Redland City Council

Redland City

Waste Reduction and Recycling Plan

2015 – 2020

Contents

Message from the Mayor

Waste is an unavoidable reality of modern life. Fuelled by consumerism and technological advances, the amount of 'rubbish' we throw out every week has continued to increase over recent decades, a trend that is both damaging for the environment and unsustainable for the future of the planet.

The essence of our enviable lifestyle in the Redlands stems from our magnificent natural environment. From our picturesque hinterland to the coastal plains, foreshores, waters and islands of Moreton Bay, the Redlands truly is the best place to live, work, play and do business. Managing our resources is a must for a sustainable future.

Here at Redland City Council, we know our approach to waste management makes a difference to our local community, our region and the world around us. The more we can recycle, reuse and recover, the less waste needs to go to landfill.

Green living is a priority for Council. We know our choices impact quality of life for 150,000 residents who call the Redlands home, as well as future generations. As our population grows, so too does the volume of waste produced and adopting a sustainable and energy efficient approach to waste management and resource recovery is essential for the future.

With kerbside waste collected from approximately 55,000 properties each week, along with fortnightly recycling collections, optional green waste bins on the mainland and a network of eight transfer stations on the mainland and islands, waste management is a significant task across the city.

In 2014-15, our city managed 108,853 tonnes of waste, 95 per cent of it produced by households. Despite successful recycling programs, 53 per cent of domestic waste received was sent to landfill and no doubt included green waste, food waste and recyclables that could have been diverted. While we are performing better than average across the wider South East Queensland region, which recorded a 37 per cent resource recovery rate in 2012-13, there is much room for improvement.

The *Waste Reduction and Recycling Plan 2015-2020* is Council's blueprint for waste management for our City over the next five years. Informed by stakeholder feedback and industry best practice, the plan will guide how the city continues to improve its waste management, to recover and reuse more resources and reduce the volume of useful material and organic matter going to landfill.

While there have been significant improvements in waste management over the past five years, attributed in part to the removal of domestic tip fees at Council's waste transfer stations in 2012, there is much to do over the next five years. This plan has been developed to ensure waste is managed appropriately in the Redlands today and into the future. It details objectives and targets and outlines our preferred approach to managing the city's waste until 2020.

Our aim is to provide an environmentally friendly waste management system that provides a high level of service to the community and is affordable. Our priority is to reduce the amount of waste that goes to landfill and improve recycling and resource recovery. To achieve our goal, we will focus on improving recovery rates, minimising food waste and ensuring green waste and recyclables are kept out of the waste bins.

Everyone has a role to play in the sustainable future of our city and the success of our waste management strategy. We are all part of the solution and together we can make a difference.

Cr Karen Williams

Mayor of Redland City

1. Introduction

Waste management is an essential service for our community, yet it remains an environmental, social and economic challenge. This plan outlines actions for managing waste as a resource and associated infrastructure planning over the next five years.

Everyone has an opinion about waste management. For some, it conjures up negative images of excessive packaging, plastic bags, littering and illegal waste dumping. Others feel a strong sense of satisfaction with the convenience of kerbside recycling systems and ready access to tip shops and transfer stations, where they can donate items, find a bargain or dispose of bulky items and excess waste.

For Redland City Council (RCC), reducing, reusing and recycling waste is an opportunity to divert resources from landfill. Despite the success of RCC recycling programs, leading to a domestic resource recovery performance of 47 per cent in 2014-15, just over half of the total waste received is still sent to landfill.

The *Waste Reduction and Recycling Plan* (the Plan) aims to tip the balance the other way so that less than half of the waste is landfilled. This means greater focus on resource efficiency. Advancing resource efficiency means moving from a linear model (where resources are extracted, processed, used and then disposed) to a cyclical model (where resources are separated and recovered then recycled again and again).

The key points covering the need for improvement in waste and resource management include:

- The generation of waste is a symptom of inefficient use of resources, including water, energy, money and land assets.
- Waste production and disposal has environmental impacts from start to finish, from extraction of resources to disposal in landfill.
- The volume of waste is increasing over time, with population growth, improved standards of living and changing technology leading to greater consumption of goods.
- Inefficient management of finite resources leads to lost opportunities for economic development of new business activities and associated job creation.
- Local community assets such as landfills are gradually being filled and replacement sites are harder to find, meaning more waste has to be trucked further away from where it is generated. This leads to increased transport costs.

A key focus of this Plan is to minimise cost pressures by taking a practical and realistic approach to continuous improvement in recycling. The more recycling the Redlands community undertakes, the less waste will go to landfill. Recycling actions that can be undertaken relatively easily, quickly and without substantial investment are preferred.

Community involvement in both reducing waste generation and correct participation in the various services available is critical for success. Various education and awareness campaigns will be sustained to ensure knowledge is available to drive cultural change towards better waste avoidance behaviours.

Everyone has a role to play in reducing waste and ensuring that existing services are used efficiently. RCC is proud of its waste management achievements and is committed to continuing its service focus, with careful consideration of the required levels of service and infrastructure requirements.

Despite the success of RCC recycling programs...over half of the total waste received is still sent to landfill.

2. What is waste?

There are three distinct types of waste depending on its composition and the reason why it was generated.

1. Municipal solid waste (MSW) / domestic

Municipal solid waste (MSW) is legally defined as domestic waste and forms the vast majority of waste that is RCC collects from kerbside wheelie bins and transfer stations. This is the main waste stream that RCC and the community can control in terms of how it is collected and managed, and the success of recycling diversion programs. The generation of domestic waste is predominantly driven by population, wealth and consumerism.

2. Commercial and industrial waste (C&I)

Commercial and industrial waste (C&I) is waste generated from commercial activities such as retail and hospitality. It varies in nature depending on the type of business. The generation of this waste is driven by economic activity. There are a number of private waste contractors that collect and dispose of C&I waste in the Redlands and the State Government has a responsibility to collect data on the volume of C&I waste.

3. Construction and demolition waste (C&D)

Construction and demolition waste (C&D) is generated from building, construction, refurbishment or demolition. The predominant waste materials from this source are concrete and soil, however, construction also generates timber, plastic, cardboard and other wastes such as plasterboard. The generation of this waste is driven by building approvals, construction and renovation activities.

Other types of waste include:

Disaster waste

Natural disasters, such as storms, create large fluctuations in the volume of municipal waste that can require additional temporary storage areas, such as at parks. RCC has been affected by tropical storms that have generated excess green waste, which has been collected and processed as a resource along with the regular green waste stockpiles at the waste transfer stations.

Regulated waste

Regulated waste is waste that is more hazardous by its nature. Special transport and disposal conditions apply to this type of waste. RCC manages a limited amount of regulated waste, such as asbestos and household hazardous waste.

Illegal dumping and littering

Illegal dumping and littering represents ‘leakage’ from the formal waste collection and disposal systems and can include any type of waste. Littering is smaller in scale and more widespread than illegal dumping, however, both occur at a cost to the RCC community.

Everyone has a role to play in reducing waste...

3. About RCC and RedWaste

Redland City covers an area of 537 square kilometres, which includes mainland suburbs and six island communities. Located on Moreton Bay, RCC borders Brisbane City, Logan City and Gold Coast City Councils. Its economy includes retail, health and community, education, manufacturing and tourism.

RedWaste is a commercial business unit of RCC responsible for delivery of waste management collection and disposal activities across the mainland and islands. Key functions include:

- Collection of kerbside waste and co-mingled recyclables from approximately 55,000 properties
- Optional kerbside green waste collection (mainland only)
- Litter bin collection from streets, parks and reserves
- Provision of eight waste transfer stations (WTS) that receive other waste and resources generated within the RCC area
- RecycleWorld tip shop that sells reusable items
- Strategic waste planning and capital works delivery of new infrastructure and major projects.

RedWaste operates as a type 2 commercial business unit under Local Government legislation and includes both waste operations and waste planning unit. Full cost pricing applies to RedWaste services, which ensures the unit operates efficiently and provides a commercial financial return to Council.

All labour, plant and equipment, operations, materials processing including commodity trading and collections are outsourced to specialist contractors on a regular basis through a competitive tender process. Contract durations vary in length from two to 10 years or more, commensurate with the level of investment required and other forecasted changes. This approach enables RedWaste to test the market regularly and ensure the most cost-effective outcome for the community.

Other Council business units deliver associated services, including waste education, littering and illegal disposal clean-up and enforcement. This plan will ensure a coordinated response to various actions across the organisation.

There are no active operational landfills in the Redlands. Closed landfill management and remediation is outside the scope of this plan.

Map of Redland City including suburbs

Where are we now?

4. Key achievements since the last strategy

The *Sustainable Resources from Waste Plan 2010-2020* was adopted by RCC in June 2010. Significant community feedback from residents and businesses was sought during the development of this document, including online and other forums, a waste futures focus group and a business workshop.

The key objectives were to:

- Align with Federal and State Government waste reforms, together with community expectations for greater diversion of waste from landfill
- Support Council's transition to a new waste disposal solution after the closure of Birkdale Landfill
- Encourage waste minimisation and assist the community to increase resource recovery
- Set targets for waste reduction and recycling
- Focus on recovery of high priority items such as organic material
- Utilise partnerships and regional collaboration for cost-effective waste management solutions.

It is important to reflect on the achievements of the past five years (2010-2015) and how they have contributed to improved performance, in order to confidently move forward with the next five years of strategic actions (2015-2020). Key achievements include:

- Implemented *Re-think your rubbish* campaign and RedSWAP program for schools.
- Provided a greater choice of wheelie bins, including a larger 340-litre recycling bin and a new third optional green waste bin. This included adopting the National Standard (AS4123.7-2006) for bin lid colours.
- Introduced bulk recycling bins at waste transfer stations and for residential and commercial properties, including resorts on North Stradbroke Island.
- Increased public place recycling bins to expand on home recycling.
- Commenced electronic waste recycling at selected waste transfer stations.
- Improved the segregation of non-ferrous metals at the waste transfer stations to increase revenue.
- Expanded cardboard recycling program to include Russell, Macleay and Coochiemudlo Island transfer stations.
- Conducted a green waste composting trial on Russell Island.
- Participated in a South-East Queensland (SEQ) regional study to overview alternative waste technologies.
- Introduced a permanent hazardous household waste facility at Redland Bay Waste Transfer Station.
- Negotiated a waste disposal agreement with Brisbane City Council to dispose waste at their facilities until mid-2020.
- Progressed regional collaboration actions by investigating shared transfer station infrastructure with Logan City Council.

5. Why do we need to review the strategy?

The previous adopted waste strategy *Sustainable Resources from Waste Plan 2010-2020* was developed as a long-term planning tool. It served to guide RCC through an emerging and rapidly changing external waste regulatory environment at that time. Legislation requires regular strategic reviews, with a five-year review planned midway through this ten term. This new plan is the result of that review.

The external regulatory environment had a significant impact on economic instruments used to advance particular outcomes at the federal, state and local levels. During the past five years, a number of price signals have been introduced then removed, including the federal Carbon Pricing Mechanism, Queensland landfill levy on C&I and C&D waste streams and residential gate fees at RCC waste facilities.

Other legislation has changed, including the introduction of the *Waste Reduction and Recycling Act 2011*, the major framework governing waste management for Queensland including strategic waste planning, which replaces the *Environmental Protection (Waste Management) Policy 2000*.

The *Queensland Waste Strategy 2010-2020* was also reviewed and the updated industry-led *Queensland Waste Avoidance and Resource Productivity Strategy 2014-2024* is now in effect. A significant change as a result of this process is that the original targets for increasing resource recovery of MSW were reduced from 65 per cent to 55 per cent. Achieving the earlier 65 per cent target was difficult to cost and RCC had set aspirational targets in its last strategy while acknowledging that more assessment was required.

This new plan, together with previous achievements, has allowed RCC to confirm its approach for resource recovery efficiency improvements to meet the new targets by 2024.

Despite these changes, there are a number of high-level principles that remain the same, and underpin this new plan, such as:

- Minimising the generation of waste and avoiding wasteful consumption
- Recovering more value from the waste and treating it as a resource to improve recycling performance
- Shared responsibility – moving to a low waste economy requires behavioural changes across the whole Redland community
- Regional collaboration – achieving economies of scale for services and infrastructure to minimise cost pressures
- Lifecycle costing of options – in order to ensure that the most cost-effective waste solution is chosen on behalf of the community, RCC will continue to underpin its recommendations for new services and infrastructure with robust financial and risk assessments.

Continued actions

Actions not completed during the first five years of the previous strategy have been carried forward to the next five-year timeframe covered by the new plan. In summary, the main action areas continued, which are detailed in latter sections, are:

- Confirming future disposal and transfer station infrastructure needs, which will then allow sites to be further developed and master-planned
- Improving data recorded about RCC resource recovery performance as an organisation and actions to manage priority wastes as they arise
- Evaluating existing statistics on litter and illegal dumping and documenting a plan for future actions and management targets.

Waste management is still a highly regulated activity that may be subject to a number of external changes in the future, for example, changes to the management of plastic bags and container deposit schemes, both recent developments announced by the Queensland Government.

Community needs also evolve over time. It is therefore important that this plan remains strategic in direction with adequate flexibility during the implementation phase to accommodate necessary changes.

The implementation actions outlined in this plan reflect the six priority objectives set for the next five years of the plan.


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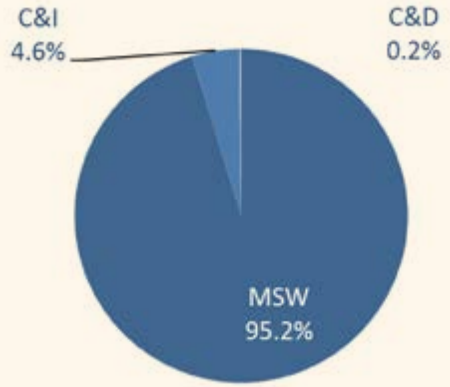
6. Waste and recyclable products managed

RedWaste handled a total of 108,853 tonnes of waste in 2014-15, comprised of:

- 103,639 tonnes of domestic waste
- 5001 tonnes of C&I
- 212 tonnes of C&D waste.

More than 95 per cent of waste managed by RCC is from households. As a result, this plan will focus on targets and strategic objectives for the domestic waste stream.

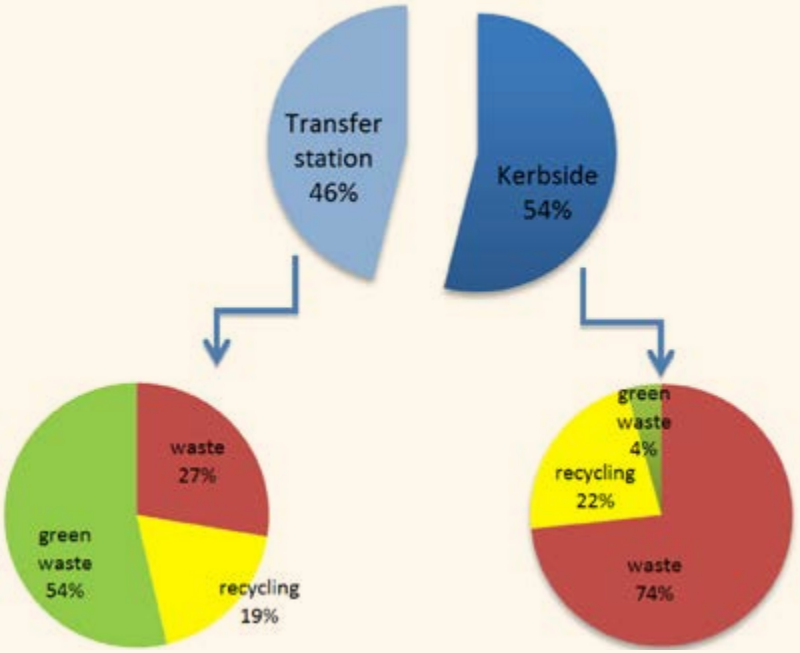
Proportion of waste types handled



In 2014-15, the resource recovery rate for domestic waste was 47 per cent, compared with 48 per cent for C&I and 100 per cent for C&D. Of the domestic waste totals, the kerbside waste and recycling bin collection system (including the optional green waste bins) managed 54 per cent of this total (55,949 tonnes). The eight transfer stations across the whole of the City (two on the mainland and one on each of the six islands in the City) handled the remaining 46 per cent (47,690 tonnes).

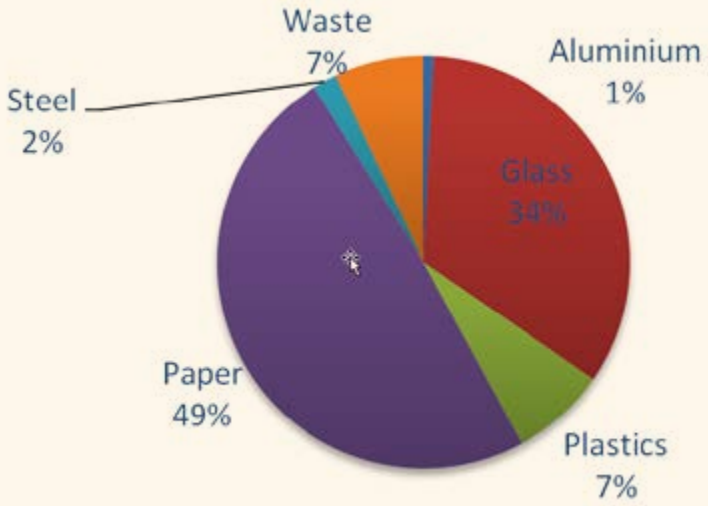
In the kerbside system, 26 per cent of waste is diverted from landfill from the co-mingled recyclables and green waste. Co-mingled recyclables collected include glass, aluminium and steel cans, plastic packaging containers, clean paper and cardboard.

Resource recovery performance of both the kerbside collection system and the waste transfer stations



The relative composition of the co-mingled recyclables mostly consists of paper and glass.

Composition of the co-mingled recyclable stream



For the eight transfer stations, the reverse is true with 73 per cent of the waste being diverted from landfill.

The overall resource recovery performance of the eight transfer stations is 73 per cent. The separate performance across the islands and mainland has also been assessed. The combined resource recovery performance of the six island transfer stations is 84 per cent and the combined performance of the two mainland transfer stations is 70 per cent. Therefore the island waste facilities are performing very well.

Most of the recycling volume recovered during 2014-15 was from green waste. A full list of products and tonnages recycled across the City is detailed below.

Resource recovery products in 2014-15 by type and weight

Data management

It is important to acknowledge the limitations of data available to RCC because this may have a small impact on the reported performance under this plan.

Data reporting is a legislative requirement across all waste sites. As not every site has a weighbridge, conversion formulas are used to convert volumes to weights for different waste types. For sites with a weighbridge, not every load is weighed as this would hinder the flow of traffic.

In the past, RCC has reported performance in accordance with various key campaigns or service promotions. Typically the overall resource recovery rate was used, which is a blend of all waste types. As the new State Government strategy sets targets for the three distinct waste types, RCC has moved to better categorise and separate these.

Overall, data confidence is high for the largest components measured in the waste system. Some particular points to note about the data are detailed in the following table.

Existing information on data type	Comments	Overall data confidence
Total City waste generation per capita	RCC only measures the amount of waste that it directly manages. Much of C&I and C&D waste is handled outside the RCC system. Other waste not measured includes donations to charity and private sales. The State Government would need to holistically calculate this from their wider reporting system.	Moderate
Split of waste between domestic, C&I and C&D including RCC as an organisation	Only large commercial transactions are weighed at Birkdale WTS. At Redland Bay and the Island WTS all incoming commercial waste is estimated on a cubic metre basis. While waste is weighed at the end processing point off site, this needs to be split between each waste type. The amount of C&I and C&D is a best estimate based on an overall transaction split.	Moderate
Amount of material diverted through RecycleWorld	All donations made at the Birkdale WTS are weighed as they leave the site for sale at the Redland Bay WTS. All donations made at the Redland Bay WTS are estimated as there is no weighbridge on-site. They are estimated to be the same weight as those donated at Birkdale.	Moderate
Transfer station waste and recyclables	The waste and recyclables that are segregated at the WTS are all weighed at the receiving locations.	High
Kerbside waste and recyclables	Waste and recyclables that are collected from the kerbside bins across the mainland and bay islands are weighed at their destination. Green waste from kerbside collections is weighed at the Birkdale Waste Transfer Station. Redland Bay is the average weight per transaction at Birkdale multiplied by the number of transactions at Redland Bay.	High
Litter bins and public place recycling bins	All the locations of litter bins and public place recycling bins are well-identified. It is not possible to measure the quantity of waste and recycling from these receptacles as they are collected using the same trucks as the household bins.	Moderate
Littering and illegal dumping	There are three different units of RCC that collect data about littering and illegal dumping depending on the area where it occurs. There is a lack of consolidation of data and trend analysis across the City.	Moderate
Waste composition	Waste composition audits are useful for strategic planning of services and infrastructure and designing waste reduction programs. Eight assessments occurred from September 2009 to June 2011 of wheelie bins and the transfer station bins in 2012. An average composition is assumed but more updated data is needed based on the new green waste bin collection service.	Moderate
Benchmarking	There is very little formal benchmarking that occurs around the state or the region to compare local governments. The Queensland Government publishes the *State of Waste and Recycling in Queensland* report annually with selected data presented to illustrate key trends. Voluntary informal benchmarking occurs between local governments within the SEQ region from time-to-time.	Moderate

7. Waste education

RCC is charged with providing the most cost-effective and environmentally responsible means to manage waste by providing collection, processing and disposal services according to the waste and resource management hierarchy. This hierarchy provides an ideal preference to the order of how waste should be managed.

Waste and resource management hierarchy

Waste education and community involvement is critical for maximising the success of avoiding, reducing, reusing and recycling waste. RCC have provided a community waste education program since 1996 when kerbside recycling was first introduced. This program aims to raise awareness and greater understanding of waste generation with a view to reducing waste in the first place and then maximising participation in the reuse and recycling services on offer.

RCC believes that sustainable waste practices should begin in the home and continue into public places and at work. RCC also believes that most people want to do the right thing, provided they have the necessary tools, information and skills to do so.

Target areas for information and involvement are usually set annually based on organisational priorities. In 2014-15, the waste education officer:

- Facilitated 77 school waste education visits (including childcare, primary and secondary) relating to the topics of waste minimisation, recycling, composting and litter prevention.
- Conducted 17 visits to RedSWAP schools involving waste minimisation advice, waste audits, assembly talks and presentations.
- Continued the RedSWAP program with four schools namely:
  - Ormiston State School, Vienna Woods State School and St Rita's Primary School, as well as Capalaba State College (Junior Campus).
  - St Rita's and Vienna Woods were both awarded 3-star accreditation in the Keep Queensland Beautiful Cleaner Greener Schools Program (upgraded from 2-stars in 2013).
  - Ormiston was awarded a 1-star accreditation.
- Purchased two portable water refill stations which are free to hire and have been booked for various council-run, schools and community events.
- Conducted community waste education extension activities at the Good Gardening Expo, Indigi Day Out and the Talking Rubbish library workshop series.
- Promoted recycling and litter messages around the City such as on bus stop shelters.

Portable water refill stations

Promotion of litter and recycling messages

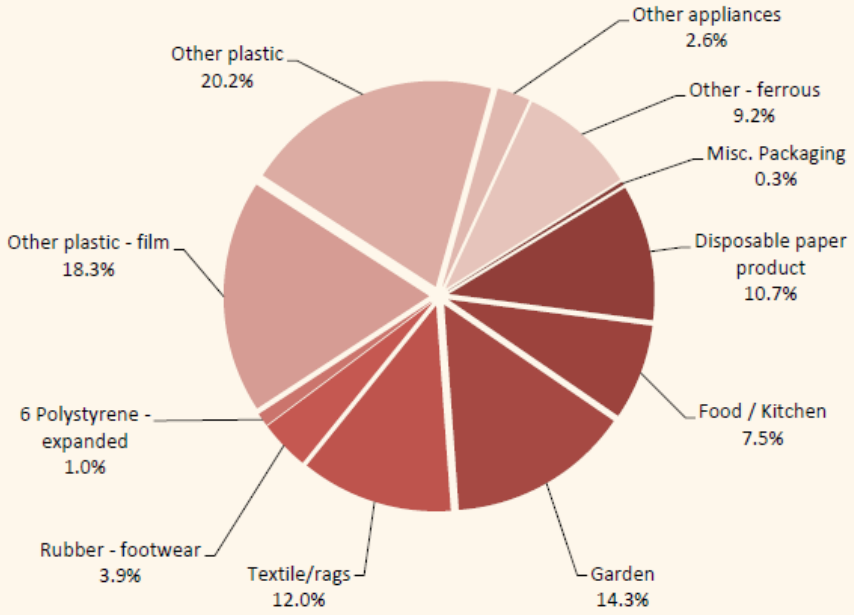
RCC conducts regular audits of the kerbside recycling system to measure whether key educational messages are positively influencing the behavioural choices made by consumers. Two key messages that are regularly communicated are contamination and presentation loss.

Contamination

Materials that are not recyclable are classed as contaminants and can increase sorting costs and reduce efficiency in the collection and handling of co-mingled recyclables.

An audit undertaken in March 2015 showed that the contamination rate had reduced to 7 per cent from a historical average of 8.32 per cent. While this is a snapshot in time and could be influenced by seasonal trends or other unpredictable events, it is an encouraging result. The composition of contamination shows that plastics and textiles make up more than half of contamination.

Composition of recycling contamination



Presentation loss

Presentation loss refers to recyclable materials that are difficult to recover because of how they are presented. For example, recyclables encased in plastic bags. In the last audit, there were no bagged or encased recyclables observed.

Sustainable waste practices should begin in the home and continue into public places and at work.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8. Kerbside bin collections

Kerbside waste truck

Kerbside recycling bin

Kerbside green waste bin

Lid colour differentiation

Bulk waste and recycling bins

The entire geographical area of the Redlands has access to a collection service. As a main tourist destination, North Stradbroke Island has a collection on Mondays. The most common type of bins used for collection are wheelie bins. Red lids are being progressively phased in for waste bins to assist in the visual differentiation between all bin types.

The following bin combinations are available.

- 140L Waste/140L Recycling
- 240L Waste/240L Recycling
- 240L Waste/340L Recycling
- 140L Waste/340L Recycling*

  *sustainability set - only available with a green waste bin on the mainland

Weekly kerbside collection services are provided to approximately 55,000 domestic and commercial premises, including public litter bins. The collection vehicles transport the collected waste direct to the landfill or transfer facilities located within the Brisbane City Council area.

The kerbside recycling bins are collected fortnightly and recyclables are transported directly to a materials recovery facility at Gibson Island in Brisbane City. A private contractor further sorts and processes these items so they are suitably presented for sale to relevant markets.

RCC offers a voluntary green waste collection service for grass clippings, small branches and garden prunings. This service is collected on alternative fortnights to the co-mingled recycling collection. This service is only available on the mainland because of cost considerations. However following public consultation, pricing for this service will be investigated in the next collection tender. The collected green waste is transported directly to the mainland transfer stations and consolidated with green waste stockpiles for onwards processing to an external composting site.

There has been steady growth in the adoption of green waste bins since they were introduced, with an average growth rate of 13.5 per cent over the past three financial years. As at the end of 2014-15, there were 8358 properties with a green bin, which represents 15 per cent of all households.

Where wheelie bins are not practical, such as for units and flats, bulk bins are provided with flexible arrangements for the number of waste pick-up services per week. Bulk bin sizes range from 0.66m^3 to 4.5m^3.

Hazardous household waste (HHW)

A quarterly household hazardous waste collection at the Cleveland Showgrounds has ceased and a permanent container for hazardous household waste established at the Redland Bay Waste Transfer Station.


WARNING

9. Bulky waste

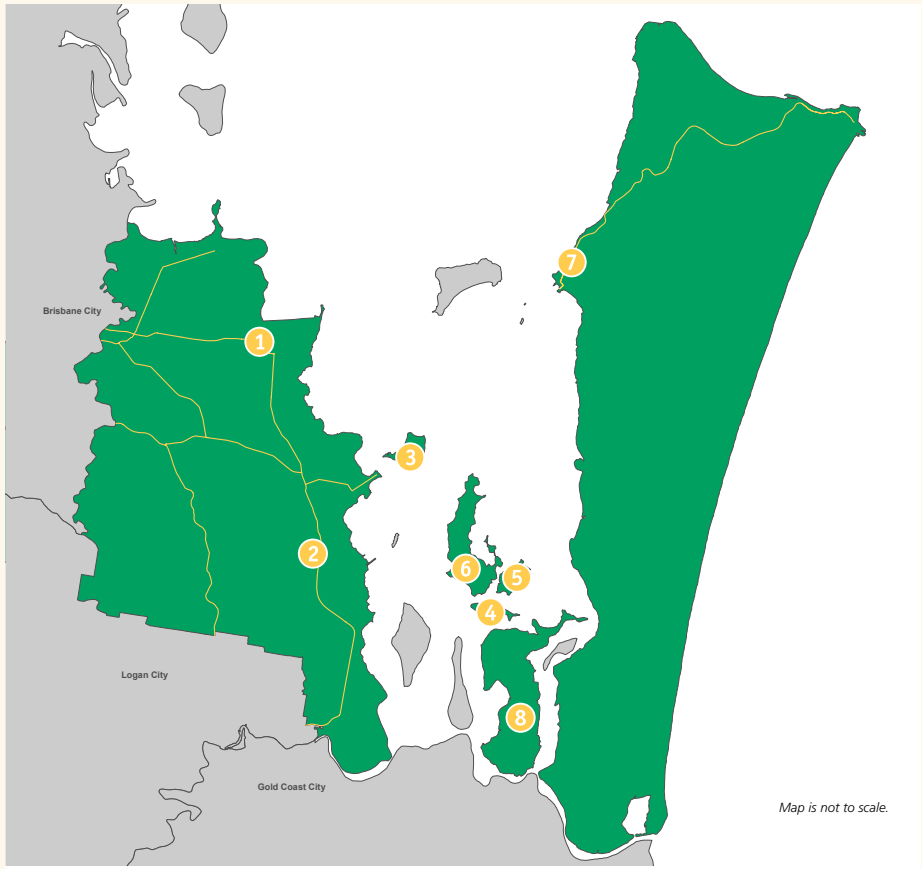
Bulky waste items are the oversized discarded items that will not fit into the wheelie bins. Items include furniture, large electrical appliances (including fridges, ovens, televisions) building materials from home renovations, logs, and large volumes of green waste.

The vast majority of bulky waste generated in RCC is self-hauled by residents to the network of eight transfer stations across the mainland and islands.

Purpose of transfer stations

Waste transfer stations are a customer interface to deposit and sort bulky waste into the various recycling areas on site, including the RecycleWorld tip shop. Specialist contractors then transfer the recyclable materials to different external processing locations. See Section 22 for more information about opening times, waste handled for each site and key statistics of the waste transfer stations.

Location of waste transfer stations in the Redlands



1. Birkdale - 537-609 Old Cleveland Road East
2. Redland Bay - 761-789 German Church Road
3. Coochiemudlo Island - Elizabeth Street
4. Karragarra Island - The Esplanade
5. Lamb Island - Sweet Gum Avenue
6. Macleay Island - Eastern Road
7. North Stradbroke Island - East Coast Road, Myora
8. Russell Island - Davidson Road

Public drop-off area and bins at Birkdale Waste Transfer Station

Alternative options to manage bulky waste instead of transfer stations

RCC offers an on-call service for the removal of up to three bulky items once per year to Home Assist eligible clients. This service includes removal of furniture and white goods, but excludes green waste. The program is available to homeowners and renters who are aged 60 years and over, or those of any age with a disability.

In 2014-15, there were 422 requests for collections of bulky items that totalled 24 tonnes. Of this total, 33 per cent was recycled through the waste transfer stations.

Residents may also manage bulky waste by:

- Collection by local private companies, for example, hiring a skip or garden bag
- Donation to charitable organisations, friends and family
- Private sale through online marketplaces, second-hand shops, jumble or car boot sales.

In 2011, RCC scheduled a kerbside bulky waste pick-up of excess green waste caused by tropical cyclone Oswald. About 15,000 cubic metres of green waste was collected and composted outside the City at a cost of more than $1 million.

There are currently no regular or scheduled city-wide kerbside bulky waste collection days provided by RCC. There are a number of operational and safety issues associated with this type of collection activity that must be managed, including hazardous materials, heavy items, ignoring quantity restrictions, placement after collection, blockage of street frontage, degradation of street amenity and attraction of scavengers. Participation rates vary according to general advice by other councils and are estimated to be 30-50 per cent.

Typical bulky waste kerbside waiting collection

Future opportunities

Factors that must be considered in assessing a community-wide bulky waste collection service in the Redlands include:

- Community demand for waste service and estimated participation rates
- Reducing traffic at the existing mainland transfer stations, which are becoming constrained
- Achieving value for money and funding the service efficiently
- Appropriate delivery models including the availability of alternative services in the commercial or voluntary sector.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10. Waste produced by RCC

As a diverse organisation, RCC generates a variety of waste and recyclables across its administration and operational areas.

Within offices, waste minimisation is encouraged. Small eco bin desktop containers are provided to reduce the need for larger waste bins underneath each desk. There are co-mingled recycling bins in all kitchen areas of the four main RCC buildings. Office paper and cardboard have separate recycling collections. The vehicle workshop separates waste oil, oil filters and tyres for recycling.

In 2011, in response to the previous landfill levy on commercial and industrial waste, a dedicated recycling station was established at the South Street depot. The success of this initiative has reduced following the removal of financial incentives, such as the removal of the levy in 2012, and other factors.

A number of RCC departments transport waste from parks and conservation areas, roads and streetscapes and civil works projects to the waste transfer stations where the waste is segregated into the recyclable areas.

Waste generated by RCC as an organisation is classified as C&I waste. There is a lack of data available about this waste and it is not possible to calculate the overall percentage of resource recovery for RCC as an organisation. . The ability for RCC to measure current performance and set improvement targets is identified as an improvement action.

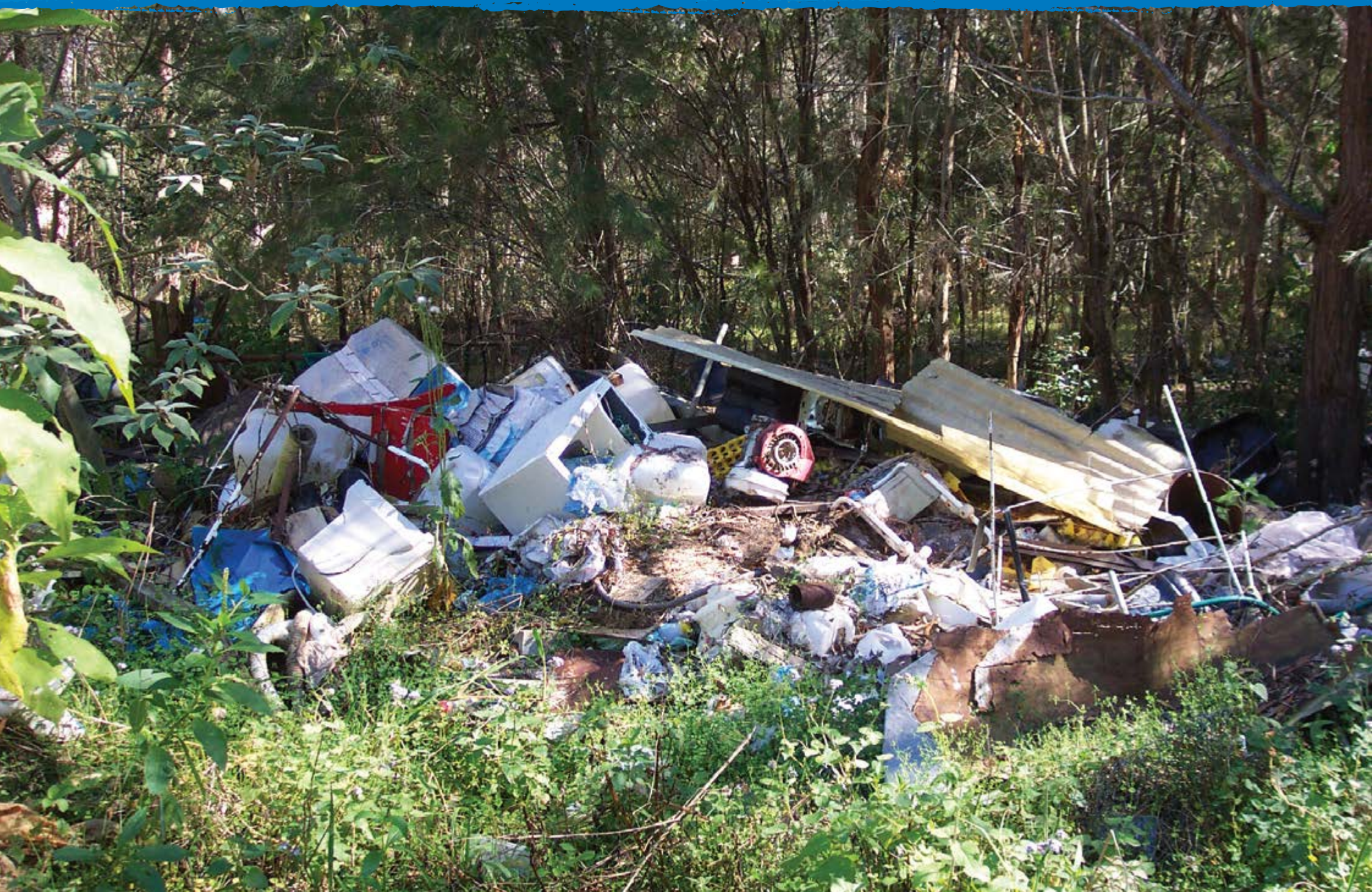
There are a number of other special waste streams generated by Council, including road scalpings from road maintenance, marine mud from dredging activities and biosolids from wastewater treatment plants. More attention of these waste types is needed to better plan for their ongoing recovery cost-effectively. These are identified as priority wastes with further investigation required on an as needs basis.

Office eco bins

Kitchen recycling

Road scalpings stockpiled at Redland Bay waiting to be reused

Former recycling station at depot



11. Littering and illegal dumping

RCC has a zero tolerance approach to littering or illegal dumping. Illegally dumping large items or loads of rubbish and littering tarnishes our community and cleaning it up costs time and resources.

Littering is the unlawful disposal of any type of waste material less than 200 litres in volume (about the volume of an average wheelie bin); greater than that volume is classified as illegal dumping.

Common types of littering include cigarette butts, drink bottles and fast food packaging thrown on the ground or out of a vehicle. Other types of littering and dumping commonly occur around charity bins and litter bins when these are full, or the dumping of green waste into RCC conservation or park reserves, which affects the natural environment. Littered items are one of the most visible forms of pollution in the environment. Litter can be washed or blown into creeks and rivers, which ultimately pollutes land, waterways and ocean environments, and can harm or kill marine creatures. Some forms of illegal dumping, such as chemicals and asbestos, can be deadly to people when discarded in the wider environment.

RCC uses a number of measures to manage litter, illegal dumping and other clean-ups:

- Proactive education programs to increase community awareness
- Community partnerships and targeted clean-up campaigns such as Clean-up Australia and Love your Island
- Providing a range of street and park bins for both waste and recyclables (and in some cases cigarette butts) across the city
- Additional servicing of public place bins during peak times of Christmas, Easter and school holidays to prevent overflow
- Network of eight transfer stations strategically located across the mainland and islands with no disposal fees for domestic waste
- A dedicated asbestos waste disposal point at Birkdale Waste Transfer Station for customers presenting asbestos in a safe way
- Cameras installed at selected locations complemented by the in-car litter cameras used by Council officers who regularly patrol the City.

In 2014-15, there were a total of 810 customer requests/complaints of littering and illegal dumping across RCC parks, conservation areas, roads and street frontage areas and other land. A total of 53 tonnes of illegally dumped material was collected and disposed at a cost of $46,951.

The Queensland Government has an online form for reporting littering and illegal dumping, with the Department of Environment and Heritage Protection (EHP) authorised to issue an infringement notice to the registered owner of a vehicle or vessel based on this report. RCC encourages residents to use this online system.

Littering and illegal dumping around RCC and butt bins on Coochiemudlo Island

More island clean-up campaigns are planned to coincide with the spring cleaning season in 2015.

More assessment of RCC data is required to develop actions and strategies to better manage litter according to available resources and complementary work that other stakeholders are undertaking. A more detailed litter and illegal dumping plan will be produced as an implementation action under this plan, in consultation with relevant community organisations.

What are the influences?

12. Strategic and operational framework

Within Australia, the State Governments have the primary responsibility for managing waste. The Federal Government prioritises the direction of policy according to international obligations and national interest, and provides overarching direction. Local Government provides waste management services and infrastructure to meet these laws and policies.

The key national and State statutory environmental requirements that guide this RCC waste plan and the ongoing operation of the RedWaste business unit are:

Level	Waste & Environment	Operation of RedWaste
National	National Waste Policy *Product Stewardship Act 2011* National Packaging Covenant	National Competition Policy
State	*Environmental Protection Act 1994* *Environmental Protection Regulation 2008* *Queensland Waste Avoidance and Resource Productivity Strategy (2014-2024)** *Waste Reduction and Recycling Act 2011** *Waste Reduction and Recycling Regulation 2011** *Sustainable Planning Act 2009* The Queensland Plan	*Local Government Act 2009* *Local Government (Beneficial Enterprises and Business Activities) Regulation 2010*
Regional	Council of Mayors Environmental & Sustainability Committee Projects South East Queensland Regional Plan	
Local	*Waste Plan 2015-2020* (under review) Waste & Recycling Collection Policy (2836) and Guideline (2836) City Plan 2015 (under review) Redlands 2030 Community Plan *Corporate Plan 2015-2020* Annual Operational Plan Asset management plan (under development)	Annual Performance Plan Financial Strategy Annual Budget

** Key drivers of the RCC waste plan.*

The Department of Environment and Heritage Protection (DEHP) is the key agency that regulates most waste management activities. The Waste Reduction and Recycling Act is currently the principal piece of legislation for the proactive conduct of waste management programs in Queensland.

Waste Reduction and Recycling Act 2011

The objectives of the *Waste Reduction and Recycling Act 2011* (WRRA) are to:

- Promote waste avoidance and reduction, resource recovery and efficiency actions
- Reduce the consumption of natural resources and minimise the disposal of waste by encouraging waste avoidance and the recovery, re-use and recycling of waste
- Minimise the overall impact of waste generation and disposal
- Ensure a shared responsibility between government, business and industry and the community in waste management and resource recovery
- Support and implement national frameworks, objectives and priorities for waste management and resource recovery.

Under the WRRA, local government is responsible for waste generated by local government itself, households and other waste generated in the local government area. There are requirements to adopt a waste reduction and recycling plan for at least three years to:

- Set waste reduction and recycling targets
- Describe actions to be taken to improve the waste reduction and recycling of these wastes
- List current and proposed waste infrastructure
- Include performance management and monitoring
- Any other continuous improvements.

Factors to be considered include:

- Population profiles
- Residential, industrial and commercial development
- Amount and type of waste generated
- Relevant services, markets and facilities
- Waste and resource management hierarchy
- Waste and resource management principles, such as polluter pays, user pays, proximity and product stewardship (defined in glossary)
- How the goals and targets of the State's waste management strategy will be achieved.

These considerations are covered by this plan. Public consultation is required before the plan is adopted by Council. The plan must be reviewed every three years.

Other potential impacts of the WRRA include:

- Setting management objectives for improving identified priority wastes. The State strategy has identified green waste and food waste as priority materials for action from households. No specific measures have been identified as yet.
- Setting offences for littering and illegal dumping
- Reporting on waste and resource recovery data each year
- Banning selected materials from landfill. There are no disposal bans currently in place.

In May 2015, the State Government announced that it would investigate a container deposit scheme (where there is typically a refund for return of the nominated empty packaging container) and possible restrictions on single-use plastic bags. RCC will await the outcomes of these initiatives and retain flexibility within this plan to respond to any changes.

Queensland Waste Avoidance and Resource Productivity Strategy

The *Queensland Waste Avoidance and Resource Productivity Strategy (2014-2024)* is a 10-year, industry-led strategy that sets the principles and objectives of waste management for the State. The strategy sets the following targets for RCC:

Target	RCC response
Reduce all general waste from 1.9 tonnes per person per year to 1.8 tonnes per person per year	RCC does not measure all of the general waste generated in its area as it is not receive all commercial and construction waste. This target is best measured by the State. The lower the number, the better the performance. The total waste handled by RCC is 0.73 tonnes per capita, well below the State target.
Domestic waste Improve recycling rate from 37% to 55% in the SEQ metropolitan area	Improvement targets have been set by RCC in Section 18 of this plan.
C&I Improve recycling rate from 42% to 55% across the State	No targets have been set in this plan because RCC primarily handles domestic waste (95%). Other waste types received will continue to be recycled as much as possible but are not measured as a target.
C&D Improve recycling rate from 61% to 80% across the State	
Landfill diversion target – reduce amount of waste going to landfill by 15% over 10 years	Landfill reduction target of 1.5% per annum set in Section 19 of this plan.

National Waste Policy (NWP) Framework

The National Waste Policy sets Australia's waste management and resource recovery direction until 2020.

The aims of the National Waste Policy are to:

- Avoid the generation of waste, reduce the amount of waste (including hazardous waste) for disposal
- Manage waste as a resource
- Ensure that waste treatment, disposal, recovery and reuse is undertaken in a safe, scientific and environmentally sound manner
- Contribute to the reduction of greenhouse gas emissions, energy conservation and production, water efficiency and the productivity of the land.

The policy sets directions in six key areas:

1. Taking responsibility. Shared responsibility for reducing the environmental, health and safety footprint of products and materials across the manufacture-supply-consumption chain and at end-of-life.
2. Improving the market. Efficient and effective Australian markets operate for waste and recovered resources, with local technology and innovation being sought after internationally.
3. Pursuing sustainability. Less waste and improved use of waste to achieve broader environmental, social and economic benefits.
4. Reducing hazard and risk. Reduction of potentially hazardous content of wastes with consistent, safe and accountable waste recovery, handling and disposal.
5. Tailoring solutions. Increased capacity in regional, remote and Indigenous communities to manage waste and recover and re-use resources.
6. Providing the evidence. Access for decision makers to meaningful, accurate and current national waste and resource recovery data and information to measure progress and educate and inform the behaviour and the choices of the community.

Impacts of the NWP for RCC

The largest impact of the NWP on RCC has been the introduction of the National Television and Computer Recycling Scheme in 2011 under the Product Stewardship Act 2011. This has seen new collection services introduced at waste transfer stations for householders and small business to recycle their televisions and computers, commonly called electronic waste or e-waste. These services are funded by industry and enable the diversion of hazardous items from landfill and the development of new recycling industries.

From 1 July 2015, targets have been increased from 37 per cent to 50 per cent of available e-waste for the 2015-16 financial year reaching 80 per cent in 2026-27. This will allow RCC greater ability to continue providing industry funded e-waste collections at its transfer stations.

It is noted that the Minister for the Environment has published two products that the Minister is proposing to consider, during 2015-16 for some form of accreditation or regulation under the *Product Stewardship Act 2011*, namely waste architectural and decorative paint and end-of-life batteries less than 5kg in weight. There are opportunities to recover more of these resources and reduce their environmental impact. RCC will monitor further developments about these products.

Australian Packaging Covenant

The Australian Packaging Covenant is focussed on recovering packaging and co-mingled recyclables including workplace recycling, public recycling and litter reduction projects. Council has received financial assistance under this scheme to increase public place recycling and will consider new grants as they become available.

Other key legislation

Other key State Acts and subordinate legislation that are relevant to the RedWaste operations includes:

- *The Environmental Protection Act 1994*
- *The Sustainable Planning Act 2009*
- *The Local Government Act 2009.*
- *Work Health and Safety Act 2011*

These Acts cover other environmental, planning and governance regulatory aspects of waste management, including licensing of waste facilities, defining waste, tracking waste movements, safe handling of asbestos, and the ability of local government to levy utility charges for waste management.

The RedWaste site-based environmental management plans annual performance plan demonstrate compliance with legislative requirements and are not covered in further detail in this plan.

Corporate and operational plans

Corporate and operational plans are used to prioritise and deliver services according to the *Redlands 2030 Community Plan*. The green living outcome is the most relevant alignment with this Waste Reduction and Recycling Plan to increase recycling within the community.

Regional waste management

RCC is one of twelve local governments located within the south-east Queensland region. It is a member of the Council of Mayors, South East Queensland (COMSEQ)

A new regional waste taskforce comprising government and industry representatives has recently been established through CoMSEQ. Common opportunities and challenges for waste management will be identified throughout the region and recommendations made that RCC will need to consider on merit. As a result of this work, there may be new, beneficial regional collaboration projects available for RCC to consider in partnership with other key stakeholders.

RCC will also benefit from regularly benchmarking the performance of its services with other comparable local governments within the region. Section 13 provides high level comparisons between RCC and other councils in the region.

Location of RCC within the wider SEQ region


OFFICE

13. Benchmarking

In assessing the strategic direction for levels of service within RCC, a snapshot of waste management across the twelve local councils in the SEQ region is summarised in this section. It is important to note that the region is diverse and community needs vary, with waste services tailored to suit these needs. There is not a one-solution-fits-all approach.

Collection services

Some SEQ councils have remote or rural areas and not all residents are able to be on a kerbside collection service due to practicality or accessibility issues. All of RCC households across the mainland and six bay islands have a collection service.

Bulky waste pick-up

Some SEQ Councils provide bulky collections to varying levels of service. RCC does not currently offer a city-wide kerbside pick-up service for bulky or large items. Eligible residents are encouraged to use Home Assist to dispose of these items.

Kerbside recycling

Over the last two decades, local government has been instrumental in introducing kerbside recycling and stimulating jobs creation and the wider economic benefits of this activity. All councils provide kerbside waste and co-mingled recycling services and recycling is growing in importance in these communities. Larger 340-litre recycling bins are the latest addition to kerbside services in many urban areas including RCC, to cater for increased demand.

As with most other SEQ councils, RCC relies on private sector material recovery facilities to operate these under contract arrangements.

Organic waste, including green waste

Organics is the biggest component of the residual waste stream. Seven out of the 12 SEQ councils, including RCC, have an optional green waste kerbside collection, which is considered best practice at this time. No councils have compulsory green waste collection at the time of publishing this plan. RCC is one of the highest generators of green waste captured across the transfer stations. This is believed to be a key reason underpinning the high resource recovery rate in RCC. As this service grows over time, more effort is needed to secure additional organic processing capacity and new markets for ongoing viability.

Most councils are not recycling food waste because of processing limitations. Some are reviewing future options for all organics. One council is collecting paper, fruit and vegetable peelings within the green waste collections. One council has a community jury process underway to make recommendations on how to best minimise organic waste to landfill. Another council, as a major event city, is planning selected collection of food waste in certain precincts.

Transfer stations

All Councils provide a network of transfer stations where the public can drop off large bulky items, recyclables that are not collected by the kerbside system, or excess waste. SEQ councils are progressively investing in these facilities to increase resource recovery performance according to available budget.

There are examples of best practice drive-through centres in SEQ where attendants assist the public to divert as many items to recycling before proceeding to the green waste or residual waste disposal areas.

The layout of RCC transfer stations is not yet best practice. These transfer stations were designed as customer interface facilities, to keep the public away from a landfill area for safety reasons. The transport system was not intended to move waste large distances to landfill.

Some councils have landfills adjacent to their transfer stations for efficient haulage and disposal of residual waste using either 30m^3 or 60m^3 roll-on, roll-off (RORO). Others have compaction areas with push pits for more efficient haulage to landfills further afield. Some transfer stations are configured to receive large waste collection trucks and others just receive residential and small commercial vehicles.

Examples of drive-through resource recovery centres

Examples of transfer station push pits

Landfill

While landfill is the least desirable option from a sustainability perspective, it remains the predominant method of disposal in SEQ because of its low cost. Most councils have adequate landfill capacity in the average range of approximately 10-20 years. Some are fast approaching the end of their landfill life while others, including RCC, rely on external landfills. New landfill sites are becoming harder to locate and develop, with increasing land availability pressures in urban areas and affordability concerns.

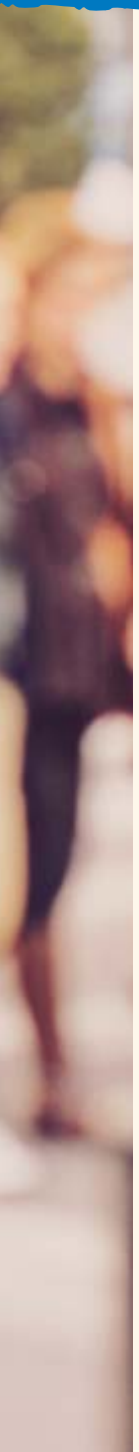
Alternative waste technologies (AWT)

Most councils in the urban area maintain a watching brief on alternative technologies to landfill so they are positioned to consult with their communities on these opportunities when circumstances are right. Planning horizons for establishing these types of facilities are between five-to-10 years for adequate site selection, community consultation, planning approvals, construction and commissioning.

These technologies can manage mixed waste and separate co-mingled food and green waste to produce composts, fertilisers and energy. They are constructed as purpose-built processing centres and have a lot of mechanical components to segregate the waste components and remove contamination. As such, they reduce the volume of waste to landfill. The trade-off is that they are more expensive than landfill and only economically viable with specific financial incentives, such as landfill levies and financial grants. They typically need significant contract lengths of 20 years or more to make the capital investment and payback period worthwhile. Despite these technologies, there will always be a need for landfill (albeit smaller volumes) for disposal of the residual material.

Example of an alternative waste processing facility outside Queensland

Although some of these technologies can be modular in design and scaled up or down to suit the waste volumes, RCC is generally considered too small to financially sustain such a technology. RCC will likely need to partner with another local government to take advantage of any technological advancement in the future.



14. Population growth

Population growth is a key driver of waste generation and the demand for waste services and infrastructure. In 2011, the population of RCC was 143,711. Based on Queensland Government projections, this population could range from 187,135 (low series) to 209,484 (high series) by 2036, an increase of 30 to 46 per cent from the 2011 population. RCC is also reviewing new population and dwelling forecasts to 2041, as part of the draft City Plan 2015 and to align with the SEQ Regional Plan.

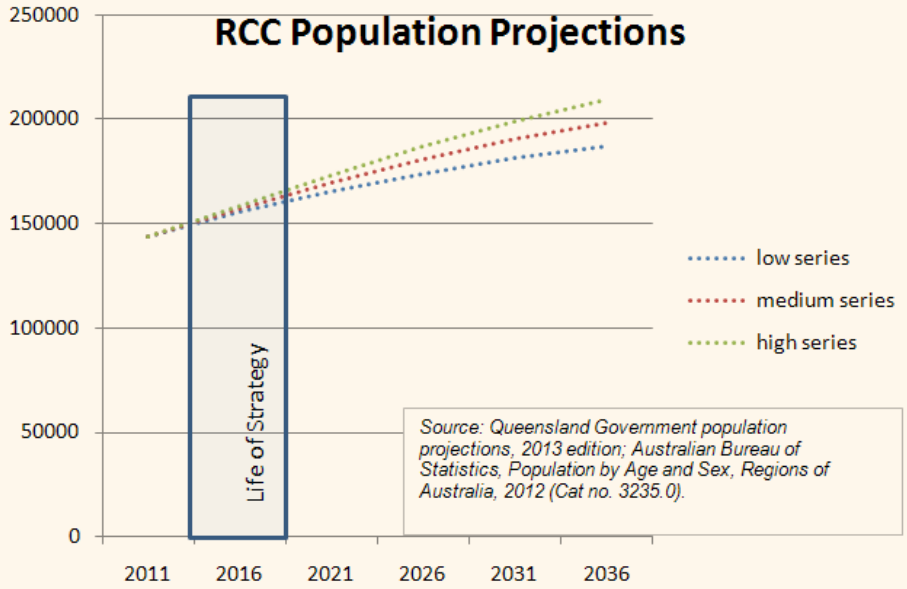
During the life of this five-year plan, the population will increase to within the range of 165,534 (low series) to 173,081 (high series). This is an increase of 15 to 20 per cent on the 2011 population. Growth is forecast to be strongest in Thornlands, Cleveland, Capalaba, Redland Bay, Victoria Point, and the bay islands. Most of this growth is infill and redevelopment, as per the SEQ Regional Plan, and this is within the catchment of the existing waste transfer stations. An average annual population growth rate of 1.5 per cent is assumed for the life of this plan.

The population growth will also bring changes to the demographics and housing types in the Redlands. Medium and high density development has represented about 25 per cent of new dwelling approvals. RCC is anticipating a greater number of higher density multiple dwellings that will require on-site waste and recycling services.

More than a quarter of the population is expected to be aged over 65 years by 2031 and an increased number of requests for manual collections of bins from the kerbside is anticipated. As development intensifies and streets become narrower because of decreasing land availability, collection service issues will need to be managed, such as increased traffic and growth in the number of parked cars.

Growth in the provision of new kerbside waste collection services is typically accommodated within the collection contracts and this new growth will be handled in the same way. Growth from commercial developments will either be managed by the RCC collection service, or an alternative provider of their choice.

Population growth during the life of this waste plan



15. Key challenges

Costs

Cost of living pressures are ongoing and there is an expectation that all levels of government will be required to work smarter and do more with less. RCC spends approximately $18 million per year on waste collection, disposal and transfer station operations. RCC ratepayers have one of the highest waste and recycling utility charges in SEQ. Although RCC competitively tenders its major services, it must continue to explore financial efficiencies in future waste management wherever possible.

Minimising costs and optimising revenue is a key focus but this is influenced by volatile market conditions linked to supply and demand economies. RedWaste prices for commercial waste are based on full cost pricing models. RedWaste is largely unable to compete in a competitive market so only has a relatively small share of the commercial waste streams.

The availability of external funding is limited. Some national programs, such as the National Packaging Covenant grants, have increased the number of public place recycling bins. Other product stewardship programs have funded the establishment and recycling of electronic waste to date. There are unlikely to be prospects for major grants from other tiers of government in the short-to-medium term. This lack of external revenue also places upward pressure on the waste and recycling charge rates.

Any community requests for new services, such as a bulky kerbside waste pick-up, may require additional revenue to be raised. RCC will assess demand and explore innovative delivery methods where possible to minimise cost impacts.

There is also some uncertainty with regulatory policy in the waste industry. Market-based instruments have historically been applied, for example, the 2012 State waste levy of $35 per tonne on C&I and C&D waste and the federal carbon price that were both subsequently retracted. RCC must retain flexibility to respond to changing cost pressures and have adaptable recycling systems in place to maximise resource recovery.

Future changes in legislation may lead to price increases outside the control of RCC, for example, landfill levies which are common interstate.

Unknown disposal site beyond 2020

In 2011, RCC exhausted its landfill space inside the city and now relies on external landfills, as is an emerging trend in metropolitan areas.

It is understood that there is adequate regional landfill capacity within SEQ with further capacity in the planning stages. RCC planning for a replacement location must occur at least five years before the expiry of the existing contract, to ensure adequate timeframes for new contracts and planning and construction of any ancillary supporting infrastructure, where necessary.

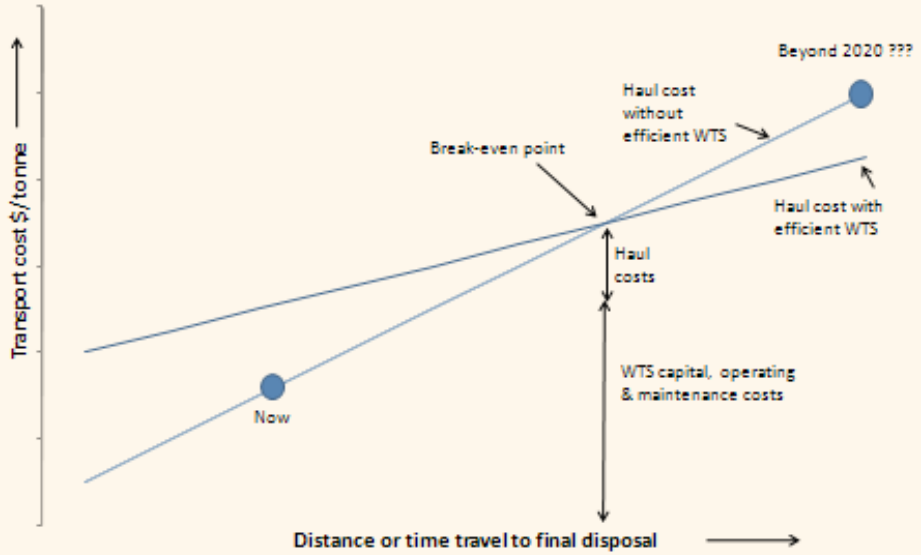
Possible new major infrastructure – bulky waste transfer station

New waste infrastructure requires significant new capital investment and is difficult to locate. This is a challenge for RCC. Collection trucks currently drive directly to the existing disposal sites within Brisbane City without additional bulking up and compaction. Depending on the location of the disposal site beyond 2020, a new bulk haul deep pit transfer facility may be needed, at a cost of multimillions of dollars.

The main benefit of a bulky transfer station is reducing costs of transporting waste to disposal or processing facilities. Collection trucks can tip off within the local area and quickly return to collect more bins. The larger trucks leaving the transfer station can carry greater payloads and travel further afield more economically. This approach would maximise the payload of each collection vehicle, for example, from the current maximum range of 8-10 tonnes per truck to 25 tonnes per truck.

There is also more flexibility in choosing the most cost-effective disposal site. Other benefits include recovery of recyclables from the waste and or separation of hazardous materials.

Analysis needed to determine whether RCC require a bulky waste transfer station
(adapted from the United States Environmental Protection Agency draft
Waste Transfer Stations: A Manual for Decision-Making April 2001)



The decision about whether a bulky waste transfer station is cost-effective will depend on the overall modelling of benefit versus costs. Various planning, siting, designing, and operating costs will need to be assessed against the savings that the transfer station might generate from reduced transport costs. An economic assessment is required to determine the break-even point of a transfer station.

Ageing and inefficient public drop-off facilities

The mainland transfer stations are inefficient in their layout, haulage systems and design and are congested during peak times. However, before any major upgrades are designed, RCC must finalise its ultimate disposal location and other infrastructure.

Where are we going?

16. Waste reduction and recycling plan objectives

Six main interconnected objectives are identified for how this plan will deliver progressive measurable outcomes to meet both legislative and RCC priorities. These objectives are linked to the implementation actions in Section 23.

1. Compliance with legislation. Waste management is a regulated activity primarily by the Queensland Government, with a range of relevant legislation. Since the last RCC waste strategy, the *Waste Reduction and Recycling Act 2011* was adopted and required local governments to adopt a Waste Reduction and Recycling Plan to meet legislative requirements, as outlined in Section 12 strategic framework.
2. Targets. The Queensland Waste Strategy has set a headline target of 55 per cent diversion of waste from landfill by 2024 for domestic waste. Other targets apply to the whole waste stream, including a 15 per cent reduction in waste going to landfill and a reduction of 5 per cent to 1.8 tonnes of waste generated per person per year. RCC proposes incremental targets for reaching these, as per Section 18 and 19.
3. Long term population growth is projected at an average 1.5 per cent per annum. This will lead to increasing use of both existing kerbside and transfer station services. The existing transfer station infrastructure is already under pressure on the mainland and there will be continued demand on traffic queuing and operational capacity for waste volumes. Demand management strategies will be used as an interim measure as outlined in Section 21.
4. Regional collaboration. RCC is positioned within the South-East Queensland region, and collaboration across local government boundaries is a key objective where there are wider benefits. As RCC does not have its own landfill or disposal capacity, it must explore infrastructure and services that could be shared. Historically, RCC has had success in this area, formalising a disposal agreement with the adjacent Brisbane City Council for access to their landfill and transfer station for collected waste. This contract expires towards the end of this plan and new arrangements must be determined. Other regional collaboration initiatives are welcomed where there are synergies and economies of scale.
5. Affordable infrastructure. Transfer stations are operating beyond their intended design capacity on the mainland, however, RCC must finalise its long-term disposal site before it can finalise the planning and design needed to best upgrade transfer station infrastructure. Economic evaluations and life

cycle costs will underpin future major investment decisions. This is discussed further in Section 20.

6. Community satisfaction is a key performance area in delivering waste services. The community have significant interaction with waste services, from regular bin collections to transfer station visits. Ensuring acceptable communications are in place for customers, particularly around any site layout changes at Birkdale, and any other new service development, is critical. Also imperative is the need to ensure service standards for safety and environmental performance are maintained as the population and customer base grows.


TEXTILE
&
SHOES


STRATEGY

17. Intuitive approach to this waste plan

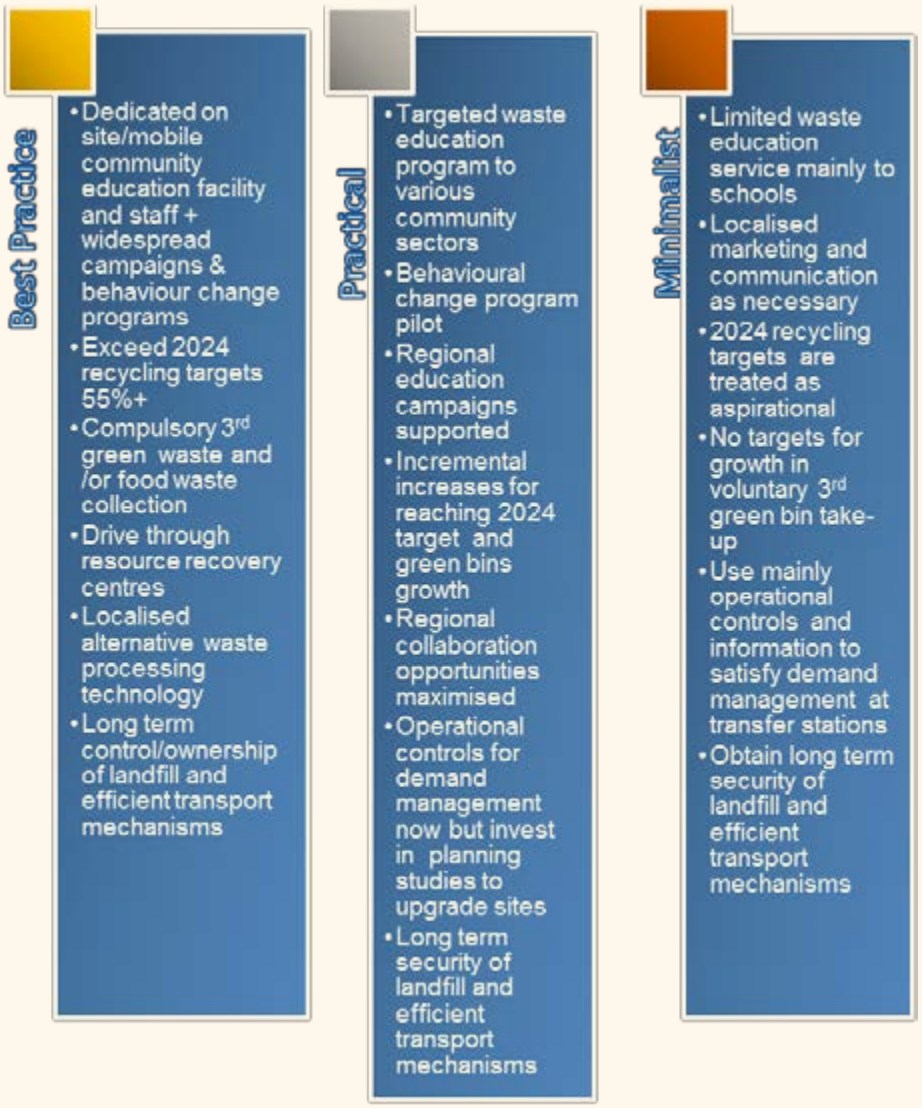
RCC has considered a range of service levels in developing its approach to this plan, including a three-year minimalist scope, a five-year practical outline and an optimum best practice 10-year outlook.

RCC has opted for practical measures to ensure a five-year financially responsible approach to implementing its plan. This means steady progress towards increased community engagement and actions to achieve set targets, along with innovation in exploring regional solutions. This approach will allow RCC to optimise new financial investments and ensure efficiency in delivering future infrastructure and services.

The practical service level was preferred instead of best practice and minimalist approaches for a number of reasons:

- The minimalist approach is based on continuing current services and infrastructure without much targeted ambition. While this approach may be cheaper to implement, it carries risk, including a high safety, population growth and community acceptance risk.
- Best practice would come at considerable cost. This is also less achievable without a major redesign, given the land area constraints faced by RCC on its existing sites.

Intuitive comparison of different service levels



18. Resource efficiency targets

Resource recovery

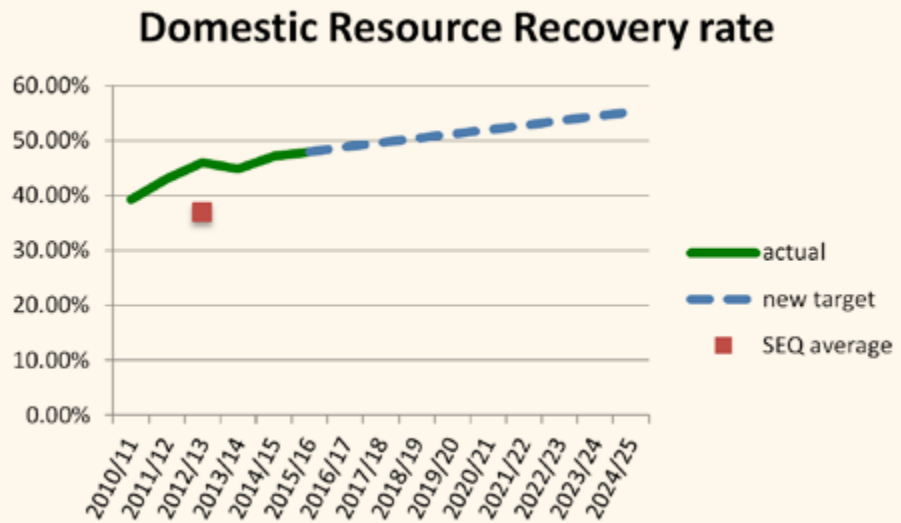
The resource recovery target is a headline performance target. It is calculated as the portion of materials that are diverted from landfill, for example, through the tip shop or recycled, divided by the sum of total material diverted plus the material sent to landfill.

This means that if the amount of waste recycled stays the same but the amount of mixed waste sent to landfill decreases, then using the same formula this will increase the resource recovery rate. Conversely, the amount of recycling could be increasing but the amount of mixed waste increasing at a greater rate means that the resource recovery rate will decrease.

Historical performance shows that the RCC domestic waste recovery rate has increased from 39 to 47 per cent during the past five years. This can be attributed to the progressive recycling improvements noted in Section 4. Due to the calculation scenarios described above, the performance can fluctuate. For example, there was a spike in 2012-13 because of tropical storm activity generating additional amounts of green waste.

Overall, there is an upwards trend in resource recovery performance. It is also noted that the performance of RCC was ahead of the SEQ metropolitan average of 37 per cent in 2012-13, as published in the *Waste Avoidance and Resource Productivity Strategy 2014-2024*.

Historical performance and future resource recovery target



RCC is targeting an average linear 0.8 per cent incremental improvement in resource recovery each year, to meet the State target of 55 per cent by 2024. While the annual increase of 0.8 per cent may seem small, it will take increased effort to progressively reach the end target of 55 per cent.

Targeting the kerbside waste wheelie bin

The proposed measures to enable this growth in resource recovery are mainly focussed on the kerbside waste bins as this is where the majority of mixed general waste is generated and subsequently sent to landfill.

As documented in Section 6, the kerbside wheelie bin system has an overall resource recovery performance of 26 per cent, with the remaining 74 per cent of material being disposed.

Using information from previous waste characterisation audits from 2009 to 2011, it is estimated that the composition of mixed waste within the waste wheelie bins is 23 per cent food waste, 39 per cent green waste, 15 per cent recyclables and 23 per cent genuine mixed waste for which recycling and recovery is not possible.

An updated characterisation audit is required to assess the impacts of the uptake of the voluntary third green waste wheelie bins since 2011. However, the composition is generally suitable upon which to prioritise actions over the next five years.

The three target measures are:

- Increase diversion of green waste
- Minimise food waste
- Increase diversion of kerbside recyclables.

Composition of waste sent to landfill from the waste wheelie bin

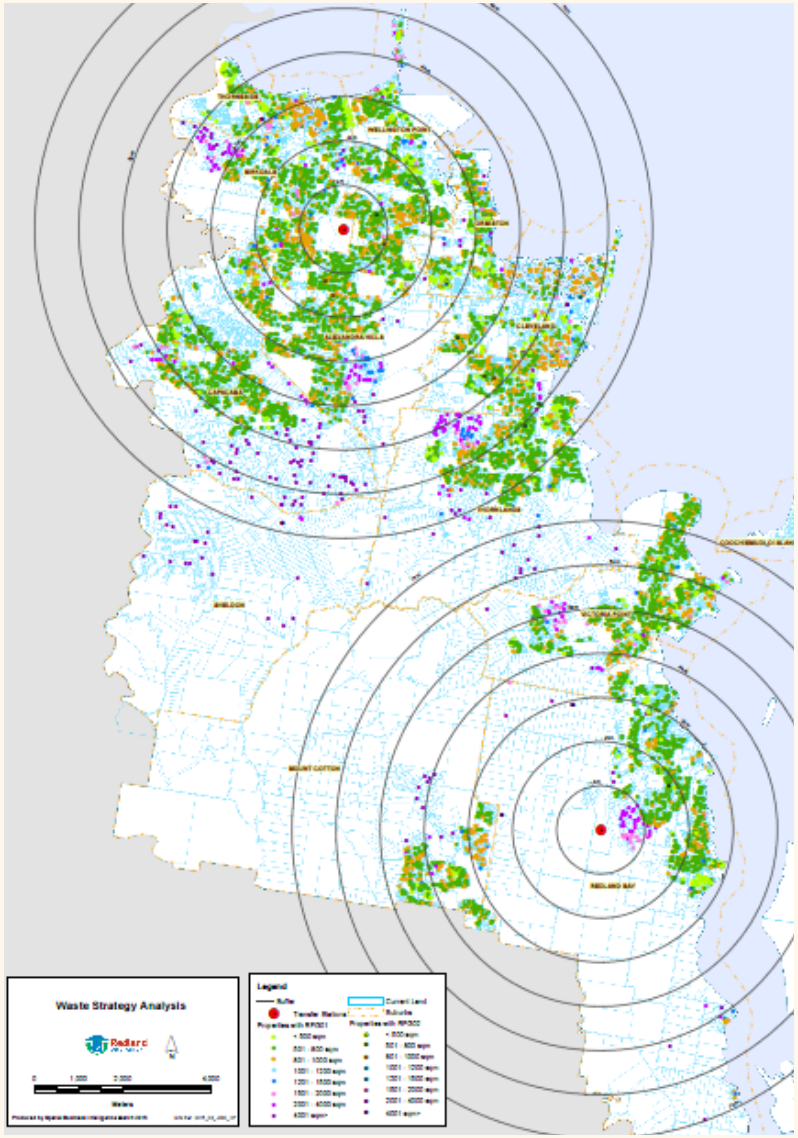
Increase diversion of green waste

Forward reaching targets have been set for the continued growth in the take-up of green waste bins across the mainland, based on an average annual growth of 13.5 per cent over the last three years. Increasing the number of these services means the collection costs decrease per service and the cost of processing green waste is cheaper than the cost of landfill. Overall, this will bring a positive financial contribution, as well as a recycling increase benefit.

Promotion of this voluntary service will occur through the annual waste education plan. RCC believes it can increase uptake to those households in the south of the city, where growth will be highest. The distribution of green waste bins across the mainland against the locations of the two waste transfer stations is illustrated on p.59.

On the islands, the plan's focus is expected to be on working with community organisations that are taking the lead in establishing sustainable island living, including localised food growing systems such as the SMBI Food Growers Group. While these opportunities are in the formative stages, there are options for green waste collected at the transfer stations to be composted on the islands, on farms or at market garden sites. This will have the benefit of reducing the transportation costs from the islands to a composting site out of the city area. More feasibility work is required and will be developed as projects are shaped.

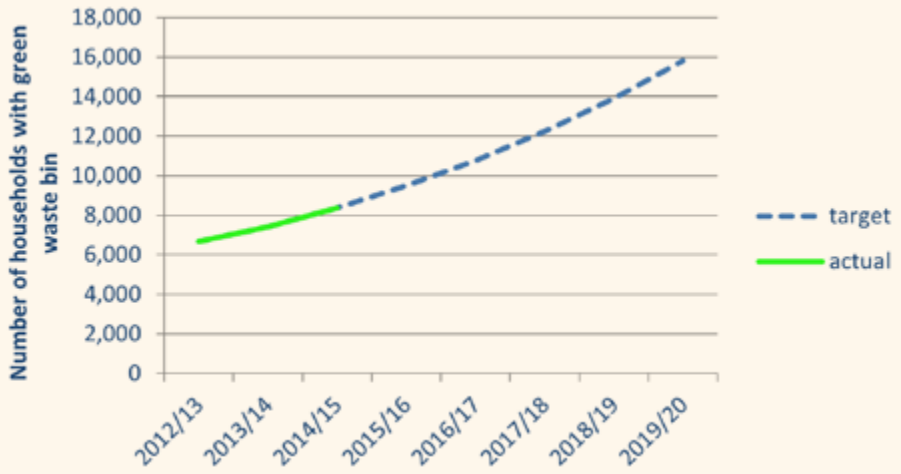
Existing distribution of green waste bins



This distributions shows residents value the convenience of a kerbside green waste collection even if they live one-to-two kilometres from a transfer station. Growing uptake of this service will also assist with reducing visitation to the transfer stations and help with the demand management strategies outlined in Section 21.

The number of households with a green bin is targeted to increase from 8358 in 2014-15 to 15,808 in 2019-20, an uptake of approximately a quarter of all households. This will generate an estimated additional 2150 tonnes of green waste.

Growth targets for green waste bin take-up



Reducing food waste

Reducing food waste content in general waste bins contributes to many sustainability outcomes. For example, less methane in landfill, less weight in bins, reduced operating costs of waste services, improved cost of living, reduced grocery shopping bills, encourages local purchasing, encourages home composting or worm farming, encourages home gardening or joining a community garden.

There are many established food waste avoidance programs overseas and interstate that show the financial and other benefits, such as the "Love food hate waste" campaign. This focuses on reducing the amount of avoidable food waste being thrown away. According to published information, 60 per cent of all food waste is avoidable. Throwing away avoidable food waste costs householders around $2000 per year.

Avoidable food waste is food that could have been eaten but is instead thrown away because people:

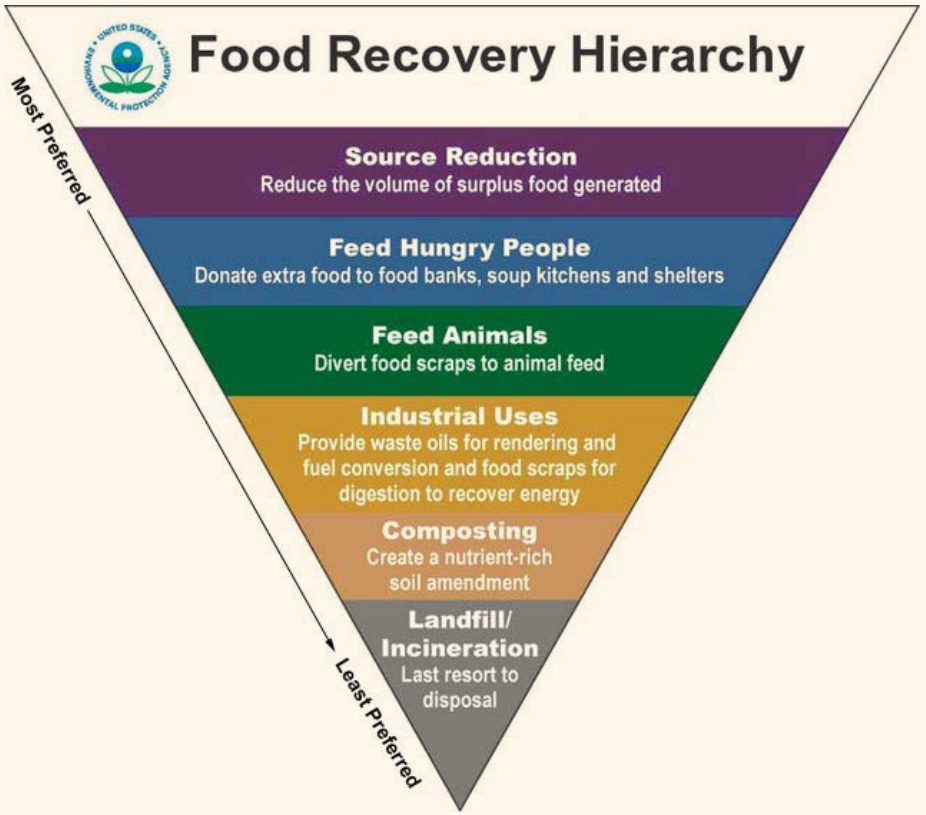
- Forgot about leftovers
- Made unnecessary purchases
- Over catered
- Did not store food correctly.

Unavoidable food waste is food that is not usually eaten, such as:

- Eggs shells
- Meat bones
- Teabags
- Fruit and vegetable peelings.

The United States Environmental Protection Agency (USEPA) has published an ideal food recovery hierarchy to raise awareness of the preferred options for food waste.

USEPA food recovery hierarchy



Information and education campaigns help to raise awareness and inform the community about environmental and sustainability issues and may even help to change attitudes. This does not mean that behaviour change is achieved or maintained.

RCC has previously provided information to the community on the high organic content of bins.

RCC promotional material about organics in bins

RCC proposes to pilot a new project to reduce food waste in the general waste bins. This will be a community-based social marketing (CBSM) method that brings together environmental psychology and social marketing to understand individual behaviours, and the associated barriers and benefits of changing behaviour. By identifying behaviours and understanding barriers and benefits, specific strategies can be developed to encourage new behaviours for the purposes of achieving sustainable outcomes.

RCC is not proposing any separate food collection system as there are no suitable end processing facilities in place and these are significantly more expensive that a food waste minimisation behavioural change program.

Improving the capture of co-mingled recyclables

Through the established waste education program, the loss of co-mingled recyclables as general waste will continue to be targeted. The CBSM program will also be used to target improved diversion of recyclables. Key behavioural messages include:

- Recycling in all areas of the home, for example, the laundry and bathroom in addition to the kitchen
- Using existing recycling bins more efficiently by squashing recyclables
- Taking excess recyclables to the waste transfer stations
- Applying for a larger 340-litre recycling bin

The ideal sustainability bin set will be promoted at libraries and community events.

Sustainability bin set display at the Cleveland library

Improving recycling at waste transfer stations

In 2012, waste characterisation audits of the mixed waste from the waste transfer stations demonstrated that obvious recycling is taking place of items, including green waste and white goods. However, where materials are more of a composite nature or not easily categorised into one type of recyclable, they tend to be treated as waste. Additional material that could be diverted includes:

Untreated timber – Contributed nearly 25 per cent of average composition by weight and was estimated to be mainly from furniture. The majority was of low reuse value through a tip shop but could have been segregated for recycling.

Metal – The majority of metals were lightweight or composite materials. Common non-composite metal items included containers, cookware/racks, metal strapping, wireframes/fencing, bicycles and furniture frames.

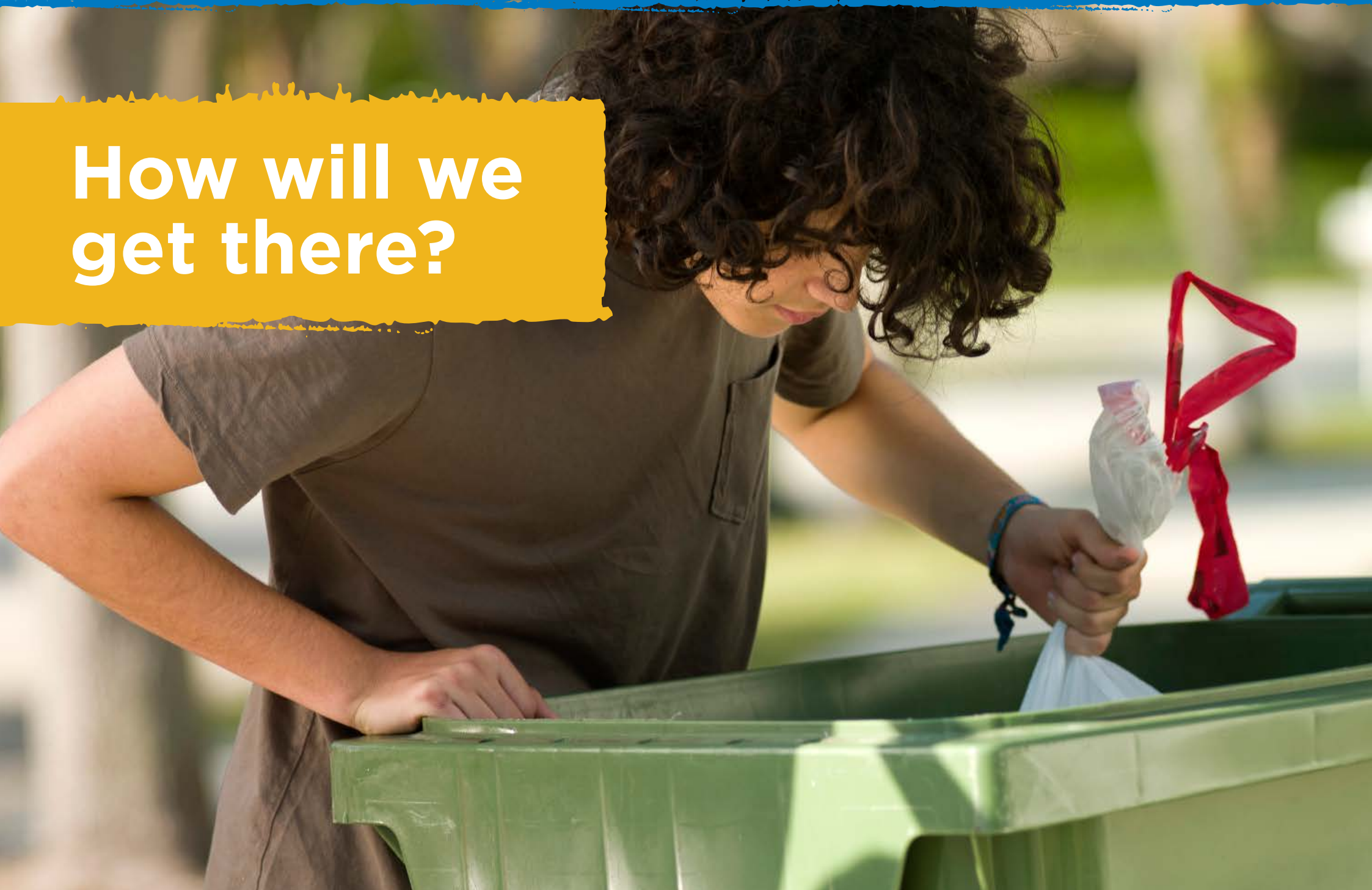
Green waste – Deposited in smaller volumes, often contained in boxes or bags. Large palm fronds were also sighted.

Co-mingled recycling – Volumes of materials suitable for diversion through the kerbside recycling service were sighted. The majority of this material appeared to be deposited as part of mixed loads (associated with household clean-ups or social occasions, as example). Glass containers were a significant contributor to this stream.

Cardboard – Observed in each sample. Significant volumes of this material were presented as cardboard only (for example, not as boxes containing waste) and would have been recoverable through onsite streams.

This information will be used to inform future waste education programs.

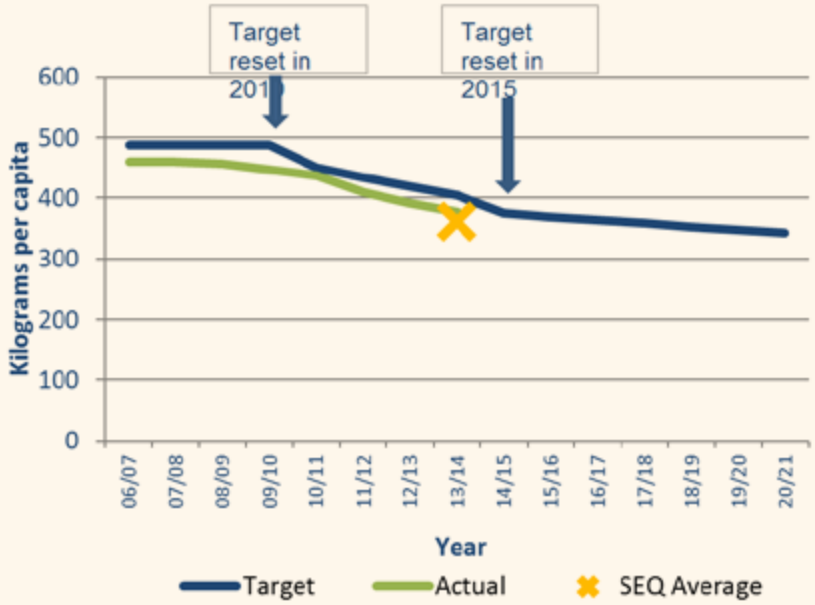
How will we get there?



19. Waste reduction to landfill target

RCC measures the amount of waste landfilled per capita. The landfill reduction targets are calculated as the kilograms of municipal waste sent to landfill divided by the estimated population. The lower this number, the less waste that is landfilled. Since 2010 there has been a steady downward trend in the amount of waste landfilled.

Waste to landfill reduction target



In 2010, the target was lowered and RCC has steadily achieved an average reduction of four per cent per annum since that time. For the purposes of this plan, the target has been lowered again, based on actual performance, and an ongoing 1.5 per cent annual reduction applied. This is to align with the State strategy, which has a 15 per cent reduction over 10 years. In 2013-14, SEQ averaged 361 kilograms of waste landfilled per capita. This is slightly lower than the RCC result of 377 kilograms of waste landfilled per capita in the same year.

RCC aims to achieve these waste reduction to landfill targets based on the additional recycling initiatives described earlier in this section on diverting more green waste, reducing food waste and increasing diversion of recyclables from the kerbside waste bins together with extra diversion at the waste transfer stations.


Recycling
Centre

20. Infrastructure planning and assessment

The number, type and location of waste infrastructure is a key component in driving costs and levels of service in a waste system. Metropolitan Councils relying on external infrastructure, rather than providing all necessary waste processing facilities, is an emerging trend. This section describes the infrastructure RCC has and what it does not need to supply, together with other key considerations and planning requirements.

Infrastructure Type	Current situation	Future Planning needs
Tip shop (RecycleWorld)	A tip shop to advance the reuse and sale of waste is located at Redland Bay Transfer Station.	The covered area needs to be expanded to provide more weatherproof storage of goods. Carparking and loading areas need to be better configured to optimise space. The site layout needs to be reviewed in line with an upgrade to the transfer station. On the islands, there are opportunities to formalise dedicated reuse drop-off areas.
Materials Recovery Facility (MRF) to sort and process co-mingled recyclable material	RCC operated a MRF from 1996 to 2006 when the recycling market was in its infancy. RCC now contracts its processing services to an external MRF within Brisbane City, as this is more cost-effective.	Economies of scale are achieved by the strategic location of a few of these plants across the SEQ region. RCC believes that there will continue to be adequate external capacity within SEQ for processing of recyclables. In addition, the trading of recyclables is within the international commodities market and best managed by suitably qualified professionals to optimise the business outcomes.
Organics processing is required to compost the green waste that is segregated at the transfer stations and collected via the optional green waste bins.	Currently RCC utilises external composters outside the city. Other market providers exist that can turn green waste into green renewable energy.	The existing transfer stations are constrained in the available space and layout available to expand operations to include on-site composting. On site composting and development of local markets especially on the islands would be a more sustainable approach. More financial and risk assessments are required on the viability of local composting and also an understanding of what other market development is occurring within industry. Any future composting initiatives need to be consistent with developed masterplans for each site accommodating expansion areas for population growth and new recycling streams.
Other recycled products	All recycled products are contracted for external processing and sales.	RCC will continue to procure external expertise to collect and process all forms of recyclables including oil, metal, electronic waste, building materials and tyres. Planning will be required for additional storage space, container locations or other specific processing and handling requirements to expand the range and types of recyclables processed in the future from federal and state legislation changes.

Infrastructure Type	Current situation	Future Planning needs
Transfer stations	RCC provides a network of eight transfer stations across the mainland and islands to meet customer service requirements such as location and accessibility (travel time and opening times). Based on a regional assessment in 2010, 94 per cent of mainland residents have access to a transfer station within a 20-minute drive. This compares to a suggested regional standard of 80 per cent of population within 20 minutes. Each island community has access to a transfer station with opening times commensurate to demand.	Design and layout requirements to handle the traffic and volumes of material from existing customers and future population growth. More upgrade opportunities are identified with the mainland sites pending outcomes of regional work. In the interim, demand management strategies will be used.
Bulky waste transfer station	RCC does not currently have capacity for the larger waste or co-mingled recycling collection trucks to use the existing transfer stations for compaction and better transport payloads.	The operational waste infrastructure is built predominantly around sites where an operating landfill has historically been situated. Building new infrastructure on top of old landfill adds a premium to the construction costs because extra engineering is required on unstable ground. Minimising civil infrastructure in those areas is therefore a first preference. RCC will protect all existing sites from non-waste activities until the outcomes of regional collaboration studies are known.
Landfill	RCC uses external landfill sites	RCC will use landfills outside the city area and remain flexible about future longer term participation in alternative waste technologies as the availability to landfill capacity diminishes. Securing a new landfill disposal contract beyond 2020 is the critical infrastructure task upon which other supporting infrastructure can be developed.

Bulky waste transfer stations

The main benefit of a bulky transfer station is to reduce the cost of transporting waste to a disposal or processing facilities. The collection trucks can tip off within the local area and quickly return to collect more bins. The larger trucks leaving the transfer station can carry greater payloads and more economically travel further afield. There is also more flexibility in choosing the most cost-effective disposal site. Other benefits include recovery of recyclables from the waste and or separation of hazardous materials.

The best location for a bulky waste transfer station is in close proximity to the majority of the population, to minimise the amount of time the collection trucks take to drop off their loads and return to their rounds to collect bins.

Currently, there are no external bulky waste transfer stations in close proximity to the northern or central RCC area that have adequate capacity to receive all of the RCC collection trucks.

RCC's decision about whether to invest in a bulky waste transfer station will depend upon the overall financial assessment of benefit versus costs.

The outcomes of regional collaboration studies will determine what options are available to RCC about this type of infrastructure and locations. Various planning, siting, design and operating costs will need to be modelled against the savings the transfer station might generate from reduced transport costs over the substantial life span of the facility, which is excess of 20 years.

21. Demand management

As the population increases so does visitation at the waste transfer stations. RCC prefers to use demand management strategies to prolong the life of existing waste assets until the outcome of further planning studies are completed. Demand management is focused on behavioural and technological approaches to manage the traffic volumes at the two mainland transfer stations.

How RCC plans to improve efficiency at Birkdale and Redland Bay Waste Transfer Stations

Data monitoring. RCC uses computer software at the gatehouse to record the type of waste, vehicle type, commercial or residential, date and time. For practical purposes, it does not weigh every vehicle unless it is a commercial load where payment is received. Instead, a default weight is applied as per the waste and vehicle type. Visitation growth is above population growth due to multiple visits per year.

Economic incentives. Residential gate fees were an effective method of reducing traffic at sites, as residents typically consolidated their loads and reduced the number of trips. However, these fees were unpopular with the community, and there were concerns about the incidence of increased illegal dumping so they were subsequently removed. No further incentives are proposed at the sites themselves. Residents will be encouraged to consider taking up an optional green waste bin for more convenience and to save them time queuing at the sites.

Education. RCC believes that sustainable waste practices should begin in the home as first preference. There is ongoing educational work needed on waste minimisation to avoid the need to use the sites. Other information includes how best to pack vehicles before leaving home to make easier use of the location of the sorting areas and avoid wasting time. Communicating peak times of visitation (i.e. summer months, from 10am to 4pm and on Sundays) and encouraging the efficient use of sites (i.e. only travelling when there is a full and consolidated load) are also required.

Enforcement. Site rules will be enforced, including speed limits and line marking, to ensure the safety of everyone on site. It is important that all customers follow directions of site staff at all times. The days of operation for RecycleWorld tip shop have been reduced to Thursday and Saturday only. This avoids a Sunday operation when transfer station traffic at Redland Bay is at its busiest.

Encouragement. RCC places high importance on providing resource recovery education and promoting alternative services such as optional green bins or larger recycling bins. These serve to minimise the generation of waste and therefore optimise the use of existing infrastructure and also maximise the participation in all of the recyclable material diversion services within RCC. More information is needed to engage with the community about the targets for increased recycling.

Engineering. A bypass lane has been designed for the Birkdale Waste Transfer Station to enable loads with only green waste to gain easier access and enable more free flowing traffic during peak times. This is expected to be completed by early November 2015. There will also be a staged capital works program to progressively upgrade sites based on safety, operational and environmental risks.

Traffic queuing outside mainland waste transfer stations

22. Infrastructure schedule

Asset	Summary	Future
South Street depot 	Not open to the public. Used as a vehicle depot and ancillary works (workshop and bin storage for the collection contractor). Former nightsoil and animal burial ground.	Offers potential for expansion of new infrastructure pending outcomes of regional collaboration processes.
Birkdale Transfer Station 	Open 7 days a week from 7am to 5pm winter and 5.30pm summer. Facilities and services provided include: • Recycling and waste separation facilities for green waste, building materials, clean soil, scrap metals, white goods, car batteries, gas bottles, electronic waste, cardboard, oil, tyres, co-mingled recyclables, clothing bins, expanded polystyrene • Sharps bin • Reuse collection point for resalable goods (sold through RecycleWorld) • Weighbridge **Key Statistics for 2014-15** • 176,187 customer visits • 65% resource recovery rate • 25,221 tonnes materials handled	There are major landfill remediation works underway in 2015, which may cause traffic delays at certain times. The landfill remediation project will install a new one-way haul road on top of the landfill for safety improvements. A bypass entry lane around the gatehouse for green waste loads during peak times will be constructed in 2015. Works as necessary for operational and safety improvements.
Redland Bay Transfer Station 	Open 7 days a week from 7am to 5pm winter and 5.30pm summer. Facilities and services provided include: • Recycling and waste separation facilities for green waste, building materials, clean soil, scrap metals, white goods, car batteries, gas bottles, electronic waste, cardboard, oil, tyres, co-mingled recyclables, clothing bins, expanded polystyrene. • Hazardous household waste and sharps • Reuse collection point for resalable goods (sold through RecycleWorld shop on site). RecycleWorld shop open Thursdays and Saturdays from 9am to 2pm. **Key Statistics for 2014-15** • 123,982 customer visits (excludes customers of RecycleWorld • 74% site resource recovery rate • 18,469 tonnes materials handled	RCC now operates RecycleWorld and an operational review will occur in 2015-16. Works as necessary for operational and safety improvements. Opportunities for consolidating operations with the nearby Carbrook Waste Transfer Station, operated by Logan City Council, have been explored and no further action is proposed. Undisturbed land to the south is currently used for stockpiling materials. The future use will be considered with long-term infrastructure needs.

Asset	Summary	Future
North Stradbroke Island Transfer Station 	Open 7 days a week from 7am to 5pm winter and 5.30pm summer. Facilities and services provided include: • Recycling and waste separation facilities for green waste, scrap metals, car batteries, gas bottles, oil, tyres, cardboard, co-mingled recyclables • Electronic waste bins as scheduled • Sharps bin **Key Statistics for 2014-15** • 10,602 customer visits • 85% site resource recovery rate • 1824 tonnes materials handled	Investigate options to receive commercial and industrial general waste and assist manage the seasonal waste and recycling volume fluctuations on the Island during peak tourist visitation. Provide hazardous household waste and electronic collections as per demand. Works as necessary for operational and safety improvements.
Coochiemudlo Island Transfer Station 	Open Sat/Sun/Mon/Wed/Fri 10am-12pm Facilities and services provided include: • Recycling and waste separation facilities for green waste, scrap metals, car batteries, gas bottles, cardboard, tyres, co-mingled recyclables. **Key Statistics for 2014-15** • 6254 customer visits • 78% site resource recovery rate • 689 tonnes materials handled	Works as necessary for operational and safety improvements.
Karragarra Island Transfer station 	Open daylight hours 7 days a week Facilities and services provided include: • Recycling and waste separation facilities for green waste and scrap metals **Key Statistics for 2014-15** • Unattended – unknown customer visits • 83% site resource recovery rate • 215 tonnes materials handled	Works as necessary for operational and safety improvements.
Lamb Island Transfer station 	Open daylight hours 7 days a week Facilities and services provided include: • Recycling and waste separation facilities for green waste and scrap metals **Key Statistics for 2014-15** • Unattended – unknown customer visits • 80% site resource recovery rate • 460 tonnes materials handled	Works as necessary for operational and safety improvements.

Asset	Summary	Future
Macleay Island Transfer Station 	Open 8am to 4pm Sun to Wed Facilities and services provided include: • Recycling and waste separation facilities for green waste, scrap metals, car batteries gas bottles, oil, tyres, cardboard, co-mingled recyclables, • Sharps bin • Reuse drop-off area **Key Statistics for 2014-15** • 10,621 customer visits • 80% site resource recovery rate • 2008 tonnes materials handled	Investigate options to receive commercial and industrial general waste. Provide hazardous household waste and electronic collections as per demand. Works as necessary for operational and safety improvements.
Russell Island Transfer Station 	Open 8am to 4pm Thu to Mon Facilities and services provided include: • Recycling and waste separation facilities for green waste, scrap metals, car batteries gas bottles, oil, tyres, cardboard, co-mingled recyclables • Sharps bin • Reuse drop-off area **Key Statistics for 2014-15** • 11,583 customer visits • 91% site resource recovery rate • 2935 tonnes materials handled	Investigate options to receive commercial and industrial general waste. Provide hazardous household waste and electronic collections as per demand. Works as necessary for operational and safety improvements.

23. Conclusion

Waste management is a heavily regulated industry at the Federal and State levels and the level of expertise to adequately manage waste to minimise environmental impacts is increasing.

The *Waste Reduction and Recycling Plan 2015-2020* has been written to comply with the *Waste Reduction and Recycling Act 2011*, and coincide with a mid-way review of the existing *Sustainable Resources from Waste Plan 2010-2020*. This plan is strategic in nature and will be supported by other key documents such as the waste education plan, litter and illegal dumping plan and infrastructure asset management plan, noting that some of these documents are yet to be developed.

The generation of waste is a symptom of inefficient use of resources such as water, energy, money and land and as resources are finite, waste must be reduced. Waste volumes will continue to increase as the population grows.

Domestic waste from households is the only type of waste that RCC has a statutory requirement to manage and this forms around 95 per cent of the total waste handled.

Customer and community expectations are increasing and are reflected in issues such as value for money, greater transparency of costs of services, convenience and accessibility to transfer stations, diversity of recycling services and reduced environmental impacts.

The importance of recycling continues to be supported within the community. An ongoing shared responsibility with RCC and the community will continue to be required to advance new resource recovery improvements.

The current resource recovery performance of RCC is good at 47 per cent for 2014-15 and incremental targets have been set to build on this solid foundation and take RCC forward towards the 2024 State Waste Strategy targets.

Greater resource efficiencies will be achieved primarily by focusing on the kerbside waste and improving the diversion of waste from the wheelie bins.

RCC will promote the availability of optional green waste bins and ways to increase the amount of co-mingled recyclables through the waste education program, with communication priorities set annually.

A brand new community-based social marketing pilot program is to be initiated that focuses on food waste minimisation to reduce the amount of waste being landfilled.

A key future focal area for RedWaste in executing this plan will be regional collaboration for services and infrastructure sharing. Cost of living pressures in the community dictate that all levels of government, including local government, must work smarter and do more with less. The benefits of regional collaboration are well documented such as gaining better business efficiencies through economies of scale principles.

There are increasing cost pressures due to lack of availability of easily accessible landfill space. The exploration of further service delivery and infrastructure sharing opportunities with available providers is critical for RedWaste to understand beyond 2020 when the existing landfill disposal agreement ends.

Planning for this must happen now, ahead of investing in any new or upgraded transfer stations and bulky haulage infrastructure worth multimillion dollars. In the interim, demand management of existing infrastructure will be important to optimise the use of the existing assets.

An implementation plan is attached listing actions against the objectives of this plan. This set of actions together with timeframes, resources and cost impacts, will guide RCC to deliver on its commitments under this plan. There may be new opportunities identified in subsequent years that are not documented in the action plan now. These will be considered on merit if they are consistent with the broad strategic objectives.

24. Implementation action plan

RCC has a structured approach to link its annual operational and 10-year capital programs to the community and corporate plans. The financial strategy sets financial targets and guides the budget process each year. This waste plan is implemented through budget funding allocated annually to RedWaste. This funding is primarily obtained through revenue from the waste and recycling utility charges.

RCC planning and budget interrelationship

"Many environmentalists and scientists believe we're now in the Transition Decade, in which our society will have to dramatically transform to cope with increasing resource scarcity. This will up the ante for efficient waste management.

When we consider the flow of resources through the economy and through our lives, it's useful to think in terms of circles and cycle instead of lines with dead ends."

Second Nature – Recycling in Australia – Planet Ark 2012

#	Implementation Actions	Timing	Resources	Measurement	Cost Impact
Objective 1 – Legislative compliance					
1	Adoption of this plan following community consultation	2015	Waste planning unit	Council resolution	Low
2	Three year review of plan	2018	Waste planning unit	Council resolution	Low
3	Maintain knowledge of legislative changes and industry trends affecting this plan	Ongoing	Waste planning unit	Briefings with impacts as required	Low
4	Maintain advocacy role through regional networks and LGAQ	Ongoing	Waste planning unit	Membership of SEQ waste and recycling network group and LGAQ waste and environment reference group	Low
5	Provide safe and environmentally compliant waste and recycling services	Ongoing	Waste operations unit	Ensure site based environmental management plans are updated regularly to align with this Plan. Compliance with key performance indicators in RedWaste performance plan.	Low
Objective 2 – Targets for waste reduction and recycling					
6	Expand take-up of the voluntary green waste collection service to support increased recycling targets and investigate pricing for providing optional green waste collection services to the islands	Ongoing	Waste education and operations units	Growth in participation according to targets	Low
7	Increase promotion of key target areas such as kerbside recycling and WTS recycling	Ongoing	Waste education and operations units	Performance improvement in resource recovery	Low
8	Perform waste characterisation audits on kerbside waste to inform the education and engagement programs	Biannually	Waste operations unit	Audit report	Low
9	Expand reuse and recycling operations at the WTS as opportunities present	Ongoing	Waste operations unit	New/expanded drop-off areas	Low

#	Implementation Actions	Timing	Resources	Measurement	Cost Impact
10	Improve data capture and resource recovery reporting of RCC as an organisation	Monthly	Waste operations unit	Calculations included in spreadsheet	Low
11	Progress report on achievement of targets	Quarterly and annually		Operational plan RCC Annual Report RedWaste performance plan	Low
12	Ensure new contracts specify the level of resource recovery performance required to deliver on the targets set in this Plan	As contracts are renewed	Waste operations unit	New contract specifications	Low
13	Expand operational areas to cater for new recycling streams	As they come on line from state and federal laws	Waste operations unit	New recycling services	Low
14	Review of public place recycling bin numbers and locations in partnership with sporting clubs and community groups	2016	Parks and Sport and Recreation units	Review complete	Low
Objective 3 – Planning for growth					
15	Complete traffic bypass lane at the Birkdale Waste Transfer Station	2015	Waste planning and operations units		Low-to-medium
16	Complete new one way access haul road for customers depositing materials on top of the landfill area at Birkdale WTS	2016	Waste planning unit	New roadway built and communication plan in place for customer use	Medium
17	Develop a Demand Management Plan and communication strategy to ensure the existing WTS assets are being used as efficiently as possible.		Waste operations and planning unit	Plan in place	Low
18	Ensure ongoing capacity for kerbside recycling particularly in units and high rise dwellings	City Plan 2015 review	Waste operations and planning unit	Outcomes documented in the City Plan 2015	Low
19	Complete feasibility study into a new bulky waste collection service and scope	2015/16	Waste operations unit	Service reviewed and decision made	Low-medium

#	Implementation Actions	Timing	Resources	Measurement	Cost Impact
20	Ensure there is adequate recycling and waste capacity in tourist destinations like NSI	Seasonal	Waste operations unit and other key stakeholders	Additional recycling and waste capacity	Low
21	Investigate sustainable waste management options for RCC generated priority wastes	As priority needs occur	Waste operations unit and waste planning unit	Cost effective solutions researched and adopted	Low
Objective 4 – Regional collaboration					
22	Complete investigation into feasibility and benefits of a regional collection contract with Brisbane City Council	2018	Waste planning and operations units		Low
23	Work with Council of Mayors and others to advance regional collaboration projects that enhance waste and resource recovery benefits to RCC	Ongoing	Waste planning unit	COMSEQ regional waste taskforce outcomes SEQ waste network group opportunities	Low
Objective 5 – Affordable services and infrastructure					
24	Ensure full cost pricing models are reviewed to meet the waste and resource principle of user pays	Annually	Waste operations unit and finance	Full cost pricing underpins rates and prices	Low
25	Research and apply for relevant financial grants that assist minimise cost impacts to residents	Ongoing	Waste operations unit and finance	Grants acquired and factored into financial modelling of rates and prices	Low
26	Develop and implement a waste asset management plan to guide the optimum use of the WTS	2016	Waste planning unit	Waste asset plan documented and approved	Low
27	Undertake site upgrades as required to manage operational and safety risks from asset plan	As required	Waste operations and planning units	Business case and project plan approved	Medium-to-high

#	Implementation Actions	Timing	Resources	Measurement	Cost Impact
28	Complete regional investigations into new disposal sites and infrastructure needed beyond 2020, supported by economic evaluations and further consultation as required	2018	Waste planning unit	Infrastructure options assessed and preferred solution adopted	Low
29	If required, develop planning studies and procurement of a bulky waste transfer station	2018	Waste planning unit	Construction and commissioning of facility	High
30	Retain working knowledge of alternative waste technologies to inform future planning studies as required	Ongoing	Waste planning unit	Updated reports Knowledge applied to infrastructure assessments where necessary	Low
31	Feasibility report into island green waste processing options	2017	Waste planning unit	Report	Low
Objective 6 – Community engagement					
32	Set and deliver waste education program priority actions and initiatives for waste prevention and improved resource recovery	Annual program	Waste education unit	Documented annual education plan Displays at community events School and community visits Investigate online and mobile technology solutions for better customer access to information Maintain RCC website that is easy to use	Low
33	Develop a litter and illegal dumping plan	2017	Waste planning unit	Documented Plan	Low
34	Work with community organisations to develop feasibility studies for greater use of green organics (especially on the islands) for example within community gardens	Ongoing	Waste planning and operations units	Documented agreement	Low

Abbreviations/Glossary

AWT – Alternative Waste Technology
C&D – Construction and Demolition Waste
C&I – Commercial and Industrial Waste
CBSM – Community Social Based Marketing
COMSEQ – Council of Mayors South East Queensland
DEHP – Department of Environment and Heritage Protection
HHW – Hazardous Household Waste
KPI – Key Performance Indicator
LGAQ – Local Government Association of Queensland
MSW – Municipal Solid Waste
MRF – Materials Recovery Facility
NSI – North Stradbroke Island
NWP – National Waste Policy Framework
Plan – Waste Reduction and Recycling Plan
PPR – Public Place Recycling
RCC – Redland City Council
RoRo – Roll-on/Roll-off Bin

Waste and Resource Management principles

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.

User pays principle is the principle that all costs associated with the use of a resource should be included in the prices of the goods and services (including government services) that result from the use.

Proximity principle is the principle that waste and recovered resources should be managed as close to the source of generation as possible.

Product stewardship principle is the principle that there is a shared responsibility between all persons who are involved in the life cycle of a product for managing the environmental, social and economic impact of the product.

Contact details

For more information about waste reduction and recycling in the Redlands, please contact Redland City Council on 3829 8999.

Disclaimer

Redland CITY COUNCIL

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