 Resources Education Program. EnviroCom is a private environmental consultancy which conducts education, training and research in the area of waste and sustainability.

EnviroCom delivered educational services in local schools as well as field excursions to the Nambour waste resource management education centre and composting workshops at Bunnings, Council libraries and other Council facilities.



Fig 13: Towards Zero Waste Education Campaign

In late 2015, Noosa Council launched its Towards Zero Waste Program which is delivered in-house by a part-time Waste Project Officer. The program was launched during National Recycling Week with a number of waste education displays in local shopping centres.

The Towards Zero Waste education campaign is divided into 4 phases over the next three years and is supported by a communication strategy with a detailed action plan for each phase. Phases include:

1. Encourage and improve recycling outcomes.
2. Encourage voluntary uptake of the garden waste service (3 bin system).
3. Prepare the community for mandatory garden waste service (3 bin system).
4. Manage and promote the correct and effective use of the garden waste (3 bin system).

Phase 1: Encourage and improve recycling outcomes (Nov 2015 – Jun 2016)

- Launch Towards Zero Waste Campaign during National Recycling Week
- Raise awareness in the community, including residents, business owners and visitors about recycling.
- Encourage behavioural change for correct recycle bin use for both residents and commercial operators through education.
- Communicate recycle bin audits and the consequences of incorrect bin use.
- Reduce the amount of recyclable materials sent to landfill from households and businesses.
- Reduce the level of contaminants in the recycle bin (plastic bags and other non-recyclable items).
- Ensure that Council's recycle bin services are communicated and understood by residents and business owners.
- Support community initiatives to reduce/eliminate the use of non-biodegradable bags
- Encourage residents to use re-useable bags, not plastic bags and ensure that alternatives to plastic bags are available.
- Educate people building new homes of the requirement to have a garden waste bin service.

Phase 2: Encourage voluntary uptake of the garden waste (3 bin system) collection service (Jul 2016 – Jan 2017).

- Raise awareness and education levels about the benefits and correct use of the garden waste bin
- Encourage voluntary uptake of garden waste bin.
- Conduct garden waste audit to determine reach required and the level of existing services.
- Reduce the amount of garden waste sent to landfill.
- Reduce the level of contaminants in the garden waste bin.
- Reinforce key messages from Phase 1.

Phase 3: Prepare Community for mandatory three-bin system of waste collection including the garden waste bin in Oct 2017 (Feb - Oct 2017).

- Community education and awareness campaign about garden waste
- Communicate bin audit results and explain why they demonstrate a need for mandatory garden waste collection and to do it properly without contamination.
- Communicate the long term cost savings to Noosa ratepayers.
- Develop and implement reward and recognition program for excellent recycling and garden waste performance.
- Reinforce key messages from phases 1 & 2

Phase 4: Manage and promote the correct and effective use of the garden waste (3 bin system). (Nov 2017 – Mar 2018).

- Communicate the results of bin audits highlighting reduction of waste being sent to landfill.
- Accelerate reward and recognition programs for recycling and garden waste bin use excellence.
- Reinforce key messages from phases 1-3.

Actions for 2018-2024 will be developed in the future and build upon the previous 4 phases.

10. Consultation

10.1 Community Jury – The Future for Noosa’s Organic Waste

About the Community Jury

In early 2015, 24 jurors were selected from 3,000 residents on the electoral roll representing a cross section of Noosa’s diverse community. The Jury met once a month over six months to reach agreement and prepare a verdict on ways to minimise organic waste to landfill. The group toured the Eumundi-Noosa road landfill, reviewed 30 submissions and heard presentations from community representatives, industry spokespeople and experts in the field of waste management.



Fig 14: Community Jury Members at the Eumundi-Noosa Rd Resource Recovery Facility

Community Jury Recommendations

The Jury unanimously agreed to urge Noosa Council to adopt nine recommendations to minimise organic waste to landfill in Noosa, targeting 100% diversion of organic waste by 2030.

In August 2015, Noosa Council adopted the Community Jury's recommendations in principle, pending the outcomes of a further workshop to discuss costs and the timing of implementation.

The outcome from the Councillor workshop was that all new dwellings in urban areas will be provided and serviced with garden waste bins from 1 July 2016. The new waste contractor will deliver bins to serviceable areas in September 2017 with the service commencing in October 2017. The garden waste service will occur fortnightly on the opposite week to recycling.

Council has deferred making a decision on the rollout of a full organics waste collection service (garden and food waste). Providing a full organics waste collection service will be reviewed in the future and will consider issues such as the introduction of a waste levy for Queensland, levels of food waste in bins and future financial viability. (A garden waste service will save approximately 3 years of landfill and a full organics waste collection service would save an additional 1 year of landfill).

Table 7 below highlights how the community jury recommendations have been incorporated into this Strategies Action Plan in Section 11.

Table 7: Community Jury Recommendation Links to Action Plan

| 9 Community Jury Recommendations | Waste Reduction & Recycling Action Plan |
|---|--|
| 1. Expand Noosa’s existing three-bin system in a staged manner to introduce mandatory weekly organics collection for residential areas, with mandatory green waste collection in 2015/16. | Actions: 1.1, 1.2, 1.3, 1.4, 1.5. |
| 2. Minimise cost to ratepayers with cost increases not to exceed \$50 per ratepayer for green waste collection and \$70 per ratepayer for full organic waste collection. | - |
| 3. Council to move to fortnightly collection of general waste bins in Stage 2 (full organic waste service). | Decision deferred. |
| 4. Construct a composting facility at Eumundi-Noosa road landfill site (or another suitable location). | Decision deferred. |
| 5. Design and implement a grassroots, long-term education and awareness campaign. | Actions: 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9, 4.10, 4.11, 4.12, 1.2. |
| 6. Reward excellent waste management to continue positive behavioural change. | Action 4.13. |
| 7. Monitor compliance with the new waste collection system. | Action: 2.5. |
| 8. Ban non-biodegradable plastic bags by 2017. | Action: 2.1. |
| 9. Direct large producers to target 100% diversion of organic waste from landfill by 2030. | Action: 1.7. |

11. Targets

Noosa Council’s Waste Reduction and Recycling Plan aims to meet or exceed the 2024 targets as detailed in the Queensland State Government’s *Queensland Waste Avoidance and Recycling and Resource Productivity Strategy (2014-2024)*. These targets are aspirational rather than mandatory (i.e. there is no penalty for non-compliance).

Table 8: Baseline Statistics

Noosa Council’s baseline waste management statistics have been calculated for 2015:

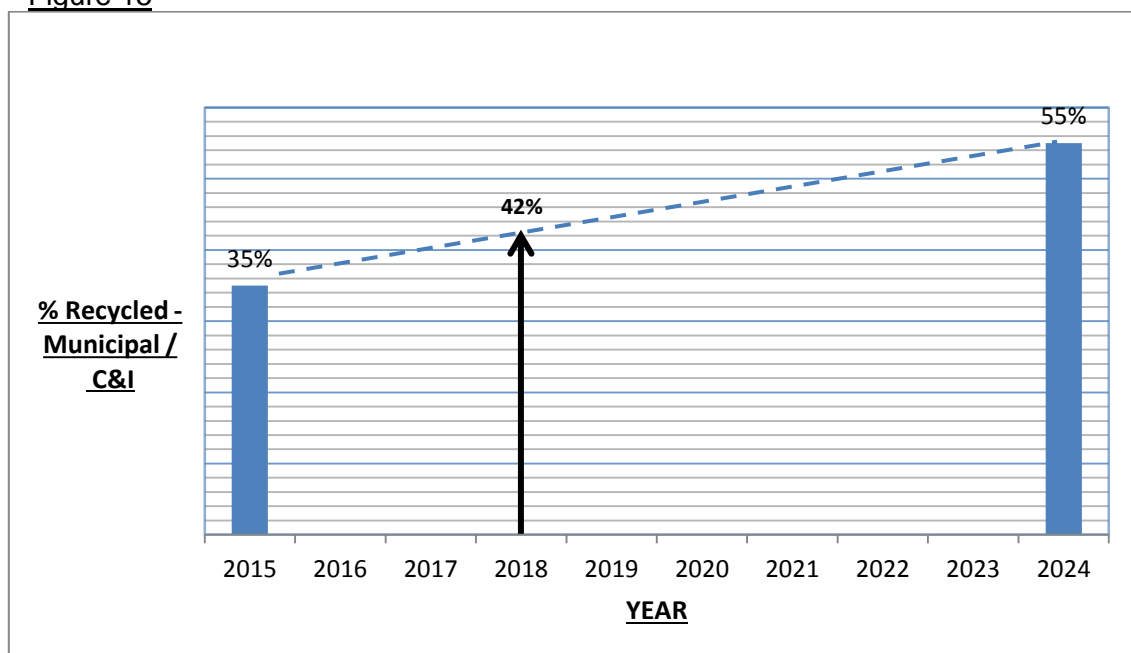
| Waste type | Amount produced | Amount diverted | Percentage diverted |
|--|-----------------|---|---|
| All waste collected or received by Noosa Council | 73,664 tonnes | 33347 tonnes | 45% |
| Municipal, Commercial & Industrial Waste* | 61,955 tonnes | 21650 tonnes | 35% |
| Construction and demolition | 11,709 tonnes | 11698 tonnes | 99.9% |
| Kerbside recycling (yellow lidded bin) | 7,845 tonnes | 7845 tonnes (a small percentage of contamination may be sent to landfill from MRF – volume unknown) | >90% (Noosa Council is allowed up 10% contamination rate – this rate has never been exceeded) |

* Municipal and Commercial/Industrial waste have been calculated together as current statistics available to Noosa Council do not account for origin of waste found in collection trucks – i.e. it is comingled. Amounts diverted in each category (e.g. steel, regulated waste, green waste, timber, etc) also do not differentiate between source of waste and therefore impossible to calculate diversion rates for municipal and commercial/industrial waste separately.

Table 9: Targets

| Waste Stream | Measure | 2015 Baseline | 2018 Target | 2024 Target – as set by Qld State Government |
|--|------------------------------|-----------------|--|--|
| All | Material produced per capita | 1.4t per person | Qld State target for 2024 already exceeded. Noosa Council will target a 2% reduction per capita - review in 2018. | 1.8t per person |
| All | Recycling rate | 45% | 47% Review in 2018 | N/A |
| Municipal, Commercial & Industrial Waste | Recycling rate | 35% | 42% See figure 15 | 55% |
| Construction & Demolition Waste | Recycling rate | 99.9% | State 2024 target already exceeded – maintain current rate. | 80% |

Figure 15



12. Waste Reduction and Recycling Action Plan

The Action Plan is aligned with Council's proposed new waste contract for 2017 and identifies five key areas including:

1. Garden Waste & Composting
2. Waste Reduction
3. Landfill Diversion
4. Community Education
5. Local Government Activities

1. Garden Waste & Composting

| Action | Description | Timeframe |
|--|---|-------------|
| 1.1 – Divert garden waste from landfill | Continue to divert garden waste from landfill. Shred, age and mulch garden waste which is received at Resource Recovery Facilities. Continue to provide mulch for use by ratepayers and for Council activities. | 2016 - 2024 |
| 1.2 Education | Continue to raise awareness regarding the benefits of diverting garden waste from landfill. | 2016 - 2019 |
| 1.3 - Voluntary garden waste bins | Continue to encourage the voluntary uptake of garden waste bins through actively promoting the service and its benefits. | 2016 -2017 |
| 1.4 - Mandatory garden waste bins – new developments | Introduce mandatory garden waste bins for all new developments from July 2016. Educate householders about mandatory garden waste bins for new developments. | 2016 - 2017 |
| 1.5 - Mandatory garden waste bins – Serviceable Areas | Introduce mandatory garden waste bins for all Noosa residents in serviceable urban areas commencing October 2017. | 2017 |
| 1.6 - Home based composting | Encourage residents to compost food waste. Promote Council’s composting and worm farming DVD. | 2016 - 2024 |
| 1.7 Commercial composting | Support restaurants and grocery markets to use commercial based composting units. | 2016 - 2024 |

2. Waste Reduction

| Action | Description | Timeframe |
|--|--|-------------|
| 2.1 – Reduce/Ban Plastic bags | Continue to support community initiatives to reduce/ban plastic bags e.g Boomerang Bags Lobby Qld state government to ban single use plastic bags. | 2016 |
| 2.2 – Public place recycling | Continue to raise awareness of public place recycling and decrease contamination by improved signage/education of recycling. | 2016- 2024 |
| 2.3 – Bulk waste kerbside clean up | Improve resource recovery rate of annual kerbside clean up | 2016 - 2024 |
| 2.4 - Briteside Tip shop | Promote Briteside Tip shop and encourage the community to divert items from landfill by donating to Briteside. | 2016 - 2024 |
| 2.5 - Bin Inspections | Employ a compliance officer to monitor segregation of waste streams. | 2017 |
| 2.6 – Waste minimisation at community events | Support event organisers to improve recycling and organic waste minimisation. Monitor and enforce recycling compliance at events held on council land. | 2016 - 2024 |
| 2.7 – Support the Australian Packaging Covenant | Raise awareness of the voluntary Australian Packaging Covenant. The Covenant is an agreement between companies in the supply chain and all levels of government to reduce the environmental impacts of consumer packaging. (The Queensland government is a signatory to the Covenant). | 2016 - 2024 |
| 2.8 – Container deposit scheme | Monitor the outcome of state government review of container deposit scheme. | 2016 |

3. Landfill Diversion

| Action | Description | Timeframe |
|--|--|-------------|
| 3.1 – Divert recyclables from landfill | Continue to divert recyclables from landfill through the fortnightly kerbside recycling service. Ensure residents/businesses are aware of that self- haul kerbside recyclables (steel and aluminium cans, plastic milk/soft drink bottles, glass bottles and jars, paper and cardboard) can be taken free of charge to the Resource Recovery Facilities. | 2016 - 2024 |
| 3.2 – Divert electronic waste from landfill | E-waste transport and recycling falls under the Federal Product Stewardship arrangements under the National Television and Computer Recycling Scheme. The scheme is currently on hold; once it is reinstated, e-waste will be able to be delivered free of charge to the Resource Recovery Facilities | - |
| 3.3 - Divert tyres from landfill | Continue to divert tyres from landfill and raise awareness in the community that car, motorbike, small truck, 4WD, bobcat and tractor tyres are all accepted at the Resource Recovery Facilities for a small fee (to cover processing). | 2016 - 2024 |
| 3.4 - Divert batteries (car batteries and dry cell) from landfill | Continue to divert batteries from landfill and raise awareness in the community that all batteries (except fire alarm batteries) are accepted free of charge at the Resource Recovery Facilities. Battery recycle bins are also available through commercial operators (e.g. Battery world, Aldi shopping centres). | 2016 - 2024 |
| 3.5 – Divert concrete & brick from landfill | Continue to divert concrete and brick from landfill and raise awareness in the general community and construction industry that clean concrete and brick are accepted at the Eumundi-Noosa rd. Resource Recovery Facility for a small fee (to cover processing) | 2016 - 2024 |
| 3.6 – Divert asphalt from landfill | Continue to divert asphalt from landfill and raise awareness in the general community and the construction industry that clean asphalt is accepted at the Eumundi-Noosa rd Resource Recovery Facility for a small fee (to cover processing) | 2016 - 2024 |
| 3.7 – Divert fluorescent tubes and compact fluorescent lights from landfill | Continue to divert fluorescent tubes and compact fluorescent lights from landfill and raise awareness in the community that fluoro tubes and CFL's are accepted for \$2.50/each at the Resource Recovery Facilities | 2016 - 2024 |
| 3.8 – Divert mattresses from landfill | Continue to divert mattresses form landfill and raise awareness in the community that innerspring and foam mattresses are accepted at the Resource Recovery Facilities for a fee. | 2016 - 2024 |
| 3.9 – Divert gas bottles from landfill | Continue to divert gas bottles from landfill and raise awareness in the community and business sector that gas bottles <9kg capacity can be delivered free of charge to the Resource Recovery Facilities | 2016 - 2024 |
| 3.10 – Divert scrap metal from landfill | Continue to divert scrap metal from landfill and raise awareness in the community and business sector that cars, whitegoods, decommissioned refrigeration appliances etc. can be delivered free of charge to the Resource Recovery Facilities. Refrigerators that are not decommissioned are accepted for a small fee | 2016 - 2024 |

4. Community Education

| Action | Description | Timeframe |
|---|--|-------------|
| 4.1 - Behaviour Change Programs | Focus on long term significant waste behaviour change programs rather than short term low impact change. Council's Towards Zero Waste Educational Program launched in Nov 2015 and will be rolled out over the next 3 years. | 2016 - 2024 |
| 4.2 - Waste Education Officer | Employ a full time Waste Education Officer to guide, coordinate and deliver the Towards Zero Waste Educational Programs in schools, with businesses, residents and visitors. | 2016 - 2024 |
| 4.3 – Waste Education Display | Develop an engaging waste education mobile display for display at events, shopping centres, schools, council facilities etc. | 2016 |
| 4.4 – Brochures & Publications | Develop and print waste education brochures and publications suitable for schools, workplaces, residents and visitors. Existing publications include: <ul style="list-style-type: none"> - Towards Zero Waste brochure about domestic 3 bin service and A-Z recycling guide. - Your Stay in Noosa – recycling information for Visitors and accommodation compendiums - Waste Collections Calendar | 2016 - 2024 |
| 4.5 – Website | Provide waste education information on Noosa Council's website. Keep information updated. | 2016 – 2024 |
| 4.6 – Media | Continue to develop newspaper advertisements, videos and social media updates. | 2016 - 2024 |
| 4.7 – Residents | Disseminate waste education information to residents via resident and ratepayers associations, body corporates, community groups, links on website etc. | 2016 - 2024 |
| 4.8 – Visitors | Disseminate waste education information to visitors via visitor accommodation providers, visitor information centre and Tourism Noosa etc. | 2016 - 2024 |
| 4.9 – Schools | Provide waste education curriculum resources to primary and high school students. | 2016 - 2024 |
| 4.10 – Businesses | Disseminate waste education information to businesses via chamber of commerce organisations and business associations etc. | 2016 - 2024 |
| 4.11 – Industrial & Commercial | Visit and conduct waste audits on selected commercial and industrial businesses and provide information and advice on how they may improve their recycling rates. | 2016 - 2024 |
| 4.12 - Construction & Demolition | Disseminate waste education information to construction and demolition operators via the appropriate associations. | 2016 - 2024 |
| 4.13 – Incentives & Rewards | Investigate incentives and rewards to support waste minimisation and positive behaviour change. | 2016 - 2024 |

5. Local Government Activities

| Action | Description | Timeframe |
|--|--|-------------|
| 5.1 – Divert garden waste from landfill. | Green waste from Council parks, gardens and rural road maintenance is mulched on site by portable (rented) tub grinder. | 2016 - 2024 |
| 5.2 – Divert construction and demolition waste from landfill. | C&D waste generated by Council activities is recovered at the former quarry site at Ringtail Creek. | 2016 - 2024 |
| 5.3 – Improve recycling and composting at Council facilities. | Council administration offices, depots, libraries etc. have recycling bins and some facilities have worm farms for the composting of food scraps. Continue to educate and support staff to recycle and compost. | 2016 - 2024 |
| 5.4 – Improve waste minimisation at Council facilities. | Council administration offices, depots, libraries etc have mini desk bins and centralised waste bins rather than individual bins. Continue to educate and support staff in waste minimisation at work. | 2016 - 2024 |
| 5.5 – Council staff behaviour change | Implement Towards Zero Waste behaviour change program with Council staff such as promoting Boomerang shopping bags, battery recycle bin etc. | 2016 - 2024 |
| 5.6 – Procurement Policy | Ensure that Council staff adhere to the procurement policy. | 2016 - 2024 |

13. Monitoring and Evaluation

Noosa Council will collaborate both internally across different departments and externally with local schools, visitors, businesses and the general community to help implement and achieve the targets within this Plan.

The key focus area actions will be reviewed annually and reported to Council.

The overall WRRP will be reviewed every 3 years and amended accordingly.

14. Appendices

Appendix 1: Waste Reduction and Recycling Act 2011, Chapter 6.

Appendix 2: Previous Waste Study Recommendations.

Appendix 3: 2012 - Composition of the Northern Region Kerbside Domestic Waste Stream.