

REDLAND CITY COUNCIL

Sustainable Resources from Waste Plan

Waste Management Strategic Plan

May 2010

FINAL REPORT

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PREPARED BY IMPACT BLUE PTY LTD IN PARTNERSHIP WITH
REDLAND CITY COUNCIL

Sustainable Resources from Waste Plan

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GLOSSARY

AWT	Alternative Waste Technology
C&D	Construction and Demolition Waste
C&I	Commercial and Industrial Waste
CPRS	Carbon Pollution Reduction Scheme
DERM	Department of Environment and Resources Management
EfW	Energy from Waste
EPHC	Environmental Protection Heritage Council
EPR	Extended Producer Responsibility
ETS	Emissions Trading Scheme
GHD	GHD Pty Ltd
GHG	Greenhouse Gas
HHW	Hazardous Household Waste
KPI	Key Performance Indicator
LFG	Landfill Gas
MGB	Mobile Garbage Bin
MSW	Municipal Solid Waste
MRF	Materials Recovery Facility
NPV	Net Present Value
NWP	National Waste Policy Framework
PIFU	Planning Information and Forecasting Unit
PPR	Public Place Recycling
REC	Renewable Energy Certificate
RETS	Renewable Energy Targets
RORO	Roll-on / Roll-off Bin
RRF	Resource Recovery Facility
SEQCOM	South-east Queensland Council of Mayors
PLAN	Sustainable Resources from Waste Plan

Note: Text boxes are included throughout the text to highlight key conclusions of the report.

1. Executive Summary

1.1. Context

The *Sustainable Resources from Waste Plan (Plan)* satisfies Redland City Council's statutory obligations under the *Environmental Protection (Waste Management) Policy, 2000* for a periodically updated Waste Management Strategic Plan. The previous Redland Waste Management Strategy was adopted by RCC in 2003, with minor reviews in the intervening period. However, this Plan will assist the Redlands community to make a transition to a more sustainable future during 2010 to 2020. It also includes information required to meet DERM reporting requirements.

The context is a rapidly changing waste regulatory environment, with a high expectation that RCC will manage its waste streams as resources. This regulatory regime will use new economic instruments and associated legislative requirements to promote WASTE MINIMISATION in all sectors of the community. Where these outcomes are not achieved, there will be significant financial implications for all waste generators, including ratepayers. Despite behavioural changes that residents may make, utilising additional infrastructure will also be required to make the significant gains required in recovering resources.

Council must provide LEADERSHIP in waste minimisation for its own activities and operations. It has voluntarily set workplace recycling targets for its own business and preliminary waste reduction targets of 100kg per person by 2020, and these will need to be reviewed against any potential State targets. Council will also need to provide effective policies and deliver EDUCATION PROGRAMS that engage the community in relation to the importance of changing their current overall behaviour, to mitigate the potential for financial exposure of all stakeholders should growth in waste generation continue. RCC will also need to develop STRONG PARTNERSHIPS with the local community and businesses, waste industry service and technology providers and governments to foster the shared responsibility needed for a low waste economy. Redland City will benefit from the adoption of a strong ADVOCACY role in relevant forums, including those associated with the SEQ Council of Mayors Regional Waste Management Programme, to develop the best mix of local and regional infrastructure to support the diversion of waste from landfill.

The *Plan* has been prepared following substantial community engagement, including online and other forums, a focus group and a business workshop. It also included several workshops involving officers and Councillors that contributed to its development. It was prepared by *Impact Blue Pty Ltd* in partnership with Council based on research, consultation and knowledge of future emerging waste policies.

1.2. Key Plan Elements

The *Plan* has considered a variety of strategic options and concluded that several key elements are essential to achieve the necessary behavioural changes to make future waste management sustainable. To more fully integrate this program with RCC's Corporate and Community Plans requires:

- reducing per capita waste generation to offset population growth
- Development of trials for viable organics source separation and local processing options;
- Tailoring solutions to the needs of local markets and island communities including identifying further opportunities for additional community involvement;
- Provision of best practice resource recovery infrastructure;
- Develop an efficient transfer capacity to allow disposal of residual materials
- Ongoing research into alternative waste technologies; and
- Development of regional partnerships for sharing essential long term waste treatment and disposal infrastructure.

The *Plan* has a number of strategic action items in four program areas covering Waste Minimisation; Resource Recovery; Energy Recovery; and Residual Disposal.

These actions are strongly aligned with the new National Waste Policy (NWP), RCC sustainability policies and expected Queensland State initiatives. RCC will also accommodate any new end of life recovery of televisions, computers and tyres in accordance with roll-out of NWP initiatives in Extended Producer Responsibility and the Australian Packaging Covenant. These programs will help RCC to improve its overall diversion rate performance towards Australian best practice. However, even if a 50% diversion target is met, a 2020 residual waste stream of **55,000-65,000 TONNES** will still remain for landfill disposal in the next ten years. It is likely that no large scale alternative waste technology will be available for most of the life of the *Plan*, as a result of the due diligence, planning approvals and construction lead times required for such regional infrastructure. These processes may be more complex in a regional negotiating environment.

1.3. Implementation Costs

To initially assess the capacity of several strategic options to deliver such outcomes, preliminary financial modelling over the ten year period of the *Plan* was undertaken. The lowest cost long term strategy is to prioritise initiatives to which actively recover secondary resources and minimise waste disposed. To achieve this priority, RCC also requires a new infrastructure development plan to provide wider access to efficient resource recovery facilities. Closure of Birkdale Landfill will require replacement infrastructure, for improved resource recovery, transfer and disposal, to complement primary source separation initiatives at the household and business level.

The anticipated *Plan* expenditure, over ten years, of in excess of **\$100 MILLION** is significant; however it will lead to net community benefits in the long term if the amount of waste requiring disposal can be reduced. If the proposed state waste levy and carbon tax costs are applied to disposal of residual waste, there will be further benefits attached to waste minimisation. The strategic options available depend on ensuring that there are suitable interim contingency plans in place to meet the needs of RCC until the adopted new infrastructure is commissioned.

RCC will adopt a policy for sustainable resources from waste that considers long term sustainability benefits, as well as full cost pricing for new infrastructure initiatives. In addition, it is important to the local community, in social capital, employment and resource availability terms, that local processing and markets are part of the solution.

1.4. Full Cost Pricing

Council will have greater transparency in full cost pricing for its Waste Services as part of strategic modelling. Given the cost recovery pressures expected, RCC should consider using a mix of gate fees, and general rates to cover such costs. Council has noted that based on the most recent six months of data to December 2009, gate fees appear to have impacted on domestic waste to landfill quantities. These have reduced from 480 to a projected 430 kg per capita in this period. These trends will continue to be monitored.

Specifically, it is recommended that Council continue to use gate fees as one of the appropriate price signals to the community and the business supply chain concerning resource conservation and sustainable outcomes through waste minimisation. It will also encourage source separation and local resource utilisation. The benefits of such action will be to maximise the asset life of Birkdale Landfill, until new infrastructure is ready, reduce traffic and congestion at transfer stations and maintain equity in charges across the community by ensuring that those voluntarily participating in waste minimisation schemes are rewarded for minimising waste, by incentives within this pricing environment. This will also maintain consistency with other Councils in the region.

The gate fee measure reduces the reliance on flat rates charges that send limited behavioural signals to the community, plus allowing for a gradual transition to the higher levels of pricing anticipated for future infrastructure facilities. This approach is consistent with that being applied in a number of other sectors and is expected to be supported by the pending draft Queensland Waste Strategy. The Department of Environment and Resources Management has indicated that this draft Queensland Waste Strategy will be issued for comment in 2010. It is widely assumed that they will propose a waste levy as an economic instrument to help reduce waste disposal to landfill and further encourage waste to be managed as resources.

1.5. Other Related Policies

The *Plan* describes a numbering of supporting policies that are able to positively influence the outcomes of this Plan. These include the priority review of the current litter strategy, developing a sustainable procurement plan and the on-going review of RCC specifications to allow recycled materials to be more widely used in the Council Works Program. In addition, the wider use of existing planning powers to condition the requirement for waste management plans for major developments and community events is also proposed. Strengthened action to review and investigate social enterprise pilot programmes is also now included. All strategies and associated policies will be regularly reviewed.

Mayor's Signature quote



CEO's Signature quote



2. Policy Context

The *Plan* context is that there are new federal and pending state policies which represent major departures from existing legislation and will require some adaptation by Council and waste generators in Redlands, to align their practices and programs with such government policy drivers to achieve the prescribed outcomes. This necessitates a significant change in emphasis for this document to maintain its relevance to current secondary resources management principles. In addition, RCC has adopted policies that also demand greater integration of this program area with the emerging Community Plan.

2.1 National, State and Regional

2.1.1 National Waste Policy (NWP) Framework

The Commonwealth has recently developed and adopted a framework for a NWP. This policy is a key driver for future planning and its specific goals are reflected in this *Plan*.

Proposed new directions include:

- Advance charge for recycling/disposal of EPR items;
- Greater emphasis on non-municipal resource recovery;
- Provision of safe stockpiling of materials prior to re-use;
- Guidelines for fit for purpose organics management suited to end use (Compost, EfW fuels or LFG energy) & location;
- Procurement policies based on performance that include suitable recycled materials;
- Investment in improved collection and sorting, processing and distribution systems for recovered materials;
- Tiered approach to cater for smaller communities; and
- Less emphasis on “end of pipe” signals and more along supply chain.

A key principle of the NWP is the promotion of PARTNERSHIPS between various stakeholders, with each taking responsibility for their own waste minimisation.

RCC will need to make specific storage provision for the used televisions and computers (e-waste) to be covered by the proposed national product stewardship legislative framework. Similarly, the NWP will continue to support the diversion of organics from landfill, or alternatively, encourage the use of disposal sites with a high methane capture efficiency.

The NWP also supports the strengthened Australian Packaging Covenant with increased focus on both package design and workplace recycling, public recycling and litter reduction projects. Council has included its current litter strategy within the *Plan* to ensure complementary initiatives are undertaken as a priority in both areas.

2.1.2 Carbon Pollution Reduction Scheme (CPRS)

The final format and timing of new legislation for a carbon Emissions Trading Scheme (ETS) is still under consideration. However, the provisions foreshadowed in the Commonwealth White Paper are assumed to be applicable to this *Plan* for the majority of the planning horizon. The CPRS, if implemented, would provide a further financial incentive for RCC to divert degradable organic carbon away from landfill and the adoption of high landfill gas collection efficiency external disposal sites, or alternative waste technologies, for future residual waste disposal. There are likely major financial liabilities associated with future landfill disposal. This encourages RCC to pursue the strategic options that most quickly reduce its residual waste percentage directed to landfill.

2.1.3 Renewable Energy Targets

New legislation has been passed to establish medium term Renewable Energy Targets (RET) for Australia. This requires 20 percent of Australia’s energy generation to come from green or renewable energy

sources by 2020. This may in future provide greater investment certainty to investors in renewable energy projects up to 2030. This is expected to impact the rate of technology implementation in the resource and energy recovery sectors, as applicable. RCC could benefit from greater infrastructure choice in future as a result of the availability of Renewable Energy Certificates for certain energy from waste infrastructure to project proponents. However, there is still uncertainty concerning scheme details. RCC will assess feasibility studies of the potential for Energy from Waste (EfW) projects within the Large Scale Renewable Energy Target scheme where relevant.

2.1.4 Draft Queensland Waste Strategy

The draft Queensland Waste Strategy Discussion Paper indicated the following key directions for this sector:

- Best Waste Management Practice Services;
- Waste & Recovery Resource Programs, Infrastructure Improvement & Market Development;
- Landfill Levy;
- Strong Advocacy;
- Educational & Awareness Material;
- Regional Contracting & Service Delivery; and
- Green Purchasing of Goods & Services.

Each of the above items is accounted for in the *Plan*. DERM has confirmed that a draft Queensland Waste Strategy will be issued for comment in 2010.

2.1.5 Environmental Protection (Waste Management) Policy 2000

Council has an obligation to regularly submit a comprehensive, Council adopted waste management strategic plan under this policy. It is timely to update earlier documentation submitted to the former EPA, to reflect the new drivers applicable to the next ten years of sustainable resources management in Redland City. It is also expected that new legislation specific to this sector will follow the draft strategy release.

2.1.6 Regional Waste Management

The South-east Queensland Council of Mayors (SEQCoM) has initiated a Regional Waste Management Programme to advance the development of regional responses to waste management. This Plan includes various local actions in response to the current regional program..

The Plan is strongly aligned with the both the new National Waste Policy (NWP) directions and the management of waste to recover secondary resources as envisaged under emerging State and regional waste management policies.

2.2 Local

2.2.1 Corporate Plan Directions

The *Plan* intersects the Redland City Council Corporate and Community Plan and reinforces it as shown in *Table 1*.

Table 1 : Corporate and Community Plan Relationship to Plan.

Outcome / Program	Goal	Plan Opportunity
<p>Supportive Vibrant Economy</p> <p>-Self sufficient economy</p> <p>-Viable tourism industry</p>	<p>Social enterprises - new ways of employing marginalised sectors of community</p> <p>Flourishing Eco-tourism</p>	<p>Infrastructure development plan to investigate inclusion of social enterprises.</p> <p>Review waste infrastructure on islands in line with Eco-tourism requirements Educational messages should be equally relevant and accessible to short term visitors as well as residents.</p>
<p>Strong Connected Communities</p> <p>-Safeguarding community well-being</p> <p>-Supportive social infrastructure</p>	<p>Island communities thrive – improved infrastructure to enhance quality of life</p> <p>Ageing well – accessible community facilities.</p>	<p>Opportunities to create island employment and economic activity via island waste diversion initiatives</p> <p>Provide some “at call” mobile waste services to aged populations</p> <p>Investigate partnership opportunities with Men’s Shed project</p>
<p>Healthy Natural Environment</p> <p>-Protect, restore and enhance local environment</p> <p>-People and the environment</p>	<p>Clean, healthy waterways and catchments – maintain water quality for ecosystems by avoiding water pollution</p> <p>People live in harmony with nature</p>	<p>Manage all potential environmental impacts from landfills. Close landfills in accordance with closure plans. Future facility operations to satisfy high standards of environmental management and amenity.</p> <p>Improved resource recovery to address population pressures on the environment;</p> <p>Attempt to disconnect waste generation from growth through effective education and local market development for resources.</p>
<p>Green Living</p> <p>-Green choices are the norm</p> <p>-Cleaner greener transport</p> <p>-Resource management</p>	<p>Culture of sustainability/ behavioural change/ clean land, air and water – Control consumption of resources at all levels and No Dumping!</p> <p>Prepared for Climate Change</p> <p>Grow local</p> <p>Environmentally friendly vehicles</p> <p>Buildings environmentally sustainable</p>	<p>Integrate waste education with overall sustainability education. Provide facilities to support sustainable lifestyles; and implement upgraded litter policies.</p> <p>Waste contracts and planning to ensure waste related GHG emissions are always minimised.</p> <p>Investigate local organics recovery and processing to support local horticulture, including community gardens and schools.</p> <p>Consolidate waste loads after local source separation to minimise trips and achieve efficient transport with a minimum number of longer trips; Ensure waste transport is undertaken in low emissions type vehicles and transport efficiencies are maximised.</p> <p>Green buildings and sustainable design principles based on the pending Green Buildings Guideline and Policy or similar should be used for future waste facilities,</p> <p>Optimise renewable energy (LFG)</p>

	<p>Energy efficiency</p> <p>Leading waste management practices</p>	<p>production and utilisation from Birkdale Landfill on closure.</p> <p>Waste minimisation is prioritised including reducing per capita waste generation through additional home and local source separation programs;</p> <p>Active development of Council and other local resource markets for recycled and /or processed secondary resources, including the Sustainable Procurement Plan.</p> <p>Provide sites for the materials handling and temporary storage needs of target resources to allow for market development lead times and fluctuating market demand.</p>
<i>Embracing the Bay</i>	<p>Island environments – sustainable island living</p>	<p>Island waste infrastructure and service delivery models to be reviewed against the distinctive Bay Island character and complement the Eco-tourism and Social Infrastructure goals.</p> <p>Investigate mulching trials of greenwaste to island residents and the supply processed organics to a community gardens.</p> <p>Review collaborative bulk purchasing opportunities for businesses on to avoid packaging waste generation.</p> <p>Reduce the waste tonnages required to be transported by barge from Bay Islands</p>

2.2.2 Climate Change Mitigation

The *Plan* represents a further policy response to the climate change issue. It embodies the management of waste streams as secondary resources, to ensure embodied energy and fuels value are utilised locally to offset fossil fuel requirements of the product consumption cycle.

2.2.3 Key Drivers

In summary, RCC will undertake its *Plan* in accordance with the following key drivers:

- Sustainability;
- Waste Hierarchy;
- Internal & External Consultation Feedback;
- Background Research;
- Redland 2030 Long Term Vision;
- Officer Survey Feedback;
- Council policies including Environment Policy 2644, including waste and resources management commitments; Waste Collection and Recycling Collection Services Policy 2836; Trade Waste Policy 1234; Redland Koala Policy, Pest Management Plan, Healthy Waterways Strategy and the Redland Biodiversity Strategy. In addition, the EPP (Water) Schedule 1 document, “Redlands Creeks Environmental Values and Water Quality Objectives”; and
- Council of Mayors Approved Regional Waste Projects.

The Plan can be aligned with many of the strategic goals, programs and actions of the new proposed Redland City Council Corporate Plan, 2030. These include relevant aspects of Redland Koala Policy, Pest Management Plan, Healthy Waterways Strategy and the Redland Biodiversity Strategy. Also, “Redlands Creeks Environmental Values and Water Quality Objectives” would apply.

3 Community Engagement

3.1.1 General Approach to Strategy Feedback

RCC has developed the proposed *Plan* based on a broad range of internal and external feedback mechanisms. The external engagement processes were:

Business Forum – Nov, 2009

Online Questionnaire & forum – Oct & Nov 2009

SMBICAC - Dec, 2009

Online Questionnaire Feb – Mar 2010

Waste focus group April 2010

Public consultation was undertaken with the assistance of corporate communications and the Community Engagement Advisor. A summary strategy document was prepared and circulated via libraries and customer service centres and distributed via the transfer stations and Councillor networks. Adverts were placed in local papers and also sent to registered participants via the community network group. A total of 35 surveys were received. The public consultation period, which ran from 24 February to 29 March 2010, can be summarised as follows:

3.1.2 Survey Feedback

A significant number of respondents (77%) were aware or highly aware of the waste management challenges faced by Council. 94% of respondents would participate, or participate enthusiastically, in a whole of community response to meet waste reduction targets, particularly if Council offered more support and education to householders about home processing of organics. Further, 83% of respondents either support, or strongly support, Council developing its own local site for processing green organics waste and selling the products back to the community.

The elements of the strategy that were supported were the whole of community approach, the support for increased recycling and decreased waste to landfill with targets of 70% recycled by 2025 being suggested. There was strong support for the focus on organics and recognition that a variety of approaches are required, including home processing, and mulching, composting and green energy solutions.

There was also support for the partnerships approach and creation of jobs. In terms of what should be different there was commentary on education needing to be more practical and targeted, more effort on upstream supply chain to minimise waste, smaller bins, cost incentives for providing worm farms and no cost to residents to implement, concern about illegal tipping from a user pays system and recognising that some people create waste from time to time so a voucher or bulky kerbside collection should be provided.

When asked to comment on what the waste system will look like in 2020 the following comments were provided.

- Businesses will use more sustainable packaging which will be compostible. Community gardens/composting facilities will be available and co-exist alongside major parks/increased links within community with food production.
- People will be recycling as much as possible/reduced throwaway attitude/ materials efficiency/ not carting trucks to Ipswich/.

- Reduction in plastics use and all waste able to be re-used.
- Low waste economy operates simply and is embedded at householder level, more education to people and co-operation from community/ focus on dealing with consumption and businesses trading waste and clustering together to maximise inputs and outputs.

Respondents were asked to suggest methods of achieving vision and suggestions ranged from increased education, more research, running trials, improving communication with all community members and incentives and actions.

3.1.3 Waste Futures Focus Group

In order to get more detailed dialogue and discussion of priority areas a waste focus group was established and advertised in the same process as described for the survey. A total of 11 participants took part in the half day event on the 13th April. The key outcomes are listed as follows:

Placing a value on waste is seen as an essential step in the new era of waste management. One method of placing a value on waste is to price its generation and disposal. Pricing is a key mechanism for shaping future waste management.

Waste has multiple values including but going beyond economic value. Community and Council initiatives should promote the social, cultural, environmental and economic value of waste including social enterprise development around waste, gardening and use of waste in land rehabilitation and localisation of waste management.

Waste diversion should generate a return for ratepayers, businesses and community organisations. Achieving this return will involve identifying a **range of existing and new revenue streams** and investing in facilitation of these across the City. Trials of these initiatives can be established through Council working with and building on existing community and business initiatives.

One major driver which would produce more localised, value-creating waste management in the future was proposed. **Any reduction in the availability or affordability of petrol** will have a major impact because of the high reliance on transportation inherent current waste management arrangements.

The following points were also made in support of the key outcomes above:

- **Reducing consumerism:**

Reducing consumerism is a national priority and requires policy and legislation at this level. However, Council should look particularly at the waste generation that is embedded in its land use approval decisions. In addition, Council can attract sustainable technology industries through its planning scheme approvals.

- **Green waste:**

Green waste must be captured and diverted from the disposal stream at transfer stations if it is to generate useful natural products and revenue. Green bins for residents may be an option, although this option was considered expensive unless there was a return to the Council from this waste. A "pay as you use" process should operate.

- **Recyclables:**

Sustainability-based recycling enterprises must be practised in homes, transfer stations and local hubs in order to generate the level of diversion from landfill that is sought for Redland. Council

can assist this through a number of mechanisms including its planning scheme and waste operations, which may extend to crushing and mulching.

- **Compostibles:**

Compostibles can be treated closer to their source e.g. in home gardens, school yards, apartment blocks and workplaces, therefore no major infrastructure needs were identified. However, Council needs to provide community education on the appropriate treatment and use of compostibles and to support and encourage larger scale projects for compostibles from major food suppliers.

- **Islands:**

Island communities may be a suitable demonstration point for the establishment and operation of local hubs, where infrastructure is provided to achieve diversion of green waste, recyclables and compostibles from landfill disposal.

- **Localisation:**

Council needs to establish a network of these local hubs, which not only provides appropriate infrastructure for green waste and recyclables, but also for related activities such as community education on food production, community gardens and maintenance and use of compostibles.:

3.1.4 Business forum

Lack of education; cost; and identification of industries that could use/recycle wastes were identified as the main issues that prevent local businesses from effectively participating in resource recovery. The attendees identified that they would like the opportunity for *'waste audits; education from Council and waste contractors for businesses, employees and the public; and weekly recycling bins'* to be provided to assist them to participate in resource recovery and waste minimisation. Local businesses wish to be kept informed about resource recovery opportunities via *'more effective involvement of Council Officers in business and community events; making business aware of the costs of waste and the benefits of recycling; and utilisation of existing networks'*. *'Financial incentives/penalties; education; and identifying business opportunities for recycling'* were highlighted as the main forms of support and services required to assist business to participate effectively in resource recovery.

The following recommendations were made:

- Work closely with Council's Economic Development Unit to identify credible and functional commercial networks that can accommodate messages on waste minimisation and waste diversion.
- Establish a mechanism for tracking technical developments in waste diversion, capture and re-processing that will flag and provide feedback to the commercial sector
- Develop discrete communication and education plans to deliver ongoing, effective commercial sector engagement
- Consider supporting the establishment of waste brokerage services that are self funding to support local resource exchange

4 Sustainable Resources Strategic Approach

4.1 Key Principles

4.1.1 Resources from Waste Policy (Evaluation Criteria)

Managing waste as a resource requires consideration of a broader range of decision criteria than the waste hierarchy alone. The waste hierarchy pre-dates the latest resources management and climate change drivers and while suitable to broadly indicate policy preferences, it is insufficient to address global issues and specific local circumstances. For this reason, the proposed National Waste Policy Framework encourages the tailoring of solutions including a balance of elements from across the waste hierarchy to satisfy local needs and holistic sustainability drivers. It is suggested that Redland City address the needs of its sub-regions, each with distinct character and needs, by having regard to *both* the waste hierarchy and the resources policy evaluation criteria shown in *Table 2*.

Table 2: Resource from Waste Policy Service and Infrastructure Evaluation Criteria

Criteria	Description	Criteria Examples
1.	Viable markets	Markets for resources and renewable energy considered in a local and regional context for stability, short and long term storage needs considered to cater for market fluctuations, risk of contamination can be managed, Diversity of markets is preferred to avoid over reliance on particular commodity markets
2.	Satisfies low carbon economy principles	Lifecycle assessment of carbon balances and potential permit liabilities, operations reflect low emissions options and nutrients / carbon recycled. Create renewable energy fuel sources, Efficient transport systems
3.	Regional collaboration	Meets regional goals and objectives Utilisation of proven and robust technologies Achieving economies of scale for infrastructure
4.	Tailored solutions to meet sustainability principles	Identifies opportunities for local communities to build social capital Life cycle financial modelling of options Whole of community responsibility

RCC will use both the waste hierarchy and resources policy evaluation criteria to ensure sustainable local outcomes are delivered by the Plan.

4.2 Education and Engagement

4.2.1 Shared responsibility

The need to engage a large section of the Redlands community to change its current waste generation behaviour is fundamental to the strategy. Moving to a low waste economy requires a shared responsibility across all sections of the supply chain in producing waste and recovering resources.

This shared responsibility model is shown in the attached *Figure 1*

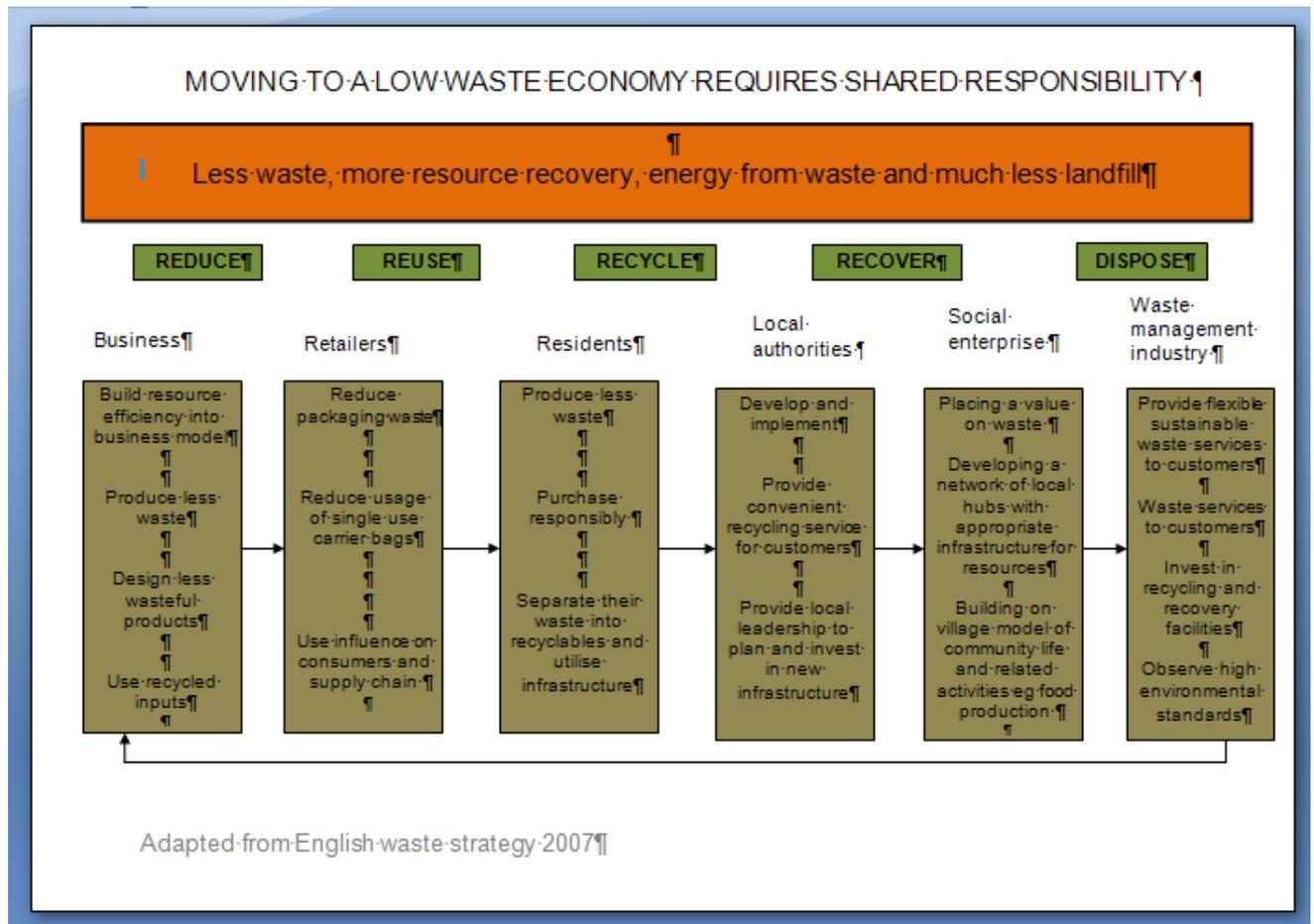


Figure 1 Moving to a low waste economy requires a shared approach

RCC will undertake a more comprehensive education and engagement role across all of the program areas of the *Plan*. This is essential given the transition required to new behaviour patterns that will assist reach long term sustainability. The key education messages are expected to be as follows:

- Minimise all types of waste generation;
- Manage potential wastes as resources;
- Opportunities for Waste Avoidance & Resource Recovery available to ratepayers in all areas;
- Local markets developed for Recovered Resources;
- Product stewardship and EPR concepts encouraged;
- Business in manufacturing/supply chain minimise their ecological footprint; and
- Council activities to facilitate Waste Avoidance and Resource Recovery.

4.3 Goals and Objectives

The specific objectives of the Plan are shown in *Table 3*.

Table 3: Plan Goals and Objectives

AREA	OBJECTIVES
Vision	<p>The Plan will cater for the growth of the Redlands community by providing a best practice framework in sustainable management of waste resources, through effective waste minimisation, source separation and resource recovery, energy recovery and residual waste disposal.</p> <p>It will assist the community prepare for change based on a more dynamic regulatory environment for waste in the future. It requires a whole of community responsibility and will assist individuals, community groups, businesses and the Council to take responsibility for diverting their own resources, through systems with a mix of local diversion and treatment hubs, supported by education, ongoing engagement, improved infrastructure, technologies and landfills.</p>
Programs	Goals
Waste Minimisation	Achieve waste minimisation targets to reduce household waste generation per capita, by providing incentives to reduce waste, focusing on organics capture at source, together with a concerted effort to minimize Commercial & Industrial (C&I) waste and Construction & Demolition (C&D) waste from building activity, as well as reducing Council generated waste from its own business activity.
Resource Recovery	Increase the amount of resource recovery in Redland to national best practice over ten years. Current performance levels should be upgraded through continuous improvement and additional recycling from waste transfer stations, business and ‘away from home’ public recycling opportunities.
Energy Recovery	Achieve maximum practical level of recovery of available energy resources from local waste and minimize fugitive Greenhouse gas (GHG) emissions from existing waste disposal sites and waste transportation operations. A facility to produce renewable energy will be operated at Birkdale Landfill.
Residual Disposal	Select new external treatment and/or disposal infrastructure and sites based on triple bottom line environmental, social and economic performance indicators to replace Birkdale Landfill. Review opportunities for regional infrastructure during the period.

4.4 Strategic Focus Areas to achieve the goals

4.4.1 Organics Management plan

All the policy initiatives proposed by various government agencies will impact on the current management practices for organic wastes. Therefore, RCC needs to plan ahead for a major change in organics management as a means to increase diversion performance overall through to 2020. This will necessitate detailed planning for both source separation and recovery at new facilities, for either local or regional treatment of the diverted organics. This will be a basic component of the RCC strategy to mitigate the impact of the proposed long haul transfer of waste and any CPRS type scheme on its future budget.

It is assumed that at least 23% of the total kerbside domestic waste stream could be diverted by setting targets for green waste, compostable waste and other commodities to be source separated and processed either at home or elsewhere locally in a suitable facility. This source separated material, broken down as shown in [Figure 2](#), may be treated by a combination of home composting, mobile mulching, worm farms, Bokashi bins or alternatively, a RCC green and/or organics waste collection services for composting or green energy generation.

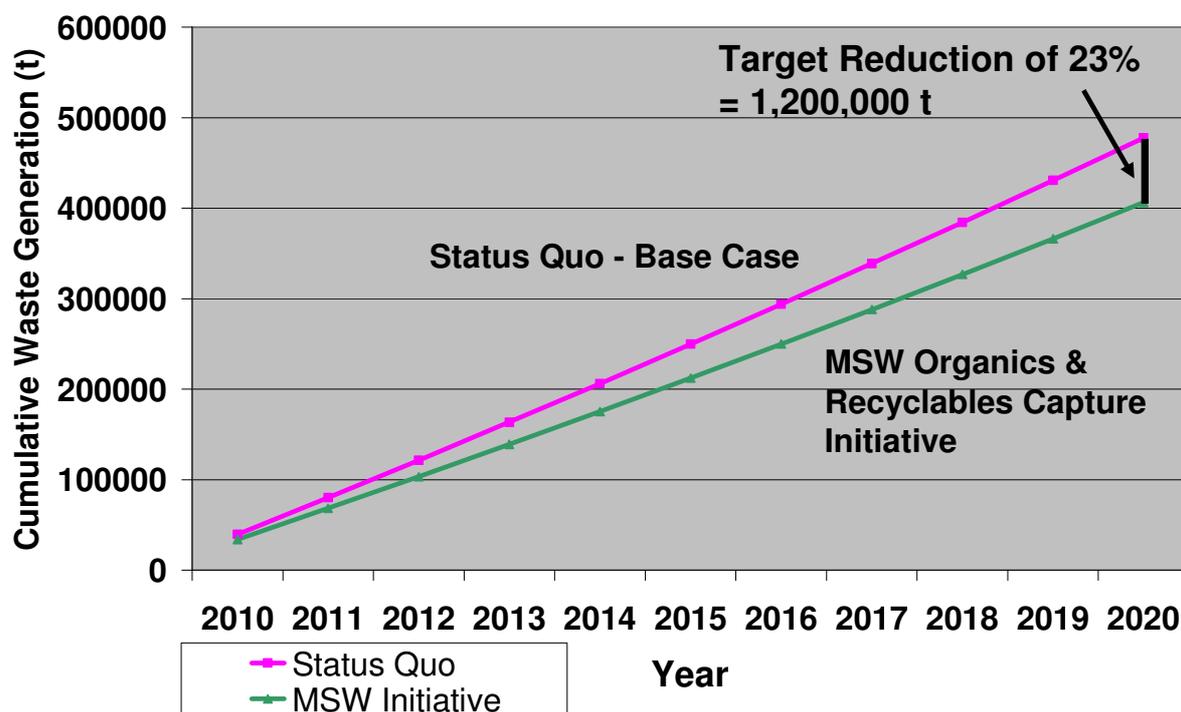


Figure 2: Impact of Household Green Waste Diversion

The optimal local organics option may vary according to specific location within the RCC area. A mobile mulching service is also proposed to be piloted. This proposal will be investigated more fully as part of an organics management plan to be developed out of this strategy. Additional support for home based green waste treatment by home composting or worm farms is proposed. Additional recyclables yield could come from an extended education program. It is recommended RCC undertake a review of the island waste collection and treatment systems, to determine if more sustainable approaches are available.

This approach could reduce cumulative Domestic Waste Generation by **120,000 TONNES** over the period to 2020. This is equivalent to almost **three** years of current MSW collections. Major changes in future could also arise from co-operation between Councils at a regional level, leading to the introduction of Alternative Waste Technology at a larger, more efficient scale.

It is assumed that eventually a further fraction of total domestic kerbside waste could be diverted by additional central processing of compostable organics in the general waste stream. This approach could reduce the cumulative Domestic Waste Generation by approximately **200,000 TONNES** to the period beyond 2020. This is equivalent to almost five years of current waste collections. One long term goal would be the reduction of the MSW stream by **46%** by some time beyond 2020, as shown in [Figure 3](#).

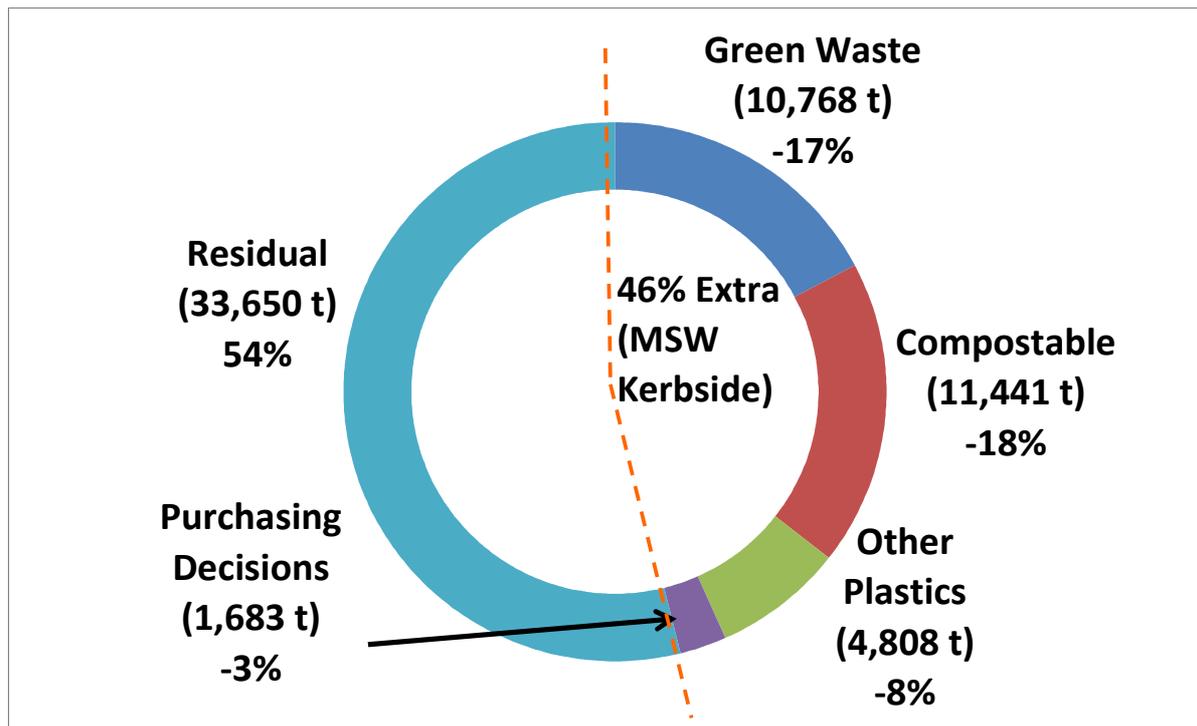


Figure 3: Possible Redland MSW Reductions Beyond 2020

Preliminary targets have been given in section 4.4.3 however, before such significant diversion targets are set for the domestic waste sector, Council would discuss alternative targets and their potential cost impacts on ratepayers with the community and consider their feedback. More ambitious targets rely on integrating future collection systems and Alternative Waste Technology. Such infrastructure would also be subject to proposed regional AWT infrastructure feasibility studies and determination of community willingness to pay for the implied higher diversion performance targets.

4.4.2 Infrastructure development plan

It is proposed that a more detailed infrastructure plan to be developed in the short term for both the mainland and the islands. Review of existing infrastructure has shown that it can not support a full resources from waste approach, without further investment or new arrangements with external service providers. This plan would consider alternative operational infrastructure options, including new RCC infrastructure and regional services, within a full cost pricing analysis framework to determine the preferred infrastructure mix. This needs to include consideration of the financial management guidelines adopted by RCC.

It is proposed to review the performance of existing and pilot facilities in Australia under the Regional Waste Management Programme of the SEQCoM and if feasible, RCC may choose to participate in regional feasibility studies of suitable shared infrastructure. RCC envisages that its aspirational goals for waste diversion can only be met by transfer of residual wastes from its own facilities to a regional Technology facility. It is understood that practically, such a regional facility would be unlikely to be operational until late in this planning document time horizon. The next Redland City Waste Collection contract preparation should introduce a collection system compatible with the needs of any proposed regional Alternative Waste Technology process if details are known.

RCC has also identified that there are a number of other potential landfills capable of taking some or all of Council's bulked up residual waste. These will be monitored for possible use on an ongoing basis.

The potential to reduce the residual waste stream depends on a variety of future treatment and disposal scenarios but significant residual wastes requiring landfill disposal will remain post treatment as shown in [Figure 4](#).

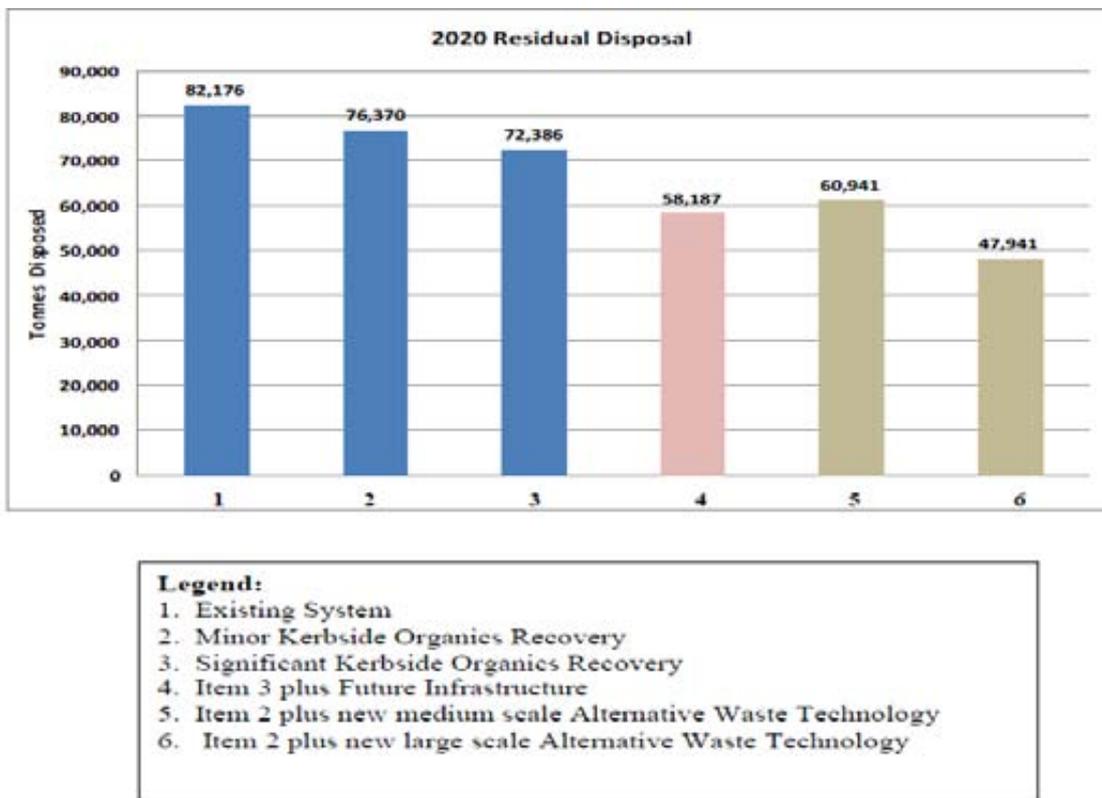


Figure 4: Residual Waste Disposal Needs for Various Treatment Options By 2020

4.4.6 Sustainable Procurement Plan

Several similar Councils in the region have adopted or are in the process of developing a Sustainable Purchasing Policy that includes provision for green purchasing and the use of recycled materials in its own purchasing of goods and services. Consideration has been given by one to the inclusion of a specific target for the percentage of purchase orders that include either recycled aggregates. A better indicator could be the quantity or value of recycled product utilised or the annual avoided greenhouse emissions arising from the substitution of recycled products. RCC are reviewing this aspect through their contract management department. Improvement is required to include provision for recycled materials in Council's construction projects. The inclusion of recycled crushed concrete in site civil works is a feature of the specification for the proposed future infrastructure.

4.4.7 Litter Strategy

RCC proposes to review the performance outcomes of the current litter strategy e.g. by audits and amend as necessary, as part of the [Plan](#). The details of the current litter strategy are included in Volume 2. While not within the Terms of Reference for this strategy for detailed examination it will be impacted significantly by this strategy and will need review in response to adopted features of the strategy including user pays fees and full cost pricing. In addition, RCC will review the need to increase Public place recycling (PPR) bins around parks, CBD, and other public venues. Consideration will also be given to the introduction of additional CBD type area recycling, and how to facilitate the increased voluntary participation by adjoining commercial businesses. Dumping of waste in public bins is an issue raised within the Business Forum and will need to be considered in planning additional PPR bins.

RCC will review its current policy for Waste and Recycling Collection Services to Special Events. These provide an important educational opportunity in relation to sustainable purchasing and innovative collection and disposal, especially for the associated food and beverage catering waste. RCC could promote the use of existing third party guidelines for green events by local community groups, to minimise costs and improve litter control and other environmental outcomes arising from special events. An Event Waste Plan, based on such guidelines and an RCC pro-forma plan, could be required with the relevant permit application.

4.4.8 Development Assessment

There is a well established precedent across the region for the inclusion of various forms of waste management plan as part of development conditions for major building developments. RCC should investigate the best form of plan to achieve the reduction of C&D waste generated from such private and government sector activities. This policy work, including the preparation of generic plans for use by business, should be done in 2010, with roll out to developers and builders in 2011. Similarly, Council Operations should also be required to develop such plans for their own works. The Business Forum endorsed the need for the Council to provide demonstrable leadership in waste minimisation, and greater engagement of the business community.

4.5 Voluntary Targets

The latest information on domestic waste and recycling bin composition shows the following breakdown of the wheelie bins:



Figure 5 Composition of waste and recycling wheelie bins



Figure 6 composition of transfer station bins

RCC considered an ambitious target of 300kg/capita domestic waste to landfill by 2020 compared to 480kg/capita now and a second target of 350 kg/capita by 2020 to offset impacts of population growth refer to [Figure 7](#). It intends to target an annual reduction of 100 kg overall in the quantity of Domestic Waste to Landfill over the life of the Plan equating to a waste disposal rate of 350 kg/capita by 2020. This corresponds to a 65 kg per capita annual reduction in 240 L wheelie bin waste generation per capita. Effort will be applied to encourage achievement of this target through voluntary schemes, including home composting / worm farms and Bokashi bench-top bins. These could contribute a 23% reduction overall in typical wheelie bin waste to landfill. Any diversion from kerbside bins at this level will at least offset the natural waste growth expected due to projected population increases over the next ten years. The stabilisation of total waste generation is considered important to offset the potential service cost increases that would otherwise occur as a result of growth in Redlands. In addition, a further 35 kg per capita must also be diverted from Self Haul Waste to Landfill. This can be achieved by providing other voluntary source diversion programs, eg mobile shredding services or improved infrastructure for resource recovery.

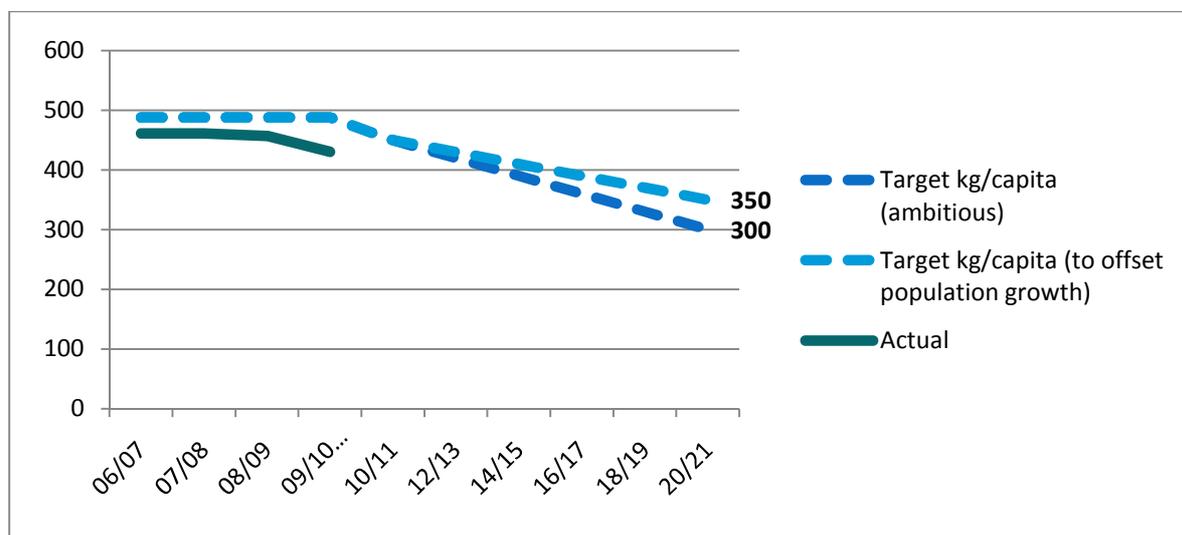


Figure 7 two possible targets considered by Council

Suggested voluntary KPI Targets are shown in [Table 4](#). Council should review target levels based on community feedback and the infrastructure cost implications of more stringent targets such as a more ambitious target of 300kg/capita by 2020. More detailed assessment of the costs of such targets is still required.

COMMUNITY KPI TARGET	2010	2012	2014	2016	2018	2020
Per Capita Domestic Waste to Landfill (kg)	450	430	410	390	370	350
Per Capita Kerbside Waste Generation (kg)	300	288	275	261	248	235
Per Capita Self Haul Waste (kg)	150	142	135	129	122	115

Table 4: Community KPI Targets 2010-2020

As part of the regional Council of Mayors projects, Council is in the process of commencing workplace audits on its own buildings to establish the current level of recycling occurring. The baselines are yet to be established but targets have been established to gain improvements over the course of this Plan as outlined in Table 5 below.

COUNCIL KPI TARGET	2010	2012	2014	2016	2018	2020
Annualised reduction in waste generation per Full Time Equivalent						
% diversion from landfill by volume	50	55	60	65	70	75
% diversion from landfill by mass	40	45	50	55	60	65

Table 5: Council KPI Targets 2010-2020

4.4.3 Benchmarking

The comparison of Redland KPIs with other Councils in the region and international references is shown in *Figure 8*. It is concluded that RCC could substantially improve its performance towards regional best practice by constructing the RRF/future infrastructure at Redland Bay and initiating new organics diversions progressively across its area. Island communities may be a priority for the latter.

In order to provide an indication of the link between targets shown in *Figure 8* and possible improvements required, typical details for scenarios based on Low, Medium and High rates of performance improvement respectively are summarised as follows:

- **LOW** - Current Diversion from Landfill Rate is 32%; apart from minor efficiency gains (1-2%) through education and bin contamination reductions, some minor source separation and infrastructure modification (2-8%) and continued reliance on regional landfill, would lead to performance rates of 35% (2015) and 42% (2020) respectively.
- **MEDIUM** - Diversion from Landfill Rate can be raised to 43% (2015) and over 50% (2020) if future infrastructure for resource recovery and bulk transfer to an emissions efficient regional landfill is combined with a universal source separation campaign targeting organics in domestic and commercial bins is implemented. The key contributions to such 2020 gains (18% in total) envisaged are:
 - Efficiency gains from education and management = 2%;
 - Creation of additional local markets = 1%
 - Source separation of home and business organics = 6%; and
 - Construction of resource recovery/ bulk transfer infrastructure = 9%
- **HIGH** - Diversion from Landfill Rate can be raised to as high as 65% in the long term only by regional AWT infrastructure being brought into the system in around 8 years time. This would have major financial implications but give an extra 15% in gains by 2020 over and above those mentioned above.

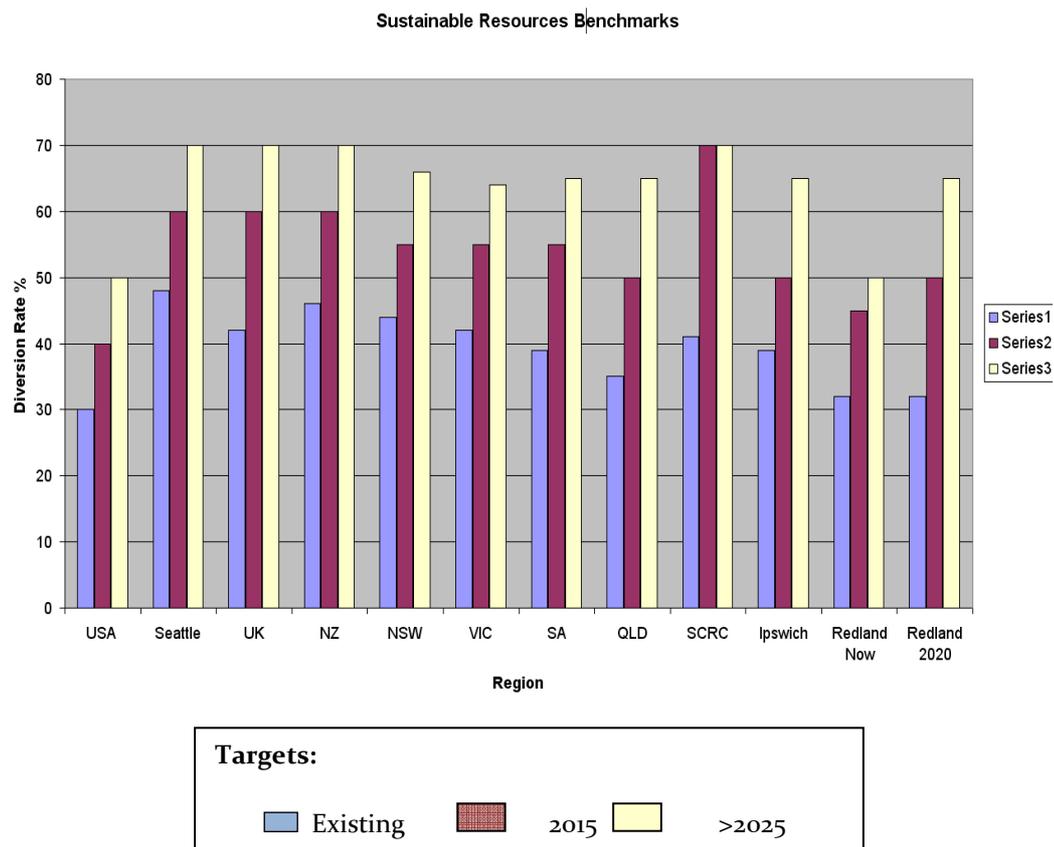


Figure 8: Regional Benchmarks for Waste Management

The figure of 50% by 2015 shown in [Figure 8](#) is indicative only and implies early introduction of local or regional AWT facilities.

Benchmarking Green Waste practices for 2009 in the region has revealed the following:

- Third green waste bins have been piloted at Gold Coast City Council, Sunshine Coast Regional Council and Toowoomba. Brisbane City Council (BCC) is programmed;
- There are no green plus food organics bin services;
- All except RCC are mulching green waste for transport efficiency;
- No formal council composting in SEQ except BCC trials; (private operators / markets exist)
- Most Councils sell or re-use green waste commercially but not to public ;
- Audits show RCC has the opportunity to source separate more organics from MGBs;
- RCC should offer options for organics diversion at source to offset gate fees;
- RCC could offer ratepayers a choice of third bin, mobile shredding, home composting; and
- Many Councils sell to Rocky Point Green Power Station.

Benchmarking Construction & Demolition Waste practices for 2009 in the region has revealed the following:

- Construction and Demolition waste has the highest diversion potential;
- No source separation at present and limited skip sorting;
- Re-use and sale of crushed concrete is common;
- Some shredded wood waste is sent to Rocky Point green energy;
- Clean product is discounted at landfill gate by some Councils;

- RCC could use DA process to condition Waste Management Plans to require sorting and re-use on major development and building sites;
- Potential resource for use in Council infrastructure projects; and
- Possible opportunities for partnerships at a local private site.

4.6 Flexibility and Diversity

It is recognised that waste drivers are changing rapidly due to legislative, sustainability or Triple Bottom Line (TBL) and waste industry technological developments. Therefore, it is essential that all future planning retains sufficient flexibility to accommodate changing requirements and ensure short term capital investment results in assets that can be incorporated into future regional infrastructure plans. A diverse range of infrastructure will manage the technology and commercial risks associated with waste and secondary resources management in the current sector environment.

4.7 User Pays Pricing

5 General Issues

In addition, the proposed Queensland Waste Strategy notes that economic instruments and user pays charges can reduce the quantity of waste generated by encouraging waste avoidance, resource recovery or re-use. Whenever true costs are hidden from service users, such as with any flat rate charges, there are potentially undesirable outcomes. That is, those undertaking the most sustainable practices are required, in fact, to subsidise those who are not. Therefore, it is more equitable in a full cost pricing system, to ensure that those using services are paying directly for them, without cross subsidisation by other ratepayers.

Based on the above state waste strategy principle, the *Plan* assumes that user pays charges in the form of gate fees *should be* applied by RCC. Council also has some evidence of the impact of gate fees at its facilities since their introduction in late 2008. The number of annual transactions at two major mainland sites has reduced by 28% since their introduction. This corresponds to the levels of more than 10 years ago, and helps extend the useful life of RCC assets. Council has also noted that based on the six months of data to December 2009, gate fees appear to have impacted on domestic waste to landfill quantities. These have reduced from 480 to a projected 430 kg per capita in this period. . Therefore, better engagement programs, aimed at explaining the associated long term sustainability goals, future cost drivers, potential residual waste liabilities and new policies, so that the context of the gate fees is fully understood by the community. Shopping centre operators have confirmed that there is often inappropriate use of their commercial and recycling bins by the public and this supports the need for expanded education.

Given the infrastructure developments that will occur in the future, RCC should model a price path with a mix of gate fees and general rate charges to recover expected future system costs. This will allow council to review the details of its longer term pricing policies, to ensure an incremental transition to the new infrastructure. It is envisaged that subject to these studies, a full transition to user pays be undertaken over the next five years. This will coincide to the wider use of other regional infrastructure, where significantly higher transport costs and gate fees will apply.

For RCC, the state government agenda may reward those communities that are able to lower waste generation and landfill disposal. Therefore, full cost pricing signals can reinforce the basis sustainability messages of the *Plan*. While they are not a total solution to waste reduction they can work in the context of other policy settings and incentives.

Gate fees are recommended to ensure sustainable behaviour is rewarded and such ratepayers are not required to subsidise other the waste generators using Council infrastructure. User pays principles will be gradually extended to a variable rate for householders choosing different combinations of services to meet their needs. Council will provide alternatives to those not wishing to use major infrastructure. A price path to full cost pricing will be developed.

5 Strategic Areas, Programs and Actions

5.1 Action Plan

Reference	Action Item	Program Area	Timeframe
	<i>Administration/General</i>		Timeframe
o.1	Review preliminary community Waste Targets in line with pending QLD State Strategy	Leadership	1-3 years
o.2	Implement Council workplace recycling targets and actions to achieve	Leadership	1-3 years
o.3	Review/update Litter strategy	Leadership	1-2 years
o.4	Major Statutory Review of Strategy	Partnership	5 Years
o.5	Prepare Annual Waste Reports to DERM	Partnership	Annually
o.6	Provide public feedback on performance against strategy implementation.	Partnership	Annually
	<i>Waste Minimisation</i>		
1.1	Re-package waste education material to integrate Sustainability and ongoing community Engagement in line with Education and Engagement strategy actions for all community sectors.	Education	1-3 years
1.2	Develop sustainable procurement policy and Council Operations Resources Guide for reuse of recycled products according to published standards	Leadership	2-4 years
1.3	Require Waste Management Plan with all Development Applications with targets for recovery of construction and demolition waste.	Partnership	1-2 years
1.4	Develop a practical support system for home composting/worm farms and waste minimisation at special events.	Waste Minimisation	2-3 years
1.5	Expand infrastructure for new resource streams such as electronic-waste at existing infrastructure.	Waste Minimisation	2-4 years
	<i>Resource Recovery</i>		
2.1	Invest in new public area recycling collection points to promote "away from home" recycling	Waste Minimisation	1-5 years
2.2	Review local and regional markets for green organics, including trials, processing options and partnerships according to existing Council policies eg Community gardens.	Organics Management plan	1-5 years
2.3	Review requirement for sites for dredge materials and other construction wastes to facilitate re-use;	Waste Minimisation	5 years+
2.4	Investigate kerbside collection options to increase diversion of organic and inorganic resources from	Waste Minimisation	1-3 years

	household bins in time for next collection contract.		
2.5	Develop infrastructure plans for all sites for best practice resource recovery and residual waste management investigate potential for community groups to have wider access to resources e.g Men's Sheds/social enterprises and review all suburb access and service levels	Infrastructure Plan	1-4 years
2.6	Extend recycling services at Island Transfer Stations and review service levels across all sites e.g. opening hours, hazardous household waste collections	Infrastructure Plan	1-5 years
2.7	Review options and information requirements for assisting business and industry increase resource recovery	Partnerships	1-3 years
	<i>Energy Recovery</i>		
3.1	Review the feasibility of modular and large scale Alternative and Energy from Waste (EfW)Technology and Local Opportunities	Infrastructure Plan	5-10 years
	<i>Residuals Disposal</i>		
4.1	Maximise landfill life and develop landfill closure plans, and master plans	Infrastructure Plan	1-4 years
4.2	Undertake a Life Cycle Assessment of waste disposal services available to optimise the disposal of residual waste.	Infrastructure Plan	1-3 years

The Action Plan shown in **Table 6** outlines the actions by program proposed to give effect to the **Plan**.

Table 6: Proposed Sustainable Resources Action Plan

RCC will implement the Plan via Action Items across the four program areas.

6 Response to Legislative Requirements

6.1 Policy

RCC policy and activities are currently guided by the 2003 Redland Waste Management Strategy by GHD. Council also has a current Litter Strategy that is to be integrated with the *Plan*. No review of the current Litter Strategy was undertaken during this study, but an action item to complete such a review is now included in the Implementation Plan for the *Plan*.

6.2 Infrastructure

RCC operates Customer Interface Facilities (CIF) at Birkdale and Redland Bay that are only designed as internal transfer stations for RORO bins. They have no compaction facility for bulk transfer purposes. A single general waste landfill is located at Birkdale. It is approaching the end of its planned life. Council has previously resolved to close the facility and avoid developing future landfill operations in Redland City. A Hard fill waste disposal site is located at Giles Road which is under an operational review and also has limited remaining life. Although recyclables are diverted at each of these sites, there is no major Resource Recovery infrastructure. RecycleWorld is located at Redland Bay and provides a small retail outlet for re-usable materials diverted from the waste received throughout Redland City.

The existing Redland Waste Management Facilities are fully outlined in *Table 7*.

The principal components of the current diverted waste streams by mass are:

- Redland kerbside recyclables;
- Other bulk recyclables eg cardboard, oil, batteries
- Green waste;
- Concrete, metal and timber waste of self haul; and
- Sales of re-usable recyclables.

It is noted that some important additional recycling opportunities exist including:

- Non-recyclable plastics and glass of both self haul and C&I waste streams;
- Timber from Construction & Demolition waste;
- Options to provide processed organics to community garden(s) from stockpiles that balance seasonal variations in generation on North Stradbroke Island;
- Earth resources and dredge spoil; and
- Organics from Commercial & Industrial waste.

Details of the additional facilities proposed under the initiative include:

- Redland Bay Infrastructure Facility;
- Upgrades to Bay Island Recycling Services;
- Rationalization of the number of waste contracts;
- Preparation of a Landfill Disposal Service Contract for Residual Waste.

In addition, Council continues to participate in the current regional dialogue in relation to organic waste processing.

Table 7: Existing Waste Management Facilities

Site	Functions	Comment
Resource recovery		
Materials Recovery Facility (MRF)	<ul style="list-style-type: none"> Regional Material Recovery Facility (MRF) 	MRF at Gibson Island now used in conjunction with current Recycling Collection Contract
Resource Recovery Facility	<ul style="list-style-type: none"> Resource recovery Re-use shop 	
Green Waste and Hard fill Waste Facility	<ul style="list-style-type: none"> Green Waste and Hard fill Waste processing 	
Existing Landfills		
Birkdale Landfill	<ul style="list-style-type: none"> Weighbridge Residual waste disposal LFG recovery C&I waste disposal MSW disposal 	<p>Birkdale Landfill to take waste until future infrastructure available.</p> <p>Existing Regional Landfill may take waste from transfer station when commissioned, under a new contract.</p>
Giles Road Landfill	<ul style="list-style-type: none"> Commercial C&D waste disposal Disposal of C&D self haul from Birkdale and Redland Bay Transfer Stations 	Giles Road hard fill to close in approximately three years with this stream going to private market. Self Haul to be included in new facility operations
Existing Transfer Stations		
Birkdale Transfer Station	<ul style="list-style-type: none"> Customer interface facility for small vehicles/residents Resource recovery <ul style="list-style-type: none"> Scrap Metal Tyres Waste Oil Gas Bottles Batteries Greenwaste Other resources 	Subject to operational review.
Redland Bay Transfer Station	<ul style="list-style-type: none"> Customer interface facility for small vehicles/residents Resource recovery <ul style="list-style-type: none"> Scrap Metal Tyres Waste Oil Gas Bottles Batteries Greenwaste Other resources 	Subject to operational review

Bay Island Transfer Stations	<ul style="list-style-type: none"> • Customer interface facility for small vehicles/residents • Resource recovery <ul style="list-style-type: none"> ○ Scrap Metal ○ Tyres ○ Waste Oil ○ Gas Bottles ○ Batteries ○ Greenwaste ○ Other resources 	Consideration of commercial bulk bin needs
Re-sale Shop - Redland Bay Waste Transfer Station	<ul style="list-style-type: none"> • Re-sale Shop and sorting area 	RecycleWorld at Redland Bay

6.3 Services /Operations

The current environmental performance of existing facilities is reported in the RCC's EPA Annual Return for Certificate of Registration Number ENDC 00162905 Section 311 Environmental Protection Act 1994. Some 28 contracts cover the current operations.

The domestic waste collection and recyclables collection services are each contracted separately up to at least 2014. A fortnightly kerbside recycling service delivers recyclables to the Visy MRF at Gibson Island. A weekly kerbside collection service is provided for general waste. This material is currently directed to Birkdale Landfill. RORO bins are used to transfer wastes from Redland Bay to Birkdale. Island residents receive similar kerbside services and in addition, have access to small island transfer stations. Limited services are available to commercial customers.

A summary of the main contracts and their expiry dates are shown in [Table 8](#).

Table 8: Existing Waste Management Contracts

Contract	Service Provider	Maximum Expiry Date
Provision of Waste Management Services <ul style="list-style-type: none"> • Kerbside Domestic Waste Collection / Bulk Kerbside Waste Collection • Kerbside Domestic Recycling Collection / MRF operations for collected domestic recyclables • Supply and service RORO bins at Redland Bay and Bay Is Transfer Stations 	JJ Richards and Sons Pty Ltd JJR subcontract Visy Recycling	June 2016
Operation of Waste Handling Facilities at Birkdale and Redland Bay Waste Handling Facilities <ul style="list-style-type: none"> • Landfilling operations at Birkdale • Management of CIF/ Transfer Station at Birkdale and Redland Bay • Short Haul of C&D to Giles Road • Resource recovery from self haul C&D at Birkdale Landfill • Nuisance and stormwater management at Birkdale Landfill 	Subloo Pty Ltd	June 2011

Removal of Greenwaste <ul style="list-style-type: none"> • Load and Haul greenwaste from all facilities except Giles Road Landfill to Rocky Point • Greenwaste Processing • Co-generation 	Rocky Point Power Project	June 2011
Operation of Mainland Gatehouses, Birkdale, Redland Bay and Giles Road	The Pickwick Group Pty Ltd	June 2014
Management of Bay Island Transfer Stations <ul style="list-style-type: none"> • Management of CIF/ Transfer Station • Greenwaste stockpiling • Scrap Metal stockpiling • Gatehouse operations 	Lone Ranger Waste Management Pty Ltd	June 2013
Purchase and Removal of Scrap Steel <ul style="list-style-type: none"> • From all facilities except Giles Road Landfill • Includes gas bottles and batteries 	Commercial Metal Recycling Services Pty Ltd	August 2011
Operation of Council's Recycle Market <ul style="list-style-type: none"> • Resale from Redland Bay WTS • Scavenging from Birkdale and Redland Bay CIFs 	Dillons Junk	June 2010
Collection and Recycling of Cardboard <ul style="list-style-type: none"> • From Birkdale and Redland Bay WTSs 	Visy Recycling	June 2011
Collection and Recycling of Tyres <ul style="list-style-type: none"> • From all facilities except Giles Road Landfill 	Australian Scrap Tyre Disposal Pty Ltd	June 2012

RCC waste statistics indicate that the waste management and resource recovery infrastructure available at present is constraining the achievement of diversion from landfill performance levels in line with comparable local government areas, either in the region or more broadly. This performance is currently 32% overall.

6.4 Performance

6.4.1 Sources of Data

Waste Statistics are captured on a daily basis by RCC at its waste facilities and these are aggregated into quarterly KPI Performance Reports. In addition, periodic third party waste audit services are provided by EnviroCom Australia, to verify the composition of household waste collection bins and other waste streams. The latest waste statistical information is enclosed in Volume 2. This information also covers the reporting required by the EPA to satisfy RCC obligations under the *Environmental Protection (Waste Management) Policy, 2000*. Council principally has jurisdiction over MSW and more limited data on C&D and C&I waste generated within the city, including hazardous waste, is available.

6.4.2 Waste Composition

EnviroCom Australia has recently determined, as shown in [Figure 9](#), that for the Kerbside Total Domestic Waste Stream, the composition includes:

- Compostable Organics of 59%, being 37% (Food/Kitchen) and 22% (Garden); and
- Recyclable Paper 29%

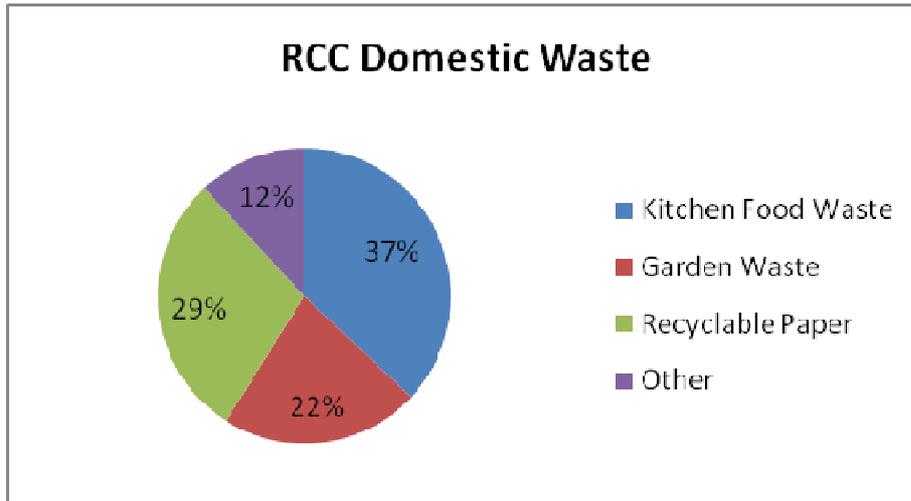


Figure 9: RCC Domestic Waste Composition

The major Compostable Organics component of this waste stream does have further potential to be significantly reduced in the residual waste to landfill stream by source separation and treatment.

6.4.3 Waste Generation

EnviroCom Australia has determined that for the Kerbside Domestic Waste Stream, the average presentation from households, in September 2009, was approximately *20.4 kg/hh/wk*. This comprised:

- *14.2 kg/hh/wk* of MGB general waste; and
- *6.2 kg/hh/wk* of Recyclables generation.

Furthermore, domestic waste generation overall was tending to remain *constant* over recent years and appeared to be constrained by the current low level of resource recovery infrastructure available in Redlands. This data has been reduced to per capita information for planning purposes as follows:

- Current Total Domestic Waste Generation per capita is *0.75 tonne/ year or 750 kg/year*;
- MSW or Domestic Waste to Landfill is around *450 kg/year*; and
- MSW Kerbside to Landfill is *300 kg/year*.

Very recent RCC data has however shown an initial drop in these domestic waste generation figures following the introduction of gate fees affecting self haul waste.

The assumed Planning Information & Forecasting Unit (PIFU) medium growth series projected populations for Redland City are shown in [Figure 10](#). Over the period of this plan, Redland population is expected to increase from *141,910* to *168,250* or by *18.6%*.

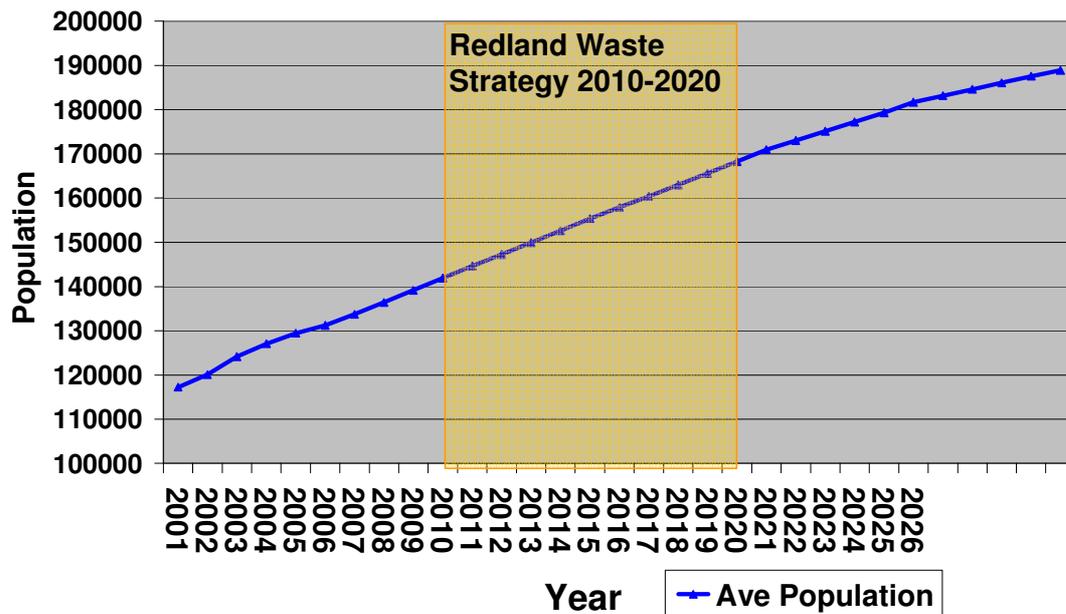


Figure 10: Redland Projected Population (PIFU Medium Series)

Future waste generation can be estimated by using these per capita trends for component waste streams in conjunction with population projections. The Total Waste Generation for Redland City without change to current policy settings and infrastructure would be as shown in Figure 11. Over the period of this plan, waste generation is expected to increase to 168,250 tonnes, also by 18.6%. Domestic Waste Generation would remain at existing per capita levels with an increase by over 10,010 tonnes, from 53,925 tonnes in 2010 to 63,935 tonnes in 2020.

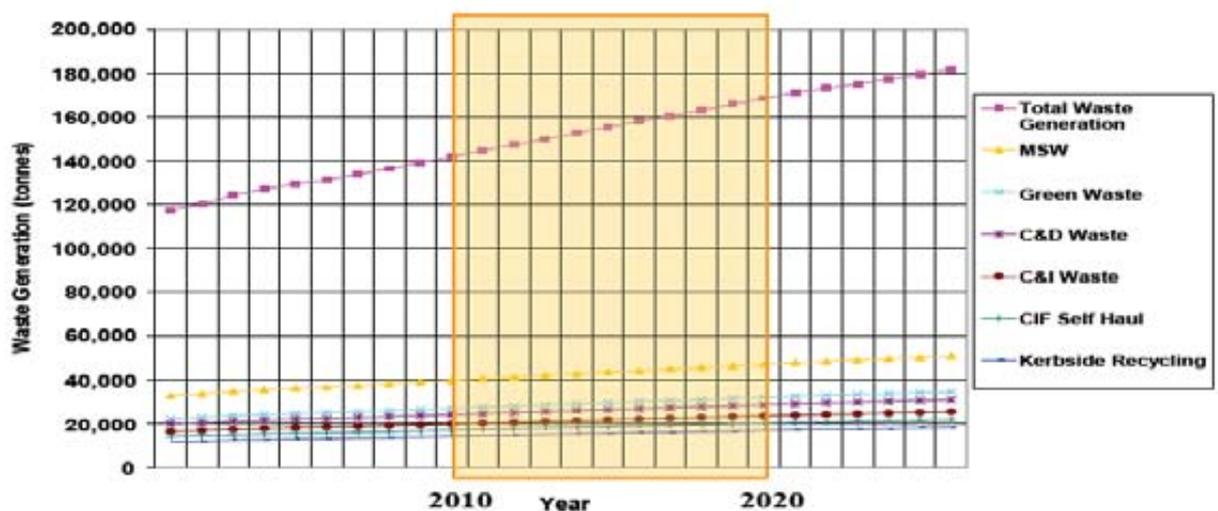


Figure 11: Redland Projected Waste Generation (Status Quo Per Capita Rates)

EnviroCom Australia results also indicate an overall Resource Recovery Rate of 73.6%. This includes around 75% or better for Paper and Glass, but only 37% for Plastics and 52% for Metals.

The Corrected Diversion Rate, after allowing for contamination and potential loss due to presentation, is the most accurate indicator of the overall effectiveness of waste education and policy settings for the

recovery of RCC secondary resources. EnviroCom Australia has estimated that this rate is currently 20.8%. They also indicate there is potential to increase this Corrected Diversion Rate to over 30% if, for example, a universal third bin for garden waste collection was introduced with a high participation rate.

The work by EnviroCom, as summarised above, indicates the importance of a strong education campaign to optimise kerbside collection system performance and achieve some early gains in overall diversion rate.