ISAAC WASTE MANAGEMENT STRATEGY

2020-2025

Current as at 21.04.2020

Presented by **Manager Waste Services, Isaac Regional Council**

Adopted by Council: 26 May 2020
Resolution No. 6623

ISAAC REGION

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“In California, they don’t throw their garbage away; they make it into TV shows” – Woody Allen.

If only it were as easy as that. Here in the Isaac region, we generated 44,000 tonnes of waste in 2018-19. Three-quarters of that was “thrown away” or, more correctly, sent to landfill. The remaining 25% was being diverted from landfill. With Queensland Government targets aimed at reducing the percentage of waste landfilled to just 35% by 2025, clearly there is much more to be done.

While the state targets relate to its overall performance, our Council must do what it can to work towards minimising waste. This strategy looks at how we do this. Our region covers a vast geographical area, but waste from its relatively small population is ending up in four landfill sites across Isaac. This strategy questions whether this is sustainable, particularly given the environmental and financial risks which will remain well into the future from today’s landfill operations just as older, now closed, sites have left us with a legacy of risks to be managed. Meanwhile, Isaac communities expect that Council will continue to provide waste management services to residents.

This is a very exciting time for the waste industry in Queensland. A new Queensland Government waste strategy has been released, a new state waste levy has been introduced, the Container Refund Scheme has just celebrated its first anniversary, and many more initiatives are just over the horizon. It is too early to say how each of these will impact upon Isaac’s waste services however this 2020-2025 strategy sets out to keep these initiatives in context.

Opportunities are being explored for collaboration with neighbouring Councils, including a recent joint procurement exercise with Central Highlands Regional Council for Waste Collection Services, and a new waste sub-group within the Greater Whitsunday Council of Mayors which will deliver actions on a range of waste issues including data management, waste education, and exploring options for potential advanced waste treatment.

On behalf of Isaac Regional Council, I am proud to endorse the Isaac Waste Management Strategy 2020-2025.

Cr Anne Baker

Mayor, Isaac Regional Council

April 2020

1 INTRODUCTION

1.1 THE NEED FOR A STRATEGY

As a society, our concept of waste is changing. It is a shift in perspective from viewing waste as rubbish to discard, to a valuable resource for which innovative solutions can be found that focus on diversion away from landfill and foster local solutions which deliver economic growth and employment. Our region needs a waste plan that addresses variability in our population and local economy and delivers essential waste management services which support industry and the local community. This needs to be done is a manner that is financially sustainable, while striving to meet growing community and social expectations for better resource recovery and waste avoidance.

Queensland is embarking on a new direction in waste management, with the centerpiece of Queensland strategy being the introduction of a waste disposal levy from 1 July 2019, providing an incentive to avoid waste to landfill. The development of this Isaac Regional Council Waste Strategy 2020-2025 (the Strategy) will fulfil the statutory requirement for local government to prepare and implement a Waste Reduction and Recycling Plan (WRRP) *under the Waste Reduction and Recycling Act 2011* (the *Act*).

The Isaac Regional Council Waste Strategy 2020-2025 sets a clear path for the management of solid waste in the Isaac region towards 2029. Council had previously developed a Waste Reduction and Recycling Plan (WRRP) for the period 2016-2026 which provided a framework for the management of Council's resource recovery function across the region. However, with the introduction of a new State Waste Management and Resource Recovery Strategy, Council considered that a review of the WRRP and development of a new strategy was necessary to set local objectives that align with the State Government.

1.2 WHAT WASTE STREAMS DOES THIS STRATEGY ADDRESS?

The Strategy summarises the proposed strategic direction for solid waste management that is generated from households, commercial and industrial premises, the mining industry and the construction and demolition sector. It only considers the current and future management of solid waste by Council. It does not include liquid wastes, as these waste streams are not accepted by Council's landfills, other than waste oils which are recovered.

Examples of the types of waste that are managed by Council and broadly addressed within this plan include:

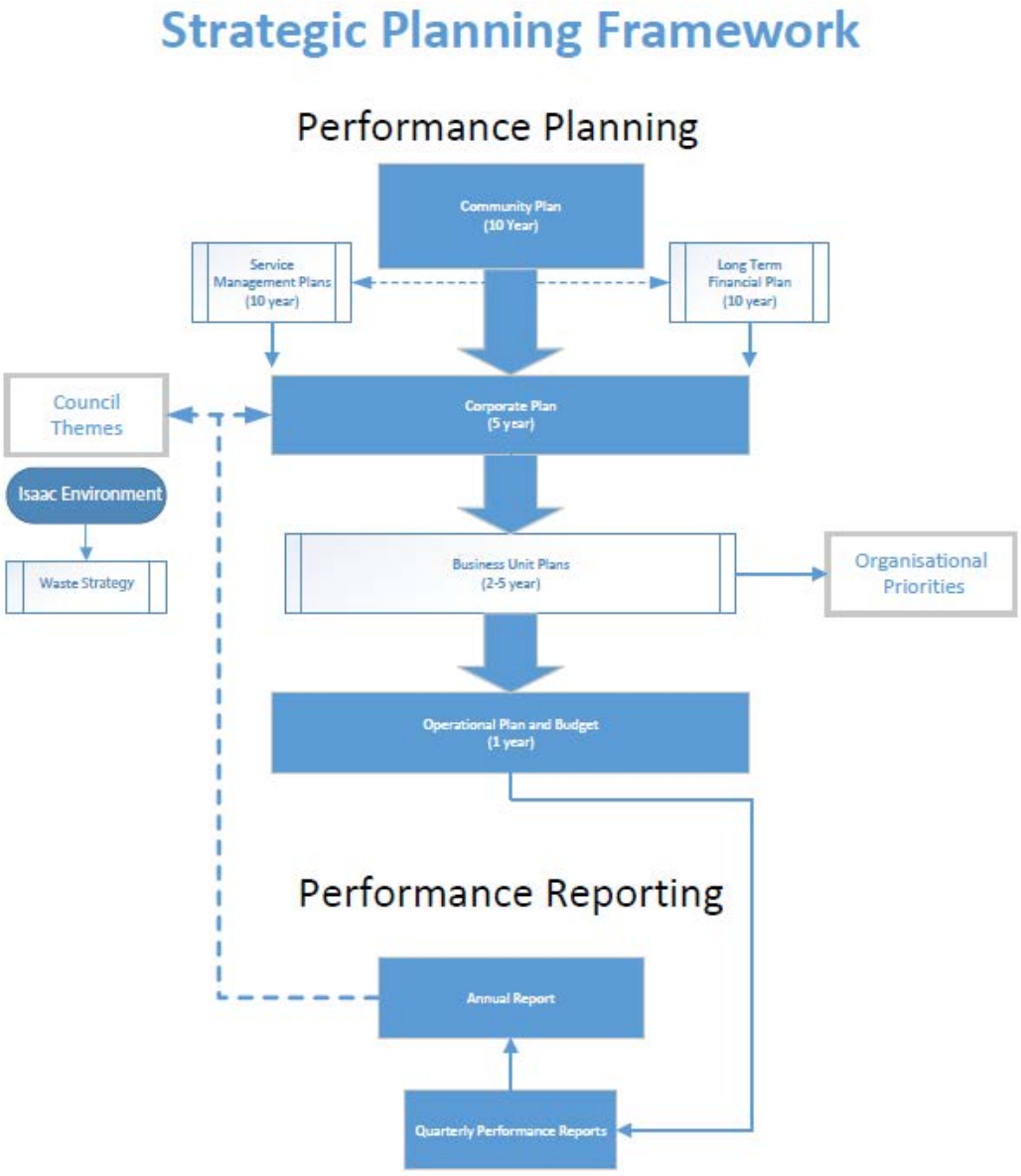
- Kerbside waste from households
- Garden waste
- Food waste
- Mineral and cooking oil
- Scrap metal
- Green waste
- Mattresses
- Electronic waste
- Tyres (excluding mining)
- Conveyor belt rubber
- Clean soil
- Recyclables – paper, cardboard, plastic, steel, aluminum and glass
- Electrical appliances and whitegoods
- Textiles and clothing
- Old furniture
- Gas bottles
- Clean, stackable pallets
- Clean concrete
- HDPE and poly pipe
- Limited regulated wastes
- Biosolids

1.3 STRATEGIC ALIGNMENT

1.3.1 Corporate Plan

In 2015, Council adopted Isaac 2020, a 5 year Corporate Plan that was adopted after two phases of community consultation. The Corporate Plan has five clear strategic themes, Communities; Economy; Infrastructure; Environment; and Governance. It identifies goals, strategies and performance indicators to show what we will deliver over the next five years to meet the objectives in Isaac 2035, a long-term Community Strategic Plan that sets the vision for the Isaac region over the next twenty years. Both of these documents have been developed in consultation with Council's living document The Isaac Region 2020 Vision 2009-2019.

The Isaac Regional Council Waste Strategy 2020-2025 will align with and complement Council's Corporate Plan and be implemented through a consistent program of planning, decision-making, delivery and performance management as illustrated below:



The development of the Isaac Regional Council Waste Strategy 2020-2025 contributes to the following themes within the Corporate Plan.

THEME	STRATEGY	WHAT SUCCESS LOOKS LIKE?
Communities	C1: Provide, operate and maintain venues and community facilities to deliver safe, efficient and cost-effective services	Council facilities and services encourage accessibility across all community groups and geographic areas within the region.
Economy	EC4: Undertake Council's commercial businesses with appropriate business and entrepreneurial acumen, as effective participants in the region's economic activity.	Performance of Council's commercial businesses is productive and profitable based on a balance of commercial and community outcomes and utilizes local products and services.
Infrastructure	I5: Strategically operate, maintain and utilise and review the delivery of Council assets to ensure the efficient and cost-effective services to the community are met and continuously improved.	Use of Council assets are regularly measured, monitored and reported on to demonstrate cost effective outcomes.
Environment	EN3: Minimise Council's impact on the natural environment through effective waste management, recycling and environmental management policies and programs.	A comprehensive waste management strategy is compiled and implemented, and an appropriate suite of policies and programs is adopted and implemented.
Governance	G2: Develop policies, strategic plans and processes to address local and regional issues, guide service provision and ensure operational effectiveness.	Council's operational activities are founded on a framework of policies, strategic plans and processes and with demonstrated positive outcomes.

1.4 QUEENSLAND WASTE STRATEGY

The direction and management of waste in Queensland is changing. During the process of developing this Strategy, the Queensland Government announced the development of a new waste strategy underpinned by a waste disposal levy that will act as a price signal to encourage recycling and recovery of resources and discourage disposal to landfill as a first option. The waste levy was introduced from 1 July 2019 at $75 per tonne (higher for regulated wastes) and is applied to waste that is disposed to landfill. The levy will be increased annually by $5 per tonne until 2021. The levy applies to general waste (municipal solid waste, commercial and construction) and regulated wastes.

The key principles and actions articulated by the Queensland Government include:

- Progressive movement towards a "circular economy" to focus on the reuse, recycling and re-manufacturing of resources.
- Introduction of landfill bans on waste streams where a feasible, alternative market exists.
- Adoption of product stewardship programs, primarily through the introduction of national schemes.
- Exploration of converting waste to energy to complement recycling.
- Development of performance monitoring systems that support good decision making for waste outcomes.

In conjunction with the waste levy, the Queensland Government has introduced new performance targets for Municipal Solid Waste (MSW), Commercial and Industrial Waste (C & I) and Construction and Demolition Waste (C & D) to drive the reduction in waste to landfill. These targets are based on the whole of Queensland and no targets have been developed that are specific to regional Queensland or to individual Local Governments including Isaac Regional Council. The targets are:

1.4.1 Waste avoidance targets for households

STREAM	2025	2030	2040	2050
Household waste	10%	15%	20%	25%

The new waste levy applies to nearly all wastes managed by Council – including household waste or MSW. The Advance Payment may act as a disincentive for Councils to divert waste from landfill, as there is a financial benefit to Councils for landfilling MSW. If in future years this advance payment was to cease, there would be a greater incentive for Councils to work towards these targets.

1.4.2 Reduced waste to landfill

The aim of these targets is to divert waste away from landfill and these targets have been expressed for different waste streams.

	AMOUNT OF WASTE DISPOSED OF TO LANDFILL (AS A PERCENTAGE OF TOTAL WASTE GENERATED)			
STREAM	**2025**	**2030**	**2040**	**2050**
MSW	45%	30%	10%	5%
C&I	30%	20%	10%	5%
C&D	25%	15%	15%	15%
Overall	35%	20%	15%	10%

1.4.3 Increasing recycling rates

These targets aim to increase recycling rates, through the development of markets and infrastructure.

	RECYCLING RATE (AS A PERCENTAGE OF TOTAL WASTE GENERATED)			
STREAM	**2025**	**2030**	**2040**	**2050**
MSW	50%	60%	65%	70%
C&I	55%	60%	65%	65%
C&D	75%	80%	85%	85%
Overall	60%	65%	70%	75%

The prospect of grant funding being available to upgrade waste infrastructure and deliver regional innovative solutions may assist this Council to contribute towards the Queensland Government reaching its State goals and targets for avoidable waste, however it is important to note that funding under these programs should only be applied for following careful consideration of appropriateness, whole-life cost and sustainability of the proposed solutions.

1.5 NATIONAL WASTE POLICY ACTION PLAN

A National Waste Policy Action Plan was prepared in 2019 in conjunction with the Australian States and Territories. This sets out 7 targets:

- Banning the export of waste plastic, paper, glass and tires, commencing 1 July 2020.
- Reduce total waste generated in Australia by 10 % per person by 2030.
- 80% average resource recovery rate from all waste streams following the waste hierarchy by 2030.
- Significantly increase use of recycled content by governments and industry.
- Phase out problematic and unnecessary plastics by 2025.

- Halve the amount of organic waste sent to landfill by 2030.
- Make comprehensive, economy-wide and timely data publicly available to support better consumer, investment and policy decisions.

Again, at this stage none of these targets translates to specific targets or actions for Isaac Regional Council, however Council should adopt these as aspirational targets.

1.6 HOW HAS THE ISAAC REGIONAL COUNCIL WASTE STRATEGY DEVELOPED?

The Strategy has been developed through a combination of Council's in-house expertise, consultants and consultation with Councilors. The completion of the Strategy has been the culmination of extensive consultation and internal collaboration.

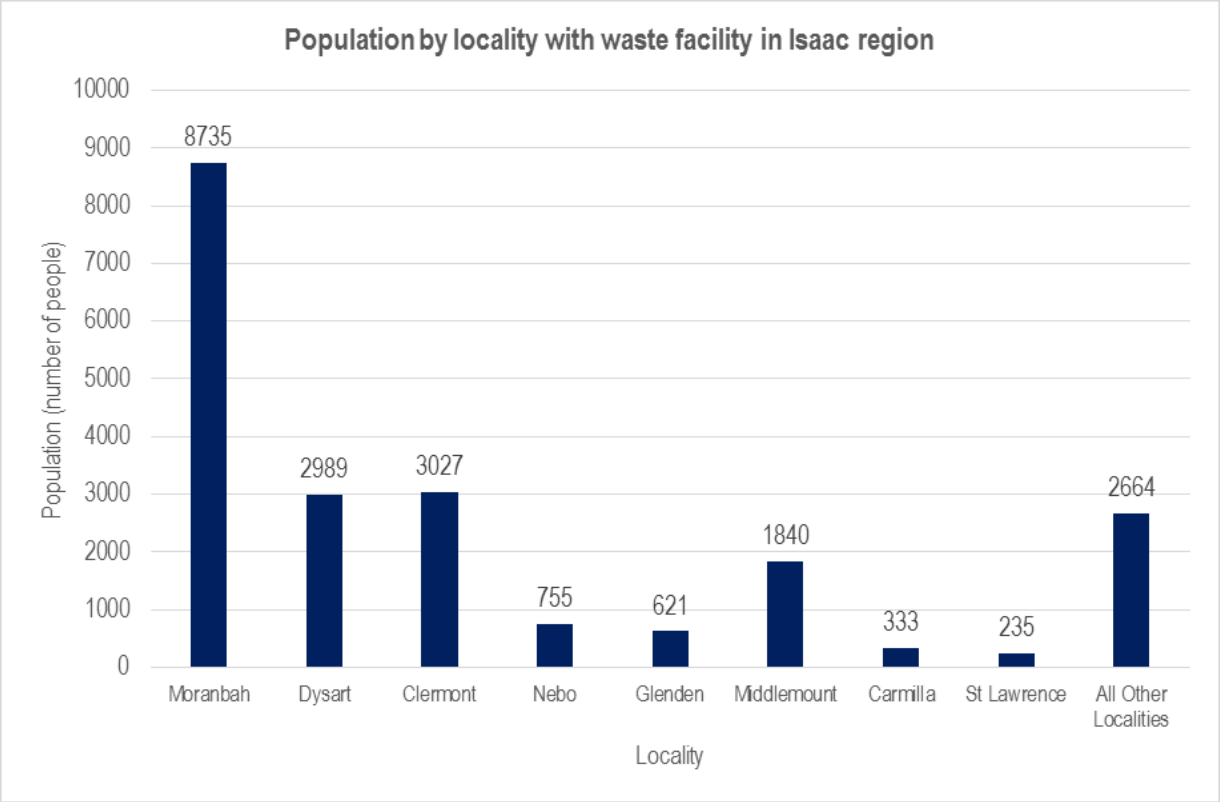
The Strategy development followed four stages as outlined in the table below.

STAGE	OUTPUTS
1. Inception	**July to October 2018**
Research and information gathering on current practice, data analysis, State policy and opportunities	Site visits and workshopping with Council waste team to identify issues and areas of priority
2. Development	**November 2018**
Develop key themes and initial feedback	Workshop with Council Officers and elected Councilors
3. Delivery	**November 2018 – December 2018**
Involvement and consultation on short and long-term direction and actions. Targeted Stakeholder Presentation	Review workshop outcomes Identified need for targeted stakeholder engagement process with industry representatives (mining sector)
	January – July 2019
	Draft Waste Strategy prepared 10-yearcapital program developed
	August 2019
	Decision to delay strategy to maximise learning from other Qld Govt Waste initiatives
4. Closure	**Dec 2019**
Preparation of final draft – consultation and adoption	Draft issued to IRC executive team and Councilors for review
	Jan – Apr 2020
	Draft *Isaac Regional Council Waste Strategy 2020 -2025* prepared for public exhibition Public consultation period Feb – Mar 2020 Adoption of final Isaac Regional Council Waste Strategy 2020-2025 – May 2020

2 WHERE ARE WE NOW?

The Isaac region is home to an estimated 24,215[1] residents, although, an additional estimated 11,085 resource sector workers travel here and are housed in temporary accommodation. At any one time the full-time equivalent population in the Isaac region is estimated at 35,845[2]. The population is spread across a vast geographic area as shown by census statistics from 2016 in Figure 2-1. Overall population growth for the ten years to 2016 has been relatively low, with high variability attributed to fluxes in the mining sector.

Figure 2-1: Population by locality in the Isaac region[3]



The region's family-friendly communities offer a safe and relaxed lifestyle and provide continued appeal for residential growth, largely driven by the mining industry. Along with the modern mining towns of Moranbah, Dysart, Middlemount and Glenden; historic communities of Nebo, Clermont, St. Lawrence combined with small coastal villages and rural localities makes it vital to maintain waste infrastructure and approaches to resource recovery that support best practice. However, the geographical spread of the population highlights some of the challenges in managing waste across the region, such as:

- Remoteness of transfer stations and landfills.
- Increased compliance standards for landfills and need to transport waste vast distances to achieve compliant waste disposal.
- Remoteness of markets for recycled products.
- High cost to deliver waste collection services over a relatively low rating base.

1 Estimated population sourced from communityprofile.com.au
2.communityprofile.com.au
3 ABS 2016 census data sourced from Isaac regional community profile

2.1 ISAAC REGION WASTE NETWORK

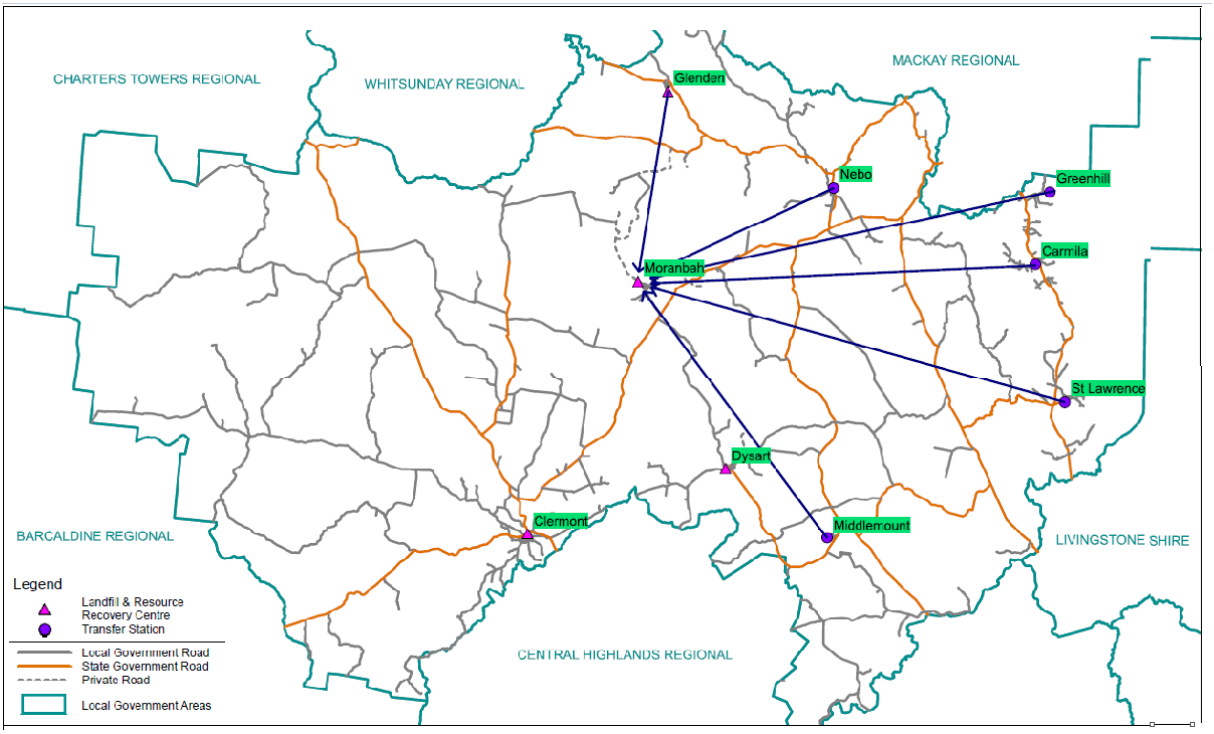
Isaac Regional Council currently manages a waste facility network that consists of five waste management facilities (Transfer Stations) located at St Lawrence, Carmila, Greenhill, Nebo and Middlemount and four landfills located at Moranbah, Dysart, Glenden and Clermont. The current positioning of facilities ensures that over 85 per cent of residents are located within a 20-minute drive to a waste management facility. This also means that Council has to transport waste significant distances from waste management facilities to landfills, resulting in a higher cost of service delivery, relative to more densely populated regional centres. Waste from St Lawrence, Carmila, Greenhill, Nebo and Middlemount is transported to other landfills within Council's network.

Waste received at Moranbah, Dysart, Clermont and Glenden is disposed of directly to landfills located at these waste management facilities.

Nearly all kerbside collection waste is disposed of at Moranbah, with Clermont and Glenden accepting the remainder.

Figure 2-2 illustrates the locations of waste facilities across the region.

Figure 2-2: Isaac Regional Council – Waste Management Network



Details on the waste facilities operated by Council are detailed in Appendix C.

2.2 WASTE COLLECTION SERVICES

Council is responsible for the provision of waste and recycling services detailed in the table below, via a seven-year (plus one plus one plus one) contract that commenced on 6 October 2019. Recyclables collected under the kerbside contract are delivered to the Mackay Regional Council Materials Recovery Facility (MRF) operated by Re.Group. The kerbside collection service is delivered to all eligible properties across the defined Isaac collection area which encompasses over 85 per cent of the region's population. Waste is delivered to the respective landfills throughout the region for disposal.

WASTE STREAM	STANDARD SERVICE
Household solid waste	Weekly 240L general waste bin Fortnightly 240L recycling waste bin
Commercial and industrial waste (C&I)	A small number of commercial premises are collected by Council as part of the kerbside collection service. These premises use the same bin set as household premises.

2.3 WASTE PROFILE

In 2018-19, Council received approximately 44,569 tonnes of waste across the entire waste network. Council recovered 11,264 tonnes or 25 per cent of various materials as resources. Commercial waste is the largest contributor to waste generation, at 53 per cent. Domestic waste accounts for 30 per cent and construction waste at 16 per cent.

Moranbah waste facility receives over 58 per cent of waste generated in the region, with Dysart, Clermont and Glenden accepting 16, 13 and 8 per cent respectively. The resource recovery facilities at St Lawrence, Greenhill, Carmila, Nebo and Middlemount collectively receive only 5 per cent of the waste generated across the region.

Figure 2-3: Waste recovered and landfilled (2018-19)

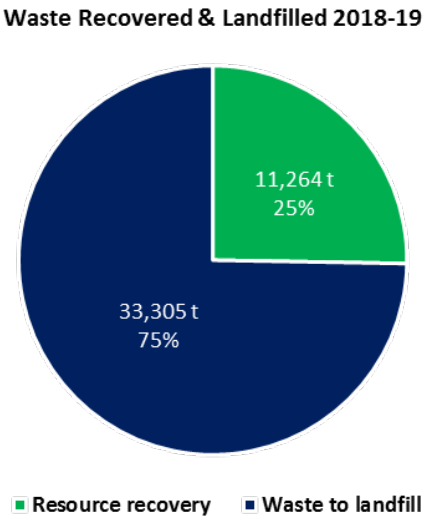
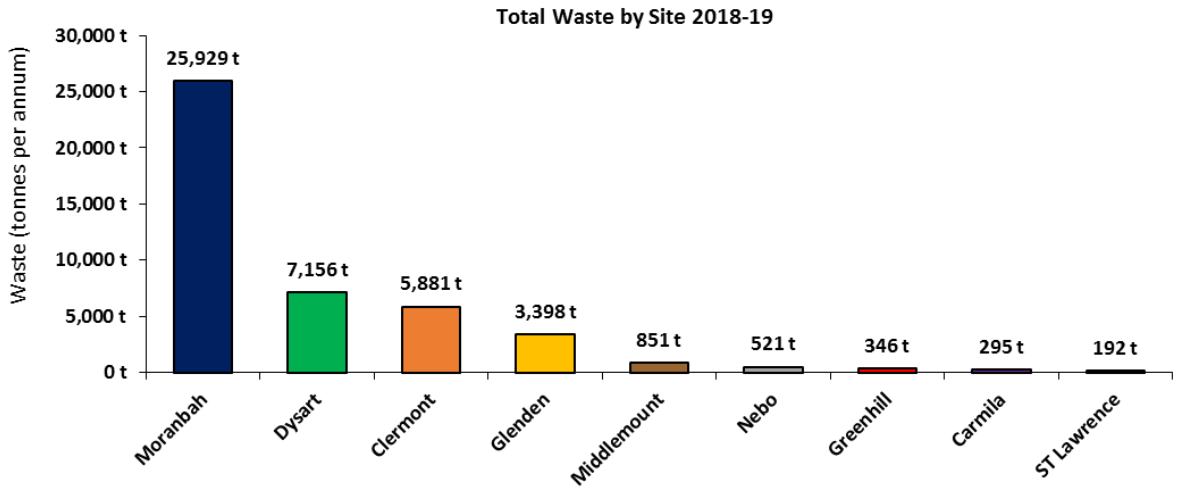


Figure 2-4: Waste received by resource recovery facility (2018-19)



2.3.1 What is the Isaac region sending to landfill?

In 2018-19, 33,305 tonnes or 75 per cent of the total waste received across Council's facilities was sent to landfill. The rate of recovery was 25 per cent, achieved through the diversion away from landfill of kerbside recyclables, scrap steel, green waste, electronic waste, batteries and other recyclables. Council facilities have a high level of usage by commercial vehicles, with commercial users contributing 60 per cent of the waste to landfill, and Council's kerbside fleet delivering 19 per cent of the waste. Domestic self-haul customers deposit 19 per cent of waste to landfill.

Figure 2-5: Waste landfilled by Waste Stream (2018-19)

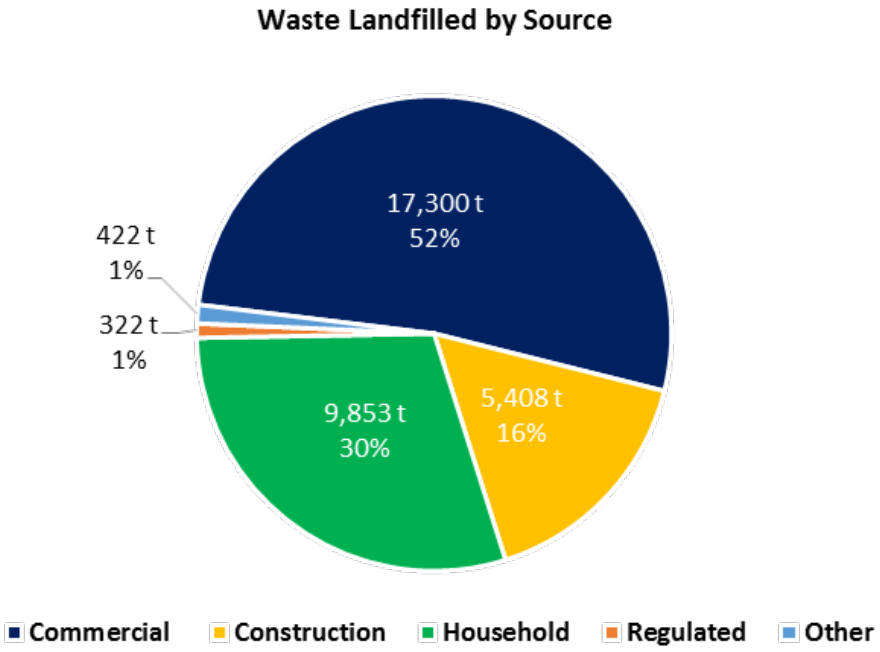
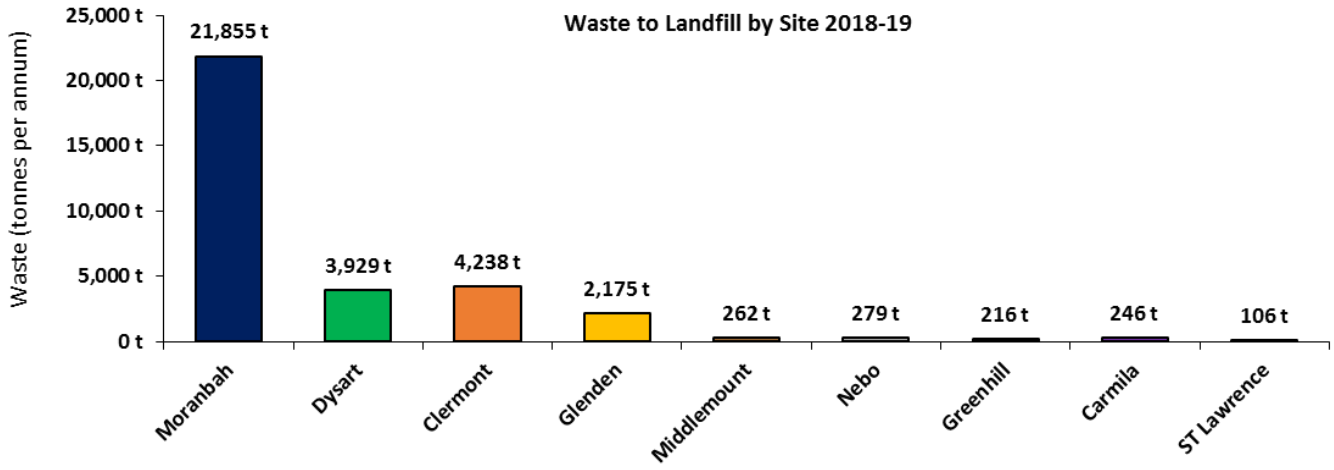
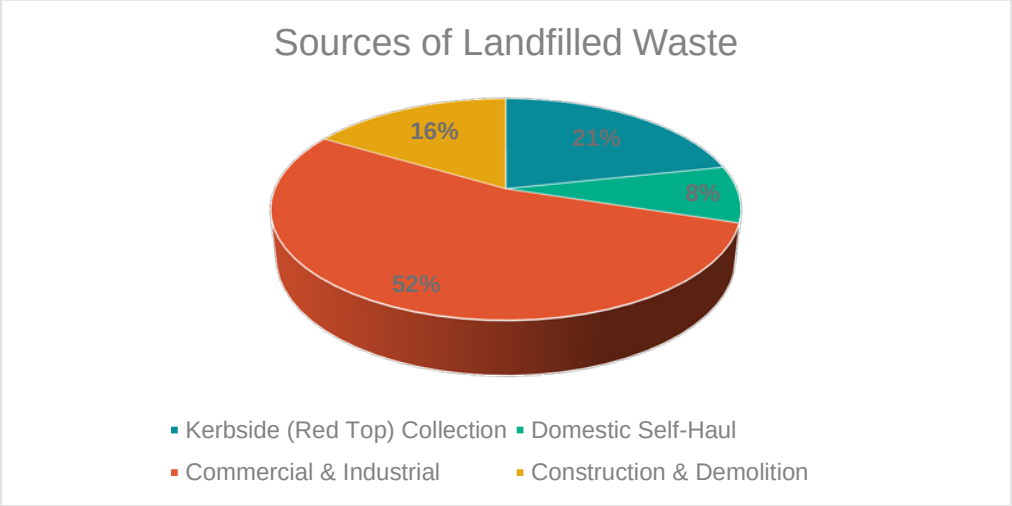


Figure 2-6: Waste to landfill by site (2018-2019)



Of the waste sent to landfill:

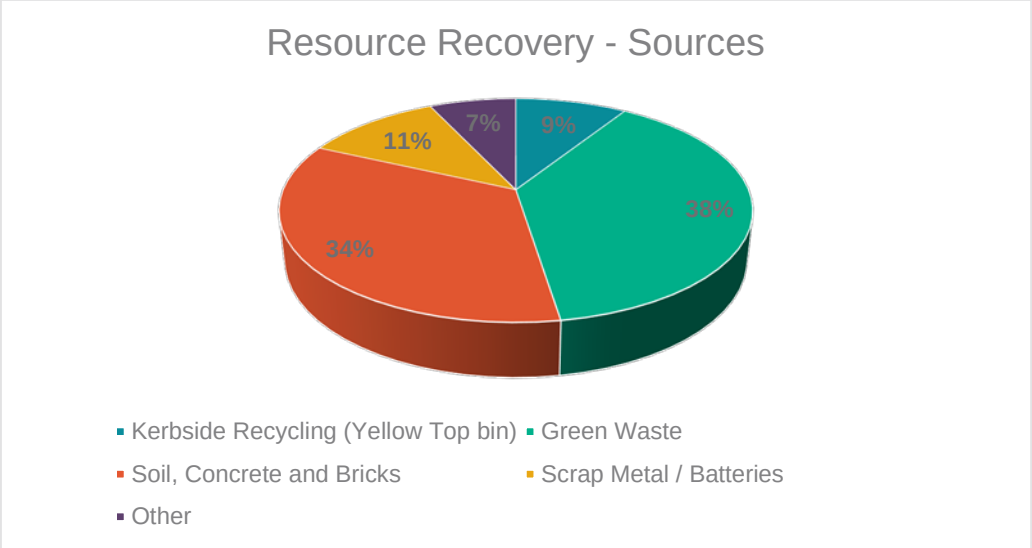
Figure 2-7: Sources of Landfilled Waste



- 21 per cent came from the kerbside general waste bins.
- 8 per cent was delivered by domestic residents using Council's resource recovery facilities.
- 52 per cent came from commercial and industrial sources.
- 16 per cent was a by-product of construction and development.

Of the resources recovered from the waste stream:

Figure 2-8: Resource Recovery - Sources



- 9 per cent came from the kerbside recycling bin.
- 38 per cent was green waste, delivered by domestic residents and commercial customers.
- 34 per cent was from soil, concrete and brick.
- 11 per cent was scrap metal and batteries.
- 7 per cent was other resource recovery.

2.4 LANDFILL CAPACITY

Council operates four active landfills for the disposal of putrescible and non-putrescible (inert) waste:

- Moranbah landfill is the primary landfill for the region and is the only engineered landfill with a lined cell and leachate management system. The site has an annual maximum tonnage limit of 50,000 tonnes, under its Environmental Authority BRID0015. Moranbah has an estimated remaining capacity of 1.1 million cubic metres[4] between the current cell and three future cells and is forecast to reach capacity beyond 2045.
- Glenden and Clermont, each with current Environmental Authorities for up to 5,000 tonnes per year, receive significantly lower waste tonnages than Moranbah and are estimated to have potential remaining operational lives of over 30 years, based on the current quantities landfilled and assuming continued used based on business as usual, however this should be read within the context of 6.1 below. Both sites are licensed under Environmental Authority EPPR00791913.
- Dysart landfill is limited to accepting 2,000 tonnes of waste to landfill per year. This constrains the quantity of waste that can be deposited at the site and, to ensure compliance with its Environmental Authority, Council has re-directed certain wastes to Moranbah Landfill. Dysart landfill is also included with Clermont and Glenden within Environmental Authority EPPR00791913.

In the short term, all waste compaction vehicles including Council's kerbside collection contractor's vehicles have been restricted from depositing waste at Dysart from 1 March 2019. Note that the tonnage accepted for 2018-19 is still approximately double the EA limit, however tonnages between March and October 2019

4 Source: GHD: Moranbah Resource Recovery Centre Site Based Management Plan, March 2018

suggest that the Council's actions taken to date will result in an annual tonnage of approximately 1,800 tonnes, just below the EA limit, in a 12 month period. Further studies will need to be completed and the preferred long-term outcome and steps to delivery will be completed early in the life of this Strategy.

3 WHERE ARE WE GOING

3.1 WASTE GROWTH

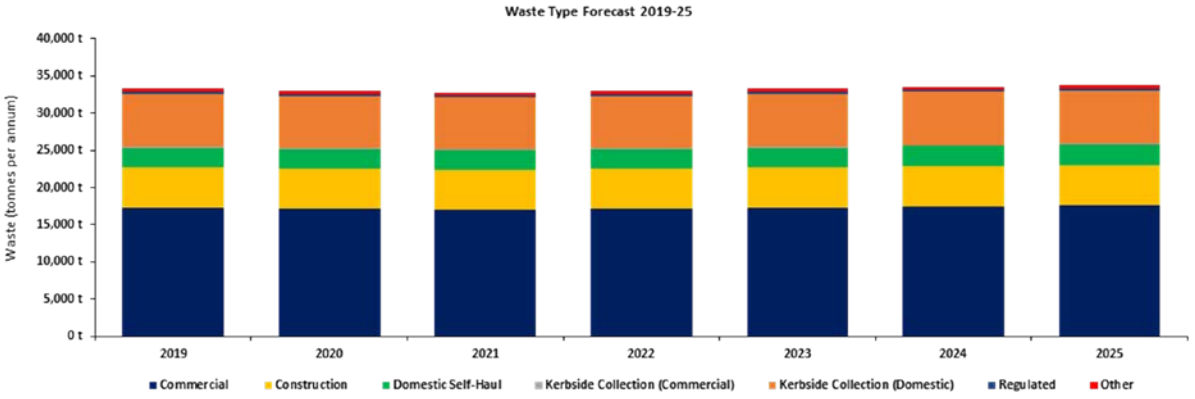
The Isaac region is home to an estimated 21,563 people and is forecast to grow to 22,709 by 2031[5]. The waste forecasts detailed in this Strategy have been developed on the understanding that current rates of waste generation will increase, in line with population growth.

Population growth in the Isaac region is expected to grow at an average rate of 0.9 per cent per year over the period 2016 to 2031. The mining industry also has a significant impact on waste volumes, with industry expansion coinciding with increased waste disposal to landfill. This impacts on the operational life of landfills and it is important that Council has at least 10 years of landfill life to maintain waste disposal security of the region.

Figure 3-1 illustrates that assuming waste volumes increase with population growth, the waste for disposal will increase from 33,305 tonnes per annum to 36,676 tonnes per annum by 2033. The dominance of commercial waste means that this tonnage is sensitive to the mining industry and previous expansions in the mining industry have resulted in waste volumes to landfill increasing by 30-40 per cent.

The recently introduced Queensland Waste Levy should result in lower tonnages of commercial waste being landfilled however the magnitude of its impact is not yet known at this early stage.

Figure 3-1: Projected waste tonnages to landfill: 2019 – 2033



3.2 WASTE ISSUES FOR THE ISAAC REGION

The key issues that the Isaac Regional Council Waste Strategy 2020-2025 seeks to address are detailed below.

NATIONAL AND STATE APPROACH TO WASTE	RESOURCE RECOVERY EXPECTATIONS	UNDERSTANDING INDUSTRY NEEDS
Community attitudes to waste management are changing, reflected in the	Council is aiming to align itself with the State Government waste targets.	The mining industry is the largest driver of our economy, but we have

5 Source: Queensland government population projections, 2018 edition. Local government area snapshot

current review by the national and State Government of their respective strategies and a shift towards circular economy. Council will continue to monitor these strategies, particularly the Queensland Waste Strategy and see how we adopt local solutions that are fit for a regional context.	There is clear and significant need within the community to take responsibility for waste to deliver better resource recovery outcomes. Council will need to take a lead in providing education programs to achieve these outcomes.	limited landfill capacity to accommodate all mining wastes. Industry upturn can significantly increase waste volumes to landfill, so we need to keep abreast of developments in the mining industry to ensure that their long-term needs do not imperil our ability to provide landfill infrastructure for the community.
INCREASING COSTS	**COMPLIANCE**	**LOCAL SOLUTIONS**
The household waste utilities and commercial landfill gate fees charged by Council are comparable with other regional local government with similar levels of service and population. The cost of environmental compliance, future infrastructure upgrades and resource recovery expectations puts pressure on future charges and needs to be balanced with the community's capacity to pay for services.	Council operates all landfills and resource recovery facilities in accordance with environmental and development approvals. Council managed these operations without any penalties for environmental harm and needs to continue to comply with State and National legislation to maintain our license to operate.	Our recycling economy is largely based on sending materials to South-East Queensland and overseas to re-process materials into useable items. The Queensland Government is focused on moving the waste sector to a circular economy and creating local re-use solutions. This means we will have to identify and invest in technology that creates a more local re-purposed solution, perhaps through collaboration with neighbouring Councils.

4 STRATEGIC OUTCOME AREAS

4.1 OBJECTIVES

The key objectives that we will seek to address through the duration of the Strategy include:

- Waste avoidance, re-use, recycling and recovery are maximized prior to landfill disposal, based on consideration of the environmental, social and economic benefits.
- Waste facilities are located in areas convenient for the majority of residents, are accessible and operate with a customer focus that prioritises resource recovery.
- Waste services reflect the community's desire for improved resource recovery, balanced with affordability.
- Minimising environmental risks by successively reducing numbers of landfill sites and replacing them with transfer stations.
- Maintaining a balance between minimising long-distance transport of waste and minimizing the number of active landfills in the Region.
- Council will "enable" partnerships with industry and government entities to deliver local re-use solutions and to support the development of sustainable end markets.
- Strategy implementation will adhere to all Local, State and National laws.
- Focus on compliance and management of risk through sound operational practices at landfills and transfer facilities.

4.2 OUTCOME AREAS

To provide a focal point for action of the objectives of the Isaac Regional Council Waste Strategy 2020-2025, five strategic themes were developed. These themes will provide a framework for the Council to develop into actionable items over the life of the Strategy.

1. Planning future waste infrastructure

Figure 4-1: Rehabilitation Works at Dysart Landfill. Note landfill gas passive vents

2. Improve waste diversion and resource recovery

Figure 4-2: Transfer Bays at Moranbah Waste Management Facility

3. Operational efficiency and compliance

Figure 4-3: Waste Collection Fleet Launch - 2 October 2019

4. Waste education

Figure 4-4: Students from Moranbah State High School enjoying a visit to the Waste Facility

5. Financial sustainability

Figure 4-5: Isaac's system captures data and ensures fees and charges are applied correctly

5 THEME 1 – PLANNING FUTURE WASTE INFRASTRUCTURE

Council is the sole owner and operator of landfill and resource recovery infrastructure across the region and will play a lead role in the development of infrastructure that is suited to recycle, recover and dispose of solid waste generated across the region. Council's main landfill at Moranbah (Stage 1) is forecast to reach capacity before 2024, with Stages 2, 3 and 4 approved and requiring capital investment to develop engineered landfill cells that will provide sufficient capacity until 2045.

5.1 ISAAC REGIONAL COUNCIL WASTE MANAGEMENT FACILITIES

5.1.1 Moranbah Waste Management Facility

This is Council's flagship waste facility. Significant investment has been made at this site over the past three years, and further large capital projects will be carried out in coming years. A large project to address various legacy issues was due to be delivered in 2018-19 but had to be deferred as there was insufficient funding to complete this project and a similar one at Dysart. The project, which involves some capping and rehabilitation as well as tannin pond and stormwater management, will be completed during 2020 and 2021.

5.1.2 Smaller Landfill Sites

Each of Council's smaller landfill sites has its own history, Environmental Authority, advantages and disadvantages and unique operational considerations.

Council's smaller landfills comprise Clermont, Dysart and Glenden. Due to concerns about environmental risks, Middlemount and St Lawrence Landfills were closed and rehabilitated in 2016 and both now operate as Transfer Stations. Waste from transfer skips at Middlemount is transported to Moranbah (Dysart until October 2019) and waste from Coastal sites was transported to Glenden until late 2019 (see section on Glenden below).

Clermont and Glenden Landfills are both licensed to accept up to 5,000 tonnes of waste per year. Although Clermont accepted close to this figure in 2018-19, Glenden Landfill accepted less than 70% of its limit in that year. Both sites will require to have weighbridges installed no later than 1 July 2024 if they are to continue as active landfills, under the *Waste Reduction & Recycling Act 2011* (WRRA). Figure 5-1 summarises current performance for these sites in 2018-19. Note: for illustrative purposes. Overheads and depreciation costs have not been included.

Figure 5-1: Performance figures - IRC Landfills in 2018-19

SITE	NO OF TRANSACTIONS 2018-19	WASTE LANDFILLED 2018-19 (TONNES)	COST PER TONNE ($) 2018-19
Clermont	11,728	4,238	-$23
Dysart	10,224	4,191	-$81
Glenden	2,744	3,022	-$112
Moranbah	34,490	21,855	$53

5.1.3 Clermont Landfill

Clermont landfill occupies Lot 2 on SP231842, a site which extends to some 112 hectares, although the active part of the site occupies only about 11 Ha. There is scope for landfilling to take place in a further 10 Ha. in the eastern part of the site, close to current landfilling and borrow pit areas, and a further 50 Ha. In the western part of the site which is currently not used.

A study carried out for Council by GHD in 2019 to look at both stormwater needs and future site development produced several documents. One of these, *4220985-REP-A_Clermont WMF Site Development Plan*, identified potential future landfilling in three phases in the current, eastern, part of the site. Two options were proposed: Option 1 (Business as Usual plus vertical expansion over current unlined cell), and Option 2 (new, horizontal expansion in new lined cells to the north of current landfill). If elements of both options are deployed however, the total available airspace is 477,600 m3, and the anticipated lifespan of the landfill would extend to the late 2040s. See below:

Figure 5-2: Option 1 cell life estimates from GHD study

Table 5-2 Option 1 cell life estimates

Description	Airspace volume (m^3)	Estimated life (years)
Estimated life (proposed maximum footprint)	20,341	1.6
Estimated life (vertical expansion)	184,167	14.3

Figure 5-3: Option 2 cell life estimates from GHD study

Table 5-4 Option 2 cell life estimates

Year	Airspace volume (m^3)	Estimated life (years)
Current	20,341	1.6
Stage 1	104,360	4.5
Stage 2	86,487	3.7
Stage 3	82,258	3.6
Total	**293,446**	**13.4**

Information obtained for the GHD study suggests that there may be some environmental constraints in the western part of the site which could make landfilling difficult, although a Council-owned waste site measuring 50 Ha could nevertheless open up future possibilities for future advanced waste treatment or other resource recovery processes.

Council officers therefore recommend that Clermont Waste Management Facility should be developed into at least the medium-term future. The opportunity could be taken at the time of lined cell construction to increase the annual tonnage limit on the EA which would reduce the longevity of the site but would take pressure off the Moranbah site.

5.1.4 Glenden Landfill

Glenden Landfill, despite holding an EA for 5,000 tonnes, has accepted only around 3,500 tonnes per year for at least the last 3 years. This figure is likely to reduce in 2019-20 due to officers' desire to minimise the amount of waste "deemed". Several factors have driven this:

i. a realization that "deemed" tonnage can be overstated by a factor of 2 to 2.5 compared to weights from a weighbridge, increasing the Council's liability for the State Government Waste Levy;

ii. concern among Council officers about how the disposal point for much of Council's coastal waste had evolved following a change in bulk skip contractor and closure of St Lawrence Landfill;

iii. relative proximity of Coastal sites to Moranbah (St Lawrence is equidistant from Moranbah and Glenden); and

iv. the opportunity afforded by the new waste collection contract from October 2019 to change disposal points at no additional cost.

Like Clermont, this site will require to construct a weighbridge by 2024 to remain compliant with the WRRA.

A *Glenden Resource Recovery Centre Operations Management Plan* was prepared by GHD in 2016. Among other things, this looked at how the site might develop in the future. Future development is proposed in stages, with the initial stage comprising filling of current (unlined) excavated areas situated at the foot of previous unlined landfill batters to create a landform which will present a topography which is both aesthetically sensible and able to manage stormwater effectively, upon which future stages would be placed, extending vertically. It would also limit the amount of landfilled area to be rehabilitated following future site closure.

As can be seen from Figure 5-1 above, costs are disproportionately high and this is partly because, following an unsuccessful trial of reduced contractor hours, there is contractor presence on the site for pushing and covering waste over 5 days per week. Despite this, and despite concerted, targeted eradication programs by Pest Control specialist contractors, there is an ongoing feral pig problem at the landfill. Although large numbers of pigs have been destroyed, the problem persists.

Because of Council officers' concerns regarding the overall financial performance of the site and the requirement for a weighbridge in 2024, it is recommended that landfilling does not progress beyond Phase 1, since this will enable a sensible landform to be created, address stormwater issues and restrict the future burden on ratepayers from post-closure rehabilitation. Instead, a transfer station will require to be constructed to serve the needs of the community.

5.1.5 Dysart Landfill

Dysart Landfill had been exceeding its EA capacity for many years, and from 1 March 2019 Council ceased the acceptance of waste in compactor vehicles to maintain compliance with legislation and enable assessment of the long-term options for the site.

Council's long-term plan for this site could involve the development of a transfer station or, less likely, a new engineered landfill, both with significant capital investment implications. This will need to be carefully considered to ensure Council delivers a solution that reflects the best economic, social and environmental solution for the local community and industry.

The history of the Dysart Landfill site is interesting in that a weighbridge was constructed some years ago although the site holds the EA with the lowest annual tonnage limit. It is understood that this weighbridge was constructed in anticipation of an increased EA however during the approval process it was learned that this could not be achieved through horizontal expansion because of Department of Environment and Science (DES) concerns about potential groundwater contamination caused by increased landfilling in unlined cells. Advice from DES in 2017 indicated that a lined cell would be required. Insufficient funds were available and an application for State Government funding (from DSDMP) was unsuccessful.

Since that time officers have gained greater understating about the volumes of waste involved – it has been possible to reduce waste being received at Dysart without major impacts on other sites and without complaints from the local business community.

Dysart is located some 87 km from Moranbah Landfill site, and 81 km from Clermont Landfill.

There is not the same time constraint for Dysart with regards to weighbridge requirements (the site already has an 80 tonne weighbridge in place although the site only has a 2,000 tonne EA). Nevertheless, a similar exercise to that carried out for Glenden was carried out at Dysart, with the publication of the *Dysart Resource Recovery Centre Operations Management Plan* in 2016. Again, this proposed several stages of landfilling on the current unlined landfill. Again, there are similarities with Glenden in terms of reducing tonnage (because of the EA in Dysart's case) risks of environmental harm from unlined landfilling, and concerns about the potential for future rehabilitation.

Dysart has also been the subject of a $2.3M capital works project in 2019 which was necessary to address various compliance issues, including encroachment beyond the site boundary, stormwater management and seepage of leachate from badly constructed batters. This effectively limits the westward expansion of the landfill site without constructing new lined cells. It also limits the degree to which further vertical expansion would be possible. Officers estimate that landfilling could continue eastwards and northwards within the current footprint to create a final landform which would achieve the same outcomes described for Glenden above. This is likely to be achieved by 2024. After that date, it is recommended that waste from Dysart and Middlemount be taken to Moranbah.

Whilst this represents Council officers' preferred option, consideration of transfer costs would need to be factored-in to a final decision.

Because of its central location within the region, Dysart could be the site of a future landfill with more than 30 years' capacity, however this will not be possible without major investment in new engineered lined landfill cells, which cannot be justified in the short to medium term because of capacity and existing EAs elsewhere in the region.

5.2 TRANSFER STATIONS

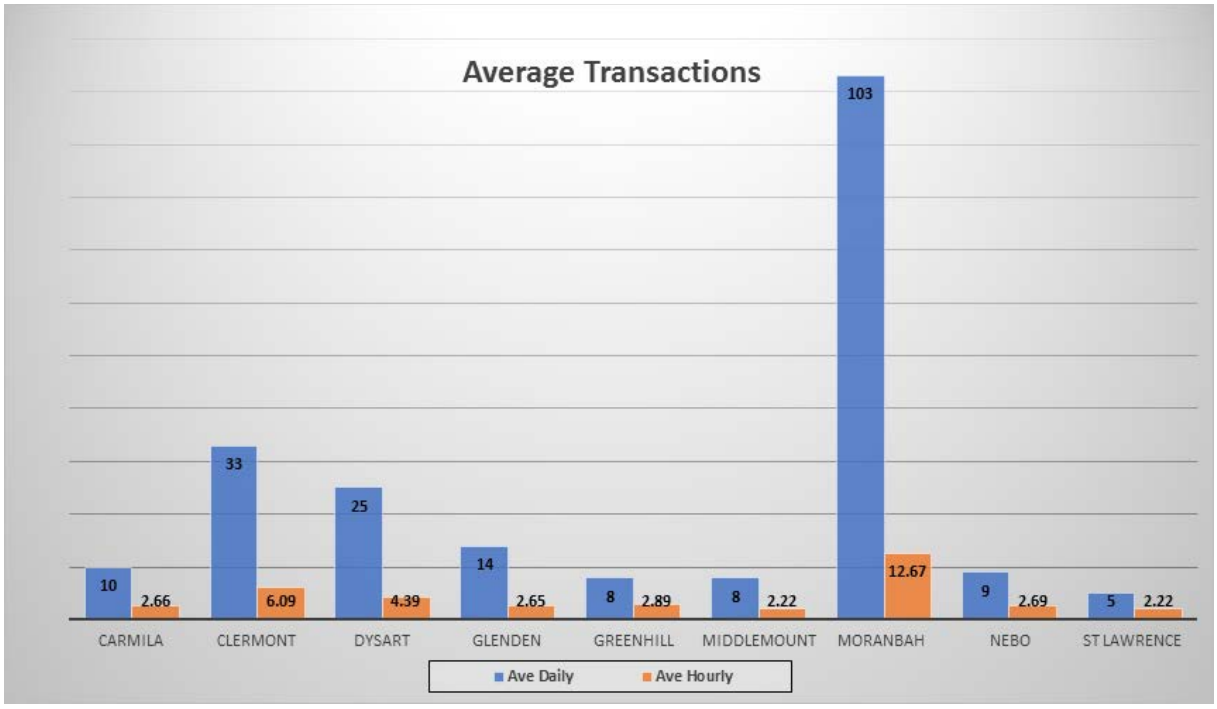
Council's waste facility network has some aging infrastructure and need for improved waste segregation, particularly at Carmila and Greenhill. New infrastructure is necessary to deliver safe sites and to enable Council to meet the proposed Queensland recycling targets, should these give rise to regional targets in the future.

Retaining walls at the Middlemount, Nebo, Carmila and Greenhill sites, constructed out of old shipping containers to create split level drop off points, will be replaced in the coming years, with those at Middlemount and Nebo planned for replacement in 2020.

There is an inconsistent spread of opening hours across the region, with Glenden, Nebo and Middlemount Waste Management Facilities providing a higher level of access to residents compared with other localities with a relatively low population catchment. Council will need to review the operational hours across the region. It is acknowledged however that opening hours have evolved in response to various factors including the need to reduce staff travel, and the ability to cover planned and unplanned absences whilst attracting and retaining skilled staff to work on the agreed 76-hour fortnightly roster.

Figure 5-4 shows that some sites receive an average of around two customers per hour, and this should also be factored-in to ay review of opening hours.

Figure 5-4: Average Daily and Hourly Transactions - IRC Waste Management Facilities



5.3 HOW MANY LANDFILLS DOES ISAAC REALLY NEED?

Despite many resource recovery activities, landfill is likely to feature in Isaac's waste disposal options for many years.

The state government's website lists 228 landfills in Queensland – that's one site to cover about 22,000 people on average.

Council has to weigh up several conflicting factors in deciding this, including the community's desire for local waste facilities, financial sustainability, future landfill capacity, future costs arising from current and future environmental controls including post-closure rehabilitation, and risks of harming the environment through keeping older-style landfills operating.

Isaac Regional Council operates four landfill sites – down from six just three years ago. But how many do we really need?

0 – An option exists for Isaac to operate no landfills of its own but to use the services of neighbouring Councils like Mackay or Central Highlands. Council would have to pay for the use of these sites and the cost of transporting waste out of the region would also be high. Likelihood = Low, but could be used for small amounts of waste if cost-effective.

1 or 2 – This is lower than the number of sites currently operated by Isaac. Smaller sites would have to be converted into transfer stations and closure plans would have to be carried out, but Council would save on lower operating costs and reduced environmental risks from having fewer sites. Likelihood = High

3 or 4 - Currently Isaac operates four sites, however running this number of sites for a full time population of 25,000 people bucks the State trend, costs a lot of money to keep running, and creates more environmental risks than would exist with a smaller number of sites. All 9 of Isaac's waste sites were landfills before they were converted into transfer stations. Likelihood = Medium to Low

More than 4 – This would make no sense, would create environmental risks and it would be very difficult to obtain approval from the state government regulators. Likelihood = Very Low

5.4 ACTION FOR DELIVERY

ACTION		DETAIL
1.1	Maintain landfill security for the region	Construct Stage 2 landfill cell at Moranbah landfill by 2022.
1.2	Develop long-term approach for all unlined landfills (i.e.	Prepare a final landform plan to guide future planning and define the longer term landfill security for the region.

	Dysart, Glenden and Clermont).	Complete feasibility assessment of the long-term options for the whole of region approach to waste disposal and select preferred option by 2021; Develop masterplan for the Dysart site based on the outcome of the preferred long-term option; Capital delivery of preferred long-term option.
1.3	Develop waste facilities that meet future community demands	Subject to the whole of region waste disposal approach, construct new transfer facility structure at Greenhill, Carmila, Nebo and Middlemount; Implement a consistent resource recovery approach across major and minor transfer stations.
1.4	Investigate regional collaboration opportunities for landfill and alternative waste treatment	Collaboration with Central Highlands and Mackay Regional Council within GWCoM to assess suitability and financial viability of regional landfill and/or alternative waste treatment facility that is fit for the regional context.

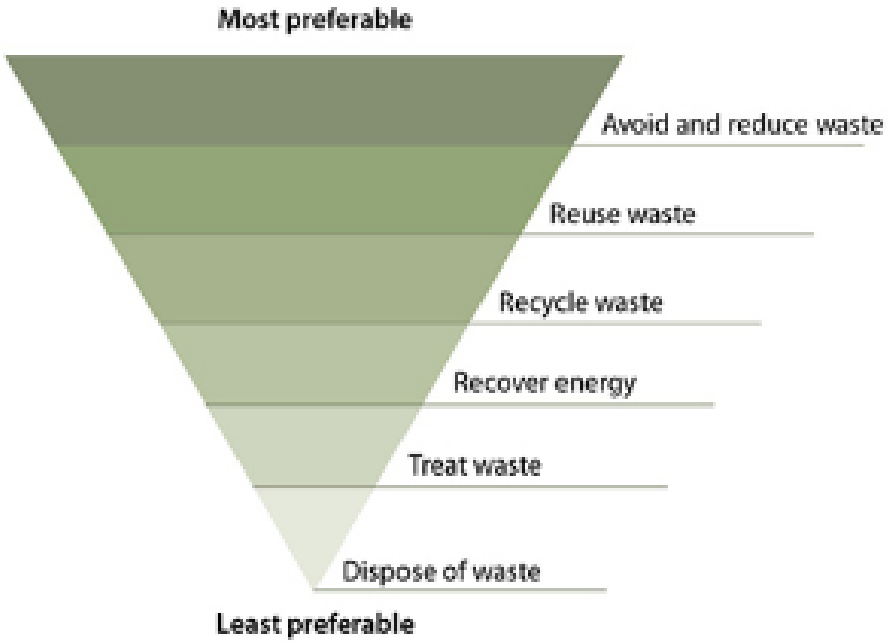
5.5 TARGETS

By 2025, we will have:

- Determined the whole of region waste disposal and transfer station network to “fit” the region.
- Constructed the Stage 2 engineered landfill cell of the Moranbah landfill.
- Identified the preferred long-term approach for the Dysart Waste Management Facility and be delivering the necessary waste infrastructure.
- Completed landform plans for the long-term landfill sites identified as part of the “whole of region” waste disposal network.
- Developed a waste network that meets Council’s service standard.
- Increased the level of resource recovery at Council’s resource recovery facilities.
- Gained an understanding of the potential for supra-regional alternative waste treatment.

6 THEME 2 – IMPROVE WASTE DIVERSION AND RESOURCE RECOVERY

Figure 6-1: Waste Hierarchy



Council supports an approach to resource recovery that aligns with the waste hierarchy, with the avoidance and reducing components addressed through our waste education actions. Reuse and recycling, with a focus on developing local re-use solutions will support job creation in the region and extend the duration of the Moranbah, Dysart, Clermont and Glenden landfills.

In financial year 2017, Council achieved a total recovery rate of 35 per cent, meaning that of all waste received across waste facilities, we recovered 35 per cent for secondary use and diverted the waste from landfill. Household waste achieved a recovery rate of 36 per cent. Council needs to complete a more detailed assessment of the commercial and construction waste stream to understand the recovery rate.

The introduction of the waste levy from 1 July 2019 will support Council to establish segregation areas at major sites and recover priority recyclables such as concrete and bricks, garden waste, electrical equipment, tyres and batteries. We realize that achieving these objectives needs partnerships with the private sector, with Council acting as the enabler and working with industry to invest in technology and supporting the establishment and sustainability of markets. This will need to be balanced with the effectiveness of applying the waste levy for our region and the impact it has on waste diversion. Council will consistently review our performance against State government diversion targets and assess the value of financial expenditure to achieve higher resource recovery outcomes.

During the early stages of preparing the tender documents for the contract for Kerbside Waste Collection Services, Council had the foresight to include items in the Bill of Quantities for tenderers to price for Green Waste Collection Services and Hard Waste Collection Services. Although introduction of either of these services would represent a policy change requiring Council approval, nevertheless the option remains open for Council to take up without further tendering activity.

No suitable large scale composting facility exists which could receive all of Isaac's green waste however suitable firms could seek funding from the state government's Resource Recovery Industry Development Program (RRIDP) funding streams to invest in such facilities, which could even be capable of accepting food and other organic wastes (FOGO) and potentially wastes such as paper or cardboard, which could alter the mix of wastes collected via the yellow-top bin service.

The State Government introduced a Container Refund Scheme on 1 November 2018, enabling beverage consumers to claim 10c refund on eligible drinks containers from the government scheme – Containers for Change. The impact on the number of containers collected via the fortnightly "yellow top" bin collection service is not yet known but this will be monitored to ensure the long-term sustainability of the service.

One feature of the reintroduced waste levy is the Advance Payment which is made to Councils each year from 2019-20 under s. 73D of the *Waste Reduction & Recycling Act 2011* and s. 11L of the Waste Reduction & Recycling (Waste Levy) Amendment Regulation 2019. This annual payment from the State Government to Councils is intended to "mitigate any direct impacts of the waste levy on households in the local government's local government area". The payment is equivalent to 105% of the amount of levy paid in respect of Municipal Solid Waste (MSW) – which consists mostly of household waste.

There is some concern that these advance payments could reduce or disappear in the future. In the case of Isaac Regional Council, this would equate to a cost of approximately $827k in 2020-21. This would provide greater impetus to divert more waste from landfill and for Council to set more stringent waste diversion targets.

The China Sword Policy and the Australian Federal Government's decision to ban the export of certain recyclables may also create a longer-term impact on this service.

6.1 ACTIONS FOR DELIVERY

ACTION		DETAIL
2.1	Increase resource recovery services at waste transfer facilities	Identify opportunities for improved resource recovery, with a particular focus on improving organics processing and sorting of construction and building wastes. Implement a consistent and effective resource recovery approach across transfer stations. Investigate shredding of appropriate waste streams (e.g. timber, tyres, mattresses, etc).
2.2	Recovery shed/Tip Shop	Standardise tip shops across all sites; Explore options to partner with community groups to centralise Tip Shop at Moranbah, Dysart or Clermont (e.g. Men's Shed, art workshops, etc).
2.3	Council to lead by example and promote waste reduction and diversion in the way it conducts its activities	Undertake operational waste audits of key Council waste generators (i.e. infrastructure services, parks and gardens) and establish department specific waste diversion programs; Apply gate fee pricing to all Council departments and provide regular reporting of performance; Staff awareness training to promote waste diversion and resource recovery; Establish policy to encourage Council to utilise recovered resources (mulch product, recycled aggregate) to support local end-use markets; Sustainable purchasing policy development to encourage full "life-cycle" assessment of products purchased by Council.
2.4	Support the development of markets (local and regional) for end-use of recovered products.	Council "internal" departments to utilise recovered resources for Council projects (mulch, recycled aggregate, clean fill); Collaborate with existing contractors and local industry to identify viable markets for potential recovered products and support market development through leadership and

		investment (i.e.plasterboard, mattresses, textiles, timber, pallets).
2.5	Kerbside Recycling Performance	Monitor the effect of the Container Refund Scheme on Kerbside Recycling tonnage Undertake waste audit of kerbside waste bin to understand waste composition and potential for recovery of items from the kerbside waste and recycling bins.
2.6	Kerbside green waste	Investigate feasibility of kerbside green waste
2.7	Kerbside hard waste	Investigate feasibility/cost-benefit of kerbside hard waste collection
2.8	Target reporting on the State waste strategy	Annual reporting on Council's performance against the State Government waste targets, if required

6.2 TARGETS

By 2025, we will have:

- Improved the recovery of recyclables and reusable materials from Council operations.
- Understand the baseline performance of waste diversion for commercial and industrial and construction and demolition waste.
- Set targets for the diversion of construction and demolition and commercial and industrial waste.
- Identified and prioritized waste streams that are recoverable, with a focus on local solutions.
- By 2029, we aim to:
- Increase the household diversion rate from 36 per cent to above 45 per cent.
- Increase the diversion of construction and commercial waste to meet or exceed targets set in 2024.
- Implement processes and infrastructure that support the recovery of priority waste streams and be actively developing end-use markets.

7 THEME 3 – OPERATIONAL EFFICIENCY AND COMPLIANCE

Waste management is a significant business activity for Council and costs over $8 million per annum to collect kerbside waste, safely operate landfills and manage waste transfer facilities that enable resource recovery and disposal for the community. In addition to delivering the essential kerbside collection service, our focus is on improving the "waste transfer facility" infrastructure across the region through investment in upgraded infrastructure, systems and processes that enhance efficiency and recovery.

Our waste management activities also have the potential to impact on the environment and public health. Landfills generate leachate, greenhouse gas emissions, odour and wind-blown litter and we will continue to improve our operational practices to maintain a high standard of environmental performance.

Moranbah Waste Management Facility in particular faces challenges due to its proximity to neighbouring properties, especially from the potential for complaints relating to odour, litter, dust and birds. A further challenge exists with the scarcity of suitable cover material. Council could consider alternative landfill cover systems to deal with this and maximise the landfill's life. An opportunity exists to operate the Moranbah site in an exemplary manner to deal with these challenges.

Another area of focus is formalising contracts for the managing of the landfills (pushing and covering of waste). The current situation has evolved from a time when most of the sites were managed by in-house Council staff to the current situation whereby operational problems led Council to decide in December 2017 (Resolution

5220) to contract out this part of the operation. Currently Clermont Landfill operates within a three year contract but other sites have ad-hoc contracts in place.

7.1 ACTIONS FOR DELIVERY

ACTION		DETAIL
3.1	Implement best practice landfill management	Developing action plans and maintain best practice housekeeping of the Moranbah landfill site to maintain relations with surrounding neighbours. Improve the compaction ratio achieved at Moranbah landfill and undertake at least annual survey to monitor performance; Staff training on compaction management and equipment use; Maintain compliance with all EAs Install leachate collection system at Dysart landfill.
3.2	Implement best practice data collection and management systems	Investigate hardware/software such as number plate recognition/weighbridge software to improve transaction management and data analysis. Establish a consistent approach to measuring waste diversion and recycling and implement a business process to capture and report data. Annual training and development for site staff on waste software data system. Development of Performance Management to enable continuous Improvement Sharing of data management with GW3CoM partners
3.3	Fill plans	Fill plans for all Clermont, Glenden and Dysart; Site Development Plans for each site, subject to the whole of region network analysis.
3.4	Develop final capping and closure construction program for all “non-active” landfills	Identify post-closure land use for each closed landfill; Develop a 15-year final capping and rehabilitation construction program and integrate into the capital delivery program to achieve final capping of all non-active landfills by 2034; Review existing landfill closure plans and develop updated plans for sites needing to be capped within the next 10 years; Proactively secure suitable capping material from other Council’s road and engineering projects.
3.5	Review the *Isaac Waste Strategy 2020-2025*	Review the Strategy in 2023
3.6	Equitable service delivery across the region	Rationalise the opening hours at Middlemount, Glenden, Nebo, Carmila and Greenhill Transfer Stations, subject to community consultation. Rationalise the opening hours at Dysart, Glenden and Clermont Landfills, subject to community consultation.
3.7	Landfill operational contract	Develop tender package/contract model for whole of region landfill network.
3.8	Kerbside Collection contract	Contract administration/management of kerbside collection contract and annual performance review of contractor performance.

7.2 TARGETS

By 2024 we will have:

- Improved the operational practices at Moranbah landfill and achieve a higher compaction ratio to extend the operational life.
- Improved the operational practices at Clermont, Dysart and Glenden landfills.
- Completed final capping of legacy (non-operational) landfills in accordance with the rehabilitation plan.
- Nil material environmental harm events at Council waste facilities.
- Improved customer experience and transaction throughput at Council waste facilities.
- Developed a consistent approach to reporting waste diversion data and a set of key performance parameters to measure business environmental, operational and financial performance.

8 THEME 4 – WASTE EDUCATION

Avoiding and minimizing the generation of waste means less waste to manage. This, in turn, leads to reduced costs associated with transporting, sorting and recycling materials and ultimately less waste to landfill. Reducing the amount of waste that people generate is a significant challenge requiring behavior change from individuals, as well as changes by industry in the way we design packaging. At a community level, Council can deliver communication and education programs that help people understand how they can support resource recovery and the actions they can take to reduce and avoid waste.

Some of the areas where we can take visible action is through understanding what we can place in bins and what services are available for residents to support resource recovery. Littering and illegal dumping is also an issue for Council, and we will continue to target initiatives aimed at raising awareness of the impact these activities have on our natural environment.

Council took the opportunity of the new Waste Collection contract to introduce a new education component. The contractor is required to pay an annual sum back to Council to be spent on Waste Education.

The Greater Whitsunday Council of Mayors (GWCoM) agreed Terms of Reference for a waste sub-group to be formed. A draft Action Plan has been drawn up which includes actions for the three Regions to collaborate on Waste Education.

8.1 ACTIONS FOR DELIVERY

ACTION		DETAIL
4.1	Develop and implement a waste education plan that aligns with the waste strategy and engages the community, schools and business in waste avoidance, reuse and recovery	Develop an annual waste education and communications plan developed in conjunction with Council's media team that aligns with the Isaac Council Waste Strategy and operational priorities and targets the following segments: School programs Commercial businesses program Council staff and departments (Infrastructure services, Parks and Gardens, etc.) Isaac residents and users Council library (as a resource for waste education program delivery).
4.2	Investment in "waste education" infrastructure	Investigate funding sources for investment in "waste education" infrastructure (mobile or fixed) that can enhance the delivery of the waste education message and

		provide a space for school/business/community groups to attend for waste education messaging; Review electronic programs/apps available to support waste education delivery.
4.3	Reduce littering and illegal dumping through education and awareness	Develop a coordinated communication plan targeting illegal dumping and littering; Participate in national approaches to litter management; Incentivise the introduction of the Container Refund Scheme (CRS) at sporting clubs and community groups. Targeted surveillance and enforcement at identified illegal dumping hotspots.
4.4	Regional collaboration in waste education	Collaborate with other Local Governments (GWCoM and others) to share resources for waste education program development and delivery.
4.5	Include waste education into kerbside collection contract	Kerbside contractor to contribute to delivery of waste education program through funding and/or “in-kind” support.
4.6	LAWMAC membership	Maintain membership in LAWMAC to foster professional networks and keep abreast of developments in Waste Management practices in Queensland
4.7	Illegal dumping	Working with environmental team to manage illegal dumping

8.2 TARGETS

By 2024, we will:

- Be working in partnership with the State Government to educate and promote waste education throughout the Isaac Council region.
- Have established a baseline amount of illegal dumped waste collected throughout the region and target hotspots where illegal dumping occurs.
- Introduced programs that enhance the community’s knowledge on how resources can be recovered and reduce contamination in kerbside recycling bins.

9 THEME 5 – FINANCIAL SUSTAINABILITY AND GOVERNANCE

In a regional context, the delivery of waste services to a local community is an expensive undertaking and requires ongoing spending on waste infrastructure, kerbside collection services and waste management facility operations. Council’s waste businesses is operationally complex, comprising multiple waste management facilities, landfills and a range of resource recovery activities from green waste processing through to tyre recycling. Factors such as higher environmental standards increase the cost of landfilling, as does the need to close landfills safely and maintain them for 30-years after closure. These aspects have an impact on the price that the community has to pay for waste services, either through waste rates or paying for waste disposal when they use a waste management facility.

To support the financial sustainability of waste services, this Council is focused on understanding the full cost of service delivery and making decisions that are in the best interest of the community. This will be achieved through the actions detailed below.

A further strategic review of waste costs will be undertaken in 2020.

9.1 ACTIONS FOR DELIVERY

ACTION		DETAIL
5.1	Maintain cost recovery pricing model	Establishment and annual review of the cost recovery pricing model.
5.2	Waste utility rates and gate fee pricing	Review the most appropriate pricing model and the combination of waste rates and user pays gate fees that delivers sustainable full cost price recovery for the waste business. Introduce gate fee pricing and set pricing to encourage resource recovery and waste segregation.
5.3	Landfill rehabilitation provision	Annual review of the landfill liability
5.4	Long-term financial planning	Annual review of the 10-year capital works plan and delivery of the yearly plan. Develop and implement an asset management plan to guide optimal renewal of assets.
5.5	Integration of long-term plans with annual operational plans	Alignment water and waste annual performance plan, annual operational plan with the 5-year corporate plan

9.2 TARGETS

By 2024, we will have:

- Adopted a cost recovery approach to setting of fees and charges.
- Established a price path of waste rates and gate fees that ensures the financial sustainability of the waste operation.
- Be managing the landfill rehabilitation liability through progressive delivery of closure works.

10 IMPLEMENTATION PLANNING

10.1 DELIVERY TIMELINE

The following table outlines the actions and timeline for delivery.

	STRATEGIC ACTION						
		2020	2021	2022	2023	2024	2025
1.1	Maintain landfill security for the region						
1.2	Develop long-term approach for all unlined landfills (i.e. Dysart, Glenden and Clermont). .						
1.3	Develop waste facilities that meet future community demands						
1.4	Investigate regional collaboration opportunities for landfill and alternative waste treatment						
2.1	Increase resource recovery services at waste transfer facilities						
2.2	Recovery shed/Tip Shop						

	STRATEGIC ACTION						
		2020	2021	2022	2023	2024	2025
2.3	Council to lead by example and promote waste reduction and diversion in the way it conducts its activities						
2.4	Support the development of markets (local and regional) for end-use of recovered products.						
2.5	Kerbside bin audits						
2.6	Kerbside green waste investigation						
2.7	Kerbside hard waste investigation						
2.8	Target reporting on the State waste strategy						
3.1	Implement best practice landfill management						
3.2	Implement best practice data collection and management systems						
3.3	Fill plans						
3.4	Develop final capping and closure construction program for all “non-active” landfills						
3.5	Review the *Isaac Waste Strategy 2020-2025*						
3.6	Equitable service delivery across the region						
3.7	Landfill operational contract						
3.8	Kerbside contract						
4.1	Develop and implement a waste education plan that aligns with the waste strategy and engages the community, schools and business in waste avoidance, reuse and recovery						
4.2	Investment in “waste education” infrastructure						
4.3	Reduce littering and illegal dumping through education and awareness						
4.4	Regional collaboration in waste education						
4.5	Include waste education into kerbside collection contract						
4.6	LAWMAC membership						
4.7	Illegal dumping						
5.1	Establish & maintain cost recovery pricing model						
5.2	Waste utility rates and user pays gate fee pricing						
5.3	Landfill rehabilitation provision						
5.4	Long-term financial planning						

5.5	Integration of long-term plans with annual operational plans						

10.2 ASSESSMENT AND REVIEW

This Strategy outlines a vision for resource recovery and waste management to 2029, under five strategic themes with 34 actions. The success of the strategy will be monitored through the key milestone targets set for 2024 and 2029. To ensure the Strategy can respond to future changes that may arise due to legislation or community attitudes, major reviews of the entire Strategy will occur in 2024 and 2029.

Progress against targets will be monitored and, where possible, quantitative data will be used to assess the performance on an annual basis. Examples of this include resource recovery of household waste, total waste diverted from landfill and littering volumes. In accordance with the WRRA 2011, an annual report will be submitted to the State Government and will be published annually as part of Council's annual reporting cycle.

10.3 COST OF SERVICE DELIVERY

The targets and actions outlined in this Strategy are designed to be achievable. Many of the larger infrastructure projects which require capital expenditure on waste facilities are already included in Council's 10-year capital works program and long-term financial forecasts. These are reviewed annually and Council will consider the most financially sustainable approach to service and infrastructure delivery that aligns with this Strategy. With the introduction of the QLD Governments Resource Recovery Industry Development Program, significant grant funding is available to assist with the delivery of strategic objectives and will be pursued as appropriate.

APPENDIX A – PROGRESS ON 2016 WASTE REDUCTION & RECYCLING PLAN

Progress on projects that were identified within the WRRP 2016 is detailed in the table below. Some of the actions have not been completed and were assessed as part of this Strategy. Where they were considered to be relevant, they have been included in this Strategy for continued progress.

NO	DESCRIPTION	PRIORITY	STATUS
1.1	Deliver an education and engagement program based on reducing waste to landfill, improving resource recovery, increasing recycling yields and participation.	High	Not commenced
1.2	Investigate and pilot technology to process food waste to reduce food waste going to landfill.	Medium	Not commenced
1.3	Develop and implement a staged program to bring all bin infrastructure, in parks and sporting clubs, to standard.	High	In progress
2.1	Complete tendering for the new waste contract. Contract approved by Council.	High	Completed
2.2	Develop and upgrade Isaac Regional Council Transfer Stations to facilitate reuse and recycling.	High	In progress
2.3	Moranbah Recycle Shop operation by external party.	Medium	Initial discussions
2.4	Complete a service and financial benchmarking study into Waste Management best practices data systems, and implement improvements to Council's systems to assist in future planning and service delivery.	Medium	Not commenced
2.5	Complete a review of opportunities to inform the development of a new kerbside waste contract specification, and ensure that enhancements are responsive to industry innovations, technology trends and incentives for achieving firm and successive Waste minimisation targets.	High	In progress
2.6	Ensure that all new and revised Council contracts have a waste minimisation clause e.g. Cleaning contract, building contract.	High	In Progress
2.7	Promote council innovation around waste minimisation and recycling. This includes incentives to promote education and engagement with service contracts.	Medium	In Progress
2.8	Conduct statistically significant waste audits every second year to evaluate the effectiveness of initiatives, and report on targets.	High	One in 2018
3.1	Review and replace signage on bins in parks and streets to ensure information is consistent and correct.	Medium	In Progress
3.2	Continue to review and update bin infrastructure and community engagement with residents and visitors, to increase recycling, better manage waste and reduce litter volumes entering stormwater drains.	Medium	In Progress
3.3	Participate in the "*Business"* Clean-up Australia Day* program.	Low	Not commenced
3.4	Develop a Dumped Rubbish/Litter reduction program, integrating infrastructure, education and enforcement.	High	In Progress

3.5	Develop and deliver targeted waste stream education/ engagement programs, to focus on problem materials such as cigarette butts, dog faeces, glass bottle tops and syringe litter in open spaces.	Medium	Not commenced
3.6	Develop and implement a robust engagement program with businesses and their local communities to reduce the litter load entering stormwater drains.	Medium	Not commenced
3.7	Review construction management plans for new developments to ensure waste minimisation and litter management is included.	Medium	In Progress
3.8	Identify other opportunities to include litter reduction in Council Local Laws.	Low	In Progress
4.1	Continue to encourage the community to recycle correctly through programs in collaboration with waste contractors. (Included in waste contract).	High	In Progress
4.2	Develop a trial program in partnership with Friends Of/Resident Groups/Rotary Clubs etc. to engage residents to better protect their local environment, minimise litter and waste, and increase recycling.	Low	In Progress
4.3	Investigate and develop and, if funded, trial an incentive program to reduce waste generation behaviour, improving resource recovery, increasing recycling yields and participation, including a review of service standards.	High	Not Commenced
4.4	Develop a program to reduce volume/ weight of waste per household through the reduction of food waste in garbage.	High	Not Commenced
4.5	Consider the introduction of waste management plans for all new commercial developments, to improve their resource recovery and waste minimisation.	Medium	Not Commenced
5.1	Support the community to better understand the need and ability to act more sustainably and overcome cultural norms surrounding consumption.	Medium	Not Commenced
5.2	Develop and pilot an innovative approach to communications and engagement to encourage greater waste avoidance and resource recovery.	High	In Progress
5.3	Develop and trial a program to maximise the diversion of food waste from cafes which currently use the kerb side waste collection service. This could be a user pays model.	Medium	Not Commenced
5.4	Develop and trial a Plastic bag minimisation program in partnership with a trader group.	Low	Not Commenced
5.5	Develop and promote a network of businesses that reduces consumption of new goods - e.g. second hand, op shops, repairs, recycled timber, Gumtree etc.	High	Not Commenced
5.6	Establish a program and deliver expanded program based on reducing waste to landfill, improving resource recovery, increasing recycling yields and participation.	High	Not Commenced

APPENDIX B – LEGISLATION

FEDERAL GOVERNMENT

The Federal Government is working towards a better way to manage waste and is in the consultation phase to update the *2009 – National Waste Policy – Less waste, more resources* by the end of 2018. The Federal Government has signaled a movement towards a circular economy approach, aligning with the Queensland Government approach. Council will continue to monitor federal legislation and align its policy and practices with federal initiatives.

At a national level there are a number of policies / legislative frameworks in place: The National Waste Policy, Australian Packaging Covenant, Clean Energy Future and associated legislation, the Product Stewardship Act 2011 and associated regulations, and the National Computer and Television Recycling Scheme. The Product Stewardship Act 2011 and associated regulations has already positively impacted on how materials are managed by individuals, councils, and industry.

STATE GOVERNMENT

The Queensland Government, in March 2018 announced the development of a new waste strategy underpinned by a waste disposal levy to increase recycling and recovery of resources. This process has not been completed and Council will review the Queensland Government targets and principles as they become more defined and align this Strategy to meet State targets. The new strategy will be articulated in the following key legislation:

- *Waste Reduction and Recycling Act 2011*
- Waste Reduction and Recycling Regulation 2011
- *Waste Reduction and Recycling (Waste Levy) Amendment Act 2019*
- Waste Reduction and Recycling (Waste Levy) Amendment Regulation 2019
- *Environmental Protection Act 1994*
- Environmental Protection Regulation 2008

CONTAINER REFUND SCHEME

The QLD Government has introduced a container refund scheme (CRS), commencing from 1 November 2018.

Under the scheme, anyone who returns an empty eligible beverage container to an approved QLD collection depot or reverse vending machine is eligible for a 10-cent refund. A network of depots and reverse vending machines is open across QLD to receive the empty containers. Features of the scheme include:

- All QLD beverage containers between 150ml and 3 litres in volume are eligible for a refund with some exceptions. These exceptions are similar to the exceptions in the New South Wales, South Australian and Northern Territory container deposit schemes, to aid consistency.
- Beverage suppliers (manufacturer, importer, wholesaler or retailer) that bring eligible containers into QLD will be responsible for funding the refund as well as associated costs.
- Eligible containers collected by Councils in kerbside recycling (e.g. Yellow Top Bin) services are able to be redeemed. The scheme allows material recovery facilities (MRFs) to use an approved method for accurately estimating the number of containers recovered in the facility and to claim the refund from the Scheme Coordinator. Under this approach, the MRF only receives the refund amount. They cannot claim a handling fee. The scheme would also provide a regulatory incentive for MRFs operators and local governments to share any benefits that may result from these arrangements.

- Currently Isaac Regional Council has entered into the default 50/50 arrangement with the Mackay MRF and therefore receives 5c from each container. This equates to an estimated $60,000 revenue for a full year.

APPENDIX C – OVERVIEW OF WASTE FACILITIES

WASTE MANAGEMENT NETWORK AND SERVICES

Council currently delivers the following services across the Isaac region:

- 9 waste management facilities, including four landfills
- Kerbside general waste collection
- Kerbside recycling collection
- Commercial bulk waste and recycling services
- Materials recovery facility operation to process kerbside recyclables via Mackay Regional Council
- Park and street litter bin collections
- Dead animal collection
- Litter and illegal dumping removal
- Waste education

DYSART LANDFILL

SITE SPECIFICS

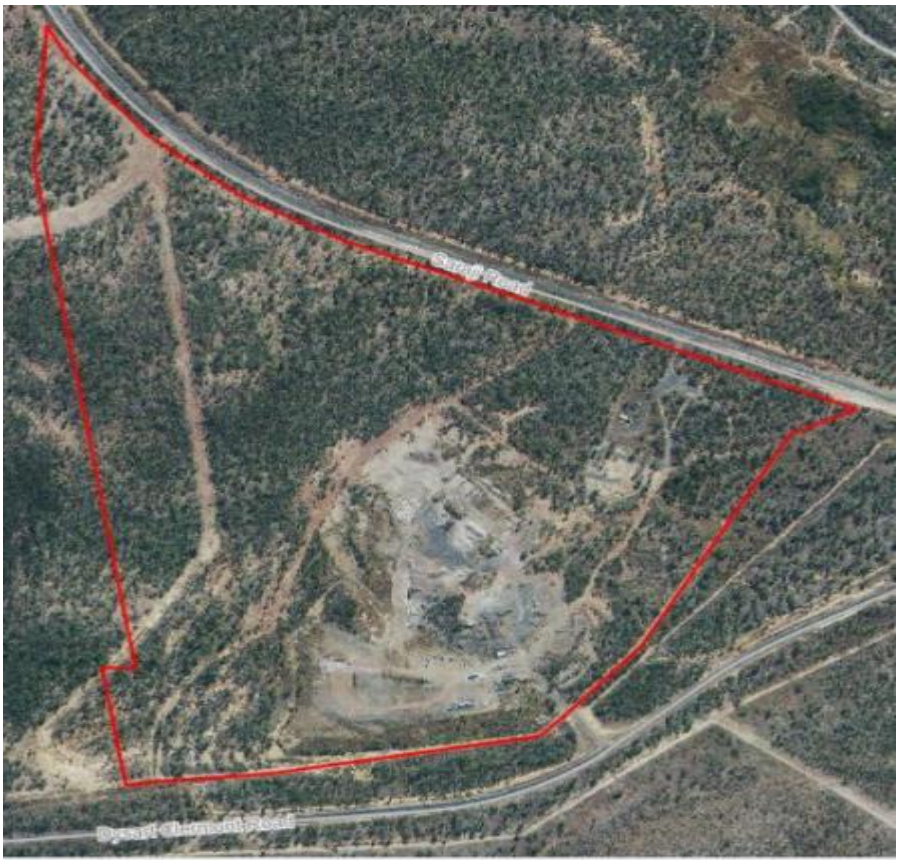
- Minor landfill for the region
- Weighbridge
- Licensed to accept < 2,000 tonnes per year
- Open 7 days per week

APPROVED USE

- Domestic and commercial waste
- Asbestos disposal
- Limited domestic hazardous waste

RECYCLING FACILITIES AVAILABLE

Green waste, concrete, scrap metals, tyres, oil, cardboard, kerbside recyclables (plastics, glass, cans), electronic waste, batteries, etc.



CLERMONT LANDFILL

SITE SPECIFICS

- Minor landfill for the region
- Open 7 days per week
- Licensed to accept < 5,000 tonnes per year

APPROVED USE

- Domestic and commercial waste
- Commercial and industrial
- Construction and demolition

RECYCLING FACILITIES AVAILABLE

Green waste, scrap metal, concrete, drum muster containers, recyclable material, electronic waste (not recycled, classed as general waste), motor oil.

MORANBAH LANDFILL
SITE SPECIFICS
• Primary landfill for the region • Major transfer station • Weighbridge • Licensed to accept > 20,000 and < 50,000 tonnes per year • Open 7 days per week
APPROVED USE
• Domestic and commercial waste • Asbestos disposal • Limited domestic hazardous waste
RECYCLING FACILITIES AVAILABLE
Green waste, concrete, scrap metals, tyres, oil, cardboard, kerbside recyclables (plastics, glass, cans), electronic waste, batteries, etc.

MIDDLEMOUNT TRANSFER FACILITY
SITE SPECIFICS
• Minor transfer station • Open 7 days per week
APPROVED USE
• Domestic and commercial waste
RECYCLING FACILITIES AVAILABLE
Green waste, concrete, scrap metals, tyres, oil, cardboard, kerbside recyclables (plastics, glass, cans), electronic waste, batteries, etc.

NEBO TRANSFER FACILITY
SITE SPECIFICS
• Minor transfer station • Open 7 days per week
APPROVED USE
• Domestic and commercial waste
RECYCLING FACILITIES AVAILABLE
Green waste, scrap metal, concrete, drum muster containers, recyclable material, electronic waste (not recycled, classed as general waste), motor oil.

GREENHILL TRANSFER FACILITY
SITE SPECIFICS
• Minor transfer station
APPROVED USE
• Domestic and commercial waste
RECYCLING FACILITIES AVAILABLE
Green waste, concrete, scrap metals, tyres, oil, cardboard, kerbside recyclables (plastics, glass, cans), electronic waste, batteries, etc.

ST LAWRENCE TRANSFER FACILITY
SITE SPECIFICS
• Minor transfer station
APPROVED USE
• Domestic and commercial waste
RECYCLING FACILITIES AVAILABLE
Green waste, concrete, scrap metals, tyres, oil, cardboard, kerbside recyclables (plastics, glass, cans), electronic waste, batteries, etc.

GLENDEN LANDFILL

SITE SPECIFICS

- Minor landfill for the region
- Open 7 days per week
- Licensed to accept 2,000 to 5,000 tonnes per year

APPROVED USE

- Domestic and commercial waste
- Commercial and industrial
- Construction and demolition

RECYCLING FACILITIES AVAILABLE

Green waste, scrap metal, concrete, drum muster containers, recyclable material, electronic waste (not recycled, classed as general waste), motor oil.

CARMILA TRANSFER FACILITY

SITE SPECIFICS

- Minor transfer station

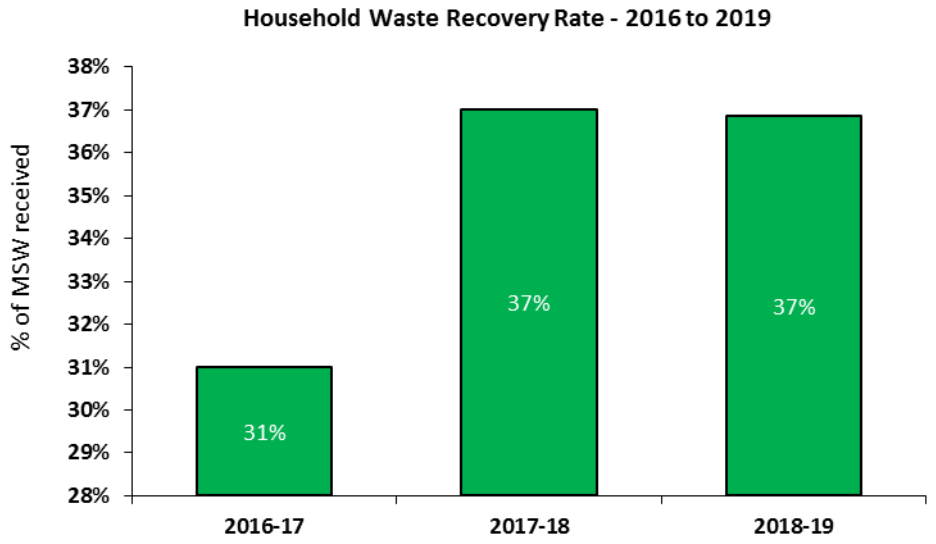
APPROVED USE

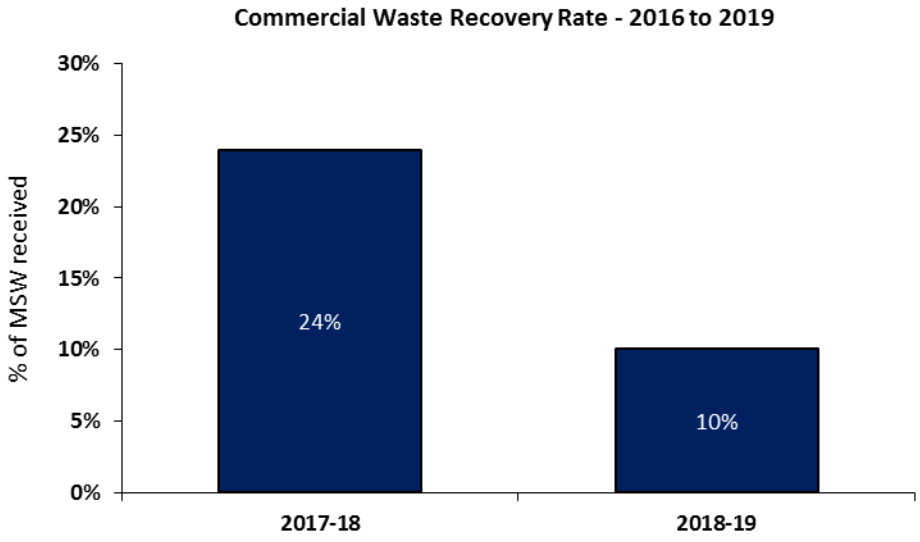
- Domestic and commercial waste

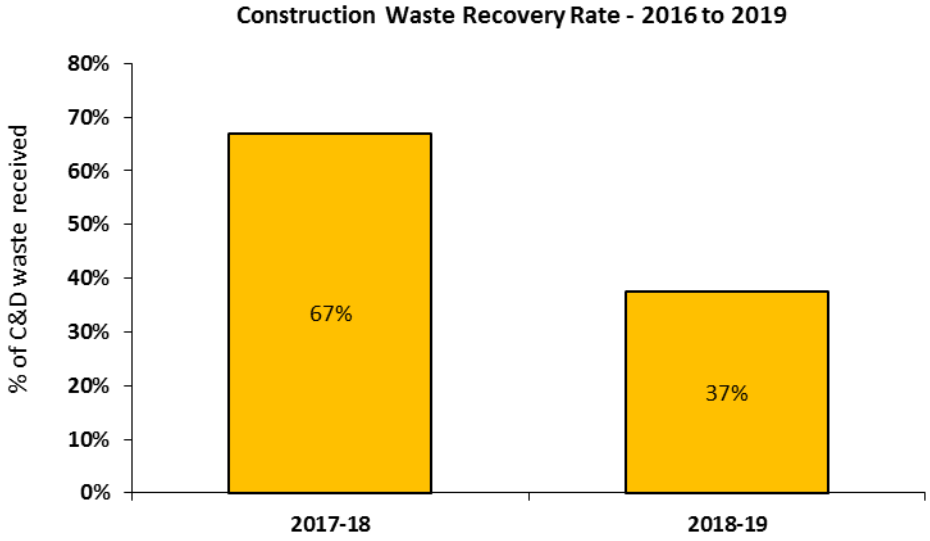
RECYCLING FACILITIES AVAILABLE

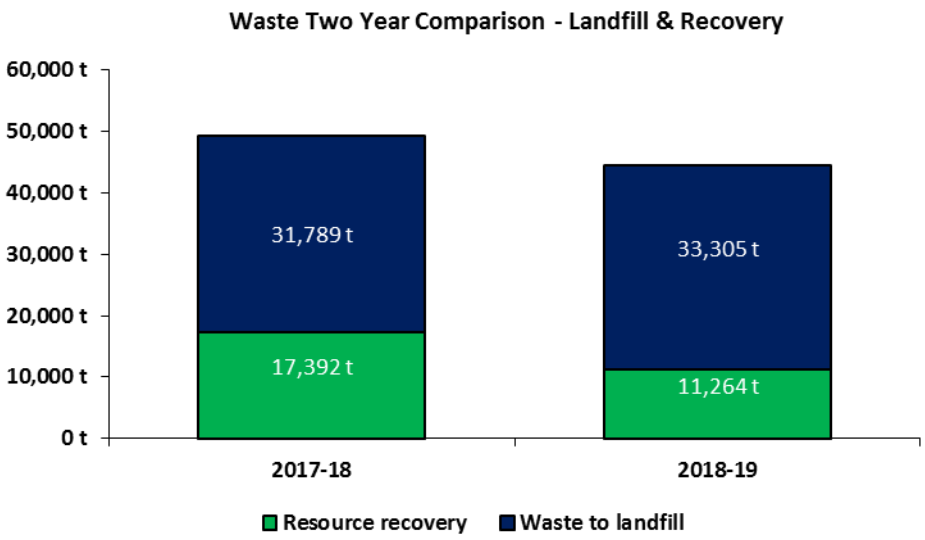
Green waste, scrap metal, concrete, drum muster containers, recyclable material, electronic waste (not recycled, classed as general waste), motor oil.

APPENDIX D – WASTE ACTIVITIES AND PERFORMANCE








Waste Two Year Comparison - Landfill & Recovery
60,000 t
50,000 t
40,000 t
30,000 t
20,000 t
10,000 t
0 t
31,789 t
17,392 t
33,305 t
11,264 t
2017-18
2018-19
Resource recovery
Waste to landfill