



# WASTE REDUCTION AND RECYCLING PLAN Summary 2016



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### INTRODUCTION

Our waste; it's not just a load of rubbish.

Reducing waste generation is a challenge faced by communities all over the world. Despite improvements in technology, processes and significant diversion actions like recycling, waste generation and disposal levels are still increasing both in our Region and world wide.

Implementing effective waste management practices and behaviours truly encompasses the message of 'think global, act local'. It is at a local level, through our waste management practices, that our community can make a difference. Effective waste management is a core responsibility of local governments. Rockhampton Regional Waste and Recycling (RRWR) provides the essential waste management services for our Region.

This Waste Reduction and Recycling Plan outlines Council's vision and targets for waste reduction. It sets out a clear path forward to achieve targets by driving cultural change, and implementing sustainable, innovative, cost effective, environmentally sound waste management practices.

The Waste Reduction and Recycling Plan identifies the initiatives, actions and waste management solutions that comply with environmental safety and legislative requirements.

This plan challenges current waste management performance and strives to achieve clear, set targets for waste reduction and diversion for our Region.

This Plan addresses the management of priority wastes, as required under Queensland's Waste Reduction and Recycling Act 2011. Through the implementation of this action plan, Council will meet the objectives outlined in Queensland Waste Avoidance and Resource Productivity Strategy (2016 - 2024).

Rockhampton Region population is approximately 83,000 and is expected to grow to 94,000 by 2024. With growing population comes increased waste generation and landfill airspace challenges.

Just over 69,000 tonnes was buried at our Region's landfills in the 2013/2014 financial year.

Over the lifetime of this plan, Council will achieve an overall reduction in waste to landfill of 15%.

The specific objectives of the Waste Reduction and Recycling Plan are to:

- Provide a framework for the collection, treatment and disposal of waste generated within RRC,
- Set long term targets for the minimisation of waste that is sent to landfill (or other forms of disposal),
- Identify the best option for the long term disposal of waste generated within RRC,
- Maximise the recovery and reuse of waste that has a further or alternative use, to the greatest extent practicable, and
- Ensure ongoing compliance with legislative and regulatory requirements.

### VISION

To manage waste production in a manner that is sustainable for the environment and the community,

# ABOUT ROCKHAMPTON REGIONAL WASTE AND RECYCLING

Rockhampton Regional Waste and Recycling (RRWR) is a business unit of RRC responsible for day to day operations and services relating to the collection and disposal of wastes generated in the Region.

The services that are provided by RRWR:

- 1. Strategic waste planning for all services and assets, including airspace, landfills, waste transfer stations and roadside bin stations.
- 2. Weekly domestic and light commercial waste collection services.
- 3. Fortnightly domestic and light commercial kerbside recycling collection service.
- 4. Bulk waste collection and transportation services.
- 5. Waste disposal services.
- 6. Community waste education and advisory services.
- 7 .Waste management and logistics during and post natural or man made disasters.
- 8. Management and monitoring of closed landfills.
- 9. Reporting as required by federal and state governments.
- 10. Council policy development to govern the operation of waste services.

## WHERE ARE WE NOW?

#### **Waste Collection Services**

Properties in declared residential collection areas receive a weekly general waste collection carried out by Council day labour and a fortnightly recycling collection service carried out by contractor.

Kerbside collection of general waste wheelie bins occurs in the declared collection areas of Rockhampton, Mount Morgan, Gracemere, Stanwell, Bouldercombe, Westwood, Gogango, Bajool, Marmor, Kabra and Pink Lily.

RRWR provides 29,991 households with 240 litre general waste and recycling wheelie bin collection services.

All co-mingled recycling collected from kerbside bins is taken to the Central Queensland Recovery Facility (CQMRF) for sorting and processing. All items disposed of in general waste wheelie bins are disposed of at landfill.

#### **Waste Management Facilities**

RRWR operates and maintains a number of different waste management facilities in the Region including:

- Two Landfills,
- Four Waste Transfer Stations, and
- Nine Roadside Bin Stations.

In some cases these sites service dual purposes, for example, the Region's largest waste management facility located at Lakes Creek Road which provides facilities for reuse and recycling drop off, as well as waste disposal.

Landfill capacity of Lakes Creek Road has been extended by a possible 20 years through a vertical expansion process known as "piggybacking". Gracemere landfill will reach capacity in the near future as it nears completion of the fill plan.

Our Region is also home to the Central Queensland Material Recovery Facility (CQMRF), constructed in 2010. The CQMRF runs in partnership with other Central Queensland local governments and is operated and maintained by contract.

### WASTE

**MSW** is waste generated as a result a domestic household or council activities. Also known as domestic

**C&D** is waste generated as a

**C&I** is any waste generated as

#### **Waste generation**

As a Region, 91,941 tonnes of waste was generated in 2013/2014, which consisted of:

- Municipal Solid Waste (MSW)
- 31,504 tonnes to landfill, 16,764 tonnes diverted
- Commercial and Industrial Waste (C&I)
- 33,858 tonnes to landfill, 3,751.55 tonnes diverted
- Construction and Demolition (C&D)
- 3,762 tonnes to landfill, 2,302 tonnes diverted

#### Summary of local government area waste generation

69,124 tonnes to

landfill

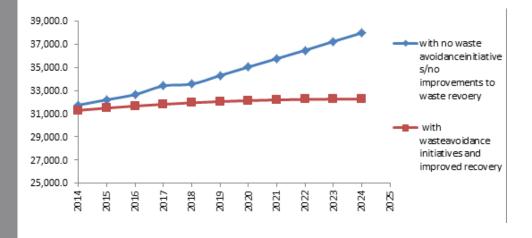
Outline of total waste generated in the Region during the 2013/2014 finacial year. 9,860.55 tonnes recycled 12,957 tonnes reused Tonnes recycled ■ Tonnes reused

■ Tonnes to landfill

# WHERE WE WANT TO GET TO

The projected rate of population growth in the Region, and proposed commercial and industrial developments, including the construction of public and commercial infrastructure, suggest a steady increase in waste generation in the next 10 years. If no waste avoidance initiatives will be undertaken, 81,171 tonnes of waste is expected to be disposed in landfill during 2024/25 financial year.

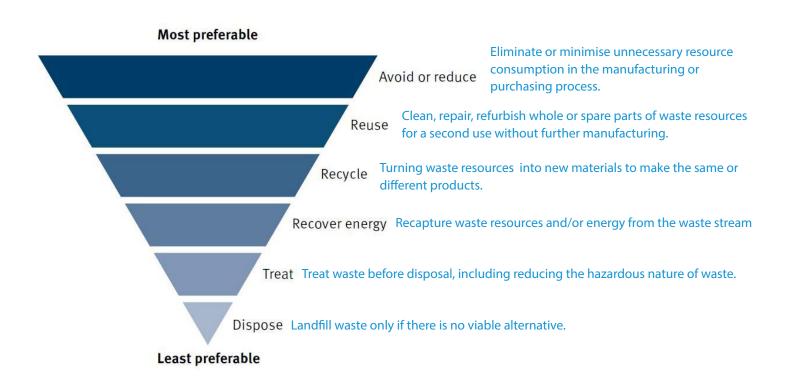
RRWR has set a practical achievable target of 3% reduction in the per capita waste generation by 2024 through waste avoidance campaigns with a stretched target (as per the Queensland waste reduction and recycling strategy 2014) set at 5%, which may be achieved through new strategies or initiatives. RRWR also endeavours to achieve 45% reduction in household waste, 50% recovery of C&I waste and 80% recovery of C&D waste going into landfills through improvements to current waste collection and treatment systems.



The waste management hierarchy is an internationally recognised framework and provides the core principles for all waste management policy and legislation in Queensland and, therefore the approach Council will implement to achieve reduction targets through this Waste Reduction and Recycling Plan is based on that hierarchy.

The inverted base of the triangle reflects where the bulk of our efforts and actions should be directed to achieve more sustainable waste management for our Region.

#### **The Waste Management Hierarchy**



# KEY DRIVERS & MEETING EXPECTATIONS

#### Principles for good waste management

This Plan recognises and incorporates the common principles for the equitable and responsible use of resources across communities and economy for sustainable waste management.

#### These principles are:

- The 'polluter-pays' principle:
   All costs associated with
   waste management should,
   where possible, be borne by
   the waste generator,
- The 'user-pays' principle:
  All costs associated with the use of a resource should, where possible, be included in the price of goods and services developed from that resource, and
- The product stewardship principle: The producer or importer of a product should take all reasonable steps to minimise environmental harm from the production, use and disposal of the product.

#### **Aligning with National and State Regulation**

This plan will fulfil the Federal and State strategies, policies and legislative requirements that provide a clear framework for Local Governments and the private sector in regards to the management of waste.

#### **National Regulation**

The National Waste Policy: Less waste, more resources aims to:

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

#### **State Regulation**

The vision of the Queensland Waste Avoidance and Resource Productivity Strategy (2014-2024) is for:

Queensland to become a national leader in avoiding unnecessary consumption and waste generation by adopting innovative resource recovery approaches and managing all products and materials as valuable and finite resources.

#### **Local Policy**

RRWR has a statutory objective to be commercially successful in carrying out its activities, and to be efficient and effective in the provision of goods and delivery of its services including tasks carried out as community service obligations.

### THEMES

Council is committed to meet waste reduction and recycling targets and achieve a reduction in materials being disposed of at landfill.

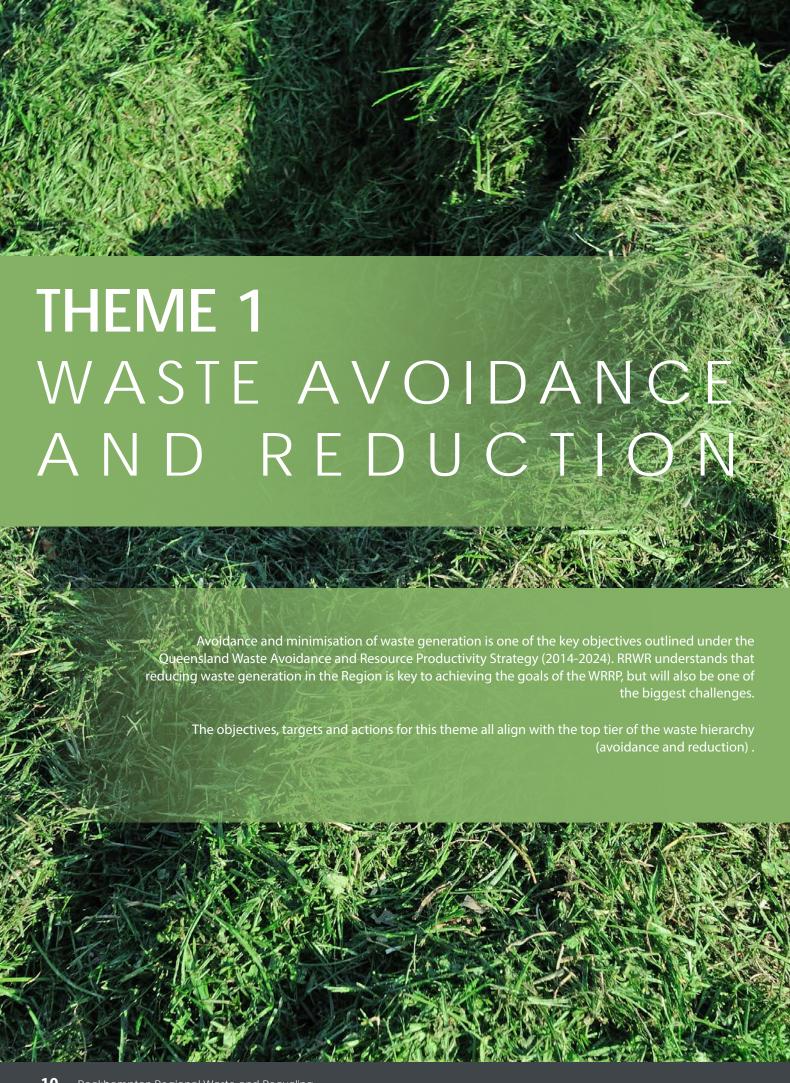
To achieve the vision of this Plan, six themes have been identified. These themes draw on the framework of the waste management hierarchy, key drivers from all levels of Government legislation and reflect the unique community needs of our Region.

For each of the six themes, a number of objectives have been identified. Each objective is given a target to use as a measureable goal.

A series of actions is identified to best achieve the objectives and targets outlined under these themes.

A timeframe for delivery is provided for each.





- 1.1 Reduce the amount of waste generated in the Region per capita by reducing excessive consumption and wastefulness, avoiding the production of unnecessary waste generated by households, industry, RRC and government agencies.
- **1.2** Measure and communicate success of implementation.

#### TARGETS

- 1.1 Aim to achieve the following targets by 2024:
- Reduction of per capita household waste by 3% (stretched target 5%).
- Reduction of per capita waste generated by RRC activities by 3%.
- Reduction of commercial and industrial waste generation by 2.5% (stretched target 5%).
- Achieve an overall reduction in waste to landfill of 15% over the life of the WRRP.
- **1.2** Continued auditing to measure volumes and composition of wastes being delivered to the landfills and publish findings on website from 2016.

- 1.1 Develop a 'working with community and industry' campaign focused on waste avoidance and reduction.
- 1.2 Develop and implement sustainable resourcing principles for the purchasing and decision making process
- 1.3 Monitor waste disposal levels on a monthly basis. Publish these rates as graphs on the RRC website and other forms of visual media on a biannual basis to encourage the public.



contractors, as well as improving supervision of waste unloading at recycling drop off points to decrease

- 2.1 Increase the recovery and recycling rate of waste generated in the Region from household, industry, RRC and government agencies.
- 2.2 Improve recycling rates (domestic, commercial and construction) through education, provision of a third kerbside bin, improved waste segregation to avoid contaminated waste within each waste stream.
- 2.3 Measure and communicate success of implementation.

#### TARGETS

T2.1 By 2024 achieve a recycling and recovery rate of:

- 45% for MSW:
- 50% (stretched target 55%) for commercial and industrial; and
- 80% for construction and demolition waste.
- T2.2 By 2020 reduce the contamination rates in recycling by 50% and by 2025 reduce by 75% through the provision of a number of initiatives including kerbside waste audits, education programs and improved engagement with C&I and C&P sectors.
- T2.3 By 2016 implement routine updates on the RRC website regarding recycling rates and contamination rates.

- 2.1 Conduct an assessment of all waste streams managed by RRC waste facilities, reviewing the processes followed to manage the waste, the resources dedicated to each process, and any areas for improvement. Focus on identifying waste streams that can be elevated up the waste hierarchy e.g. waste that is buried that could be processed and resold to the public.
- 2.2 Increase the presence of "tip shops" and second hand businesses in the Region and promote these businesses to achieve increased recovery rates.
- 2.3 Commission and begin using the new LCRL waste transfer station for enhanced resource recovery.
- 2.4 Determine baseline waste generation and recycling rates for MSW, C&I and C&D to improve recovery and recycling rates.
- 2.5 Increased supervision of waste unloading in recycling drop off areas at landfill and the WTS sites.
- 2.6 Provide education to the public on the best use of kerbside recycling, to maximise efficiency and minimise contamination.
- 2.7 Monitor recycling and resource recovery rates on a monthly basis. Publish these rates as graphs on the RRC website and other forms of visual media on a biannual basis to encourage the public.



Protection of the environment and human health is the first key principle in the in the Queensland Waste Avoidance and Resource Productivity Strategy (2014-2024).

RRC agree with the importance of this theme and is committed to implementing a series of actions and initiatives to ensure all waste facilities comply with regulatory requirements and standards, as well as developing programs to minimise the impacts of waste on the environment and human health. RRWR currently undergoes routine environmental monitoring of all operating waste facilities and the higher risk closed landfill sites.

Closed landfills in the Regions are also a priority, due to their potential for harm to environmental or human health if left un-checked.

- 3.1 Identify opportunities for improvement whilst ensuring waste facilities are compliant with environmental licences and regulations, as well as workplace health and safety (WH&S) legislation.
- 3.2 Minimise the environmental footprint of the Region's landfills through provision of extending operational life span of Lakes Creek Road Landfill and improved management of airspace and site operations.
- 3.3 Reduce illegal waste dumping and littering.
- 3.4 Ensure regional solutions are developed and implemented to manage problem or priority wastes.
- 3.5 Minimise impacts to the environment or human health from closed landfills within the Region.
- 3.6 Continue to implement education and procedures to correctly dispose of asbestos in order to avoid hazardous materials contaminating green waste mulch.

#### TARGFTS

- T3.1 Compliance with EA requirements and WH&S requirements, with a goal of zero incidents and exceedances over the life of the WRRP.
- T3.2 Improving landfill airspace at Lakes Creek Road landfill by advanced vertical landfill expansion techniques ("piggy backing").
- T3.3 Developing programs to reduce illegal dumping
- T3.4 Identify the Region's problem or priority wastes and implement solutions for the management of these wastes by 2024.
- T3.5 Ensure all closed landfills in the Region are managed through a site management plan and routinely assessed and monitored and, if necessary, rehabilitated to ensure no harm to the environment or to human health.
- T3.6 Zero asbestos contamination in green waste mulch.

- 3.1 Regularly conduct internal compliance audits on works against the Environmental Authority and action non-conformances accordingly.
- 3.2 Conduct regular safety inspections at each waste facility and action areas for improvement/ hazards accordingly.
- 3.3 Ensure landfilling operations are effective and efficient to maximise landfill life by complying with compaction requirements
- 3.4 Research third party interest into implementing different treatment methods and technologies that will prolong the life of operating landfills.
- 3.5 Develop and implement a management plan for illegal dumping and littering within the Region. The management plan is to include:
- Public engagement initiatives;
- Increased enforcement of local laws;
- Increased fines. Continual improvement and monitoring of the plans effectiveness is to be achieved annually.
- 3.6 Identify the Region's priority wastes (as per Waste Reduction and Recycling Act 2011) and implement solutions for the management of those wastes.
- 3.7 Update and maintain a register of all known closed landfill sites in the Region. Prepare site management plan for all sites.
- 3.8 Conduct yearly site inspections at each closed landfill site on the register, consisting of landfill gas monitoring and a visual inspection for signs of environmental harm (e.g. subsidence, erosion, weed infestation, landbat parallation). leachate percolation).
- 3.9 Develop information packages outlining the best way to dispose of asbestos and the impacts of illegally disposing of asbestos and other hazardous wastes in green waste. Continue to educate until asbestos and other contaminants are no longer and other contaminants are no longer identified in green waste.
- 3.10 Annually review procedures in place to manage asbestos contamination in green waste (inspections, sampling, education etc.).). Implement improvements where necessary.



- 4.1 Promote the values of the WRRP to the community.
- 4.2 Identify opportunities to increase community awareness of waste reduction, recycling and management programs.
- 4.3 Collaborate with community organisations to achieve the objectives outlined in the WRRP. Ensure support and participation in community collaborative waste reduction efforts.
- 4.4 Listen to the community, not just the complainants, to ensure waste management is planned in a way that is responding to community expectations for a sustainable future.
- 4.5 Educate the community on the real costs of providing green waste mulch, waste management and services.

#### TARGETS

- T4.1 Develop a communication plan that ensures the WRRP and its values are communicated to the Region through a combination of media avenues and education programs.
- T4.2 Deliver a two-yearly survey of waste facility users to gauge stakeholder satisfaction and identify key community needs.
- T4.3 Work with community groups on at least one community collaborative waste reduction effort per year and promote the outcomes.
- T4.4 and T4.5 Information package/s provided to the community providing details on green waste mulch and waste management.

- 4.1 Develop and implement a communication plan for the Region to raise awareness of the WRRP. Communication channels are to include a mix of both media avenues and education programs.
- 4.2 Design an online interactive map for the public detailing the operating and closed landfills of the Region. The map is to include details for each site such as operating hours, waste accepted and costs and be accessible to the public through the RRC website.
- 4.3 Deliver a two yearly survey to customers to gauge both stakeholder satisfaction and identify community needs. Key findings are to be incorporated into operations and aid in the continual improvement of waste management in the Region.
- 4.4 Attend or host at least one community collaborative waste reduction effort per year.
- 4.5 Develop information packages to educate the public on the green waste mulching process and the costs involved. This can be incorporated with Action 5.10.

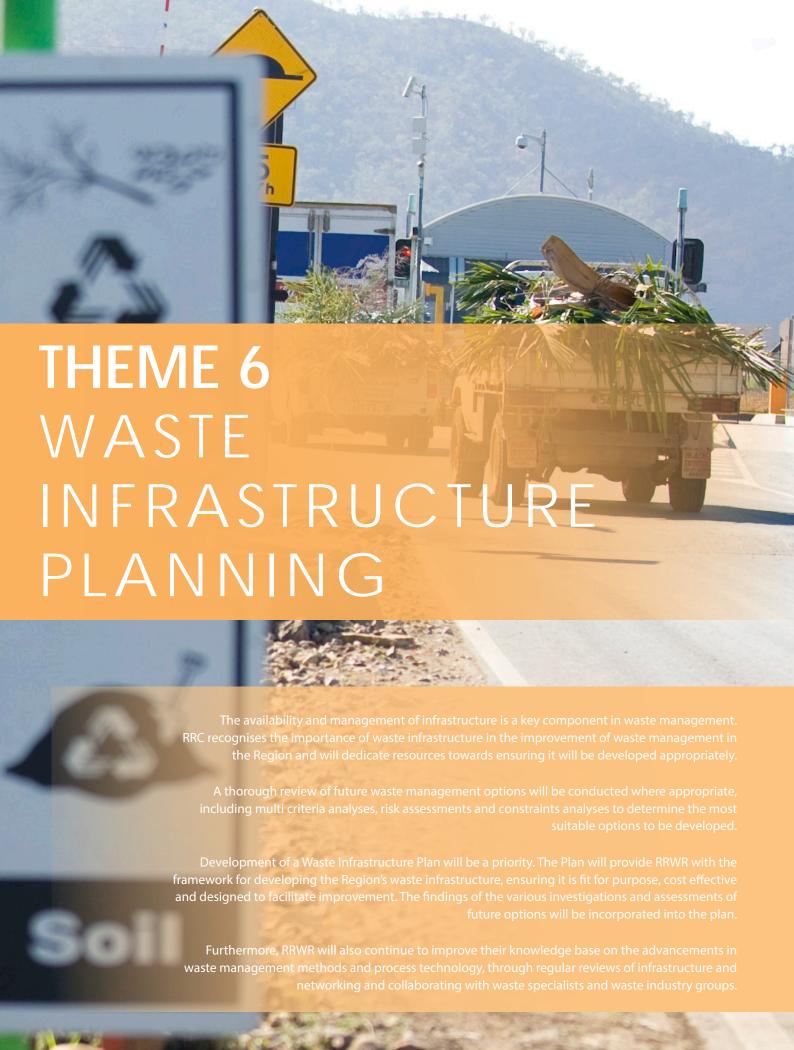


- 5.1 Encourage and support innovative development opportunities and collaborative efforts for waste management improvements, both within the Council and externally.
- 5.2 Investigate innovative resource and energy recovery techniques that are appropriate for the current waste streams and generation rates, improved recycling process techniques and novel techniques for landfill airspace management.
- 5.3 Develop an innovative and accessible data management system that is simple to use and simple to retrieve data in a meaningful and consistent manner that is aligned where possible with neighbouring Councils for data comparison. Work with contractors to improve capture of commercial recycling and RRC waste data.
- 5.4 Develop and implement a strategy for improving green waste management, including increased capture rates, developing improved treatment techniques and investigating options to recover other organics such as food waste.

#### TARGETS

- T5.1a Assess, at a minimum, three opportunities annually for innovative developments within their waste facilities for:
- Increasing resource recovery and recycling; or
- Decreasing waste sent to landfill; or
- Efficient use of landfill airspace.
- T5.1b Encourage businesses (either new or currently established) in the waste management and resource recovery sector.
- T5.1c Collaborate with, and provide support to, businesses in the Region in developing waste management improvement initiatives.
- T5.2 Investigate and develop cost effective and practical process model for improving recovery, recycling and management of airspace
- T5.3 Develop and implement an improved data management system and/or upgrade current systems.
- T5.4 Develop and implement green waste management improvement strategy.

- 5.1 Develop a business case that explores at least three opportunities for innovative developments current or future waste facilities including (but not limited to):
- Increasing resource recovery and recycling; or
  Decreasing waste sent to landfill; or
  Increasing landfill airspace.
- 5.2 Develop initiatives to either draw new business to the Region, or support existing businesses, in the waste management or resource recovery sector. Initiatives could include:
- -Provision of resources;
   Advertising space on the RRC website or print media;
  - Establishing communication between the business and like minded parties; and Planning support.
- 5.3 RRC to initiate a project/s, in partnership with one or more business in the Region, to the focus on waste management improvements, resource recovery, or sustainable development.
- 5.4 RRC to contact businesses in the hospitality industry and gauge interest in participating trials for the black soldier fly investigation.
- 5.5 Set benchmarks/targets for resource recovery and recycling levels and compaction rates. Review quarterly if these targets are being achieved and implement actions if they aren't.
- 5.6 Develop and implement a fit for purpose accessible data management system.
- 5.7 Undertake a financial feasibility assessment of waste operations to identify waste management improvement initiatives.
- 5.8 Create an interactive internal map for RRC staff. Incorporate other relevant site data such as audit results and monitoring data. The intention being to create a map where staff can select any site and access relevant data about that site.
- 5.9 Work with contractors to identify methods to better capture:
   Commercial recycling figures (kerbside and drop off);
   Annual breakdown of recycling to the MRF by stream;
   Waste generation figures from RRC's own activities.
- 5.10 Conduct assessment of green waste management process (from collection trough to use of mulch). Identify areas for improvement such as methods to increase diversion from other waste streams, reducing contamination, improving profitability of composting and utilizing/incorporating other organic waste (e.g. food).



- 6.1 Develop a Waste Infrastructure Plan to deliver infrastructure for the Region that is fit for purpose, cost-effective and designed to facilitate improved waste management.
- 6.2 Design and implement vertical expansion (piggy-backing) of Lakes Creek Road Landfill to increase its operational life.
- 6.3 Continue to review the current roadside bin station model and identify initiative for improvement.
- 6.4 RRC to consider and implement practical, cost effective recommendations for waste minimisation and resource recovery, based on the feasibility assessment.
- 6.5 Maintain up-to-date knowledge of latest advancements in waste infrastructure and improvements and state or national level initiatives that could be of relevance to RRC.

#### TARGETS

- T6.1 Review maintenance requirements and effective life of current landfill infrastructure, WTS and bin stations and monitor conditions. Review and upgrade operations at roadside bin stations. Plan for the replacement/upgrade dates for infrastructure and include in Council budgets.
- T6.2 Award tender for design of LCRL vertical expansion by end of 2015. Award tender early 2016 for operation in 2017.
- T6.3a Data collected from roadside bin stations by end 2015 and identify volume and source of waste materials.
- T6.4b Reconfiguration of roadside bin stations for improved performance.
- T6.5 Implement the recommendations identified by the financial assessment.
- T6.6 Implement consistency in accounting for capital expenditure, use financial cost benefit analysis to compare options and refine the landfill pricing model.
- T6.75a Attend, or host, waste conferences and workshops in the waste industry to identify options for improvement in waste infrastructure and management that will improve waste minimisation and resource recovery, and reduce operational costs.

- 6.1 RRC to conduct an assessment to determine the operational lifetime for each current waste facility (landfill, WTS and hin station)
- 6.2 RRC top develop a Waste Infrastructure Plan that includes:
- RRC's plans for development of future waste infrastructure, that is fit for purpose, cost effective and designed to facilitate improvement:
- Schedules for the replacement/ upgrade of waste infrastructure; and
- RRC's approach to keep abreast of new waste infrastructure developments.
- 6.3 Tender for design of Piggyback at LCRL by end of 2015. Award tender early 2016 for operation in 2017.
- 6.4 Engage a consultant to conduct a review of current roadside bin operations with particular focus on capturing waste data (volumes, sources) and identifying areas to improve waste segregation and reduce waste contamination.
- 6.5 Complete a financial feasibility assessment that outlines future waste management improvements. The most appropriate and cost-effective solutions will be adopted and implemented by RRC
- 6.6 Implement the recommendations identified by the financial assessment.
- 6.7 Use financial cost benefit analysis to compare options and refine the landfill pricing model.
- 6.8 RRC to host, or send key staff to, a workshop, or workshops, with members of the waste industry (RRC staff, waste contractors, specialist consultants etc.)) to identify options for improvements in waste infrastructure and management



#### THEME 1

Waste management within the Region has followed the waste hierarchy with waste generated per capita reduced from households, industry and government sources by 1.6% per annum.

#### THEME 2

Increased the rate of recycling per annum by:

- 4.5% for MSW;
- 5.5% for commercial and industry; and
- 8% for construction and demolition waste.

#### THEME 3

Zero licence breaches or exceedances.

Reduce the amount of illegal dumping by 3.3% per annum.

#### THEME 4

Increased public awareness of waste management within the Region with a 0.5% reduction of household waste per annum.

#### THEME 5

Increase in the number of new businesses supported in relation to waste management by 0.5%

#### THEME 6

Development of the plan, which includes timelines, budgets and milestone measures for existing and future infrastructure, by end of 2016.





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