

DRAFT Sunshine Coast Waste Strategy 2015-2025

Waste Reduction and Recycling Plan



Item 8.4.2

Draft Waste Strategy Draft Sunshine Coast Waste Strategy 2015-2025 Appendix A



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Acknowledgements

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Disclaimer

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Executive summary

The Sunshine Coast like many other communities across Australia is facing major challenges relating to the collection and disposal of solid waste. Existing landfills are fast running out of space and there is growing community support for councils to adopt a more sustainable approach to waste management.

The Waste Reduction and Recycling Plan (WRRP) 2015 – 2025 has been developed to shape council's future waste management infrastructure needs, support the development of strong resource recovery markets and ensure this essential community service remains cost effective and customer focussed whilst protecting our public health and natural environment.

Taking a balanced approach to waste management across the Sunshine Coast Council region, the WRRP will provide integrated waste and resource recovery solutions and assist in delivery of council's vision to become Australia's most sustainable region – vibrant, green and diverse. The strategy intends on delivering this vision by establishing goals and directing resources to the highest value initiatives through the setting of achievable targets over a reasonable time frame.

Planned 'major actions' for the 2015 – 2025 strategy include:

- Construction of a new Resource Recovery Centre at Nambour;
- Expansion of waste and recycling collection services to cover > 95% of the region;
- Delivery of innovative, financially viable 21st century waste infrastructure for future generations that will support projected population growth;
- Investigating alternate waste collection options for the new Maroochy CBD; and
- · Increasing landfill diversion.

Performance indicators and action plans identified in the WRRP are based on the Waste Management Hierarchy and have been developed to align with the Commonwealth National Waste Policy and State² waste reduction targets.

Waste Stream	Qld State Strategy 2014-2024 Landfill Diversion Targets			
Municipal Solid Waste (MSW)	55%			
Commercial and Industrial Waste (C&I)	55%			
Construction and Demolition Waste (C&D)	80%			

Key priorities, strategies and actions in the Sunshine Coast Corporate Plan 2014-2019 have also been incorporated in the WRRP.

In line with the Queensland Waste Reduction and Recycling Act 2011, the WRRP will be reviewed every three years and action plans updated on an annual basis taking into consideration relevant market conditions, revised state targets or federal government initiatives(if applicable).

National Waste Policy: Less Waste, More Resources 2009

² Queensland Waste Reduction and Recycling Act 2011

1. Introduction

1.1 About the Sunshine Coast

The Sunshine Coast Council region encompasses a total land area of approximately 2,291 square kilometres, including beaches, coastline, waterways, national parks, state forests, bush land, coastal urban centres and inland towns. Much of the rural area is used for dairy farming, cattle grazing and crop growing.

More than 35,150 registered businesses in a range of industry sectors exist on the Sunshine Coast (AEC Group, January 2013) and the region has well-established foundations in the retail and construction sectors. Tourism is a major industry which incorporates many holiday resorts and accommodation houses.

1.2 Demographics

The Sunshine Coast is located in South East Queensland, approximately 100km north of Brisbane. The local government area (LGA) is bounded by the Shire of Noosa to the north, Gympie and Somerset Regions to the west and Moreton Bay Regional Council to the south.

The population of the Sunshine Coast Council, as of 30 June 2014, was 284,811 (Australian Bureau of Statistics, Estimated Resident Population (ERP)). Based on this ERP the population forecast for 2025 is 370,222.

The Sunshine Coast region's popularity as a tourist destination also results in an annual transitory residential population increase of approximately 10% which is not accounted for in the ERP data.

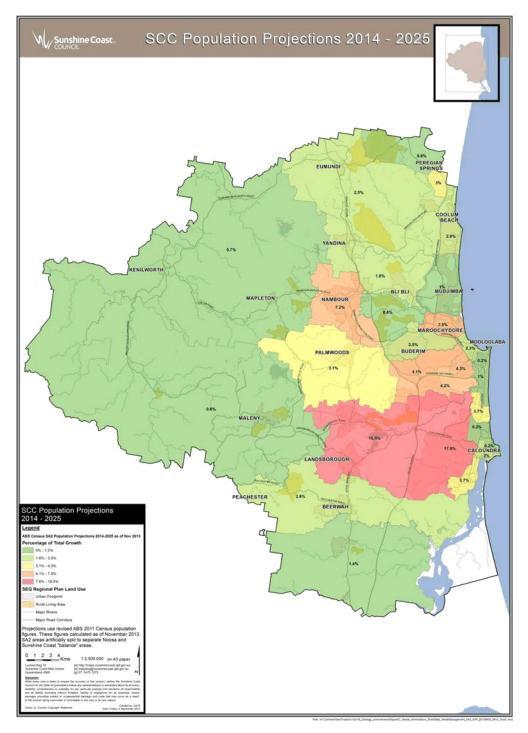
Currently experiencing a growth rate of approximately 1.8% per annum, it is forecast that the LGA will see a population change between 2014- 2025 of 85,411 or 30%. Appendix A tables the population projections for the region based on Australian Bureau of Statistics 2011 SA2 area, illustrating growth by suburb. Of specific note are the projected population increases in the southern part of the region, in particular the suburb of Caloundra West and township of Landsborough which have a combined forecast population increase of 66,865 people by 2025.

In 2011, the census indicated that there were 84,272 detached houses in the LGA, 28,914 medium and high-density dwellings, with 91.7% of these dwellings housing up to four residents and 8.3% housing five or more residents.

Understanding the regions growth rates and housing demographics assists Council and its contractor in planning cost effective provision of services.

The Sunshine Coast Planning Scheme 2014 priority infrastructure plan details existing and projected residential, industrial and commercial development for the region. Concerning industrial and commercial development – the Caloundra West, Landsborough, Maroochydore and Nambour areas are predicted to encounter the majority of growth and as such will influence decision making for the location of future waste management infrastructure.

The Caloundra West local plan area includes the established residential neighbourhoods of Aroona, Little Mountain and part of Currimundi as well as emerging neighbourhoods at Bellvista and Meridan Plains (Source: Sunshine Coast Planning Scheme 2014).



Map 1: Residential population growth projections for the region

This map identifies larger regional population densities and does not identify every locality.

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1.3 Purpose

The Waste Reduction and Recycling Plan 2015-2025 (WRRP) has been developed to align with Sunshine Coast Council's vision to become Australia's most sustainable region – vibrant, green and diverse.

The WRRP sets a direction for waste management across the region over the next 10 years. It will shape council's future waste management infrastructure needs and support the development of strong resource recovery markets.

1.4 Approach

Development of the Sunshine Coast Council Waste Reduction and Recycling Plan can be summarised as:

- Review of Waste Minimisation Strategy 2009/2014
- Review of policy, legislation and corporate plans
- · Review of projected population growth, services, infrastructure and related technology
- · Development of objectives, targets and actions
- Consultation with council officers and councillors
- Initial review of objectives, targets and actions
- · Community and industry consultation via release of draft plan for comment
- · Final review of objectives, targets and actions.

1.5 Previous Strategy

Council's Waste Minimisation Strategy 2009-2014 was used as a guiding document during development of this new strategy. Since adoption of the previous strategy Sunshine Coast Council has invested over \$30million developing new resource recovery facilities, establishing innovative waste management contracts, increasing landfill capacity and investigating a range of alternative waste management initiatives.

Several factors, including removal of the Queensland landfill levy and diminishing timber reuse markets adversely influenced council's efforts to achieve the landfill diversion targets and timelines outlined in the previous strategy.

Technical research undertaken over the past four years also demonstrated that a number of proposed waste minimisation projects outlined in the previous strategy were not conducive to the market conditions of that period. As circumstances change and markets evolve during the term of this WRRP, council will re-assess the viability of these projects whilst continuing to improve on successes of the previous Strategy which include:

- Construction of a new Resource Recovery Centre and Tip Shop at Buderim in 2012/2013
- Introduction of e-waste recycling in 2013
- Introduction of mattress recycling in 2010
- Introduction of regional optional kerbside garden waste services in 2009/2010
- Installation of landfill gas extraction and flaring at Caloundra & Nambour landfills
- · Expansion of bulk recycling collection services to business and industry across the region
- Mobilisation of council's first 'regional' waste collection contract in July 2014.
- A full market assessment of alternative waste treatment and waste to energy technologies to provide Council with future guidance



Image 1: Mattress disassembly for recycling



Image 3: Buderim resource recovery centre front end sorting area



Image 2: Buderim tip shop - outdoor goods area



Image 4: Garden waste collection service

2. Strategic Framework

2.1 Key legislation considerations

There are a number of Queensland and Commonwealth statutory environmental requirements, policies and guidelines that have to be taken into consideration in order to develop appropriate waste management initiatives for this plan and to identify incentives for the reduction and recycling of waste material.

Commonwealth legislation:

- National Greenhouse and Energy Reporting Act (NGER Act) 2007
- Clean Energy (Consequential Amendments) Act 2011
- Clean Energy Legislation Amendment Act 2012
- Product Stewardship Act 2011

Queensland legislation:

- Environmental Protection Act 1994
- Environmental Protection Regulation 2008
- Sustainable Planning Act 2009
- Local Government Act 2009
- Waste Reduction and Recycling Act 2011
- · Waste Reduction and Recycling Regulation 2011
- Environmental Protection (Greentape Reduction) and Other Legislation Amendment Act 2012.

2.2 Key legislative driver

A key requirement of the Queensland *Waste Reduction and Recycling Act 2011 (WRRA 2011)* is an obligation for each local government to prepare a Waste Reduction and Recycling Plan (WRRP). A WRRP must set out actions for managing waste in local government areas in a way that best achieves the objectives of the Act.

2.3 Key policy drivers

The National Waste Policy: Less Waste, More Resources 2009 sets the direction for Australia's waste management and resource recovery from 2010-2020. It sets six key directions under which priority strategies have been developed:

- Taking responsibility for reducing the impacts of products and materials from production to the end-of-life
- Improving the market to deliver efficient and effective markets for waste and recovered resources, using local technology and innovation
- Pursuing sustainability and achieving environmental, social and economic benefits from producing less waste and using waste better
- 4. **Reducing hazard and risk** by reducing the hazardous content of waste and using consistent and safe waste management methods
- Tailoring solutions to increase regional capacity and allow communities to manage waste and recover and re-use resources
- Providing evidence giving decision makers access to meaningful, accurate waste and
 resource recovery data that allows progress to be measured and to inform community choices
 and behaviours.

The Queensland Government is working with the waste sector, general business and industry, local government and community stakeholders to develop the Queensland Waste Avoidance and Resource Productivity Strategy 2014-2024. This industry led strategy will outline the new direction and vision for waste management in Queensland and is expected to be adopted in late 2014. The Queensland strategy is underpinned by five guiding principles:

- Protecting human health and the environment to secure our future prosperity
- Shared responsibility for avoiding unnecessary consumption and improving resource management
- 3. Recognition of the economic, environmental and social costs of waste generation and disposal
- 4. Recognition of regional differences and opportunities
- 5. Full lifecycle management of resources.

The draft Qld State waste strategy proposes targets outlined in Table 1 below.

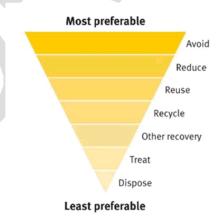
Table 1: Draft Queensland Waste Avoidance and Resource Productivity Strategy 2014-2024 Targets

Waste Stream	Measure	2024 Target
Municipal Solid Waste (MSW)	Improved recycling rate	55%
Commercial and Industrial Waste (C&I)	Improved recycling rate	55%
Construction and Demolition Waste (C&D)	Improved recycling rate	80%
Reduce generation of waste	Reduction in per capita generation	Reduce by 5% to 1.8 tonnes per person per year

The State's Waste Reduction and Recycling Strategy 2010-2020 contained similar targets and included a \$35.00 per tonne landfill levy on C&I and C&D waste as a price signal to change disposal behaviour. The levy was rescinded on 1 July 2012 through an amendment to the Waste Reduction and Recycling Regulation 2011. The industry lead Waste Avoidance and Resource Productivity Strategy 2014-2024 has been drafted to replace the previous strategy.

Consistent with state and commonwealth practices, the Sunshine Coast WRRP 2015 – 2025 is also informed by the waste and resource management hierarchy (figure 2).

Figure 2: The Waste and Resource Management Hierarchy



The waste hierarchy is the preferred order in which waste and resource management options should be considered with avoidance and reduction the most preferable, followed by reuse and recycling and disposal with no energy recovery the least preferable option for managing waste.

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3. Waste Management Activities

Sunshine Coast Council's waste management activities are administered by its Waste and Resource Management (WRM) Branch.

The operations of the WRM Branch are considered a significant business activity subject to National Competition Policy (NCP) provisions of the Local Government Act 2009 and the Local Government (Beneficial Enterprises and Business Activities) Regulation 2010.

In accordance with its obligations under NCP, WRM applies full cost-pricing to its suite of services based on a user-pays principle.

WRM manages waste collection services through a single region-wide collection contract and also oversees the operation of eight waste management sites with a range of infrastructure at each respective facility.

This strategy sets actions to provide efficient and reliable collection services resulting in less than 1 in 2000 missed services and ensure annual per capita generation of waste is less than 1.8 tonnes per person.

All facility, operation and collection services are provided by a suite of contracts awarded through a public tender process that ensures the most cost effective beneficial outcome is delivered to residents and customers.

3.1 Solid waste collection

WRM is responsible for the provision of waste, recycling and garden waste collection services to domestic and commercial premises via a 7 (+1) year contract that commenced in July 2014. The collection and service type arrangements are detailed in Table 2.



Image 5: Collection vehicles

This strategy sets an action for the expansion of the waste collection service area to encompass >95% of the region.

Table 2: Summary of solid waste collection arrangement

Description	Services
Residential Waste	140L and 240L (weekly)
Residential Recycling	240L and 360L (fortnightly)
Residential Garden (optional)	240L (fortnightly)
Multi-Unit Developments Waste	140L and 240L (minimum weekly) 1, 2, 3, 4.5 m3 bulk bins (minimum weekly) 660 and 1100 litre low noise bins (minimum weekly)
Multi-Unit Developments Recycling	240L and 360L (minimum weekly) 660 and 1100 litre low noise bins (minimum weekly)
Multi-Unit Developments Garden Waste (optional)	240L (fortnightly) 660 and 1100 litre low noise bins (fortnightly)
Commercial Waste	140L and 240L (minimum weekly) 1, 2, 3, 4.5 m3 bulk bins (minimum weekly) 660 and 1100 litre low noise bins (minimum weekly) 17, 19, 23 metre compactors (minimum weekly) 30 m3 roll on roll off bins (minimum weekly)
Commercial Recycling	240L and 360L (minimum fortnightly) 1, 2, 3, 4.5 m3 bulk bins (minimum fortnightly) 660 and 1100 litre low noise bins (minimum fortnightly)
Commercial Garden Waste (optional)	240L (minimum fortnightly)) 660 and 1100 litre low noise bins (minimum fortnightly
Public Place Bins	60L pedestal bins (daily) 140L and 240L (daily coastal areas, 3 x weekly hinterland)

This strategy sets an action to investigate options for an alternative waste collection system for the new Maroochy City Centre priority development area.

Recyclables collected under the kerbside collection contract are delivered to the Nambour Materials Recovery Facility, operated under contract until 2021 with an extension option until 2022.

Kerbside garden waste collection is an optional service with a current uptake of 8.5%. Garden waste is delivered to an open-windrow composting facility located at Caloundra landfill.

This strategy sets an action to expand the optional garden waste service by 5% annually in order to reduce waste to landfill and minimise the contamination of the general and recycling waste streams.

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3.2 Resource recovery centres and landfill operations

Council currently operates two putrescible landfills and eight resource recovery centres for the receipt of household waste (MSW), commercial and industrial waste (C&I), construction and demolition waste (C&D) and recyclables. Table 3 provides a summary of current waste disposal and resource recovery centre contracts and their operational arrangements.

Table 3: Disposal and resource recovery centre contracts

Operation	Site	Contract Terms	New Contract
Landfilling Contract	Nambour	10 years	A new contract will commence July 2015.
Landfilling Contract	Caloundra	2 years	A new contract will commence July 2015.
Resource recovery	Caloundra, Buderim, Nambour, Beerwah, Witta, Mapleton, Kenilworth, Yandina	3 years	A new contract will commence July 2015.
Recyclables Sorting and Bailing	Nambour – Materials Recovery Facility (MRF)	7 years + 1	A new contract will commence July 2022.
Garden waste mulching	Caloundra, Buderim, Nambour, Beerwah, Witta, Mapleton	2 years + 1	A new contract will commence September 2016.
Concrete crushing	Caloundra, Buderim, Nambour	3 years	A new Contract will commence January 2015.

This strategy sets an action for the **construction** of a new Resource Recovery Centre at the Nambour.

Smaller contracts are also in place for recovery and recycling.

Recovered Material	
Scrap Metal (including white goods)	Mattresses
Tyres	E-waste
Oils	Batteries
Cardboard	Fluroescent bulbs
Household hazardous waste (chemicals/paints etc.)	



Image 6: Battery recovery

Image 7: Tyre recovery



Image 8: E-waste recovery

Image 9: White goods recovery

3.3 Waste statistics

The quantities, types and source of waste materials disposed of throughout the region are an important factor in determining future directions in waste and resource management. In 2013-2014 the Sunshine Coast community delivered 232,283 tonnes of waste to council's waste management facilities, of which 159,458 tonnes was landfilled.

These tonnages constitute kerbside collected municipal solid waste (MSW), self-haul MSW, commercial and industrial waste (C&I) and construction and demolition waste (C&D).

A total diversion rate of approximately 31% was achieved in the 2013-2014 financial year. Table 4 provides a breakdown of these waste streams received, recycled and landfilled at council's facilities.

Table 4: 2013-2014 Sunshine Coast Council waste statistics

Waste Streams	Tonnes Incoming	Tonnes Landfilled	Tonnes Recycled	Diversion Rate	SCC WRRP 2015-2025 Diversion Targets	
Municipal Solid Waste (MSW	/)					
Domestic Kerbside Waste	72,199	72,199	0	35%	55%	
Domestic Kerbside Recycling	26,795	1,298	25,497			
Domestic Kerbside Garden	4,206	0	4,206			
Domestic Self-haul Waste	18,372	13,987	4,385			
Domestic Self haul Garden	13,104	27	13,077			
Total MSW	134,676	87,511	47,165			
Commercial & Industrial (C& Commercial Waste	36,330	36,330	0	23%	55%	
Commercial Recycling	2,977	144	2,833			
Commercial Self-haul Waste	21,533	17,315	4,218			
Commercial Self-haul Garden	9,375	29	9,346			
Total C&I	70,215	53,818	16,397			
		1	1		1	
Construction & Demolition (C&D)					
Total C&D	27,393	18,129	9,264	34%	80%	
Total Waste Stream	232,284	159,458	72,826	31%		

The Sunshine Coast recycling rate was 35% for MSW in 2013-2014. An annual recycling improvement of 2% will be required to meet the recycling target of 55% by 2024. The C&I waste recycling performance of 23% will entail a 3.2% annual improvement in order to make the target of 55% by 2024. Leadership and guidance from council in the form of partnerships with business will assist in the Sunshine Coast meeting this target.

The recycling performance for C&D waste is currently at 34%. The SCC recycling target of 80% by 2024 is also the state target and therefore will also need to consider implementing initiatives that will see the construction and demolition material recycled through other waste management sector activities.

This strategy sets targets to improve recycling rates for Municipal Solid Waste and Commercial & Industrial Waste to 55% and Construction & Demolition Waste to 80% by 2024.

As part of SCC's resource recovery centre operations, council operates four 'Tip Shops' that are stocked with products diverted from landfill at the resource recovery centre 'front end sort' and identified as reusable, such as household furnishings, collectables, books, toys and sporting equipment. It is difficult to quantify exact volumes or tonnage of material diverted from landfill through Tip Shop activities, however across the four sites the total diversion volume is substantial and the re-use factor is highly ranked in the waste management hierarchy.

The region's current estimated population of 284,811 along with a total waste generation of 234,973 tonnes equates to a waste generation rate of 0.83 tonnes per person per year, which is better than the State target of 1.8 tonnes per person annually.

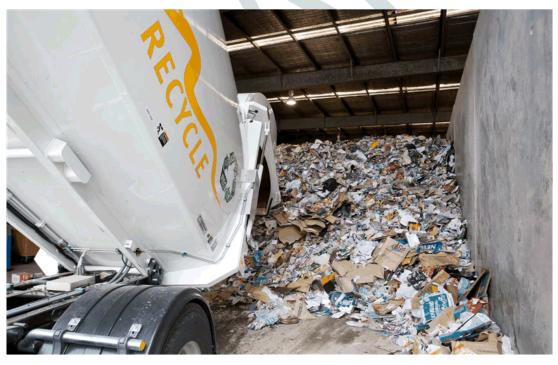


Image 10: Domestic kerbside recyclables unloaded at MRF

3.3.1 Waste composition

The Waste and Resource Management Branch carries out waste composition assessments on a yearly basis alternating between waste streams. The branch audits intervals to ensure valid and accurate data that reflects the Sunshine Coast seasonal variations.

The 2014 data (refer Table 5 and Table 6) demonstrates that there is still a large proportion of recyclable material in the municipal and commercial waste bins such as metals, paper/cardboard and glass.

The data also highlights the high proportion of organic material (garden and food waste) presented in the municipal waste bin, albeit with the current voluntary garden waste system consisting of 8.5% participation.

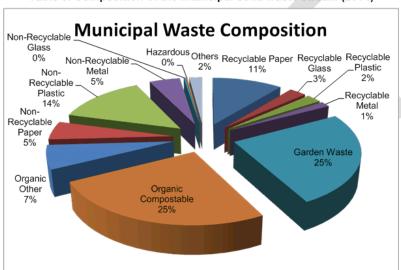
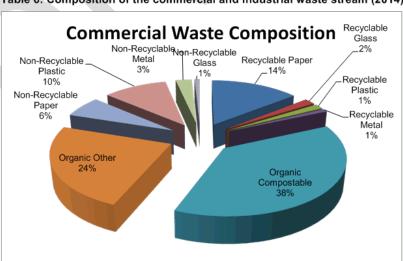


Table 5: Composition of the municipal solid waste stream (2014)





3.3.2 Waste generated by council activities

Waste generated by council in carrying out its activities is diverse, as shown in the Table 7. Where ever possible council branches undertake a range of measures to avoid, reduce, reuse and recycle waste.

Table 7: Waste types generated by council branches in carrying out their activities

Council Branch	Waste Types					
	C&I Waste	C&D Waste	Garden Waste	Recyclables	Other	
Council Offices	✓			✓		
Council Depots	✓		✓	✓		
Parks and Gardens			✓		✓	
Civil Works		√	✓			
Environmental Operations		✓			✓	
Community Response			✓		✓	
Pathways Maintenance		V				
Airport	~					

The Waste Reduction and Recycling Act (WRRA) 2011 stipulates that this plan is to include actions to improve the reduction and recycling of waste generated by council in carrying out its activities. For council to lead by example in moving waste up the hierarchy there is a need to establish an accurate baseline data of the quantities and types of waste generated by council's activities. For this reason an action in Objective 5 (Table 14) has been established to measure this and thus allow future performance to be measured against the then established baseline data.



3.4 Facilities / Infrastructure

Council provides a range of resource recovery centres and disposal facilities for the waste generated in the Sunshine Coast. Table 8 identifies each facility and the waste type accepted. It also includes information about proposed future capital works.





Image 11: Beerwah tip shop

Image 12: Caloundra resource recovery - front end



Image 13: Buderim resource recovery centre solar panels offsetting the sites power usage

This strategy sets actions to investigate future waste disposal infrastructure requirements in collaboration with other public utility or private sector partners.



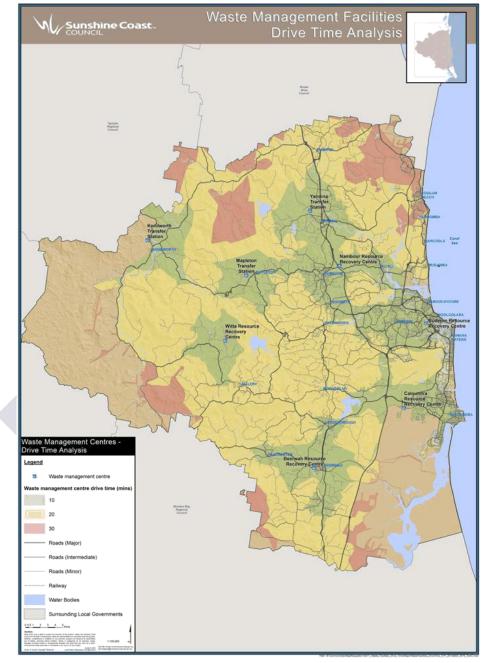
Image 14: Caloundra landfill transfer station

Table 8: Current and proposed infrastructure

Facility	Waste Types Accepted	Proposed Future Capital Works
Caloundra Landfill and Resource Recovery Centre	Waste transfer station and landfill Domestic and commercial waste Construction waste Contaminated soils Green waste Recyclables Household hazardous waste	Construction of cells 9,10,11 and 12 Sewer connection for leachate removal Construction of bio-basin for control of nutrient rich runoff
Beerwah Resource Recovery Centre	Domestic waste Green waste Recyclables Household hazardous waste	
Witta Resource Recovery Centre	Domestic waste Green waste Recyclables Household hazardous waste	
Nambour Landfill and Transfer Station	Waste transfer station and landfill Domestic and commercial waste Construction waste Contaminated soils Green waste Recyclables Household hazardous waste	Construction of cell 5 Construction of Resource Recovery Centre and Tip Shop Installation of dual weighbridges Construction of Transfer Station Construction of workshops Sewer connection for leachate removal Landfill expansion into adjacent property
Nambour Material Recovery Facility (MRF) Closed to Public	Domestic and commercial recyclables	Upgrade bulk haul bailing system
Buderim Resource Recovery Centre	Domestic waste Green waste Recyclables Household hazardous waste	Upgrade of bulk waste drop off zone Construction of bio-basin for control of nutrient rich runoff
Kenilworth Transfer Station	Domestic waste Green waste Recyclables Household hazardous waste	
Mapleton Transfer Station	Domestic waste Green waste Recyclables drop-off Household hazardous waste	Upgrade of facility to increase resource recovery
Yandina Transfer Station	Domestic waste Green waste Recyclables Household hazardous waste	

Map 2 below illustrates the locations and drive time analysis of the eight disposal facilities currently located within the region (excluding the Nambour MRF which is not open to the public). The map indicates that over 85% of the region's population is within 20 minutes of a waste disposal facility. This information in conjunction, with the predicted population growth, guides decision making with regard to location of future disposal sites and upgrades of resource recovery centres and transfer stations.

Map 2: Waste facilities drive time analysis



This map identifies higher regional population densities and does not identify every locality.

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3.4.1 Landfill capacity

The space above the ground-level at landfill sites (known as airspace) is a key strategic driver for long-term planning of waste disposal assets. Council operates two active landfills for the disposal of putrescible and non-putrescible waste:

- Caloundra Landfill is located at Pierce Avenue, Caloundra and has an estimated remaining capacity of approximately 1.9 million cubic metres and is forecast to reach capacity in approximately 2030.
- Nambour Landfill is located at Cooney Road, Bli Bli and has an approved and remaining capacity of approximately 1 million cubic metres with an approximate forecast closure of 2024.

This strategy sets a target to ensure that the percentage of incoming waste that is diverted from landfill is greater than for the previous year. This is in place to prolong landfill life and support the achievement of recycling rate targets.

In 2013, Sunshine Coast Council acquired the land parcel adjoining the Nambour Landfill for future landfill development. A summary of the landfill airspace capacity is provided in Table 9.

Table 9: Remaining landfill airspace capacity

Facility	Approved Airspace*	Potential Additional Airspace	Estimated Closure Year
Caloundra	1,915,000m3	Nil	2030
Nambour - Current	1,005,000m3	Nil	2024
Nambour – Future (18 Cooney Rd)	Nil	1,085,000 – 2,411,006m3	2037

^{*}Current at 7 July 2014

Council is currently considering a range of infrastructure planning options for future waste management to cater for predicted population growth. Options include:

- 1. Expansion of current sites:
 - potential to build bulk storage/bulk haul transfer station/s
 - potential to increase the size of current landfills
 - construction of a new resource recovery centre at Nambour
- 2. Development of new sites:
 - potential to build new regional landfill/s or shared landfill/s (with private enterprises or neighbouring councils)
- 3. Re-shaping the way current facilities are being utilised
- Investigate options for partnerships with neighbouring local councils or public utilities for the development of regional facilities.
- 5. Conducting a feasibility study of alternative waste treatment (AWT) options in conjunction with potential public utility or private sector partners as appropriate.

State legislation impacts specifically related to the possible reintroduction of a 'landfill levy' will influence decision making as planning and development options are progressed.

3.4.2 Landfill gas

Organic waste in a landfill decomposes, releasing mainly carbon dioxide and methane – known as greenhouse gas emissions. Gas emissions from the various council landfills, closed and current, account for approximately 80% of the total greenhouse gas emissions in council's total greenhouse gas emission footprint.

Landfill gas is captured so that the methane component can either be used or converted to carbon dioxide to reduce its impact on the environment. Current gas capture rates are approximately 23%. Council's target of 40% by 2020 will be achieved through improvements to landfill gas capture systems, operational activities and expansion and finalisation of landfill capping.

This strategy sets a target to improve site operational methods to enable a 40% methane capture rate by 2020. The development of this is to support Councils Climate and Peak Oil Strategy 2010-2020 target of carbon neutrality by 2020.

Council has landfill gas capture systems in place at three locations:

- Nambour landfill
- · Caloundra landfill
- Buderim landfill (closed)

Over the next few years, the quantities of gas generated will be monitored. If sufficient volumes are proven, council will install a gas driven engine to power a generator in order to produce electricity to feed into the local electricity network and supply grid.



Image 15: Caloundra landfill gas manifold



Image 16: Caloundra landfill gas flare

3.4.3 Closed landfill remediation program

Council actively manages a number of legacy landfills in the region including those listed below. This management is delivered via an ongoing monitoring program and a long-term prioritised operational and capital works program that delivers closure, remediation and post-closure works.

Buderim landfill	Syd Lingard Drive, Buderim
Coolum Landfill	Toolborough Road, Coolum
Kenilworth Landfill	Brooloo Lane, Kenilworth
Mapleton Landfill	Delicia Road, Mapleton
Woombye Landfill	Laidlaw Road, Woombye
Duck Hole Creek Landfill	Pelican Waters Boulevard, Caloundra West
Glass House Landfill	Mt Beerwah Road, Glass House Mountains

In accordance with the standard, council is required to recognise a provision for the future costs associated with closing and restoring its landfills, where:

- it has a present obligation (legal or constructive) as a result of a past event
- it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation
- a reliable estimate can be made of the amount of the obligation.

3.5 Education program

The Sunshine Coast Council is committed to encouraging community change concerning attitudes, behaviours and practices regarding waste. Continued development in, and emphasis on, the areas of education and community involvement in waste minimisation and resource recovery is a key strategy.

To this end, the Waste 2 Resource Education Program was established in 2004. It aims to:

- raise awareness and understanding towards waste and resource consumption issues and solutions
- · provide the community with first hand experience in waste management issues and activities
- facilitate on-ground behavioural change and improve practices towards resource recovery, recycling and waste minimisation.

The longevity and exposure of the program amongst the community has built solid partnerships that work year after year toward the common goal of improved waste related behaviours across the region. Currently the program is delivered to approximately 6000 people per year. Council's target is to increase this by 5% annually and the actions in place to achieve this are listed in Objective 2 (Table 11).

The program has partnerships with community groups, businesses, schools, local TAFE networks, early learning centres, the University of the Sunshine Coast and community members.



Image 17: Nambour waste and resource management education centre

3.6 Litter and illegal dumping

The Sunshine Coast Council is committed to improving the management of litter and illegal dumping with a proactive cost-effective approach. The Litter Management Plan 2014-2016 aims to address the ongoing issue of litter and illegal dumping in the Sunshine Coast local government area. The objectives of the plan are to:

- 1. Adopt zero tolerance to rubbish dumping
- 2. Reduce the amount and incidence of littering and illegal dumping
- 3. Increase enforcement of litter and illegal dumping offences
- 4. Increase community awareness of littering and illegal dumping (why it's a problem and what to do to be part of the solution)
- 5. Encourage community involvement in litter and rubbish dumping prevention
- 6. Monitor and evaluate all programs and communicate results.

During the 2013-2014 financial year council received 159 littering reports and 935 illegal dumping reports. A 100% clean-up rate of reported incidents was achieved.

Of the 935 illegal dumping reports received during 2013 / 2014, 299 were referred to local laws for further investigation. Evidence found in illegally dumped waste led to a number of offenders being identified and invited to retrieve the offending material. Penalty infringement notices were issued to those that failed to respond.

This strategy sets a target for the reduction in incidences of littering and incidences of illegal dumping by 5% per annum.

Illegal dumping and littering hotspots are monitored using a combination of covert surveillance techniques and highly visible regular inspection programs. Through ongoing enforcement and community education Council has targeted an annual 5% reduction in illegal dumping occurrences.



Figure 18: Public place litter and recycle bin

4. Strategy Implementation

4.1 Objectives & Targets:

The objectives of the Sunshine Coast Council Waste Reduction and Recycling Plan support those presented in the Draft Queensland Waste Avoidance and Resource Productivity Strategy 2015-2024 and are also aligned to Councils Corporate Plan 2014-2019.

- Objective 1. Provide ongoing opportunity for cost effective resource recovery operations and efficient disposal of residual waste.
- Objective 2. Ensure the community is well-informed and satisfied with waste management services.
- Objective 3. Conduct all waste operations with the minimum effect on the environment
- Objective 4. Ensure the waste management system is operated in the most social, economical and environmentally responsible manner.
- Objective 5. Base the system on the Waste and Resource Management Hierarchy in order to minimise the amount of waste going to landfill.

The following tables outline the actions in place to support the achievement of their respective objectives. Action timelines of one, two and three are based on 1-3 years, 4-7 years and 8+ years respectively. Action costs of low, medium and high are valued at \$0-100k, \$101k to \$500k and greater then \$500k respectively.

This strategy's objectives, targets and their relationship to council's Corporate Plan 2014-2019 are clearly illustrated in appendix B.



4.2 Actions

Table 10 - Objective 1: Provide ongoing opportunity for cost effective resource recovery operations and efficient disposal of residual waste.

Target Link	Actions	Timeline	Measure / Source	Cost
1.1	Maintain an updated listing of waste treatment technologies and economic aspects of each process	1	Documented evidence, annual review of list	Low
1.1	Maintain a cooperative approach with other local councils and utilities with the possibility of development of a regional facility	1	Attend regional workgroup meetings (ComSEQ etc.)	Low
1.2	Ensure efficient and effective landfilling operations that maximise landfill life	1	>900 kg per cubic meter compaction measured bi- annually	Medium
1.2	Research grant processes and third party interest for the implementation of different treatment technology applications	3	Maintain currency in industry developments both nationally and internationally	Low
1.2	Identification of new landfill sites, associated bulk haul options and/or alternative waste technologies in and out of the SCC region in collaboration with other public utility or private sector partners as relevant.	1	Business case in place for future waste disposal / transfer infrastructure requirements	Medium
1.2	Develop a Business Plan outlining services, activities and projects contributing to council's strategic goals	1	Approved Business Plan in place, updated annually	Low
1.2	Undertake financial modelling that sets prices to fully recover all the relevant costs of supplying services based on the polluter pays principal	2	Adopted financial model in place, updated annually	Low
1.2	Develop and implement Asset Management Plans to guide the optimal utilisation of resources	2	Asset Management Plan with linkages to financial plan in place	Low

Table 11 - Objective 2: Ensure the community is well-informed and satisfied with waste management services.

Target Link	Actions	Timeline	Measure / Source	Cost			
2.1	Maintain a website which is easily understood by the ratepayers	1	Review website access numbers annually	Low			
2.1	Provide timely and relevant information to customers about waste management services	1	Information available on website and in print material	Low			
2.1	Provision of safe waste disposal facilities	1	Nil reportable injuries per year	ries per Medium			
2.1	Provide efficient and reliable collection services meeting all relevant legislative requirements	1	<1 missed service complaint per 2000 services	Medium Low			
2.1	Prepare and implement media releases and segments informing the community about waste matters	1	Regular contact with internal media branch and number of releases prepared	Low			
2.1	Investigate online and mobile technology solutions to provide better customer access to waste management information and services	2	Regular meetings and involvement with Councils information technology branch	Low			
2.2	Prepare, implement and monitor Annual Education Plan	1	Education Plan adopted, updated annually	Low			
2.2	Provide education programs for schools and community groups		Monthly reports indicating participation rates and number of programs delivered	Medium			
2.2	Be involved in SCC displays at community events	1	Minimum of 3 events supported annually	Low			
2.1	Maximise the safety and wellbeing of employees, contractors and volunteers	1	On an annual basis no major instances reported	Low			

Table 12 - Objective 3: Conduct all waste operations with the minimum effect on the environment.

Target Link	Actions	Timeline	Measure / Source	Cost		
3.1	Recovery of methane / NGERS reporting as required and progress generation opportunities.	1	Methane recovery graphed and documented evidence of NGERS reporting			
3.1	Maintain a Site Based Management Plan for each site	1	Plans in place and functional for each sites individual requirements	Medium		
3.1	Ensure that site Contractors review and comply with their required actions under SBMP & site licences	1	Documented inspection program and audits carried out	Low		
3.1	Improve site operational methods to enable the capture of 40% of methane by 2020	2	% of methane capture measured annually	High		
3.1	Develop Vegetation Offsets - Caloundra Landfill clearing and Buderim Resource Recovery Centre new 'Tip Shop' clearing	2	Veg offsets in accordance with license requirements in place	Medium		
3.1	Implement transitional environmental plans for Caloundra Landfill cut-off wall and stormwater diversion	1	Plans implemented	High		
3.2	Maintain and implement a Litter Management Plan,maintain a surveillance program and reduce incidence of littering and illegal dumping by 5% per annum	1	Plan in place reviewed annually, surveliance program in place, 5% reduction per annum	Low		

Table 13 - Objective 4: Ensure the waste management system is operated in the most social, economical and environmentally responsible manner.

Target Link	Actions	Timeline	Measure / Source	Cost		
4.1	Percentage of incoming waste that is diverted from landfill is greater than for the previous year adjusted for population and economic growth to support the achievement of recycling rate targets	1	% waste diversion measured annually			
4.1	Conduct community and customer surveys to better inform the design and delivery of services	2	Biennial surveys completed	Low		
4.2	Waste services rates in the top three as determined by the council annual satisfaction survey	1	Council's biennial customer service survey	Low		
4.2	Manage Council's existing waste contracts	1	Documented evidence of contractor monthly reports reviewed for compliance	Low		
4.1	Expansion of waste collection service area to encompass whole of region when service access and/or communal collection points can be established	1	Low			
4.1	Establish 10 year capital works plan, ensure minimum 90% spend for the year	2	Endorsed plan in place, updated annually	Low		
4.1	Develop Local Law for the administration of waste management activities in preparation for the state devolving its responsibilities as part of the review of the Waste Management Regulation 2000	1	Local Law developed and adopted by Council	Medium		
4.1	Investigate options for alternative waste collection system for new Maroochy City Centre priority development area	1	Business case prepared and presented	Medium		
4.1	As part of annual financial modelling review tiered charging methodologies	1	Tiered Charging modelling presented to Council	Low		
4.1	Contribute to economic development through joint initiatives between communities and business	2	Resource recovery contracts offering profit share initiatives	Medium		

Table 14 - Objective 5: Base the system on the Waste and Resource Management Hierarchy in order to minimise the amount of waste going to landfill.

Target Link	Actions	Timeline	Measure / Source	Cost		
5.1	Expand optional garden waste service to support the achievement of recycling rate targets	2	Increase garden waste services by 5% annually	Low		
5.1	Expansion and promotion of the operation of the 'Tip Shops' to support the achievement of recycling rate targets	1	Increase in customer transactions	Low		
5.1	Construction of a new Resource Recovery Centre at Nambour to support the achievement of recycling rate targets	1	RRC constructed 2016	High		
5.1	Perform annual waste characterisation surveys of kerbside and self-hauled waste	1	Annual waste survey report	Low		
5.2	Develop markets for diversion and management of new waste types from waste streams to support the achievement of recycling rate targets	3	Markets for new waste types established and diversion in place	Medium		
5.2	Determine waste generation rates for individual Council activities as baseline data for improved recycling rates	2	Database established recording tonnages by activity	Low		
5.2	Ensure annual per capita generation of waste is less than 1.8 tonnes per person	1	Waste generation measured annually	Low		



5. Evaluation

Council will work with residents, businesses and industry to help achieve the objectives and targets within this WRRP. Measuring how we are performing against the targets will be completed on an annual basis and reported according to Table 15.

Table 15: Key performance indicators

Objective	Target	Target Measure
Provide ongoing opportunity for cost effective resource recovery operations and efficient disposal of residual waste	Improve recycling rates for Commercial & Industrial waste to 55% and for Construction & Demolition Waste to 80% by 2024	C&I 55% C&D 80%
	Effective landfilling operations delivering waste compaction in excess of 900kg per cubic metre	>900kg per cubic meter
Ensure the community is well informed and satisfied with waste management services	Provide efficient and reliable collection services resulting in less than 1 in 2000 missed services	< 1 in 2000
	Participants in our education programs through schools and community groups to increase by 5% annually*	5% annual increase in participants*
Conduct all waste operations with the minimum effect on the environment	Improve site operational methods to enable a 40% methane capture rate by 2020	Measure of methane captured
	Reduction in incidence of littering and incidences of illegal dumping*	5% reduction per annum*
Ensure the waste management system is operated in the most social, economical and environmentally responsible manner.	determined by the council's annual satisfaction	Top 3 services
	Percentage of incoming waste that is diverted from landfill is greater than for the previous year*	Total waste diversion
Base the system on the waste and resource management hierarchy in order	Improve recycling rates for Municipal Solid Waste to 55% by 2024	55%
to minimise the amount of waste going to landfill	Ensure annual per capita generation of waste is less than 1.8 tonnes per person	<1.8 tonnes / annum

^{*} The measurement of these metrics will be proportional to population growth

Progressively council's Waste and Resource Management Branch will ensure implementation of the actions and that the region achieves its objectives centred on improved waste reduction and recycling.

In line with the Qld Waste Reduction and Recycling Act 2011, this WRRP will be reviewed every three years and actions updated on an annual basis.

Glossary

Alternative Waste Technology (AWT)

Waste processing infrastructure using mechanical, biological and/or thermal processes as an alternative to, or pretreatment prior to, landfill.

Construction and Demolition Waste (C&D)

Unwanted materials produced directly or incidentally by building or demolition activities.

Commercial and Industrial Waste (C&I)

Means waste, other than green waste, recyclable waste, interceptor waste or waste discharged to a sewer, produced as a result of the ordinary use or occupation of commercial premises.

Polluter Pays Principle

Is the principle that all costs associated with the management of waste should be borne by the persons who generated the waste.

Putrescible landfill

Landfills that are licensed for the disposal of waste that decomposes e.g. food waste.

Resource Recovery

Is the selective recovery of waste materials for a specific next use, such as recycling, composting or energy generation.

Landfill Airspace

Amount of space directly related to the capacity and usable life of the landfill.

Landfill Gas Capture

Collection of methane gas that is formed during the breakdown of decomposing waste.

Leachate

Water that has percolated through the landfill itself and contains contaminating substances.

Legacy Landfills

Former landfill sites for which council still has an environmental responsibility.

Materials Recovery Facility (MRF)

Facility for the sorting of mixed recyclable materials primarily from yellow lidded bins into separate material streams.

Municipal Solid Waste (MSW)

Waste from households, usually either collected at the kerbside or delivered by residents to transfer stations/landfill sites.

Residential Waste (domestic waste)

Means waste, other than domestic clean-up waste, green waste, recyclable waste, interceptor waste or waste discharged to a sewer, produced as a result of the ordinary use or occupation of domestic premises.

Tip Shor

Facility that houses and sells quality used, recycled and second hand products which have been salvaged before going to landfill.

Transfer Station

Is a building or processing site for the temporary deposition of waste.

Waste and Resource Management Hierarchy

The waste hierarchy is the preferred order in which waste and resource management options should be considered with avoidance and reduction the most preferable, followed by reuse and recycling and disposal with no energy recovery the least preferable option for managing waste.

Appendices

Appendix A

POPULATION SIMULA	ATIO	N																			
Persons	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Buderim - North	15,859	16,192	16.531	16,878	17,232	17,594	16,493	16,601	16.710	16,819	18,178	18,382	18,589	18,798	19,009	19,222	19,486	19,753	20,024	20,298	20,576
Buderim - South	14,910	15,199	15,495	15,795	16,102	16,415	16,933	17,296	17,666	18,045	18,251	18,510	18,774	19,041	19,312	19,586	19,690	19,795	19,900	20,006	20,112
Mountain Creek	7,245	7,769	8,330	8,933	9,578	10,271	8,655	8,916	9,184	9,461	11,912	12,090	12,270	12,453	12,639	12,828	12,960	13,093	13,228	13,364	13,502
Sippy Downs	9,397	9,584	9,775	9,970	10,168	10,371	12,197	12,739	13,305	13,896	12,889	13,058	13,230	13,404	13,581	13,759	13,842	13,926	14,010	14,094	14,179
Aroona - Currimundi	9,988	10,061	10,134	10,208	10,282	10,357	9,994	9,994	9,995	9,996	10,362	10,358	10,354	10,350	10,347	10,343	10,350	10,358	10,366	10,373	10,381
Buddina - Minyama	6,431	6,470	6,509	6,549	6,589	6,629	6,451	6,454	6,458	6,461	6,646	6,661	6,676	6,690	6,705	6,720	6,732	6,743	6,755	6,766	6,778
Caloundra - Kings Beach	6,365	6,437	6,510	6,584	6,659	6,734	7,686	7,931	8,184	8,446	7,880	7,978	8,076	8,176	8,276	8,379	8,544	8,713	8,886	9,061	9,241
Caloundra - West	15,557	16,131	16,727	17,344	17,984	18,648	20,624	21,616	22,656	23,747	23.587	25,569	27,718	30,047	32,572	35,308	38.228	41,390	44,813	48,518	52,531
Golden Beach - Pelican Waters	10,613	10,778	10,945	11,115	11,287	11,463	12,079	12,342	12,611	12,886	12,767	13,124	13,490	13,867	14,254	14,652	14,832	15,013	15,197	15,383	15,571
Moffat Beach - Battery Hill	8,071	8,132	8,193	8,255	8,317	8,379	8,080	8,082	8,083	8,085	8,387	8,386	8,385	8,384	8,384	8,383	8,388	8,394	8,400	8,405	8,411
Parrearra - Warana	9,407	9,544	9,683	9,824	9,967	10,112	9,695	9,744	9,793	9,842	10,369	10,442	10,515	10,589	10,663	10,738	10,925	11,115	11,309	11,506	11,706
Wurtulla - Birtinya	6,107	6,408	6,723	7,055	7,402	7,767	7,517	7,782	8,056	8,339	9,234	9,479	9,731	9,989	10,254	10,527	10,780	11,040	11,305	11,578	11,856
Coolum Beach	13,726	14,067	14,417	14,776	15,143	15,519	15,260	15,532	15,808	16,090	16,952	17,023	17,094	17,166	17,238	17,310	17,384	17,458	17,532	17,606	17,681
Marcoola - Mudjimba	10,635	10,776	10,918	11,063	11,209	11,357	10,962	11,018	11,074	11,130	11,648	11,705	11,763	11,822	11,880	11,939	11,980	12,020	12,061	12,102	12,143
Maroochydare - Kuluin	17,394	17,734	18,080	18,433	18,793	19,160	21,368	22,114	22.886	23,684	22,744	23,249	23,766	24,293	24,833	25,384	26,062	26,758	27,472	28.205	28,958
Mooloolaba - Alexandra Headland	11,622	11,805	11,990	12,179	12,370	12,565	13,186	13,466	13,752	14,045	13,958	14,008	14,057	14,107	14,157	14,207	14,327	14,447	14,568	14,690	14,814
Bli Bli	6,890	7,059	7,231	7,408	7,589	7,775	7,636	7,767	7,902	8,038	8,470	8,538	8,606	8,675	8,745	8,815	8,885	8,956	9,027	9,099	9,172
Diddillibah - Rosemount	3,447	3,492	3,538	3,584	3,631	3,679	3,672	3,710	3,750	3,789	3,877	3,939	4,001	4,064	4,129	4,194	4,253	4,312	4,372	4,433	4,495
Eumundi - Yandina	9,715	9,881	10,050	10,222	10,396	10,574	11,393	11,700	12,015	12,338	12,075	12,140	12,205	12,270	12,336	12,402	12,635	12,872	13,113	13,359	13,609
Nambour	18,665	19,010	19,361	19,719	20,083	20,454	21,599	22,131	22,676	23,235	23,100	23,757	24,432	25,126	25,840	26,575	26,870	27,168	27,470	27,774	28,083
Noosa Hinterland (Sunshine Coast part)	3,337	3,405	3,474	3,545	3,617	3,690	3,648	3,703	3,758	3,814	3,975	4,000	4,026	4,052	4,078	4,105	4,145	4,185	4,226	4,268	4,309
Peregian (Sunshine Coast part)	4.036	4,201	4,373	4,553	4,739	4.933	5,776	6.131	6,509	6,909	6.651	6,771	6.894	7,019	7,146	7,275	7,389	7,505	7,623	7,743	7,864
Beerwah	7,358	7.641	7,934	8,239	8.556	8.884	8,563	8.782	9,007	9,237	10,081	10,178	10,276	10,375	10,474	10,575	10,734	10,896	11,060	11,226	11,395
Caloundra Hinterland	8,324	8,386	8,448	8,511	8,574	8,638	8,642	8,696	8,751	8,805	8,912	8,950	8,989	9,027	9,066	9,105	9,217	9,330	9,444	9,560	9,677
Glass House Mountains	5,668	5,789	5,912	6,038	6,166	6,298	6,390	6,519	6,650	6,784	6,959	7,021	7,083	7,146	7,209	7,273	7,329	7,386	7,444	7,501	7,559
Landsborough	9,793	10,058	10,330	10,609	10,896	11,190	16,683	18,232	19,924	21,774	17,444	19,347	21,459	23,800	26,397	29,278	30,660	32,107	33,623	35,210	36,872
Maroochy Hinterland	6,131	6,229	6,328	6,429	6,531	6,635	6,521	6,589	6,657	6,726	6,986	6,998	7,011	7,023	7,036	7,049	7,093	7,138	7,183	7,229	7,275
Palmwoods	10,469	10,642	10,818	10,997	11,178	11,363	12,396	12,750	13,114	13,488	13,081	13,224	13,368	13,514	13,661	13,811	13,899	13,989	14,078	14,169	14,260
SUNSHINE COAST TOTAL	267,160	272.877	278,759	284.811	291.040	297.454	310.097	318.336	326.933	335,910	337,375	344.885	352.837	361,269	370,222	379,742	387,619	395,859	404,487	413.528	423.010

Appendix B



Draft Sunshine Coast Waste Strategy 2015-2025



