



Mackay Most Sustainable City

MACKAY was recently named Queensland's Most Sustainable City for 2016 by Keep Queensland Beautiful. Mackay has been recognised for a number of key environmental projects as well as taking out the Sustainable Cities award for Resource Recovery and Waste Management. The MRF refurbishment utilising world's latest technology resulting in a 38% increase to the region's overall domestic co-mingled recycling rate was highly revered by the judges.

Announcing the award winner, Keep Queensland Beautiful, Chief Executive Officer, David Curtin, said the Mackay community should be proud of progress being made towards a more sustainable and livable city.



Pre-sort alchemy area at MRF

Hervey Range Gas Flare Connection

TCC and LMS have again worked together to see the installation of the second landfill gas flare in Townsville - this time at the Hervey Range Landfill. The flare, connected to a network of 25 gas wells, was commissioned in October 2016 under a long term contract with LMS. The contractor is looking to initially prove the gas supply, with a view to installing a micro-power generator on the site in

due course. The Stuart landfill gas flare also remains in operation, and a flare will be installed at the Jensen landfill following capping works in a few years' time.



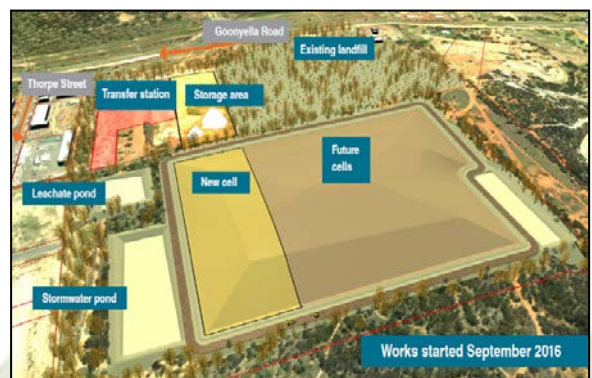
Installation of the second landfill gas flare in Townsville

Moranbah Resource Recovery

WORKS have begun on the \$7.16 million Moranbah Resource Recovery Centre Expansion and Improvement Project. Started in September 2016, the project is expected to be complete by October 2017.

Isaac Regional Council awarded the tender to GHD Pty Ltd at the Ordinary Council Meeting on 27th September.

GHD has been named by industry publication Inside Waste as the number one large waste consultancy in Australia for five consecutive years.



Concept plan Moranbah Resource Recovery Centre



Mayor Anne Baker said GHD bring extensive experience and value for money to the project.

The tender included detailed design, procurement, project management and construction administration.

With the capacity of the current landfill expected to be exhausted in the next 1-2 years, this project is vital to meeting demand for waste disposal in the region and improving environmental performance.

The project will deliver a new landfill cell, storm-water and leachate ponds, and provide a modern refuse transfer station.

The refuse transfer station will enable bulk handling of waste and improve hygiene and safety for the community, users of the landfill, and employees. It will improve operational efficiencies and extend the existing landfill's lifespan.

This project will meet community and industry requirements for the next two decades and improve the efficiency and recovery of recyclable materials. The upgrade will provide Isaac residents with a purpose built refuse transfer station.

This project is critical in ensuring Moranbah can meet demand for the provision of waste infrastructure to serve the regional community, mining sector and supporting industries.

Isaac Regional Council has matched the Queensland Government's \$3.58 million grant under the Building our Regions program.

Building our Regions provides funding for critical infrastructure in regional areas, while also supporting jobs, fostering economic development and improving the liveability of regional communities.



Mayor Anne Baker and Waste, Sewerage and Waste Advisory Committee Chair Cr Peter Freeleagus

Hervey Range Landfill Rehabilitation

TCC is in the final stages of completion of rehabilitation of a 6.5 hectare section of the Hervey Range Landfill. The area has been capped with a Coated - Geosynthetic Clay Liner and is presently being covered with turf to ensure establishment prior to the wet season. The project presented multiple challenges, including the unknown extent of waste in the historic section of the landfill, as well as the need to maintain access to the mound for disposal while the latest cell was nearing completion. The capping works also included construction of over 1km of a leachate interception trench to allow capture of leachate from the older unlined cells. Landfilling is now continuing in Cell A at the site, which is the last operational cell planned for the landfill.



Rehabilitation of a 6.5 hectare section of the Hervey Range Landfill



Tackling the Tyre Problem

THE Whitsunday Regional Council has joined forces with Australia's oldest and largest recycler of waste tyres to rid the council region of unwanted, old tyres and put them to good use.

The partnership with Tyrecycle ensures tyres that were previously destined for landfill are diverted to an important recycling venture which delivers reprocessed end of life tyres for use in a range of products including as an alternative to fossil fuel for energy recovery.

Karl Murdoch, Manager Waste Services, Whitsunday Water & Waste says the council is embarking on a new promotional campaign so ratepayers understand the tyre recycling effort is an integral part of the Council's waste management strategy.

"Our efforts are focused on our ratepayers, letting them know the good work we are doing as part of our waste management strategy which is currently being developed", said Mr Murdoch.

"We want them to understand that waste, in this case - tyres, is a re-usable resource." The council has produced a range of posters which highlight the end use of the product.

"So while users are waiting to cross the weighbridge they can see the posters informing them that we are recycling all these items at the site. The message we are sending out is that recycling doesn't end at the tip – we work with reputable recyclers like Tyrecycle, who take our discarded items and recycle them into something else," said Mr Murdoch.

Tyrecycle has been collecting waste tyres from the Whitsunday Regional Council for five years.

During that time an average of 1,000 tyres a year has been recycled, totalling 5,000 tyres.



Tyrecycle poster displayed on fences

The Whitsunday Regional Council consolidates the tyres at their depot, near Airlie Beach and Tyrecycle collects them from there.

The tyres are delivered by rail to the Tyrecycle site in Redbank Plains, Brisbane, and from there they are processed.

The council is also involved in the recycling of chemical drums, mobile phones, fertiliser bags, waste oil and batteries.

"It's an important and worthy program and we are proud to be in this partnership with Tyrecycle.

Matt McInerney, Tyrecycle National Sales Manager said Tyrecycle is committed to working with Local Governments across Australia.

"We work closely with Councils, tailoring our service to meet their requirements including varied pick up locations," said Mr McInerney.

"Tyrecycle services clients across the nation including those in metropolitan, regional and remote locations."

"Tyrecycle commends the Whitsunday Regional Council on its commitment to keeping their region in a pristine and beautiful state for all to enjoy," said Mr McInerney.



THE ROSSKO AWARD – 2016

And the winner of LAWMAC's 2016 Ross Overton Memorial Award for Excellence in Waste Management in North Queensland is...

Gary Ewart

THE Ross Overton Memorial Award for Excellence in Waste Management in North Queensland honours the memory of Mr Ross Kenneth Overton, founding Chair of LAWMAC.

The Rossko Award allows us to showcase the achievements, success and innovation in fields of waste management, recycling and environmental awareness, while maintaining the legacy and also honouring Ross' memory.

The winner receives a Certificate, a \$500 Bursary and also a perpetual trophy to proudly held in trust for one year until handover to the successful 2016 Rossko Award winner.

LAWMAC has established the annual "Rossko Award" for leadership, innovation and dedication in the field of waste management in the North Queensland Local Government Association area

This year there were six very worthy nominations submitted to the LAWMAC office.

All of the nominees have championed practical innovations which have improved the sustainability of waste management in North Queensland.

"Mr Ewart epitomises the ideology that LAWMAC founding member, then Cr Ross (Rossko) Overton initiated over 20 years ago when LAWMAC was formed. He has consistently demonstrated his commitment to excellence in Waste Management in North Queensland over a sustained period of time and has proved a worthy recipient of the 2016 Rossko award."



Gary Ewart being presented with 2016 Rossko Award

Unfortunately Gary was not present at the LAWMAC meeting when the winner was announced so it was arranged for Mr Keith Parsons, Director of Townsville Waste & Water, to present the Rossko Award to Mr Gary Ewart, Executive Manager Utility Services at Townsville City Council a week or so after. Gary was nominated for the award by Townsville City Council.

Council backs bulk rubbish pick-up

TOWNSVILLE residents will save a trip to the tip with council's Water and Waste Committee today voting to call for tenders to carry out a bulk rubbish collection across the city in the 2017/18 financial year. An election commitment of Mayor Cr Jenny Hill, the collection will be separated into portions to account for some of the city's remote locations, with interested providers asked to tender for all or part of the contract.

All properties that currently receive waste and recycling collection will be covered, with the collection to be carried out during the dry season on a suburb by suburb basis. Some rural suburbs, including Rollingstone, Cungulla, Alligator Creek and Nome, will be provided skip bins given the average lot size and distance between homes. Committee chairman Cr Paul Jacob said the



kerbside collection would provide a convenient service to residents.



Bulk rubbish collection to commence 17/18 financial year

“Many residents don’t have access to a trailer to dispose of their own bulky rubbish or are elderly and simply can’t make the trip themselves,” Cr Jacob said. “There’s also a need to be properly prepared for cyclones and the kerbside collection is a way to reinforce that message and remove potential hazards from neighbourhoods. “From an environmental perspective, it ensured we dispose of those large, unwanted household items responsibly.”

Separable portions will include:

- Magnetic Island
- Northern Beaches communities including Balgal Beach, Toomulla, Toolakea and Saunders Beach
- The provision of skip bins at prominent locations to service areas of Rollingstone, Cungulla, Alligator Creek and Nome
- Remaining properties within the defined waste and recycling collection area divided by suburbs.

Today’s committee recommendation will go to the full council on November 22 for approval.

Farm Waste Recovery

FARM Waste Recovery continues to receive wide recognition for its successful fertiliser bag recovery program, which heads towards a target of 1,000,000 kg's. The success is due to the strong partnerships with the responsible fertiliser companies Incitec Pivot Fertilisers and Impact Fertilisers. Farmers for multiple sectors are now using the program to have their waste disposed of via, the reseller, local Council or on farm where large volumes may exist.

Farm Waste Recovery is always looking to expand with Innisfail company Soils First recently joining. Farm Waste Recovery is particularly keen to include Stock Feed, Seeds and other packaging waste.

Farm Waste Recovery is also proud of its strong association with the Queensland Government and supporting local Governments and is continuing to assist with solutions to the priority waste strategy.



Proserpine Transfer Station

Stuart Interface Liner

THE development of the Stuart landfill has historically progressed in a horseshoe shaped manner which has left an unlined central void between the stages. TCC has therefore constructed an 'interface' or 'piggyback' lining system to bridge the gap and allow the vertical



expansion of the landfill in an environmentally and regulatory sound manner. This will allow TCC to maximise the footprint of the landfill and therefore defer the establishment of a new facility. The interface liner consists of seven layers, commencing at the bottom of the system with a gas collection layer to allow its collection and conveyance to the site's gas flare to reduce the environmental effects of the greenhouse gases.

The uppermost layer of the liner consists of a network of leachate collection lines which convey collected leachate to a sump that forms part of the sites overall leachate management system.

In between these layers, there is a profile of earthen and geosynthetic liners, including stabilising geogrids, a GCL and LLDPE to ensure the interface liner meets the required stability and permeability standards applied to modern day landfill cells. Stage 2 of the liner was completed in late August 2016 and is now in operation.

being in place, the clay has now been covered with a synthetic erosion control matting to protect the site until final capping works commence in 2018. The final cap profile is currently under design, and will consist of a GCL and LLDPE lining system.



Synthetic erosion control matting to protect site until capping works begin in 2018



'Interface' or 'piggyback' lining

Picnic Bay Landfill Rehabilitation Works

The Picnic Bay Landfill closed to receipt of waste in early March 2016 following completion of the Magnetic Island Waste Facility (Transfer Station). Since this time, the landfill has been shaped, and an interim layer of 200mm of clay has been placed over the mound. Due to Level 3 water restrictions

Great Northern Clean Up

THE Mackay Regional Council provided free waste disposal for the Great Northern Clean Up rubbish. Council allocated the weekend of 3 - 4 September for the clean-up. Although we had some new groups register for the Great Northern Clean Up overall, the number of sites registered was less than 2015. On average most sites had from 6 to 25 volunteers participating and there was good participation by council staff.



Cr Bonaventura and Robyn Billings with Students from St Patrick's College



The tonnage of waste collected across the region was just over four (4) tonne with 900kgs of tyres included in this figure. This was equal to the amount of waste collected in 2015. There was less rubbish found at our beaches however, some of the more remote beach areas with limited vehicle access seem to attract illegal dumping. Closer to town, Riverside Drive still remains a problem area with illegal dumping.

Tyres continue to be a prevalent illegally dumped item. The total amount of waste disposed of from the 2016 Great Northern Clean Up was just over four (4) tonnes with tyres making up 0.9 of a tonne.

An array of items were collected including mattresses, lounge suite, sharps, a range of plastics and hundreds of bags of waste.



Tyres found at Hay Point

Data Dump

MACKAY'S Hogan's Pocket Landfill (as the name suggests) is located in a natural depression surrounded on three sides by Spencer Gap State Forest forming the ridgeline of the Connor's Range, part of the Great Dividing Range complex. The typical property RL at the landfill is some 120m lower than the range peak. The current communications method for the site is 3G utilising a high gain Yagi antenna providing relatively poor connectivity and reliability due to the surrounding terrain.

Steps to improve the performance of the site through technology have historically been constrained by poor communication capabilities, offering limited capacity for programmed initiatives that rely on real-time communication of data, voice and video.

Council is currently undertaking a capital works project to install a small low profile solar repeater station located on the range ridgeline. The repeater will connect Hogan's Pocket to Council's Wide Area Network (WAN). The solution will provide a high-capacity microwave back-haul point-to-point link with a bandwidth up to 600 MB/sec duplexed (super-fast internet). The site will be further supported by a local mesh network where multiple wireless mesh nodes (small radio transmitters) will seamlessly connect and share the network connection across the entire landfill footprint.

This IT industry-leading solution will provide high capacity communications to enable planned and proposed landfill technology initiatives to be implemented site-wide.

The Internet of Things (IoT) is shaping up to have a critical influence over how utility businesses operate worldwide, now and into the future. With continued advances being made in both sensor and communication technologies, capturing highly detailed information is becoming a lot more cost effective. MRC has realised this benefit and is already harvesting millions of bits of data from the landfill. Each bit is meaningless on its own, however aggregated and viewed intelligently is changing the way we see the landfill unit and is shaping new ways to operate more effectively.