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<td>41292</td>
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<td>Infrastructure and Services Standing Committee Minutes</td>
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<td>41375</td>
<td>07.12.2016</td>
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Declaration of Potential Conflict of Interest

Item 14.1 - Crs Bonaventura, Paton and Walker
INFRASTRUCTURE AND SERVICES STANDING COMMITTEE MEETING MINUTES

1. COMMITTEE ATTENDANCE:
Crs K L May (Chairperson), M J Bella, L G Bonaventura, K J Casey, A R Paton, R D Walker and Mayor G R Williamson were in attendance at the commencement of the meeting.

2. NON-COMMITTEE ATTENDANCE:
Also present were Cr R C Gee, Cr J F Englert, Mr C Doyle (Chief Executive Officer), Mr J Devitt (Director Engineering and Commercial Infrastructure) and Mrs M Iliffe (Minute Secretary).

The meeting commenced at 8.30 am.

3. ABSENT ON COUNCIL BUSINESS:
Nil

4. APOLOGIES:
Nil

5. CONFLICT OF INTEREST:
Item 14.1 - Crs Bonaventura, Paton and Walker
6. **ORDER OF BUSINESS**

   THAT as per the provisions of sections 8.2 and 44 of Council’s Standing Orders (Meetings) 2016, that as the matter listed in the Agenda at Item 13.2 Leachate Management Asset Capital Request is not deemed to be Confidential that it is considered in an open forum under the Tenders part of the Agenda at Item 10.1, with the subsequent Tender Agenda items as listed to be then considered as Items 10.2 and 10.3.

   Moved Cr Casey  
   Seconded Cr Paton  
   **CARRIED**

7. **CONFIRMATION OF MINUTES:**

7.1 **INFRASTRUCTURE AND SERVICES STANDING COMMITTEE MEETING - 9 NOVEMBER 2016**

   THAT the Infrastructure and Services Standing Committee Meeting Minutes held on 9 November 2016 be adopted.

   Moved Cr Casey  
   Seconded Cr Walker  
   **CARRIED**

8. **BUSINESS ARISING OUT OF MINUTES OF PREVIOUS MEETING:**

   Nil

9. **CORRESPONDENCE AND OFFICERS’ REPORTS:**

9.1 **ECI - WATER SERVICES MONTHLY REVIEW - 1 NOVEMBER 2016 TO 30 NOVEMBER 2016**

   Author  
   Director Engineering and Commercial Infrastructure

   **Purpose**

   To provide the Committee with Engineering & Commercial Infrastructure - Water Services Monthly Review for the period 1 November 2016 to 30 November 2016.
Officer's Recommendation

THAT the Engineering & Commercial Infrastructure - Water Services Monthly Review for the period of 1 November 2016 to 30 November 2016 be received.

Director Engineering and Commercial Infrastructure (DECI) spoke to the report.

The Mayor queried given the current dry hot season the region is heading into if there were any advertising promotions in place to encourage residents to sign up to myh$_2$o.

DECI advised there is a current advertising campaign occurring to encourage residents to sign up to myh$_2$o and the department is currently reviewing ways to make it easier for residents to sign up. Also discussions have taken place on how to reach tenants of properties where it is difficult for the tenant to have the necessary information to sign up. Discussions will take place with relevant tenancy agencies to ensure both the owner and the tenant are registered to allow the data to be monitored going forward.

Cr Bonaventura queried the leak detection notification information provided and the policy to notify anyone with a leak greater than 10 litres per hour. At the end of the month there was approximately 1240 meters with leaks and this calculates approximately to over 2 ML's of water that is being lost. Cr Bonaventura queried if this is the minimum amount than what would the average be?

DECI advised that the information contains some large commercial organisations which skew the figures and this information will be split into residential and non-residential go forward in reporting.

DECI advised he will take the query on notice on what is the average amount of water lost per period and report back to the February 2017 committee meeting this data.

Committee Resolution

THAT the Officer's Recommendation be adopted.

Moved Cr Bonaventura          Seconded Cr Paton

CARRIED
9.2 ECI - WASTE SERVICES MONTHLY REVIEW - 1 NOVEMBER 2016 TO 30 NOVEMBER 2016

Author    Director Engineering and Commercial Infrastructure

Purpose

To provide the Committee with Engineering & Commercial Infrastructure - Waste Services Monthly Review for the period 1 November 2016 to 30 November 2016.

Officer's Recommendation

THAT the Engineering & Commercial Infrastructure - Waste Services Monthly Review for the period of 1 November 2016 to 30 November 2016 be received.

Director Engineering and Commercial Infrastructure (DECI) spoke to the report.

Cr May queried in relation to the landfill gas figures for the month if the disruption that occurred in previous months was interrelated to the disruption that occurred this month or were they two separate issues.

DECI advised the disruptions were two separate issues and not related.

Cr Bonaventura queried in relation to the pre-cyclone clean up and the use of the dump vouchers if Council has any publicity planned.

Cr May queried if the officers could prepare some press releases to promote residents carrying out their pre-cyclone season clean up and the use of the dump vouchers.

Committee Resolution

THAT the Officer's Recommendation be adopted.

Moved Cr Bella    Seconded Cr Walker

CARRIED
9.3 ECI - TRANSPORT & DRAINAGE MONTHLY REVIEW - 1 NOVEMBER 2016 TO 30 NOVEMBER 2016

Author Director Engineering and Commercial Infrastructure

Purpose

To provide the Committee with Engineering & Commercial Infrastructure - Transport & Drainage Monthly Review for the period 1 November 2016 to 30 November 2016.

Officer's Recommendation

THAT the Engineering & Commercial Infrastructure - Transport & Drainage Monthly Review for the period of 1 November 2016 to 30 November 2016 be received.

Director Engineering and Commercial Infrastructure (DECI) spoke to the report.

Cr Bella congratulated the Director on the maintenance operation and Council generally on the increase of funding toward gravel roads and would like to highlight the point that the Unsealed Road Maintenance graph does not include roads projects that are not completed with medium and heavy formation grading. In total there was just over 16 km and there are hundreds of kms of gravel roads.

Cr Bonaventura advised he was very impressed with the savings made on the Landsdowne Road project. Given the savings achieved on this project are there any lessons to be learnt and passed on to future projects.

DECI advised the capital programs systems are still a work in progress and there are lessons to be learnt to achieve savings to the regions ratepayers.

Cr May queried if it was possible to include in the reporting on capital projects the budget allocation for each project.

The Chief Executive Officer advised the current reporting will be amended to include more information and data on percent complete, etc., in the New Year for the whole business.

Cr May advised she looks forward to the changes in the New Year to Councils reporting.
Committee Resolution

THAT the Officer's Recommendation be adopted.

Moved Cr Casey  Seconded Cr Paton  CARRIED

9.4  MIDDLE CREEK DAM - EMERGENCY ACTION PLAN

Author  Director Engineering & Commercial Infrastructure

Purpose

To make Council aware of the Middle Creek Dam (MCD) Emergency Action Plan (EAP).

Background/Discussion

Middle Creek Dam is located off Middle Creek Road, approximately 12 kilometres west-southwest of the township of Sarina. The dam was constructed between 1959 and 1961 and has a full supply capacity of 1,120 ML. The dam was constructed to subsidise the water supply to both the Sarina Shire Council and sugar processing industries (now Wilmar) in Sarina.

Between October 2015 and January 2016, Council carried out extensive upgrade works to the embankment and spillway at Middle Creek Dam. The current spillway discharge capacity of the dam meets a 1 in 2000 AEP (Annual Exceedance Probability) flood.

The main purpose of the Emergency Action Plan is directed towards the safety of Population at Risk (PAR) in areas downstream of Middle Creek Dam. Those areas downstream of Middle Creek Dam are likely to be inundated with floodwater during exceptional rainfall events and this situation would be compounded should structural embankments at Middle Creek Dam fail.

Inundation Modelling has been carried out and Council is aware of areas where there is PAR.

This Emergency Action Plan describes the coordination of necessary actions by the Council and its officers to provide timely notification to the Queensland Police Service, Mackay Local Disaster Management Group (LDMG) and affected persons in the event of an emergency situation at Middle Creek Dam.

Twenty five (25) residential properties could be impacted by flood inundation out of Middle Creek Dam. Inundation impact on these properties could amount to flooding up to 300mm AGL. The actual number of Population at Risk (PAR) would be dependent on flooding location within properties. All 25 properties will be contacted by landline or mobile phone at the time of any prescribed incident.
Several members of Council, Councillors, Police, Emergency Services and members of the private sector would be involved should the Emergency Action Plan be activated. All parties mentioned within the document should be aware of roles and responsibilities.

Consultation and Communication

Consultation on the Middle Creek Dam EAP has occurred with the following list of stakeholders:

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Position</th>
<th>Person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Disaster Management Group</td>
<td>Chair</td>
<td>Cr Greg Williamson</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cr Amanda Camm</td>
</tr>
<tr>
<td>Local Disaster Management Group</td>
<td>Local Disaster Coordinator</td>
<td>Jason Devitt</td>
</tr>
<tr>
<td>Mackay Regional Council</td>
<td>Chief Executive Officer</td>
<td>Craig Doyle</td>
</tr>
<tr>
<td>Mackay Regional Council</td>
<td>Director Engineering and Commercial Infrastructure</td>
<td>Jason Devitt</td>
</tr>
<tr>
<td>Mackay Regional Council</td>
<td>Manager Water &amp; Wastewater Treatment</td>
<td>Stuart Boyd</td>
</tr>
<tr>
<td>Mackay Regional Council</td>
<td>Water Treatment Plant Supervisor (Dam Operator)</td>
<td>Ross Turner</td>
</tr>
<tr>
<td>Department of Energy and Water Supply</td>
<td>Dam Safety Regulator</td>
<td>Peter Allen</td>
</tr>
<tr>
<td>Mackay Regional Council</td>
<td>Emergency Management Team</td>
<td>Anthony Lee</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bruce Chester-Master</td>
</tr>
<tr>
<td>Queensland Police Service Sarina</td>
<td>Officer in Charge</td>
<td>Jeremy Novosel</td>
</tr>
<tr>
<td>Mackay District Disaster Management Group</td>
<td>Executive Officer</td>
<td>Paul Algie</td>
</tr>
<tr>
<td>Queensland Fire and Emergency Service</td>
<td>Emergency Management</td>
<td>Carla Adams</td>
</tr>
</tbody>
</table>

Resource Implications

The Middle Creek Dam EAP has been developed and delivered using internal resources to there are no additional resource implications.
**Risk Management Implications**

The main purpose of the Emergency Action Plan is directed towards the safety of Population at Risk (PAR) in areas downstream of Middle Creek Dam. Those areas downstream of Middle Creek Dam are likely to be inundated with floodwater during exceptional rainfall events and this situation would be compounded should structural embankments at Middle Creek Dam fail.

Twenty five (25) residential properties could be impacted by flood inundation out of Middle Creek Dam. Inundation impact on these properties could amount to flooding up to 300mm AGL. The actual number of Population at Risk (PAR) would be dependent on flooding location within properties.

**Conclusion**

This document has been prepared in accordance with directives from Dam Safety, Water Planning and Regulation, Department of Energy and Water Supply (DEWS) and is essential for forward planning of any emergency situations that may arise at Middle Creek Dam.

The Emergency Action Plan describes the coordination of necessary actions by the Council and its officers to provide timely notification to the Queensland Police Service, Mackay Local Disaster Management Group (LDMG) and affected persons in the event of an emergency situation at Middle Creek Dam.

Several members of Council, Councillors, Police, Emergency Services and members of the private sector would be involved should the Emergency Action Plan be activated. All parties mentioned within the document should be aware of roles and responsibilities.

The Middle Creek Dam Emergency Action Plan was endorsed at the Local Disaster Management Group Meeting on 10 October 2016. Upon receiving formal endorsement by Council, the report will be forwarded to DEWS.

**Officer's Recommendation**

THAT the report be received.

Director Engineering and Commercial Infrastructure (DECI) spoke to the report.

Cr May advised it was good to read in the Report that the poor mobile phone coverage in the Middle Creek Dam area has been taken into account in notifying residents before events.
Committee Resolution

THAT the Officer's Recommendation be adopted.

Moved Cr Bella  
Seconded Cr Walker

CARRIED

9.5  RENAMING OF ISIS COURT WITH A NAME TO HONOUR MACKAY RESIDENTS

Author  GIS Support Officer

Purpose

To rename the road name, Isis Court in Rural View, a name sensitive to today’s society, to ‘Barkeri Court’ in honour of two Mackay men for their marine life observations.

Background/Discussion

Under the provisions of section 60 (Control of Roads) of the Local Government Act 2009 (Act), Council has amongst other powers the ability to name and number roads.

In 2014 Council’s Manager Development Engineering approached the Geographic Information Service (GIS) area who co-ordinates the naming and number of roads and streets about the possibility of renaming Isis Court in the Avalon Estate in Bucasia. The approach was made also on the basis of the Developer of the estate having raised it was an issue.

In July 2015 GIS received a letter from a Mrs Jeanette Barker from Slade Point. She was requesting to have a street in the Mackay area named Barkeri in honour of her brother in law Paul Barker and her husband, Dave Barker.

The name Barkeri is that of a jellyfish called *Cyanea Barkeri* named by Dr. Lisa-ann Gershwin in honour of the two Barker brothers in 2010. Both men, originally from Brisbane moved to Mackay in 1968 and have been calling Mackay home ever since.

Below is a quote from Dr Gershwin’s paper, Medusae (Cnidaria) of Morton Bay, Queensland Australia. Memoirs of the Queensland Museum – Nature 2010 54(3) Page 90 refer 1

"The specific name, Barkeri, is in honour of Paul Barker, the Lifeguard Supervisor in the Mackay region, and his brother Dave, an avid fisherman, Paul and Dave know the marine life of the Mackay region comprehensively, and this intimate knowledge and keen observations have led to their finding many species new to science. It is a great honour to thank them by naming this conspicuous species after them".
Mrs Barker in her letter advised that –

Paul was now retired after 32+ years as a lifesaver. Paul went from a weekend volunteer to Lifeguard Supervisor for Mackay area; many locals would remember hearing his voice on the local radio for the daily beach report. Paul held this position full time for 16 years. In 1996 Paul received State lifeguard of the year, then in March 2007 he received State Lifeguard of the year for a second time. In 2007 our family was again made very proud when he received the award for Australian Lifeguard of the year.

Dave is now retired after 35+ years fishing the local Mackay waterways as a commercial fisherman. Not only was he providing fresh local produce to local seafood retailers but he was often repairing or making stinger nets for the local surf club to keep our beaches safe. When any research was underway he would use specially designed nets to capture the jellyfish in the area of sightings or stings.

Mrs Barker informed GIS that both men were gravely ill and that a confirmation regarding using this name would be greatly appreciated by the family.

Mrs Barker was advised that this name would be reserved for future use or when the next opportunity arose for a road to be renamed in the region.

Mrs Barker advised that her family was very happy with this, however not long after this news was received Mr Paul Barker passed away.

**Consultation and Communication**

Isis Court is a fairly new road in the Avalon Estate in Bucasia and there are only 2 residents who will be affected by this change. The other Lots are all owned by the Developer.

A letter was mailed to all the owners on the 24th August 2016, advising them of the proposed road name change and that they were encouraged to respond if this was not suitable. Only one response was received and this resident agreed to the name change but felt that naming a road after a jellyfish was not in keeping with the road names in the area. A response was sent explaining that the name is to honour the Barker brothers who had a species of Jellyfish named after them as well, with no reply received.

**Resource Implications**

- GIS Officer to revise and update all residents addresses on Councils database
- GIS Officer will advise the residents in writing of Councils decision and their new address details
- GIS Officer to arrange for the street signage to be replaced
- GIS Officer to advise all services in writing of the road name change, eg. Queensland Ambulance Service, Emergency Management Queensland, Australia Post, DNRM
Risk Management Implications

N/A

Conclusion

In keeping with Road Names Standards Australia, a road name should not be offensive, racist, derogatory or demeaning.

To rename this road name with a name that will honour men who have done so much for Mackay, is considered appropriate.

Officer's Recommendation

THAT the Committee supports renaming Isis Court to Barkeri Court.

FURTHER THAT –

1. Residents be advised of the change
2. Replacement street signage be arranged
3. Council’s databases be amended to reflect this change
4. All service delivery agencies of the change.

Committee Resolution

THAT the Officer's Recommendation be adopted.

Moved Cr Casey Seconded Cr Paton

CARRIED

10. TENDERS:

10.1 LEACHATE MANAGEMENT ASSET CAPITAL REQUEST

File No Hogan's Pocket
Author Waste Services Coordinator

Purpose

The purpose of this report is to request approval from Council for out of budget capital expenditure for additional leachate management assets at Hogan’s Pocket Landfill.

Operational Plan Linkage

5.3.1 Investigate and invest to extend the useful life of waste facilities.
**Background/Discussion**

Mackay Regional Council (Council) over the last few years has been renewing its suite of waste management contracts. The most significant of these contract transactions is the current tender for the bulk waste haulage and landfill operation. This contract review is in the final stages of evaluation and is programmed to be presented to Council at the 14 December 2016 Ordinary Meeting.

The services required under this tender includes, operating a bulk haulage fleet, loading at the Paget transfer station, transferring that waste to Hogan’s Pocket landfill and the operation of the landfill. This contract is to replace, substantially, the services currently undertaken in a similar contract MCC 2016-031 by Remondis Australia Pty Ltd. The substantive services for this contract are for two sites, Hogan’s Pocket Landfill and at the Paget Waste Management Centre, with the haulage component being between those two locations.

Under the existing service contract arrangements, the operational risk for leachate management at the landfill is fully priced within the contract, however leachate management is currently not priced separately and is bundled within the agreement’s schedule of rates.

Waste Services understands one of the key risks in operating a landfill in a tropical environment is managing water. Leachate is water that has come in contact with waste and must be managed to reduce the risk of pollution. As the Hogan’s Pocket Landfill develops the volume of leachate required to be managed increases commensurately. Whilst developing the market engagement plan, Waste Services anticipated escalated pricing and or departures around the acceptance of the leachate risk. For this reason the tender was structured to obtain best value offers (lowest total cost over the contract life cycle) from the market allowing tenderers to apply their expertise in developing an alternative offer to optimise leachate management.

Waste Services understands there are a variety of options available to respond to the generation of excess leachate and it was recognised that the industry sector could bring significant expertise to managing the inter-relationship between landfill operations, leachate generation rates and leachate management / disposal. The tender provided a baseline pricing option that must be tendered as part of any offer and that was a business as usual operational offer. The second option included a capital works solution combined with operational management. The theory was that the mandatory baseline pricing would demonstrate return on investment for any innovative industry proposed capital works solution. The proposed procurement model was endorsed by the Water and Waste Advisory Board on 15 February 2016.

Upon review of the tendered offers, the tender evaluation panel was unable to assess the four offers for leachate management services, as each tenderer elected to price for risk in a different way. The majority of submissions also contained significant departures around the leachate risks. What was unexpected during the evaluation was that the market failed to provide any real innovative alternative capital works solutions other than additional storage by one respondent. In addition to this outcome, all offers
showed a significant escalation in pricing between 8 and 20% against the current pricing.

Recognising the variability, Waste Services sought to reduce the uncertainty for the market. AECOM was engaged to develop a concept for a leachate infrastructure solution. An internal review of offsite leachate disposal was also undertaken and an optimised approach has been developed collectively by Water and Waste Services (for disposal at Mackay South Water Recycling Facility).

Waste Services also responded to a number of risks that were highlighted in tender responses, by delaying commencement of filling in cell 3 and delaying the contract commencement from 12 February 2017 to 1 July 2017. This opportunity could occur due to the lower filling rate of the existing landfill cell that is currently occurring.

Subsequently, responding to the escalated pricing, Waste Services disaggregated the fixed price schedule and included an ‘if ordered’ leachate disposal (per litre) line item, removing the unacceptable risk to the market.

Accordingly, the tender responders were advised of the above mentioned changes and were offered the Council provided capital solution. The tender responders have now provided submissions with more transparency to leachate management costs along with reduced statement of departures as the risk allocation has far more clarity than was originally offered.

The Council proposed capital solution (this proposal) involves construction of an additional 15ML covered leachate storage pond augmenting onsite storage to a total of 25ML, providing sufficient onsite buffer storage to manage any leachate production arising during the wettest years (up to at least the 90th percentile wet year). The infrastructure design will be performed by AECOM (consulting design engineers) following on from conceptual design already completed. The estimated cost of the project is $2,000,000. The delivery will be outsourced through a request for tender to suitable qualified contractors. Waste Services will provide project management with the assistance of Council Civil Projects and a contract superintendent’s representative. Construction quality assurance will be delivered through a third party consultant as per the Queensland landfill guidelines.

The below tabulated investment analysis demonstrates project viability based on an anticipated positive cost differential between the baseline offer and the amended Council capital works offer. A positive Net Present Value (NPV) is maintained even when sensitivity analysis is applied to leachate volume and interest rates. The analysis has been performed over the minimum contract term (8 years) however two additional one year options are imbedded in the contract (10 years). The asset will continue to add value beyond the contract term and this is indicated over the 30 year term (allowing for a $1,000,000 mid-life refurbishment).
Table 1 - Investment Analysis Summary

<table>
<thead>
<tr>
<th></th>
<th>Project Team</th>
<th>8 years</th>
<th>10 years</th>
<th>30 years</th>
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</thead>
<tbody>
<tr>
<td>Investment $</td>
<td>$2,000,000</td>
<td>$2,000,000</td>
<td>$3,000,000</td>
<td></td>
</tr>
<tr>
<td>Pay back period (years)</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Net Annual savings</td>
<td>$583,500</td>
<td>$583,500</td>
<td>$583,500</td>
<td></td>
</tr>
<tr>
<td>Net present value</td>
<td>$1,929,200</td>
<td>$2,756,628</td>
<td>$8,855,567</td>
<td></td>
</tr>
<tr>
<td>Internal rate of return</td>
<td>26%</td>
<td>28%</td>
<td>31%</td>
<td></td>
</tr>
</tbody>
</table>

In summary, the expected pay back of the $2M capital over the contract term is less than 3 years and results in an annual saving of $583,500 in operational costs as compared with the original tender offerings.

Consultation and Communication

Consultation was conducted externally with Department of Environment and Heritage Protection, AECOM design engineers, Council's transaction consultant (Infrastructure Transaction network), as well as the Water and Waste Advisory Board. Internally consultation with; Civil Projects, procurement & Plant, Water Treatment, Business Services and Financial Services.

Resource Implications

Currently there is no approved budget for this estimated $2M project. If approved the funding of this project will be allocated from the Waste Fund Reserves and will be recognised as part of the December Budget Review process. The capital expenditure required for the project will be required over FY16/17 and FY17/18. The estimated cash flow is $0.5M expenditure in FY16/17 and $1.5M in FY17/18.

Overall Council reduced its estimated capital spend for 2016/17 by approximately $4.5M as part of the September 2016 quarterly budget review. Therefore this additional $2M of out of budget project expenditure can be covered from within the total agreed 2016/17 capital budget without any changes to the budget total spend.

Risk Management Implications

A risk assessment was carried out (using the Council corporate risk framework) to assess the risk if the project does not proceed. The results demonstrated extreme and high risk drivers relating to environment, reputation and economic as detailed below:

- Economic (Extreme risk) potential environmental remediation costs ≥ $1,000,000. In addition increased service costs ≥ $1,000,000.
- Environment (High risk) potential for serious local discharge of pollutant requiring remedial action.
- Reputation (Extreme risk) potential for wide community concern and significant adverse media coverage in the event of an uncontrolled pollution event.

It is important to note that the risk allocation for leachate management under the proposed negotiated transaction outcome is moving away from a fully priced contractor
risk to a framework detailing a strict management regime with specific key contract performance indicators. When necessary leachate can be tankered offsite to Mackay South Water Recycling Facility at a scheduled per litre transport fee payable to the contractor with a known internal (Council) transaction for disposal per litre. Based on detailed water balance modelling, Waste Services informed position allocates 5ML of offsite disposal. This allocation has been included in the detailed financial analysis and sensitivity analysis still shows project viability even when significant increases to leachate volumes are applied.

As the site continues to develop over future stages leachate management will continue to evolve. This now known baseline cost will enable Council to review and compare any new or emerging leachate treatment technology on its commercial merits at any time during the contract term.

**Conclusion**

Waste Services now has a good understanding of the Hogan’s Pocket site water balance through extensive modelling, live telemetry analysis and established operating history. Failing to provide additional onsite ‘buffer storage’ represents a significant risk to Council as robust conceptual modelling indicates that uncontrolled leachate discharge could occur during high rainfall periods. Waste Services understands that ultimately, there is no one ‘silver bullet’ for leachate management, particularly in a tropical location. Consequently Waste Services are recommending moving forward with a multifaceted leachate management contract regime focusing on; minimisation, active face evaporation, limited recirculation, adequate onsite buffer storage, and offsite tankering of leachate as required.

Waste Services have extensively reviewed the leachate management options available through the development of a leachate management strategy, novel approach to the landfill and waste haulage transaction as well as optioneering the Council concept capital solution and business case development. This significant work and active market engagement has demonstrated that existing, new and emerging technology options designed to treat leachate did not satisfy our evaluation criteria and/or included multiple uncertainties. The process has however demonstrated that the capital solution and management methodology proposed for adoption is the most cost-effective and lowest risk option currently available to Council.

The complex procurement process and proposed ‘development capital’ request represents success across the entire transaction lifecycle. The detailed capital investment analysis demonstrates a strong 26% internal rate of return over the minimum 8 year term, whilst leveraging an overall significantly higher level of operational performance for 0% increase in ongoing service contract costs.
Officer's Recommendation

THAT the Committee recommend to Council that it resolves to support the following recommendations:

A. THAT Council approve the project funding of $2,000,000 for the construction of an additional 15ML leachate storage pond at Hogan’s Pocket Landfill over the Financial Year 2016/2017 and Financial Year 2017/2018.

B. AND THAT a budget allocation of $500,000 be approved from the Waste Reserves Fund as part of the December 2016 budget review.

C. AND FURTHER THAT the remaining $1,500,000 be allocated as part of the 2017/2018 budget cycle.

Director Engineering and Commercial Infrastructure (DECI) spoke to the report.

Cr Bonaventura queried where the recommended funding would come from.

The Chief Executive Officer advised council approved a transfer from capital to reserves of ~$4.8M in October and this out of budget project would be funded from that without altering the total capital budget for 2016/17 approved by Council.

Cr May advised it was very important to note that the amount invested in capital produces the ongoing cost saving which most Councillors have been conscious off and this is great to see this occurring.

Cr Casey advised only $500,000 will be allocated from Reserves in 2016/17 and the balance will be reviewed in the 2017/18 budget cycle.

The Mayor congratulated the CEO, DECI and his team for the very commercial way in which they have approached this with savings in mind.

Committee Resolution

THAT the Officer's Recommendation be adopted.

Moved Cr Paton                     Seconded Cr Casey

CARRIED
10.2 **MRC 2017-008 PROVISION OF GRAVEL CRUSHING OPERATIONS**

**File No**  MRC 2017-008 Provision of Gravel Crushing Operations  
**Author**  Director Engineering & Commercial Infrastructure  

**Purpose**

To present to Council for approval, tenders submitted for MRC 2017-008 Provision of Gravel Crushing Operations.

**Background/Discussion**

Mackay Regional Council (Council) issued a Request for Tender (RFT) inviting submissions for the production of unsealed road maintenance gravel at fourteen pits within the Mackay region. It is estimated that Council will require approximately 45,000m$^3$ per annum, however actual quantities will be dependent upon budget allocations, scope and programming of Council works. The tender documentation details Council’s needs will likely vary from a minimum of 20,000 m$^3$ to a maximum of 70,000m$^3$ over a 12 month period.

The successful contractor is required to win, process (by the use of impact crusher), supply and incorporate water (in the form of dust control on and around the crusher) and stockpile materials at any of the fourteen quarry pits currently operated by Council within the region.

The current contract for the provision of gravel crushing operations expires on the 31st January 2017. The proposed commencement date for this contract is the 1st February 2017, for a 2 year period with the option of one (1) year extension.

Tenders were invited on the 20th August 2016, via the QTender website and advertised locally in the Daily Mercury.

The following submissions were received by the closing time of 10.00am on the 13th September 2016:

- Oakdare Holdings Pty Ltd  
  Townsville Q  
- Crush-It Pty Ltd  
  Sarina Q  
- Vella’s Plant Hire Pty Ltd  
  Farleigh Q  
- Katcrush Pty Ltd  
  Sarina Q  
- BRW Transport & Quarries Pty Ltd  
  Victoria Plains Q  
- Calibre Earthmoving & Environmental  
  Rockhampton Q  
- Summit  
  Mackay Q  
- W.Wall & Sons Pty Ltd  
  Bowen Q  
- Rapid Crushing Pty Ltd  
  Maddington WA

An initial compliance check was conducted on the 14th September 2016 to identify submissions that were non-conforming with the immediate requirements of the RFT.
This included compliance with contractual requirements and provision of requested information.

All submissions were progressed through to the qualitative criteria assessment on the basis that all terms and conditions and mandatory requirements of the RFT had been met.

The Evaluation Panel met on the 20th October 2016 to undertake the evaluation of all submissions.

During this meeting, Rapid Crushing Pty Ltd, W.Wall & Sons and Summit were excluded from any further review, due to their higher pricing. That is, they were not considered to be providing ‘value for money’ as they were not offering any more advanced experience or knowledge for the higher pricing. That is, the five lowest priced tenders were evaluated in detail.

Tender Information Requests (TIR) were issued to Oakdare Holdings Pty Ltd, Katcrush Pty Ltd, Crush-It Pty Ltd and Vella’s Civil Pty Ltd:

- Seeking confirmation that the tenderers understood that there was no guarantee of continuity of crushing and that gravel requirements were on a replenishment basis only;
- to request details pertaining to their quarrying equipment; and,
- to request information on their accreditations with Department of Mines, Quarries and Safety Management Systems.

Responses were received from all parties.

The Evaluation Panel reconvened on the 17th November 2016 to review the responses received to the TIR’s and complete scoring based on the key criteria.

Tenderers were assessed against the nominated qualitative criteria. The weighting attributed to each qualitative criteria was:

| a) Relevant Experience | 25% |
| b) Key personnel skills and experience | 25% |
| c) Tenderers' Resources | 30% |
| d) Demonstrated Understanding | 20% |

Generally, all five companies were considered to have the experience and knowledge to perform the services required, but not all companies had the required equipment, processes and management systems to provide the services as specified.

Crush-It Pty Ltd, Katcrush, Calibre and Vella’s Civil did not submit the specified crushing equipment, required for the varying natural materials that exist at the quarries. Crush-It and Katcrush also did not submit the minimum requirements for a safety management system. Crush-It and Katcrush were considered not suitable due to these non-conformances.
BRW Transport being the current gravel crushing contractor demonstrated a good understanding of Council requirements with personnel, suitable equipment, processes and safety management systems that minimised the risk to Council.

Oakdare demonstrated they had the personnel, equipment and systems however there is a concern they did not visit the quarry sites to develop a suitable understanding of the varying quarry conditions that would be encountered. Oakdare are a non-local company mobilising from the Townsville/northern region to manufacture the required quantities of gravel. Concern was expressed with their availability and flexibility to meet the potential changing demands and impacts associated with wet weather and natural disasters. These two issues present a moderate risk to Council in terms of meeting Council’s demands in a timely manner.

Calibre demonstrated that they had the personnel, equipment, processes and systems to meet the requirements of the specification. In addition they met with Council’s Site Senior Executive (SSE) and inspected all the pits to understand the challenges of the natural materials to be processed. They are also a non-local company that would be required to mobilise from the Rockhampton area to manufacture the required quantities of gravel. Concern was also raised with their availability and flexibility to meet the potential changing demands and impacts associated with wet weather and natural disasters.

In order to obtain a comparative annual cost of the contract, a cost comparison was conducted by calculating the sum of:

- Tenderers’ rate for establishment to Mackay Region (where applicable) and
- Tenderers’ rate for establishment between quarry sites multiplied by the anticipated number of moves of 10 each year and
- Annual gravel production cost derived by multiplying the unit rate tendered by the annual estimated figure of 45,000m³ per annum.

The table below indicates the comparison of rates (excl GST):

<table>
<thead>
<tr>
<th>Tenderer</th>
<th>Lump Sum Price</th>
<th>Price Rank</th>
<th>Price Score</th>
<th>Qual Score</th>
<th>Total Score</th>
<th>Final ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRW Transport</td>
<td>$ 548,500.00</td>
<td>5</td>
<td>9.06</td>
<td>33.75</td>
<td>43.56</td>
<td>1</td>
</tr>
<tr>
<td>Crush-It</td>
<td>$ 444,950.00</td>
<td>1</td>
<td>10.00</td>
<td>19.00</td>
<td>29.60</td>
<td>5</td>
</tr>
<tr>
<td>Katcrush</td>
<td>$ 550,330.00</td>
<td>6</td>
<td>9.05</td>
<td>19.15</td>
<td>28.94</td>
<td>6</td>
</tr>
<tr>
<td>Calibre Earthmoving</td>
<td>$ 504,700.00</td>
<td>4</td>
<td>9.46</td>
<td>24.60</td>
<td>34.06</td>
<td>3</td>
</tr>
<tr>
<td>Oakdare Holdings</td>
<td>$ 455,000.00</td>
<td>2</td>
<td>9.91</td>
<td>27.45</td>
<td>37.36</td>
<td>2</td>
</tr>
<tr>
<td>Vella’s Civil</td>
<td>$ 498,000.00</td>
<td>3</td>
<td>9.52</td>
<td>20.40</td>
<td>30.60</td>
<td>4</td>
</tr>
<tr>
<td>Summit</td>
<td>$ 610,950.00</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>W.Wall &amp; Sons</td>
<td>$ 795,000.00</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Rapid Crushing</td>
<td>$ 1,105,170.00</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Lowest Price $ 444,950.00
Highest Price $ 1,105,170.00
It should be noted that the price score calculation has taken into account the local content concessions detailed in Council’s Procurement policy.

At the conclusion of the combined qualitative and price assessments, BRW Transport & Quarries Pty Ltd tender demonstrated best value for money and risk mitigation to Mackay Regional Council based on their demonstrated understanding of Council’s requirements, their experience, capacity and resources to provide the services to the specified quantity and quality as detailed in the RFT and their pricing.

**Consultation and Communication**

The evaluation of the tenders was conducted by:

<table>
<thead>
<tr>
<th>Soil Tester &amp; Quarry Supervisor</th>
<th>Civil Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance Co-ordinator – Civil Supervisor</td>
<td>Civil Operations</td>
</tr>
<tr>
<td>Supervisor Roads and Drainage</td>
<td>Civil Operations</td>
</tr>
<tr>
<td>Contracts Officer</td>
<td>Procurement &amp; Plant</td>
</tr>
</tbody>
</table>

**Resource Implications**

External contract resources are required to produce the unsealed road maintenance gravel needs as this is the most cost effective means. Council does not have such specialised crushing equipment.

The funding for the gravel to be manufactured under the contract is budgeted for in the unsealed road maintenance budget account.

**Risk Management Implications**

Council has developed a Quarry Management System to manage the significant risks associated with the blasting, winning and production of gravel materials in a quarry environment. The management system complies with legislative requirements. Successful external audit outcomes have been demonstrated.

In addition, it is critical that the successful contactor has an accredited safety management system complying with the specification n requirements in order to manage the significant risks associated with quarry operations.

**Conclusion**

That awarding the contract to BRW Transport & Quarries Pty Ltd represents the most advantageous outcome in terms of demonstrated value for money and risk management to Mackay Regional Council based on their demonstrated understanding of Council’s requirements, their experience, capacity and resources to provide the services to the specified quantity and quality as detailed in the RFT and their pricing.
**Officer's Recommendation**

THAT the schedule of rates tender submitted by BRW Transport & Quarries Pty Ltd for the anticipated annual cost of $548,500.00 (excl GST) be accepted for MRC 2017-008, Provision of Gravel Crushing Operations for a 2 year period with the option of 1 x 1 year extension.

Director Engineering and Commercial Infrastructure (DECI) spoke to the report and advised further assessment evaluation is required and asked if the report be deferred.

Cr Casey advised given the DECI advice that the report lay on the table.

**Procedural Motion**

THAT the Report lay on the table to be considered at the Ordinary Meeting of 14 December 2016.

Moved Cr Casey

CARRIED

10.3 **MRC-2016-034 WASTE HAULAGE AND LANDFILL SERVICES**

**File No**  MRC 2016-034 Waste Haulage and Landfill Services  
**Author**  Manager Waste Services

**Purpose**

To present to the Committee for recommendation to full Council for approval, tenders submitted for MRC 2016-034 Waste Haulage and Landfill Services.

**Background/Discussion**

Since 2014, Mackay Regional Council (Council) has been renewing its suite of waste management service contracts which were approaching their contract expiry.

The suite of contracts to be tendered during this period principally comprised:

- Waste and recyclables, including green waste, collection services;
- Material Recovery Facility (MRF);
- Resource Recovery Facility (RRF);
- Minor Transfer Stations – Operations;
- Minor Transfer Stations – Roll on Roll off (RORO);
- Construction & Demolition Waste Recycling;
- Green Waste Management;
- Paget Transfer Station Services; and
- Waste Haulage and Landfill Services.

Work has been undertaken to review all Waste Services operational contracts to assess the risks, improvement to the specifications to achieve improved performance and value for money from contractors and to increase the commercial market interest.

The most significant of these contract transactions is this current tender for the bulk waste haulage and landfill operation. The services required under this tender includes operating a bulk haulage fleet, loading at the Paget Transfer Station, transferring that waste to the Hogan’s Pocket landfill and the operation of the landfill (“Waste Haulage & Landfill Services”). This contract is to replace, substantially, the services currently undertaken under a similar contract. However, the services scope of the new ‘Waste Haulage and Landfill Services’ changes from the former Mackay City contract, principally by removing the haulage from minor transfer stations which has now been separately tendered.

The substantive services for this contract are at two Sites, Hogan’s Pocket Landfill and at the Paget Transfer Station with the haulage component being between those two locations. At the Landfill, the contractor is responsible for most of the operations on site excluding the landfill gas management system which is managed under a separate contract. At the Paget Transfer Station, the overall operations comprise consolidation and management of waste within the transfer station pit and load out operations for the bulk haul fleet.

Council is seeking to obtain best value offers from the market by allowing Tenderers to apply their expertise in developing options that potentially optimise the arrangements for two key aspects of the Services, being:

(i) Optimisation of the configuration of the haulage fleet; and
(ii) Optimisation of the leachate management system at the landfill.

The current bulk haulage of waste between Paget Transfer Station and Hogan’s Pocket Landfill currently represents more than half of the variable contract costs for the landfill and haulage operation. Accordingly, increasing the freight capacity for this bulk waste transport task can potentially influence productivity and efficiency. The tender has provided an option to price high volume multi-combination B-doubles vehicles whilst baseline pricing of conventional semi-trailers remains mandatory. Along with the objective of improving productivity, options to exploit the concessional mass limits transport regulations were also included.

The other option explored was an optimised approach to leachate management. Council’s Waste Services understands there are a variety of options available to respond to the generation of leachate in excess of on-site disposal capacity and it was recognised that the industry sector could bring significant expertise to managing the inter-relationship between landfill operations, leachate generation rates and leachate management / disposal.
1. The tender provided a baseline pricing option that must be tendered as part of any offer and that was a business as usual operational offer which incorporated compulsory additional operational measures as compared to the practices under the current contract; and
2. The second option included a capital works solution combined with operational management. In adopting this approach to tendering, the mandatory baseline pricing would demonstrate the return on investment for any innovative industry proposed capital works solution.

In each case, it is recognised that the optimum solution may involve capital investment by Council; and accordingly Council is implementing a tender response and tender evaluation process that it expects will allow the overall best value solutions to be identified and delivered. The capital investment solution for additional leachate storage is subject to a separate council report for consideration.

This tender is for the load-out and haulage of bulk wastes, which also includes the operation of the Hogan’s Pocket landfill, is being tendered concurrently by Council with the tender for the operation of the Paget Transfer Station. Although these are not separable parts tenders, Council noted to the market that the operations at Paget would be jointly located and, as such, Council welcomed submissions from Tenderers which offer discounted rates on the Paget Transfer Station contract should the Tenderer be successful in securing this tender.

The contract for the Services is principally a ‘schedule of rates’ contract, with provisions for reimbursement of expenditure on significant asset maintenance items where that work is required on the assets owned by Council but maintained by the Contractor.

The term of the contract is structured so that it will coincide with the end of term of other contracts at the Paget Transfer Station and will be 8 years from commencement plus two options each of a one year extension at Council’s discretion on the same terms. The Services Commencement Date is scheduled for Sunday 1st July 2017 and initial end of term on 30th June 2025, unless the 1 year extensions are implemented by Council.

Tenders were invited on the 27 February 2016, via Queensland Governments Qtender website and advertised in the Daily Mercury.

The following submissions were received by the closing time of 10.00am Wednesday 4 May 2016

<table>
<thead>
<tr>
<th>Tenderer</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleanaway Pty Ltd</td>
<td>Mackay</td>
</tr>
<tr>
<td>Haber Excavations Pty Ltd</td>
<td>Mackay</td>
</tr>
<tr>
<td>Remondis Australia Pty Ltd</td>
<td>Mackay</td>
</tr>
<tr>
<td>Suez Recycling and Recovery Pty Ltd</td>
<td>Mackay</td>
</tr>
</tbody>
</table>

An initial compliance check was conducted on the 13 May 2016 to identify submissions that were non-conforming with the immediate requirements of the Request for Tender
(RFT). This included compliance with contractual requirements and provision of requested information.

All submissions were progressed through to the qualitative criteria assessment on the basis that all terms, conditions and mandatory requirements of the RFT had been met.

During the evaluation, tenderers were assessed against the nominated qualitative criteria. The weighting attributed to each qualitative criteria was:

a) Organisational Experience and Referees 20%
b) Tenderer’s Price 50%
c) Proposals For the Services 20%
d) Staffing and Training 10%

The qualitative criteria assessment was carried out by the Evaluation Panel over a number of meetings, including discussion held with external consultants. Meetings were as follows:

- 6 June 2016;
- 2 August 2016;
- 3 August 2016;
- 8 September 2016; and
- 21 November 2016.

The submitted schedule of rates pricing excluding GST, per annum are:

<table>
<thead>
<tr>
<th>Tenderer</th>
<th>Total schedule of rates price per annum (excluding GST)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleanaway Pty Ltd</td>
<td>$5,018,224.25</td>
</tr>
<tr>
<td>Habers Excavation Pty Ltd</td>
<td>$5,315,589.77</td>
</tr>
<tr>
<td>Remondis Australia Pty Ltd</td>
<td>$5,716,779.02</td>
</tr>
<tr>
<td>Suez Recycling and Recovery Pty Ltd</td>
<td>$5,137,071.29</td>
</tr>
</tbody>
</table>

It should be noted that the above submissions contained significant statement of departures associated with their submitted prices.

In addition to the above conforming submissions, Remondis Australia Pty Ltd also provided an alternative non-conforming submission, however this submission was not evaluated further, as it fundamentally altered the basis that this tender was approved to be issued. It would have required Council to go back out to all respondents to fundamentally resubmit their proposals. This would have added the additional complexity and time to evaluate, and possibly delay award further.

During the evaluation numerous Tender Information Requests (TIR) were issued to ensure that the evaluation panel were able to assess the submission correctly. All responses were received within the relevant timeframes addressing the queries / clarification or additional information requested.
The evaluation panel and technical advisors reviewed submission for MRC 2016-034 Waste Haulage and Landfill Services.

The tender highlighted Council’s willingness to view various options in regards to two key aspects. These aspects were:

1. Optimisation of the configuration of the haulage fleet; and
2. Optimisation of the leachate management system at the landfill.

All options submitted by tenderers were reviewed in detail with the view to achieving maximum benefit to Council.

The evaluation panel had a particular interest in how each tenderer detailed the anticipated management of leachate at Hogan’s Pocket Landfill site. This area in particular contains the potential for major risk factors associated with this tender. Upon review of the tendered submissions, the tender evaluation panel was unable to assess the four submissions for leachate management services, as each tenderer elected to price for risk in a different way.

The majority of submissions also contained significant departures around the leachate risks. What was unexpected during the evaluation was that the market failed to provide any real innovative capital works solutions other than additional storage by one respondent. In addition to this outcome, all submissions showed a significant escalation in pricing ranging between 10 and 25% against the current pricing.

Recognising the variability, Waste Services sought to reduce the uncertainty for the market. AECOM was engaged to develop a concept for a leachate infrastructure solution on behalf of Council. The tenderers were then provided with the opportunity to revise their submission in relation to the leachate management, which in turn provided further transparency regarding leachate management costs along with a reduced statement of departures by respondents as the revised risk allocation has far more clarity than that was originally submitted.

The consolidation and bulk haulage of waste between Paget Transfer Station and Hogan’s Pocket Landfill represents a significant proportion of variable contract costs for the landfill and haulage operation. Increasing the freight capacity for this bulk waste transport task can significantly influence productivity and efficiency.

Council’s Waste Services had undertaken a significant review of the haulage task as a component of the pre-tender work. The modelling indicated a positive cost differential between B-double haulage and the current semi-trailer fleet demonstrating a positive return on investment for the estimated $690,000 required infrastructure upgrades for the larger vehicles. Whilst some of the tender responses confirmed Council’s modelling, the overall preferred tenderers option (overall lowest cost offer) demonstrated only marginal viability over the contract lifecycle. In addition, in order to obtain approval for use of Hogan’s Pocket road (the landfill access road) as an approved multi-combination route, Hogan’s Pocket Road would need to be closed as a public road. During the tender period a key stakeholder (immediate neighbour) had objections to the proposed closure placing further risk on the options viability. Council’s Waste Services have not been able to clearly demonstrate the viability of the B-double option and therefore are
making recommendations to continue the use of high productivity semi-trailer haulage for this contract term.

During the evaluation TIR’s were issued to all tenderers requiring confirmation or additional information to their submissions. Key factors required were:

- The extension of the current contract:
  - to allow for alternative timing for the commencement to the filling of Cell 3; and
  - the commencement of the new contract outside the wet season to reduce leachate risk to both current and new contractor.
- Leachate management solutions.
- Contractual and technical statement of departures.

All tenderers were invited to attend individual meetings with the evaluation panel and technical advisors on either the 21 or 22 September 2016. Individual agenda listing items to be discussed were issued as part of a TIR. This included:

- contractual and technical statement of departures;
- leachate management; and
- transport options.

All tenderers attended their allocated meeting and provided the additional information, responses as per Council request. They also had the opportunity to discuss concerns they may had regarding this tender. Following these meetings all tenderers were issued discussions points and requests for information relating to any material matters arising during these meetings.

It should be noted, that all respondents stated that they will perform all management and service operations directly, with the exception of Suez Recycling and Recovery Pty Ltd, as they will be subcontracting their landfill operations to Select Civil Pty Ltd. Suez Recycling and Recovery Pty Ltd have a long term arrangement in subcontracting to Select Civil Pty Ltd in the performance of the landfill operations on their behalf and currently have them engaged at six landfills nationally. As part of the evaluation process, Select Civil Pty were evaluated for their component of Suez Recycling and Recovery Pty Ltd response and also were included in the compliance elements of the process.

Throughout the evaluation period tenderers were advised of the following changes and general requirement:

- alternation to Cell 3 filling plan;
- the extension of the commencement date to 1 July 2017;
- the proposal for Council suppling additional leachate management assets (leachate storage); and
- key safety, environmental and operation risks.
Based on these changes, all tenderers were given the opportunity to review their submitted schedule of rates pricing.

The revised schedule of rates price excluding GST per annum are as follows:

<table>
<thead>
<tr>
<th>Tenderer</th>
<th>Original schedule of rates price per annum (excluding GST)</th>
<th>Revised schedule of rates price per annum (excluding GST)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleanaway Pty Ltd</td>
<td>$5,018,224.25</td>
<td>$5,183,854.03</td>
</tr>
<tr>
<td>Habers Excavation Pty Ltd</td>
<td>$5,315,589.77</td>
<td>$4,904,797.54</td>
</tr>
<tr>
<td>Remondis Australia Pty Ltd</td>
<td>$5,716,779.02</td>
<td>$6,456,446.80</td>
</tr>
<tr>
<td>Suez Recycling and Recovery Pty Ltd</td>
<td>$5,137,071.29</td>
<td>$4,378,571.29</td>
</tr>
</tbody>
</table>

The movement of pricing reflects the individual respondents' methodology for their submissions. Some respondents required changes to resourcing and methodology, whilst others were able to utilise the opportunity to introduce greater efficiency, while improving the mitigation of risk and achieving the performance objectives of the tender.

It should be noted that the revised tender prices received are contingent on Council providing an additional 15ML leachate storage facility on site which is subject to separate approval by the Infrastructure Services Committee via another agenda report.

At the completion of all TIR’s for technical and commercial queries the evaluation panel met to review all information provided for both tenders. A summary of the final review are:

- Cleanaway Pty Ltd have extensive experience in waste management and landfill operations. Their submission highlighted a detailed understanding of associated risks and addressed issues in bulk handling and landfill operations including leachate. Cleanaway Pty Ltd proposed options which offered a low risk to Council for the haulage component their submitted and leachate management system is acceptable.

- Haber Excavation Pty Ltd offered extensive experience in the haulage component and support work to Council at current and former waste operation sites. Their response highlighted that personnel of Haber Excavation Pty Ltd have minimal experience in dealing with leachate management, however they provided details of consultants supporting in executing for this work.

- Remondis Australia Pty Ltd details considerable extensive experience in transport haulage and landfill operations. As they are the incumbent contractor for the waste haulage and landfill operations for Council, this was highlighted along with their proposal for services for the new contract.

- Suez Recycling and Recovery Pty Ltd provided details of current waste haulage and landfill operations contracts including other Local Councils in Queensland. Their proposal offered to Council clearly articulates an understanding of the risks
and management required. Their response shows a detailed transport haulage offer and leachate management system that reduces Council’s risk.

Based on the quality scores from the evaluation, Suez Recycling and Recovery Pty Ltd are the recommended tenderer based on their resources, experienced management personnel, having an overall understanding of the major risk factors to both Suez Recycling and Recovery Pty Ltd and Council surrounding these services and price.

The evaluation of the tender was conducted by:

- Manager Waste Services – Waste Services
- Co-ordinator Waste Services – Waste Services
- Contract Co-ordinator – Procurement and Plant

Technical advisors to the evaluation panel:

- Transaction Consultant – Director, Infrastructure Transaction Network
- Technical Consultant – Associate Director, AECOM Australia Pty Ltd
- Legal Consultant – Principal, Yeang Lawyers
- Leachate Consultant – Director, Taft Engineering
- Transport Consultant – Director, U-RENT Pty Ltd

Consultation and Communication

Consultation was conducted between Waste Services and Procurement & Plant prior to the Request for Tender being released.

During the tender evaluation process the Chief Executive Officer, Director Engineering and Commercial Infrastructure, Chief Operating Officer, Manager Business Services, Manager Financial Services, Manager Procurement & Plant, were consulted by the tender evaluation panel members.

Resource Implications

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Contract MRC 2016-034</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contract Price for the first 12 months</td>
<td>$4,378,571.29</td>
<td><em>Suez Recycling and Recovery Pty Ltd, including an allocation of tankering 5,000,000L of leachate if required</em></td>
</tr>
<tr>
<td>Cost for leachate disposal at South Mackay Wastewater Plant</td>
<td>$175,000.00</td>
<td>Based on the disposal of 5,000,000L of leachate if required</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td><strong>$ 4,553,571.29</strong></td>
<td></td>
</tr>
<tr>
<td><strong>BUDGET</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waste Haulage and Landfill Services contract payments 2016/2017 Budget</td>
<td><strong>$ 4,576,375.26</strong></td>
<td>Based on the current contract rates and other variables for the full twelve months.</td>
</tr>
</tbody>
</table>
The difference between the current budget and the cost of the new contract and the new leachate disposal costs for the first 12 month period represents an overall 0.5% cost saving. This represents great value as the new contract has a significantly improved specification and performance management system which will deliver improved outcomes in the operation of this contract.

It should be noted that this long term services contract has variable components, which are the tonnes of waste disposed of and leachate tankered.

The tonnes of waste landfill variable fees are currently difficult to forecast due to the volatility of waste tonnage received for transport has actually decreased significantly in the past three years as compared to the period prior to that. However this variability is already incorporated in the existing agreement for this service.

The other variable component is the cost of tankering and the disposal of leachate. The previous contract did not have this cost as a separate rate and was bundled up with the service rate. With the new price schedule the cost of managing leachate is now known and will help Council to assess future options in the management of this risk and have a specific budget allocation for this risk, with an equivalent offset in budget allocation for contract payments to reflect the true cost of managing this service.

**Risk Management Implications**

The conditions of contract provide sufficient remedies to Council based on the risk profile of the services being provided.

The recommended respondents are required to provide all relevant insurances, work health and safety and other regulatory compliances prior to the executing of their contract. This includes:

- Product Liability - $20,000,000.00
- Public Liability - $20,000,000.00
- WorkCover - As required by law
- Plant and Equipment - Full Market Value

All respondents were required to demonstrate in their submissions on how they will manage safety, environment and quality elements of their management systems and these were assessed as part of the evaluation process.

In addition to this, other risk elements were considered by accessing external specialist advice on engineering, leachate management, legal, financial capacity, contract experience and heavy vehicle management. This information was also considered as part of the evaluation process.
As stated earlier a key risk to this long term services contract is for leachate management and this new agreement is altering the manner that this risk will be managed. The risk allocation is moving away from a fully priced contractor risk, to a framework detailing a strict management regime with specific key performance indicators. When necessary, leachate will be tankered offsite to Mackay South Water Recycling Facility at a scheduled per litre transport fee payable to the contractor with a known internal (MRC) transaction for disposal per litre. Based on detailed water balance modelling, Waste Services informed position allocates 5,000,000L of offsite disposal.

As part of the leachate management risk analysis, the site water balance model has been developed with a commonly used industry standard Monte Carlo simulation software. While the actual elements of leachate generation are highly variable and complex, it is relatively simple to conceptualise it with the following formula:

\[ \text{Leachate (L)} = \text{Rainfall over area (R)} - \text{Stormwater runoff (SR)} - \text{Evapotranspiration (ET)} - \text{Waste field storage capacity (WS)}. \]

The model incorporated the natural variability of climatic data in the model process by using a large historical Bureau of Meteorology dataset. The model points towards approximately 5,000,000L being required to be tankered offsite annually. In early operational years this might be slightly higher and later cell development stages slightly lower. In dry years, tankering may be reduced or even eliminated. Whilst the onsite storage ‘balances’ during normal conditions, consecutive high rainfall years, could result in significant volumes tankered offsite. All financial modelling for this contract have been developed around the model assumptions of 5,000,000L per annum tankered offsite.

Another key element of this new contract will be the improved Performance Management System. This system stipulates key performance indicators that the contractor must achieve. If the contractor fails to meet the agreed key performance indicator, then the payment fee can be adjusted. The agreed key performance indicators include landfill compaction efficiency, day cover utilisation, litter management, access to dispose waste into the transfer station pit and the failure to report key safety and environmental incidents.

In addition to this, Suez Recycling and Recovery Pty Ltd response included a stretch target for achieving a higher level landfill compaction efficiency. Their response is if this stretch target is achieved then a positive fee adjustment is made in favour to Suez Recycling and Recovery Pty Ltd. A cost benefit analysis was undertaken by Water and Waste Services and it demonstrated that, if the stretch target is achieved, Council will have a greater benefit with deferral of capital and reduction of operational costs, that is the benefit will exceed the positive price adjustment to the contractor.

**Conclusion**

The awarding of the contract represents a significant step change in the way that the Council will be managing the Waste Haulage and Landfill Services that it is responsible for. The new agreement will introduce vastly improved operations due to the enhanced
specification and performance management system, along with clarity around the inherent risks in operating the service, particularly with leachate.

That awarding the contract to Suez Recycling and Recovery Pty Ltd represents the most advantageous outcome and demonstrated value for money to Mackay Regional Council, due their vast knowledge of landfill operations, waste haulage and their proposed management plans.

**Officer's Recommendation**

THAT the Committee endorses the report and recommends to Council that the following recommendations are supported:

A. THAT Council award contract MRC 2016-034 to Suez Recycling and Recovery Pty Ltd commencing 1 July 2017 for an 8 year contract with the option of 2 x 1 year extensions for the schedule of rates total, subject to indexation, for $4,378,571.29 excluding GST.

B. FURTHER THAT Council accepts the submission by Suez Recycling and Recovery Pty Ltd to amend the Performance Management System to incorporate a fee adjustment for achieving a Landfill Compaction Efficiency ratio as agreed to in the Tender Information Request.

Director Engineering and Commercial Infrastructure (DECI) spoke to the report.

Cr May advised this is only a recommendation, as the tender is over $2M and approval is required at the Ordinary Meeting for this tender.

Cr Bonaventura queried whether a copy of the scoring matrix could be provided. Also expressed his concerns in relation to the current contractor increasing their tender quote and is there a reason for this increase.

DECI advised there were a number of RFI's that went back and it was not just the leachate that was the governing factor that drove the revised provisions. Officers have undertaken a detailed review of the pricing and are confident that it reflects a *like for like* in relation to price from all of the tenderers.

Cr Bonaventura queried if the current tenderer has made an error will any adjustments be made.

DECI advised the pricing is fixed and there are two (2) components, the fixed operating costs and the variable costs that fit around the amount of tonnage received. The risk sits with the contractor in relation to the prices once they are locked in.

The Mayor advised the contract price should have "per annum" after the amount and the Committee Resolution should be updated.

Cr Bella advised the operation of the Paget Station is split from the other components and queried if any thought was given to the splitting of the haulage and the
management of Hogans Pocket. A split contract gives a company the opportunity to tender for a single facet and believes there are a number of local companies who could tender for this part and it would increase the competitive mix.

Cr Bella also queried given the fact that the region is facing some possible economic challenges why is there a potential for a bonus to be paid to the awarded tenderer if they exceed their compaction KPI and would like an evaluation of possible costs and outcomes with regard to the bonus.

DECI advised considerable work has been undertaken in reviewing these contracts and believes the interface risks with multiple contracts increases Council risks significantly. DECI believes having one contract is the best net outcome for the ratepayers of the region.

DECI advised he will provide the costings behind the possible bonus, before the Ordinary Meeting next week, with the better compaction achieved providing a benefit in relation to the amount material placed onto the site.

Cr Bonaventura queried if the recommended tenderer recipient had contracted part of the job to another company and whether this affects the risk interface matter.

Cr May confirmed that was correct.

DECI advised the difference was that the head contractor carries all of the risk. Even though some of the contract is sub-contracted the head contractor carries all of the risks and Council is not involved.

Cr May queried the $175,000 of cost savings for the disposal of leachate if it goes to the sewerage treatment plant (STP), currently has there been a need to tanker leachate to the STP

DECI advised there was a need at the start of the contract when the site was first established but since then there has been limited need to tanker leachate. Cell 3 is the largest cell in relation to the area and the volume of it and the officers have done some modelling in relation to previous rainfall history and model all of the implications what may happen in a standard wet year and what the risks maybe in relation to excess leachate and how it is dealt with.
Committee Resolution

THAT the Committee endorses the report and recommends to Council that the following recommendations are supported:

A. THAT Council award contract MRC 2016-034 to Suez Recycling and Recovery Pty Ltd commencing 1 July 2017 for an 8 year contract with the option of 2 x 1 year extensions for the schedule of rates total, subject to indexation, for $4,378,571.29 per annum excluding GST.

B. FURTHER THAT Council accepts the submission by Suez Recycling and Recovery Pty Ltd to amend the Performance Management System to incorporate a fee adjustment for achieving a Landfill Compaction Efficiency ratio as agreed to in the Tender Information Request.

Moved Cr Paton  
Seconded Cr Casey

Cr Casey spoke to the Motion advising he felt it was a great outcome and congratulated the Director and his team and looks forward to eight (8) plus two (2) years with Suez Recycling and Recovery Pty Ltd.

Cr Bonaventura spoke against the Motion and reiterated his concern as to why the current contractors price is so high and it is a key factor in his decision to vote against the Motion on the figures provided and asked if the DECI could provide additional information prior to next weeks’ Ordinary Meeting.

CARRIED

Cr Bonaventura recorded his vote against the Motion.

11. CONSIDERATION OF NOTIFIED MOTIONS:

Nil

12. PUBLIC PARTICIPATION:

Nil
13. LATE BUSINESS:


Cr Payton provided a report to the Committee on the LAWMAC meeting he attended in Mareeba along with 50 other LAWMAC members.

The field trip held on Thursday 24 November included various site inspections and on Friday 25 November 2016 the general meeting was held with briefings from several groups.

Mackay Waste Services have compiled the last couple of LAWMAC newsletters and have committed to developing the first newsletter for 2017.

Congratulations to Mackay Waste Services on their successful bid for the Waste Q Forum to be held in Mackay by Waste Management of Australia in September 2017. Also the LAWMAC Annual General Meeting and General Meeting will be held in conjunction with the Waste Q Forum.

The next LAWMAC meeting will be held in Cairns on 23 and 24 February 2017.

ADJOURNMENT

THAT as a procedural motion under Council's Standing Orders the meeting stands adjourned until 9.30 am to enable media responsibilities be undertaken.

Moved Cr Bonaventura

CARRIED

9.18 am - Meeting adjourned at this time.

9.34 am - Meeting resumed at this time.
14. **CONFIDENTIAL REPORTS:**

**Crs Bonaventura, Paton and Walker** declared a material conflict of interest (as per section 173 of the *Local Government Act 2009*) on this matter due to being shareholders of Mackay Sugar Ltd and left the room at **9.35 am**, taking no part in the debate or decision of the meeting.

THAT the meeting be closed to the public in accordance with the *Local Government Act 2009* (*Section 275 (1) of the Local Government Regulation 2012*) to discuss matters relating to:-

<table>
<thead>
<tr>
<th>Confidential Item</th>
<th>Reason for Meeting Closure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Item 14.1</strong> - Mackay Sugar Limited Raw Water Supply Agreement</td>
<td>(e) contracts proposed to be made by Council</td>
</tr>
<tr>
<td><strong>Item 14.2</strong> - Proposed Land Acquisition - Intersection Milton &amp; Archibald Streets, Paget</td>
<td>(g) action to be taken under the Sustainable Planning Act 2009 (Qld)</td>
</tr>
</tbody>
</table>

**Moved Cr Casey**  
**Seconded Cr Bella**  
**CARRIED**

9.36 am - The meeting be closed to the public.

THAT the meeting be reopened to the public.

**Moved Cr Casey**  
**Seconded Cr Bella**  
**CARRIED**

9.41 am - The meeting was reopened to the public.

Voting then recorded as per usual.
14.1 MACKAY SUGAR LIMITED RAW WATER SUPPLY AGREEMENT

Confidential

Committee Resolution

THAT under Section 236 of the Local Government Act, the Chief Executive Officer be authorised to enter into and sign the Water Supply and Infrastructure Agreement between Mackay Regional Council and Mackay Sugar Ltd, for supply of raw water to the Racecourse Mill.

Moved Cr Casey
Seconded Cr Bella

CARRIED

9.42 am - Crs Bonaventura, Paton and Walker returned to the Meeting Chamber.

14.2 PROPOSED LAND ACQUISITION - INTERSECTION MILTON & ARCHIBALD STREETS, PAGET

Confidential

Procedural Motion

THAT the Report lay on the table for consideration at the Ordinary Meeting dated 14 December 2016.

Moved Cr Casey

CARRIED

15. MEETING CLOSURE:

The meeting closed at 9.43 am.

16. FOR INFORMATION ONLY:

Nil
Confirmed on Wednesday 8 February 2017

CHAIRPERSON
APPENDIX / ATTACHMENTS
Engineering and Commercial Infrastructure - Water Services
November 2016
OVERVIEW

This report is for Water Services activities for November 2016. Significant items in this period include:

- There were no LTTs recorded in November which extends the period for no LTTs for the Water Business to 17 months.
- Whitsunday, Isaac and Mackay (WIM) Water Alliance held a Regional Forum in Proserpine on November 3. The forum provided an opportunity to share initiatives and learnings. A number of officers from Mackay gave presentations on Mirani STP’s Storage, Decisions on Large Meters, Safety Issues and Preventative Maintenance.
- Officers attended a Seasonal Outlook Briefing Disaster Preparedness Seminar on November 4. The seminar provided an overview of the Weather & Flood Outlook for the 2016-17 season along with various agency updates.
- Eton continues to experience some water quality issues (elevated Selenium levels in Bore 1 and elevated Uranium levels in Bore 2. Bore 2 continues to be out of service), Senior Council Officers completed door knocks at Eton to inform residents of the recent water quality issues. Three information sessions have been held in conjunction with Queensland Health at Eton Primary School on November 8, November 9 and November 29 where residents could ask questions relating to the water quality.
- On November 7, all fluoride dosing facilities were ceased in Mackay.
- Staff from Northern Territory’s Power Water visited council on November 9, to learn more about demand management initiative that Mackay has undertaken over the last 3-4 years, and also learn about Mackay’s Smart Metering project.
- On November 14, an overview was provided to the Matsura Citizens Tour on how council has transformed its water business with the Smart Metering project and software development of MWater and myh20.
- The summer water awareness campaign ‘watch the flow’ was launched on November 18, with adverts on Radio, TV and posts on council’s Facebook page.
- A presentation was provided to the Daby and Surat Basin QWRAP (Queensland Water Regional Alliance Program) on the Smart Metering project in Chinchilla on November 18.
- Officers went to Nudge Point in late November to complete some planned flushing of the water mains prior to Christmas and found that the water supply was very discoloured. Staff spent time flushing the water mains to remove the sediment within. The water quality is now good and there is no discoloration.

Director Engineering and Commercial Infrastructure
1.1. Incident Statistics

The incident statistic details a summary of the Water Services safety incident performance. Water Services aspires to achieve zero harm with a stretch target of zero injuries.

The following incidents were recorded in November 2016:
1 x Suitable Cut/Es injury from misusing equipment
1 x Near Miss being a Vehicle incident
1 x Non Treatment Injury being Falls on the same level

1.2. Lost Time Injuries

Water Services aspires to achieve zero Lost Time Injuries by improving safety performance by developing a proactive safety culture and implementing best practice safety management across all business areas.

The table below shows the Lost Time Injuries over previous years:

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Administration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business Services</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Planning &amp; Sustainability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Network</td>
<td>2</td>
<td>79</td>
<td>4</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>Water Treatment</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Infrastructure Delivery</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Services</td>
<td>2</td>
<td>79</td>
<td>4</td>
<td>9</td>
<td>3</td>
</tr>
</tbody>
</table>

Data is as at 23 November 2016
2.1. Water Operating Revenue Less Expenditure

The following graph shows the budget, forecast and actual earnings before Interest, Taxes and Amortization (EBITDA) based on cash accounting for the 2016/2017 financial year. The saw tooth nature of the graph is reflective of the timing of water revenue received. Capital revenue has been excluded from this graph.

![Graph showing water operating revenue less expenditure]

Operating Surplus $1.37M below budget, driven by revenue being 32%, 11% below budget partially offset by cost savings in employee costs and goods and services.

Lower revenues primarily due to lower water consumption charges. While this will create short term challenges, it will deliver long term benefits and is an indication that the demand management program is delivering on its objectives.

2.2. Accrued Water Operating Revenue Less Expenditure

The following shows the estimation of the accrued revenue less expenditure. Capital revenue has been excluded.

![Graph showing accrued water operating revenue less expenditure]

Annual variance of operating surplus based on currently budgeted cost structure is projected at $0.85M below budget.

Despite the variance, the water business will deliver a surplus of over $15M.

The business is currently assessing what changes can be done to the cost structure to realise the budgetary impact on the current year and make any adjustment for next year’s budget.
2.3. Wastewater Operating Revenue Less Expenditure

The following graph shows the budget, forecast and actual EBITA based on cash accounting for the 2016/2017 financial year. The sawtooth nature of the graph is reflective of the timing of water revenue received. Capital revenue has been excluded from this graph.

Operating Surplus $1.3M above budget, driven primarily by under spend of $2000K in goods and services. Part of this will erode as they are due to timing differences in incurring costs.

Revenue is above budget $300K driven by additional interest earned.

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2.4. Accrued Wastewater Operating Revenue less Expenditure

The following shows the estimation of the accrued revenue less expenditure. Capital revenue has been excluded.

This annual operating surplus is projected to be $800K above budget which will somewhat offset any negative variances within the water business.

Income is projected to be over budget by $500K with significant contributions from sewer access charges and interest income.

Operating expenses are forecasted to be $400K below budget with contributions from contract costs, employee costs and insurance premiums.
2.5. Capital Expenditure Performance

The following trend provides a high level overview of the capital expenditure to monitor actual expenditure against forecast expenditure. The forecast expenditure profile is based on the original Water and Sewerage Capital Program projects budget and delivery schedule.

![Expenditure Graph]

- YTD actual capital expenditure is around 22% of the annual budget for water & sewerage and around 80% of the capital budget forecasted for spend by November.
- Withcommittees included, the capital expenditure is around 41% of the annual budget.

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### CLIENT SERVICES

3.1. Requests

This graph details the client requests received and recorded via pathways that relate to the Water Business. The target is to have 90% of all client requests closed at any one point in time.

![Client Requests Graph]

- 91% of Client Requests completed in November 2016
- Data is at 28 November 2016

---
3.2. Request Types

The following chart displays a summary of the client request types received for the month.

![Request Types Chart]

Number of requests received in November was 337, which is an increase from October where 274 requests were received. The majority of the requests are for Water Leak Service - 177 requests.

Data as of 26 November 2016.

3.3. Plumbing Applications

In accordance with the Plumbing and Drainage Act, a plumbing application is required for all new plumbing installations or modifications to existing plumbing. A plumbing application must be lodged to Local Government. Water Services has a regulatory time frame of 20 business days to assess a plumbing application. An internal target of 5 business days has been set for all residential plumbing applications.

![Plumbing Applications Chart]

Application numbers have dropped back to the average for the previous 6 month period from which highlights the sole applicant is lodgement of 15 applications last month. Approval turnaround times remain well within set timeframe.

Data as of 26 November 2016.
3.4. Trade Waste Approvals

The program for undertaking trade waste assessment and licensing of all applicable businesses that discharge trade waste is ongoing. As part of the Trade Waste Assessment process a temporary Trade Waste Approval is put in place while the formal approval process is undertaken. The table below summarises the number of Trade Waste Approvals for the Mackay Region.

<table>
<thead>
<tr>
<th>Area</th>
<th>Total Approved Businesses</th>
<th>Temporary Approvals In Place</th>
<th>New Approved Businesses for the Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mackay South</td>
<td>742</td>
<td>23</td>
<td>10</td>
</tr>
<tr>
<td>Mackay North</td>
<td>68</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Sarina</td>
<td>57</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Mirani/Marian</td>
<td>29</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>890</td>
<td>30</td>
<td>15</td>
</tr>
</tbody>
</table>

13 new businesses were identified for the month of November.

Data is at 28 November 2016.

3.5. Annual Trade Waste Activity

Annual targets are set for the Trade Waste team with respect to licensing Trade Waste Businesses. The target has been set at 250 new licensed businesses and audits completed by June 2017. The following graph shows the Actual Approvals, Temporary Approvals and Audits achieved and the number of the target remaining.

Target Trade Waste Approvals & Audits Completed

- YTD Approvals
- Remaining Approvals
- YTD Audits
- Remaining Audits

The target is 250 combined Approvals and Audits for 2016/2017 financial year.

Data is at 28 November 2016.
3.6. Building Over Adjacent Sewers

Building Over Adjacent Sewers applications are lodged where the construction of a structure is proposed within close proximity of a sewer main. The application is assessed against Queensland Development Code Mandatory Part 1.4 with council reviewing applications that do not comply with acceptable solutions identified in the code. Building Over Sewer Applications are assessed within a target timeframe of 20 business days.

![BOAS Applications Chart]

There were no new BOAS referrals for the month. Plumbing Inspectors continue to field enquires and provide information on infrastructure.

Data is as at 28 November 2016

3.7. Scientific and Analytical Services

Scientific and Analytical Services provides laboratory analysis in accordance with National Association of Testing Authorities (NATA) Standards to both Mackay Regional Council and external clients. A summary of the laboratory activities are detailed below.

![Test Performed Chart]

The laboratory has undertaken project work for Whitsunday Regional Council – Bowen Sewage Characterisation (Total of 4 weeks and significant number of samples continued into November as well). A number of environmental incidents and ongoing testing for Elton water supply scheme also increased the laboratory work load.

Data is available to 28 November 2016
3.8. Community Engagement
This section monitors Water Services engagement on the services provided. The following chart shows the number of media releases, media updates and the number of people that were reached by the Media Releases on Facebook.

The following chart shows the number of likes and positive comments, the number of neutral comments and the number of negative comments received on Facebook from Media Releases and Media updates for Water Services.
The following chart shows the cumulative number of myH2O registrations for the reporting period.

3.9. Leak Detection Notifications
Leak Detection notifications are sent to clients, when the leak identified is greater than 10 litres per hour. Follow up notices are sent to residents, monthly for a three month period after the initial notification.

The number of new leaks identified during November was 842, which was a decrease from October. The number of leaks ceased during the period is 605, resulting in an overall decrease in the number of meters with leaks at the end of the period.
The average leak days for current leaks shows the average number of days a leak exists before any action by the client to rectify the cause of the leak. The average leak days for ceased leaks shows the average number of days that the leak exists before the leak is repaired.

The number of average leak days for current leaks and average leak days for ceased leaks has increased slightly during the November period.

ASSET MANAGEMENT

4.1. Surface Water Raw Water Storage Capacities

Water Services sources water from a combination of surface water and groundwater sources. With the exception of Middle Creek Dam the storage facilities are owned and operated by SunWater. Middle Creek Dam is under Council's control. The water stored in each of the storages is detailed below.

<table>
<thead>
<tr>
<th>Storage</th>
<th>ML</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mirani Weir</td>
<td>2,800</td>
</tr>
<tr>
<td>Maran Weir</td>
<td>3,865</td>
</tr>
<tr>
<td>Dumbleton Weir</td>
<td>6,106</td>
</tr>
<tr>
<td>Middle Creek Dam</td>
<td>1,129</td>
</tr>
<tr>
<td>Peter Faust Dam</td>
<td>491,460</td>
</tr>
<tr>
<td>Teemburra Dam</td>
<td>147,506</td>
</tr>
</tbody>
</table>

Miran, Maran and Dumbleton Weirs are at full capacity. Peter Faust, Teemburra and Middle Creek are at 59%, 63% and 95% capacity respectively.

Data is as at 28 November 2016.
4.2. Annual Water Consumption vs Allocation by Source

Water Services has a water allocation or water license for each water source. The water allocation and year to date water consumption for each of the water sources is detailed below.

<table>
<thead>
<tr>
<th>Water Source</th>
<th>YTD Water Consumed</th>
<th>Allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marian Weir</td>
<td>207</td>
<td>400</td>
</tr>
<tr>
<td>Gargett Bore</td>
<td>0</td>
<td>60</td>
</tr>
<tr>
<td>Finch Hatton Bore</td>
<td>10</td>
<td>46</td>
</tr>
<tr>
<td>Armstrong Beach Bore</td>
<td>22</td>
<td>230</td>
</tr>
<tr>
<td>Koomala Bore</td>
<td>21</td>
<td>35</td>
</tr>
<tr>
<td>Barly Keel Bore</td>
<td>12</td>
<td>150</td>
</tr>
<tr>
<td>Eton Bore</td>
<td>15</td>
<td>63</td>
</tr>
<tr>
<td>Proserpine River</td>
<td>154</td>
<td>2700</td>
</tr>
<tr>
<td>Boomerang Bore</td>
<td>3</td>
<td>22</td>
</tr>
<tr>
<td>Marwood Bore</td>
<td>8</td>
<td>45</td>
</tr>
<tr>
<td>Marian Bore</td>
<td>22</td>
<td>55</td>
</tr>
<tr>
<td>Mirani Bore</td>
<td>1</td>
<td>100</td>
</tr>
<tr>
<td>Sarina Bore</td>
<td>12</td>
<td>300</td>
</tr>
<tr>
<td>Plane Creek</td>
<td>31</td>
<td>236</td>
</tr>
<tr>
<td>Nebo Rd Bore</td>
<td>225</td>
<td>1696</td>
</tr>
<tr>
<td>Cumbalton</td>
<td>3,538</td>
<td>48,420</td>
</tr>
</tbody>
</table>

**Cale Water Usage figures are not based on Water Allocation, but show the amount of water usage for the area to date.

4.3. Water Consumption by Locality

Water Services supplies water to both residential and commercial water clients throughout the Mackay Region. The average water consumption in each of the three major community centres is detailed below. The water consumption is presented as litres per equivalent population per day. This graph provides a summary of water consumption including commercial water use.
4.4. Significant Projects

Water Services undertakes a range of projects across the water business. Projects take the form of Capital works projects, planning studies and investigations. Information for the significant projects in Water Services is provided in the table below and was current as at 28 November 2016. Significant Projects are assessed on the following criteria: Dollar Amount, Risk and/or Community Interest.

<table>
<thead>
<tr>
<th>Council Project Management Phases</th>
<th>Indicators</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Planning (Plan)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Design (Des)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Procurement (Proc)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Construction (Con)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PROJECT</th>
<th>PHASE</th>
<th>PHASE COMPLETE</th>
<th>INDICATORS</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sewerage Network Refurbishments (Relining)</td>
<td>Procurement</td>
<td>20%</td>
<td>Schedule, Budget, Other Issues/ Risk</td>
<td>Tender document for relining works being finalised following technical review of products and discussions with stakeholders. 2016/17 CCTV inspection program being scoped.</td>
</tr>
<tr>
<td>Sewerage Network Refurbishments (Manholes)</td>
<td>Construction</td>
<td>10%</td>
<td>Schedule, Budget, Other Issues/ Risk</td>
<td>Network crews continue with inspection of restricted access manholes and inspection of buried manholes with CCTV. Tender for manhole relining works with Calcium Aluminate scheduled to close end of the month and scope of works and specification for relining using epoxy coating expected to be complete and issued to market as a request for quotation early December.</td>
</tr>
<tr>
<td>Sewage Pump Station Resilience Upgrades</td>
<td>Construction</td>
<td>45%</td>
<td>Schedule, Budget, Other Issues/ Risk</td>
<td>The construction is well under way since the 12 September 2016. The Contractor has completed two access improvements out of nine, has installed seven ventilators out of 28, has factory tested five switchboards and installed and commissioned four switchboards on site out of 20, has relocated six antennas out of six and has completed the first two wet well rehabilitations out of five. They are currently working on the completion of three pump station accesses.</td>
</tr>
<tr>
<td>Water and Sewerage Network Telemetry Upgrades</td>
<td>Construction</td>
<td>60%</td>
<td>Schedule, Budget, Other Issues/ Risk</td>
<td>The Telemetry upgrade works carried over from 2015/16 are complete, with works forecast to be over budget by approximately 9%, as a result of variations for additional scope of work. Still awaiting final invoice for the project.</td>
</tr>
<tr>
<td>PROJECT</td>
<td>PHASE</td>
<td>% COMPLETE</td>
<td>INDICATORS</td>
<td>COMMENTS</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>------------------------</td>
<td>------------</td>
<td>------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Water Main Replacements -</td>
<td>Design and Construction</td>
<td>45% Overall</td>
<td>Schedule</td>
<td>The 16/17 Capital project includes three water mains (WM) that require relocation prior to MRC road works. Construction of Curlew St WM is complete. Physical Works for Construction of Brean St New Water Main is complete. Construction of Vincent St is scheduled to commence in the new year. Possible addition of another water main relocation being discussed with Civil Projects.</td>
</tr>
<tr>
<td>Roads Driven</td>
<td></td>
<td></td>
<td>Budget</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Other Issues/ Risk</td>
<td></td>
</tr>
<tr>
<td>Water Main Renewals</td>
<td>Design</td>
<td>40%</td>
<td>Schedule</td>
<td>Design has been completed for Gibson St, with internal construction crews commencing work in December. Designs are continuing in house for Gardner, Duncan &amp; Bagley Streets. A preferred alignment has been selected for Bedford Road. Investigation and design will continue over November &amp; December. Updated project construction estimates indicate a potential budget shortfall, mainly due to the complexities of being in urban built areas. We are reviewing the application of the cost estimate manual.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Budget</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Other Issues/ Risk</td>
<td></td>
</tr>
<tr>
<td>Mt Oscar High Level Zone</td>
<td>Construction</td>
<td>70%</td>
<td>Schedule</td>
<td>Construction continuing, currently heading along Bona Vista Drive. Forecast for construction completion is January 2017. Cost forecast is still exceeding the original budget, alternate alignment options are being considered as part of the design process, though efficiencies being identified are being offset by rocky ground conditions impacting progress.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Budget</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Other Issues/ Risk</td>
<td></td>
</tr>
<tr>
<td>Water Meter Replacements</td>
<td>Construction</td>
<td>26%</td>
<td>Schedule</td>
<td>Replacement of commercial and domestic meters and AMR retrofits commenced. Awaiting delivery of AMR's for commercial meters and retrofits. Domestic AMR retrofits completed with the exception of 30 properties where access is taking time to arrange, customer liaison is continuing.</td>
</tr>
<tr>
<td>and AMR retrofits</td>
<td></td>
<td></td>
<td>Budget</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Other Issues/ Risk</td>
<td></td>
</tr>
<tr>
<td>PROJECT</td>
<td>PHASE</td>
<td>% COMPLETE</td>
<td>INDICATORS</td>
<td>COMMENTS</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>-------------</td>
<td>------------</td>
<td>------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Shakespeare Street sewer realignment</td>
<td>Design</td>
<td>6%</td>
<td>Schedule</td>
<td>Survey of the site has been completed and a design consultant appointed, with initial design investigations scheduled to commence early December. Updated project construction estimates based on concept alignments indicate a potential budget shortfall.</td>
</tr>
<tr>
<td></td>
<td>Procurement</td>
<td>25%</td>
<td>Schedule</td>
<td>The project involves repairs of Mount Pleasant Reservoir No 1 and investigations of Mount Oscar Reservoir Nos 1 and 2 and Backs Beach Reservoir Nos 1 and 2. The tender for the repair works of Mount Pleasant Reservoir No 1 has been advertised, and is due to close in December. Mount Oscar Reservoir investigation report being finalised.</td>
</tr>
<tr>
<td>Mirani Storage</td>
<td>Planning/Design</td>
<td>35%</td>
<td>Schedule</td>
<td>Negotiations regarding purchasing the land for the new dam have progressed with a meeting being held with the owner. A follow up meeting is scheduled for the end of November. This aspect of the project is taking longer than originally estimated.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Budget</td>
<td>Quotes have been requested for the remaining design scope, though finalisation of the scope is reliant on having a final dam location and land acquisition certainty. The current schedule has construction commencing July 2017 and therefore the budget has been identified as a potential issue due to delays in land acquisition.</td>
</tr>
<tr>
<td>Barnes Creek SRM Bypass</td>
<td>Construction</td>
<td>100%</td>
<td>Schedule</td>
<td>The Barnes Creek bypass works are complete and sewer is now operational. Funding of these emergent works to be confirmed in the 2nd Quarter budget review in December.</td>
</tr>
</tbody>
</table>
5.1. Drinking Water Compliance

Safe Water supplies are provided in accordance with the requirements of the Water Supply Safety and Reliability Act and are measured against the Australian Drinking Water Quality Guidelines. Drinking Water samples are taken at the outlet of Water Treatment Plants and within the reticulation network. A summary of the performance is detailed below.

**Health Parameter Test Results**

- There have been no new exceedances at any schemes. The incident of high selenium at Eton was reported to DEWS and continues to track above ADWG Guidelines (limit is 10 μg/L). Bore 2 at Eton remains out of service and there are no exceedances of Uranium in the reticulation network.

**Aesthetic Parameter Test Results**

- Eton & Koumaia have high hardness (~200; range 379 to 410).

This data is reported 1 month in arrears.
5.2. Wastewater Compliance
The discharges from wastewater treatment facilities are regulated by Development Approvals issued by the Department of Environment and Resource Management. The licence requirements differ based on the time the Development Approval was issued and the receiving environment associated with any discharges.

![Wastewater Test Results](chart1)

All wastewater test results for November 2016 (available at the time of reporting) were compliant.

Data is 30 November 2016

5.3. Backflow Testing
Backflow devices are installed on water services where there is a risk that water could return from a private property back into the Water Retention network. The requirement for backflow devices is regulated in accordance with the Standard Plumbing and Drainage Regulations.

![No of Devices Registered/Cancelled](chart2)

9 new devices were registered this month.

Data is 30 November 2016
Engineering and Commercial Infrastructure - Waste Services
Monthly Review -
1 November 2016 – 29 November 2016
Overview

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Overview
This report is for Waste Services activities for November 2016, for the reporting period of 1 November to 29 November 2016. Significant items in this period include:

- The closed landfill risk review project has commenced.
- Waste Services undertook a variety of activities for National recycling Week held on 7 to 13 November 2016.
- Dump voucher usage has dropped for the reporting period.

Director Engineering & Commercial Infrastructure
1.1 Safety Incidents and Lost Time Injuries

The incident statistic details a summary of the Waste Services safety incident performance. Waste Services aspires to achieve zero harm with a stretch target of zero injuries.

![Safety Incident Graph]

- No Lost Time Injuries were recorded in November 2016.
- 5 Near Misses at involving contractors occurred including:
  - Involving vehicles
  - Involving dust generation
  - Involving inappropriate waste disposal
  - Involving a fire at a waste facility. The fire was managed with minimal resources and caused no damage.

1.2 Lost Time Injuries

Waste Services aspires to achieve zero Lost Time Injuries by improving safety performance and developing a proactive safety culture while implementing the best practice of safety management across the whole of Waste Services.

![Lost Time Injury Graph]

- Waste Services has not recorded a Lost Time Injury.
- Data is up to 23 November 2016.
The table below shows the Lost Time Injuries over previous years:

<table>
<thead>
<tr>
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<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste Total Days Lost</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Waste Total LTIa</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**FINANCE**

2.1 Community Service Obligations – Fee Waivers

Not for Profit Organisations – Total Waste Disposals 1 November to 29 November 2016

This report displays July to November 2015 and is currently in line with the budget; however, a number of charities have not been able to retain the allocated budget.

Year to date expenditure for not for profit organisations is reported on a calendar month.

2.2 Waste Operating Revenue Less Expenditure

The following chart shows the actual budget and forecast Earnings before Interest, Taxes and Amortization (EBITA) based on cash accounting for the 2016/2017 financial year. The saw tooth nature of the graph is reflective of the timing of waste revenue due.
2.3 Accrued Waste Operating Revenue less Expenditure

The following chart shows the estimation of the accrued revenue less expenditure. The capital revenue has been excluded.

Despite forecast revenue for the year being below budget by around $600k due to lower gate fees, a resulting reduction in variable contract fees of around $400k combined with other savings will enable the business to meet the budgeted operating surplus.

2.4 Capital Expenditure

The following graph provides an overview of the capital expenditure and monitors forecast expenditure against actual expenditure.

YTD 52% of the annual capital budget has been spent. WBB continues to spend increases to 85%.

The forecast spend for the year is now closer in line with budget.
3.1 Client Requests

The following graph shows the number of Client Requests actioned by staff according to type, for November 2016.

3.2 Number of Bin Requests Actioned by Bin Contractors

The following graph shows the number of bin requests actioned by Bin Contractors for November 2016.

The following new graph illustrates the key customer service requests for bin collection services as a time series, to provide better context for analysis.
3.3 Education

3.3.1 Material Recovery Facility tours:
- North Queensland Airports staff (business visit during national Recycling Week)
- Matsuura VIP visitors
- Marian State School (joint waste and water education) – four groups of Year 2

3.3.2 Education programs in the community
- Recycling and worm farming education at Lady Gowie Kindergarten Sarina
- Waste education at Positive Learning Centre for high school students
- Waste education given at North Mackay High School to year 11 & 12 students studying Certificate III in Early Childhood Education
- Waste education at Eimeo Road State School delivered to 5 classes of year 4 students.

3.3.3 National Recycling Week
A marketing campaign was developed to promote National Recycling Week, which was held on 7 to 13 November 2016. The following activities were organised during National Recycling Week:
- Recycling right advertisements were telecast on Win and Seven during National Recycling Week. The advertising package included free radio advertising on Hot FM and Sea FM
- A free composting workshop was held at the Community Gardens. The sixteen (16) attendees expressed their appreciation of this council sponsored program
- The Council website was well utilised to deliver recycling right messages and tips
- A video post promoting correct recycling habits reached over 9,800 people on Council’s Facebook on Wednesday 9 November
- The campaign included a Grapevine article for Council staff.
3.4 Dump Vouchers

Dump vouchers are still being presented although November was slightly down compared to previous months.

<table>
<thead>
<tr>
<th>Voucher Season</th>
<th>No Vouchers issued</th>
<th>No Vouchers used</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>15A (valid to 31 March 2015)</td>
<td>145,344</td>
<td>34,747</td>
<td>23.9%</td>
</tr>
<tr>
<td>15A' (valid to 30 Sept 2015)</td>
<td>146,313</td>
<td>32,733</td>
<td>22.4%</td>
</tr>
<tr>
<td>15B (valid to 31 March 2016)</td>
<td>146,790</td>
<td>38,250</td>
<td>26.0%</td>
</tr>
<tr>
<td>15B' (valid to 30 Sept 2016)</td>
<td>141,174</td>
<td>36,798</td>
<td>25.5%</td>
</tr>
<tr>
<td>15B (valid to 31 March 2017)</td>
<td>144,000</td>
<td>18,535</td>
<td>12.9%</td>
</tr>
</tbody>
</table>

Total number and $ value of vouchers presented to date:

- 2014/2015 Financial Year (to 30.08.2015): 58,276, $410,227
- 2015/2016 Financial Year (to 30.08.2016): 75,459, $553,204
- 2016/2017 Financial Year (to 30.11.2016): 24,584, $227,616

Voucher presented showing green and general waste

There has been a decrease in the number of vouchers used for the reporting period. This is a reflection that the previous vouchers have now expired.
3.5 Community Engagement

This section monitors Waste Services engagement on the service provided. The following chart shows the number of media releases, media updates and the number of people reached by media releases on Facebook. The 10,247 people reached for the Changes to Waste and Recycling collection services is extraordinary, compared to the usual reach.

The following chart shows the number of likes and positive comments, the number of neutral comments and the number of negative comments received on Facebook from media releases and media updates for Waste services.
4.1 Hogan’s Pocket Landfill Waste Disposal Tonnages

The following chart represents the monthly tonnes disposed of at Hogan’s Pocket Landfill. This chart shows that tonnes this financial year have been down when compared with previous financial years.

4.2 Landfill Gas

The following chart depicts the monthly tonnes of CO₂-e destroyed.

Data is for period 01 July 2016 to 29 November 2016.
4.3 Greenwaste Management

The following graph illustrates the tonnage rates for green waste processed for the period, the cumulative tonnes of green waste processed for the year to date and the tonnes of green waste projected to be processed early. The production of processed green waste remains highly variable and the projected totals are a guide only.

![Graph showing greenwaste management data]

4.4 Projects

4.4.1 Significant Projects

Waste Services undertakes a range of projects across the business. Projects take the form of capital projects, planning, research and investigations.

<table>
<thead>
<tr>
<th>Council Project Management Phases</th>
<th>Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning (Plan)</td>
<td>On Track</td>
</tr>
<tr>
<td>Design (Des)</td>
<td>Potential Issue</td>
</tr>
<tr>
<td>Procurement (Proc)</td>
<td>Definite Issue</td>
</tr>
<tr>
<td>Construction (Con)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project</th>
<th>Phase</th>
<th>Phase Complete</th>
<th>Budget</th>
<th>Time</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cell 3 Construction</td>
<td>Construction</td>
<td>100%</td>
<td></td>
<td></td>
<td>The project is now completed. The landfill operations contractor will remain filling in cells one and two until the 2017 dry season.</td>
</tr>
<tr>
<td>MRF Fire System Upgrade</td>
<td>In-Progress</td>
<td>15%</td>
<td></td>
<td></td>
<td>This project covers the installation of an updated fire warning system. This provides reduced risk protection of staff and the asset. The project is being conducted under variation through the</td>
</tr>
<tr>
<td>Project</td>
<td>Phase</td>
<td>Phase % Complete</td>
<td>Budget</td>
<td>Time</td>
<td>Comments</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>--------------</td>
<td>------------------</td>
<td>--------</td>
<td>------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Plant &amp; Equipment</td>
<td>Planning</td>
<td>5%</td>
<td></td>
<td></td>
<td>operating contractor and is currently in design stage. Design experienced delays and will be delivered early December. Installation will be completed in January 2017.</td>
</tr>
<tr>
<td>Hogan's Pocket Communication tower</td>
<td>Land negotiation</td>
<td>10%</td>
<td></td>
<td></td>
<td>Project is reliant on securing suitable elevated land. Waste services are currently negotiating a lease arrangement with neighbour. Property Services have published a recommendation report on the leases for the December Standing Committee for recommendation, then onto the Ordinary agenda for resolution. Waste Services is drafting specifications for requests for quote, once the lease arrangements are finalised.</td>
</tr>
<tr>
<td>Hogan's Pocket weeds wash bay</td>
<td>Procurement</td>
<td>0%</td>
<td></td>
<td></td>
<td>Pursuant to the recently developed site pest management plan and weeds washdown bay is required for the site. Waste Services currently undertaking detailed design</td>
</tr>
<tr>
<td>Paget Transfer station dust suppression system</td>
<td>Procurement</td>
<td>0%</td>
<td></td>
<td></td>
<td>Replacement of dust suppression system required to meet environmental and workplace health and safety obligations. Waste Services currently developing a performance specification for the work.</td>
</tr>
<tr>
<td>Bucasia gatehouse realignment</td>
<td>Concept design</td>
<td>10%</td>
<td></td>
<td></td>
<td>In order to meet site operational requirements as well as workplace health and safety requirements the site office needs to be relocated (including introduction of traffic management infrastructure). This project will prolong the current single site operator, maintaining operational costs. The site traffic management plan and design is completed, procurement of equipment and services is occurring.</td>
</tr>
<tr>
<td>Closed landfill risk review</td>
<td>Strategy</td>
<td>15%</td>
<td></td>
<td></td>
<td>Waste Services is undertaking a review of the Closed Site Remediation Program. The former landfill site remediation</td>
</tr>
</tbody>
</table>
### Engineering & Commercial Infrastructure

**Monthly Review > November 2016**

<table>
<thead>
<tr>
<th>Project</th>
<th>Phase</th>
<th>Phase % Complete</th>
<th>Budget</th>
<th>Time</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>obligations currently represent one third of the Waste Services’ twenty year capital forecast budget. The review will undertake a triple bottom line risk assessment priority ranking based on relative risks as well as a revised budget framework. Golder Associates has been engaged and the framework for the first stage of the project has been agreed upon. A series of workshops have been programmed for December and January with project completion expected early 2017.</td>
</tr>
</tbody>
</table>

### 4.4.2 Significant Non-Capital Projects

<table>
<thead>
<tr>
<th>Project</th>
<th>Phase</th>
<th>Phase % Complete</th>
<th>Budget</th>
<th>Time</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste Services Contracts Development</td>
<td>In-Progress</td>
<td>80%</td>
<td></td>
<td></td>
<td>The Waste Haulage and Landfill Operation Services and the Paget Transfer Station Services tenders continue to be evaluated. Recommendation to December Council meeting will occur. The Green Waste processing services tender, evaluation has commenced.</td>
</tr>
</tbody>
</table>
4.5 Material Recovery Facility Operations

The following graph identifies tonnages inbound and product to market for the Material Recovery Facility. Types of product output will vary each reporting period.

Due to the earlier cut-off, November data was unavailable at the time of publishing. November’s data will be presented in next month’s review.

The following graph shows tonnages for inbound product received from domestic collections within the Mackay Region, Commercial collections and Isaac Regional Council.

Inbound data has been steady for the past few months.

Data is from 1 December 2015 to 30 November 2016.
5.1 Surface Water Discharge Management

No matters to report.

5.2 Waste Facility Audits

Internal audits of MRC Waste Facilities continue to be conducted. During November 100% of sites were inspected.

As recording of this new performance metric has commenced it will assist Waste Services to focus on the delivery of this key service. Planned audits that were not achieved are to be conducted within 7 days of the end of the scheduled month. Issues that prevented Waste Services achieving this target were related to key staff being on leave. Waste Services will review this for future periods. Pleasingly there were no significant issues to report for this period.

This section of the report will evolve to include the rate of compliance and non-compliance.

<table>
<thead>
<tr>
<th>Inspection Frequency</th>
<th>Number required</th>
<th>% Complete</th>
<th>Completed/ Carryover</th>
<th>Risk</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bi-monthly</td>
<td>16 sites</td>
<td>100%</td>
<td>16 completed 0 carried over</td>
<td>Green</td>
<td>No significant safety, environmental or asset issues identified in audits. All carry overs completed in September.</td>
</tr>
<tr>
<td>Six-monthly</td>
<td>0</td>
<td>100%</td>
<td>Nil required</td>
<td>Green</td>
<td>Nil safety, environmental or asset issues reported. Sites low risk. All carry overs completed in September.</td>
</tr>
</tbody>
</table>
Engineering and Commercial Infrastructure - Transport & Drainage
1 November 2016 to 30 November 2016
# Engineering & Commercial Infrastructure

**Monthly Review > November 2016**

## OVERVIEW

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Incidents and Injuries</td>
<td>4</td>
</tr>
<tr>
<td>1.2 Lost time Injuries &amp; Days Lost</td>
<td>4</td>
</tr>
</tbody>
</table>

## SAFETY

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1 Capital Expenditure</td>
<td>5</td>
</tr>
<tr>
<td>2.2 Financial Effectiveness Maintenance</td>
<td>6</td>
</tr>
<tr>
<td>2.3 Road and Drainage Maintenance Activities</td>
<td>6</td>
</tr>
<tr>
<td>2.4 Unsealed Road Maintenance Activities</td>
<td>7</td>
</tr>
</tbody>
</table>

## CLIENT SURVEYS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1 Requests for Maintenance Work</td>
<td>9</td>
</tr>
</tbody>
</table>

## PROJECTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1 Significant Projects</td>
<td>10</td>
</tr>
</tbody>
</table>
ENGINEERING & COMMERCIAL INFRASTRUCTURE

MONTHLY REVIEW – NOVEMBER 2016

OVERVIEW

This report is for Transport and Drainage activities for the month of November 2016. Significant items in this period include:

- There continues to be a strong focus on safety with no LTI’s being recorded for the year to date.
- Work has continued on the preparation and review of Business Cases to be presented at the next Transport & Drainage Advisory Board Meeting scheduled for 5 December 2016.
- The programme of gravel replenishment on the unsealed road network is being undertaken by all grading crews in line with the priorities and scope identified in the gravel depth and coverage survey that was undertaken earlier in the financial year.
- Special drainage maintenance work on the Chain Street open drain is practically complete with work comprising vegetation removal/trimming and reinstatement and stabilisation of the northern bank which had eroded over time.

Director Engineering and Commercial Infrastructure
SAFETY

1.1. Incidents and Injuries
The incident statistic details a summary of the Transport and Drainage safety incident performance. Transport and Drainage aspires to achieve zero harm with a stretch target of zero injuries.

Nine (9) incidents were reported during November 2016 with all being Near Misses and all but one (1) vehicle related:
- Passenger side step on water truck damaged
- Mirror damage to driver side while exiting premises
- Tail gate damage to hire vehicle
- Bollards struck by forklift
- Vehicle incident
- Gate runner/track damaged by caravan
- Hit and damaged underground cable
- Toolbox door damaged by reversing water truck

Remaining incident was a fire reported by slasher operator at Helewa Wharf Road.

Data as at 24 November 2016

1.2. Lost time Injuries & Days Lost
Transport and Drainage aspires to achieve zero Lost Time Injuries by improving safety performance by developing a proactive safety culture and implementing best practice safety management across all business areas.

No Lost Time Injuries have been sustained in November 2016.

Data as at 24 November 2016
## Engineering & Commercial Infrastructure

### Monthly Review > November 2016

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td></td>
<td>LTI</td>
<td>Days</td>
<td>LTI</td>
<td>Days</td>
<td>LTI</td>
</tr>
<tr>
<td>Civil Operations</td>
<td>7</td>
<td>123</td>
<td>2</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Civil Projects</td>
<td>3</td>
<td>59</td>
<td>2</td>
<td>57</td>
<td>3</td>
</tr>
<tr>
<td>Technical Services</td>
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<td></td>
<td></td>
<td></td>
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<tr>
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<td>182</td>
<td>4</td>
<td>61</td>
<td>11</td>
</tr>
</tbody>
</table>

## FINANCE

### 2.1. Capital Expenditure

November saw the completion of the first Resurfacing Package and the awarding of contracts for the asphalt works. Shoulder sealing works in Sarina and Mirani were also completed.

Currently the forecast is approximately $4M below budget. The majority of these savings will be recognised in the December quarterly budget review process. Notable items below budget are:

- Lansdowne Road – Approximately $600K under budget (Please Note this is 100% Grant funded so the savings will result in reduced Grant not extra funds for the Program).
- East Boundary Road – $330K. The budget is for Ergon works. The works cannot occur until the road works are completed and the road works have now been deferred for one year. Therefore, these funds cannot be expended this financial year.
- Mackay Bucasia Footpath - $240K saving. Current competitive market has provided contract prices less than original estimated.
- Dalyrmple Bridge Replacement – Anticipated $400K saving. Current competitive market has provided contract prices less than original estimated.
2.2 Financial Effectiveness – Maintenance

Financial Performance

*Note – YTD expenditure does not include end of month expenses processing for November and the wages costs for the last week of November. Also, there have been external expenses occurred in November which will not get paid for until December, in line with the invoicing and payment cycle.

2.3 Road and Drainage Maintenance Activities

The following chart details maintenance activities completed during the period as recorded in the recently implemented electronic Maintenance Management System (MMS), DeltaS.
Finalisation of implementation of the new electronic maintenance management system remains a very high priority with integration with Pathways being the main focus.

All maintenance teams remain focused on detect identification and associated maintenance activities to rectify and to respond to customer requests in a timely and efficient manner.

2.4 Unsealed Road Maintenance Activities

![Unsealed Road Maintenance](image)

Note: A number of Works Orders are partially complete and hence the orders have not been closed, that is, these quantities are not included in the above graph – this explains the lower quantities of grading in this month.

The Gravel Replenishment Program is in progress in all Supervisor areas. The gravel replenishment works are being delivered in conjunction with the unsealed road maintenance grading programme.
2.5 Open Drainage Maintenance

Routine maintenance of open drains network continues in line with the schedule. The high profile drains are continuing to be serviced at a higher frequency and coordinated with Parks crews’ mowing to deliver better coordinated outcomes.

Special drainage maintenance is continuing in preparation for the wet season. Bank stabilisation work on the Chain Street open drain is practically complete with work comprising vegetation removal/trimming and reinstatement of the northern bank which had eroded over time.

Quotations for improvement works at Summeresl Drain have been received, analysed and a successful contractor appointed. The project involves re-shaping of the drain profile and concrete lining of the invert. Works are scheduled to commence in early December and to be completed prior to Christmas, weather permitting.
3.1 Requests for Maintenance Work

### RESPONSES FOR MAINTENANCE WORK
Results of Survey (Sep '16 - Oct '16)

#### Civil Operations

- **Attitude of staff receiving request**
  
<table>
<thead>
<tr>
<th>Percentage</th>
<th>Very Good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
<th>Very Poor</th>
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</thead>
<tbody>
<tr>
<td>78.0</td>
<td>19.5</td>
<td>0.0</td>
<td>0.0</td>
<td>2.4</td>
<td></td>
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</table>

- **Attitude of staff attending request**
  
<table>
<thead>
<tr>
<th>Percentage</th>
<th>Very Good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
<th>Very Poor</th>
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<tbody>
<tr>
<td>80.0</td>
<td>17.1</td>
<td>0.0</td>
<td>0.0</td>
<td>2.3</td>
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- **Time taken to address request**
  
<table>
<thead>
<tr>
<th>Percentage</th>
<th>Very Good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
<th>Very Poor</th>
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</thead>
<tbody>
<tr>
<td>88.0</td>
<td>27.5</td>
<td>7.5</td>
<td>0.0</td>
<td>2.5</td>
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- **Appearance of completed work**
  
<table>
<thead>
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<th>Percentage</th>
<th>Very Good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
<th>Very Poor</th>
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<tbody>
<tr>
<td>53.7</td>
<td>22.0</td>
<td>17.2</td>
<td>2.4</td>
<td>4.3</td>
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- **Degree work addresses request**
  
<table>
<thead>
<tr>
<th>Percentage</th>
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<th>Good</th>
<th>Fair</th>
<th>Poor</th>
<th>Very Poor</th>
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<tbody>
<tr>
<td>66.4</td>
<td>13.4</td>
<td>5.3</td>
<td>2.6</td>
<td>5.2</td>
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- **Overall satisfaction with response**
  
<table>
<thead>
<tr>
<th>Percentage</th>
<th>Very Good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
<th>Very Poor</th>
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</thead>
<tbody>
<tr>
<td>63.4</td>
<td>29.3</td>
<td>2.4</td>
<td>2.4</td>
<td>2.4</td>
<td></td>
</tr>
</tbody>
</table>

#### Representative Comments

- A pleasure to talk to.
- They did a very good job.
- Very appropriate.
- Very prompt response.
- Street sweeper - great job.
- Very good.
- Not finished yet.
- Acceptable.
- Very neat and tidy.
- Quick flow, sewer last.
- Maintenance team very poor.
- Needs bitumen to be laid as advised will happen next year.
- No further attempts have been made to stabilise the road surface.
- So pleased with the outcome. Thank you.

#### Trends

- **Overall rating trends**

<table>
<thead>
<tr>
<th>Month</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
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</thead>
<tbody>
<tr>
<td>Jan-Feb</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Mar-Apr</td>
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<td>Sep-Oct</td>
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<td>Nov-Dec</td>
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<table>
<thead>
<tr>
<th>Trend</th>
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<th>2016</th>
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<tbody>
<tr>
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<td>2014</td>
<td>2015</td>
<td>2016</td>
</tr>
<tr>
<td>Trend</td>
<td>2014</td>
<td>2015</td>
<td>2016</td>
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<tr>
<td>Trend</td>
<td>2014</td>
<td>2015</td>
<td>2016</td>
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## PROJECTS

### 4.1. Significant Projects

Significant Projects are assessed taking into account the Project Cost, the Project Risk and/or Community Interest. The following information was current as of Friday, 23 September 2016.

<table>
<thead>
<tr>
<th>Council Project Management Phases</th>
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<td>Planning (Plan)</td>
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<tr>
<td>Design (Des)</td>
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</tr>
<tr>
<td>Procurement (Proc)</td>
<td></td>
</tr>
<tr>
<td>Construction (Con)</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>PROJECT</th>
<th>PHASE</th>
<th>PHASE % COMPLETE</th>
<th>BUDGET</th>
<th>TIME</th>
<th>COMMENTS</th>
</tr>
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<tbody>
<tr>
<td>Resurfacing Program</td>
<td>Con</td>
<td>25%</td>
<td></td>
<td></td>
<td>Asphalt Program tenders have been awarded and are due for delivery in December. An additional Resealing Program is being prepared for tender early December.</td>
</tr>
<tr>
<td>Land Acquisition Ferris Gully</td>
<td>Proc</td>
<td>75%</td>
<td></td>
<td></td>
<td>Finalisation of Agreements still progressing.</td>
</tr>
<tr>
<td>Shakespeare Street Culvert</td>
<td>Con</td>
<td>100%</td>
<td></td>
<td></td>
<td>Completed</td>
</tr>
<tr>
<td>Paulette Street Drainage</td>
<td>Con</td>
<td>15%</td>
<td></td>
<td></td>
<td>Installation of drainage works in Paulette Street between Nebo Road and Field Street is underway.</td>
</tr>
<tr>
<td>Dalrymple Road Bridge at Sonny Boy Creek</td>
<td>Con</td>
<td>65%</td>
<td></td>
<td></td>
<td>Progress is still slow with the contractor experiencing issues with their major sub-contractor. Culverts are now installed with inlet and outlet works underway and roadworks commencing. Expect completion prior to Christmas.</td>
</tr>
<tr>
<td>Intersection - Malcomson Street / Charles Hodge Avenue</td>
<td>Con</td>
<td>10%</td>
<td></td>
<td></td>
<td>Drainage works are continuing with limited disruption to road users.</td>
</tr>
<tr>
<td>Fourways Drainage</td>
<td>Design</td>
<td>80%</td>
<td></td>
<td></td>
<td>Final Design Report to be presented to Council for endorsement.</td>
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Middle Creek Dam
Dam Safety Management Program
Emergency Action Plan

Mackay
REGIONAL COUNCIL

Document Control Sheet

Controlled copy number: ____________________________________________

Approved by: __________________________________ Date: 17/11/2016

Revision Records:

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<td>I</td>
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### Middle Creek Dam

**Dam Safety Management Program**

**Emergency Action Plan**

---

#### Emergency Action Plan Distribution

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Position</th>
<th>Person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Disaster Management Group</td>
<td>Chair</td>
<td>Cr. Greg Williamaen</td>
</tr>
<tr>
<td>Local Disaster Management Group</td>
<td>Local Disaster Coordinator</td>
<td>Jason Devitt</td>
</tr>
<tr>
<td>Mackay Regional Council</td>
<td>Chief Executive Officer</td>
<td>Craig Doyle</td>
</tr>
<tr>
<td>Mackay Regional Council</td>
<td>Director Engineering and Commercial Infrastructure</td>
<td>Jason Devitt</td>
</tr>
<tr>
<td>Mackay Regional Council</td>
<td>Manager W &amp; WW Treatment</td>
<td>Stuart Boyd</td>
</tr>
<tr>
<td>Mackay Regional Council</td>
<td>Water Treatment Plant Supervisor (Dam Operator)</td>
<td>Ross Tumer</td>
</tr>
<tr>
<td>Department of Energy and Water Supply</td>
<td>Dam Safety Regulator</td>
<td>Peter Allen</td>
</tr>
<tr>
<td>Mackay Regional Council</td>
<td>Emergency Management Team</td>
<td>Anthony Lee&lt;br&gt; Bruce Chester-Master</td>
</tr>
<tr>
<td>Queensland Police Service Sarina</td>
<td>Officer in Charge</td>
<td>Mark Shields</td>
</tr>
<tr>
<td>Mackay District Disaster Management Group</td>
<td>Executive Officer</td>
<td>Paul Aigle</td>
</tr>
<tr>
<td>Queensland Fire and Emergency Service</td>
<td>Emergency Management</td>
<td>Carla Adams</td>
</tr>
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</table>
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1. Introduction

1.1. Purpose

This Emergency Action Plan (EAP) describes the coordination of necessary actions by the Mackay Regional Council (MRC) and its officers to provide timely notification to Queensland Police Service, Mackay Local Disaster Management Group (LDMG) and affected persons in the event of an emergency condition at the Middle Creek Dam.

Twenty five (25) residential properties could be impacted by flood inundation out of Middle Creek Dam. Inundation impact on these properties could amount to flooding up to 300 m.m. AGL. Actual number of Population at Risk (PAR) would be dependent on location within properties. All 25 properties will be contacted by landline or mobile phone at the time of any prescribed incident.

Controlled releases from Middle Creek Dam (MCD) do occur as and when downstream water supplies are in need of replenishment. During these occasions the 450 m.m. outlet valve will be opened and water released. This release operation will not impact on any residential properties downstream of MCD. Impact on private residential road access is minimal and does not make road access hazardous.

1.2. Scope

This EAP details Emergency Events and Action Procedures for the following events.

- Flooding.
- Excessive or New Seepage Occurrence.
- Movement of the Dam.
- Earthquake.

Procedures have been developed for various scenarios that may pose a risk to the dam. Each procedure documents a series of events that trigger a decision or action. Each procedure is laid out in a tabular format accompanied by a succinct description to support the decision or required action.

The Mackay Local Disaster Management Group (LDMG) coordinates disaster and planning within the Mackay Regional Council area for floods and other events which significantly impact the community downstream. If an emergency occurs at Middle Creek Dam that causes a community consequence the MWS-MRC holds the responsibility for the initial notifications of residents and the management of incident unless escalation requires evacuations. The LDMG will coordinate community response where evacuation of residents is required i.e. establishing evacuation centres etc.
2. Definitions
The following definitions are used throughout this manual.

- The Owner – Mackay Regional Council.
- Declared Incident – A set of circumstances resulting in the EAP being invoked.
- Community – residential properties within flood inundation area
- Community consequence – residential properties within flood inundation area are flooded
- Routine inspections – Dam inspection in accordance with Middle Creek Dam Standard Operating Procedures (SOP).

2.1. Abbreviations and Glossary of Terms
The following abbreviations or Glossary of Terms apply when using this Emergency Action Plan.

- AEP Annual Exceedance Probability
- AFC Acceptable Flood Capacity
- COO Chief Operating Officer
- DDC District Disaster Coordinator
- DEWS Department of Energy and Water Supply
- EAP Emergency Action Plan
- LDC Local Disaster Coordinator
- LDMG Local Disaster Management Group
- MRC Mackay Regional Council
- MWS Mackay Water Services
- PAR Population at Risk
- LDCC Local Disaster Coordination Centre
- PMF Probable Maximum Flood
- DCF Dam Crest Failure
- SDF Sunny Day Failure
- SOP Standard Operating Procedures
3. Roles and Responsibilities

Any emergency incident at the Middle Creek Dam will involve representatives from a number of agencies including the MRC, Mackay Water Services (MWS), a department within the MRC and the LDMG.

MRC have the ultimate responsibility for the emergency response within the region.

MWS will be responsible for maintaining and executing this EAP. Expectations of MWS are to:
- Ensure the business maintains adequate levels of planning and preparedness for emergencies;
- Execute an efficient/effective response to emergency events at Middle Creek Dam, i.e. Releases/Inspections/Communications or Alerts/Warnings to residents downstream;
- Cooperates with Council, the LDMG and all stakeholders in the management of emergencies.

Where any emergency is likely to affect the downstream community i.e. Evacuation or temporary accommodation requirements the LDMG will assist in the coordination of the operation.

In the event of an emergency, decisions on where, when and how units are deployed to address the situation downstream of Middle Creek Dam will be handed down from the LDMG. During an event, regular meetings between MWS and the LDMG will occur to brief on the situation and to allocate tasks to ensure a co-ordinated response is achieved.

Within MRC and MWS, key roles and responsibilities for development and implementation of this EAP are outlined in Table 1.

Table 1: Roles and Responsibilities

<table>
<thead>
<tr>
<th>Role</th>
<th>General Responsibility</th>
<th>Personnel (and alternative)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency Action Plan custodian</td>
<td>The custodian of the EAP will be responsible for development and overseeing implementation of the EAP. Primary responsibility of the EAP Custodian will be to ensure that MWS MRC has sufficient capability to manage its response to an emergency as efficiently and effectively as possible.</td>
<td>Manager Water Treatment (Stuart Boyd)</td>
</tr>
<tr>
<td>Mackay Water Services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preparedness Coordinator</td>
<td>Primarily responsible for the execution of the emergency planning and preparedness activities. Promote opportunities for improved emergency management including review of plans, “live” exercises etc. to ensure that plans and arrangements are operable. Coordinate with, and support Council and other regional or state agencies in developing MRC’s emergency management capability on a broader scale.</td>
<td>Manager Water Treatment (Stuart Boyd)</td>
</tr>
<tr>
<td>Incident Manager</td>
<td>Ensure that in the event of an emergency, the business resources are coordinated as envisaged under this EAP. The Incident Manager will assume the overall ‘day to day’ responsibility for management of an event.</td>
<td>Manager Water Treatment (Stuart Boyd)</td>
</tr>
<tr>
<td>Incident</td>
<td>Overall responsibility for managing the tactical and wider</td>
<td>As determined</td>
</tr>
<tr>
<td>Role</td>
<td>General Responsibility</td>
<td>Personnel (and alternative)</td>
</tr>
<tr>
<td>------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Management Team              | operational aspects of the incident and for coordinating all operational aspects of the response and recovery effort for MWS. In doing so, the Incident Management Team has the following objectives:  
  • Ensure the safety of the overall operational response;  
  • Maintain the integrity of the operating systems;  
  • Minimise the impact to customers, the community and the environment;  
  • Ensure that the site operation has adequate organisation support and resources. | by the Incident Manager and LDMG                                                                                  |
| Field Coordinator            | Management of the ‘on the ground’ assessment and execution of the emergency response to an incident. Provide feedback to the Incident Manager on key aspects of the event.  
  This includes monitoring the Middle Creek Dam level and operating the Middle Creek discharge valve as required. | Water Treatment Plant Supervisor, Sarina (Ross Turner)                                                         |
| Site Management Team         | The site management team will have responsibility for managing the localised site based operational aspects of the incident for MWS and in doing so, will make best endeavours to:  
  • Ensure the safety of all persons on site;  
  • Restore services with minimum disruption to customers, community and the environment;  
  • Provide regular updates to the Incident Management Team at the times requested. | As determined by the Field Coordinator                                                                            |
| Communications /Media Manager| Provides a single point of communication with all parties internal and external to MRC. Coordinates any media releases.                                                                                             | CEO, MRC (Craig Doyle)  
  Ken Furdey  
  Mayor Greg Williamson                                                                                         |
| Mackay Regional Council      |                                                                                                                                                                                                                       | LDMG Coordinator (Jason Devitt)  
  Alternative: Craig Doyle                                                                                      |
| Local Disaster Coordinator   | Responsibilities include:  
  • Roles under the Disaster Management Act 2003  
  • Coordinating the evacuation or residents in the vicinity of the flood inundation area.  
  • Coordinating relief to properties affected.                                                               | LDMG Chair  
  Chair LDMG  
  In consultation with DDC authorises voluntary or directed evacuators                                            |
| LDMG Chair                   |                                                                                                                                                                                                                       | Greg Williamson  
  Alternative: Amanda Camm                                                                                      |
| Sarina Water Treatment Plant |                                                                                                                                                                                                                       | Ross Turner                                                                                                    |
| Staff                        | Middle Creek Dam Inspections                                                                                                                                                                                            |                                                                                                               |
Emergency Communications and Contact List

The Incident Manager, or his delegate, is responsible for reporting on rainfall, water levels and dam condition. The Incident Manager is responsible for identifying an emergency situation.

Mobile phones are the only available channel of communication between Middle Creek Dam and the Sarina field office. However, mobile phones are not reliable 100% of the time and cannot be relied upon during emergencies for this area due to poor reception. The quality of the telephone reception depends on the service provider used. Council will have at its disposal, 2 way VHF radio systems. This equipment will either be in the form of hand held radio systems or vehicle equipped systems. This will provide a back-up communication system between Middle Creek Dam and the control centre should the mobile phone system fail.

A number of local residents have been identified as being at risk of flooding or inundation during an emergency event, based on the ‘Middle Creek Dam Sarina Dam Safety Review’ (Cardno, 2013). A list of properties and contact addresses and phone number are included in Attachment C. The residents have been prioritised based on their proximity to Middle Creek Dam. During an emergency event, these residents will be contacted by telephone or in person. In addition to the case of an emergency event, residents considered to be at risk will also be contacted in the event of a significant wet weather event.

MRC will allocate staff specifically tasked to contact these residents by telephone (mobile or landline) to warn them of a potential flood incident. Should any residents not be contactable via telephone, MRC will make every effort to physically visit affected residential properties to make necessary contact.

In the event of a dam failure or potential dam failure at Middle Creek Dam, and subject to lead times to warn residents downstream of Middle Creek Dam alternative warning alerts will be used i.e. door knocking, vehicle and loud hailer. It is important to note that residents do not rely on receiving a warning message on their phone. Residents need to prepare for an emergency and should not wait to receive a warning before they act. They will need to refer to their Safety Information Kit for further information in what PAR may need to do. Preformatted messages are shown in Attachment D.
3.1. Contact List

Table 2 contains a list of contact names and telephone numbers that can be used to contact key personnel during an emergency.

Table 2: EAP Contact List  Effective as of 31/7/2016

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
<th>Telephone</th>
<th>Mobile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Director, Engineering and</td>
<td>Jason Devitt</td>
<td>07 4961 0007</td>
<td>0418 782 870</td>
</tr>
<tr>
<td>Commercial Infrastructure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local Disaster Management Group</td>
<td>Mayor Greg</td>
<td>07 4961 9455</td>
<td>0427 850 959</td>
</tr>
<tr>
<td>– Local Disaster Coordinator</td>
<td>Williamson</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local Disaster Management Group Chair</td>
<td>Amanda Camm</td>
<td>07 4961 9455</td>
<td>0438 377 125</td>
</tr>
<tr>
<td>Local Disaster Management Group Alt</td>
<td>Craig Doyle</td>
<td>07 4961 9458</td>
<td>0435 951 144</td>
</tr>
<tr>
<td>Chief Executive Officer</td>
<td>Ross Turner</td>
<td>07 4961 9432</td>
<td>0422 336 115</td>
</tr>
<tr>
<td>Water Treatment Plant Supervisor,</td>
<td>Andrew Gibbs</td>
<td>07 4961 9803</td>
<td>0403 266 201</td>
</tr>
<tr>
<td>Sarina</td>
<td>Stuart Boyd</td>
<td>07 4961 9040</td>
<td>0438 388 847</td>
</tr>
<tr>
<td>Manager Civil Operations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manager Water Treatment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emergency Services</td>
<td>000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sarina Police Station</td>
<td>Mark Shields</td>
<td>07 4964 8444</td>
<td>0407 376 070</td>
</tr>
<tr>
<td>Dam Safety Engineer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Director, Department of Energy and</td>
<td>Peter Allen</td>
<td>1300 596 709</td>
<td></td>
</tr>
<tr>
<td>Water Supply</td>
<td></td>
<td>07 3199 4848</td>
<td></td>
</tr>
<tr>
<td>Operations Manager of CSR Plane</td>
<td>Paul Banakai</td>
<td>07 4940 9951</td>
<td>0419 475 252</td>
</tr>
<tr>
<td>Creek MII</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operations Manager of CSR Ethanol</td>
<td>Carl Morton</td>
<td>07 4940 8877</td>
<td>0439 802 219</td>
</tr>
<tr>
<td>Distillery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emergency Management Coordinator</td>
<td>Anthony Lee</td>
<td>07 4961 9462</td>
<td>0429 550 251</td>
</tr>
<tr>
<td>Technical Officer Emergency</td>
<td>Bruce Chester-</td>
<td>07 4961 2632</td>
<td>0407 646 980</td>
</tr>
<tr>
<td>Management</td>
<td>Master</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

All contact details shall be reviewed annually.
4. Middle Creek Dam Background Information

Table 3 provides a summary of key Middle Creek Dam information.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location Map</td>
<td>Shown in Figure 1</td>
</tr>
<tr>
<td>Watercourse</td>
<td>Middle Creek, AMTD 5.5km</td>
</tr>
<tr>
<td>Address</td>
<td>Middle Creek Road, Sarina</td>
</tr>
<tr>
<td>Latitude</td>
<td>21 Degrees 29 Minutes</td>
</tr>
<tr>
<td>Longitude</td>
<td>149 Degrees 5 Minutes</td>
</tr>
<tr>
<td>Surface Area</td>
<td>17.5 ha</td>
</tr>
<tr>
<td>Catchment Area</td>
<td>7.4 km²</td>
</tr>
<tr>
<td>Dam Volume When Full</td>
<td>1,120 ML</td>
</tr>
<tr>
<td>Wall Length</td>
<td>130m</td>
</tr>
<tr>
<td>Maximum Height</td>
<td>26m (Embankment crest to downstream toe)</td>
</tr>
<tr>
<td>Type of Structure</td>
<td>Rolled earth and rock fill with separating filter zones</td>
</tr>
<tr>
<td>Construction Method</td>
<td>Compacted clay/earth fill</td>
</tr>
<tr>
<td>Source of Materials</td>
<td>Local</td>
</tr>
<tr>
<td>Type of Spillway</td>
<td>Fixed flow control</td>
</tr>
<tr>
<td>Means of FFC</td>
<td>Broad-Crested Weir</td>
</tr>
<tr>
<td>Location</td>
<td>Left Abutment</td>
</tr>
<tr>
<td>Crest Width</td>
<td>24.38m</td>
</tr>
<tr>
<td>Spillway Level</td>
<td>RL 133.3</td>
</tr>
<tr>
<td>Embankment Crest Level</td>
<td>RL 137.8</td>
</tr>
<tr>
<td>Discharge Capacity</td>
<td>340 m³/s (approx.)</td>
</tr>
<tr>
<td>Type of Outlet</td>
<td>Cast Iron Pipe</td>
</tr>
<tr>
<td>Diameter</td>
<td>450mm</td>
</tr>
<tr>
<td>Method of Control</td>
<td>Down Stream Valve</td>
</tr>
<tr>
<td>Maximum Release Rate</td>
<td>171 ML/day</td>
</tr>
</tbody>
</table>

The current spillway discharge capacity of the dam meets a 1 in 2000 AEP (Annual Exceedance Probability) flood. Dam Operation

The only operating equipment at Middle Creek Dam is the dam discharge valve. The dam valve is opened by the standard water valve key carried in the vehicles of all local MWS Operations and Maintenance personnel. The valve is located at the toe of the dam wall. Access to the dam may not be possible in the event of a dam emergency.

For more detailed information refer to the Middle Creek Dam Standard Operating Procedures and the Middle Creek Dam Operations and Maintenance Manual. These documents are stored electronically in SharePoint:


Middle Creek Dam Standard Operating Procedures: [http://bruce/CorpSystems/WWSDocStore/WWSDocStore/Middle Creek Dam SOPs.doc](http://bruce/CorpSystems/WWSDocStore/WWSDocStore/Middle Creek Dam SOPs.doc)
The MRC document storage and control system and hardcopies are maintained in the Disaster Management and Incident kit.

4.1. Location and Access to Middle Creek Dam

Middle Creek Dam is located off Middle Creek Road, approximately 12 kilometres west-southwest of the town of Sarina (Figure 1).

![Location of Middle Creek Dam in Relation to Sarina](image)

Figure 1: Location of Middle Creek Dam in Relation to Sarina (source: Google Maps)

Access to Middle Creek Dam from Sarina is as follows:

- Travel south-west along Sarina – Marlborough Road for approximately 9.6 km.
- Turn right onto West Plane Creek Road. Travel north for approximately 1 km.
- Turn left onto Middle Creek Road. Travel north-west for approximately 5.5 km until reaching a locked gate. (The locked gate is located on a private property (Lot 1 RP717804) owned by Patricia Spratt opposite 549 Middle Creek Road. The key to open the gate is the former Sarina Shire Council key (WS14) which should be carried by all local water personnel). Turn right once through the gate.
- Travel 1.1 km along a dirt road to access the eastern end of the Middle Creek Dam wall. The spillway can be accessed by driving approximately 130 m along the dam wall.
- The roads used to access Middle Creek Dam are shown in Figure 2.
4.1.1. Dry Weather Access to Middle Creek Dam Wall

During dry weather conditions, the approximate travel time between Sarina and Middle Creek Dam is 20 minutes. The dam wall is able to be accessed by all vehicle types.

4.1.2. Wet Weather Access to Middle Creek Dam Wall

During wet weather conditions, a 4 wheel drive vehicle will be required past the locked gate. However, there will be no vehicle access to the dam wall or spillway. Access will be by foot only, starting approximately 500 m from the dam wall.

During periods of heavy rain resulting in localised flooding, the culverts on Middle Creek Road are likely to become inundated. In this case, there will be no access to Middle Creek Dam.

4.2. Monitoring and Inspection Programs

Routine inspections of the Middle Creek dam are undertaken by local field staff (Sarina Water Treatment Plant staff) in accordance with seasonal rainfall events and rainfall expectancy. Middle Creek Dam Standard Operating Procedures provides some guidance to the field staff as to what to look for and actions to be taken should any issues be identified. Findings from each inspection are recorded in a Log Book. The proposed monitoring and inspection program is as follows;

- May through December – routine inspections every two weeks.
- January through April – routine inspection once each week.
- During wet weather events (at any time during the year). Any weather forecast prediction of rainfall precipitation in excess of 100 mm during any 24 hour period will automatically trigger an inspection.
- During EAP activation dam routine inspection will immediately apply, either daily or in accordance with current situation.
- A dam level sensor is in place at Middle Creek Dam. Readings from the monitor are accessed by MWS staff via a web-based program, accessible from any internet-connected computer/iPad/smart phone at any time. The level sensor is also triggered to send an SMS alarm to the Incident Manager plus Emergency Management Team/Emergency Management Coordinator and Technical Officer Emergency
Management) when the Middle Creek Dam levels reach 500 m.m. over full supply level and 1000 m.m. over full supply level.

- A rainfall measurement device is in place at MCD. Live rainfall activity is available on Mackay Regional Council computer network system. In the event of rainfall events of either 50 m.m. precipitation in one hour or, 100 m.m. in three hours, SMS advice will be provided to send an SMS alarm to the Incident Manager plus Emergency Management Team (Emergency Management Coordinator and Technical Officer Emergency Management)

- A camera observation system is in place at Middle Creek Dam. The system consists of viewing two separate areas;
  1. Still view of spillway area in relation to dam water levels. Live coverage.
  2. Downstream embankment area covered by mobile observation camera. Live coverage.

All information available on Mackay Regional Council computer network system.
5. Documentation and Reporting

It is essential that activities and decisions undertaken during any incident be duly recorded in chronological order.

An Emergency Event Report is to be provided to the DEWS Chief Executive within 30 business days after the end of the emergency event.

The Emergency Event Report is to include the following:
- A description of the event.
- Time, date and description of any actions.
- Regular dam level recordings.
- Description of any observed damage.
- Photographs and/or sketches.
- Details of communication and actions taken during the emergency.
- A description of how the EAP was implemented during the event and any comments on the adequacy of the EAP, as well as any proposed changes.
6. Emergency Events and Actions

Residents likely to be impacted by flood inundation will be contacted by landline or mobile phone at the time of any declared incident. Contact of 25 properties is considered a manageable task at the time of any incident and certainly as reliable as an automated advisory system.

Emergency alerts would be issued for two action requirements:

- Watch and Act.
- Evacuate now.

6.1. Flooding

For rainfall events with an AEP greater than 1 in 2000 flood, there is a risk that the spillway capacity will be exceeded and the dam will overtop.

The water level in the dam is monitored by an automated level sensor. It provides a level reading at all times and will automatically send an SMS alarm to key emergency staff.

Table 4 provides the triggers and appropriate actions to be taken should an emergency flooding event take place.

Table 4: Flooding — Triggers and Actions

<table>
<thead>
<tr>
<th>Alert Level</th>
<th>Triggers</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRE-INCIDENT ALERT LEVEL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P1</td>
<td>Significant rainfall event (&gt;50mm in 1 hour)</td>
<td>An automated alert is received by the Incident Manager. The Incident Manager continually monitors rainfall and level data.</td>
</tr>
<tr>
<td>P2</td>
<td>Water level reaches 90% dam capacity</td>
<td>An automated alert is received via SMS from the Middle Creek Dam level sensor. Incident Manager initiates inspection of the dam if appropriate. Rainfall and dam levels continue to be monitored. The Incident Manager informs the LDC and others on contact list that there is potential for a Activation of EAP</td>
</tr>
<tr>
<td>ACTIVATION OF EAP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Water level overtops the spillway and significant rainfall</td>
<td>The Incident Manager alerts the LDC and others on contact list of a Level 1</td>
</tr>
</tbody>
</table>
## Emergency Action Plan

<table>
<thead>
<tr>
<th>Alert Level</th>
<th>Triggers</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Event anticipated (&gt;100 mm in 24 hour period)</td>
<td>Activation EAP. Under the directions of the IM, Residents of properties within the possible inundation area are contacted and informed, as advised by LDC.</td>
</tr>
<tr>
<td>2</td>
<td>Dam level at 500 mm over FSL</td>
<td>The Incident Manager alerts the LDC and others on contact list of Level 2 activation EAP. Under the directions of the IM, Residents of properties within the possible inundation area are contacted and informed, as advised by LDC.</td>
</tr>
<tr>
<td>3</td>
<td>Dam level at 1000 mm over FSL</td>
<td>The Incident Manager alerts the LDC and others on contact list of Level 3 activation EAP. Under the directions of the IM, Residents of properties within the possible inundation area are contacted and informed, as advised by LDC.</td>
</tr>
</tbody>
</table>

### POST INCIDENT
- The Incident Manager and Local Disaster Coordinator to jointly declare incident closed. Contacts advised of incident stand-down.
- Residents advised of incident stand-down.

### 6.2. Excessive or New Seepage

Monitoring seepage is part of routine dam maintenance. A routine inspection of the dam is undertaken by the local field staff as indicated in section 5.3. When inspecting for seepage, signs to look for include:
- Increase in seepage quantity.
- Unaccountable increases in seepage flow.
- “Evergreen” spots, boggy ground or pools of water.
- Detection of cloudy water at seepage monitoring points.

When seepage of an unusual pattern is observed, a closer inspection is undertaken and details of the seepage are recorded in an Incident Log which is maintained along with Middle Creek Dam Data Book.
If further investigation identifies a substantial increase in the flow of seepage, the Field Coordinator is to inform the Incident Manager.

The Incident Manager will be responsible for ensuring that the appropriate action is taken, such as:

- Direction of remedial works.
- Engaging specialist Dam Safety Engineers / Consultants.
- Informing the LDMG of the potential for an emergency event.

The MRC will be responsible for issuing public information and warnings to all properties and residents along the inundation path.

The LDMG will be responsible for issuing any Voluntary or Directed Evacuation orders for all properties along the inundation path, if required.

There may be occasion when the Incident Manager may need to make the call to evacuate—specifically when there is no lead time for consultation in which case the Incident Manager will need to make an executive decision and make a call to evacuate now.

Table 5 provides the triggers and appropriate actions to be taken should an emergency seepage event take place.
### Table 5: Seepage – Triggers and Actions

<table>
<thead>
<tr>
<th>Alert Level</th>
<th>Triggers</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PRE-INCIDENT ALERT LEVEL</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| P1 | Field staff become aware of seepage. | Field staff alert the Field Coordinator, who in turn alerts the Incident Manager. The Incident Manager assesses the situation and either:  
- Activates further investigation to confirm seepage.  
- Elevates to Activation of EAP Level 1 immediately.  
- No further action. |
| **ACTIVATION OF EAP** | | |
| 1 | Seepage occurring at unusual rate, or of increased turbidity. | The Incident Manager engages a Dam Safety Engineer to assess the risk of failure. The Incident Manager alerts the LDC and others on contact list of Level 1 Activation EAP. Alert downstream residents. |
| | Seepage considered likely to cause dam failure. | The Incident Manager alerts the LDC and others on contact list of level 2 activation EAP. The Chair of the LDNG in consultation with the DDC issues a Directed Evacuation order for all properties along the inundation path. |
| **POST INCIDENT** | | |
| | | The Incident Manager and Local Disaster Coordinator to jointly declare incident closed. Contacts advised of incident stand-down. Residents advised of incident stand-down. |
6.3. Movement of Dam

Dam movement is considered a general term associated with slide, slump, slip, scarp, bench and overstep area or change of grade. A series of movements may lead to the failure of the dam.

Monitoring dam movement is part of routine dam maintenance. A routine inspection of the dam is undertaken by the local field staff.

When inspecting for dam movement, signs to look for include:

- Foundation movement.
- Overly steep grades.
- Local settlement.
- Cracking, slumping or slipping.

When dam movement is observed, the Field Coordinator is immediately notified, who in turn informs the Incident Manager. Constant monitoring from a safe distance is undertaken, until stood down by the Incident Manager. Details of the movement are recorded in an Incident Log.

Table 6 provides the triggers and appropriate actions to be taken should a dam movement event take place.
Table 6: Dam Movement– Triggers and Actions

<table>
<thead>
<tr>
<th>Alert Level</th>
<th>Triggers</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PRE-INCIDENT ALERT LEVEL</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P1</td>
<td>Field staff become aware of apparent movement</td>
<td>Field staff alert the Field Coordinator, who in turn alerts the Incident Manager. The Incident Manager assesses the situation and either:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Activates further investigation to confirm movement.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Elevates to Activation of AEP Level 1 immediately.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• No further action.</td>
</tr>
<tr>
<td><strong>ACTIVATION OF EAP</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Confirmed movement of part or all of the dam embankment structures.</td>
<td>The Incident Manager engages a Dam Safety Engineer to assess the risk of failure. The Incident Manager alerts the LDMG and others on contact list of level 1 activation EAP Alert downstream residents.</td>
</tr>
<tr>
<td>2</td>
<td>Dam Safety Engineer or COO considers dam to be at risk of collapse.</td>
<td>The Incident Manager alerts the LDC and others on contact list of level 2 activation EAP The Chair of the LDMG in consultation with the DDC issues a directed Evacuation order for all properties along the inundation path.</td>
</tr>
<tr>
<td><strong>POST INCIDENT</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post incident</td>
<td>The Incident Manager and Local Disaster Coordinator to jointly declare incident closed. Contacts advised of incident stand down. Residents advised of incident stand-down.</td>
<td></td>
</tr>
</tbody>
</table>
6.4. **Earthquake**

In the event of an earthquake, concern centres on the structural stability of the dam. Movement could occur during the earthquake resulting in or leading to failure of the dam. Inspection process similar to that indicated in Section 7.3 Movement of Dam to be carried out.

Table 7 provides the triggers and appropriate actions to be taken should a dam movement event take place.

**Table 7: Earthquake – Triggers and Actions**

<table>
<thead>
<tr>
<th>Alert Level</th>
<th>Triggers</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRE-INCIDENT ALERT LEVEL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P1</td>
<td>An earthquake occurs in the Mackay / Sarina region.</td>
<td>The Incident Manager determines whether a dam inspection should be undertaken. If required, the Incident Manager initiates the dam inspection.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Incident Trigger Levels</th>
<th>Triggers</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Damage to the dam is confirmed.</td>
<td>The Incident Manager engages a Dam Safety Engineer to assess the risk of failure. The Incident Manager alerts the LDC. And others on contact list of level 1 activation EAP. Alert downstream residents.</td>
</tr>
<tr>
<td>2</td>
<td>Dam Safety Engineer or Incident Manager considers dam to be at risk of collapse.</td>
<td>The Incident Manager alerts the LDC and others on contact list of level 2 activation EAP. The Chair of the LDMG in consultation with the DDC issues a Directed Evacuation order for all properties along the inundation path. Alert downstream residents.</td>
</tr>
</tbody>
</table>
### POST INCIDENT

<table>
<thead>
<tr>
<th>Post incident</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>The Incident Manager and Local Disaster Coordinator to jointly declare incident closed. Contacts advised of incident stand down.</td>
<td></td>
</tr>
<tr>
<td>Residents advised of incident stand-down.</td>
<td></td>
</tr>
</tbody>
</table>
7. Evacuation Procedure Resulting From Dam Flooding or Failure

In the event of a flood (from overtopping) or a dam failure, there is a risk of inundation of downstream properties. A dam failure inundation profile has been developed to identify properties and structures at risk. The latest available inundation map is provided in Attachment B. Attachment C provides the names, addresses and contact details of all properties at risk. The ‘Property ID’ corresponds to the numbers labelled on the inundation map. The properties have been prioritised based on their vicinity to the dam and the type of land use (i.e. Properties with dwellings have been prioritised above those with only farm buildings or sports fields etc.).

During an overtopping or failure event, the following roads will become impassable (see Figure 3):

- Breen’s Crossing on Rifle Range Road.
- Jackson’s Crossing on Pirie St.
- Jenners Crossing.
- West Plane Creek.

In the event of dam failure there will be no access to or from Middle Creek Road. During dry weather releases no roads are impacted.

Figure 3: Location of impassable crossings in the event of a failure at Middle Creek Dam
Attachment A
Monitoring and Inspection Programs – Middle Creek Dam
## Attachment A
### Monitoring and Inspection Programs – Middle Creek Dam

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>GENERAL CHARACTERISTICS</th>
<th>WHEN AND WHAT TO CHECK</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overtopping imminent</td>
<td>Storage tail and water level rising</td>
<td>During periods of excessive rainfall.</td>
<td>Monitor water levels. Enact evacuation plan if dam wall overtops.</td>
</tr>
<tr>
<td>Wave erosion</td>
<td>Beaching or notching of the upstream face of embankments by wave generated over long periods of strong wind.</td>
<td>During or after periods of strong wind – inspect upstream face of embankment.</td>
<td>Initiate engineering assessment and rehabilitation.</td>
</tr>
<tr>
<td>Toe erosion</td>
<td>Erosion of embankment toe by spillway discharge or diversion flows.</td>
<td>During and after large rainfalls – inspect embankment toe.</td>
<td>Initiate engineering assessment and rehabilitation as required.</td>
</tr>
<tr>
<td>Gullying</td>
<td>No armouring or vegetation cover on embankment batters or poor drainage</td>
<td>During and after large rainfalls inspect embankment batters for damage to armouring to vegetation cover.</td>
<td>Initiate engineering assessment and rehabilitation as required.</td>
</tr>
<tr>
<td>Loss of storage contents</td>
<td>Excessive loss from the storage and/or occasionally increased seepage or increased groundwater levels near the storage</td>
<td>During routine monitoring – look for environmental changes such as vegetation damage, salt scalds, etc.</td>
<td>Initiate engineering assessment and rehabilitation as required.</td>
</tr>
<tr>
<td>Seepage erosion or piping</td>
<td>Progressive internal erosion of the embankment or foundation to form an open conduit or pipe.</td>
<td>During routine inspection or after unaccountable increases in seepage flows, look for an emission point.</td>
<td>Initiate engineering assessment and rehabilitation as required.</td>
</tr>
<tr>
<td>New springs, seeps or boggy areas</td>
<td>Evidence of internal changes in seepage control (could be initial signs of piping failure).</td>
<td>During routine inspection, look for ‘evergreen spots’, boggy ground or pools of water.</td>
<td>Initiate engineering assessment and rehabilitation as required.</td>
</tr>
<tr>
<td>Rapid increases or cloudy appearance of seepage</td>
<td>Seepage flow through the storage embankment is cloudy and increasing (piping failure has started).</td>
<td>After detection of cloudy water at seepage monitoring points – look for the source of cloudy water.</td>
<td>Initiate engineering assessment and rehabilitation as required.</td>
</tr>
<tr>
<td>Increase in gallery seepage</td>
<td>Increase in the normal rate of gallery seepage.</td>
<td>After detection – check for differential movement or cracking in concrete components.</td>
<td>Initiate engineering assessment and rehabilitation as required.</td>
</tr>
<tr>
<td>PROBLEM</td>
<td>GENERAL CHARACTERISTICS</td>
<td>WHEN AND WHAT TO CHECK</td>
<td>ACTION</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>-----------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Foundation Failure</td>
<td>Sliding, rotation or settlement of part or entire dam.</td>
<td>During routine inspection or immediately after earthquakes - inspect for evidence of foundation movement or displacement immediately adjacent to dam.</td>
<td>Initiate engineering assessment and rehabilitation as required.</td>
</tr>
<tr>
<td>Slide in downstream slope</td>
<td>Slide in the downstream face.</td>
<td>During routine inspection - look for cracks or scarp near the crest and bulges at the toe.</td>
<td>Initiate engineering assessment and rehabilitation as required.</td>
</tr>
<tr>
<td>Flow slide</td>
<td>Collapse and flow of soil around the storage periphery.</td>
<td>During routine inspection and especially with sedimentary/ colluvial soils - look for material displacement around the storage rim.</td>
<td>Initiate engineering assessment and rehabilitation as required.</td>
</tr>
<tr>
<td>Landslide</td>
<td>Mass movement of soil or rock from slopes and valley walls around the storage.</td>
<td>During routine inspection - look for material displacement.</td>
<td>If major soil movement or dam wall enact evacuation plan. In minor soil movement, initiate engineering assessment and rehabilitation as required.</td>
</tr>
<tr>
<td>Movement or cracking in structural concrete work</td>
<td>Failure of mechanical components such as pipes, gates, etc.</td>
<td>During routine inspection or when mechanical problems such as a burst pipe or a jammed gate occur - look for any movement or cracking of the structural concrete work to determine the cause.</td>
<td>Initiate engineering assessment and rehabilitation as required.</td>
</tr>
<tr>
<td>Failure of appurtenant structures or operating equipment</td>
<td>Loss of ability to supply water or discharge flood safely</td>
<td>After detecting an operational anomaly - identify and investigate the cause.</td>
<td>Initiate engineering assessment and rehabilitation as required.</td>
</tr>
<tr>
<td>Chemical spills</td>
<td>Dead fish and other aquatic life in storage, or a strange odour or colouration.</td>
<td>On detection.</td>
<td>Use alternate water source, initiate chemical testing, identify and investigate the cause.</td>
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</table>
Attachment B
Flood Inundation Map
Attachment C
At Risk Properties and Contact Details in Case of Evacuation
<table>
<thead>
<tr>
<th>Ref/Lot</th>
<th>Property description (Land Use)</th>
<th>Address</th>
<th>Suburb</th>
<th>Owner</th>
<th>CONTACT DETAILS</th>
<th>Flood Layer</th>
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<td>SP12300/1</td>
<td>Dwelling Lot</td>
<td>338 Middle Creek Road</td>
<td>SARRA QLD 4733</td>
<td>Steven J Mel</td>
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<td>CFP &amp; GDF 1</td>
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<td>Barry J Demarin</td>
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<td>RP9069/18</td>
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<td>RP9800/12</td>
<td>True House (with Buildings)</td>
<td>250 Middle Creek Road</td>
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Attachment D

Preformatted Warning Messages in Accordance with Priority
### Middle Creek Dam
**Dam Safety Management Program**
**Emergency Action Plan**

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<thead>
<tr>
<th>Alert Level</th>
<th>Trigger</th>
<th>Formatted Message Sent to Property Owner</th>
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<tbody>
<tr>
<td>PRE-INCIDENT ALERT LEVEL P1</td>
<td>Significant rainfall event (&gt;50mm in 1 hour)</td>
<td>No Message</td>
</tr>
<tr>
<td>PRE-INCIDENT ALERT LEVEL P2</td>
<td>Water level reaches 100% dam capacity</td>
<td>No Message</td>
</tr>
<tr>
<td>DECLARED INCIDENT TRIGGER LEVEL 1</td>
<td>Water level overtakes the spillway and significant rainfall event anticipated (&lt;100 mm in 24 hour period)</td>
<td><strong>MC DAM AT 100% CAP. HEAVY RAINFALL EXPECTED. WATCH AND ACT.</strong></td>
</tr>
<tr>
<td>DECLARED INCIDENT TRIGGER LEVEL 2</td>
<td>Dam level at 500 mm over spillway</td>
<td><strong>MC DAM SPILLING AT 500 MM OVER SPILLWAY. WATCH AND ACT.</strong></td>
</tr>
<tr>
<td>DECLARED INCIDENT TRIGGER LEVEL 3</td>
<td>Dam level at 1000 mm over spillway</td>
<td><strong>MC DAM SPILLING AT 1000 MM OVER SPILLWAY. EVACUATION REQUIRED. ACT.</strong></td>
</tr>
</tbody>
</table>