

REGIONAL WASTE AND RESOURCE RECOVERY MANAGEMENT PLAN

Central Queensland

Prepared for:

Local Government Association of Queensland
Local Government House
25 Evelyn Street
Newstead
Fortitude Valley 4006

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BASIS OF REPORT

This report has been prepared by SLR Consulting Australia Pty Ltd (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Local Government Association of Queensland (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

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DOCUMENT CONTROL

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EXECUTIVE SUMMARY

The Central Queensland Regional Waste and Resource Recovery Management Plan

This Plan identifies a series of actions to be taken at a regional scale and for individual Councils to improve waste and resource recovery outcomes in the Central Queensland region. Participating Councils are Banana Shire Council, Central Highlands Regional Council, Gladstone Regional Council, Livingstone Shire Council, Rockhampton Regional Council, and Woorabinda Aboriginal Shire Council. Under the Central Queensland Regional Organisation of Councils (CQROC) Waste and Resource Recovery Working Group (WRRWG), a series of workshops and interviews were undertaken to define current challenges and opportunities, to identify, refine and select preferred options, and to identify a pathway for implementation.

The current population of the CQROC area is approximately 230,000¹ and predicted to grow an estimated 360,000 residents by June 2036. Population projections suggest growth in population will be most significant in Gladstone, Livingstone, and Rockhampton LGAs, marginal in Central Highlands, and population may decline in Banana Shire and Woorabinda Aboriginal Shire Council between 2016 and 2041.² Central Queensland is a major contributor to the state and National economy, generating \$17 billion in Gross Regional Product in 2019, primarily from key industries of mining and agriculture. These key industries are widely dispersed throughout the region. Key mining operations are conducted in the central, western, and southern areas near Emerald, Blackwater, Biloela, and Moura. Agricultural activities are located across the region from Banana through to Rockhampton, with the Central Highlands supporting approximately 1.3 million head of cattle across its expansive LGA.³

CQROC recognises that Woorabinda Aboriginal Shire Council is a member of the Central Queensland region for the purpose of developing and implementing a Regional Waste Management Plan and that:

- Woorabinda's preliminary internal assessment of impacts and opportunities relating to Waste Management does not identify business case elements for potential initiatives to be considered as part of the Qld State Infrastructure Investment Plans and/or other Strategic Plans in the immediate future.
- To negate this limitation, Woorabinda Aboriginal Shire Council will develop its own local waste reduction and resource recovery Plan to inform further iteration of the CQROC Regional Waste Management Plan and in due course provide greater opportunities to align needs and opportunities for State Infrastructure Investment and/or other Strategic Plans for Waste Management into the future.

¹ Central Queensland Regional Organisation of Councils, 2022. Population (<https://cqroc.org.au/population/>)

² Queensland Government population projections, 2018 edition; Australian Bureau of Statistics, Population by age and sex, regions of Australia, 2016 (Cat no. 3235.0).

³ DSDIP (2013). Central Queensland Regional Plan

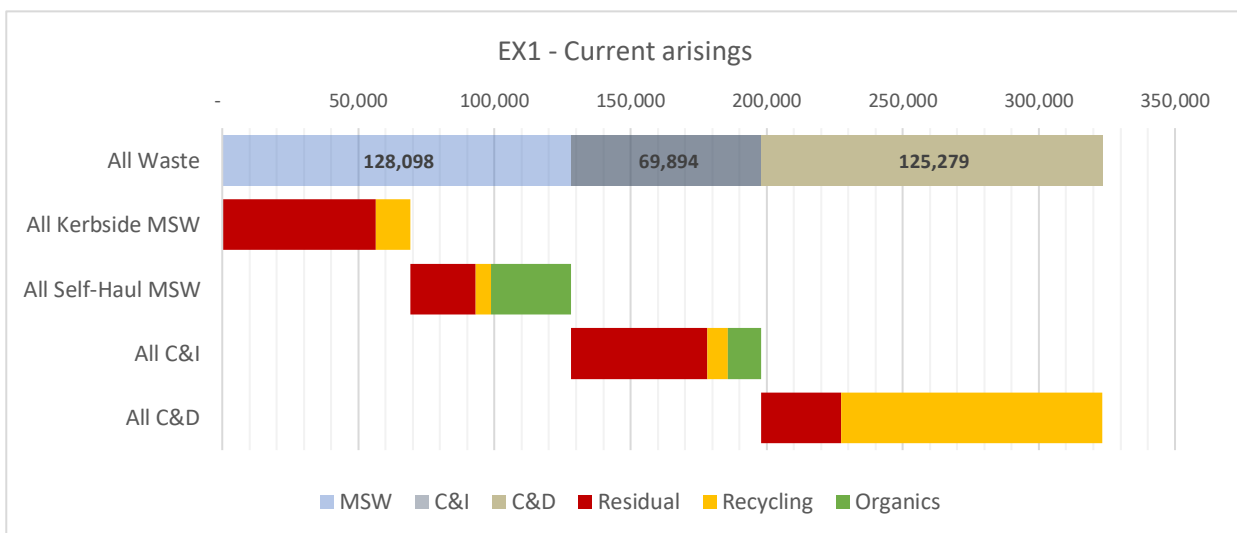
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Current state

Waste arisings and services

Councils in the Central Queensland region managed a total of 323,271 tonnes of waste in the 2020-21 financial year (FY20-21). This included (see **Figure EX1**):

- 128,098 tonnes of household waste (MSW stream).
- 69,894 tonnes of commercial and industrial waste (C&I); and
- 125,279 tonnes of construction and demolition waste (C&D).



Regionally the amount of waste managed by individual councils in FY20-21 was:

- Banana Shire Council: 4%
- Central Highlands Regional Council: 14%
- Gladstone Regional Council: 20%
- Livingstone Shire Council: 12%
- Rockhampton Regional Council: 50%
- Woorabinda Aboriginal Shire Council: <1%

Without action, waste managed by councils in the region is forecast to grow to 400,000 tonnes per year in FY30-31, and 480,000 tonnes per year by FY50-51. There remains a need to improve the quality and quantity of data available, particularly for private sector waste and recycling operations in the region.

All councils offer at least a kerbside household residual waste bin collection service. Central Highlands Regional Council, Gladstone Regional Council, Livingstone Shire Council and Rockhampton Regional Council currently offer a 2-bin collection system. Banana Shire Council offers a kerbside, blue-lidded bin for paper and cardboard

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All Councils also provide some form of self-haul facility which receive householder, commercial and industrial, and construction wastes. Problematic wastes with limited currently available recovery options in the region include construction and demolition wastes (e.g., masonry, aggregates, and concrete), contaminated soils, e-waste, food and garden organics, timber, textiles, and tyres.

The Plan identifies several regional or cross-regional solutions for these but acknowledges that Queensland or Commonwealth Government leadership and interventions will be needed for some of the more problematic waste streams.

Key issues

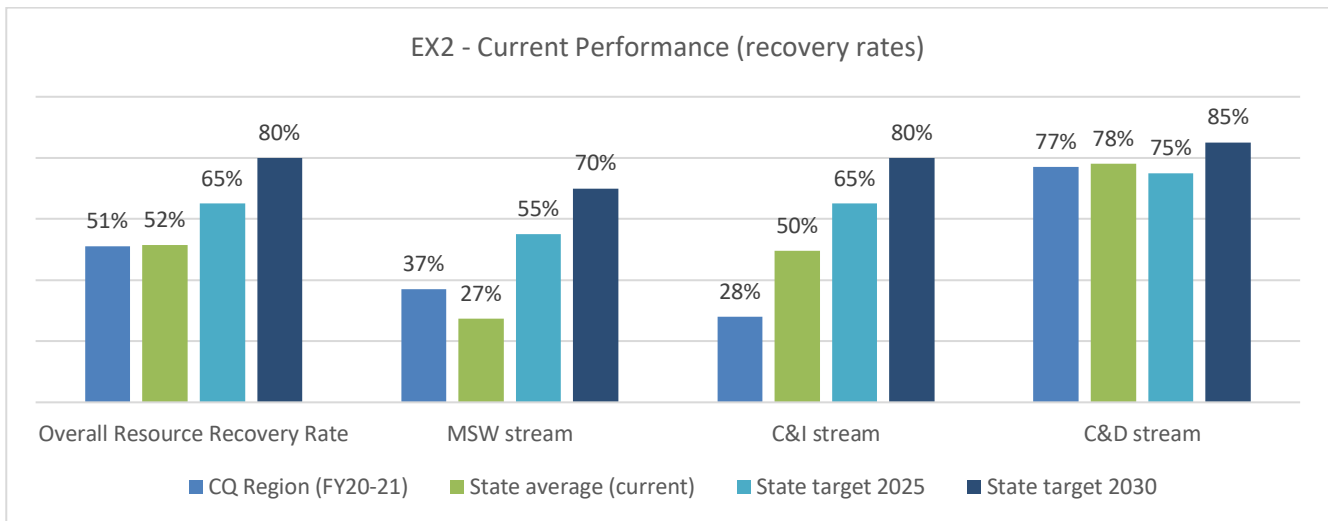
Several key issues identified were identified for the Plan to address:

- Lack of long-term approved and constructed landfill capacity.
- Geographical diversity in the region with a range of large geographical areas with dispersed populations and more densely populated urban areas, resulting in prohibitive transport costs.
- Councils in the region are required to diversify their service offering, but also receive significant amounts of non-household waste which they are expected to manage.
- Lack of scale for recycling or secondary processing.
- Lack of end-markets locally driving demand for recycled materials.
- Community understanding and behaviours impose a significant risk and impact to existing or proposed future operations.
- Current policy settings do not support greater recovery and recycling.
- There is an increasing cost to improving waste and resource recovery outcomes in the region.

Current performance against Strategy targets

The Central Queensland region has a current resource recovery rate of 51% across all streams, compared to a current state average of 52% and 2025 state target of 65%. The municipal solid waste (MSW) and construction and demolition (C&D) waste streams are consistent with the state average, whilst the commercial and industrial (C&I) stream is performing poorly. Across all streams, the 2025 and 2030 targets are challenging without intervention, as shown on **Figure EX2**.

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Plan outcomes

Education as a primary focus

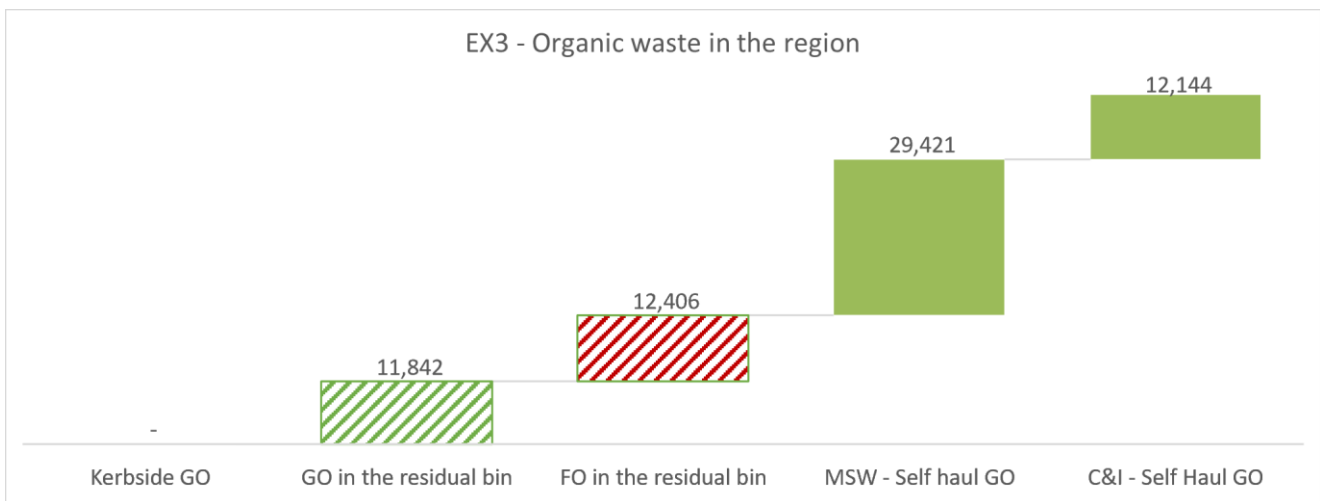
A regional waste and recycling education strategy has been identified by Councils to focus investment on education and behaviour change activities that promote better outcomes for the region. Education will focus on problem areas including reducing the kerbside recycling bin contamination rates, which diminishes the value of sorted material and can increase operational costs, as well as capturing more recyclable material currently sent to landfill. Other areas of focus will include food waste avoidance programs, and other behaviour change activities which educate residents on the benefits of getting recycling right.

The regional education strategy will be developed through collaboration by Councils in the region however will require investment and input from the Queensland Government to prepare and implement. Through further investment, this Strategy, and the resources deployed could also target education of waste producers in the C&I stream to drive better resource recovery outcomes. Woorabinda Aboriginal Shire Council will develop its own community specific education Plan to align with other education services in the area.

Improved organic waste management

The Central Queensland region already recovers and recycles 41,565 tonnes of green waste (in FY20-21) through material delivered to Council resource recovery facilities. A further 24,000 tonnes of food and garden organic waste (FOGO) is estimated to be sent to landfill across the region (as shown on **Figure EX3**). This represents an opportunity in the region to divert some of this material from landfill and into organic waste recycling through composting, whether at commercial facilities, at home, or via community facilities. In the region, current policy and economic settings suggest that Gladstone Regional Council and Rockhampton Regional Council have sufficient volume to introduce a separate organic waste kerbside collection and processing solution. For other councils in the region, lack of suitable processing and current policy settings may limit the potential establishment of kerbside organic waste services.

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For those parts of the region that cannot access a kerbside organic waste collection service, the Queensland Government will establish mechanisms for residents to participate in composting through community gardens or composting hubs, or by encouraging access to at-home composting infrastructure such as compost bins or worm farms. These interventions will be implemented as soon as practically possible and dependent on availability of funding. Food waste avoidance education should also be rolled out across the region.

Economic analysis to support this Plan has identified that the introduction of a new kerbside organics service is expected to result in extra cost for Councils. The estimated cost for Gladstone Regional Council and Rockhampton Regional Council for a new organics collection service including processing is estimated is **\$45 million** (present value) assuming a simple open-windrow technology can be deployed over a 30-year forecast period in each LGA. The estimated annualised cost increase compared to business as usual, allowing for increasing levy costs, would be an additional estimated **\$25 per household** per year (present value), assuming the residual bin collection is reduced to fortnightly where a kerbside organics collection is available. This includes:

- One-off-transition costs to purchase consumables and distribute to households including new bins, kitchen caddies, and compostable liners estimated at **\$1.5 million** for Gladstone Regional Council and **\$2.2 million** for Rockhampton Regional Council.
- An additional potential one-off cost of \$11-\$21 per bin may also be incurred to change current residual bin lids from green to the standardised red.
- Additional establishment education and ongoing organics diversion education costs just for FOGO implementation are included in the estimate at **\$0.14 million** for Gladstone and **\$0.21 million** in Rockhampton per year commencing 2-years before a new service commences.

Whilst nothing in this Plan precludes other Councils from introducing a kerbside FOGO collection and processing solution, under current policy settings, the comparable cost per household would be higher due to 100% of landfill levy paid being returned to council in annual advance payments, in addition to the lack of scale and large distances required to transport waste for processing. Similar proportional costs may be incurred by other Councils progressing organic waste diversion.

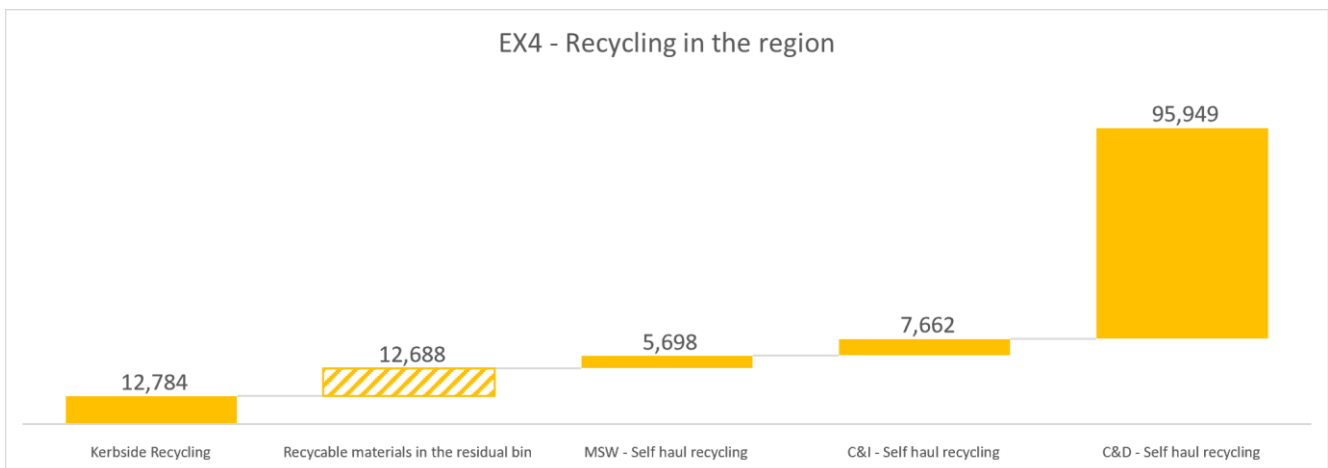
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Activities and actions are identified for Councils not introducing new kerbside services to support food waste avoidance, at-home, or community composting. These interventions are expected to be led by the Queensland Government.

It is estimated that the introduction of a FOGO collection service in both Gladstone and Rockhampton could capture an initial 13,000 tonnes of organic waste to be recycled. As a region this is forecast to result in a 4% increase in overall recovery rate for the region from a current 51% to 55% once the services commence. Between FY25-26 and FY30-31 this intervention is estimated to divert an estimated additional 65,000 tonnes of organic waste from landfill.

Improved material recovery and recycling

In FY20-21, 122,092 tonnes of material managed in the region was reported as recovered, of which the household kerbside collection of dry recyclables contributed 12,784 tonnes.



The bulk of reported recovered waste is from the C&D stream which has a recovery rate already of 77%. Contamination of the kerbside commingled bin in the region is around 20% but, in some cases, higher. It is estimated that approximately 12,688 tonnes of dry recyclable material is currently disposed of in the kerbside residual bin that could be captured.

Through focussed education campaigns as part of the regional education strategy it is expected that contamination will be reduced, and that there will be greater capture of recyclable material currently lost to landfill. Central Highlands Regional Council, Gladstone Regional Council, Livingstone Shire Council and Rockhampton Regional Council are currently collaborating on a new regional recycling processing solution. This may include the establishment of a new material recycling facility in the region.

There may be opportunities for the establishment of new recycling or reprocessing facilities in the region aligned with the Queensland Governments precinct approach, however this requires further refinement. Target reprocessors may access organic waste, C&D waste (masonry, aggregates, and concrete) and solar panel recycling to complement existing arrangements.

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To facilitate future precinct development and better diversion through resource recovery facilities, an allowance has also been made in the economic analysis for improvements to transfer facilities or existing landfill sites, additional operating costs, and transport to move recyclables from satellite sites to processing hubs. This may also include community recycling hubs or hazardous waste transfer facilities, and circular economy solutions such as fixing facilities.

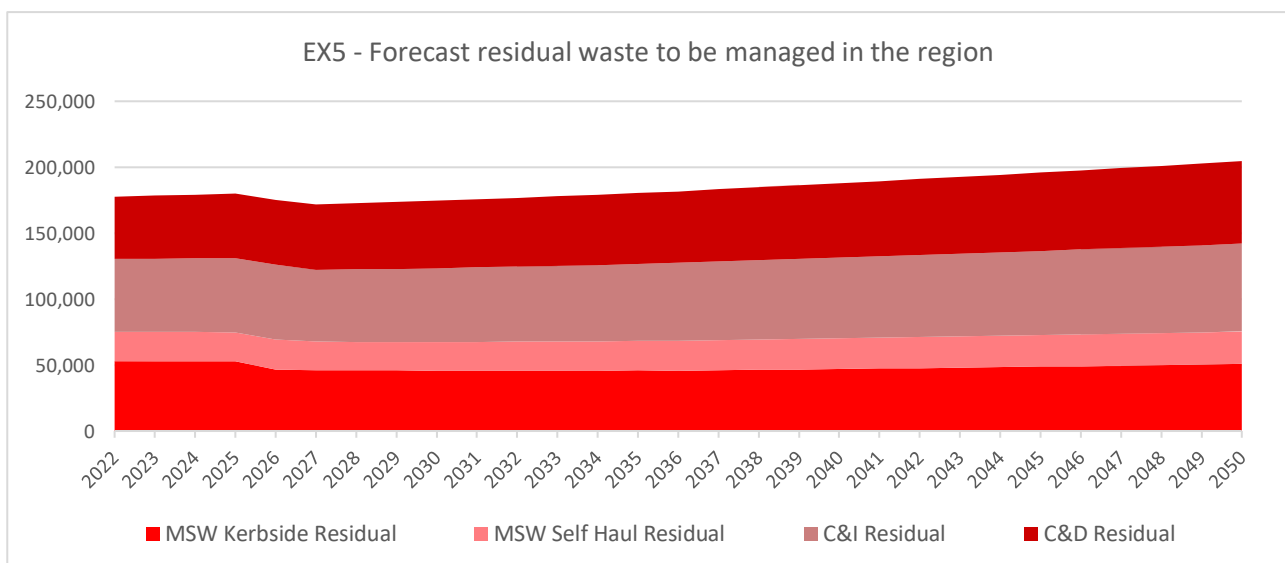
The estimated cost to implement the material recovery and recycling interventions is **\$44 million** (present value) equivalent to an annualised cost of approximately \$25 per household per year. This includes:

- Estimated capital expenditure of **\$18 million** for a new regional scale MRF, if identified as the preferred solution, and ongoing operational costs for the MRF over the 30-year lifetime.
- Small-scale infrastructure improvement indicative budget of **\$7.5 million** to allow for upgrades to existing facilities, or conversion of existing landfills to transfer facilities.
- The development and delivery of a regional education strategy that applies across all Councils to provide education priorities in collaboration with the Queensland Government, estimated to be **\$0.68 million** per annum commencing immediately

It is assumed that additional education costs are funded by the Queensland Government. These changes are focussed on improving the quality and quantity of material captured for recycling through enhanced education across the region. A separate education Plan will be developed by Woorabinda Aboriginal Shire Council specific to community needs.

Residual waste management in the long-term

In FY20-21, 159,613 tonnes of residual waste was managed, of which 56,392 tonnes was generated directly by households. With the interventions identified in this Plan, residual waste is expected to be 180,615 tonnes by FY30-31 growing to 193,074 tonnes by FY40-41 and 212,240 tonnes by FY50-51. For the household derived MSW stream only, Councils are forecast to need to manage 69,482 tonnes of residual waste in FY30-31, 72,740 tonnes in FY40-41 and 78,282 tonnes by FY50-51 (see **Figure EX5**).



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Some Councils are running out of approved and constructed landfill capacity. The cost of residual waste management in general is expected to increase as new landfill capacity is required, or alternative solutions procured. However, the immediate cost of landfilling is also increasing rapidly for Gladstone Regional Council and Rockhampton Regional Council due to changes in annual advanced payments. In the long-term the region will need to identify and Plan a residual waste solution that considers continuation of landfill through development of new capacity, or via sending some residual waste to energy or to fuel from waste facilities that could be developed in the region. All solutions will still require ongoing landfill capacity.

Aligned with Queensland's Waste Management and Resource Recovery Strategy, utilisation of energy from waste is the likely path to achieve the states resource recovery targets of 90% recovered by 2050. There is uncertainty over the costs. This is because an energy from waste solution is not currently available or proposed in the Central Queensland region, or Queensland at present. If a solution was available, the estimated cost per household of diverting residual waste to EfW is likely to be significantly greater than continued landfilling. An action in the Plan is to monitor the opportunity to develop an EfW facility of suitable scale for the region.

Other problematic streams identified in the residual waste stream include biosolids, timber and contaminated soils. Long term solutions for these streams that avoid the need for landfill will require further cross-regional collaboration and strategic transformation of regional waste management.

Expected recycling and resource recovery outcome of the Plan

To achieve an estimated regional resource recovery rate of approximately 56% resource recovery, which amounts to an overall improvement of 5% for the entire region and a 19% improvement in recovery rate on the kerbside MSW stream, the Councils, principally Gladstone Regional Council and Rockhampton Regional Council, would need to introduce an organics diversion service targeting FOGO. This should be coupled with improvements to the existing yellow top bin recycling services for all Councils through a combination of improved transfer facilities and education. Beyond this, significant improvements to the C&I stream are required, but only after data for non-council managed wastes are collected and assessed. A forward estimate on the potential benefit to resource recovery rates if energy from waste was available in the future could be between 72% (for produced engineered fuel/refused derived fuel) to 78% (thermal combustion) depending on technology selection.

Implementation

Cost to deliver the Plan

The estimated cost for implementation (excluding residual waste management) is **\$66 million** over this period as presented in **Table EX1**⁴.

⁴ Costs are estimated to a maximum of p50 accuracy where presented in this Plan

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Table EX1 Indicative Cost Estimate (costs in millions, p50 accuracy)

Item	2024	2025	2026	2027	2028	2029	2030	2031	Total to FY31
Regional Implementation									
Project Manager (RWG)	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	1.44
Administrative & Legal	0.10	-	-	-	-	-	-	-	0.10
Develop detailed implementation Plan	0.05	-	-	-	-	-	-	-	0.05
Review RWWP	-	-	-	-	0.10	-	-	-	0.10
Meetings (Council FTE requirement)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.39
Council contribution to actions	0.05	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.22
Sub Total – Plan Implementation	0.43	0.25	0.25	0.25	0.35	0.25	0.25	0.25	2.30
Regional Education Strategy									
Education Strategy (and updates)	0.05	-	0.02	-	0.02	-	0.02	0.00	0.10
FOGO implementation, GRC/RRC only	Captured within organic implementation costs below								-
Kerbside Education & Other	Captured within material recycling & recovery costs below								-
Sub-Total – Regional Education	0.05	0.00	0.02	0.00	0.02	0.00	0.02	0.00	0.10
Regional Organics Solution									
<i>FOGO Implementation, GRC only</i>									
Administration, business cases, PM	0.20	0.20	0.08	0.08	0.08	0.08	0.08	0.08	0.85
FOGO education costs (new service GRC)	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	1.08
One off investment (bins) (GRC)	-	-	1.43	-	-	-	-	-	1.43
Collection costs (new, GRC)	-	-	0.55	0.58	0.60	0.61	0.62	0.63	3.59
Processing costs (new, GRC)	-	-	0.64	0.65	0.67	0.69	0.70	0.72	4.08
Sub-Total – New FOGO Service, GRC	0.34	0.34	2.83	1.44	1.48	1.51	1.53	1.56	11.03
<i>FOGO Implementation, RRC only</i>									
Administration, business cases, PM	0.20	0.20	0.08	0.08	0.08	0.08	0.08	0.08	0.85
FOGO education costs (new service RRC)	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	2.08
One off investment (bins) (RRC)	-	-	2.20	-	-	-	-	-	2.20
Collection costs (new, RRC)	-	-	0.91	0.93	0.95	0.97	0.99	1.00	5.75
Processing costs (new, RRC)	-	-	0.93	0.95	0.98	1.00	1.03	1.05	5.94
Sub-Total – New FOGO Service, RRC	0.46	0.46	4.38	2.22	2.26	2.31	2.35	2.39	16.82
<i>Organics Programs</i>									
Community composting	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.80
Roll out of compost bin program	-	0.21	-	-	-	-	-	0.21	0.43
Material flow analysis - organics	0.01	0.02	-	-	-	-	0.02	-	0.05
Sub-Total – Organics Programs	0.11	0.33	0.10	0.10	0.10	0.10	0.12	0.31	1.28
TOTAL (Regional Organics Solution)	0.91	1.13	7.30	3.76	3.84	3.91	4.01	4.26	29.13

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Item	2024	2025	2026	2027	2028	2029	2030	2031	Total to FY31
Material recovery & recycling solution									
Education Implementation (kerbside + other)	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	5.44
Education Plan (Woorabinda)	-	0.05	0.02	0.02	0.02	0.02	0.02	0.02	0.17
Small scale infrastructure improvements	-	1.25	1.25	1.25	1.25	1.25	1.25		7.50
Community circular economy programs	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.40
Household Hazardous Waste CRCs	-	-	0.20	0.20	0.20	0.20	0.20	-	1.00
New regional scale MRF	0.50	17.50	-	-	-	-	-	-	18.00
Waste audit program	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.64
TOTAL (MRR Solution)	1.31	12.11	9.78	2.28	2.28	2.28	2.28	0.83	33.15
Residual Waste									
Develop regional residual waste solution & business case	-	0.05	0.30	0.30	0.30	0.02	0.02	0.01	1.00
Progress & implement R&D into problematic wastes & disaster wastes	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.80
TOTAL (Residual Solution)	0.10	0.15	0.40	0.40	0.40	0.12	0.12	0.11	1.80
OVERALL TOTAL – IMPLEMENTATION COST FOR RWRMP TO FY30-31	2.79	13.64	17.75	6.70	6.89	6.57	6.67	5.46	66.47

All costs presented in Million \$ based at 2023 rates, BSC-Banana Shire Council, CHRC-Central Highlands Regional Council, GRC-Gladstone Regional Council, LSC-Livingstone Shire Council, RRC-Rockhampton Regional Council, WASC-Woorabinda Aboriginal Shire Council

Access to supporting resources and funding

There is a need for support around the development of business cases and forecasting suitable for approval by the Queensland Government, particularly for infrastructure such as new or improved transfer facilities, new collections, or processing infrastructure. Access to regional facilitation / coordination support resources is essential for Councils implementation of the Plan, as would funding support to develop supporting documentation for funding applications. Implementation at the regional scale will also require funding to coordinate and liaise with the Queensland Government, and advocate for better waste outcomes in the region.

Funding for capital expenditure such as an organic waste processing facility (or enhancements to existing privately owned facilities), small scale infrastructure improvements, or potentially an energy from waste facility may also be facilitated by the Queensland Government, pending specific business case development.

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Regional collaboration and responsibilities

To support delivery of this Plan, the region has utilised a collaborative approach to strategy development and implementation through a working group operated under the Central Queensland Regional Organisation of Councils. This group will continue to collaborate on Plan implementation, and seek to undertake regional procurement where beneficial, as well as collaborate on the implementation of education and awareness campaigns. This is a critical action required to be commenced immediately following finalisation of the Plan. The Queensland Government will fund a project or program manager to deliver the Plan. Depending on procurement and ownership decisions around certain infrastructure, there may be a need to establish additional governance structures.

Responsibility for decision making for the implementation of interventions under this Plan will sit with individual councils facilitated by the WRRWG. The WRRWG will coordinate funding requests required to the Queensland Government for approval under the following proposed structure:

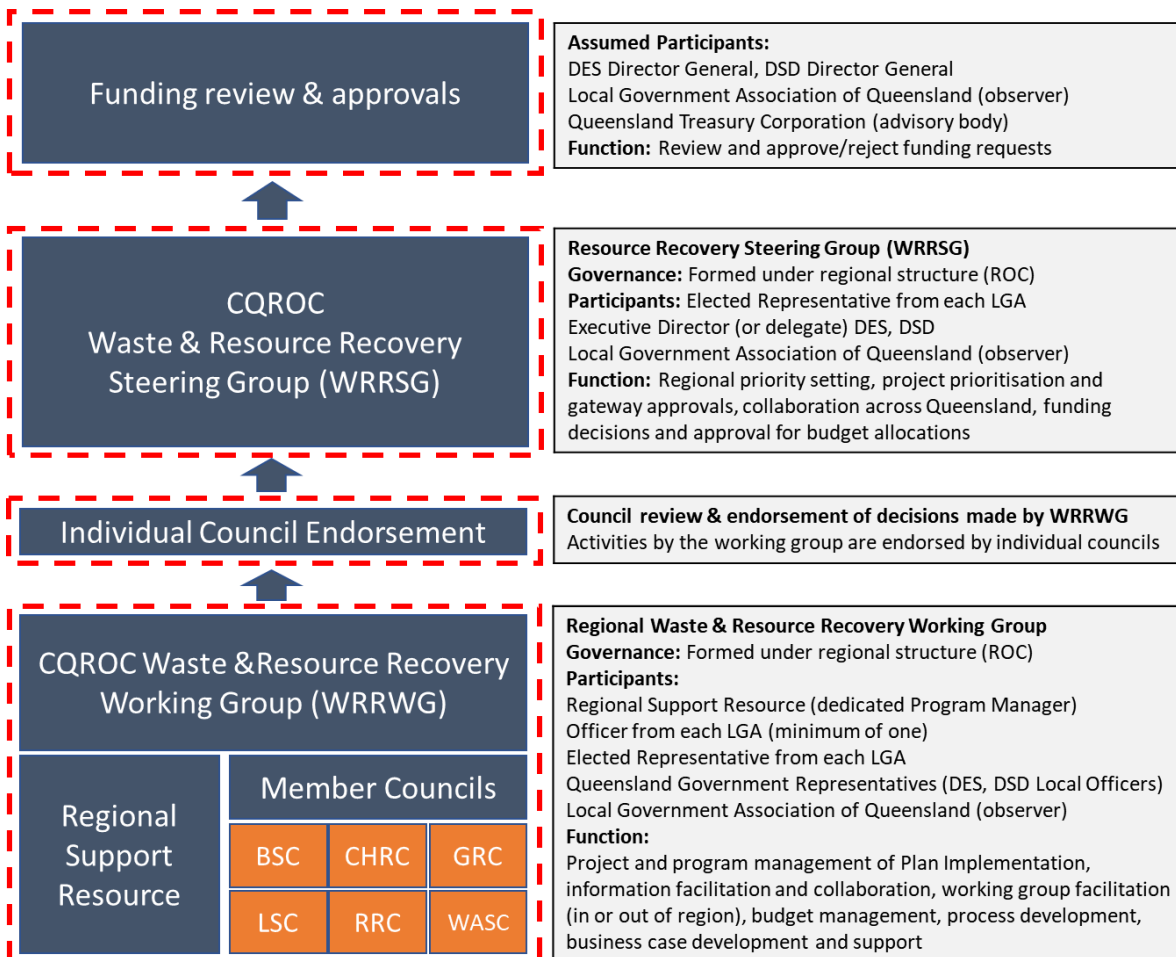


Figure EX6 – Regional governance structure

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Review and monitoring

Implementation of the Plan will be the responsibility of the regional steering group through the regional facilitation / coordination support assistance. Initial actions will be measured against progress, but longer-term review should be against metrics including delivery of specific services identified in the Plan and achieving levels of education, capture of types of waste (e.g., FOGO, GO, dry recyclables) and resultant change to recovery rates compared to forecast. The Plan will be scheduled for review and update every 5-years.

Implementation roadmap

An implementation roadmap has been developed identifying timing and activities to deliver this Plan, as show in **Table EX2**.

While the Regional Waste and Resource Recovery Management Plan provides the primary vehicle for accessing available funding from the Recycling and Jobs Fund, there may also be opportunities for initiatives to be funded that are outside the Plan. For example, a pilot at a local level to 'test' the suitability of a model or infrastructure for the region (or sub-region). It is recognised that the Plan needs to be a living document and that not all potential initiatives will have been identified in the Plan.

However, it is expected that the bulk of the funding will come through the projects identified in the Plan with a more streamlined pathway for funding approvals as it has already been identified in the Plan. In the first instance any projects identified that are outside the Plan would likely be discussed with the regional working and steering groups and the proposed regional support resource position that will be funded to support implementation of the Plan, to assess suitability for funding under the Plan or whether this would be considered under a separate funding process.

Councils, in participating in the development of this Plan and subsequent endorsement of or support for its finalisation and publication, can do so in the knowledge that this consideration does not obligate individual Councils to any funding commitment. Subsequent business cases developed as part of implementing the Plan and implementation decisions made by the region for implementing the Plan would normally include that detail.

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Table EX2 Implementation Roadmap

Action	Responsibility	Immediate	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2040	2050
		Next 2 years			Within next 5 years			Within next 10 years					To 2040	To 2050
General														
Formalise regional waste working group to implement Plan	WRRSG, All													
Program management	WRRSG, WRRWG													
Regional collaboration (e.g., WRRWG meetings, action management, etc.)	WRRSG, WRRWG, All													
Organic Waste Management														
Participate in Education and Behaviour Change Initiative (assumed continuation) as part of regional education strategy – incorporating a food waste avoidance component	WRRWG, All													
Review potential for behaviour change regulation (new services)	GRC, RRC													
Roll out of at-home composting solutions (where appropriate)	QGOV, ALL													
Develop detailed business case for organics collection service for council approval including market development	GRC, RRC													
Commence new organic waste collection service education	GRC, RRC													
Procurement of organic waste collection solution	GRC, RRC													
Procurement of organic waste processing solution	GRC, RRC													
Commence and operate kerbside organic waste collection service (pending individual council approval)	GRC, RRC													
Continuation of self-haul green waste receipt and processing	All													
Roll out of community composting solutions including guidance (where appropriate)	QGOV													
Develop regional solution for biosolids and timber	WRRWG													
Develop pathway to improve non-Council held data collection	QGOV, All													
Material Recycling & Recovery														
Develop Regional Education Strategy & Implement	WRRSG, WRRWG, All													
Participate in Education and Behaviour Change Initiative (assumed continuation)	WRRSG, WRRWG, All													
Develop Council specific Education Plan for Woorabinda Aboriginal Shire Council and implement	QGOV, WASC													
Review & agree pathway for improved enforcement activity for poor household behaviours in kerbside bin service provision, and implement	WRRSG, WRRWG, CHRC, GRC, LSC, RRC													
Collaborate on regional kerbside recycling processing solution	WRRSG, WRRWG, CHRC, GRC, LSC, RRC													
Seek opportunities to collaborate on regional kerbside recycling collections approach when contracts allow	WRRSG, WRRWG, All													
Develop business case, designs for new or improved transfer facilities	All (as required)													
Construct and commission upgrades or new transfer facilities	All (as required)													
Collaborate and refine need for establishment of regional scale precinct and ancillary satellite sites in accordance with precinct guidelines	QGOV, WRRSG, WRRWG,													

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Action	Responsibility	Immediate	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2040	2050
		Next 2 years		Within next 5 years			Within next 10 years					To 2040	To 2050	
Construct enabling infrastructure for precinct	QGOV													
Establish new resource recovery processing facilities within precinct	GGOV													
Work with Queensland Government agencies to improve uptake or recycled materials in procurement	QGOC, WRRWG													
Develop pathway to improve material flow data and knowledge across region for recyclable material	QGOV, WRRSG, All													
Collaborate to collect data on contamination within kerbside bins to improve education approach.	QGOV, WRRSG, WRRWG, All													
Residual Waste Management														
Councils to consider individual landfill capacity needs in short-medium and long-term	All													
Consider long-term options and approach to managing residual waste in the long-term, pending availability of facilities out of region	SG, WRRWG, All													
Design, construct & commission long-term residual waste solution (or enter into long-term supply agreements with privately owned facilities)	SG, WRRWG, All, QGOV													
Develop long-term approach to managing problem and emerging wastes	All													

Notes: BSC-Banana Shire Council, CHRC-Central Highlands Regional Council, GRC-Gladstone Regional Council, LSC-Livingstone Shire Council, RRC-Rockhampton Regional Council, WASC-Woorabinda Aboriginal Shire Council, QGOV-Queensland Government, All-All councils, WRRWG-Regional Waste and Resource Recovery Working group, WRRSG-Regional Resource Recovery Steering Group

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