



## Rockhampton Regional Council

### CQ Regional Approach to Waste and Recycling Workshop

Elected representatives and waste managers from eight CQ Councils (Bundaberg, Gladstone, Livingstone, Central Highlands, Isaac, Mackay, plus representatives from QTC came together on 17th April 2019 to discuss the potential for adopting a regional approach to waste management here in our region.

The focus of the workshop was to determine if there was an appetite amongst CQ councils for a regional approach to waste management and what form that collaboration might take.

The general consensus was that there was strong appetite for taking a regional approach, with the following key drivers being noted:

- The policy framework currently being developed by the Queensland Government's, including the upcoming Waste Strategy, Energy from Waste (EfW) Policy, Waste & Resource Recovery Infrastructure Plan (QWRRIP), are all largely being focused on seeking out and supporting best outcomes at regional level.
- Formal structures for regional collaboration in waste management are either already in place or are now being developed across the rest of the newly declared Levy Zone in Queensland. These collaborations include areas such as education, procurement, and potentially extend to joint tendering to achieve required scale.
- It is acknowledged that each council is managing very different risks and challenges. As such, a successful model of regional

collaboration will only be successful if it aims to meet these specific needs and capacities, and allows flexibility in the collaboration across different areas.



As an outcome of this workshop, several priority action areas have been identified for interested councils to pursue:

1. Participate in the development of draft Regional Waste Education Plan;
2. Participate in a joint project to map regional waste data as a means to inform better decision making on a regional basis;
3. Participate in negotiations (CQ Councils) for a short term regional recyclables processing services agreement (due to expiry of current agreement) which would allow for commodity values to stabilise and revenue from kerbside CRS to be fully understood; and
4. Participate in the tender process for the long-term provision of co-mingled recycling processing services commencing at January 2022 or 2023.

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5. Participate in the drafting a recommendations paper to present governance options for a regional waste management entity.

In order to take this process forward, a working group will be formed consisting of waste managers/officers taken from each of the councils that confirm their intention to participate. This working group will set about developing more structured recommendations on each topic.

At this time, no financial commitment is being requested, and no governance structure is being proposed other than the waste manager working group.

## Regional Waste and Recycling Education Activity

Challenging but necessary, the closure of multiple unsupervised bin stations in rural locations throughout the Rockhampton region initiated the new focus for Rockhampton Regional Waste and Recycling (RRWR) in 2019 – education and behaviour change.



To put the new focus into action the team have begun hosting Open Days at each of our Waste Transfer Stations throughout the region involving; sizzling sausages, demonstrating upcycling, morning coffee van run and guided site tours. Plus a suite of new signage has been designed to assist users to find collection points for recyclable items at transfer stations so they are separating their load to save at the weighbridge.



In particular RRWR unveiled the brand new Waste Transfer Station for Bajool township this April. In honour of the prior planning to grow this community's waste services, a retired Councillor from the former Shire Council, and respected member of the local community cut the ribbon at Bajools' Waste Transfer Station Open Day in front of a gathering of community members, contractors, RRWR staff and Councillors.

A steady flow of visitors continued to arrive specifically to see how the facility operates, while a handful of vehicles arrived with loads of waste to dispose. This event provided the opportunity to talk directly to residents about how they manage their waste at home and the importance of sorting, cleaning and crushing recyclables.

Staff greeted visitors on arrival to the facility and walked them around explaining the newly available collection points for recyclables and general waste they have not had access too quite so close to home.

The sausage sizzle certainly ensured all visitors ended up at the information marquee where they were handed a map showing all available Waste Transfer Stations in the region, listing their

collection points for varying recyclable items, all within a free reusable bag for separating recyclables at home.

The 2019 calendar of events for our team is diverse in location and activity but focussed on educating to reduce, reuse and recycle waste.

## Issac Regional Council

### Dysart Stormwater & Leachate Management Upgrades and Site Rehabilitation

Also at Dysart, Council is in the middle of a large capital works project involving Stormwater & Leachate management upgrades and rehabilitation at the site. This is a \$2.4M capital works project which is necessary to fix some legacy issues at the site and reduce the risk of environmental harm being caused. The southern batter is being reprofiled and special leachate drainage is being installed to capture leachate which has been breaking out of the batter and collect it into a tank for treatment offsite. Landfill gas trenches and educts are being created, and a new stormwater drain and pond are also being installed. The work will take 12 weeks to complete, with only minimal disruption to site users.



### Waste Diversion from Dysart to Moranbah

Dysart Waste Management Facility had for many years been accepting amounts of waste in excess of the Environmental Authority issued by the state government. The site is licensed to accept 2,000 of waste per year and in recent years it had been

accepting up to 5,000 tonnes per year. There had been an intention to apply to increase the EA to accept more than this 5,000 tonne figure, and a MCU application was pursued. A weighbridge was also installed in anticipation of this going ahead. Eventually however the application was withdrawn when the costs had been fully identified. After considering various options, Council took the decision in December to cease the acceptance of certain wastes at Dysart from 01 March, including all waste delivered in compaction trucks. This includes the vehicles which collect domestic wheelie bin waste. Most of the waste is now being delivered to Council's flagship site at Moranbah, although a small amount is going to Clermont. Council's Waste Services team will now monitor where this waste is ending up, to ensure that Council does not encounter a similar problem at any of its other waste facilities. This information will help Council to map out its new Waste Management Strategy later this year.

## Townsville City Council

### Innovative Hervey Range recycling project to support 20 jobs

Townsville City Council has awarded the tender for the Hervey Range Front End Resource Recovery Facility to local company A. Gabrielli Constructions.

The Resource Recovery Facility – which is a significant upgrade of the existing infrastructure – will recycle items people have traditionally thrown out and the project will support 20 local jobs.

Old bikes, furniture, cutlery, corrugated iron and gates could be reused – and batteries, cardboard and metal will be recycled.

The Facility will reduce landfill and supply stock for a second-hand store at the Hervey Range Transfer Station.

There is a shop on site but the contract is coming to a close and Council is looking to upgrade the infrastructure at the site.

Council will release a request for tenders to run the store over the coming months.

Council staff will help the public identify what waste is recyclable and help them sort their rubbish into different categories.

Townsville Water and Waste Committee Chair Cr Russ Cook said the project will create local jobs.

“We have backed a local company to develop the Hervey Range Front End Resource Recovery Facility – the construction will support 20 jobs

and it will generate more jobs in the community,” Cr Cook said.

“The sales shop will need staff and the reused products could be bought by other stores and create more employment opportunities.”

Cr Cook said the Facility will change the way people view the dump.

“At the moment people unload their rubbish at Hervey Range and it goes into the compactor,” Cr Cook said.

“Moving forward Council workers will help people decide what items can be recycled or reused.

“A bike or chair could be cleaned up and sold in the on-site shop.”

Division 1 Councillor Margie Ryder said the facility will help ratepayers and the environment.

“We want to encourage people to give back to the community – instead of paying to dump a bike they can leave it at the site for someone else to buy,” Cr Ryder said.

“The facility will also help us reduce landfill and transfer costs – Council has to transport any compacted rubbish from Hervey Range to Stuart Waste Facility.”

Construction of the Hervey Range Front End Resource Recovery Facility is expected to start next month and the Facility will open late this year.

The Hervey Range Transfer Station will have new operating hours from April 17.

The site will be open from 7am to 5pm 7 days a week.

## Flying Skip Bin

A land slip early in the Monsoon Rain Event caused Hervey Range Road to be closed to all traffic for several weeks. Flooding at Star River and Keelbottom Creek, and the possibility of further landslips resulted in residents living at Hervey Range to be without access to essential waste management services.



The Townsville Local Disaster Coordination Centre received a request from the District Disaster Coordination Centre to provide assistance.

In order to provide residents with capacity to deal with their putrescible waste Logistics Officers working in the LDCC sourced air lift capability and delivered multiple skip bins by helicopter.

Residents utilised the temporary disposal facility until regular kerbside services could be resumed by Townsville Waste Services.

## Stuart Waste Facility Upgrade

Townsville City Council has approved a \$1.1 million project that will continue to minimise the environmental impact of the Stuart Waste Facility.

Council has awarded the tender for the installation of a leachate extraction and conveyance system to local business CES Civil NQ.

Leachate is the liquid that is produced as waste breaks down.

Townsville Mayor Jenny Hill said the upgrades will raise the standards of the waste facility.

“We will supply and construct pipelines to pump leachate to two storage ponds,” Cr Hill said.

“We’ll install new compressed air operated pumps and control panels.”

“It will ensure that leachate that is formed is managed in accordance with the best environmental management practices.”

Cr Hill said Council also has an eye on the future – it awarded a \$3.5 million tender to build the next stage of the Stuart facility last month.

“The Stuart Waste Facility will change and expand over time so the leachate extraction system needs to be flexible,” Cr Hill said

“We may need to move it as the site develops over time.”

Townsville Water and Waste Committee chair Cr Russ Cook said the project is a wise investment.

“The Stuart leachate project is expected to cost \$1.1 million,” Cr Cook said.

“It will fund the new system and it will also improve the three leachate wells we already have at Stuart.

The project has a budget of \$350,000 this financial year and \$790,000 in 2019/2020.

## Clean up cost for recovery at \$2.9 million

An update on the flood waste collection was given to the Infrastructure Committee yesterday with final figures rolling in and the total cost of clean-up estimated at around \$2.9 million.

Townsville City Council staff worked with the Australian Defence Force to coordinate the flood waste collection following the unprecedented monsoon with 27,745 tonnes of waste recorded across all sites.

Infrastructure Committee Chair Cr Mark Molachino said 30,000 hours had gone into running the flood waste collection and the temporary waste sites.

“Council crews, the ADF and volunteers worked around 30,000 hours to complete the flood waste collection and operate the temporary waste sites across the city,” Cr Molachino said.

“These operations cost \$2.9 million which Council is hopeful to recover from the Queensland

Reconstruction Authority under the Disaster Recovery Funding Arrangements.

Townsville Local Recovery and Resilience Group Chair Cr Les Walker said the recovery effort is still ongoing and Council’s waste services had played a significant role.

“In addition to the flood waste collection and temporary sites, Council waste facilities were free for domestic waste following the unprecedented monsoon,” Cr Walker said.

“Allowing this free dumping has resulted in around \$1.7 million of foregone revenue.

“This is money that can now go towards repairs to homes, replacing lost items and supporting local businesses as our community continues to recover.”

Townsville Water and Waste Committee Chair Cr Russ Cook thanked Council staff for their dedication during the clean-up.

“Council crews had a sustained and huge effort to help clean up our community after the unprecedented monsoon,” Cr Cook said.

“It was physically demanding work in difficult conditions and I’d like to thank our crews for working in collaboration with the ADF and volunteers.”

All recovery information is available at <https://www.townsville.qld.gov.au/community-support/community-safety/recovery-information>.

## Mattress Shredding Eases Landfill Strain

Townsville City Council has engaged a contractor to shred thousands of flood-affected mattresses and slash their size by up to 85 percent at local waste management facilities.

Approximately 10,000 mattresses have been shredded at Council transfer stations since the unprecedented monsoon.

Townsville Local Recovery and Resilience Group Chair Deputy Mayor Les Walker said the contractor has used a slow speed shredder to separate the steel springs from the foam.

“Mattresses have been a big issue for us since the monsoon and we’ve been working to reduce their impact,” Cr Walker said.

“The shredder cuts the size of mattresses by up to 85 per cent and that is a significant amount given we’ve shredded around 10,000 mattresses.

“Breaking up the mattresses has saved us around 5,000 cubic metres of landfill space.”

Townsville Water and Waste Committee Chair Cr Russ Cook said the foam goes to the landfill but the inner springs are recycled.

“For every 800 mattresses we shredded we have averaged 12 to 14 tonnes of steel,” Cr Cook said.

“We’re effectively diverting the metal away from the dump to recycling, which will reduce our need for landfill space.”

## **Stuart Dump Project Creates 20 Local Jobs**

Townsville City Council has awarded a \$3.5 million tender to local construction company Mendi to build the next stage of the Stuart Waste Facility – creating 20 local jobs.

Townsville Water and Waste Committee Chair Cr Russ Cook said the project will add more space to the site to extend the life of the dump.

“Council has identified the need for additional space at the dump as the current space is nearing capacity,” Cr Cook said.

“The 100 metre by 190 metre addition to the existing site will extend the life of the dump and ensure that the site complies with any environmental guidelines.”

Infrastructure Committee Chair Cr Mark Molachino said the project – which includes excavation of the site, earthworks and installation of liners, drains and pipes – is expected to create 20 jobs for locals.

“Council is spending nearly \$400 million this financial year on important infrastructure projects throughout the community and support jobs for locals,” Cr Molachino said.

“The project is expected to start in April and finish up by September this year.”

The Jensen Waste Management Facility will close to all users on January 28.

Stuart, Hervey Range, Bluewater and Toomulla Waste Management Facilities remain open to the public.

## **Terra Sana Consultants**

### **The use of drones for landfill gas monitoring**

We are at the very beginning of the drone revolution in many aspects of our increasingly technologically-fuelled lives. Utilising drones in environmental management is in its infancy, but the possibilities are seemingly limitless. In recent years we have begun to see the silent intrusion of these miniature flying objects in environmental monitoring. Drones bring incredible opportunities for environmental professionals and researchers to improve and re-shape the way we think about data collection and assessment. Now that we are beginning to see the possibilities, I believe there is no turning back.

So much of the work done in environmental management and conservation is done in remote areas. What drones can offer to environmental professionals is the ability to collect accurate data quickly, avoiding logistical issues that go along with working in remote or challenging conditions. Regional data can be collected at the snap of a finger. We can get aerial imaging of erosion, data on wildlife and ecosystems, information on coral reefs, and can even take water samples in crocodile infested rivers! But it isn’t just data that drones are useful for. Drones can be used practically to help solve many of our environmental and conservation problems. For example, reforestation companies estimate that a single drone has the potential to plant 100,000 trees per day. Utilising drones in this way can help reforestation in degraded landscapes, and assist with forestry management. Drones can be deployed immediately in response to a poaching threat in Africa, and can be used as a deterrent.



From environmental mapping to species identification, more environmental professionals are using drones because they are more capable than 'traditional' techniques in terms of efficiency, safety and data quality.

The increasing number of users drives innovation and cross pollination of ideas, creating exciting new opportunities. But as is so often the case with exciting new applications of technologies, a number of pressing, unresolved questions now face policy makers and regulators.

Landfills are the perfect candidate for the substantial implementation of data collection using drones, as the drones offers incredible benefits to both data accuracy and lowering potential risks for workers.

Work carried out in landfill poses a significant risk to people, due to the challenging work environment. The presence of odorous and gases, sloping and unstable ground, heavy machinery compacting waste, exposed refuse; let's say that landfills are not pretty, particularly on a hot summer day!

After 15 years of monitoring landfills gas, my competitive streak arose when our in-house developed drone started to transmit data of methane concentration measured over the surface of the landfill used for our first trial. I decided to personally challenge the drone, man vs machine. At the same time as the drone was flying overhead, I conducted a walk-over survey under

the watchful eye of my team. After all, experience and professional judgment still has an advantage over technology. I started to doubt myself when I saw the drone elegantly twirl over my head while I was painfully progressing over the landfill surface in (what I believed to be) regular patterns. I felt defeated four hours later when I entered the crib room (red-faced, huffing and puffing) where everybody had been waiting for me to finish for the past 3 hours, drinking tea. It certainly didn't help my ego when I compared the data collected from the drone to my data. The differences were so extreme; I could not believe the amount of area I had missed! It was physically impossible to walk over some of the older areas, but as it turned out, that was where significant amount of methane was escaping. It was impossible to drive on some of those slopes. I missed a lot of points simply because I did not turn exactly 360 degrees and I could not follow a pre-determined straight grid like the one programmed in the drone. The smallest human-error on my part became a pretty sizable chunk of missing data. I followed my "professional judgment", which compared to the drone data looked more like a butterfly chase. No hope to reproduce the same path in few months. For so many years I did not realise how the human factor is an important bias for accurate data collection in landfill gas fugitive emissions surveys. It was clear that the data collected with the drone was superior in terms of accuracy, efficiency, and the reproducibility of the process compared to a walk-over survey, and the safety improvement of removing humans from the exposure to the risk of

landfills. My initial feelings of uncertainty towards utilising drones to conduct landfill gas survey have now truly disappeared. After seeing first-hand how important drones can be to this industry, I will be excitedly watching for new innovations and uses

## Interesting Facts and Figures

### Link to waste management related podcast

[Talking Garbology: Waste and Recycling Unwrapped \(https://wriqpodcasts.castos.com/\)](https://wriqpodcasts.castos.com/)

## Container Refund Scheme

**483,196,110** beverage containers collected in Queensland as of 5 May 2019

## Australia waste generation rate

	2016-17	2014-15
Waste generated	67	66
Waste recycled	37	36
Waste to energy	2.0	2.4
Waste disposal	27	27
Resource recovery rates		
Core waste plus ash	58%	58%
Core waste only	62%	62%

In 2016-17 Australia generated an estimated 67 million tonnes (Mt) of waste including 17.1Mt of masonry materials, 14.2Mt of organics, 12.3 Mt of ash, 6.3Mt of hazardous waste (mainly contaminated soil), 5.6 Mt of paper and cardboard and 5.5 Mt of metals. This is equivalent to 2.7tonnes (t) per capita.