

**WATER AND WASTE COMMITTEE****15 FEBRUARY 2012****2****MAJOR PROJECTS STATUS REPORT – WATER & WASTE**

J Turner: 1/58/13-23: #3220807v7

**RECOMMENDATION:****It is recommended that the report be noted.****INTRODUCTION:**

The following update is provided on current major projects being undertaken by Water & Waste. As requested by Councillors, updated information is provided in a lighter font colour and information no longer relevant has a line through it.

The status of the following projects is provided in this report:

1. Mulgrave River Aquifer Water Supply Scheme
2. Portsmouth Landfill Closure
3. Northern (Stage 1), Marlin Coast and Mossman Recycled Water Systems
4. Port Douglas Demand Management Project

**Project 1:****MULGRAVE RIVER AQUIFER WATER SUPPLY SCHEME****Project Manager:**

Robert Willemse

**Project Steering Group:**

Bruce Gardiner, Jon Turner

**Consultant:**

GHD – Mulgrave River Aquifer Feasibility Study & Public Environment Report  
GHD - Mulgrave River Aquifer Scheme Stage 1

**Scope of Works:** Based on the resolution of Council dated 15<sup>th</sup> April 2009, Council is pursuing the following major tasks;

- Commonwealth and State approval of Stage 1 of the Mulgrave River Aquifer Scheme; and,
- Development of planning, concept and detailed design of Stage 1 involving community engagement, land acquisition and permitting tasks.

## Key Achievements

The recent major achievements include:

- CRC W&W tabled a recommendation at the Water & Waste Committee dated 16 November 2011. The recommendation noted inclusion of the following reports:
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  - a. Report for Mulgrave River Aquifer Scheme Stage 1 - Numerical Modelling and Ecological Investigations, GHD Pty Ltd, July 2011.
  - b. Independent Review of Groundwater Modelling for the Mulgrave River Aquifer Project, Heritage Computing (Dr Noel Merrick), November 2011.
  - c. Report of the Mulgrave River Aquifer Community reference Panel to Cairns Regional Council, 26 October 2011.

The following recommended conclusions:

- Proceed with the process of installing flow monitoring stations and additional monitoring bores in the vicinity of Behana Creek.
- The above works to assist in providing further data to assist Council and the Community in making a final decision on whether to proceed with the project or not.

The recommendation was carried.

- CRC W&W to close off Consultancy scope, with GHD, as per Mulgrave River Aquifer Scheme Stage 1.
- CRC W&W to change scope of works for this Consultancy, with GHD, to take account of the completion of the works as per the recommendations.

## Issues

Key issues include:

- Installation of further monitoring station and collection of data during year 2012, to supplement data as per recommendation.
- Further cultural heritage and community consultation consideration. A meeting was held with Converge Heritage on 18/1/12 ~~on the recommendation to CRC from Preston Law to further consider Council's duty of care requirements~~ a proposal for recommended work has been received and is currently under consideration.

## Future Milestones

- GHD scope proposal, based on report and panel recommendations due 9/2/12.
- CRC W&W evaluation of GHD proposal by 17/2/12
- CRC W&W to evaluate Community Reference Panel independent input.
- Collection of supplementary data to augment the currently available data in order for Council and the Community to assess whether the Project will proceed or not.

## Financial Data

The 2011/12 budget has taken into account further DERM liaison requirements and costs associated to complete the additional recommended installation of monitoring bores and ongoing monitoring works.

**Financial Status:** (mark box)  Under budget  On budget  Over budget

Mulgrave River Aquifer Scheme						
Project #	Description	2nd Budget Review 2011/12	Expense at 27/01/12	Committals at 27/01/12	Total costs at 27/01/12	Variance
PCW51310	Mulgrave River Aquifer	\$500,000	\$91,218	\$355,160	\$446,378	\$53,622
	TOTAL	\$500,000	\$91,218	\$355,160	\$446,378	\$53,622

## Project 2: PORTSMITH LANDFILL CLOSURE

**Project Manager:** Peter Thoren

**Consultant:** Golder Associates Pty Ltd

**Scope of Works:** Preparation of closure and post closure plan, detailed design and implementation of the detailed design for closure of Portsmith landfill.

### Key Achievements:

- Contract for the Landfill Liner awarded to FABTECH SA P/L on 15 December 2010.
- The construction contract was awarded to BMD on 24th March 2011. Possession of site granted 7th May 2011.
- ~~— A major rain event was experienced on site on 18th and 19th October 2011, with significant damage experienced to the top soil, cover soil, rock drop structures and drainage layer. Costs for rectification works are estimated to be approximately \$1 million, and will be covered by the Contractor Works Insurance. No costs will be borne by Council for repair works.~~
- ~~— In response to the rain event, Council and the Contractor jointly reviewed options to improve site security as the wet season approaches. Council has subsequently approved an option to turf the batter slopes and hydro-mulch the top portions of the landfill. These works are being incorporated into the current works.~~
- Council is maintaining a daily review of sediment and erosion control strategies throughout the site to ensure that adequate measures are being maintained.
- ~~— Repair of the damage that occurred during the rain event of 18 and 19 October now completed and construction works commencing. Construction program has however been extended as a result of the repair works and subsequent rain. Completion of works now anticipated to be January 2012.~~
- Installation of turf is ongoing in response to Councils approval to provide turf to all batters has been completed.
- The contractor has implemented additional sediment and erosion control strategies to provide security against further rain events.
- Outstanding works include surface treatment of the balance of Separable Portion 4. The design for this area requires a hydromulch treatment.

- Due to ongoing rain, the contractor has also opted to supply and place turf in lieu of hydromulch for the balance of Separable Portion 4. The turf is being supplied and placed at no additional costs to council. ~~The contractor has adopted this strategy due to the improved security the turf is providing against the wet weather, and improved production rates in the wet weather.~~
- The on-site gas flare has now been commissioned and is operational. Methane gas is therefore now being burnt off through the flare. The flare will remain in operation for 6 months to record and measure gas flow rates. This data will be used to assess the final gas re-use options for the site.
- The flare will result in an immediate reduction in greenhouse gas emissions from Council activities by approximately 60% or 23,000 tonnes per annum.
- Construction works anticipated to be complete by end of ~~January~~ mid February 2012, but is subject to favourable weather conditions.

## Issues

The key issues to be monitored are:

1. Timing of the closure works (unable to work in the wet season).
2. Acceptance of the closure and post closure plan by DERM.
3. ~~Identification of lead times for supply of materials that may impact on the successful delivery of the project, in particular the significant area of membrane liner required and the significant volume of fill material for the capping works.~~
4. ~~Traffic management associated with the delivery of the significant fill material required for the closure works.~~
5. ~~Management of clay sub-grade material to ensure moisture content is maintained prior to placement of liner. This process has proved to be difficult and the contractor has therefore opted to use a proprietary Geosynthetic Clay Liner in lieu of the clay layer to improve the liner installation production rate. This process while more expensive, is at no additional cost to Council.~~
6. ~~Management of liner installation process with regard to weather conditions, to ensure complete clay sub-grade works are protected.~~
7. Manage the supply and delivery of the turf to ensure adequate supply is maintained and to ensure the turf installation is not adversely effected by further wet weather.
8. Managing sediment and erosion controlling strategies to suit construction processes and pending wet weather.
9. Finalisation of the outstanding works (balance of Separable Portion 4) including turfing.
10. Finalisation of contract quality documentation (ongoing).

## Future Milestones

Timetable will be reviewed subject to outcomes as above.

Description	Program	Status
Design complete (subject to outcomes of gas pumping trial)	December 2010	Complete
Gas pumping trial completion	December 2010	Complete
Expression of Interest Phase	October 2010	Complete
Purchase of Liner	December 2010	Complete
Award of Probity Consultancy	August 2010	Complete
Preparation of tender documentation complete (construction works)	December 2010	Complete
Issue tender documents for Principle Contract	January 2011	Complete
Tender phase and assessment complete	March 2011	Complete
Award of construction phase	April 2011	Complete
Site mobilisation	April 2011	Complete
Construction phase	April 2011 to December 2011 January 2011	On going

## Financial Data

**Financial Status:** (mark box)  Under budget  On budget  Over budget

Portsmouth Landfill Closure						
Project #	Description	2nd Budget Review 2011/12	Expense at 27/01/12	Committals at 27/01/12	Total costs at 27/01/12	Variance
PMW10001	Portsmouth Landfill Closure	\$14,758,837	\$12,455,458	\$1,667,832	\$14,123,290	\$635,547
	TOTAL	\$14,758,837	\$12,455,458	\$1,667,832	\$14,123,290	\$635,547

### Project 3:

### NORTHERN (STAGE 1), MARLIN COAST AND MOSSMAN RECYCLED WATER SYSTEMS

#### Project Manager:

Rebecca Randall – Northern and Marlin Coast Schemes  
Peter Thoren – Mossman Scheme

#### Consultant: (Design & Documentation)

Sinclair Knight Merz Pty Ltd – Northern & Marlin Coast  
GHD Pty Ltd – Mossman Scheme

#### Contractor: (Construction)

Northern (Stage 1) Pipeline to Botanic Gardens – FGF  
Marlin Coast Recycled Water Distribution Pipelines – JPMI

**Scope of Works:**

Northern (Stage 1) Recycled Water Scheme – consists of design, documentation, construction, commissioning and validation of recycled water infrastructure to supply recycled water from the Northern Wastewater Treatment Plant to the Cairns Botanic Gardens, sporting fields and other users for irrigation purposes.

Marlin Coast Recycled Water Scheme – consists of design, documentation, construction, commissioning and validation of recycled water infrastructure to supply recycled water from the Marlin Coast Wastewater Treatment Plant to the existing recycled water users – Paradise Palms Golf Club and Half Moon Bay Golf Club – and new recycled water users – Yorkey’s Knob State School and Smithfield Village residential users – for irrigation and outdoor water use purposes.

Mossman Recycled Water Scheme – consists of design, documentation, construction, commissioning and validation of Northern (Mossman) Recycled Water Scheme and the Southern (Mossman) Recycled Water Scheme infrastructure to supply recycled water to the Mossman Golf Course, George Davis Park, Mossman High School Sporting Fields and Mossman Showgrounds/Coronation Park for irrigation purposes.

**Key Achievements:***Marlin Coast Recycled Water Scheme*

- New pipeline and associated infrastructure installed to service Yorkey’s Knob State School from Half Moon Bay pipeline in May 2011.
- Recycled Water Agreement drafted and issued to Yorkey’s Knob School for signing in June 2011. Following extensive negotiations, an agreement has been reached on the terms and conditions for this agreement. Recycled water agreement finalised and recycled water supply to school commenced in December 2011.
- Marlin Coast Recycled Water Scheme Bulk Storage and Distribution system design completed.
- Construction contract for Marlin Coast Recycled Water Distribution system awarded to JPMI Pty Ltd on 24<sup>th</sup> November 2011.
- Construction expected to commence for Marlin Coast Recycled Water Distribution system in week beginning 5<sup>th</sup> December 2011, weather permitting.
- Supply & Install tender for the key mechanical and electrical equipment for the Recycled Water Treatment Plant (RWTP) was advertised on 26<sup>th</sup> November 2011, with award expected in February 2012
- Pre-lodgement meeting for A and C Recycled Water Management Plan (RWMP) held with DERM in December 2012 to finalise RWMP prior to formal lodgement.

### *Northern Recycled Water Scheme*

- Northern Recycled Water Scheme Detailed Design Drawings and Specifications complete.
- Tender for the construction of the Northern Recycled Water Scheme infrastructure with Upgrade of Rising Main K (common trench) awarded 5<sup>th</sup> September 2011.
- Construction of the Northern recycled water main and K rising main has commenced with completion expected in June 2012.

### *Mossman Recycled Water Scheme*

- Concept design report finalised
- Entered into negotiations with Mossman Golf Club for future supply of recycled water for irrigation purposes
- Entered into negotiations with Mossman Sugar Mill for future supply of recycled water
- Completion of the standardised Recycled water agreement documentation.
- Recycled water management plan finalised.
- Survey and Geotechnical investigation sub-consultants engaged
- The construction contract for the northern Mossman recycled water main, in conjunction with the Newell Beach trunk water main, awarded 7<sup>th</sup> December, 2011
- The design and construction contract for the southern Mossman recycled water main and recycled water storage awarded 14<sup>th</sup> December, 2011.
- Entered into negotiations with Mossman Showgrounds, Department of Education (Mossman State School and Mossman State High School) and Department of Health (Mossman Hospital) for future supply of recycled water.

### **Issues**

The key issues to be monitored are:

#### *Marlin Coast Recycled Water Schemes*

1. Acceptance of the validation data for the Recycled Water Schemes and Recycled Water Management Plans (RWMPs) by DERM.
2. Multiplex, managers of the Bluewater residential development are awaiting the issue of an Infrastructure Agreement before confirming their involvement in the Marlin Coast "A+" Class Recycled Water Scheme for future development staging. The Infrastructure Agreement is currently being drafted and it is expected that negotiations with Multiplex will continue.
3. Obtaining Recycled Water Agreements with identified supply customers.

#### *Northern Recycled Water Scheme*

1. Acceptance of the validation data for the Recycled Water Scheme and Recycled Water Management Plan (RWMPs) by DERM.
2. Obtaining Recycled Water Agreements with identified supply customers.

### *Mossman Recycled Water Scheme*

1. Acceptance of the validation data for the Recycled Water Schemes and Recycled Water Management plans (RWMPs) by DERM.
2. Obtaining customer take up of recycled water for irrigation purposes
3. Obtaining Recycled Water Agreements with identified supply customers.
4. This project has tight delivery timeframes due to an agreed completion date of June 2012 as per the Federal Government funding deed in order to be eligible for a 50% subsidy of the overall project cost.

### **Future Milestones**

#### *Marlin Coast Recycled Water Scheme*

- Lodgement of RWMP for existing "A" & "C" Class recycled water schemes (incorporating school) to DERM in March 2012.
- Construction of distribution system infrastructure to begin in February 2012.
- Construction of distribution system infrastructure to be complete in July 2012.
- Detailed design of RWTP due to be complete by June 2012
- Approval of RWMP for "A" & "C" Class recycled water schemes in July 2012
- Tender for the construction of the RWTP due to be advertised in July 2012
- Construction of the RWTP to commence in October 2012.
- Commissioning & Validation of the RWTP to commence February 2013.
- Lodgement of RWMP for "A+" Class recycled water scheme (including validation data) in July 2013.
- Supply of "A+" Class recycled water to residential customers in August 2013.
- Approval of RWMP for "A+" Class recycled water scheme in October 2013.

~~The project milestone dates have changed for the following reasons:~~

- ~~— Additional requirements prior to lodgement of the Recycled Water Management Plan, as a result of the pre-lodgement meeting held with DERM in December 2011;~~
- ~~— Delays to the award of the construction contract for the distribution system infrastructure to December 2011 due to the need for post tender clarifications, coupled with the holiday season; and~~
- ~~— Delays to the detailed design of the RWTP due to the time required to compile input and the need for tender and post tender clarifications associated with the key mechanical and electrical infrastructure (UF & UV) supply and install contracts.—~~

~~Due to the current status of this project, the dates now given have a far higher degree of confidence than previously reported milestone dates. The milestone date slippage reported above does not have a detrimental impact on the previously reported completion dates as any slippage will be able to be made up during the construction period.—~~

### *Northern Recycled Water Scheme*

- Design and Documentation for Recycled Water Pump Station complete in February 2012.
- Lodgement of RWMP for scheme to DERM in March 2012.
- Construction of Recycled Water Pump Station in April 2012.
- Approval of RWMP in May 2012
- Completion of main pipeline and pump station in June 2012
- Supply of recycled water to Botanic Gardens, Magazine Park & Touch Park in August 2012.
- Construction of separate pipeline and supply of recycled water to Arnold Street Nursery subject to negotiated approvals.

~~The project milestone dates have changed for the following reasons:~~

- ~~— Additional requirements prior to lodgement of the Recycled Water Management Plan, as a result of the pre-lodgement meeting held with DERM in December 2011;~~
- ~~— Delays to the detailed design of the Recycled Water Pump Station due to the engaged consultant failing to deliver to the required timeframes, sighting holiday period staff absences/shut-down period as the result.~~

~~Due to the current status of this project, the dates now given have a far higher degree of confidence than previously reported milestone dates. The milestone date slippage reported above does not have a detrimental impact on the previously reported completion dates as tasks on the critical path for completion have remained unchanged.~~

### *Mossman Scheme*

- Lodgement of RWMP for scheme to DERM in February 2012
- Construction of the recycled water distribution and storage infrastructure to commence in January 2012.
- Completion of construction of recycled water distribution and storage infrastructure in May 2012.
- Approval of RWMP in May 2012.
- Supply of recycled water to initial customers in June 2012.
- Finalisation of supply agreements with identified customers by June 2012.
- Funding deed reporting completion and receipt of government subsidies 50% of project costs by June 2012.

**Financial Data***Northern and Marlin Coast Schemes*

**Financial Status:** (mark box)  Under budget\*  On budget  Over budget

<b>Marlin Coast and Northern Recycled Water Systems</b>						
Project #	Description	2nd Budget Review 2011/12	Expense at 27/01/12	Committals at 27/01/12	Total costs at 27/01/12	Variance
PCW09317	<b>Design Recycled Water Systems</b>	\$3,635,000	\$930,124	\$4,085,088	\$5,015,212	-\$1,380,212
	TOTAL	\$3,635,000	\$930,124	\$4,085,088	\$5,015,212	-\$1,380,212

\* Project is an ongoing project spanning the 11/12 and 12/13 financial years so total committals are not expected to be expended this financial year.

*Mossman Scheme*

**Financial Status:** (mark box)  Under budget  On budget  Over budget

<b>Mossman Recycled Water Project</b>						
Project #	Description	2nd Budget Review 2011/12	Expense at 27/01/12	Committals at 27/01/12	Total costs at 27/01/12	Variance*
PCW11317	<b>Mossman Recycled Water Project</b>	\$3,000,000	\$196,560	\$3,032,910	\$3,299,470	-\$229,470
	TOTAL	\$3,000,000	\$196,560	\$3,032,910	\$3,299,470	-\$229,470

\* Variance to be resolved at 3<sup>rd</sup> Budget Review

**Project 4:** **PORT DOUGLAS DEMAND MANAGEMENT PROJECT**

**Project Manager:** Adrian Newton-Bird

**Consultants:** Detection Services, MWH, Itron, A.E.Smith, Reef City Maintenance, MPC

**Scope of Works:** Establish District Metered Areas, embark on a communications and education campaign (inclusive of a home water wise service and commercial water assessment service), implement a trial of advanced residential metering, undertake a leak detection program, and optimise the performance of the network using pressure management.

The project has target water savings of 21 ML of potable water per annum and 64 ML reduction in water consumption per annum, with targeted total water savings of 312 ML per annum.

**Key Achievements:**

- 248km of mains have been leak detected with estimated savings of \$157,876.57 non revenue water (to be confirmed after leak repair is completed), with estimated energy savings of 26,905kwh /per annum and a reduction in councils carbon footprint of 3.5 tons per annum.
- ~~60%~~ 100% of the identified leaks have been repaired and letters have been issued to all the customers with suspected internal leakage. Actual expenditure to Date is \$34,000.
- All district meters have been installed and commissioned in the district metering zones and are producing reliable data.
- The Pressure management valves have been procured for the creation of Pressure managed zones. The installation of PRVs is scheduled in November 2011. ~~Pressure reductions are scheduled to commence in January after further communications to the residents 14 days prior to implementation.~~ Pressure reductions will commence shortly in Division 10 with the official press release published on the 2<sup>nd</sup> February.
- The communications and education campaign was launched on 26 July 2011 in Port Douglas, ~~Invitations were publicly extended to local stakeholders and the general. The event was officiated by Deputy Mayor, Cr. Cochrane and Cr. Leu and hosted by Liz Collyer, Regional Manager Douglas.~~ The shop front at Macrossan St Port Douglas was officially opened on the 9/09/11 and was closed on 1/12/11.

- Commercial and Residential water audit sheets have been developed and resources have been identified, for the commercial water audit initiative and the Home Water Wise Service (Residential Retrofit program) The Home water wise works were awarded to A.E. Smith and Reef City Maintenance with the first bookings taken for the 12/9/11. The response to the Home Water Wise Service has been an unprecedented success. The original expectation based on Gold Coast Councils results was 3%, whilst Port Douglas has experienced a take up of 18% or 660 properties. This is approximately 4 times the projected response with bookings ongoing and significant positive feedback from those participating. The Uptake on the Home Water wise Project has now reached 925 homes or 18% of the port Douglas community. Due to budget constraints we ceased taking any further bookings on Wednesday the 2<sup>nd</sup> of November 2011. The feed back from customers has been extremely positive with no registered complaints to date. 44 companies have registered for the commercial water audits 58 properties have now registered for the commercial water audits
- Estimated water savings from the Home Smart Water Service, based on preliminary estimates the amount of water potentially saved from the service could be up to 140ML per annum. This equates to savings for customers of potentially \$145,000 per annum. Direct production costs for this water are approximately \$66,000. The Project has been completed with a total of 925 customers or 18% of the community taking up the service significantly higher than the planned 3% take up based on other council's experiences. The program identified 150 customers with internal leaks totalling 8.4M/l of water savings per annum at cost saving to the customers of \$8,471 per annum. Total water savings are estimated at 30Ml of water production per annum. Actual water savings from installation of devices will be calculated and reported in the final project report.
- Completion of the Advanced Water metering feasibility study. The Advanced metering tender was released to market and is due to close on the 13-9-11 with the recommendation for award due to be tabled at the September ordinary meeting. The Advanced metering tender has been awarded to Itron/Actaris at the September Ordinary meeting and Prestart meeting scheduled for the 12 October 2011. The first advanced water meter was installed on the 7<sup>th</sup> of November with the installation schedule to continue into the new year. To date some 833 advanced meters have been installed and the fixed networks data collection system is currently being assessed and installed. The first trial of the drive by meter reading capabilities was carried out on the 20th of January with a 100% success rate on reading meters.

## Issues

- ~~• Community objection to spending funds on this project rather than a chlorine free trial.~~
- ~~• Limited providers of advanced metering that meets the Australian standards for use in billing systems.~~
- This project has tight delivery timeframes due to an agreed completion date of June 2012 as per the Federal Government funding deed in order to be eligible for a 50% subsidy of the overall project cost.
- ~~• The original allocated budget for the Home Water Wise Service has been significantly exceeded due to the exceptional uptake of the service. Funding has been re-allocated from other parts of the project budget. We are also reviewing budgets outside the project to find an additional \$80,000 so that we can extend the program through to 1 December as originally advertised.~~
- ~~• Should additional budget not be found, and then the service will need to be cut short which may cause some negative comments in the community.~~
- There are some concerns relating to the timeframes to obtain approval to use third party infrastructure to mount the data collectors for the advanced metering program. At this time the contractor is working closely with CRC and the external entities to expedite the approval process.

## Future Milestones

- ~~• Completion of the Leak Repair Program.~~
- ~~• Setup of Pressure Managed Areas prior to the Wet Season, after community engagement.(areas are Wonga Beach, Newell Beach, Cooya Beach, Port Douglas)~~
- ~~• Commencement of the Commercial Water Audit Initiative in September. This has now commenced~~
- The Home water wise service (residential retrofit program) offers free in home water conservation advice, provision of water conservation fittings such as flow modulation inserts in taps and Flow modulated shower roses. The Program of works is expected to commence in September This has now commenced
- ~~• Release of advanced metering tender in August. The tender is released and due to close on the 13<sup>th</sup> September 2011~~
- ~~• Submission of the advanced meter tender to the Water & Waste Committee meeting in October.~~
- Completion of the advanced metering pilot program by June 2012.
- Completion of Communications and Education Campaign by June 2012
- Confirmation and reporting of actual water savings.
- ~~• Pressure reductions in January~~
- Approvals for the installation of the collectors for the smart metering program on 3<sup>rd</sup> party infrastructure
- Data logger installation and commissioning at the pressure managed sites
- Activation of the Fixed Network for advanced meter reading

**Financial Data**

**Financial Status:** (mark box)  Under budget  On budget  Over budget

<b>Port Douglas Demand Management Project</b>						
Project #	Description	2nd Budget Review 2011/12	Expense at 27/01/12	Committals at 27/01/12	Total costs at 27/01/12	Variance
MULTIPLE	<b>Port Douglas Demand Management Project</b>	\$1,631,880	\$798,085	\$537,929	\$1,336,015	\$295,865
	TOTAL	\$1,631,880	\$798,085	\$537,929	\$1,336,015	\$295,865

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