FINAL MINUTES

11 March 2015

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Declaration of Potential Conflict of Interest

Cr Casey - Item 9.4

ORDINARY MEETING
MINUTES

1. ATTENDANCE:

Her Worship the Mayor, Cr D T Comerford (Chairperson), Crs K J Casey, C J Bonanno, L G Bonaventura, F A Gilbert, A N Jones, G J Martin, T A Morgan, D J Perkins, P F Steindl, and R D Walker were in attendance at the commencement of the meeting. Also present was Mr B Omundson (Chief Executive Officer) and Mrs M Iliffe (Minute Secretary).

The meeting commenced at 10.00 am.

2. OPENING PRAYER:

Pastor Reno led those present in Prayer.

3. ABSENT ON COUNCIL BUSINESS:

Nil

4. APOLOGIES:

Nil

5. CONDOLENCES:

Nil

6. CONFIRMATION OF MINUTES:

6.1 ORDINARY MEETING MINUTES - 25 FEBRUARY 2015

THAT the Ordinary Meeting Minutes held on 25 February 2015 be confirmed.

Moved Cr Gilbert **Seconded Cr Morgan**

CARRIED

7. BUSINESS ARISING OUT OF MINUTES OF PREVIOUS MEETING:

Nil

8. MAYORAL MINUTES:

Nil

9. CORRESPONDENCE AND OFFICERS' REPORTS:

9.1 ENGINEERING & COMMERCIAL INFRASTRUCTURE MONTHLY REVIEWS - 17 JANUARY 2015 TO 13 FEBRUARY 2015

Author Director Engineering & Commercial Infrastructure

Purpose

To provide Council with Engineering & Commercial Infrastructure Monthly Reviews for the period 17 January 2015 to 13 February 2015.

Officer's Recommendation

THAT the Engineering & Commercial Infrastructure Monthly Reviews for the period
17 January 2015 to 13 February 2015 be received.

Council Resolution

THAT the Officer's Recommendation be adopted.

Moved Cr Gilbert **Seconded Cr Bonaventura**

CARRIED

9.2 REED STREET EXTENSION

Author Manager Technical Services

Purpose

To seek approval from Council for the recommended alignment of the future extension of Reed Street, Rural View.

Operational Plan Linkage

This report relates to Operational Plan Linkages:

5.1.1 - Develop a long term roads and drainage capital works program
5.1.2 - Deliver the roads and drainage capital works program in accordance with developed project plans

Background/Discussion

Adjoining developers requested development surety for the alignment of Reed Street southward from the recent construction fronting Northern Beaches State High School across McCreadys Creek to Kerrisdale Estate. Development Services staff engaged Aurecon Consultants to review alignment options for Reed Street with the objective of determining a suitable crossing point at McCreadys Creek.

Mackay Regional Council Road Hierarchy Plans indicate Reed Street is ultimately a major collector road in classification. Upon completion, it will also serve as a primary access for residents within Kerrisdale Estate to the high school and Northern Beaches Central Shopping Centre. Given the lower function classification and constrained geometric standards of neighbouring roadways, it is not envisaged that Reed Street will act as an alternative route to Mackay Bucasia Road but will act as an emergency bypass for that road.

The Design Report was commissioned on the following basis:

- Produce a conceptual horizontal and vertical design of the roadway
- Review the cross-sectional requirements including services and public utility plant
- Review land tenures, requirements and proposed future users
- Undertake preliminary drainage calculations suitable for determining culvert sizes and budget estimates
- Undertake a desktop review of environmental factors
- Assess the capacity, alignment and cross-sectional requirements of the Rosewood Drive outlet drain
- Undertake a preliminary assessment of the flooding impact by the development and filling of the school site
- Preparation of a budget estimate for the chosen alignments

Four road alignment options were developed in conjunction with six drainage structure options for the creek crossing. These were discussed with the relevant stakeholders being:

- Critchleys (Mentmore Developments)
- Kerrisdale Developments
- Education Queensland
- Mackay Water & Waste Services
- MRC Strategic Developments

Stakeholder agreement was reached for Road Option 2 based on the following:

- Direct access to the existing sewerage pump station
- Alignment with suitable curve lengths for 60kph regulatory speed
- The impacted area low development potential as the land is impeded by stormwater outlet drains and McCreadys Creek flood plain

Agreement was also reached for Drainage Option 4 being 3/3600 x 3600 slab link box culvert (SLBC) across McCreadys Creek plus 2/3600 x 1800 box culvert (BC) in overbank flow area on the southern side with bypass for flows greater than 100 year average recurrence interval (ARI) on southern approach.

The conceptual estimate for this road/creek crossing combination option is $7,644,000.

Consultation and Communication

The following stakeholders were consulted with:

- Director Engineering & Commercial Infrastructure
- Director Development Services
- Design Co-Ordinator
- Strategic Planning staff
- Consultants

A briefing session was held with Councillors and the Strategy, Leadership & Performance Team on 25 February 2015.

The recommendations from the Design Report will be canvassed with all related stakeholders once adopted.

Resource Implications

Funding of the Reed Street extension and McCreadys Creek crossing at some future stage will be required to be undertaken by Council given it's a trunk road. Nominally construction has been proposed for 2026/2027 in the Long Term Financial Plan.

Risk Management Implications

Conceptual cost estimates have been prepared only at this stage to compare project options. It is proposed to undertake detailed design of the approved option in 2016/2017 to confirm geotechnical assumptions and total construction costs for future funding allocation.

Conclusion

Associated road alignments have been promoted as the most viable option and have been subject to agreement between Council and adjacent developers. Council is requested to confirm this preferred option for future design and planning options.

Officer's Recommendation

THAT Council receive the Design Report for the Reed Street extension and endorse the future alignment as recommended.

Council Resolution

THAT the Officer's Recommendation be adopted.

Moved Cr Casey **Seconded Cr Perkins**

CARRIED

9.3 COMMUNITY AND CLIENT SERVICES MONTHLY REVIEW

Author Director Community and Client Services

Purpose

Attached is a copy of the Community and Client Services Monthly Review for the period 19 January to 15 February 2015 for information purposes.

Officer's Recommendation

THAT the Community and Client Services Monthly Review covering the period 19 January to 15 February 2015 be received.

Council Resolution

THAT the Officer's Recommendation be adopted.

Moved Cr Jones **Seconded Cr Bonanno**

CARRIED

Cr Casey declared that a perceived conflict of interest in this matter (Item 9.4) could exist (as per section 173 of the *Local Government Act 2009*), due to a family member living in the area and left the room at **10.21 am**, taking no part in the debate or decision of the meeting.

9.4 NOTICE OF MOTION - RESCISSION OF MOTION REGARDING BOUNDARY ROAD NOTICES OF REALIGNMENT

File No **Boundary Road, Ooralea**
Author **Manager Property Services**

Purpose

To seek Council's approval to rescind an earlier motion resolved on the 13th August 2014 to approve the issuing of "Notices of realignment" for properties on Boundary Road, Ooralea.

Officer's Recommendation

THAT Council rescind the motion below, as adopted at the Ordinary Council Meeting of 13th August 2014, with regard to the Boundary Road Notices of Realignment:-

15.3 Boundary Road Notices of Realignment

THAT Council approve the issuing of "Notices of Realignment" for properties on Boundary Road, Ooralea in accordance with future road reserve requirements detailed in plans A4-403 to A4-416.

Council Resolution

THAT the Officer's Recommendation be adopted.

Moved Cr Steindl **Seconded Cr Jones**

CARRIED

10.22 am - **Cr Casey** returned to the Meeting Chamber.

9.5 SECOND QUARTER BUDGET REVIEW DECEMBER 2014

Author Director Organisational Services

Purpose

To present the December 2014 second quarter budget review.

Background/Discussion

December 2014 second quarter budget review

In line with the *Local Government Act 2009* and Council's adopted Budget Policy, quarterly reports are presented to Council detailing proposed budget amendments at the end of the quarter.

A detailed briefing has been provided to fully inform Council of the content of the reports and enable Councillors to raise questions directly with the relevant Director.

The revised budget proposed for adoption with this report is summarised as follows:

General Fund

Overall the operating revenue budget has been decreased by $416,981. Significant decreases in revenue, particularly relating to reduced development application fees and reductions in search and change in ownership fees, were realised in the first half of the financial year. Offsetting this reduction however is some higher than anticipated net rates revenue, interest earnings, grant funding and other revenue. Some of this additional revenue has been transferred to reserve for future use, ideally to fund capital projects or reduce borrowing levels. The net effect of reserve transfers is $210,811.

The decrease in operating revenue and net increase in reserve transfers are offset by a decrease in overall operating expenses of $627,793. A significant saving in interest payable was realised as a result of loan consolidation and reduced borrowings. A reduction in wages expenses due to decreased activity, together with deferral of some projects and lower than anticipated street lighting charges and maintenance costs were also achieved. Some increased expenditure associated with grant funds received and expenditure for projects funded by previously constrained reserve funds were also recognised.

Capital Expenditure has decreased overall by $38,122,541. The main contributing factor here is a $28M decrease in projected loan funded projects through project management associated with NDRRA which resulted in these projects being grant funded through the Queensland Reconstruction Authority. In addition, the $3,000,000 loan to fund the contribution to the CQU sporting precinct has been deferred to 2015/2016. Funds for a number of projects totalling $8,111,095 have also been constrained to reserve. $729,307 in savings has been identified mainly through the non-replacement of some capital plant items. This has been offset by $1,717,861 in

additional capital grants being received to fund some projects, in particular, $1,421,686 for the Roads to Recovery Program.

Water Fund

A total of $388,338 in capital expenditure has been identified for projects which have been deferred to future years. These funds are being transferred to the Water Reserve for reallocation in future years.

Waste Water Fund

A total of $3,330,579 in capital expenditure has been identified for projects which have been deferred to future years. These funds are being transferred to the Sewerage Reserve for reallocation in future years.

Waste Fund

Whilst no budget amendments are listed for the Waste Fund, it should be noted that lower than anticipated revenue and expenditure levels across the fund are being managed within the existing budget.

Overall

Whilst finalisation for the NDRRA program is still underway, accounting adjustments for the anticipated final position and the repeal of the carbon tax legislation have been made to the budget. These adjustments have a nil effect on the budget overall, and have been carried out in accordance with the adopted budget policy.

Consultation and Communication

All Council programs were asked to review their operations against budget to December and submit any variances for consideration. The Strategy Leadership and Performance Team has then reviewed and approved the variances as appropriate within available funding sources. A detailed briefing with Council was held on 18 February 2015.

Resource Implications

The resource implications to bring to account the December 2014 Second Quarter Budget Review are as follows:

General Fund

Decrease in operating revenue - $416,981
Decrease in operating expenses - ($627,793)
Capital Projects deferral and accounting for NDRRA - ($38,122,541)
Increase in capital grant funding - ($1,717,861)
Decrease in capital loan funding - $31,000,000
Net transfers to reserve - $8,321,907

Overall amendments - $729,307
Transfer from Capital Improvements Reserve - ($729,307)

Water Fund

Decrease in capital expenses - ($388,338)
Net transfer to reserve - $388,338
Overall amendments - NIL

Waste Water Fund

Decrease in capital expenses - ($3,330,579)
Net transfer to reserve - $3,330,579
Overall amendments - NIL

Risk Management Implications

Nil.

Conclusion

The December 2014 second quarter budget review amendments, identified in the Council briefing have now been included in the amended budget.

In accordance with the budget policy, during the financial year any surplus funds should be transferred to reserve to cover the possibility of not meeting revenue targets or unpredicted / unavoidable expenditures. Consideration will be given at the end of the financial year as to whether any remaining surplus funds will be used to reduce any unfunded depreciation or further reduce borrowing levels.

Whilst noting the changes made above, Council is cognisant of the current economic climate and will be paying particular attention to how the budget is tracking throughout the remainder of the year. There is no material change to the future years of the Long Term Financial Forecast adopted in June 2014 however, the overall position will be reviewed in detail as part of the 2015/2016 budget process.

Officer's Recommendation

THAT the following transfers to reserve be approved.

General Fund

Transfer to Constrained Works Reserve - $7,711,095
Transfer to Disaster Response Reserve - $214,762
Transfer to Natural Environment Reserve - $255,000
Transfer to Capital Improvements – General - $1,000,000

Water Fund

Transfer to Water Reserve - $388,338

Waste Water Fund

Transfer to Sewerage Reserve - $3,330,579

General Fund

Transfer from City Centre Reserve - $172,250
Transfer from Capital Improvements Reserve - $1,081,323
Transfer from Constrained Works Reserve - $5,377

Council Resolution

THAT the Officer's Recommendation be adopted.

Moved Cr Walker **Seconded Cr Jones**

CARRIED

10. CONSIDERATION OF COMMITTEE REPORTS:

10.1 DRAFT MINUTES NATURAL ENVIRONMENT ADVISORY COMMITTEE

File No **NEAC Minutes**
Author **Manager Parks and Environment**

Purpose

Attached is a copy of the draft minutes of the Natural Environment Advisory Committee meeting held 17 February 2015, for information purposes and consideration of recommendations.

Officer's Recommendation

THAT the Minutes of the Natural Environment Advisory Committee Meeting of 17 February 2015 be received.

FURTHER THAT the revised terms of reference for the Natural Environment Advisory Committee are approved.

Council Resolution

THAT the Report be deferred pending further information.

Moved Cr Morgan **Seconded Cr Bonaventura**

CARRIED

10.2 DRAFT MINUTES MACKAY MATSUURA SISTER CITY ADVISORY COMMITTEE

Author Manager Community Lifestyle

Purpose

Attached is a copy of the draft minutes of the Mackay Matsuura Sister City Advisory Committee meeting held 23 February, for information purposes.

Officer's Recommendation

THAT the minutes of the Mackay Matsuura Sister City Advisory Committee of 23 February 2015 be received.

Council Resolution

THAT the Officer's Recommendation be adopted.

Moved Cr Jones **Seconded Cr Perkins**

CARRIED

10.3 DRAFT MINUTES FIELDS OF DREAMS ADVISORY COMMITTEE

Author Manager Property Services

Purpose

Attached is a copy of the draft minutes of the Fields of Dreams Advisory Committee meeting held on 3 February 2015 for information purposes.

Officer's Recommendation

THAT the minutes of the Fields of Dreams Advisory Committee of 3 February 2015 be received.

Council Resolution

THAT the Officer's Recommendation be adopted.

Moved Cr Morgan **Seconded Cr Martin**

CARRIED

10.4 DRAFT MINUTES CHARACTER HERITAGE ADVISORY COMMITTEE MINUTES

Author Strategic Planner - Local Area Planning

Purpose

Attached is the draft minutes of the Character Heritage Advisory Committee meeting held on 13 February 2015, for information purposes and consideration of recommendations.

Officer's Recommendation

THAT The Minutes of the Character Heritage Advisory Committee Meeting of 13 February 2015 be received.

Council Resolution

THAT the Officer's Recommendation be adopted.

Moved Cr Perkins **Seconded Cr Jones**

CARRIED

11. RECEIPT OF PETITIONS:

Nil

12. TENDERS:

12.1 MRC 2015-001 PANEL OF PREFERRED SUPPLIERS FOR PLANT AND EQUIPMENT WITH OPERATOR

File No **MRC 2015-001 Panel of Preferred Suppliers for Plant and Equipment with Operator**
Author **Manager Procurement and Plant**

Purpose

To present to Council for approval, tenders submitted for MRC 2015-001 Panel of Preferred Suppliers for Plant and Equipment with Operator.

Background/Discussion

Mackay Regional Council (Council) issued tender documents seeking responses to establish a panel of Preferred Suppliers for plant and equipment with operator which provides Council with a full range of plant and equipment aiding in the delivery of both capital and maintenance works.

The current contract MRC 2013-001 Provision of Plant Hire with Operator expires on 31 March 2015. The proposed commencement date for contract MRC 2015-001 Panel of Preferred Suppliers for Plant and Equipment with Operator (Panel) is 1 April 2015, for a period of two (2) years, with the option of a one (1) year extension period, together with the provision for an annual CPI increase on each anniversary of the contract.

Tenders were invited on 8 November 2014, via Council's website and advertised locally in the Daily Mercury.

A non-mandatory contractor information session was held on the evening of 19 November 2014 at the Mackay Entertainment and Convention Centre (MECC) to brief

potential contractors on the tender documents and Council's requirements. This session explained the tender process, requirements for submitting a conforming tender, completion of price schedules and Work Health and Safety requirements.

The Request for Tender (RFT) called for the following plant and equipment to be priced according to the eight supply areas commonly utilised by Council for their preferred supplier arrangements. Due to the vast area covered by Mackay Regional Council, introducing the eight supply areas allowed suppliers to price according to the areas they were financially viable to service. The following plant classes are included in the RFT:

- Backhoes
- Cranes
- Dozers
- Elevated Work Platforms
- Graders
- Excavators
- Front End Loaders
- Rollers
- Stump Grinders
- Skid Steer Loaders
- Tree Chippers
- Trucks – various builds
- Various combinations of the above or others combinations as nominated by contractors
- Other specialised plant and equipment available

Contractors will be appointed to the Panel and listed according to the combined score of the evaluation panel relevant to their equipment category and nominated area.

When works are identified, Council staff will consult the relevant Panel and select the highest ranked contractor for the required equipment, per area. If the contractor is unavailable to perform the work when required, the next listed contractor with the required equipment will be contacted and so on.

To accommodate new contractors to the Mackay region during the term of the contract, a reserve panel (B Panel) will be established. The B Panel will be utilised as a contingency measure to ensure Councils operations continue with minimal disruptions but only where no suppliers are available from the Panel. All suppliers listed on B Panel will be required to provide Council with their compliance details including valid insurances, vehicle registrations and they must complete Council's online contractor's induction prior to commencing work. If no contractors on the Panel are available, Council reserves the right to obtain quotes from contractors on B Panel or from other suitably experienced and resourced contractors.

The following submissions were received by the closing time of 10.00 am Tuesday 9 December 2014.

Tenderer	**Location**
Advanced Tree Care	Mackay Region Based

Tenderer	Location
AJK Contracting Pty Ltd	Mackay Region Based
Allclean Environmental Services Pty Ltd	Mackay Region Based
Anything Earthmoving Pty Ltd	Mackay Region Based
AS & JR Schwabe Pty Ltd T/a Andrews Mini Tipper and Dingo Hire	Mackay Region Based
ANH Civil and Safety Pty Ltd	Capella Based
As Luck Wood Have It Pty Ltd	Mackay Region Based
Ausroads Stabilisers Pty Ltd	Sunshine Coast Based
BJF Contractors Pty Ltd ATF Barry Finn Family Trust	Mackay Region Based
BMR Crane Hire & Rigging Pty Ltd	Mackay Region Based
Brooks Hire Service Pty Ltd	Western Australia Based
BRW Transport & Quarries Pty Ltd	Mackay Region Based
Caruana Mining Services Aust Pty Ltd	Mackay Region Based
Everlasting Enterprises (Qld) Pty Ltd	Mackay Region Based
Champion Grader Hire	Mackay Region Based
CJD Investments (NQ) Pty Ltd	Mackay Region Based
Clark Drinking Water Pty Ltd	Mackay Region Based
LJR Holdings Pty Ltd T/A Complete Tree Management	Mackay Region Based
Cortis Civil & Demo Pty Ltd	Mackay Region Based
Crane Logistics Pty Ltd	Mackay Region Based
DH Slashing & Landscaping	Mackay Region Based
Falzon Backhoe Hire	Mackay Region Based
Force Corp Pty Ltd	National Based with Mackay Office
Full Boar Bobcat Hire	Mackay Region Based
Full Boar Tilt Tray and Excavator Hire	Mackay Region Based
Graham Brothers Pty Ltd	Mackay Region Based
The W & D Jackson Family Trust Trading As Gunyarra Plant Hire	Whitsunday Region Based
Haber Excavations Pty Ltd	Mackay Region Based
Hastings Deering (Australia) Pty Ltd	Mackay Region Based
HM Hire Pty Ltd	Mackay Region Based
I Dig Earthworks	Mackay Region Based
I Reddacliff & Co Pty Ltd	Mackay Region Based
Jai-Cor Family Trust T/as Jai-Cor Communications Solutions	Mackay Region Based
JT & PA Croyden Pty Ltd	Mackay Region Based
JP Zarb & TL Zarb ATF The Jason Zarb Family Trust T/As JT'Z Transport	Mackay Region Based
L.A & L.R Ramsamy Crane Hire Pty Ltd	Mackay Region Based
Mackay City Cranes Pty Ltd	Mackay Region Based
Clacer Pty Ltd As Trustee for the Feeney Family Trust T/as Mackay Water Movers	Mackay Region Based
Mapleys Bobcat Hire	Mackay Region Based
Melvyn Finn & Colin Finn ATF MCT Finn Family Trust T/A MCT Finn Pty Ltd	Mackay Region Based
Morris Builders & Civil Pty Ltd	Mackay Region Based
Norman Cameron Trust T/A Norm's Grader Hire	Mackay Region Based

Tenderer	Location
L.C & G.M Paul T/A Paul's Excavations	Mackay Region Based
Darryl Smyth Pty Ltd T/A Pioneer Grader Services	Mackay Region Based
RG & JM Grech Backhoe Hire	Mackay Region Based
Riggco Pty Ltd	Mackay Region Based
Dee Tec T/A Riggsy's Bobcat & Excavator Hire	Mackay Region Based
Rod's Backhoe Hire Pty Ltd ATF Abell Family Trust	Mackay Region Based
Sarina Crane Hire Pty Ltd	Mackay Region Based
Matton Earthmoving Pty Ltd ATF The Bluegum Investment Trust T/A Sarina Mini Excavators	Mackay Region Based
Seaforth Civil & Plant Pty Ltd	Mackay Region Based
SM & AJ Schmidtke	Mackay Region Based
Talbots Earthmoving & Bulk Haulage Pty Ltd	Whitsunday Region Based
The Stump Man	Mackay Region Based
Vella's Plant Hire Pty Ltd T/A Vella's Civil Construction	Mackay Region Based
Walter Wright Cranes Australia	Mackay Region Based
Warren Transport Pty Ltd	Whitsunday Region Based

Local Supplier Information

Of the 62 submissions received:

- 58 contractors are either Mackay based business or have an office in Mackay.
- 3 contractors are based in the Whitsunday Region. Of these 3, 2 contractors have depots close to the Mackay/Whitsunday boarder with the remaining business' depot being located at Midge Point; and
- 1 contractor is based interstate.

An initial compliance check was conducted on 19 December 2014 to identify submissions that were non-conforming with the requirements of the RFT. This included compliance with contractual requirements and provision of requested information.

The contractors listed below were deemed non-conforming for the following reasons:

- Hasting Deering (Australia) Pty Ltd submission included prices the hire of plant and equipment only, with no operator.
- ANH Civil and Safety and Brooks Hire Services Pty Ltd do not currently have a depot or plant and equipment in Mackay.
- Force Corp Pty Ltd and Austroad Stabilisers Pty Ltd offered alternative plant and machinery outside the scope of this tender.

All other 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. Specific criteria were weighted according to their importance as perceived and agreed by the evaluation panel, with the weightings being published within the RFT, as follows:

a)	Relevant Experience	30%
b)	Tenderers' Resources	25%
c)	Price	30%
d)	Local Content/Depot Location	15%

The qualitative criteria assessment was carried out over a number of meetings with the evaluation panel scoring the tenders according to the evaluation matrix. These meetings occurred on:

- 4 February 2015
- 11 February 2015
- 16 February 2015
- 18 February 2015

As a result of the evaluation meetings, Tender Information Requests (TIR) were issued to the following contractors, requesting clarification in relation to their submitted rates:

- AJK Contracting Pty Ltd
- Anything Earthmoving Pty Ltd
- BMR Crane Hire Services Pty Ltd
- Caruana Mining Services Aust Pty Ltd
- Champion Grader Hire
- LJR Holdings Pty Ltd T/A Compete Tree Management
- Full Boar Bobcat Hire
- Graham Brothers Pty Ltd
- The W& D Jackson Family Trust T/A Gunyarra Plant Hire
- HM Hire Pty Ltd
- Jai-Cor Family Trust T/A Jai-Cor Communications Solutions
- JT & PA Croyden Pty Ltd
- Mackay City Cranes Pty Ltd
- Norman Cameron Trust T/A Norm's Grader Hire
- LC & PM Paul T/A Paul's Excavator Hire
- Darryl Smyth Pty Ltd T/A Pioneer Grader Services
- RG & JM Grech Backhoe Hire
- Vella's Plant Hire Pty Ltd T/A Vella's Civil Construction
- Walter Wright Cranes Australia
- Warren Transport Pty Ltd

Further TIR's were issued to the following contractors to clarify that the initial engagement rates were inclusive of all travel and float time as per the tender specifications:

- Advanced Tree Care

- As Luck Wood Have It
- BJF Contractors Pty Ltd ATF Barry Finn Family Trust
- BMR Crane Hire Services Pty Ltd
- Caruana Mining Services Aust Pty Ltd
- CJD Investments (NQ) Pty Ltd
- LJR Holdings Pty Ltd T/A Compete Tree Management
- Cortis Civil & Demo Pty Ltd
- JT & PA Croyden Pty Ltd
- Full Boar Bobcat Hire
- Mapley Bobcat Hire
- Melvyn Finn & Colin Finn ATF MCT Finn Family Trust t/a MCT Finn Pty Ltd
- Morris Builders & Civil Pty Ltd
- Dee Tec T/A Riggsy's Bobcat & Excavator Hire
- Matton Earthmoving Pty Ltd ATF The Bluegum Investment Trust T/A Sarina Mini Excavators
- Seaforth Civil & Plant Pty Ltd
- SM & AJ Schmidtke
- The Stump Man
- Vella's Plant Hire Pty Ltd T/A Vella's Civil Construction

In assessing the qualitative criteria, the evaluation was conducted on individual pieces of plant and equipment and considered against other plant within the same category and supply area. Consideration of the contractor's depot location was of significant importance during the evaluation process.

For evaluation purposes and for clarity in using the Panel, the following plant and equipment were segregated further:

Front end loaders have been separated into two separate categories being:

- Load capacity under 3 cubic metres and
- Load capacity over 3 cubic metres

Graders have been separated by the size of the grader's blade being:

- Up to 10 foot blade and
- 12 foot blade

Rollers have been separated as follows:

- Under 5 tonne;
- 5 to 10 tonne; and
- Over 10 tonne

Skid Steer loaders have been separated as follows and are then listed in order of the machine size:

- Skid steer including posi track; and

- Skid steer with no posi track

The RFT specified that Council requests that equipment "*is not more than 10 years old from the date of manufacture; however equipment less than 5 years old may be given preference in the evaluation process."* Any plant and equipment with a manufacture date prior to the year 2000 was removed during the evaluation stage.

All categories listed the successful contractors in order of use, per item of plant and equipment per area, as determined by the evaluation panels scoring.

The evaluation of the tender was conducted by:

• Team Leader Parks Building Services	Parks and Environment
• Supervisor Arboriculture	Parks and Environment
• Supervisor Cemeteries	Parks and Environment
• North West Coordinator	Civil Operations
• Supervisor Roads and Drainage	Civil Operations
• Waste Management Technical Officer	Waste Services
• Water Maintenance Team Leader	Water Network
• Sewerage Team Leader	Water Network
• Construction Engineer	Civil Projects
• Central Coordinator	Civil Operations
• Procurement Officer	Procurement and Plant

Consultation and Communication

Consultation was undertaken between all operational departments and Procurement and Plant prior to the RFT being released.

Council hosted a lessons learnt session with current contractors on 2 October 2014 to seek their feedback on the operation and structure of the contract prior to the new RFT being released.

Resource Implications

The Panel of Preferred Suppliers for Plant & Equipment with Operator is a schedule of rates contract, which is utilised on an as required basis with funding to be provided from the relevant department budgets within financial delegations of respective officers.

Risk Management Implications

Council will monitor the Work Health and Safety compliances with this contract by ensuring all contractors comply with Council's PPE management policy, Drug & Alcohol management policy, Fatigue management policy, ensuring they maintain a valid Mackay Regional Council contractor's induction and that all relevant insurances are current.

Conclusion

The RFT documentation detailed that the order in which contractors are listed, per equipment category per area, is the order in which services will be requested. If the contractor is unavailable to perform the work when required, the next listed contractor with the required equipment will be contacted.

Where no contractors on the Panel are available, Council reserves the right to obtain quotes from contractors on B Panel or from other suitably experienced and resourced contractors.

It is recommended that MRC 2015-001 Panel of Preferred Suppliers Plant & Equipment with Operator be awarded for a two (2) year period with the provision of a one (1) year extension period, together with provision for CPI increase on the anniversary of the commencement date.

Officer's Recommendation

THAT Council award contract MRC 2015-001 Panel of Preferred Suppliers for Plant & Equipment with Operator to the following tenderers for a two (2) year period with the provision of a one (1) year extension period, together with the provision for CPI increase on the anniversary of the contract, and that the following contractors, listed in no particular order, are appointed to the panel and utilised as listed in each plant category:

- Advanced Tree Care
- AJK Contracting Pty Ltd
- Allclean Environmental Services Pty Ltd
- Anything Earthmoving Pty Ltd
- AS & JR Schwabe Pty Ltd T/A Andrews Mini Tipper and Dingo Hire
- As Luck Wood Have It Pty Ltd
- BJF Contractors Pty Ltd ATF Barry Finn Family Trust
- BMR Crane Hire & Rigging Pty Ltd
- BRW Transport & Quarries Pty Ltd
- Caruana Mining Services Aust Pty Ltd
- Everlasting Enterprises (Qld) Pty Ltd
- Champion Grader Hire
- CJD Investments (NQ) Pty Ltd
- Clark Drinking Water Pty Ltd
- LJR Holdings Pty Ltd T/A Complete Tree Management
- Cortis Civil & Demo Pty Ltd
- Crane Logistics Pty Ltd
- DH Slashing & Landscaping
- Falzon Backhoe Hire
- Full Boar Bobcat Hire
- Full Boar Tilt Tray and Excavator Hire
- Graham Brothers Pty Ltd
- The W & D Jackson Family Trust Trading As Gunyarra Plant Hire

- Haber Excavations Pty Ltd
- HM Hire Pty Ltd
- I Dig Earthworks
- I Reddacliff & Co Pty Ltd
- Jai-Cor Family Trust T/A Jai-Cor Communications Solutions
- JT & PA Croyden Pty Ltd
- JP Zarb & TL Zarb ATF The Jason Zarb Family Trust T/A JT'Z Transport
- L.A & L.R Ramsamy Crane Hire Pty Ltd
- Mackay City Cranes Pty Ltd
- Clacer Pty Ltd As Trustee for the Feeney Family Trust T/A Mackay Water Movers
- Mapleys Bobcat Hire
- Melvyn Finn & Colin Finn ATF MCT Finn Family Trust T/A MCT Finn Pty Ltd
- Morris Builders & Civil Pty Ltd
- Norman Cameron Trust T/A Norm's Grader Hire
- L.C & G.M Paul T/as Paul's Excavations
- Darryl Smyth Pty Ltd T/A Pioneer Grader Services
- RG & JM Grech Backhoe Hire
- Riggco Pty Ltd
- Dee Tec T/A Riggsy's Bobcat & Excavator Hire
- Rod's Backhoe Hire Pty Ltd ATF Abell Family Trust
- Sarina Crane Hire Pty Ltd
- Matton Earthmoving Pty Ltd ATF The Bluegum Investment Trust T/a Sarina Mini Excavator
- Seaforth Civil & Plant Pty Ltd
- SM & AJ Schmidtke
- Talbots Earthmoving & Bulk Haulage Pty Ltd
- The Stump Man
- Vella's Plant Hire Pty Ltd T/A Vella's Civil Construction
- Walter Wright Cranes Australia
- Warren Transport Pty Ltd

Council Resolution

THAT the Officer's Recommendation be adopted.

Moved Cr Walker **Seconded Cr Casey**

CARRIED

13. CONSIDERATION OF NOTIFIED MOTIONS

Nil

14. LATE BUSINESS:

14.1 LEAVE OF ABSENCE - CR CASEY

THAT Cr Casey be granted leave of absence for the Meetings on 8 and 22 April 2015.

Moved Cr Steindl **Seconded Cr Walker**

CARRIED

14.2 MARILYN WALLMAN FUNERAL

The Mayor advised she attended Marilyn Wallman's funeral on Friday 6 March 2015, where her family were able to lay her to rest 43 years after she disappeared.

14.3 STAFF RECOGNITION

The Mayor wished Dan McKinlay, Director of Organisational Services all the very best with his new role as CEO of Hinchinbrook Shire Council. Dan commenced with Mackay City Council in 2002 and has been instrumental in guiding Council through its financial obligations.

Dan McKinlay thanked the Mayor, Councillors, CEO, Directors and Staff.

The Mayor also wished the Peter Shuttlewood, Manager Procurement & Plant all the very best in his new position with the Whitsunday Regional Council.

14.4 EVENTS

Cr Bonanno advised that at the Cutters game at the Mackay Stadium on the week-end the Duck Derby mascot will be out promoting the Duck Derby to be held on the Pioneer River in August 2015.

Cr Martin advised the Sarina Sugar Shed was successful in winning two bronze medallions at the Australian Distilled Spirits Awards, being for its underproof rum and rum liqueur.

14.5 2011 JAPANESE EARTHQUAKE & TSUNAMI

Cr Perkins advised that four (4) years ago today Japan experienced a massive earthquake which led to a tsunami which displaced over 300,000 people. Mackay's sister city Mastuura billeted families from the affected areas, as did many other cities

throughout Japan. Four (4) years on some of these families continue to be billeted and are unable to return to their region.

15. PUBLIC PARTICIPATION:

Nil

16. CONFIDENTIAL REPORTS:

16.1 ORGANISATIONAL CHANGE

Confidential

Council Recommendation

THAT Council approves the organisational structure.

Moved Cr Casey **Seconded Cr Bonanno**

CARRIED

17. MEETING CLOSURE

The meeting closed at 10.39 am.

18. FOR INFORMATION ONLY

18.1 DEVELOPMENT APPLICATION INFORMATION - 23.02.15 TO 01.03.15

For Council Information Only - No Decision Required

Development Applications Received

App No	Code / Impact	Address	Applicant	Description	Officer
CAC-2015-27		56 Pugsley Street, WALKERSTON	Wayne D Peoples	3 Rural Lots into 13 Lots with Balance Lot & Dwelling House (Flood and Inundation)	Brogan Jones
CON-2015-29		4 Salisbury Place, OORALEA	GMA Certification Group Pty Ltd - Mackay	Building Work - Boundary Setback for Awning and Carport	Andrea McPherson
CON-2015-30		8 Lockyer Court, RURAL VIEW	Gemini Homes (QLD) Pty Ltd	Building Work - Boundary Setback for Dwelling	

App No	Code / Impact	Address	Applicant	Description	Officer
CON-2015-31		14 The Esplanade, GRASSTREE BEACH	Development Planning & Approvals	Building Work - Boundary Setback for Dwelling House	
MCUC-2015-28	Code	51 Phoenix Crescent, RURAL VIEW	Ignite Homes Pty Ltd	Dual Occupancy	Josephine McCann

Development Applications Entering Decision Making Period

App No	Code / Impact	Address	Applicant	Description	Officer
MCUC-2015-25	Code	15 Bellavista Circuit BEACONSFIELD	Murphy Homes QLD Pty Ltd	Material Change of Use - Dual Occupancy	Andrea McPherson

Development Applications Finalised

App No	Code / Impact	Address	Applicant	Description	Officer
Approved Subject to Conditions					
CON-ASPA-2015/20		2 Apsley Way ANDERGROVE QLD 4740	Robert M Aitken	Building Work - Boundary Setback for Open Carport	Darryl Bibay
CON-ASPA-2015/23		172 Whitehaven Drive BLACKS BEACH QLD 4740	GMA Certification Group Pty Ltd - Mackay	Building Work - Boundary Setback for Dwelling House	Andrea McPherson
CON-ASPA-2015/24		7 Burleigh Court BLACKS BEACH QLD 4740	GMA Certification Group Pty Ltd - Mackay	Building Work - Boundary Setback for Dwelling	Andrea McPherson
CON-ASPA-2015/25		L 905 Mansfield Drive BEACONSFIELD QLD 4740	RPS Group (Mackay) Pty Ltd	Building Work - Boundary Setback for Dwelling	Darryl Bibay
CON-ASPA-2015/26		6 Burleigh Court BLACKS BEACH QLD 4740	GMA Certification Group Pty Ltd - Mackay	Building Work - Boundary Setback for Dwelling House	Andrea McPherson
CON-ASPA-2015/27		9 Pelorus Court OORALEA QLD 4740	Insight Patios	Building Work - Boundary Setback for Patio/Bike Port	Andrea McPherson
MCUC-ASPA-2011/23A	Code	28 Campbell Street SLADE POINT QLD 4740	Steppe Pty Ltd	Request to Extend Relevant Period and recalculate ICN - General Industry	Andrea McPherson
MCUC-ASPA-2015/19	Code	21-23 The Crescent NORTH MACKAY QLD 4740	Douglas Developments QLD Pty Ltd	Dwelling House (Flood & Inundation Overlay)	Andrea McPherson
MCUC-ASPA-2015/22	Code	2 Broclin Court RURAL VIEW QLD 4740	Sandsky Developments	Dual Occupancy	Brogan Jones
MCUC-ASPA-2015/26	Code	3 Seabreeze Court FRESHWATER POINT QLD 4737	Development Certification	Outbuildings with a Combined Total Exceeding 110m2 on Rural Res Lot of Less than 4000m2.	Josephine McCann
MCUC-ASPA-2015/4	Code	1 Finch Street SLADE POINT QLD 4740	Powercat Holdings Pty Ltd	Health Care Centre (Dental Clinic)	Josephine McCann

APPENDIX / ATTACHMENTS

Mackay REGIONAL COUNCIL
Engineering and Commercial Infrastructure - Waste Services
Monthly Review -
17 January 2015 to 13 February 2015

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OVERVIEW

This report is for Waste Services activities for January/February 2015. Please note that references to the January to February reporting period covers the period 17 January 2015 until 13 February 2015. Significant items in this period include:

1. The free Dump Voucher redemption rate is currently 20.4%;
2. Preparation for the second round of Dump Vouchers was undertaken during the reporting period;
3. Tonnes of waste received at Hogan's Pocket Landfill is currently below 2011/2012 levels;
4. Bin Audit Project is nearing completion. The Project focus is now on the development of a database ensuring accountability.

Director Engineering & Commercial Infrastructure

FINANCE

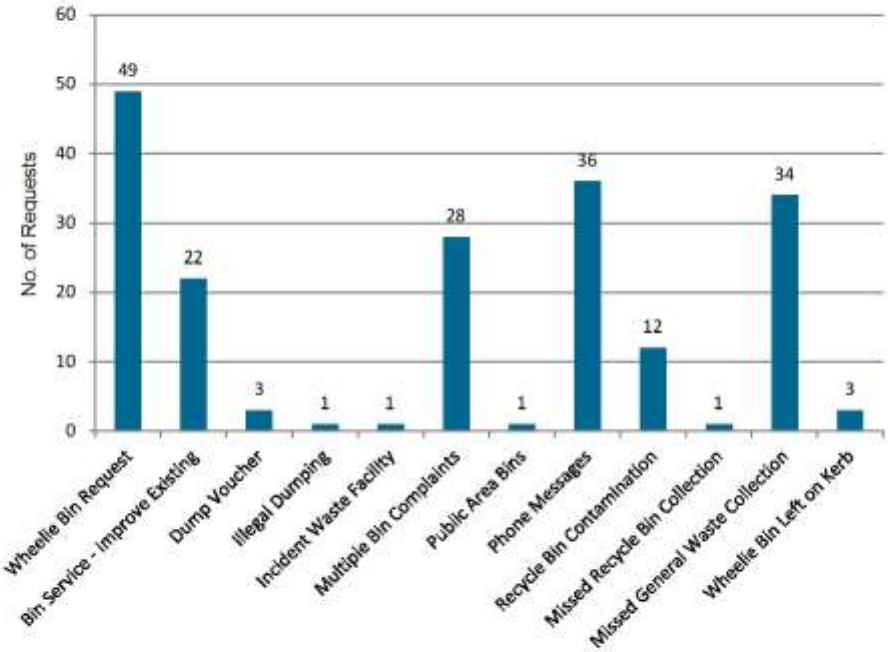
1.1 Community Service Obligations – Fee Waivers

The following chart displays the Total Waste Disposals for Not for Profit Organisations as at 13 February 2015

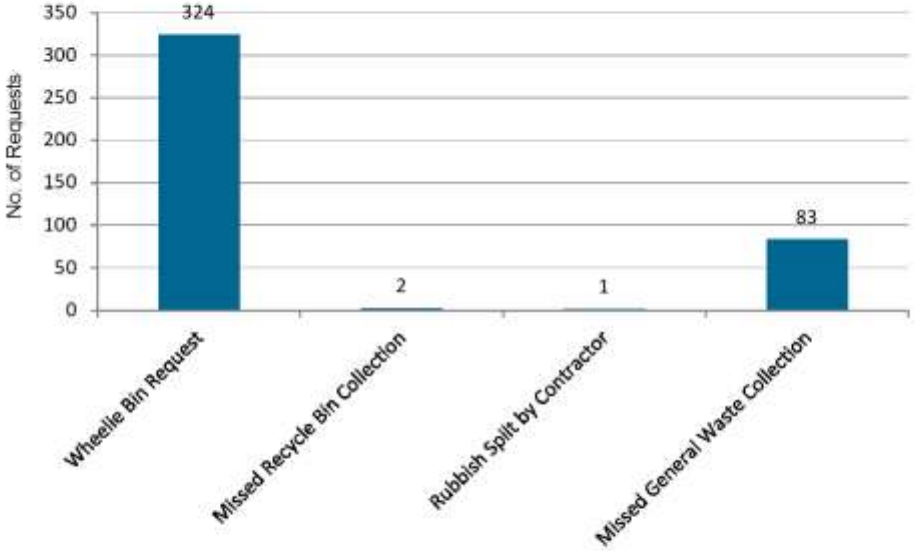
CLIENT SERVICES

2.1 Client Requests

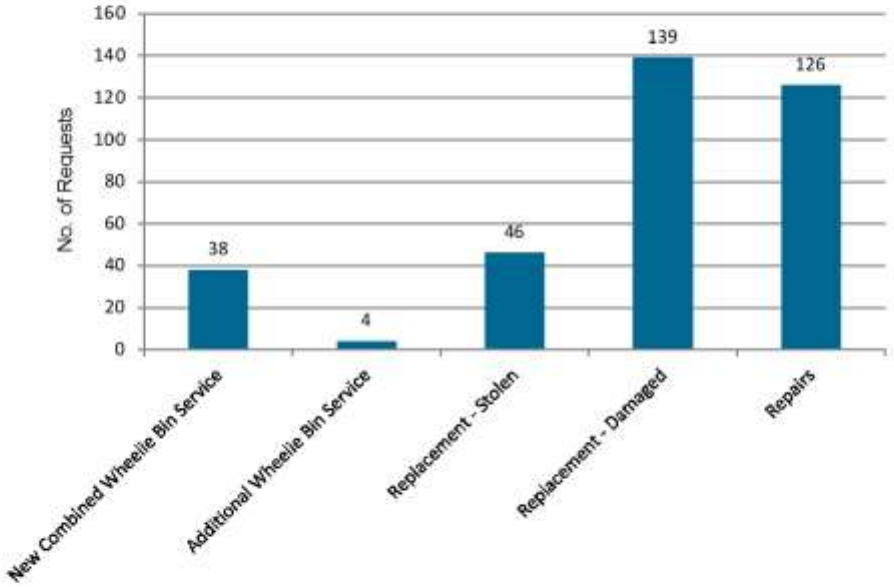
The following chart displays a summary of the client request type received for the period 17th January - 13th February 2015



The following chart displays a summary of the number of Bin requests actioned by Bin Contractors for the period 17th January - 13th February 2015



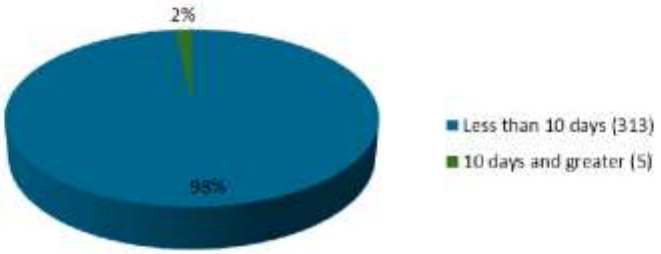
The following chart displays a breakdown of the Wheelie Bin requests by Contractors for the period 17th January - 13th February 2015



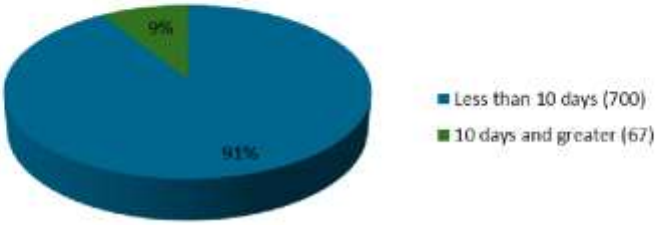
2.2 Contractor Service Delivery Performance

The following pie charts identify deliveries and repairs for bins that exceed 10 calendar days and are calculated on performance across a three month period.

JJ Richards



Veolia



2.3 Education

The following Education and Engagement Activities are of note:

- MRF visit with Queensland Bulk Ports on 4th February
- Three Waste Education classes with English Students from CQ TAFE
- Worm Farming Session conducted at Gordon White Library on 10th February
- Recycling and Worm Farming Session conducted for Mackay North State School OSHC on 11th February
- Sessions conducted for five Year 6 classes consisting of 150 students from Eimeo Road State School on 13th February
- Planning for utilisation of the Waste Education Trailer during 2015 continued

2.4 Voucher Implementation

Voucher Trial – The Voucher implementation continues to be adopted by the community.

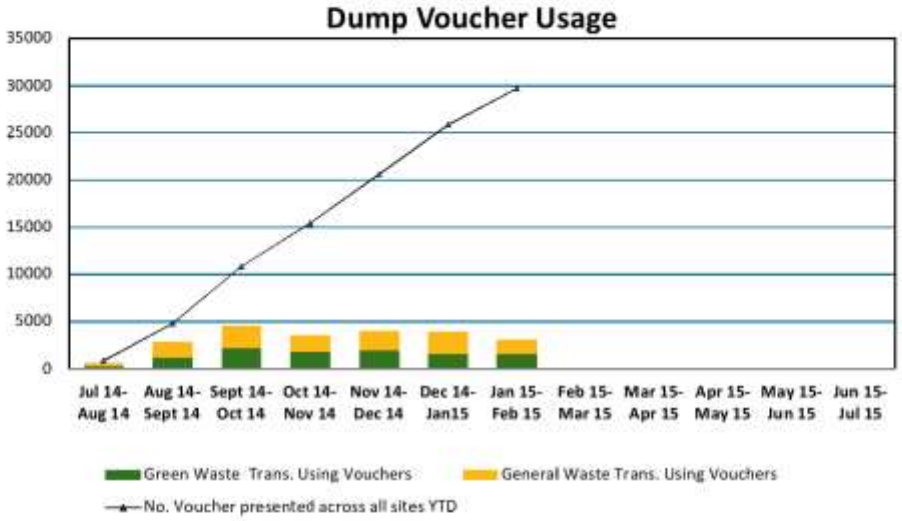
- YTD total number of Vouchers presented across all sites – 29,724
- Total number of Vouchers issued to residents during the current rate period – 145,344
- YTD redemption rate – 20.4%
- Projected Redemption rate based on reported transactions for the rating period – 23.3%

- Total Vouchers presented for the reporting period 17/01/2015 to 13/02/2015 – 3,880
- Total Actual value of Vouchers presented to date - $212,451

Note – Council's reporting system is now reporting actual values, not nominal values for voucher redemptions

During the reporting period work was undertaken in preparation for the second round of vouchers to be issued with the rates notices to be distributed in February 2015.

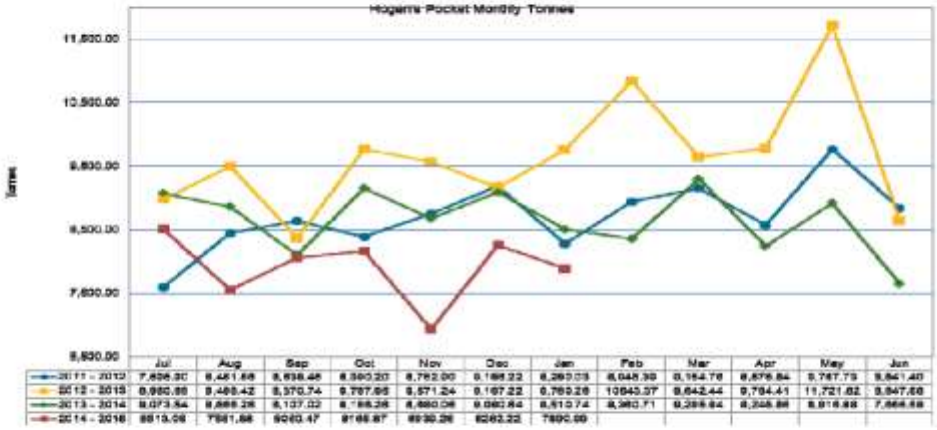
The following chart displays a breakdown of the Voucher Usage for the year to date to the 13th February 2015



ASSET MANAGEMENT

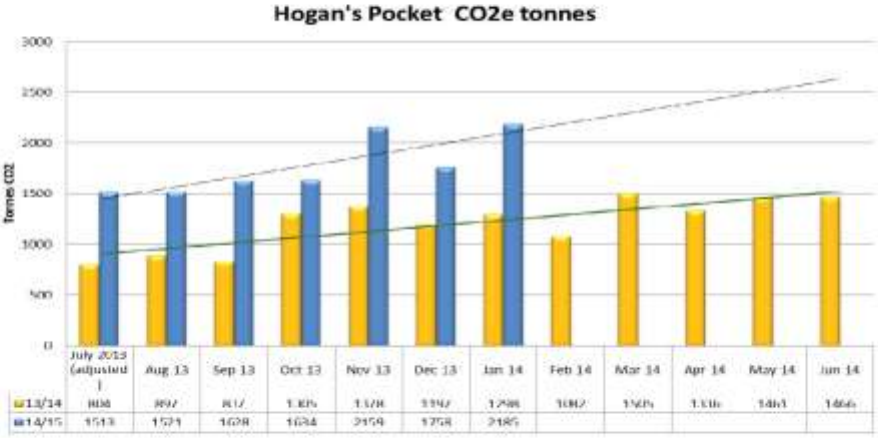
3.1 Hogan's Pocket Landfill Waste Disposal Tonnages

The following chart represents the monthly tonnes disposed of at Hogan's Pocket Landfill. This chart shows that the tonnes of waste received in 2014/2015 is below 2011/2012 levels



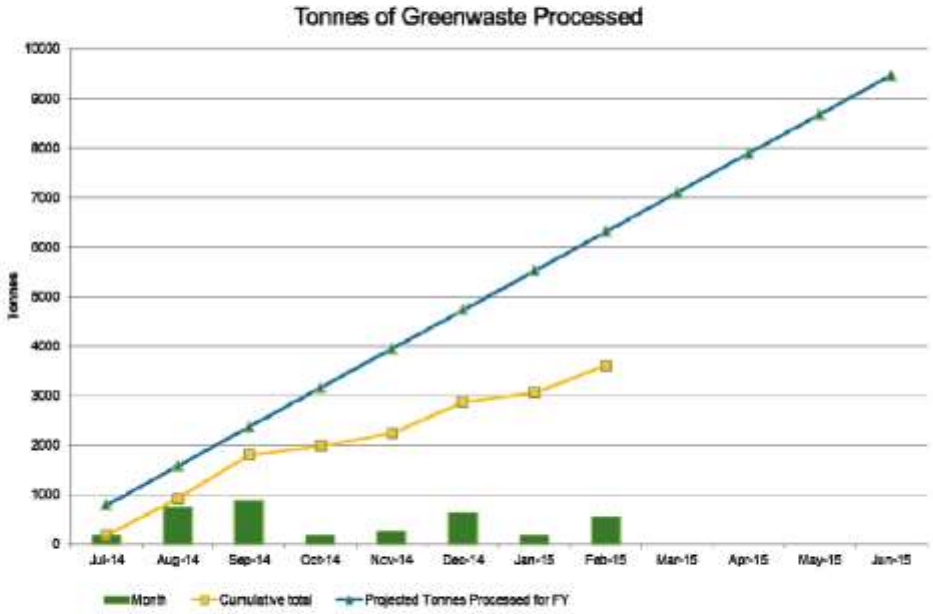
3.2 Landfill Gas

The following chart depicts the monthly tonnes of CO_2-e destroyed. In November 2014 there was a step change in production, with the new well field in Cell 2 coming online. During December 2014, there were a series of minor malfunctions that caused the flare to be offline for several days, therefore, reducing the tonnes of gas destroyed for that month. The new well field appears to have increased production by approximately 500 tonnes CO2-e per month.



3.3 Greenwaste Management

The following graph illustrates the tonnage rates for greenwaste processed for the period, the cumulative tonnes of greenwaste processed for the year to date and the tonnes of greenwaste projected to be processed linearly. The production of green waste remains highly variable and significant under the projections based on previous year's volumes.



3.4 Projects

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

3.4.1 Sarina Rehabilitation

Program	Project	Status	% Complete	Budget	Time
WS	Sarina Rehabilitation	Design	60%	•	•
The designs were revised to assess the potential of the carbon reduction elements of the project being eligible for the Emissions Reduction Fund (ERF). Waste Services to present to Council on the outcomes of that review and the designs for its consideration.					

3.4.2 Hogan's Pocket Cell 1 Capping

Hogan's Pocket Cell 1 Capping			
Program	% Complete	Budget	Time
WS	100%	•	•

Hogan's Pocket Cell 1 Capping works were completed late last year. The geocomposite drainage material installed has been identified as not meeting required specifications. Negotiations are continuing to ensure Council is adequately protected from this risk with a 2 year defects liability period, as well as a 10 year deed of warranty on the non-conforming material. Payment remains withheld until an agreed outcome has been reached.

3.4.3 Hogan's Pocket Cell 3 Development

Program	Project	Status	% Complete	Budget	Time
WS	Cell 3 construction	Design	5%	•	•

Cell 3 tender was advertised 31st January 2015 and is due to close on the 3rd March 2015. It is anticipated that contract award will incur during late May and works to commence onsite early July 2015. The 3.9 ha cell will contain approximately 1 million cubic metres of Mackay's future waste.

3.4.4 Waste Services Contract Development

Program	Project	Status	% Complete	Budget	Time
WS	Tenders	In progress	70%	•	•

Finalised Tenders
o Waste and Recyclables Collection Services
o Recyclables Processing Services
o Expression of Interest Development of Construction and Demolition Waste Facilities
Currently the following tenders are being evaluated:
o Green Waste Processing Services
o Transfer Stations Site Control Services
o MRC 2015-026 Resource Recovery Facility Services and Paget Transfer Station Services
The following tenders are being drafted for future release:
o Roll on – Roll off bins

Considerable work has been undertaken on the transitional planning and implementation of the old contracts to the new collection services and recycling processing services contracts. In the reporting period the Waste Services team has been focussed on the mobilisation plans for both contracts and significant matters including truck delivery, truck liveries, bin stock, transitional services between contracts for the collection contract and transitional arrangements, asset managment and additional opportunities for the recycling processing contract.

3.4.5 Bin Audit

Program	Project	Status	% Complete	Budget	Time
WS	240lt Bin Count	In progress	99%		

The bin audit is aimed at ensuring that all bin services are appropriately being paid for - 47,700 counted. The audit is addressing issues of multiple presentations as well as unidentified clients.

Figures **for this period are:**

Number of additional services taken up due to the audit - 3
Number of bins returned due to the audit - 13
Number of requests raised due to audit - 11
Number of Multiple Bin requests addressed as a result of the audit - 24
Number of outstanding Multiple Bin requests - 65
Number of properties added to rates not previously paying - 37

Totals to date;

Number of additional services - 104
Number of bins returned - 627
Number of Multiple Bin requests addressed - 1196
Number of properties added to rates not previously paying - 135

REGULATORY COMPLIANCE

4.1 Surface Water Discharge Management

No matters to report.

4.2 Waste Facility Audits

Internal audits of other MRC waste facilities have been ongoing. No significant issues to report for this reporting period.

Mackay REGIONAL COUNCIL

Engineering and Commercial Infrastructure - Water Services

Monthly Review -

17 January 2015 to 13 February 2015

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OVERVIEW

This report is for Water Services activities for January - February 2015. Please note that references to the January/February reporting period covers the period 17 January 2015 to 13 February 2015. Significant items in this period include:

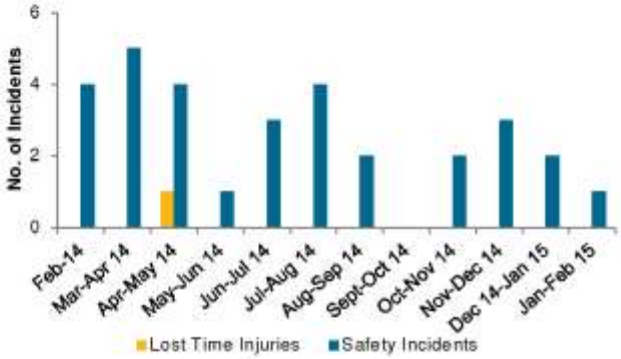
- Water and Waste Advisory Board (WWAB) meeting was held on 3rd February 2015, where 10 business cases for future projects where presented.
- Water Services Association of Australia (WSAA) Members meeting was held in Sydney on 11th February 2015. This focused on Customer Engagement in the Water Industry and opportunities to improve Safety Performance
- District Metering Area (DMA) have been commissioned in the Andergrove North, Andergrove South, Beaconsfield and Mt Pleasant areas
- Australian Drinking Water Quality Standards have been consistently met during the period
- Marian Water Treatment Plant saw raw water from the Pioneer River start flowing into the flocculation chambers for the first time as part of the pre-commissioning process

Director Engineering and Commercial Infrastructure

SAFETY

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.

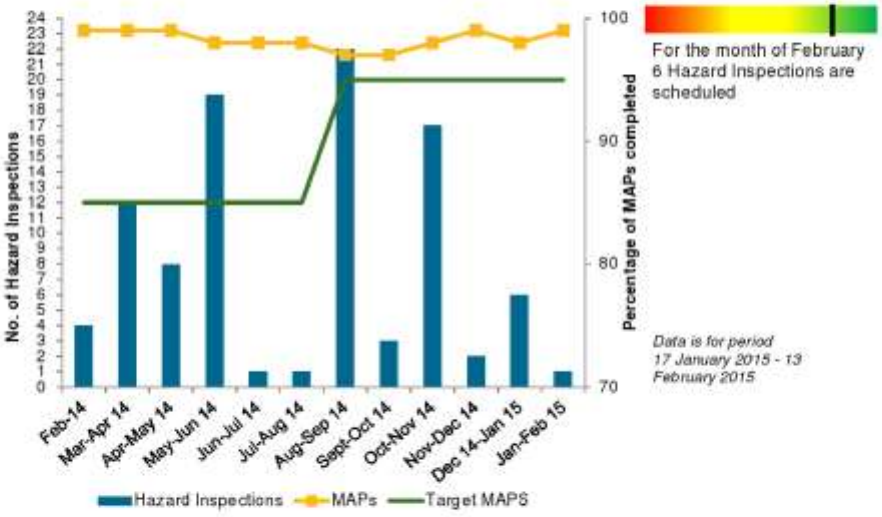


There was 1 x no time lost incidents reported - It was related to Muscular stress while handling objects

Data is for period 17 January 2015 - 13 February 2015

1.2. Preventative Actions

To achieve improved safety performance a range of improvement initiatives are undertaken on a monthly basis. The following figure tracks the improvement process through implementation of the SafePlan Monthly Action Plans (MAPs) and the hazard inspections.



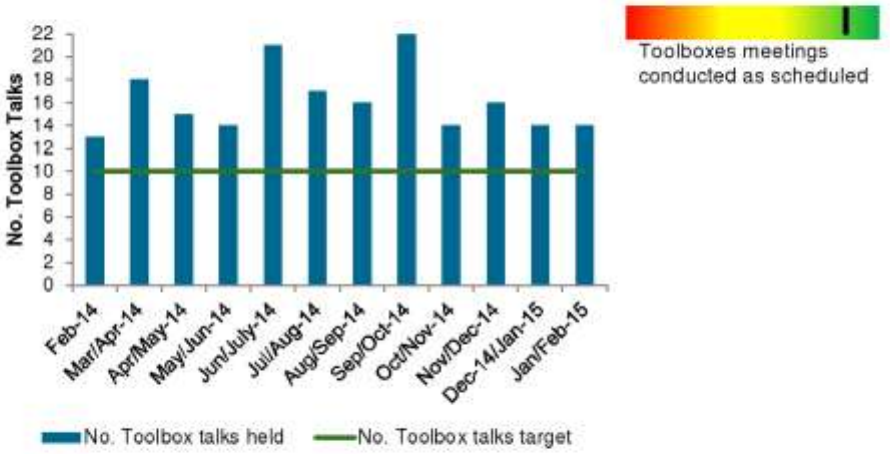
For the month of February 6 Hazard Inspections are scheduled

Data is for period 17 January 2015 - 13 February 2015

TEAM CULTURE

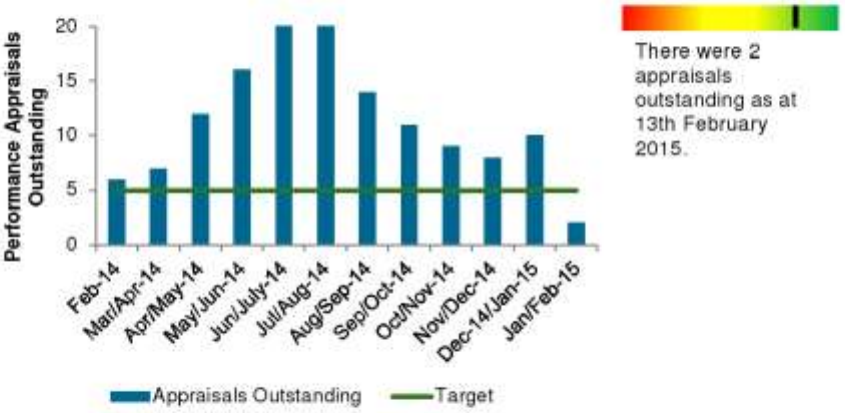
2.1. Team Engagement

Water Services believes that a high performing culture is an essential part of a successful business. The following chart tracks the initiatives to achieve an engaged, aligned and performing workplace culture through regular team meetings.



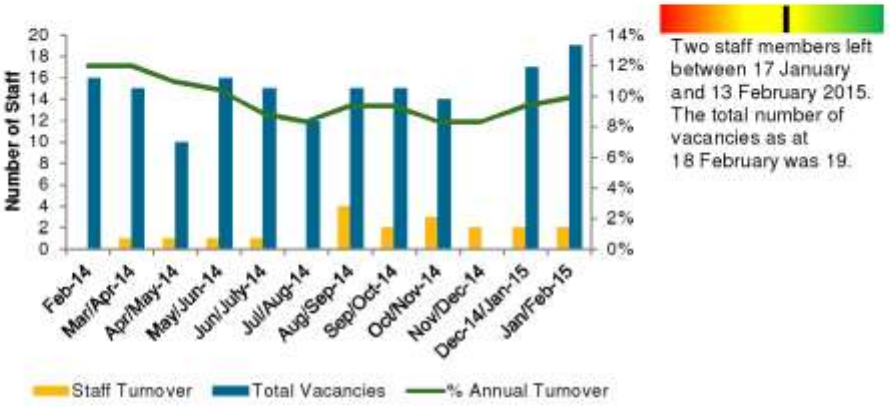
2.2. Performance Appraisals

The following chart tracks the initiatives to achieve an engaged, aligned and performing workplace by conducting regular performance appraisals.



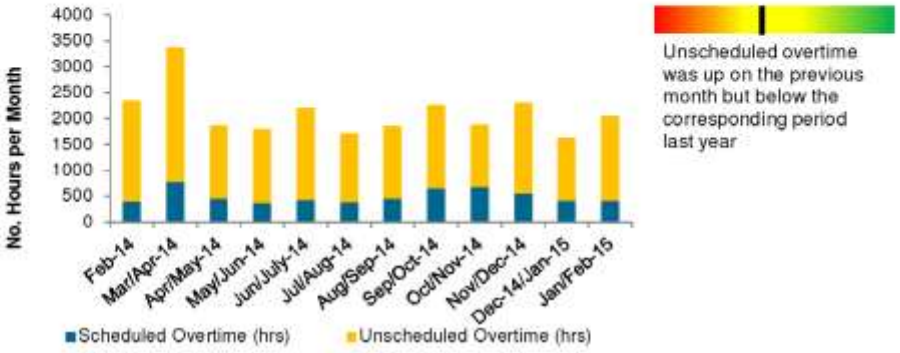
2.3. Annual Turn Over

The following staff turnover statistics are presented as an indicator of staff stability in the business. The business aims to keep the annual turnover under 10%.



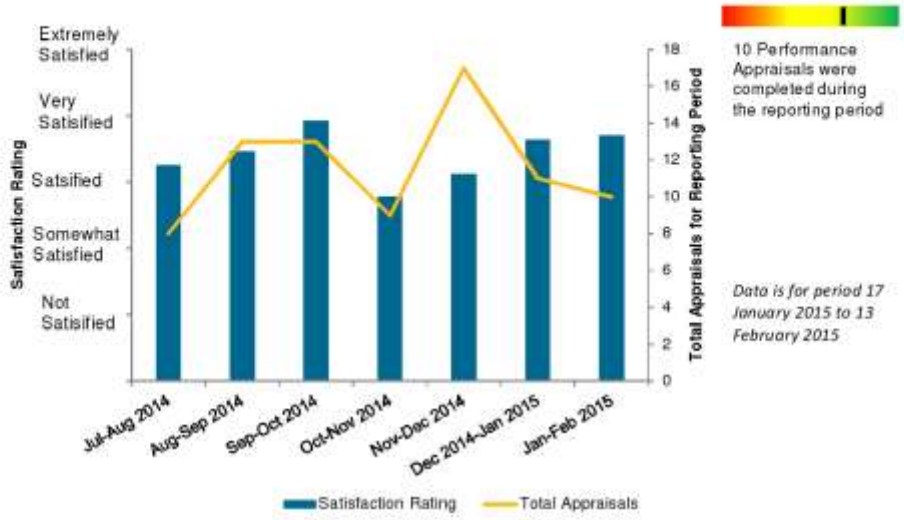
2.4. Operational Hours

The following charts detail Scheduled and Unscheduled overtime performed as well as total hours worked.



2.5. Employee Satisfaction Rating

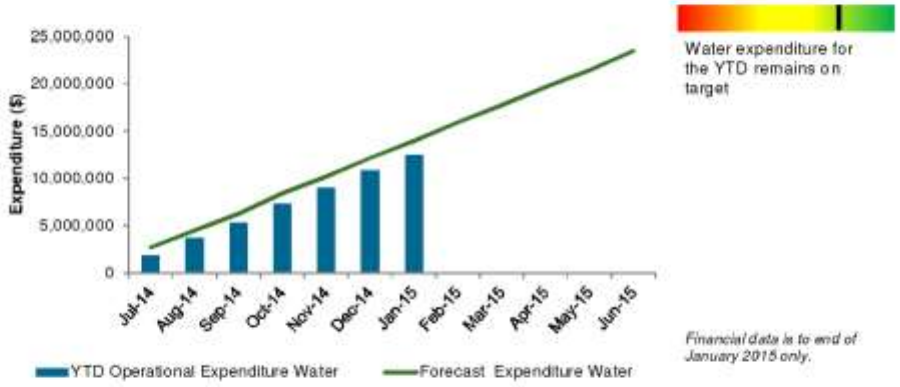
The following chart shows the Employee Satisfaction Rating for those that have completed a Performance Appraisal within the reporting period



FINANCE

3.1. Water Expenditure

The following trend provides a high level overview of the water expenditure to monitor forecast expenditure against actual expenditure. The forecast expenditure profile has been derived from previous year's cash flows. Note that the below graph does not include finance and depreciation costs.

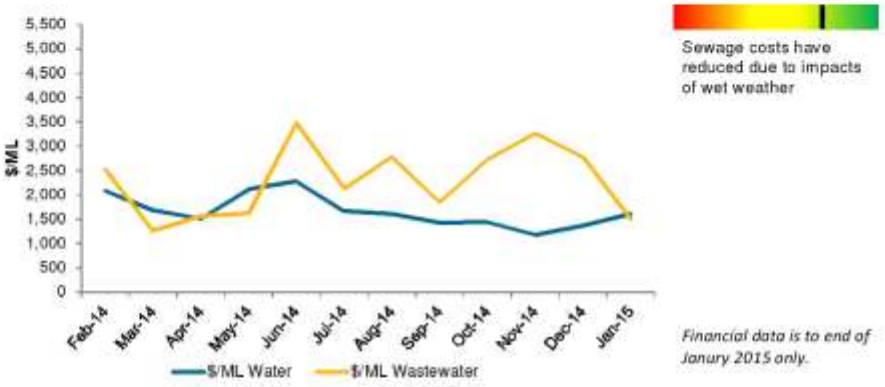


3.2. Wastewater Expenditure

The following trend provides a high level overview of the wastewater expenditure to monitor forecast expenditure against actual expenditure. The forecast expenditure profile has been derived from previous year's cash flows. Note that the below graph does not include finance and depreciation costs.

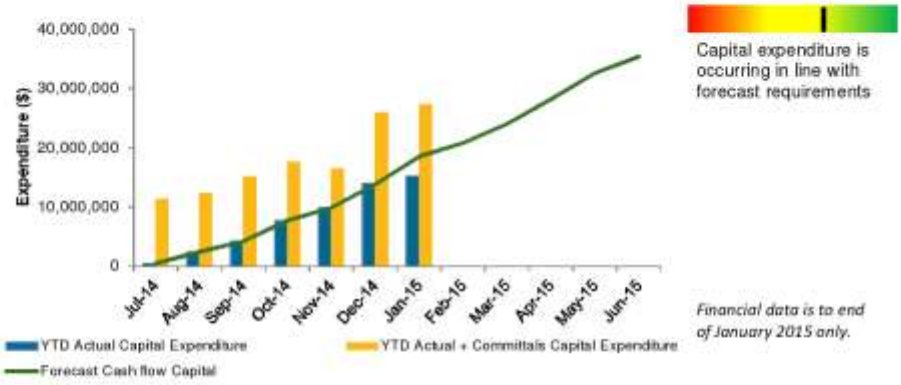
3.3. Operating Costs

The figure below details the average operating costs to treat water and wastewater in Mackay Regional Council.



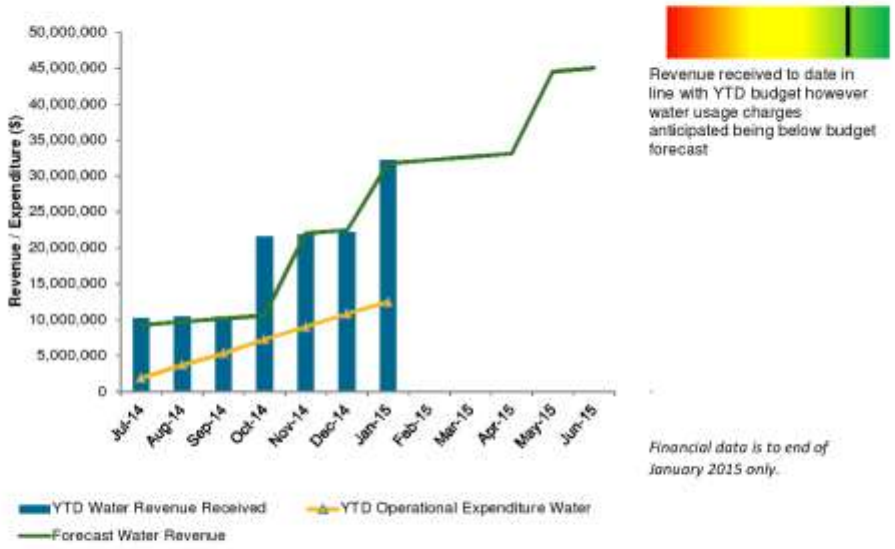
3.4. Capital Expenditure Performance

The following trend provides a high level overview of the capital expenditure to monitor forecast expenditure against actual expenditure. The forecast expenditure profile is based on the project delivery schedule within Water Services.



3.5. Water Revenue

Water revenue is received periodically through a combination of the access charge and consumption charge.



Revenue received to date in line with YTD budget however water usage charges anticipated being below budget forecast

Financial data is to end of January 2015 only.

3.6. Wastewater Revenue

Wastewater revenue is collected biannually.

Revenue slightly ahead of YTD budget

Financial data is to end of January 2015 only.

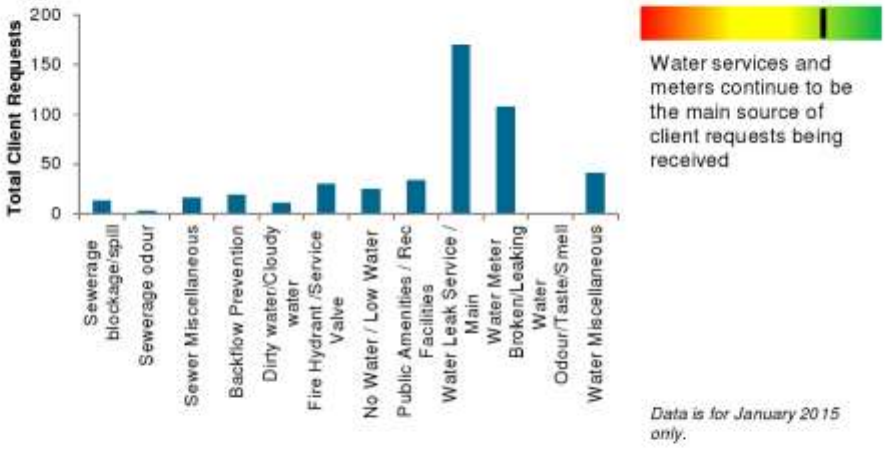
CLIENT SERVICES

4.1. 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.

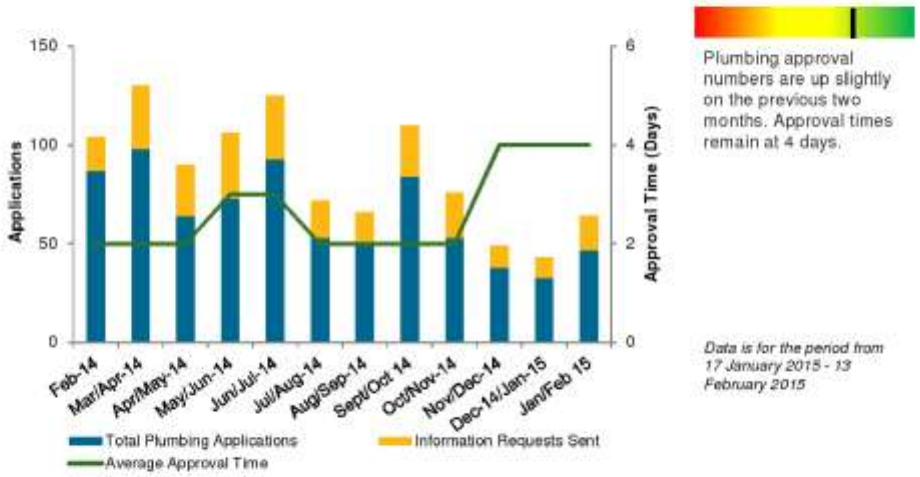
4.2. Request Types

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

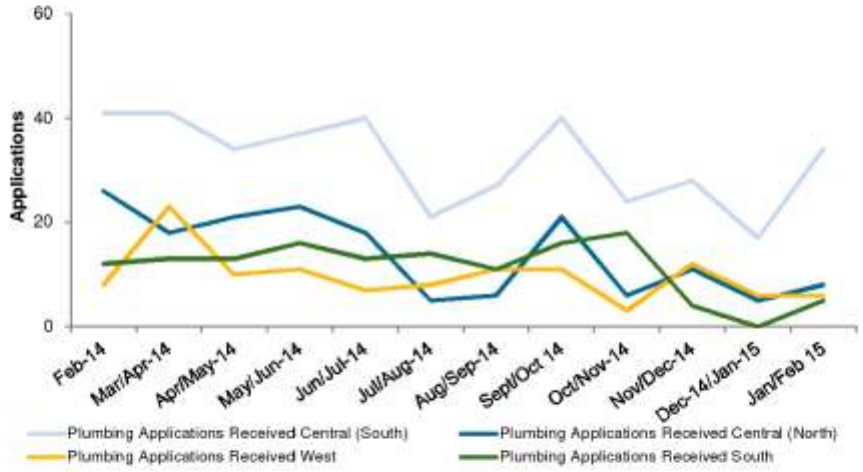


4.3. Plumbing Applications

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.

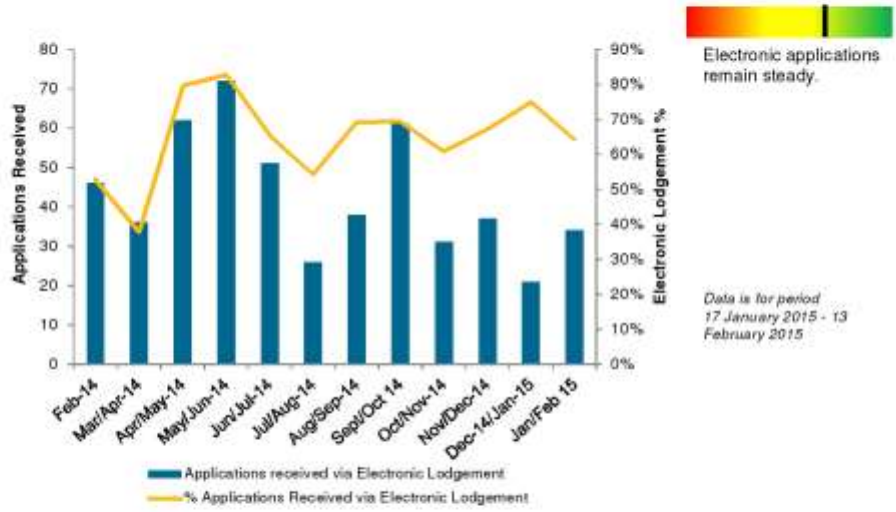


An indication of the amount of building activity in each population centre of the Mackay region can be derived by assessing the building activity by location. This is summarised in the table below.



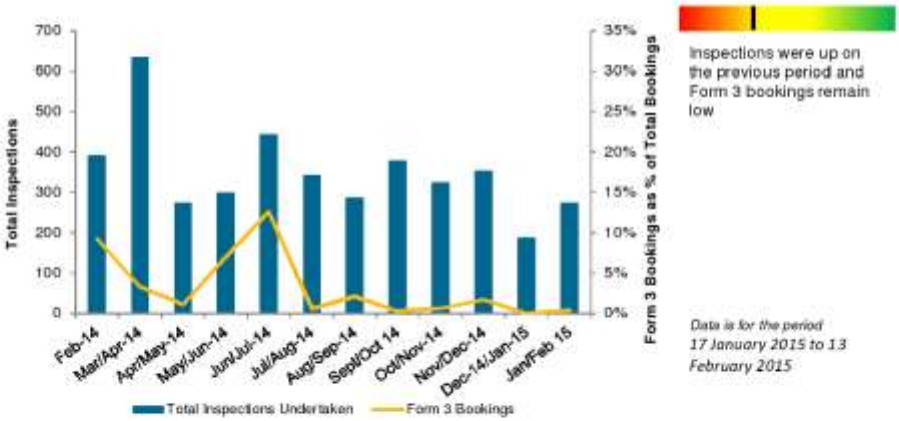
4.4. Electronic Plumbing Applications

Clients have the option to lodge Plumbing Applications electronically or directly with council in hard-copy.



4.5. Plumbing Inspections

Plumbing inspections are undertaken throughout a building construction or renovation process. Typically 4 plumbing inspections are undertaken for each plumbing application. In accordance with the *Plumbing and Drainage Act* plumbing inspections must be carried out within 48 hours of a plumbing inspection being booked. If Water Services cannot attend the plumbing inspections within the regulated 48 hour period, a plumber can submit a form 3 booking and proceed without an inspection, 1 hour after the 48 hour period.



4.6. 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 in the Mackay Region.

	Total Approved Businesses	Temporary Approvals In Place	New Approved Businesses for the Month
Mackay South	675	42	6
Mackay North	56	2	1
Sarina	56	2	0
Mirani/Marian	26	0	0
Total	**813**	**46**	**7**

Seven new businesses were identified for the month

4.7. Annual Trade Waste Targets

Annual targets are set for the Trade Waste team with respect to licensing Trade Waste Businesses. The target has been set at 150 new licensed businesses by June 2015. The following graph shows the Actual and Temporary Approvals achieved and the percentage of the target remaining.

Approval target and audit inspections are on track.

Data is for the period 17 January 2015 to 13 February 2015

4.8. Trade Waste Compliance

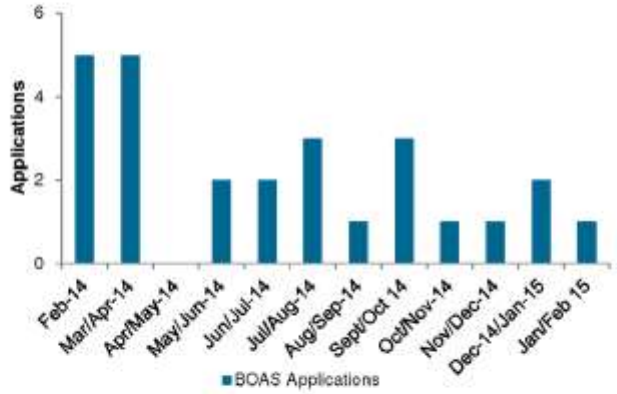
Trade Waste compliance testing is undertaken on a routine basis for all trade waste generators that have pre-treatment devices installed. The compliance testing is aimed at ensuring that Trade Waste discharges will not adversely impact on the treatment plant. A summary of the trade waste compliance tests undertaken in each Wastewater Treatment Plant catchment is detailed below.

	Compliance Tests within Limits	Compliance Test Outside limits
Mackay South	60	21
Mackay North	8	1
Sarina	12	3
Mirani	0	0
Total	**80**	**25**

A number of licenced premises are still failing to meet compliance requirements

4.9. Building Over Sewers

Building Over Sewer applications are lodged where the construction of a structure is proposed within close proximity of a sewer main. The application is assessed in accordance with Councils building over and adjacent to sewer policy. In accordance with the policy, Building Over Sewer Applications are assessed within 20 business days. Future reporting will include performance against turnaround time targets.

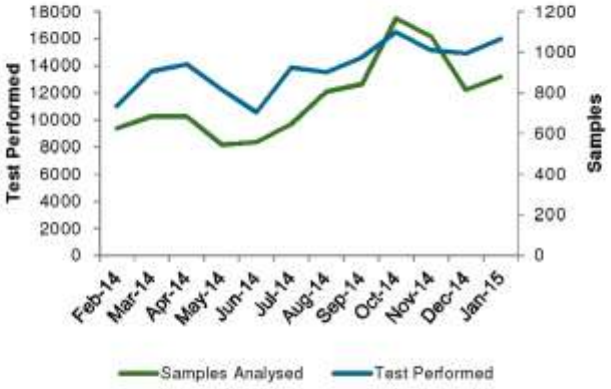


Only 1 referral received for the period. Numerous enquiries regarding the amended code are being received.

Data is for period 17 January 2015 to 13 February 2015

4.10. 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.

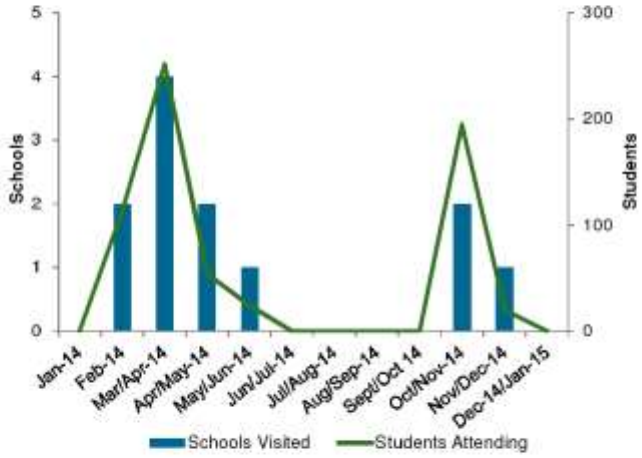


Number remains high with an increase in external work

Data is available to end of January 2015 only

4.11 School Visits

As part of the community education program Water Services provides water awareness sessions at schools. A summary of the program is detailed in the graph below including schools visited and students presented to.



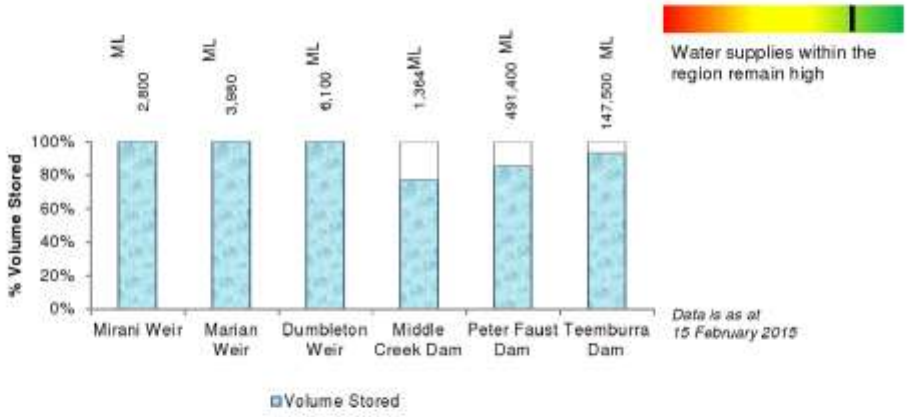
Due to School Holidays and School returning in early February no visits were scheduled over this time

Data is for period 17 January 2015 to 13 February 2015

ASSET MANAGEMENT

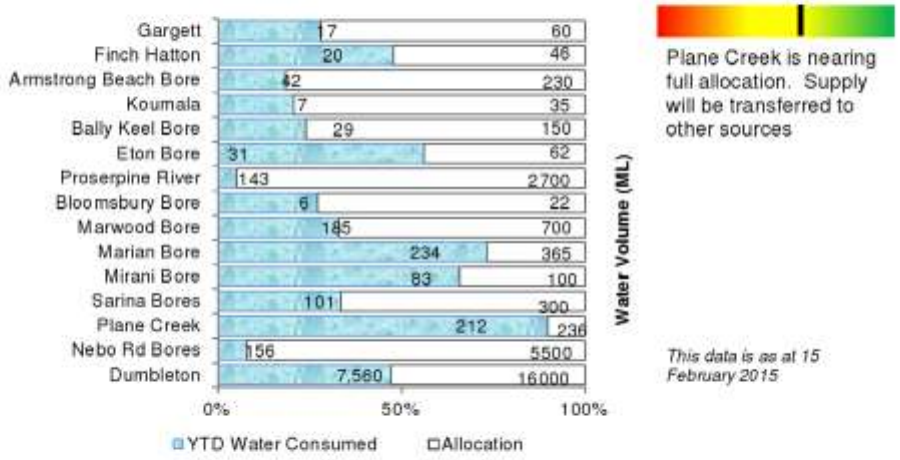
5.1. Surface Water Raw Water Storage Capacities

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.



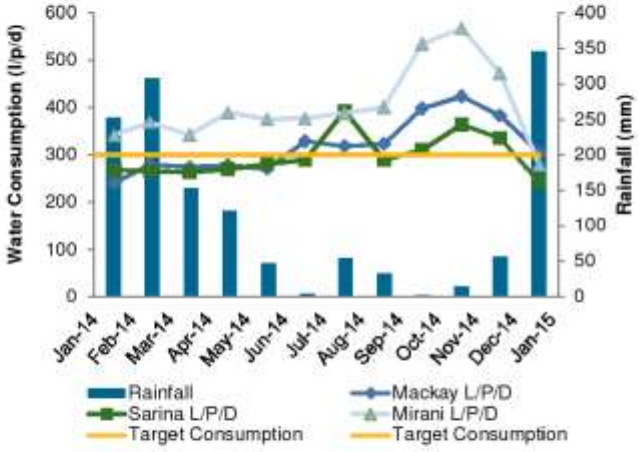
5.2. Annual Water Consumption vs Allocation by Source

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.



5.3. 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.

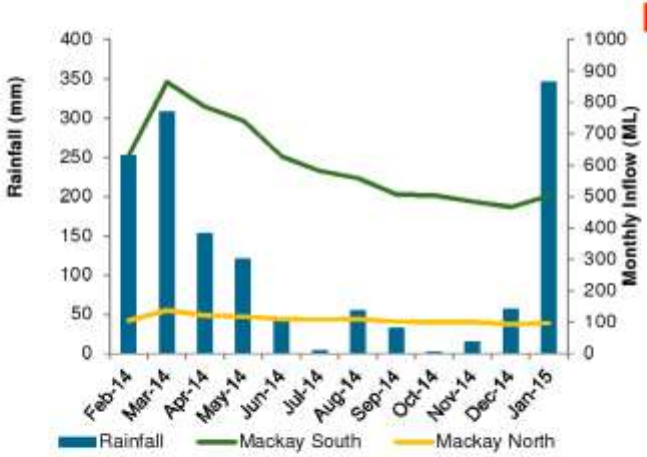


Water consumption has decreased across the region. 346mm of rain was registered for the month.

Data is as at end January 2015

5.4. Wastewater - Mackay North and Mackay South Inflows

The inflow into Wastewater Treatment Plants is impacted by the number of sewage connections and the extent of inflow and infiltration. The monthly inflow into the Mackay North and Mackay South Water Recycling Facilities is detailed below.

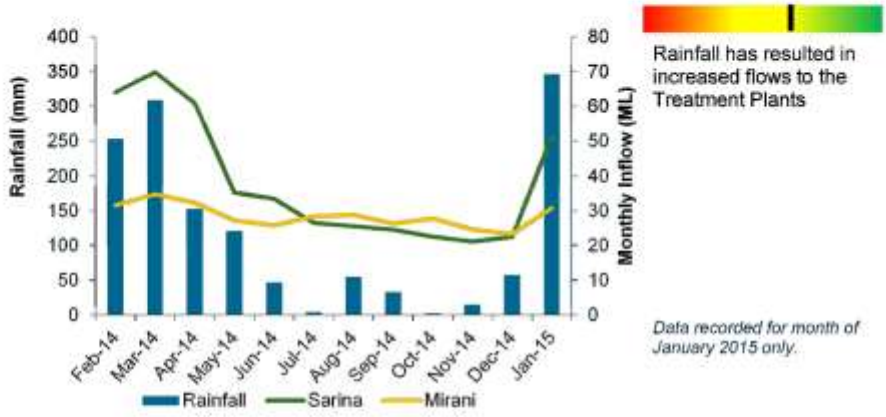


High rainfall in January is expected to impact on inflows to the Mackay South plant

Data recorded for month of January 2015 only

5.5. Wastewater – Sarina and Mirani/Marian Inflows

The monthly inflow into the Sarina and Mirani/Marian Wastewater Treatment Plants is detailed below.



5.6. Sewer Inspections – CCTV Camera

To protect and identify defects in the sewer system Water Services routinely undertakes CCTV inspections of the sewer system. CCTV inspections are undertaken for both developers as part of the process to create a new subdivision and on existing sewer assets as part of the routine sewer inspection program. A summary of the CCTV activity is displayed below measured as meters of sewer inspected.

5.7. Projects

Water Services undertakes a range of projects across the water business. Projects take the form of Capital Projects, Planning Studies and investigations. Information was current as at 13 February 2015.

Program	Project	Status	% Complete	Budget	Time
ID	AWMR - Connors Rd South	Design	98%	•	•
For Construction drawings have been completed and are awaiting signatures.					
Program	**Project**	**Status**	**% Complete**	**Budget**	**Time**
ID	Retic - Meter Replacement Program (14/15)	Construction	70%	•	•
Domestic Water Meter replacement Project is complete. Council's Internal Crew have replaced 100 out of 142 commercial water meters. Works are estimated to be complete by April 2015.					
Program	**Project**	**Status**	**% Complete**	**Budget**	**Time**
ID	WMT-Sarina water infrastructure improvement	Design	60%	•	•
Stage 1 Complete (Construction Works will be reported under WMR Leslie St Sarina). Stage 2 design works to be completed in house expected March 2015.					
Program	**Project**	**Status**	**% Complete**	**Budget**	**Time**
ID	WRS - Rural Water Supply Upgrade Project	Waiting on As-Constructed Information	98%	•	•
Waiting on amendments to As-Constructed information.					
Program	**Project**	**Status**	**% Complete**	**Budget**	**Time**
ID	WMR - Augusta Street, Mirani	Complete	100%	•	•
Works are complete. As-Constructed information received.					
Program	**Project**	**Status**	**% Complete**	**Budget**	**Time**
ID	Leak Detection & Demand Management	Construction	90%	•	•
Completed construction on the flow meter pits for the Demand Management Area's (DMA's) and awaiting drafting of as constructed plans. Well advanced on the commissioning 3 of the 6 DMA's, starting to commission remaining three DMA's.					
Program	**Project**	**Status**	**% Complete**	**Budget**	**Time**
ID	Digitisation of Telemetry - Water (14/15)	Construction	75%	•	•
Installation of equipment is underway.					

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Program	Project	Status	% Complete	Budget	Time
ID	Marian WTP	Construction	90%	•	•

Initial flushing of Raw Water Main

Pre-commissioning works on going. Communication line between Raw Water Intake and WTP has been installed. Road works are ongoing. Stormwater installation on going. Administration building fitout is nearing completion. Chlorine building fit out is on going.

Program	Project	Status	% Complete	Budget	Time
ID	Reservoir Chlorination System	Construction	5%	•	•

Pre-start meeting has been undertaken. Works due to commence on site in March 2015.

Program	Project	Status	% Complete	Budget	Time
ID	WMT Midge Point Line	Construction	5%	•	•

Pre-start meeting has been undertaken. Works due to commence on site in March 2015.

Program	Project	Status	% Complete	Budget	Time
ID	Cemetery Rd Trunk Main Relocation	Construction	97%	•	•

Excavation for final connection at Hume St

Phase 1 of the Cemetery Rd - Water main relocation at Nebo Rd/Shakespeare St intersection (by G & MA Lemura) Construction is complete and awaiting finalisation of As-constucted drawings.
Phase 2 (Nebo Rd to Hume St) - Final Connection at Hume St due for compeltion 20/2/15. As-constructed information still to be submitted.

Program	Project	Status	% Complete	Budget	Time
ID	WWS - Laboratory New	Planning	90%	•	•

Business Case for 2014/15 capital project being prepared.

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Program	Project	Status	% Complete	Budget	Time
ID	WRT - Smart Metering	Construction	70%	•	•
Contract for AMR installations on all identified domestic water meters is complete. Council's Internal Crew have installed 100 out of 142 commercial water meters. Works are estimated to be complete by April 2015.					
Program	**Project**	**Status**	**% Complete**	**Budget**	**Time**
ID	Heaths Road (Valetta Dr-Fursden St) - 200 mm link	Construction	40%	•	•
Construction has commenced on site. Good progress was made initially, however recent rain has slowed productivity slightly.					
Program	**Project**	**Status**	**% Complete**	**Budget**	**Time**
ID	Reservoir Corrosion Project	Tender / Procurement	25%	•	•
Tenders close on 17th February. Works include refurbishment of Gargett Reservoir, Sarina No 2 Reservoir, Nebo Rd Clarifiers No 1& 2 and Mt Pleasant No 1 Investigation works into the condition of the external render.					
Program	**Project**	**Status**	**% Complete**	**Budget**	**Time**
ID	WMR Leslie St Sarina	Tender / Procurement	50%	•	•
Tenders have been received and evaluation process has commenced.					
Program	**Project**	**Status**	**% Complete**	**Budget**	**Time**
ID	WMR Bruce H'way near Ablett St (Sarina)	Construction	0%	•	•
Design is complete. Anticipate construction to start in March 2015.					
Program	**Project**	**Status**	**% Complete**	**Budget**	**Time**
ID	WMR Elizabeth St to Brooks Rd	Construction	0%	•	•
Design is complete. Anticipate construction to start in March 2015.					
Program	**Project**	**Status**	**% Complete**	**Budget**	**Time**
ID	Middle Creek Dam Safety Upgrade	Design	40%	•	•
Detailed Design Phase of the Stage 1 upgrade is underway.					
Program	**Project**	**Status**	**% Complete**	**Budget**	**Time**
ID	WMR Johnson Street, Sarina	Construction	75%	•	•
Construction nearly complete. Water main is installed with only new services remaining to be done.					

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Program	Project	Status	% Complete	Budget	Time
ID	WMR West St Sarina	Design	70%	•	•
Detailed design nearing completion, with construction expected to start in March 2015.					
Program	**Project**	**Status**	**% Complete**	**Budget**	**Time**
ID	WMR Innes St Sarina	Planning/Design	10%	•	•
Survey and concept design of water main at intersection with West St complete.					
Program	**Project**	**Status**	**% Complete**	**Budget**	**Time**
ID	WMR Atherton St Sarina	Planning/Design	5%	•	•
Scope for 2014/15 is design only. Capital Delivery Briefs being reviewed and project drivers/ requirements confirmed.					
Program	**Project**	**Status**	**% Complete**	**Budget**	**Time**
ID	WMR Maud St Mirani	Planning/Design	5%	•	•
Scope for 2014/15 is design only. Capital Delivery Briefs being reviewed and project drivers/ requirements confirmed.					
Program	**Project**	**Status**	**% Complete**	**Budget**	**Time**
ID	WMR Stayts Rd Sarina	Planning/Design	5%	•	•
Scope for 2014/15 is design only. Capital Delivery Briefs being reviewed and project drivers/ requirements confirmed.					
Program	**Project**	**Status**	**% Complete**	**Budget**	**Time**
ID	WPS Booster Station Upgrades/	Construction	50%	•	•
Switchboard assembly has been completed and switchboards delivered to site. Installation and commissioning expected to occur March 2015.					
Program	**Project**	**Status**	**% Complete**	**Budget**	**Time**
ID	WTP - Nebo Rd support improvements/ upgrades	Various (Tender and Construction)	15%	•	•
Project includes four (4) packages of work - fencing, CCTV upgrades, clarifier repairs and replacement of WTP building roof. Status as follows: • Fencing – completed • CCTV – completed • Clarifier repairs – These works have been included with the tender issued for Reservoir Corosion Project Job No 63088 due to synergies in construction methods. Tenders have been evaluated is in progress. • Roof replacement – Tenders are finalised					
Program	**Project**	**Status**	**% Complete**	**Budget**	**Time**
ID	WMR Renewals (Sandy Creek)	Design	80%	•	•
For Approval drawings have been received, and have been reviewed. During the planning stage the requirement for additional potholing was identified and being undertaken					

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Program	Project	Status	% Complete	Budget	Time
ID	Chlorine Gas Detection	Tender / Procurement	25%	•	•
Currently out to tender, with tenders closing in early March 2015.					

Program	Project	Status	% Complete	Budget	Time
ID	South Mackay Trunk Main	Tender / Procurement	25%	•	•
Quotes have been sent out for Principal Supplied materials. Tender documentation is being finalised, and it is expected to advertise late Feb.					

Program	Project	Status	% Complete	Budget	Time
ID	Sewer Structural Lining Program	Tender / Procurement	75%	•	•
Tender evaluation for Relining Works is in final stages.					

Program	Project	Status	% Complete	Budget	Time
ID	Inflow Infiltration	Construction	65%	•	•
Sewage overflow level sensors are being installed as required by Networks at various sites in Mackay and Sarina. Manhole inspections are underway in various sewerage pump station catchments in Mackay. Sewer flow monitoring is underway in the Gooseponds catchment. A trial Watcomb Emergency Release Overflow Strucutre (EROS) screen has been installed at the new Poulsen Drive EROS to assist the protection of vulnerable private properties in this area from unscreened wet weather overflows.					

Program	Project	Status	% Complete	Budget	Time
ID	Digitisation of Telemetry - Sewage	Construction	75%	•	•
Installation of equipment is underway.					

Program	Project	Status	% Complete	Budget	Time
ID	Marian Sewerage System Augmentations - SRM	Construction	60%	•	•

Contractor Installing 250mm SRM

250mm Sewer Rising Main (SRM) pipeline laying works from Marian SPS 1 to the Mirani Waste Water Treatment Plant have been substantially completed. Construction Works has commenced on the 225mm SRM from Marian SPS 7 to SPS 1.

Program	Project	Status	% Complete	Budget	Time
ID	Marian Sewerage System Augmentations - SPS 1 and 7	Procurement	50%	•	•
Works include the retrofit of larger pumpsets to Sewage Pump Station (SPS) No. 7 and a new SPS to replace the currently undersized SPS No 1. Tender submissions have been received and are currently under review.					

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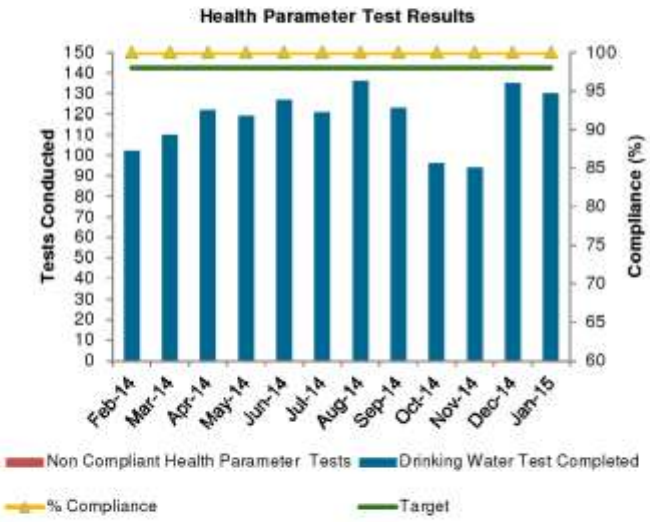
Program	Project	Status	% Complete	Budget	Time
ID	Base Hospital SPS replacement	Construction	5%		
Contractor has commenced with procurement of long lead time items, with construction on site expected to commence in March 2015.					
Program	**Project**	**Status**	**% Complete**	**Budget**	**Time**
ID	SPS Wattle Street Sewerage Pump Station	Construction	10%		
Contract has been awarded to Roebuck and Pre-start meeting was held on 19 December 2014. Contractor has commenced with procurement of long lead time items. Establishment on site has commenced.					
Program	**Project**	**Status**	**% Complete**	**Budget**	**Time**
ID	SPS Heaths Road No.1 Sewerage Pump Station	Construction	10%		
Contract has been awarded to Roebuck and Pre-start meeting was held on 19 December 2014. Contractor has commenced with procurement of long lead time items. Establishment on site has commenced.					
Program	**Project**	**Status**	**% Complete**	**Budget**	**Time**
ID	SPS Refurbishment/ Renewals (Magpie Street)	Construction	10%		
Contract has been awarded to Roebuck and Pre-start meeting was held on 19 December 2014. Contractor has commenced with procurement of long lead time items. Establishment on site has commenced.					
Program	**Project**	**Status**	**% Complete**	**Budget**	**Time**
ID	SPS Hicks Road Sewerage Pump Station	Construction	10%		
Contract has been awarded to Roebuck and Pre-start meeting was held on 19 December 2014. Contractor has commenced with procurement of long lead time items. Establishment on site has commenced.					
Program	**Project**	**Status**	**% Complete**	**Budget**	**Time**
ID	SPS Lindwall Street Sewerage Pump Station	Design	95%		
Final design drawings currently being reviewed. Construction works have been deferred to align with the development of the surrounding land.					
Program	**Project**	**Status**	**% Complete**	**Budget**	**Time**
ID	Symons Farm SPS Upgrade	Planning	95%		
Scope has been revised to include an additional Sewer Rising Main (SRM) investigation. Quotes have been received for design of the gravity main and concept design of the Symons Farm SPS and SRM.					
Program	**Project**	**Status**	**% Complete**	**Budget**	**Time**
ID	Mirani WRF Stage 1 - PTA & ATF	Design	15%		
Design work is underway. The 30% design review workshop is programmed to be held in late March 2015.					

REGULATORY COMPLIANCE

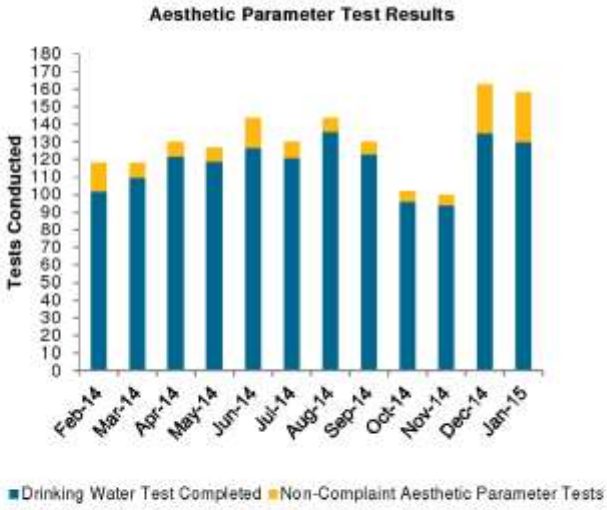
6.1. Drinking Water Compliance

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.



No health based exceedences.

This data is reported 1 month in arrears and due to regulatory reporting requirements is reported by calendar month.

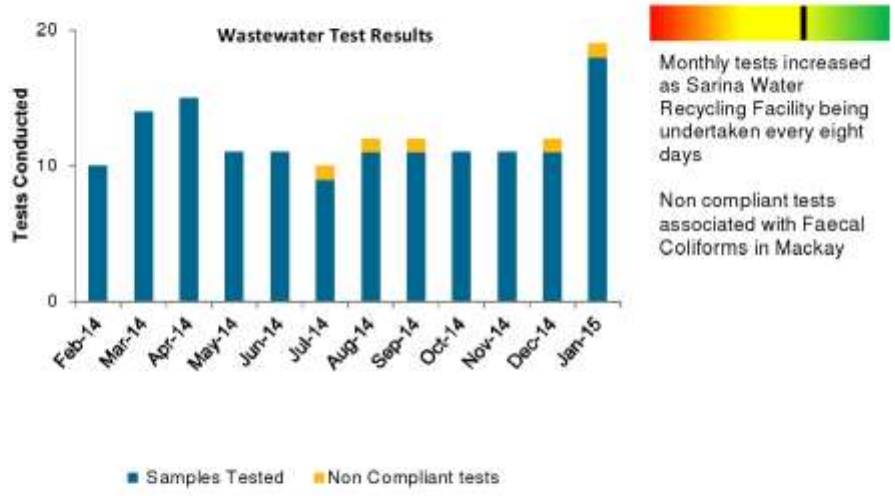


Most aesthetic exceedances were for hardness and these were found in Bloomsbury, Eton, Koumala, Marian, and Sarina.

This data is reported 1 month in arrears and due to regulatory reporting requirements is reported by calendar month.

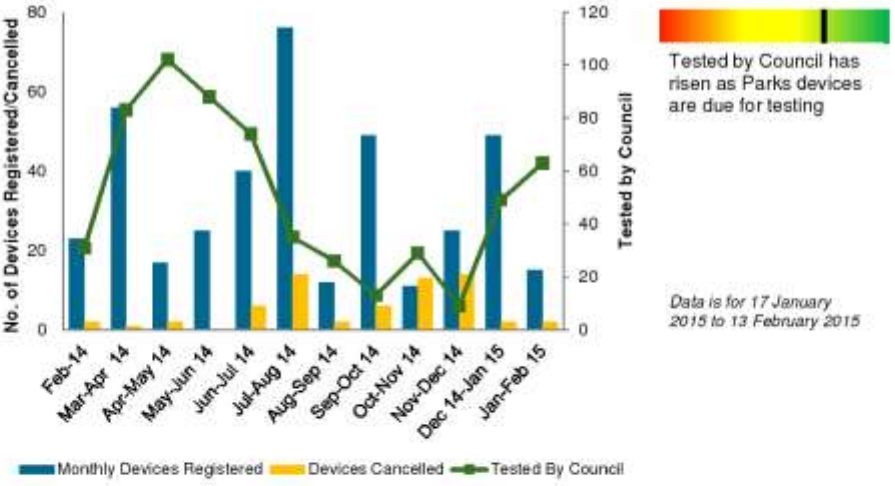
6.2. Wastewater Compliance

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.



6.3. 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 Reticulation network. The requirement for backflow devices is regulated in accordance with the Standard Plumbing and Drainage Regulation.



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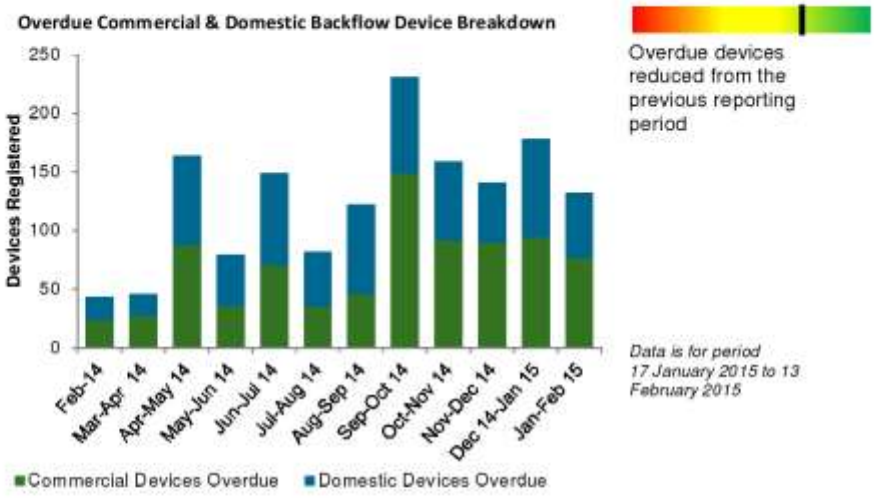

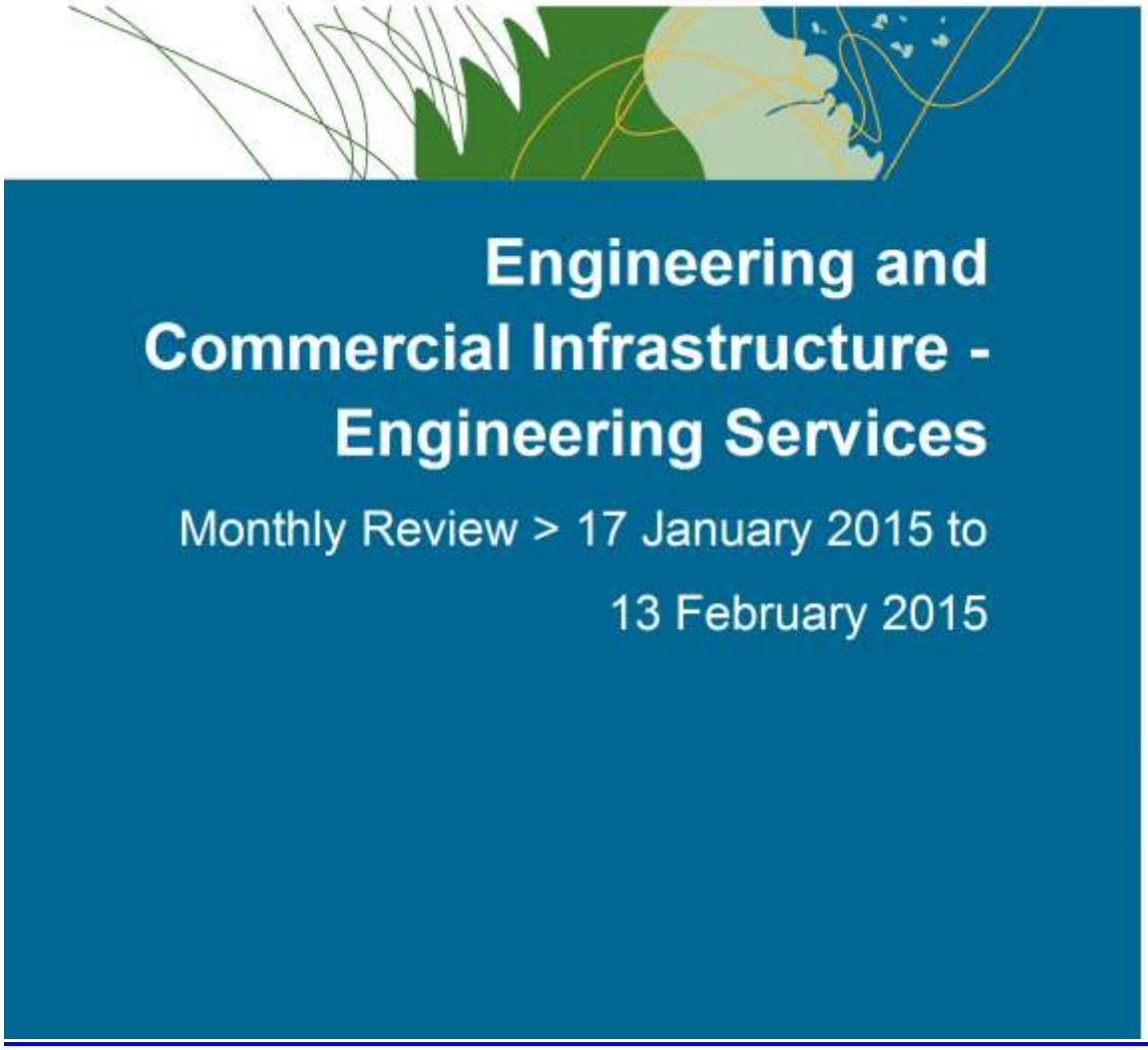
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OVERVIEW

Overview

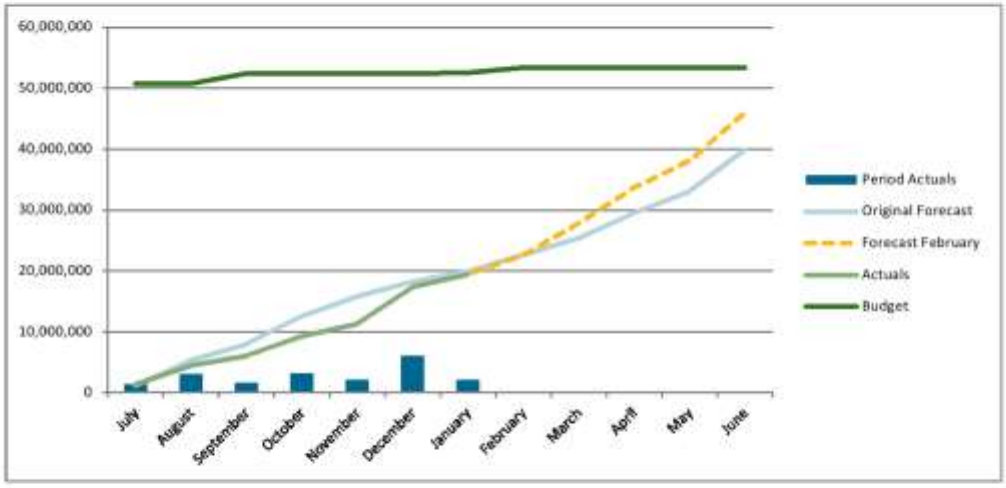
This report is for Engineering Services activities for January/February 2015. Please note that references to the January/February 2015 reporting period covers the period 17 January 2015 to 13 February 2015. Significant items in this period include:

- Measures to accelerate the Capital Program were introduced during the period and will continue to ensure that the Capital Program is delivered. Some minor interruptions were experienced due to adverse weather; however, general works proceeded well during the period.
- Maintenance crews have now returned to near full capability following the Christmas break. Sealed roads maintenance activities to action programmed maintenance, to rectify defects and to address client requests have continued during the period. The wet weather has caused disruptions to the Unsealed Road Formation Maintenance Program.
- The last stage of the Resurfacing Program involving asphalt works has just commenced and is scheduled to be completed in April, weather permitting.
- The NDRRA Program is close to being finalised with the Federal Inspectorate Audit in progress. All subsidy payments have now been received from QRA.
- Ongoing delivery of design works for Capital Works Program Projects and Active Towns Projects continues on schedule.
- Transport & Drainage Advisory Board (T&DAB) Meeting was held on 4 February 2015 where 5 business cases for future projects where presented.

Director Engineering and Commercial Infrastructure

CIVIL PROJECTS

Program



Comments

The Program's expenditure is approximately 38% with a further 34% committed. The period saw the commencement of measures to accelerate expenditure and it is anticipated that should this continue the Capital Program will be back on track to achieve their 90% target.

The period saw several days of wet weather. Whilst the amount of rainfall did not cause prolonged periods of delay, the resultant corrective works did slow progress on some Projects.

Progress continued on the Resurfacing Program with the asphalt component commencing.

Progress stalled on the bridge over Murray Creek on Rostirollas Road as the site was inundated several times and the standing water level is above the headstocks. Measures will be undertaken to lower the water level and complete the placement of the deck units, however, this will be highly dependent on the amount of rainfall received in the area.

The period saw the commencement of construction on a further stage of the Cross City Link. This stage is between Archibald and Webberley Streets. A further stage connecting Webberley Street through to Bridge Road will follow.

Work also commenced on the upgrade of the Grass Tree Beach Boat Ramp and Car Park.

The road to the historic Greenmount Homestead was upgraded and sealed in preparation for ANZAC Celebrations. This Project was not part of the original Capital Program, however, it was prioritised to be completed to allow full establishment of vegetation prior to ANZAC Day.

Archibald to Webberley – Old Rail Corridor Before Works

Archibald to Webberley – Base Prepared

Archibald to Webberley – Concrete Poured

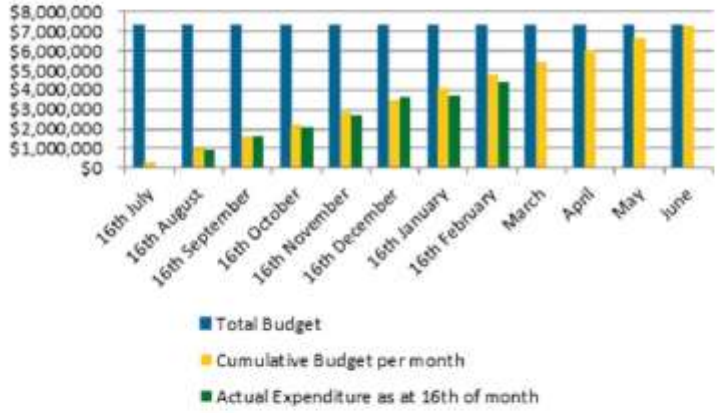
Greenmount Homestead – Upgraded Access

Monash Way During Recent Rainfall

Grasstree Beach Car Park – Ramp Works Still to be Completed

CIVIL OPERATIONS

Sealed Road Maintenance



Comments

Sealed roads maintenance activities to action programmed maintenance, to rectify defects and to address client requests have continued during the period.

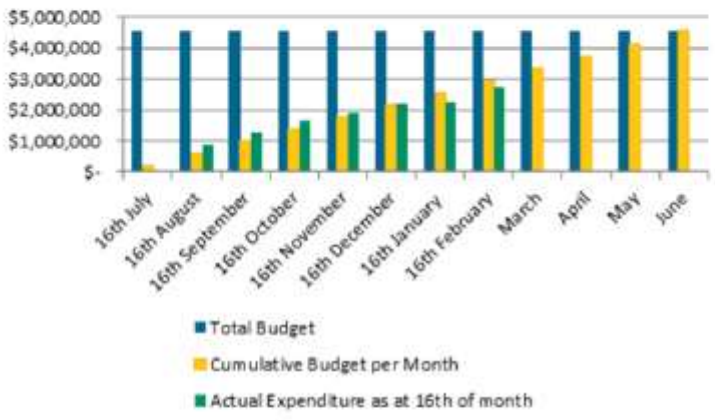
Shoulder grading has been undertaken throughout the network including Bogga Road, Schmidtke Road, Christoe Street, Wainai Road and Middle Creek Road.

Bitumen surface repairs have been undertaken on numerous roads; however, there has been a general reduction in the level of surface defects following wet weather which is a direct positive impact of the Roads Rebuilding Program.

Linemarking maintenance has been undertaken within the Southern Area including the localities of Sarina, Timberlands, Campwin Beach, Sarina Beach, Louisa Creek, Grasstree Beach, Alligator Creek and Bakers Creek.

Signage repairs are an on-going challenge with regular damage being reported; twenty street name blades have been repaired in the period.

Unsealed Road Maintenance

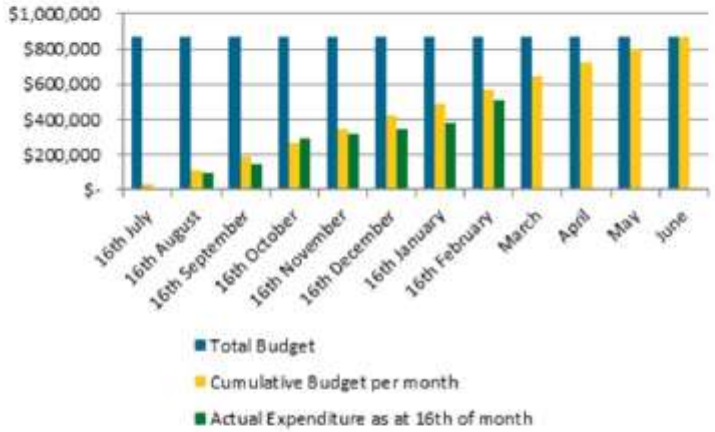


Comments

The wet weather has negatively impacted on the Unsealed Road Formation Maintenance Program; however, crews have been diverted to address the backlog of defects.

Road inspections are continuing and maintenance is being programmed in line with the Unsealed Road Maintenance Management System.

Street Cleaning

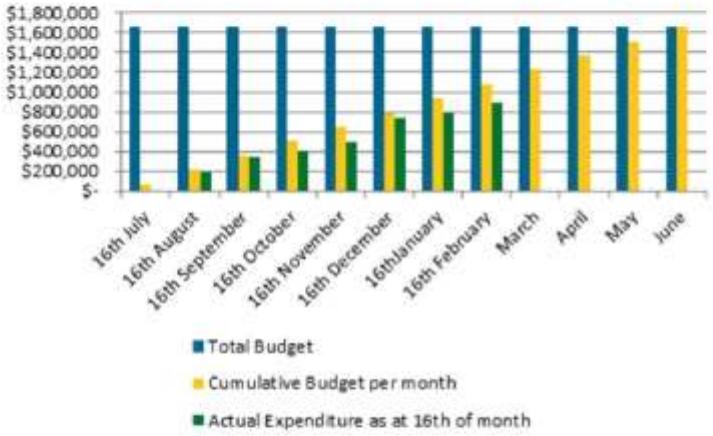


Comments

Street sweeping has been undertaken in line with the Program and to address client requests.

Contract Footpath Cleaning within the business districts, in particular the Mackay City Centre, is continuing in line with the Maintenance Schedule except where revitalisation works are in progress.

Open Drainage Maintenance



Comments

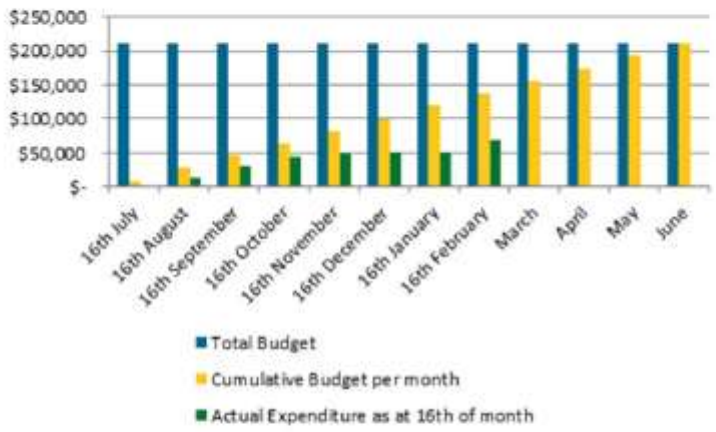
Open drainage maintenance remains a high priority; however, wet weather has impacted on Maintenance Schedules as expected. Extra temporary resources have been engaged to assist with the high workload.

Further special maintenance activities (e.g. de-silting, re-profiling and vegetation control) are scheduled to be undertaken when weather and ground conditions permit.

Drain maintenance expenditure to date currently sits below the expected YTD budget. The reasons for this and the planned works for the remainder of the year are as follows:

- A comprehensive drain maintenance preparation has been undertaken to date as planned, however, the type of works undertaken this pre-season has not been as plant intensive especially external plant hire, hence lower cost to date.
- The lower expenditure to date allows the allocation of more resources to drains maintenance during the wet when vegetation growth and client requests are at their highest. We are also intending to trial hire a specialised mower that can operate in up to 600mm water depth.
- This lower expenditure will also allow additional de-silting/re-profiling works towards the end of the financial year, where warranted, in preparation for the following wet season.

Bridge Maintenance

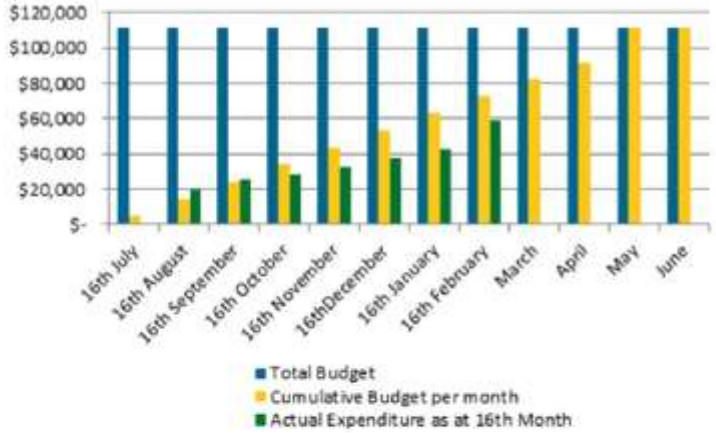


Comments

Further routine and Bridge Rehabilitation Works are scheduled for this second half of the year.

Planning is well advanced for rehabilitation works on O'Sheas Road timber bridge with works scheduled to commence in April 2015. Design for rehabilitation work on Bell Creek Bridge on Munbura Road is in progress with rehabilitation works scheduled for May/June 2015.

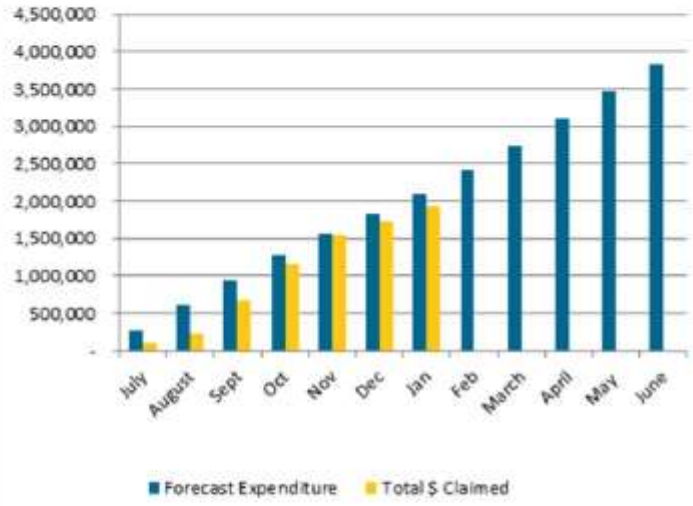
Boat Ramp Maintenance



Comments

Routine inspections and ramp surface cleaning is continuing in line with the schedules. Minor defects have been repaired as needed.

RMPC's



Comments

Routine maintenance activities continue to be undertaken on the TMR Road Network as required with the major focus being on sealed road maintenance including vegetation control and slashing.

Grading and re-sheeting works on Eungella Dam Road are scheduled to be undertaken prior to Easter.

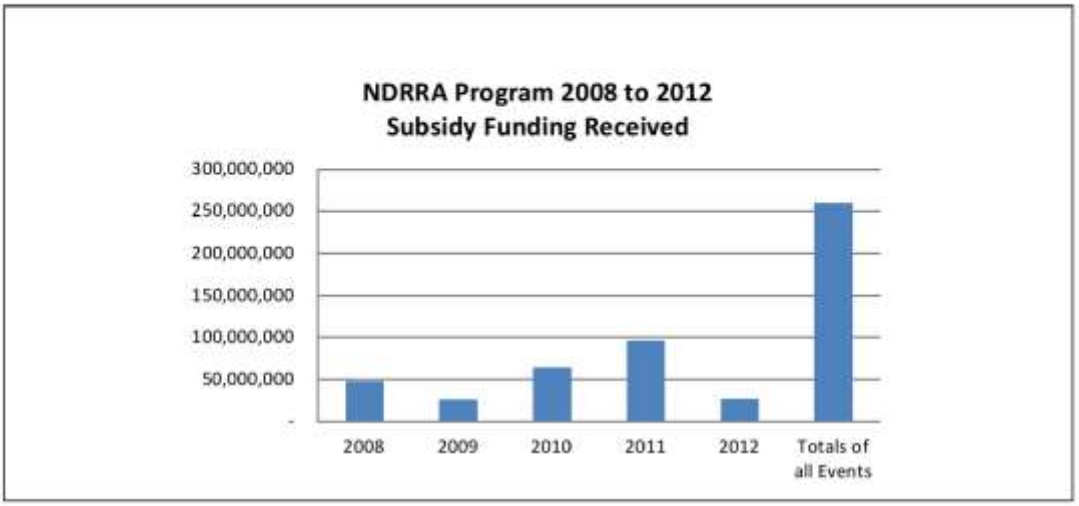
NDRRA Restoration Works

Overview

The Program is close to finalisation with the Federal Inspectorate Audit in progress.

All payments have been released by QRA. The table below summarises the subsidy funding received for the 2008 to 2012 natural disaster events.

There has been on-going contact with QRA to respond to queries associated with the QAO/Federal Inspectorate Audit process.



TECHNICAL SERVICES

- Development and design of Projects within Capital Works Program (CWP) for 2013/2014, 2014/2015 ,2015/2016 and 2016/2017
- Development of 20 Year Capital Works Program relating to roads and drainage infrastructure for inclusion in and generation of Long Term Financial Forecast. Discussions with service providers to streamline design and construction processes
- Extend assessment to track actual unit rates to build history for future estimates following implementation of Department of Transport and Main Roads (TMR) specifications and estimates. Incorporation of risk allocation into estimates process.
- Development of a series of Business Cases for upcoming Capital Works Program Projects for submission to and consideration by the Transport and Drainage Advisory Board
- Compilation of Report to Council on Petition to Upgrade the Condition of Vincent Street, South Mackay and the Traffic Advisory and Walking & Cycling Advisory Committee Meeting Minutes
- Participation in Briefings to Council on Road Realignment Notices and Fourways Drainage
- Successful completion of Black-Spot Submission for the upgrading of Shakespeare and Milton Streets' signals.

Survey Services

Overview

- 50% of 2015/2016 Capital Works Program surveys completed
- Set-out Abutment for Cross City Link Footbridge (Bridge Road to Webberley Street)
- Cadastral surveys completed for Parks investigations at Ball Bay and Halliday Bay

Digital Cadastral Data Base (DCDB)

- Co-ordination of cadastral reference marks and office plotting continued for upgrade of Digital Cadastral Data Base in Habana/Balnagowan area
- Reconnaissance continued for upgrade of Digital Cadastral Data Base in Eton/Sarina Range area

Australian Height Datum (AHD)

- High order levelling of survey marks from Sarina to Ilbilbie and from Sarina to Armstrong Beach submitted to DNRM for processing.

Boat Ramp Surveys

- Surveys needed for Capital Works Projects to enable future upgrade of boat ramp and car park
- All boat ramp designs need to consider Highest Astronomical Tide and Lowest Astronomical Tide (HAT and LAT)
- Surveyors needed to take tide measurements so they could perform calculations to convert between the Australian Height Datum used for Engineering Projects and Standard Port Datum used to publish tide heights: the difference between the two is about 2.94 metres in Mackay

Design Services

Capital Works Program (CWP)

- 109 of the 110 Design Projects in the 2010/2011 Capital Works Program have been completed (99%). The Project remaining is design works only associated with the reconstruction of Archibald from Connors to Milton and is delayed by confirmation of land acquisitions and proposed future Realignment Notice issues associated with the Milton/Archibald intersection.
- 113 of 114 Design Projects in the 2011/2012 Capital Works Program have been completed to date (99%). Project remaining is Milton Street Construction (Farrellys to East Boundary).

- 96 of 98 Design Projects in the 2012/2013 Capital Works Program have been completed to date (98%). Projects remaining are the Archibald Street/Central Park Drive intersection design only and the completion of floodway extensions on Gakowskis Road.
- 86 of 88 Design Projects in the 2013/2014 Capital Works Program have been completed to date (98%). Projects remaining are the East Boundary Road reconstruction and the Victoria Plains Road intersection upgrade.
- 53 of 65 Design Projects in the 2014/2015 Capital Works Program have been completed to date (81%).
- 35 of 74 Design Projects in the 2015/2016 Capital Works Program have been completed to date (47%).

Those outstanding require land acquisitions, valuations and input from service authorities which are delaying completion of the design.

- Commencement of CBD Drainage Study – data collection of underground asset data and survey and detailed design have commenced
- Commencement of Shellgrit Creek Outlet and alternative Beach Outfall Drainage Designs – detailed survey and design brief development have commenced
- Detailed design of Glenpark Overpass Duplication proceeding including detailed geotechnical investigations
- Commencement of Fourways Drainage detailed design engagement

Major Projects for Delivery Next Month

- Penn/Juliet intersection upgrade and signalization
- Pioneer River Pontoon detailed design and Wharf Removal Plans and Specifications
- Geeberga Buthurra/Mt Martin Road Upgrade (Pontcliff Subdivision)

Landscape Issues

- Pending Detailed Design for Bluewater Trail (BWT) Sections – Bluewater Quay (BWQ) to River Street Boat Ramp, Stages 2 & 3: due to funding availability these will have to be delivered via Capital Works Program at a later stage. Design development to commence first quarter 2015.
- Disabled Access (DA) Audit Priority Listing for 2015/2016 Rectification Projects (Mackay-wide) completed and design of Bus Stop Compliance Projects in CBD, West Mackay and North Mackay commenced with 5 Design Projects completed.
- Finalising update of 8300 Supplementary Specification. Liaising with Parks to review and revise Irrigation Master Specification.
- Updates to Style Manual ongoing; draft anticipated to be available in June 2015
- Ongoing Contract Administration advice and services on City Centre Revitalisation Project
- Progressed cost estimate rates for landscape items for inclusion into MRC Cost Estimates System; liaising with Parks for rates on standard furniture and structure items and finalising Rates Spreadsheet for landscape works
- Urban design input to Glenpark Street Overpass and Malcolmson Street/Greenfields Gantry Project
- Design development of landscape concepts for Evans/Grendon Road intersection (Client: Economic Development)
- Botanic Gardens Carpark Upgrade Concept Plans finalised; pending discussions with Mackay Regional Botanic Gardens Curator prior to finalisation
- Jubilee Park Upgrade:
    - Stage 1 Civil Works completed, flagpoles and lighting to be installed in March2015 and gardens and artwork to be installed March/April 2015
    - Ultimate Design, Staging Proposal and Estimates have been completed
    - Stage 2 Design and Estimate have been completed
    - ANZAC Artwork – Stage 1 Artwork currently being manufactured; advised 50% of pieces were completed as at 13 February 2015. Liaising with RSL, Library Heritage Collection and Mackay Museum in development of Stage 2 Artwork.
- Redesign of 2 x Roundabout Landscape Designs for Mackay-Bucasia Road (Eimeo and Holts Road) and revision of Irrigation Design pending Standard Drawings (recycled plastic bollards and barriers) finalised: pending Parks approval prior to sign off.

Traffic and Investigation Issues

Active Towns Program:

- Planning has continued for Bike Week 2015. The Program will include 'Cyclefest Mackay', an expo showcasing all things cycling. Branding has now been completed and we have approached local businesses with sponsorship opportunities. Westfund Health has agreed to be the Gold Sponsor of Cyclefest Mackay.
- Construction on the Gooseponds Missing Link is progressing and proposed completion is now mid-February 2015 (weather permitting). An Official Opening event will be planned for late March 2015.
- Rides of the Region – Printed copies of the brochure have now been received. The brochure will be distributed at the Sports Expo in February 2015 and also through MRC Customer Service, Mackay Tourism, local bike shops and local gyms.
- Planning for Ride2School Day (13 March 2015) has commenced. Every school in the region has been offered the opportunity to register for an event kit. The kits will provide the school with promotional material for the day, water bottles to be offered as prizes and boxes of whole fruit.
- Planning for April 2015 School Holiday Bike Education Courses has commenced.
- Planning for Monthly Community Rides has commenced. Rides will take place on the last Sunday of the month starting in March 2015. They will offer the community an opportunity to ride in a safe, inclusive environment allowing people to enjoy the outdoors, be physically active, improve their confidence when cycling and meet new people.
- Currently liaising with GIS to obtain Bike Plan information to identify missing links within the Bicycle Network. The purpose of this is to allow a review of the Mackay Regional Council Cycleway Strategy 2011–2016 and prioritise Projects within Council's Capital Works Program.

Traffic Counts:

- Installed traffic counters for Boat Ramp Survey over Christmas period
- Maintain Count Program for Capital Works Program

Works On Roads – Ongoing Projects:

- Ergon Energy - Milton Street – Request for amended cable route for 33kV power supply. Defect Notice sent awaiting response/action
- ISGM – National – 19 Campbells Ridge Road, Balberra – No Action
- ISGM National – 1397 Midge Point Road, Midge Point - Routine site inspection has revealed that the work had already been completed without Council approval or Traffic Management Permits. Discussions with ISGM reveal that ISGM is now instructing Contractors to make contact with Council prior to commencement of work. No action to date.
- Ergon Energy – Gravinos Road, Victoria Plains – Design issues complete; guardrail installation design being undertaken. Ergon installation complete.
- Ergon Energy – 3 Creese Street, Beaconsfield - Relocation of water supply within the Road Reserve to correct alignment to allow for Ergon installation has been completed.
- Ergon Energy 11KV supply to Bondi Court – In design
- Across Aus Boring – NBN Conduit Bruce Hwy, Bakers Creek – Completed
- Ross Kreis – 521 Miran Khan Drive, Freshwater Point – Dam encroachment on Road Reserve. Dam wall has been relocated and identification survey provided to ensure it is clear of road reserve – Completed
- Thiess Pty Ltd – FDH Cabinet Shakespeare Street – Amended location agreed
- Ergon Energy – Sydney Street Markets – Amended 11 KV pole position agreed

Works on Roads Inspections

Ergon, Telstra and Other Utility Provider Inspections

24 worksites have been inspected; 2 of these have defects and will be issued with Defect Notices to be repaired within a 30 day time frame. Remainder will be issued with letter indicating commencement of a 6 month's warranty period.

Inspection will be performed when Ergon has notified the Works On Road Officer of Defect completion. If works are

repaired to Council's requirements, a letter for 6 month's warranty will be issued.

EMERGENCY MANAGEMENT

Overview

Community Education

- Interview with ABC Radio to discuss Disaster Preparedness activities for the rain event, 22 January 2015. Follow up interview on 23 January 2015; post wrap up.
- Kindergarten Presentation, Kookaburra Child Care Centre – Disaster Preparedness, 10 February 2015

Exercises

Nil exercises to report for this period.

Operations

- Rain Event - 22 January 2015
  The BOM predicted possible rainfall amounts to exceed over 150mm in the Mackay area with some coastal zones seeing amounts exceeding 300mm. Falls in 24 hours could be in excess of 250mm. In preparation, MRC closed flood gates as the rainfall coincided with a high tide. Localised flooding occurred in the usual locations; i.e. Fourways and Wellington Street. The most rainfall recorded for the Mackay area in an hour was at McCready's Creek with 104mm received.

Planning - Mackay Local Disaster Management Plan and Operational Plans

- Attended the Mackay Aerodrome Emergency Committee Meeting on 20 January 2015: Endorsement of Plan, desktop exercise for 2015 and review any incidents to date.
- Continuing work with Inspector General Emergency Management and internally in Council on various Disaster Management (DM) Sub Plans.
  Further development work was conducted in the Interim Cyclone Shelter Operational Sub Plan to refine the equipment needed for the Cyclone Shelter. Equipment and stationary have been ordered in this reporting period for the Cyclone Shelter.

Projects / Mitigation Strategies

- Northern Beaches Cyclone Shelter stock purchase; i.e. stationary, hygiene/sanitary gear, cleaning products, etc. This material will be housed at the shelter ready to go in the event of a cyclone of Category 3 or above.
- SES ICT Functional Requirements Implementation – Moving ahead with rollout. All stakeholders are involved with this Project.
- Coastal Hazards Adaptation Study, Stage 1A completed. Stage 1B will be completed by April 2015. Information gathering is currently being undertaken.
- CBD Flood Study - Survey currently being undertaken. Completion by April 2015.
- Further investigations continuing on the best option for a hardstand at Eungella Day Care Hall for the new generator.
- Draft SOP's for the new generators (Midge Point and Eungella) have been completed and have been distributed for feedback. It was identified that the earth lead poles are not connected. Property Services is organising to have this work completed.
  Special Needs Working Group continuing work with Special Needs Groups in the Mackay Area.

Emergency Management Capital Projects & Facility Upgrades

- Application submitted through the SES Non-Recurrent for Midge Point SES awning and electrical work.
- Sarina SES facility is 99% complete and waiting on the Final Building Certificate with minor works to be finished off.
- Quotes for Calen SES facility footpath between car park and building being sourced.
- Finch Hatton SES door locks are now on the SES Master Key System.

General

- Emergency Management Team completed Inspector General Emergency Management Survey on 17 February 2015 on behalf of MRC.
- Emergency Management Administration Officer completed Disaster Management Training on 11 February 2015 and will be undertaking further Disaster Management Training on 19 & 26 February 2015.
- Five (5) staff members are continuing their studies, Advanced Diploma of Public Safety (Emergency Management). Next weekly block is 23 to 27 March 2015.
- Nathan Turner from Falck provided a presentation on the Emergency Response and Management Training they can provide to MRC.
- First Aid Kits checked and updated for all Emergency Liaison Officers.

State Emergency Services

Overview

Local Controller

Two members from the Mackay Regional Unit travelled to Brisbane this month to participate in the latest Emergency Leadership Development Programme (ELDP) as Mentors. Having previously completed the Course, the mentors now assist new participants in their Leadership Development.

Training for 2015 commenced on 2 February 2015.

Activations for the month

21 – 22 January 2015 - Storm Response/Rain Event

Mackay, Mirani Calen and Sarina Groups responded to storm damage and temporary repairs in each community.

25 January 2015 - Traffic Control

QPS activated the Sarina Group to respond to a level crossing light failure.

Public Safety/Community Education

26 January 2015 - Fundraising

Volunteers operated a sausage sizzle at Mackay Bunnings.

Major Training Events

MRU Training and Community Hours

	Operations	Training	Administration	Maintenance	Community Education	Total
Multiple Group Response	6		52	90	22	170
Midge Point				20		20
Calen	8		4			12
Mackay	51	308		22		381
Mirani	12	56	10			78
Sarina	98	60	10	35	5	208
Campwin		13		8		21
Armstrong		15		7		22
Koumala			6	6		12
Total	175	452	82	188	27	924

QUALITY ASSURANCE

2013/2014	Jan 2014	Feb 2014	Mar 2014	April 2014	May 2014	June 2014	July 2014	Aug 2014	Sept 2014	Oct 2014	Nov 2014	Dec 2014	Jan 2015
No. of Completed Client Requests Surveyed for Satisfaction Levels*	342	327	463	293	556	331	321	363	277	260	392	284	328
No. of Completed Construction Projects Surveyed for Satisfaction Levels	0	0	0	1	0	2	1	0	0	1	0	0	0
No. of Client Satisfaction Survey Results Finalised	0	2	0	3	0	3	1	3	3	0	0	3	3
No. of IMS Documents Reviewed and Updated	0	4	6	4	3	4	4	0	6	1	5	15	12
No. of New IMS Documents Commenced	2	3	1	1	0	2	1	3	0	0	3	1	6
No. of Work Site Visits	8	20	18	15	16	5	7	3	5	1	1	3	10
No. of Internal Quality Audits Conducted	0	1	1	2	2	2	2	1	0	2	0	0	2
No. of Staff Training Sessions Conducted	Nil	1	1	2	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil

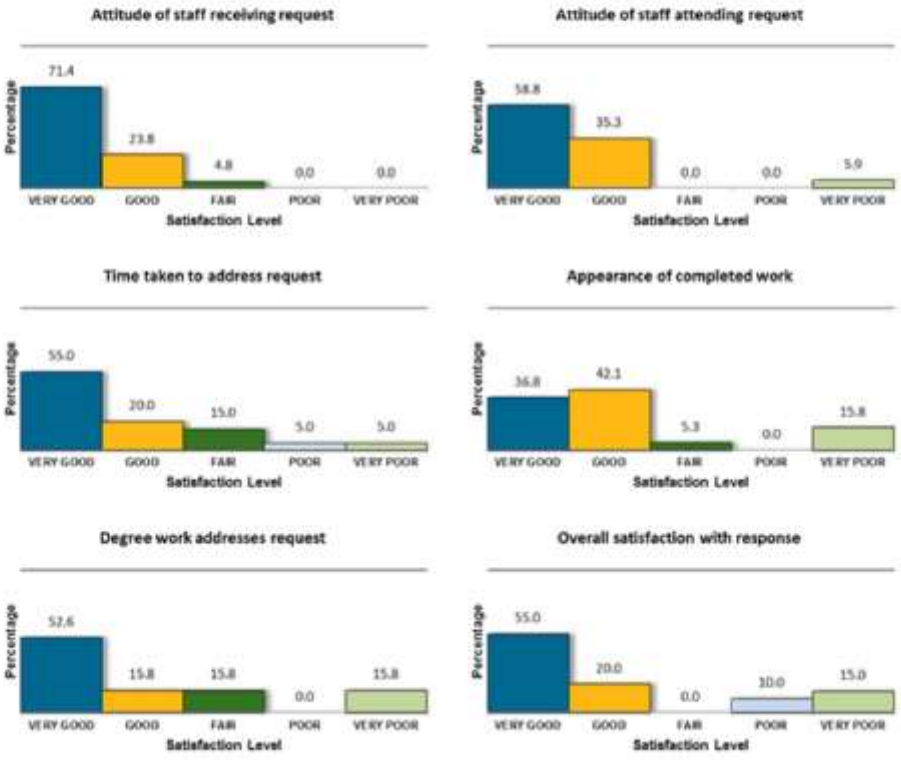
*Includes surveys undertaken for Parks & Environment

Mackay REGIONAL COUNCIL

Engineering and Commercial Infrastructure Monthly Review >
17 January 2015 to 13 February 2015

REQUESTS FOR MAINTENANCE WORK
Results of Survey (November/December 2014)

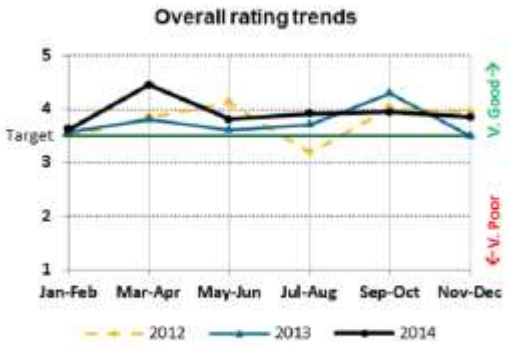
Civil Operations



Representative Comments

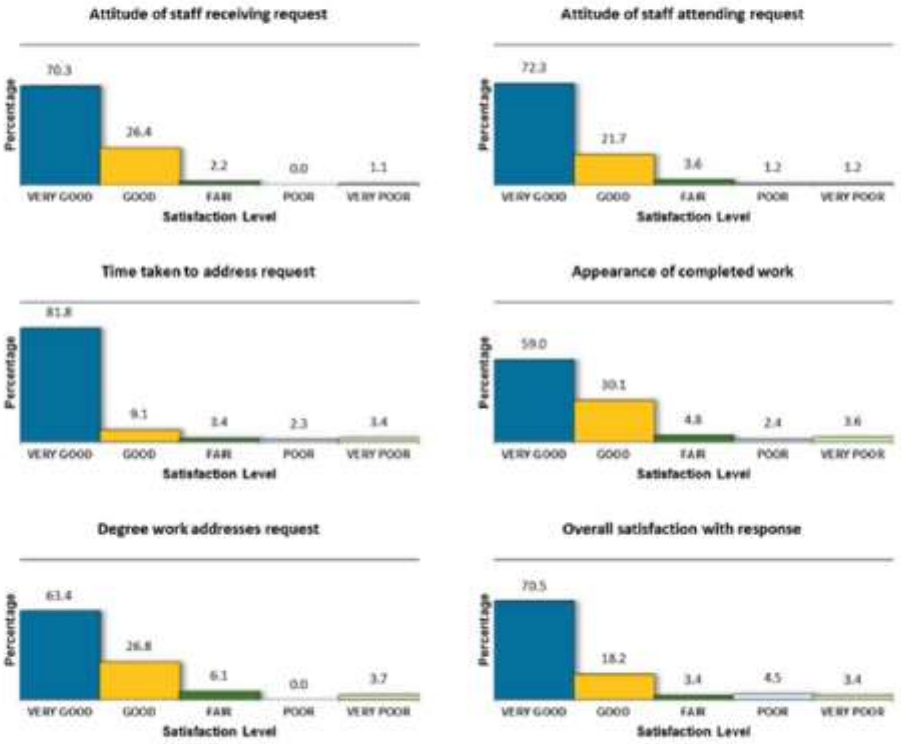
- Very friendly
- Thank you for the prompt manner in which action was taken
- Well done
- Wonderful
- Unfinished. Left stones and rocks all over bitumen at intersection. Safety issue.
- Perfect
- Not happy
- Exceptional
- Spoke to Kevin Casey at RAAG Meeting who contacted Charlie whose road maintenance crew did an exceptional job.

Trends



REQUESTS FOR MAINTENANCE WORK
Results of Survey (November/December 2014)

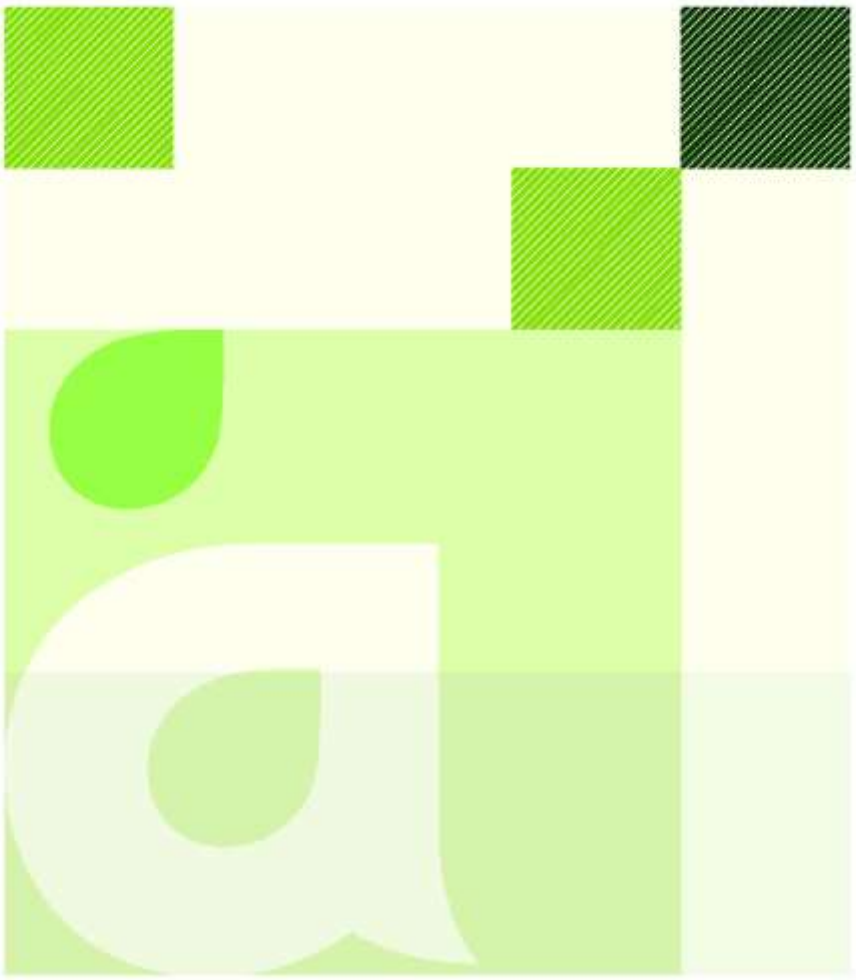
Water & Waste Services



Representative Comments

- Very polite young man
- Very prompt
- Man arrived within an hour of request. It was Christmas Eve.
- 24 hours for a sewer overflow. Not good enough.
- Rehabilitated the dug up area very well.
- Tidiness of footpath after it was dug up could have been better.
- No more leaks after job was done.
- Very pleased with the response.
- An excellent result. Thank you.
- Very happy.
- Well done team.
- Does not appear that the job request was attended to. Could not see evidence of job request repaired

Trends



aurecon

Project: Reed Street Extension
Design Report

Reference: 238522
Prepared for: Mackay Regional Council
Revision: 0
16 October 2013

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RPT 0227

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1. Background

Aurecon have been engaged by Mackay Regional Council to review preliminary alignment options for the extension of Reed Street with the objective of determining a suitable crossing point at McCready's Creek. Currently Reed Street is a stub road connecting to the recently completed Rosewood Drive works and provides access to the new Northern Beaches High School. The proposed extension of Reed Street is from the new access at the Northern Beaches High School through to Kerrisdale Estate linking at Norwood Parade.

Mackay Regional Council road hierarchy plans indicate Reed Street is ultimately a Major Collector in classification. (Refer Appendix A). Upon completion of the Reed Street Extension the link will also serve as a primary access for people living within the Kerrisdale Estate to the high school and also Northern Beaches Central Shopping centre.

It is not envisaged the link will be used as a primary access for residents travelling to and from work. Given the lower functional classifications and constrained geometric standards of neighbouring roadways, it is also not envisaged that Reed Street will act as an alternative / parallel link to Mackay Bucasia Road in the future.

Drawing C-CD-01 attached in Appendix B shows an overall layout plan of the project.

2. Scope of Commission

The scope of Aurecon's services was as follows:

- Produce a conceptual horizontal and vertical design of the roadway.
- Review the cross sectional requirements including services and public utility plant.
- Review land tenures, requirements and proposed future uses.
- Undertake preliminary drainage calculations suitable for determining culvert sizes and budget estimates.
- Undertake a desktop review of environmental overlays in the strategic plan and other potential environmental factors (PASS, Veg, Waterway Barrier Works etc.).
- Assess the capacity, alignment and cross sectional requirements of the Rosewood Drive outlet drain.
- Undertake a preliminary assessment of the flooding impact caused by the development and filling to the school site.
- Prepare a budget estimate for the chosen alignment.

3. Geometric Design Parameters

Throughout the design development, Austroads documentation has been used as the primary reference guide. Reference has also been made to Mackay Regional Council's road hierarchy plans. Following is discussion on the design parameters chosen for the basis of Aurecon's design.

3.1 Speed Parameters

As per Mackay Regional Council's road hierarchy requirements, the operating speed is to be limited / controlled to 60km/h. This is also supported by Austroads Part 3, Table 3.1 for Inner Urban Roads.

It was deemed not appropriate to include traffic calming in the roadway but instead control speed via a constrained horizontal geometry. The roadway will have a posted speed limit of 50 km/h and 40 km/h in school zones. The design speed of the roadway is 60 km/h.

3.2 Cross Section

As per Mackay Regional Council's road hierarchy standard drawings (Refer Appendix A), Reed Street will have the following Major Collector type cross section:

Table 1 Reed Street Type Cross Section Widths

Road Type Cross Section Details	
Traffic Lane	2 x 3.5m
Shoulders	2 x 2.5m (Parking Permitted)
Central Median	Nil
Verge	6.0m
Footpath	1.5m (Western Side)
Shared Path	2.5m (Eastern Side)
Formation / Reserve Width	24.0m

A 3.5m footpath has been provided for the Northern Beaches High School frontage. This has been a previous requirement of Queensland Education and is a continuation of Rosewood Drive and the existing Reed Street profile.

In an attempt to reduce roadway width and in turn cost, the McCready's Creek crossing profile has been reviewed. The creek crossing will have the following cross sectional dimensions:

Table 2 McCreadys Creek Crossing Type Cross Section Widths

Culvert Type Cross Section	
Traffic Lane	2 x 3.5m
Shoulders	2 x 1.5m (Refer Note 1)
Central Median	Nil
Type F Barrier	2 x 0.57m (No Lighting)
Footpath	1.8m min.(Western Side Refer Note 4)
Shared Path	2.5m min. (Eastern Side)

Following are comments on the reduced cross section for the McCready's Creek crossing.

1. Traffic lanes have been designed as per standard profile to provide consistent width separation and not impact capacity or safety.

2. The shoulder widths have been developed on the Shy Line Offset Values provided in Austroads Part 6, Table 6.4. The nominal 2.5m shoulders applied to the balance if Reed Street are intended for parking. As there are no abutting properties requiring parking, this width has been reduced to 1.5m. Whilst the 1.5m width will not accommodate parking it is still in the acceptable width range for on road cyclist use.

3. Type F Barrier has been provided to mitigate the risk of vehicles veering over the culvert structure. W Beam was also considered but not applied to the preliminary design. If required, W Beam requires a special fixing to the culvert structure as well as an additional width allowance of approximately 1.0m between the guardrail and footpath for deflection.

4. In accordance with Austroads Part 6, Figure 6.1, a minimum 1.8m footpath is required to allow two wheelchairs to pass in a constrained situation. A minimum 2.5m shared pathway width is required on the opposite side to continue the standard profile. Both footpath widths have been increased to align with the minimum achievable box culvert width which is dependent upon cell lengths.

3.3 Design Vehicle

In accordance with Austroads Design Vehicles and Turning Path Templates Guide (Section 4.1.2), the design vehicle for this link is based on the functional classification and is a 12.5m Single Unit Truck / Bus. At intersections, a 19.0m prime mover / semi has been nominated as the checking vehicle.

3.4 Horizontal Alignment

The horizontal alignment has been designed in accordance with Austroads: Guide to Road Design - Part 3.

Mackay Regional Council's recommended practice is, where possible, to avoid curves requiring super elevation in built up and urban environments. This practice is supported in Austroads Guide to Road Design, Section 7.8.

Superelevated curves will also be problematic for aquaplaning due to the flat longitudinal grades, reverse curves and road surface drainage. As such the horizontal alignment has been designed to incorporate a curve with adverse crossfall.

As noted above the design adopted is a Single Unit Truck / Bus. Austroads Table 7.11 advises curve widening is required to curves with horizontal radius less than 180m.

From the above considerations, the minimum horizontal curve radius and supporting parameters are stated below.

Table 3 Minimum Horizontal Curve Values

Radius (m)	Design Speed (km/h)	Superelevation	Max.Side Friction Factor	Curve Widening (m / Lane)	Min Length (m)
200	60	-3% (Adverse)	0.17	Nil	100

Given the lower operating speed and recommended avoidance of superelevation, we believe reverse curves are an acceptable and safe geometric element in this situation but should be avoided where possible.

Compound and broken back curves have been avoided as they are problematic in most situations and design speeds.

As this is a green field project, minimum horizontal curve lengths can be achieved and have been adopted.

3.5 Vertical Alignment

The surrounding terrain would be described as 'flat' as per the parameters outlined in Austroads and as such maximum grades are not considered to be an issue. Minimum grades have been adopted where possible to minimise earthworks. Given the flat terrain, this has not always been possible. The minimum grade recommended in Austroads Section 8.5.6 and Table 8.5 is 0.3%.

Constructability is nominated as the reasoning for this minimum. Mackay Regional Council road hierarchy plans and engineering policy refer to a minimum grade of 0.2%. This grade has successfully been constructed in past local projects and as such a minimum grade of 0.2% has been adopted in the design.

Crest Vertical Curve K values have been based on a Stopping Sight Distance for cars. In accordance with Table 5.4, SSD = 73m on flat ground. This standard is based on a desirable value for urban roads, (reaction time of 2.0s and coefficient of deceleration of 0.36). The minimum K value for a crest is 11.8 as per Table 8.7.

Sag vertical curves have been designed for comfort. This has been based on the assumption that the roads will be lit to a V category in accordance with AS1158. If V category lighting is not intended for installation at the time of road opening, the minimum sag vertical curves lengths shall be increased to meet the headlight design criteria. Given the above, the minimum K value is 6.

Note: K Value is the length of vertical curve in meters for 1% change in grade.

4. Constraints

4.1 Horizontal Alignment

The horizontal alignment constraints identified on the project are as follows:

- The connection with Reed Street Roundabout at the School Access to the north
- The requirement to maintain access off Reed Street to the existing sewerage pump station.
- McCreadys Creek crossing was to be as close to perpendicular as possible to minimise culvert width
- Critchleys lake to the west
- Flood plain to the east
- Existing trunk services connecting to the sewerage pump station

4.2 Vertical Alignment

The vertical alignment constraints identified on the project are as follows:

- The connection with Reed Street Roundabout at the School Access to the north. The level of the roundabout has been set to access the Northern Beaches School Development and is higher than would otherwise be required.
- The requirements to minimise fill heights to improve economics
- The requirement to maintain 100 year ARI flood immunity
- The requirement to provide a major flow bypass / floodway at McCreadys Creek.

4.3 Objectives

The objectives identified on the project are as follows:

- To minimise the impact on any developable land

- To provide an economical solution
- To maintain a desirable alignment, high design standard and high level of safety
- To maintain or minimises any increases in the flood inundation patterns
- At the request of the Kerrisdale development, alignments located further to the west were to be considered. Alignments were considered in option development but impacted on the constraints and objectives listed above and were there discarded

5. Option Development

Four options were developed and assessed to confirm the most suitable alignment. Drawing C-CD-02 in Appendix B shows the options investigated. Refer to Table 4 below for details of the assessment

Table 4 Alignment Selection Table

	Option 1	Option 2	Option 3	Option 4
Objective	Alignment is based on the original option provided by Mackay Regional Council. Furthest option to the east considered as it is on the boundary of the flood plain. Any options south of this alignment are considered uneconomical.	This option moves further to the west but maintains direct access to the pump station.	This option moves further again to the west with the purpose of avoiding any resumptions to the school site.	This option is the most western alignment considered. The intent of this option was to cross McCreadys Creek where the channel is most defined. No additional options were investigated west of this alignment as there would have been impacts on the lake and existing tree farm development. The link would also have started to become less economical due to the increased length.
Design Speed	No design speed issues have been identified for any of the four options. All options achieve 60km/h with no adverse impacts on economics			
Alignment Design	Alignment contains a reverse curve adjacent to the pump station. While this is a tolerable design it is considered undesirable and to be avoided where possible.	Good alignment with suitable curve lengths and reverse curve has been removed. Curve leads in over the Rosewood Drive Outlet Drain which increases the culvert length (slightly)	Further improvement on option 2 in relation to curve length and appearance. Conflicts are also avoided with the Rosewood Drive Outlet Culvert.	As a result of pushing further west a reverse curve is required to maintain a suitable alignment at McCreadys Creek. This is undesirable and to be avoided where possible.

	Option 1	Option 2	Option 3	Option 4
Impact on Development	This option has the greatest impact on the school site in relation to area required for resumption. The impacted area has low development potential as the land is separated from the main site by the Rosewood Drive Outlet Drain and low flood prone area. This option is less accessible to Critchley's Land making a secondary access more difficult and limited in location	This option has an impact on the school site in relation to area required for resumption. The impacted area has low development potential as the land is separated from the main site by the Rosewood Drive Outlet Drain and low flood prone area. This option is less accessible to Critchley's Land making a secondary access more difficult and limited in location	No impact on the school site other than minor truncations. Alignment creates a pinch point between the apex of the curve and the lake. This will limit / impact on possible development layouts on this site.	This alignment has significant impact on Critchley's Land and could significantly impact on the development potential of the whole site. The alignment also limits the expansion of the Tree Farm development.
McCreadys Creek Cross Drainage	Drainage requirements and sizes would be similar for options 1 to 3. While the alignments are located at the start of the floodway this can create an advantage given the culvert is intended to have a reduced immunity (Q20). Given the proximity to the flood plain there is the opportunity to provide a Q20 culvert in the main channel and a Q50 / Q100 / high flow floodway in the flood plain area to the south. This arrangement reduces the impact of the creek crossing on the major storm inundation areas as the road crown level can be set 100 to 200mm above the Q20 water surface levels			This alignment is likely to dictate the requirement for the culvert to be sized for Q100 flows otherwise there would be a significant increase in the flood inundation patterns / water surface levels. If the culverts were sized for Q20 then the road crown would be approximately 1.0m higher than Q20 WSL hence the increase in the flood inundation.

Discussions with Kerrisdale Estate's consultants at the project prestart indicated they did not have a fixed layout and would be willing to work with Aurecon's recommendations. Due to the limited information on hand when completing this project it is difficult to provide any comment on the suitability and impacts on Kerrisdale Estate's future development.

Considering all objectives and factors listed in Table 4 above, Option 2 has been selected as the most preferable. Option 2 appears the most economical and has the least negative impact on surrounding development potential.

6. Drainage Design

The analysis of the drainage design has been undertaken in two stages:

- The first stage was to use basic end area methods to determine an approximate size of each culvert and the Rosewood Drive Outlet Drain (Refer Appendix C, Calculation 130912-01). Once preliminary culvert and drain sizes had been determined they were used to develop vertical alignments and design models.
- In the second stage, the design models created were used for the base information in the HEC-RAS sections. The HEC-RAS analysis was used to confirm that the proposed design met the design requirements noted previously.

A summary of the HEC-RAS results have been provided in Appendix D and the geometric layout is provided in Appendix A, Drawing C-CD-15.

6.1 McCreadys Creek Culvert

6.1.1 Basis of Design

The primary reference material used was the McCreadys Creek Stormwater Drainage Study, Final Report, 6 June 2006 by KBR.

Report Sub-catchment 9 Figure 8.8 was used for hydrology / flow data taken for Q5, Q50 and Q100.

A downstream tail water level / WSL was also used as a control in the preliminary HEC-RAS model.

6.1.2 Design Requirements

Mackay Regional Council has requested that for the Culvert is designed for 20 year ARI immunity.

As these results were not provided in the KBR report a trend line / line of best fit was created in Excel using the known flow results. This determined that Q20 flows equates to approximately 70% of the Q100 flow.

Given the properties of the upstream channel and undeveloped upstream catchment it is assumed the debris load during flood events would be similar to that of rural catchment. (Eg. Long grass, logs and cane trash). Given this, a clearance / freeboard of 300mm is required to the underside of the structure to allow for debris to pass through in the design event as per Mackay Regional Council's policy 15.05 Stormwater Drainage Design Clause 1.6.7.

As the culvert is located in an amber zone when referencing Department of Agriculture, Fisheries & Forestry Mapping, the culvert was to be designed in accordance with Minor Waterway Barrier Works Part 3 Culvert Crossings (WWBW01 April 2013). As per the exert attached in Appendix G, all cells of the culvert are required to be 300mm below the invert of the creek bed level and the culvert width is required to be 100% of the main channel width.

When implementing a 20 year ARI design immunity at the culvert there is an increased risk of greater inundation of the existing properties during events greater than Q20 which is caused by Reed Street acting like a dam. To minimise this, a floodway was incorporated into the design.

6.1.3 Recommendations

Based on the above requirements and constraints the following treatment was recommended:

- A culvert consisting of 3 / 3600 x 3600 Slab Link Box Culverts (2 crown units, 1 slab link)
- Based on the available survey information, the creek bed level is approximately RL 2.700 with the invert level of the culvert being set at IL 2.400
- A floodway approximately 30.0m long is to be provided. The floodway is to be offset so that the road crown level is as close to the 20year ARI WSL level as possible to ensure limited increase in the inundation area for greater flow volumes. This is proposed to be to the south of McCreadys Creek as this area is currently shown to be inundated in larger rainfall events.
- Given the height and proximity of the Culvert headwall to the traffic lane; a road side barrier system is recommended for safety. The recommended treatment is to maintain the minimum possible width of the culvert:
  - A minimum of 25m W-Beam including terminal and transitions of guardrail in advance to the culvert structure

- 20m minimum of Type F Concrete Barrier across the culvert itself.
- Ingal ET-2000 terminals (or approved equivalent) to remove the requirement for additional formation widening
- Type 2 transitioning at the connection point to the Type F barrier

Standard Drawings of the safety barriers have been included in Appendix F of this report.

6.2 Rosewood Drive Outlet Drain and Reed Street Culvert

6.2.1 Basis of Design

The primary reference material used was the McCreadys Creek Stormwater Drainage Study, Final Report, 6 June 2006 by KBR - Report Sub-catchment 11 Figure 8.10.

Information supplied by Farr Engineers (attached in Appendix E) during the design of the Rosewood Drive project indicated that the discharge from the Rosewood Drive culverts would be 38m3/s in a 100 year ARI event. This flow is much greater than that calculated KBR report value of 23.8m3/2.

While a detailed assessment of this sub catchment is outside the scope of the current investigation, preliminary calculations using the rational method were used to determine the likely Q100 flows from this catchment (refer Appendix C, Calculation Number 130913-01). This assessment indicated that the total catchment area runoff based on a 60 minute time of concentration is 27.9m3/2. As this assessment does not take into the account the impact of the Premier Garden's Detention, it is considered that the result provided in the KBR report is the more realistic.

However, Council have previously indicated the need for a 30m drainage reserve in this area. For this reason a conservative assessment of cost and sizing has been provided based on the flow of 36.0m3/s through the proposed Reed Street Culverts.

6.2.2 Design Requirements

This culvert is to accommodate a 100 year ARI design immunity.

As per Mackay Regional Council's policy 15.05 Stormwater Drainage Design Clause 1.6.7, a reduced clearance / freeboard of 75mm is required as the upstream catchment is close to being fully developed and likely to be when this project is completed.

The drain cross section has been based on MRC A3-868 (attached in Appendix J). As there is a requirement for service relocations to be included in the drainage reserve on the western side of Reed Street, an allowance for a 4.0m maintenance reserve has been included in the profile. The batter slope has been increased to 1 on 3 to accommodate this corridor in the nominated width.

6.2.3 Recommendations

Prior to proceeding any further with land acquisitions, a detailed hydrology and hydraulic assessment is required to confirm the catchment runoff and the actual drainage requirements downstream of Rosewood Drive.

Based on the above requirements and constraints the following treatment was recommended:

- Provide a trapezoidal drain as per the typical cross section provide in Appendix B drawing CD-C-13
- A culvert consisting of 4 / 3000 x 1500 Reinforced Concrete Box Culverts. Slab links were investigated however deemed inappropriate due to the proposed skew angle of the culvert.

It is recommended the alignment of the open drain is reviewed to overcome / further mitigate the following issues as outlined in Appendix B, drawing C-CD-11:

- Creating areas of limited development potential
- High skew angles leading to increased culvert length.
- Separating large parcels of land from the main development areas

An alternative drainage alignment shown in Appendix B Drawing C-CD-12 overcomes / improves on some of the above issues.

6.3 Minor Road Surface Drainage

Given the urban profile of the roadway there is a need to install a longitudinal drainage system. Nominal pipe sizes have been calculated for cost estimate proposes only and no detailed analysis has been undertaken.

The estimated pipe sizes have been based on collecting the road flows only and no allowance has been made for flows / runoff from the surrounding properties.

7. Services

Detailed layouts of the proposed service works have been detailed in Appendix B, Drawing C-CD-09 and C-CD-10

7.1 Sewerage

As a continuation of the service relocation started in the Rosewood Drive project, the sewerage gravity and rising main servicing the existing pump station are to be relocated. These are being relocated into the drainage and road reserve to allow for better accessibility and remove them from Critchley's land to allow for more viable future development. These relocations extend from the extent of the Bowls Club site to the sewerage pump station on Reed Street.

There is also the potential to relocate the existing 100mm diameter sewerage rising main running from the Kerrisdale Development into the road reserve. Relocating this main will improve accessibility. As the length of this relocation is undefined no allowance has been made in the preliminary estimate of cost.

7.2 Water

A trunk water main is required to run the length of Reed Street and connect back into the trunk reticulation system located in Mackay-Bucasia Road in the future. This requirement was defined by Mackay Water Services during the design of the Rosewood Drive Project. Provision for a 375mm diameter DICL water main has been made for the entire extent of the project.

As there is no direct property access allowed for the extent of Reed Street no allowance has been made for a service main. It is envisaged any service mains will be provided by the developing party when / if required.

7.3 Electrical

During the design of Rosewood Drive, Ergon indicated that there was no need to extend the trunk / HV electrical supply past the connection point for the school. Given this previous advice, no allowance has been made for a trunk electrical reticulation system in the design.

As there is a requirement for street lighting for the extent of the project, allowance has been made for an electrical corridor within the road reserve. As the crossing of McCready's Creek may be costly or difficult, Ergon may opt to light the culvert structure from both sides of the creek and avoid this crossing or under bore.

The sewerage pump station is currently serviced via an overhead supply and there is a good opportunity to incorporate an upgraded underground supply into the service corridor at minimal cost to the project. This also allows for removal of the service pole and stay at the sewerage pump station which may be within the clear zone of the new road.

7.4 Telecommunication

Recent discussions with Telstra have indicated that they have no plans to upgrade or extend their network given the current NBN infrastructure project.

On other projects of similar nature, NBN have requested 2 / P100 conduits be accommodated in the project to service their future requirements.

Whichever the case, the telecommunication conduits can be incorporated into the standard joint services trench used in all subdivisions when further development in the area proceeds.

8. Pavement Design

For the purpose of the preliminary earthworks and pavement quantities the design shown on the drawings has been based on the pavement and subgrade improvement treatment used in the Rosewood Drive projects. These pavements have been designed utilising insitu CBR strength of 3%.

9. Estimate

A preliminary estimate of cost has been prepared to aid in budget planning and is attached in Appendix H.

Rates have been based on tendered rates from recent projects as well as suggested amounts and percentages in Mackay Regional Council's standard estimate template. As the two culverts are a significant portion of the cost, a preliminary quote was obtained from Rolca and is included in Appendix H. This quote is preliminary only and is to be used for the purpose of this project only.

Due to the preliminary nature of the estimate, a 20% contingency has been added on all contracted works and principal cost items.

The attached estimate is subject to the disclaimer below:

This opinion of cost has been prepared by Aurecon Australia Pty Ltd at the request of Mackay Regional Council and solely for use in connection with the preliminary design of Reed Street

Aurecon does not accept any legal liability or responsibility in respect of the use of the cost estimate for any purpose other than the purpose defined above.

Aurecon has exercised due skill, care and attention in preparing the opinion of cost.

Since Aurecon has no control over the cost of labour, materials, equipment or services furnished by others, or over contractors' methods of determining prices, or over competitive bidding or market conditions, any estimate of cost is made on the basis of Aurecon's experience and qualifications and represents its best judgement as an experienced and qualified professional engineer, familiar with the construction industry; but Aurecon cannot and does not guarantee that proposals, bids or actual construction cost will not vary from Aurecon's opinion of cost.

10. Environmental and Planning Issues

The following environmental and planning issues may exist on site and have been determined from existing mapping and mapping overlays (attached in Appendix I):

- Acid Sulphate Soils – The McCreadys Creek crossing is on land at or below RL 5.0. The Rosewood Drive Outlet Drain will also extend into land mapped as Actual or Potential Acid Sulphate Soils.
- Coastal Management – The northern end of the project is in an area nominated as coastal zone and the works south of McCready's Creek is in a coastal management district.
- Regional Ecosystems and High Value Regrowth – The northern end of the project is predominantly located in an area mapped as Containing Endangered Regional Ecosystems.
- Strategic Cropping Land – The whole site is mapped as being strategic cropping land.
- Waterway Barrier Works – McCreadys Creek at the culvert crossing is mapped as Moderate (amber) Risk. The implications of this classification have been discussed in more detail in the drainage section of this report as it has an impact on the drainage design.

The intention of this study was only to highlight potential environmental and planning issues. A detailed investigation of the above and possible additional issues will be required during the detailed design phase of this project.

Appendices

Appendix A
MRC Road Hierarchy

A0-01320 – Road Hierarchy Plan

A3-3615 - Major Collector Street

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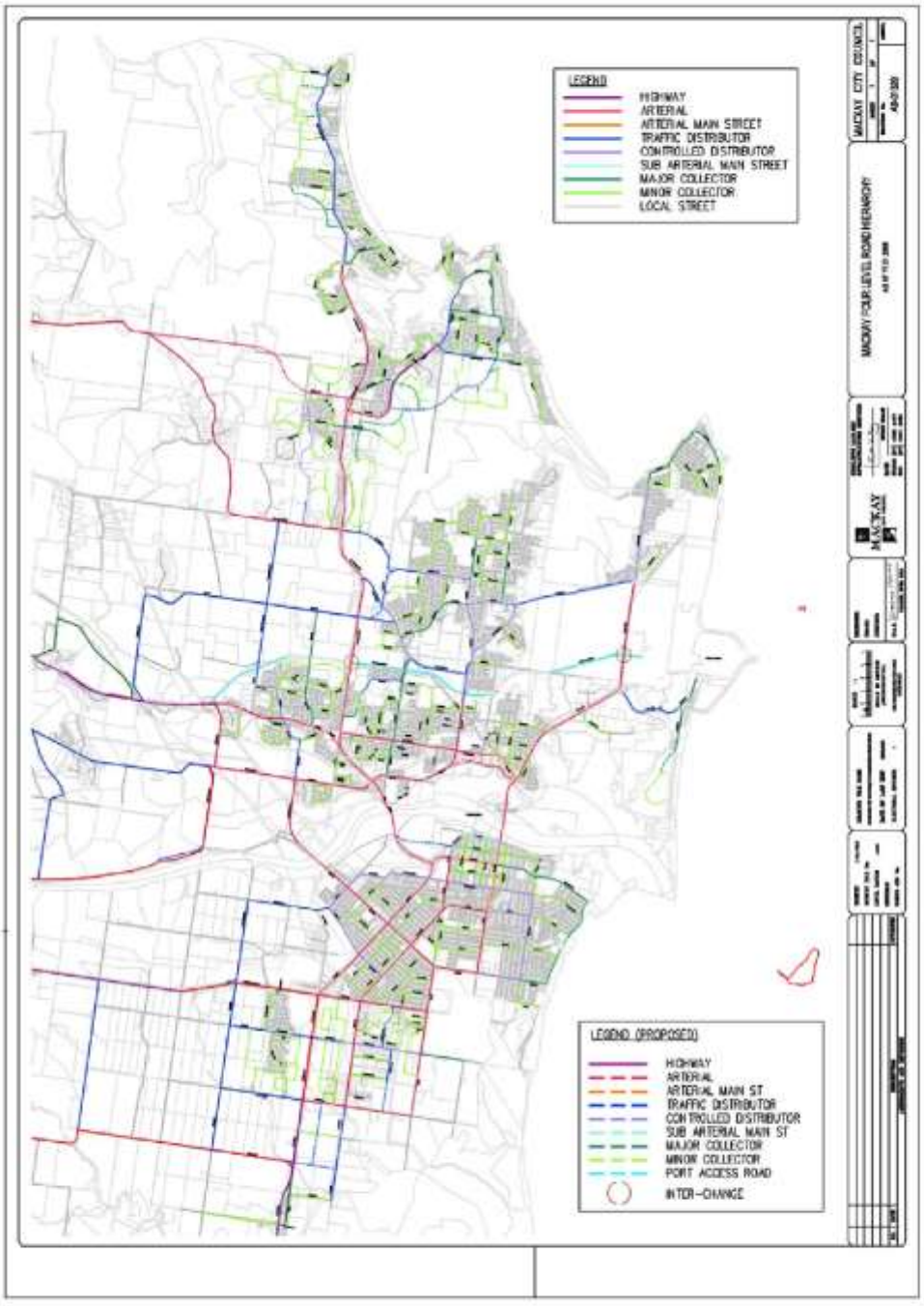
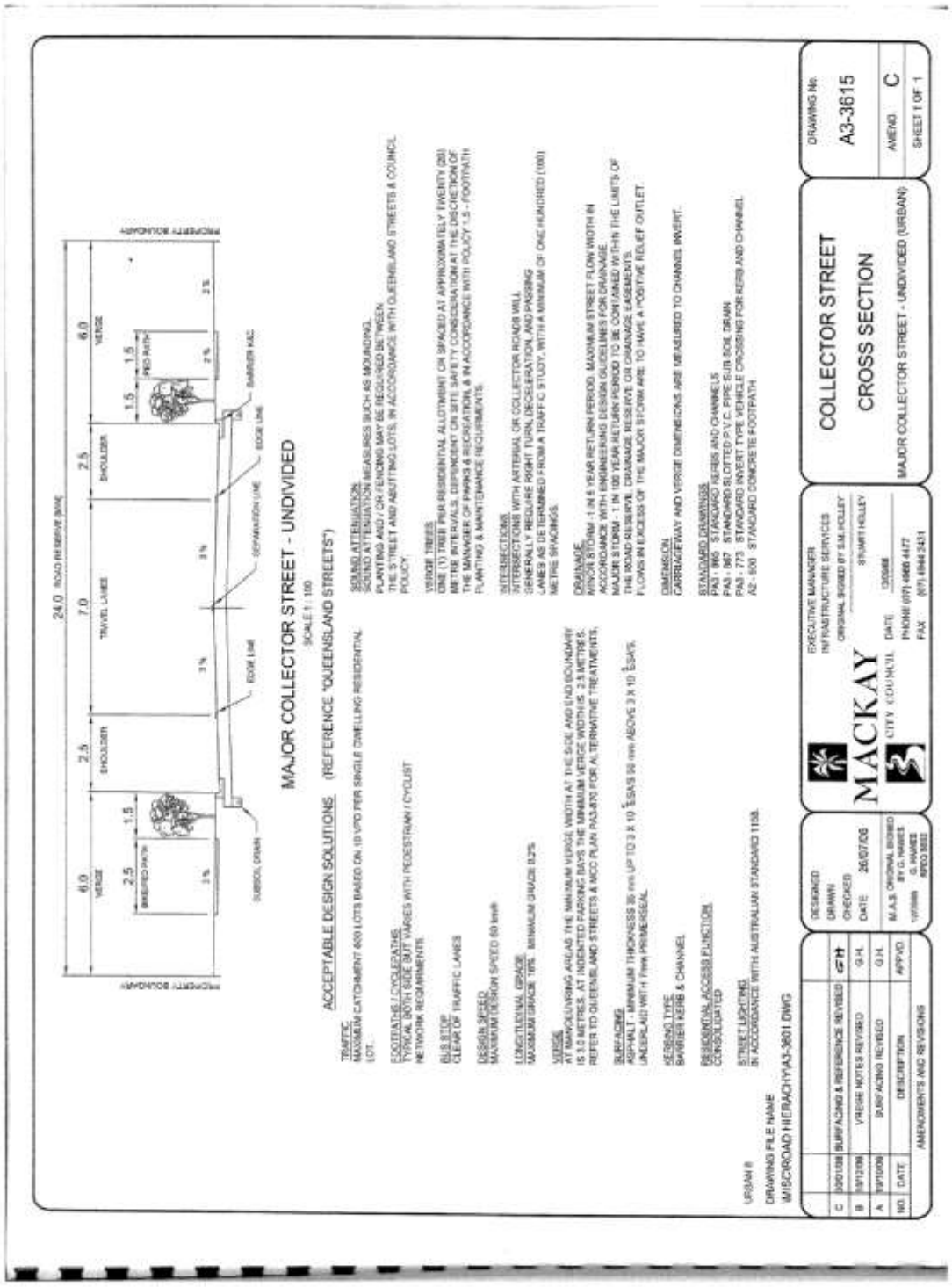
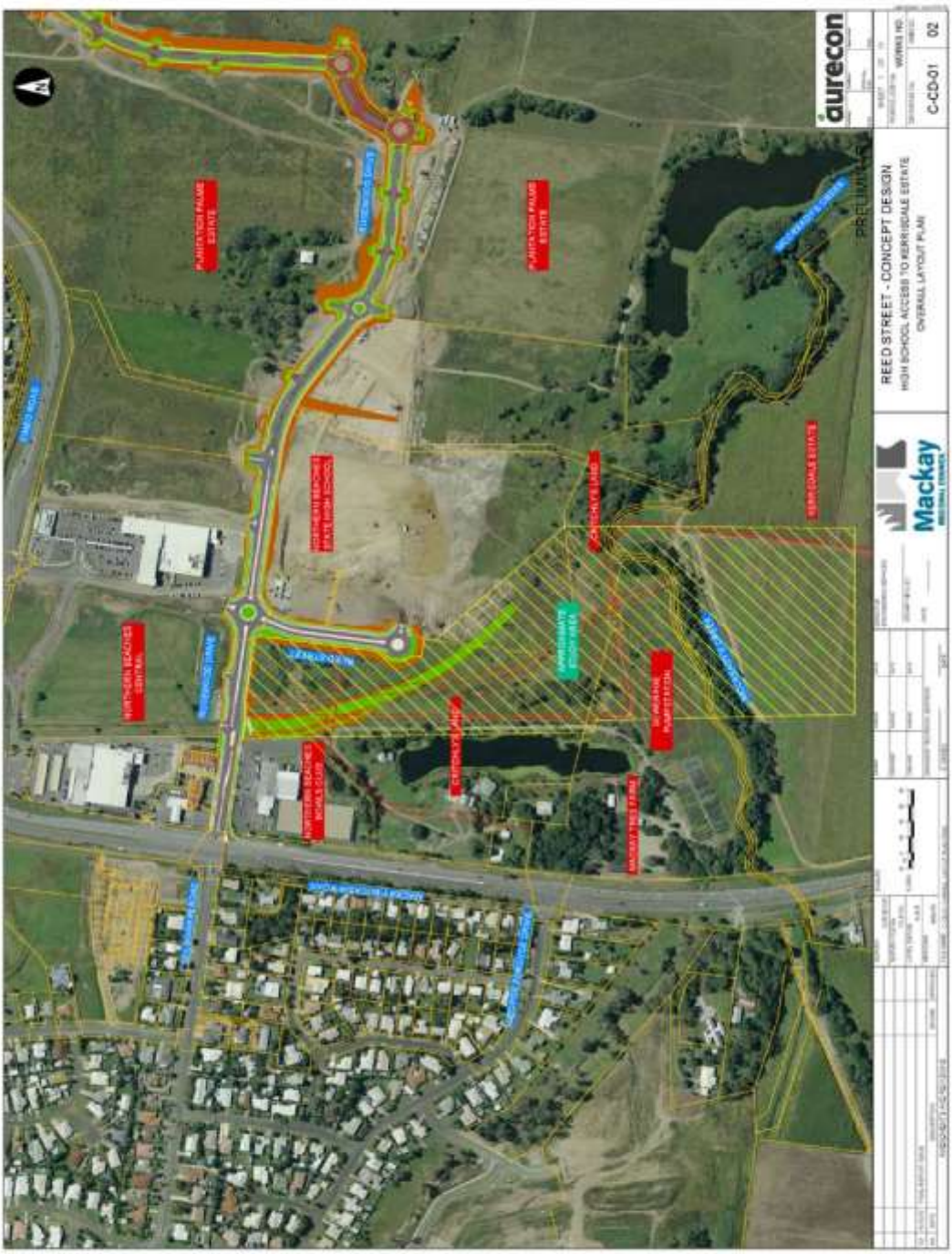

LEGEND
HIGHWAY
ARTERIAL
ARTERIAL MAIN STREET
TRAFFIC DISTRIBUTOR
CONTROLLED DISTRIBUTOR
SUB ARTERIAL MAIN STREET
MAJOR COLLECTOR
MINOR COLLECTOR
LOCAL STREET
LEGEND (PROPOSED)
HIGHWAY
ARTERIAL
ARTERIAL MAIN ST
TRAFFIC DISTRIBUTOR
CONTROLLED DISTRIBUTOR
SUB ARTERIAL MAIN ST
MAJOR COLLECTOR
MINOR COLLECTOR
PORT ACCESS ROAD
INTER-CHANGE


MAJOR COLLECTOR STREET - UNDIVIDED
SCALE 1 : 100
ACCEPTABLE DESIGN SOLUTIONS (REFERENCE "QUEENSLAND STREETS")
TRAFFIC
MAXIMUM CATCHMENT 600 LOTS BASED ON 10 VPD PER SINGLE DWELLING RESIDENTIAL LOT.
FOOTPATHS / CYCLEPATHS
TYPICAL BOTH SIDE BUT VARIES WITH PEDESTRIAN / CYCLIST NETWORK REQUIREMENTS
BUS STOP
CLEAR OF TRAFFIC LANES
DESIGN SPEED
MAXIMUM DESIGN SPEED 60 km/h
LONGITUDINAL GRADE
MAXIMUM GRADE 10% MINIMUM GRADE 0.2%
VERGE
AT MANOEUVRING AREAS THE MINIMUM VERGE WIDTH AT THE SIDE AND END BOUNDARY IS 3.0 METRES. AT INDENTED PARKING BAYS THE MINIMUM VERGE WIDTH IS 2.5 METRES. REFER TO QUEENSLAND STREETS & MCC PLAN PA3.875 FOR ALTERNATIVE TREATMENTS.
SUBGRADE
ASPHALT - MINIMUM THICKNESS 30 mm UP TO 3 X 10 ESA'S 35 mm ABOVE 3 X 10 ESA'S.
UNDERLAID WITH Fibre PRIMESEAL
KERBING TYPE
BARRIER KERB & CHANNEL
RESIDENTIAL ACCESS FUNCTION
CONSOLIDATED
STREET LIGHTING
IN ACCORDANCE WITH AUSTRALIAN STANDARD 1158.
SOUND ATTENUATION
SOUND ATTENUATION MEASURES SUCH AS MOUNDING, PLANTING AND / OR FENCING MAY BE REQUIRED BETWEEN THE STREET AND ABUTTING LOTS, IN ACCORDANCE WITH QUEENSLAND STREETS & COUNCIL POLICY.
VERGE TREES
ONE (1) TREE PER RESIDENTIAL ALLOTMENT OR SPACED AT APPROXIMATELY TWENTY (20) METRE INTERVALS, DEPENDENT ON SITE SAFETY CONSIDERATION AT THE DISCRETION OF THE MANAGER OF PARKS & RECREATION, & IN ACCORDANCE WITH POLICY 1.5 - FOOTPATH PLANTING & MAINTENANCE REQUIREMENTS.
INTERSECTIONS
INTERSECTIONS WITH ARTERIAL OR COLLECTOR ROADS WILL GENERALLY REQUIRE RIGHT TURN, DECELERATION, AND PASSING LANES AS DETERMINED FROM A TRAFFIC STUDY, WITH A MINIMUM OF ONE HUNDRED (100) METRE SPACINGS.
DRAINAGE
MINOR STORM - 1 IN 5 YEAR RETURN PERIOD, MAXIMUM STREET FLOW WIDTH IN ACCORDANCE WITH ENGINEERING DESIGN GUIDELINES FOR DRAINAGE.
MAJOR STORM - 1 IN 100 YEAR RETURN PERIOD TO BE CONTAINED WITHIN THE LIMITS OF THE ROAD RESERVE, DRAINAGE RESERVE OR DRAINAGE EASEMENTS. FLOWS IN EXCESS OF THE MAJOR STORM ARE TO HAVE A POSITIVE RELIEF OUTLET.
DIMENSION
CARRIAGEWAY AND VERGE DIMENSIONS ARE MEASURED TO CHANNEL INVERT.
STANDARD DRAWINGS
PA3.865 STANDARD KERBS AND CHANNELS
PA3.867 STANDARD SLOTTED P.V.C. PIPE SUB SOIL DRAIN
PA3.773 STANDARD INVERT TYPE VEHICLE CROSSING FOR KERB AND CHANNEL
AZ - 800 STANDARD CONCRETE FOOTPATH
24.0 ROAD RESERVE (MIN)
7.0 TRAVEL LANES
2.5 SHOULDER
6.0 VERGE
1.5 PED PATH
2.5 BIKE/PED PATH
3%
2%
SUBSOIL DRAIN
EDGE LINE
SEPARATION LINE
BARRIER KAC
PROPERTY BOUNDARY
MACKAY
CITY COUNCIL
EXECUTIVE MANAGER
INFRASTRUCTURE SERVICES
ORIGINAL SIGNED BY S.M. HOLLEY
STUART HOLLEY
DATE 12/06/08
PHONE (07) 4968 4477
FAX (07) 4944 2431
COLLECTOR STREET
CROSS SECTION
MAJOR COLLECTOR STREET - UNDIVIDED (URBAN)
DRAWING No.
A3-3615
AMEND. C
SHEET 1 OF 1
URBAN #
DRAWING FILE NAME
M:\ROAD HIERACHY\A3-3601.DWG
C 03/01/08 SURFACING & REFERENCE REVISED GFH
B 30/11/06 VERGE NOTES REVISED G.H.
A 30/10/06 SURFACING REVISED G.H.
NO. DATE DESCRIPTION APP'VD
AMENDMENTS AND REVISIONS
DESIGNED
DRAWN
CHECKED
DATE 26/07/06
M.A.S. ORIGINAL SIGNED BY G. HAWES
12/06/08 G. HAWES RPEQ 5032

Appendix B
Concept Design Drawings

C-CD-01 OVERALL LAYOUT PLAN	02
C-CD-02 ALIGNMENT OPTION PLAN	02
C-CD-03 CONCEPT LAYOUT PLAN	02
C-CD-04 PROPOSED TENURE PLAN	02
C-CD-05 LAYOUT PLAN SHEET 1	02
C-CD-06 LAYOUT PLAN SHEET 2	02
C-CD-07 PLAN AND LS SHEET 1	02
C-CD-08 PLAN AND LS SHEET 2	02
C-CD-09 SERVICES PLAN SHEET 1	02
C-CD-10 SERVICES PLAN SHEET 2	02
C-CD-11 DRAINAGE OPTION 1	02
C-CD-12 DRAINAGE OPTION 2	02
C-CD-13 DRAINAGE TYPE CROSS SECTIONS	02
C-CD-14 DRAINAGE DETAILS PLAN	02
C-CD-15 APPROX. INNUNDATION AREAS	02

aurecon Leading. Vibrant. Global.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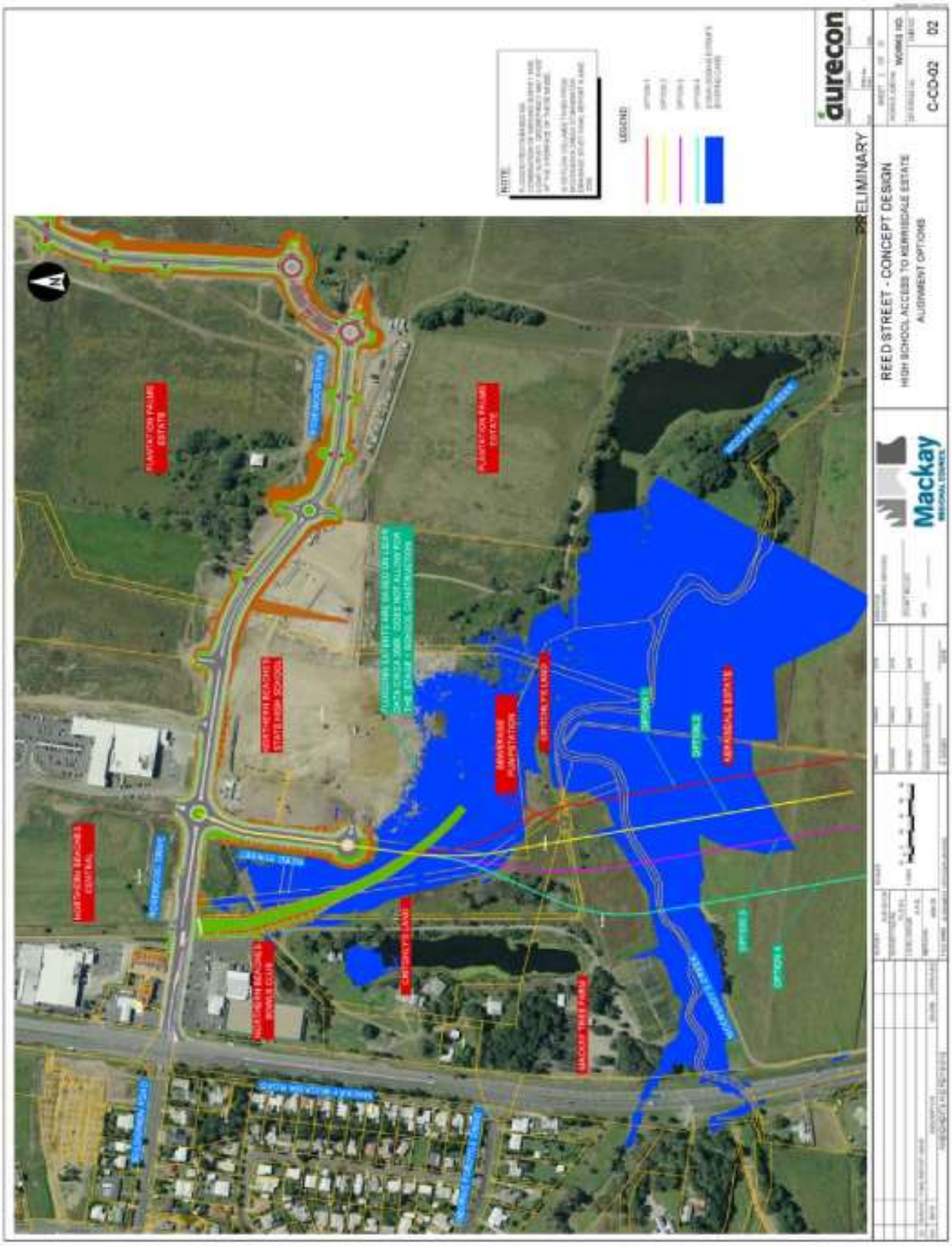
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C-CO-02
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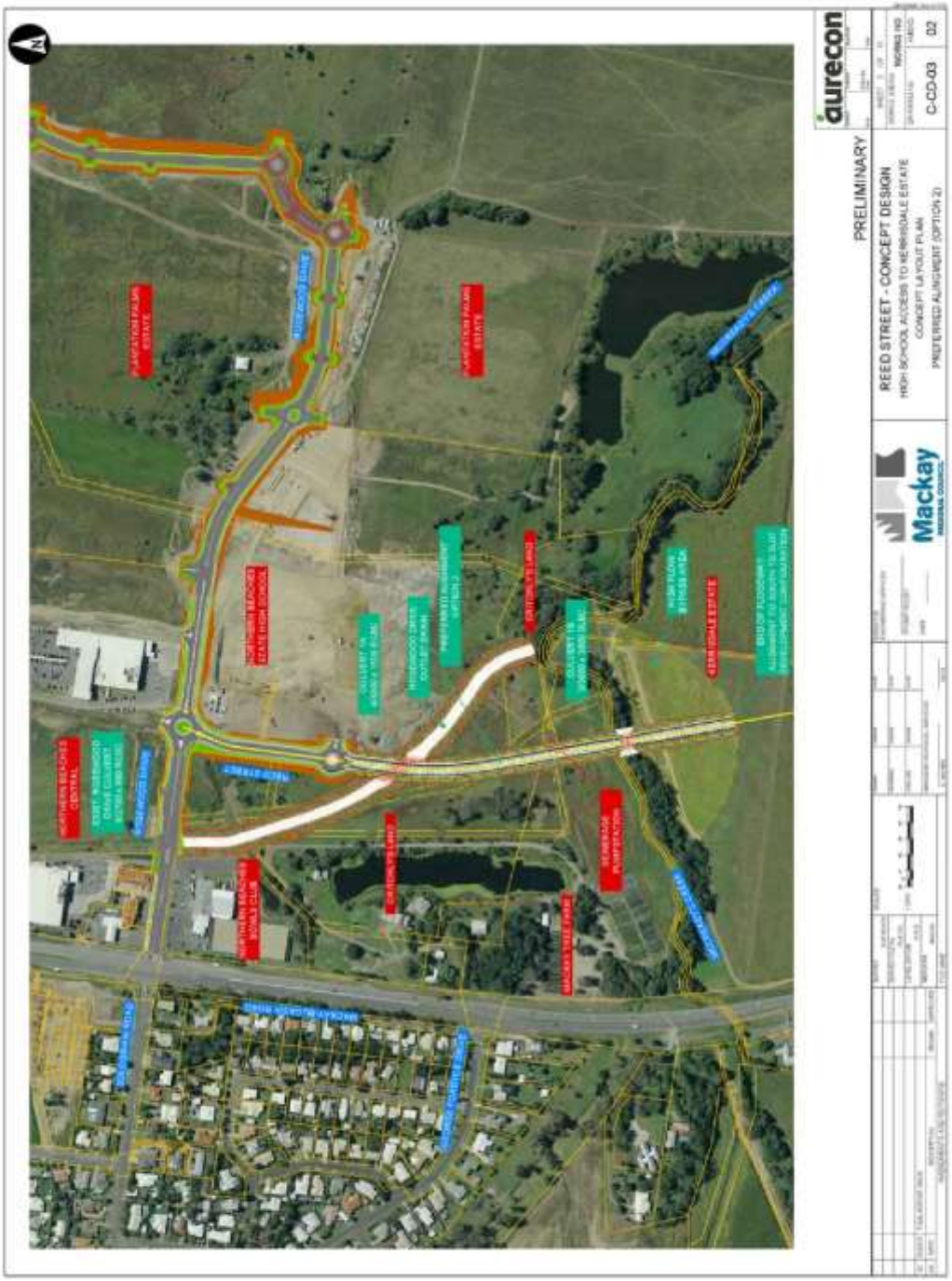
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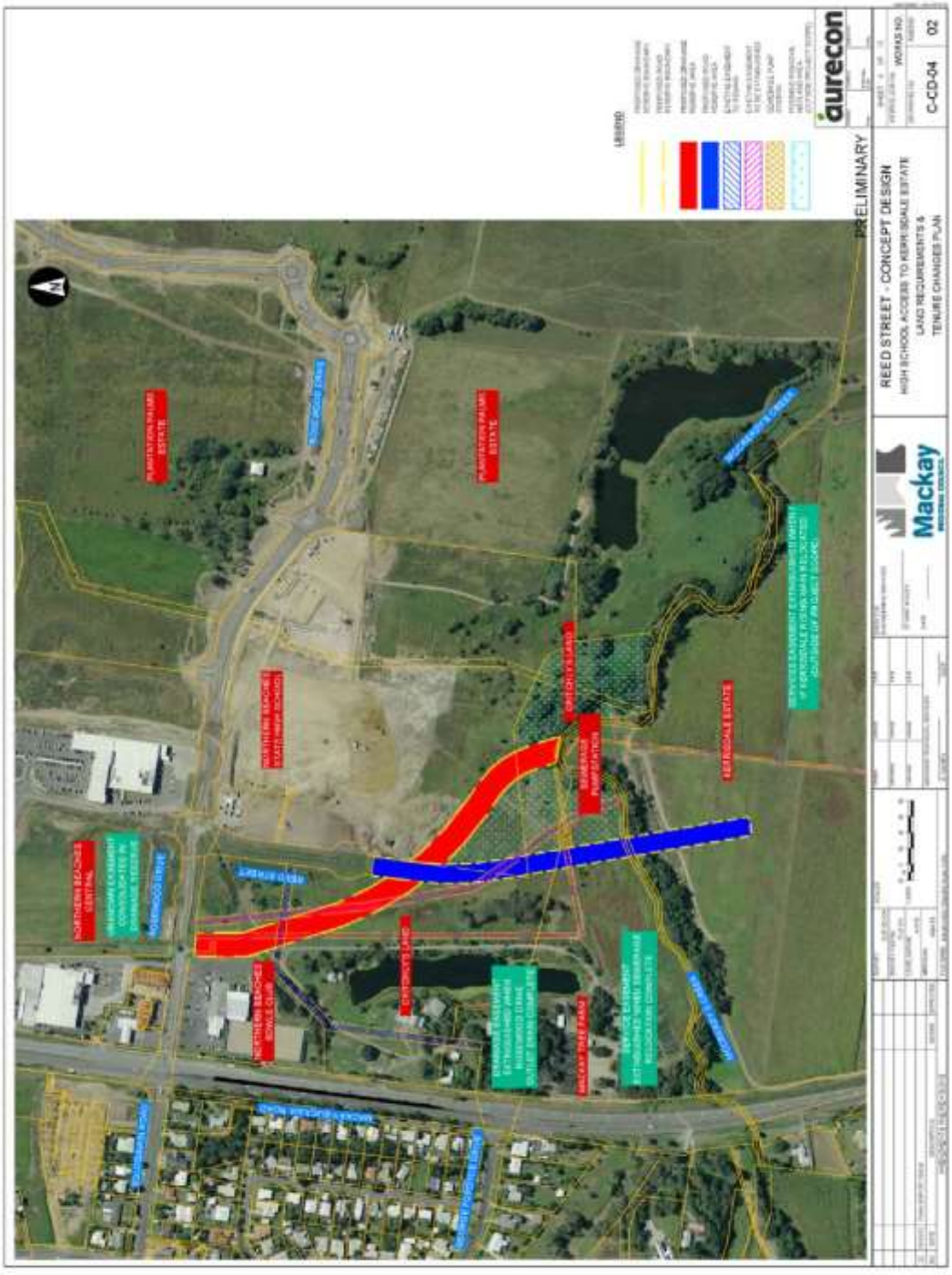
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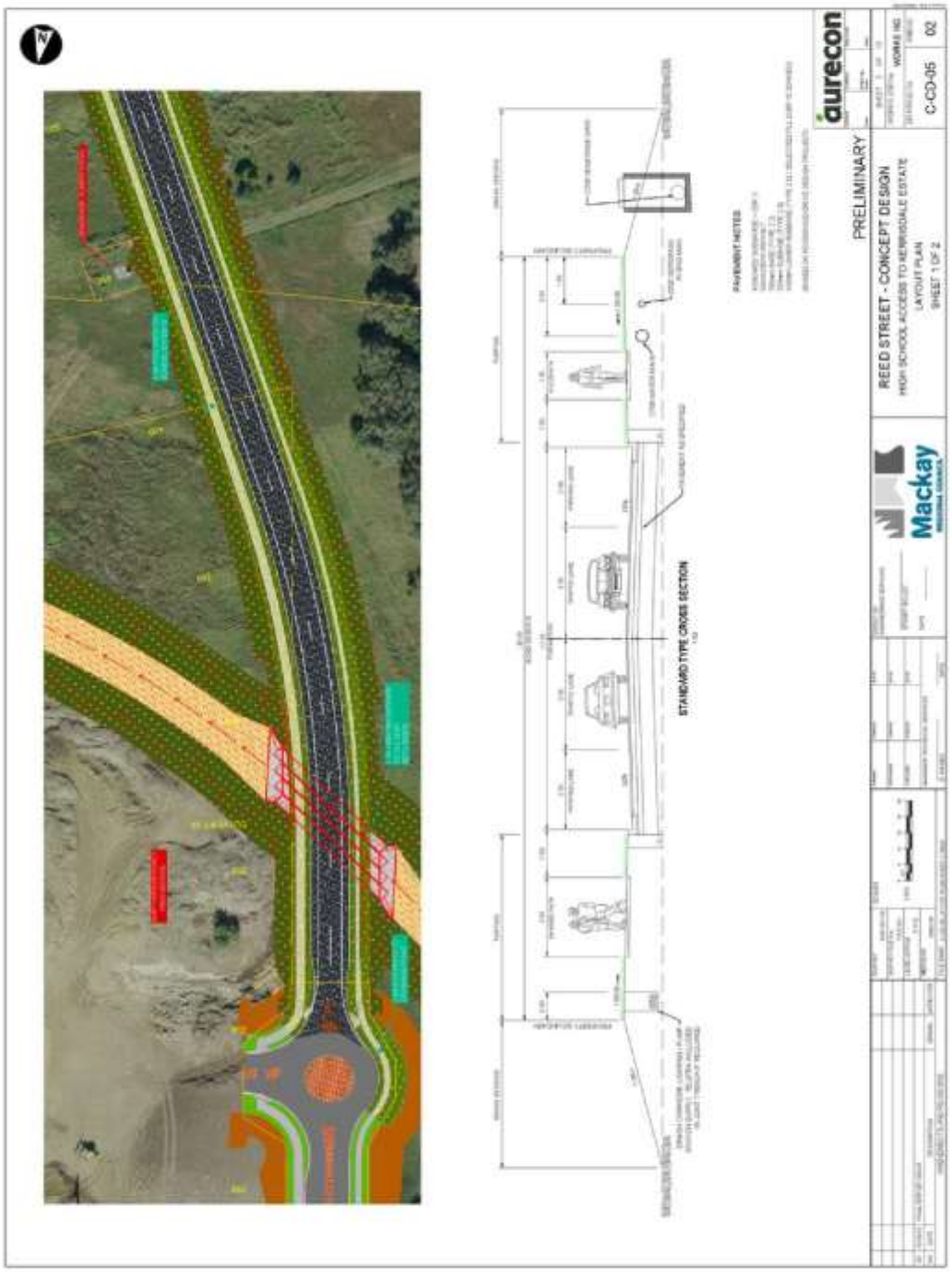
aurecon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Mackay
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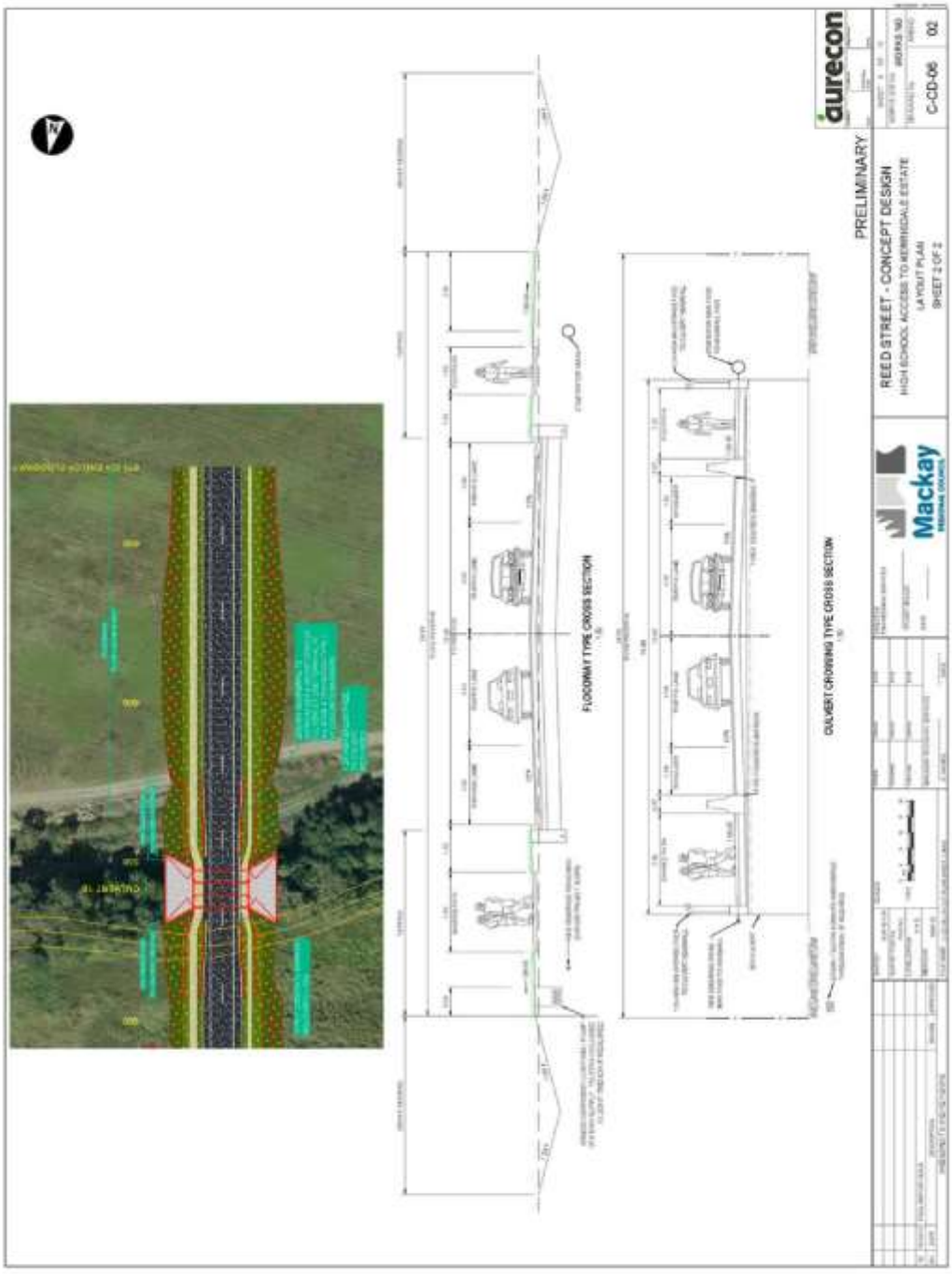
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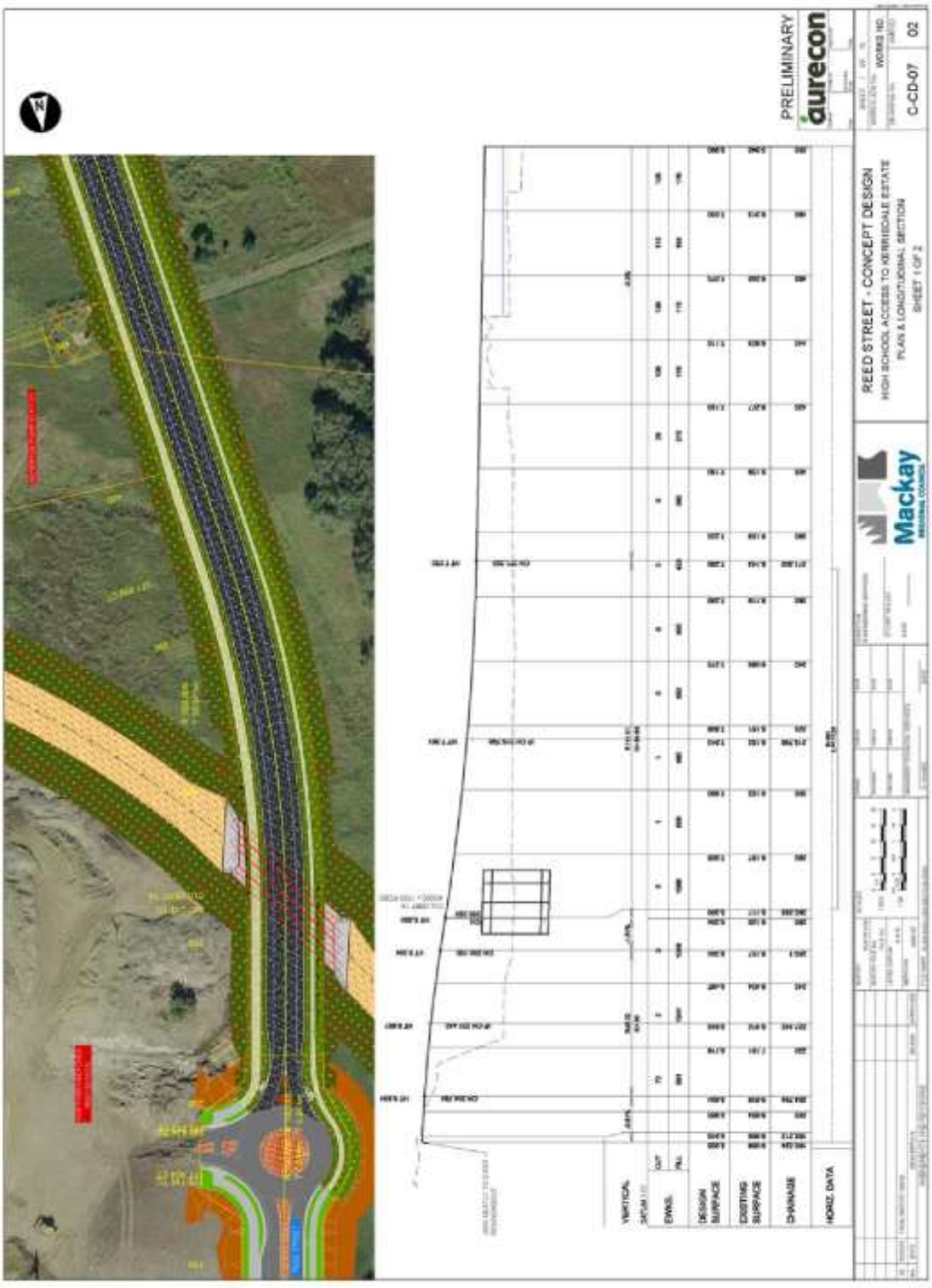
REED STREET - CONCEPT DESIGN
HIGH SCHOOL ACCESS TO KERRISDALE ESTATE
LAYOUT PLAN
SHEET 2 OF 2
C-CD-06
02
Mackay
FLOODWAY TYPE CROSS SECTION
CULVERT CROSSING TYPE CROSS SECTION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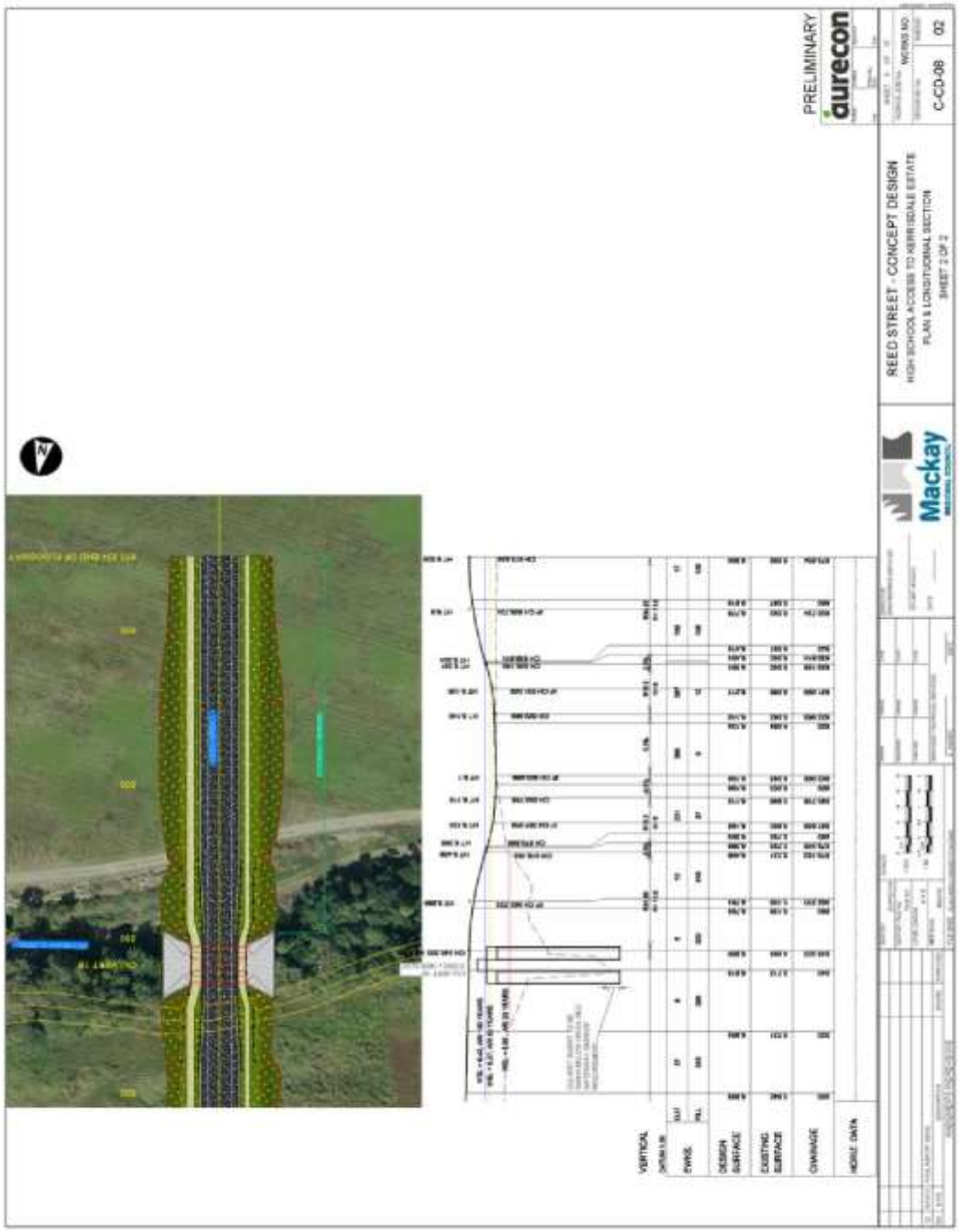
REED STREET - CONCEPT DESIGN
HIGH SCHOOL ACCESS TO KERRIDALE ESTATE
PLAN & LONGITUDINAL SECTION
SHEET 1 OF 2
C-CD-07
02
Mackay
REGIONAL COUNCIL
VERTICAL DATUM
HORIZ. DATA
CHAINAGE
EXISTING SURFACE
DESIGN SURFACE
EWIS.
OUT
IN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PLAN & LONGITUDINAL SECTION
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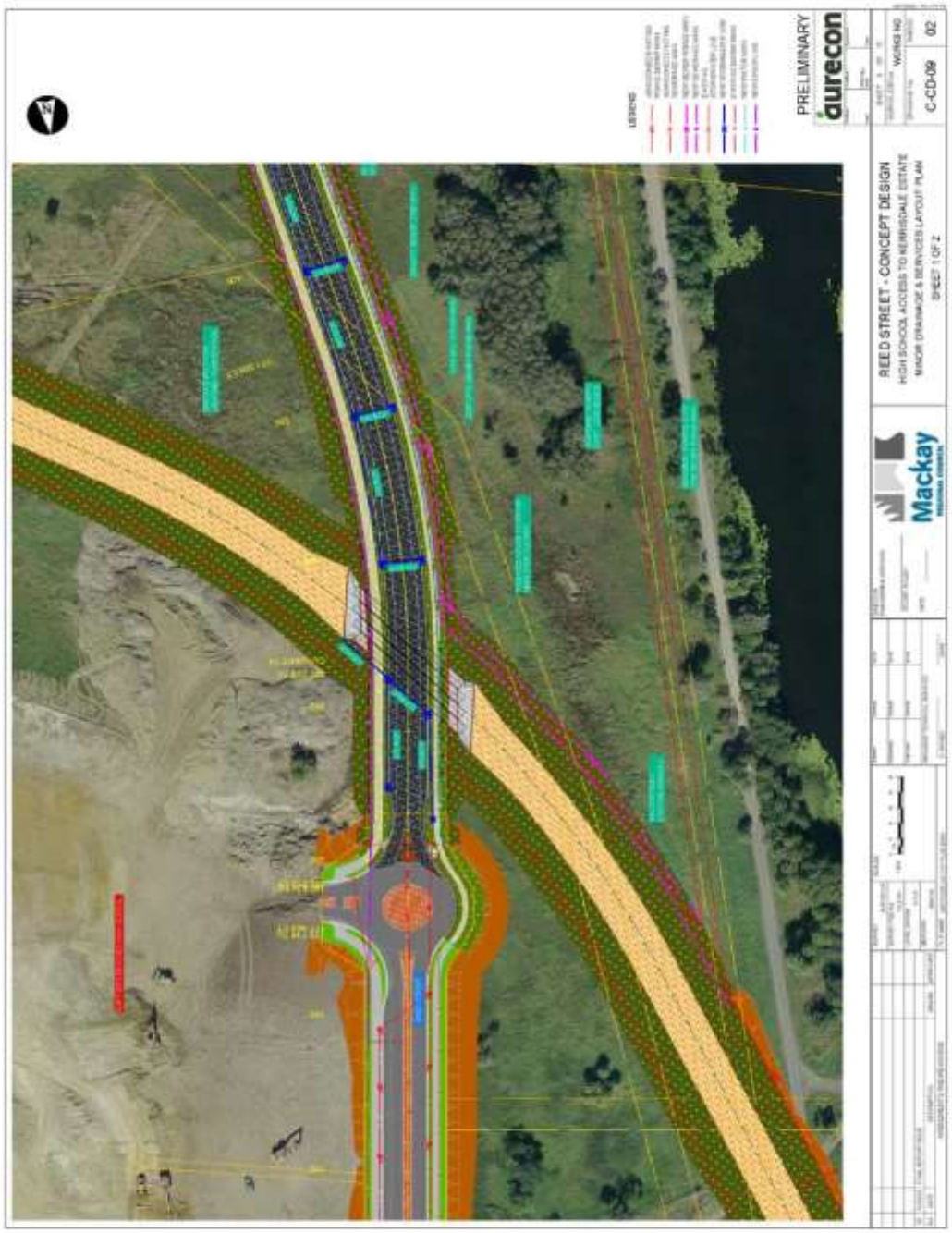
C-CD-08
02
Mackay
VERTICAL
DWGS
DESIGN SURFACE
EXISTING SURFACE
CHAINAGE
HORIZ DATA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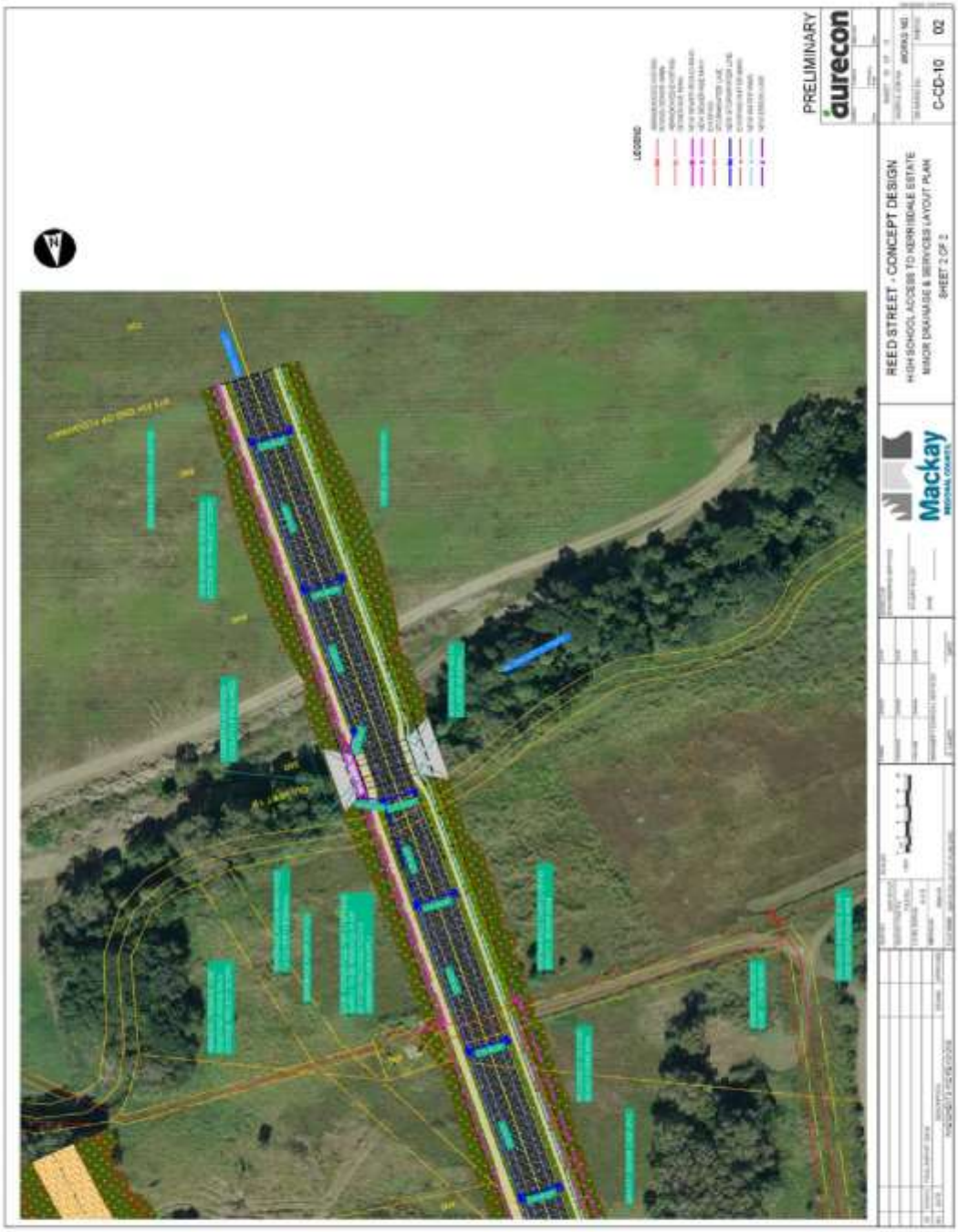
MINOR DRAINAGE & SERVICES LAYOUT PLAN
SHEET 1 OF 2
C-CD-09
02
Mackay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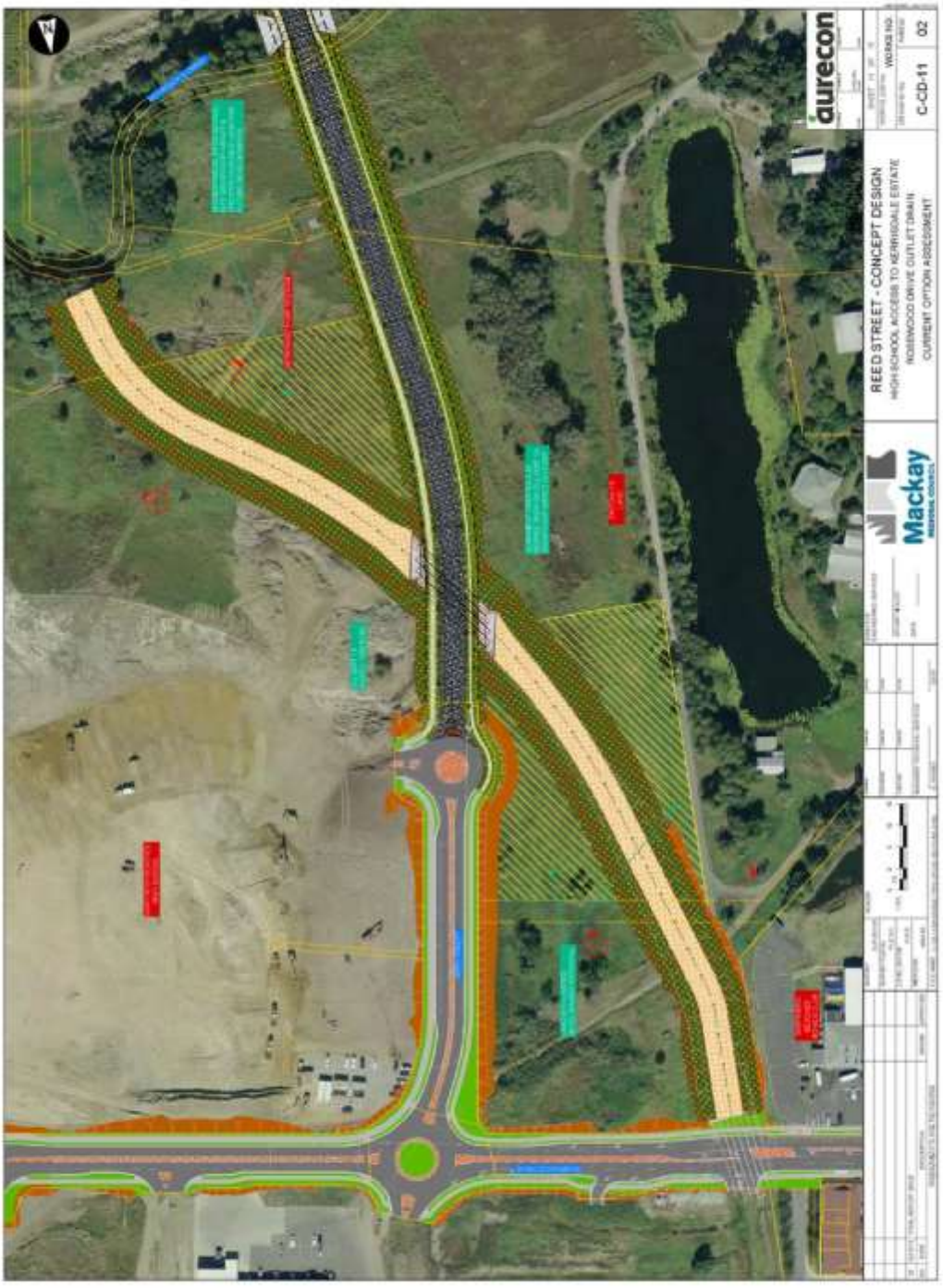
MINOR DRAINAGE & SERVICES LAYOUT PLAN
SHEET 2 OF 2
C-CD-10
02
Mackay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ROSEWOOD DRIVE OUTLET DRAIN
CURRENT OPTION ASSESSMENT
C-CD-11
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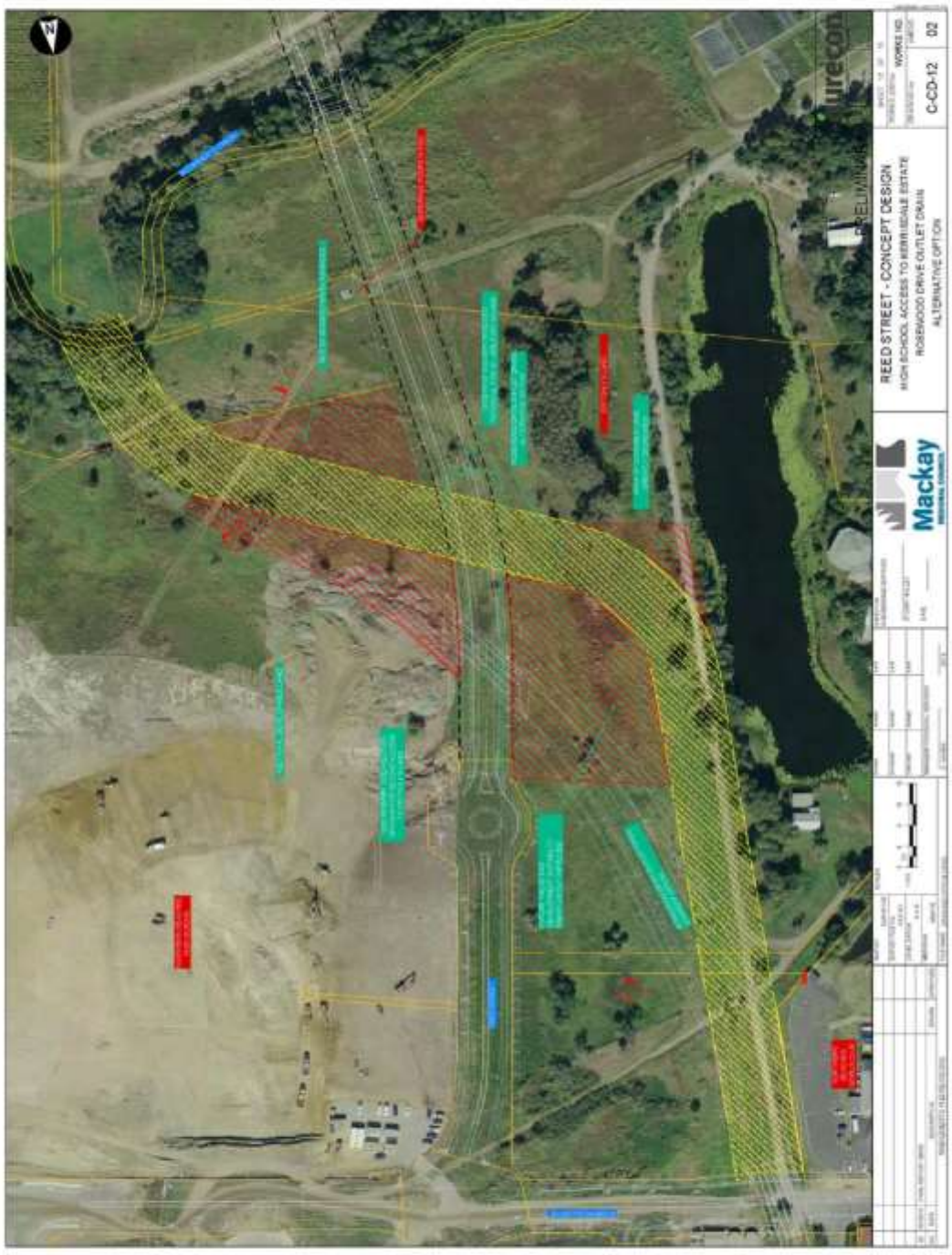
Mackay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HIGH SCHOOL ACCESS TO BERRIDEVALE ESTATE
ROSEWOOD DRIVE OUTLET DRAIN
ALTERNATIVE OPTION
C-CD-12
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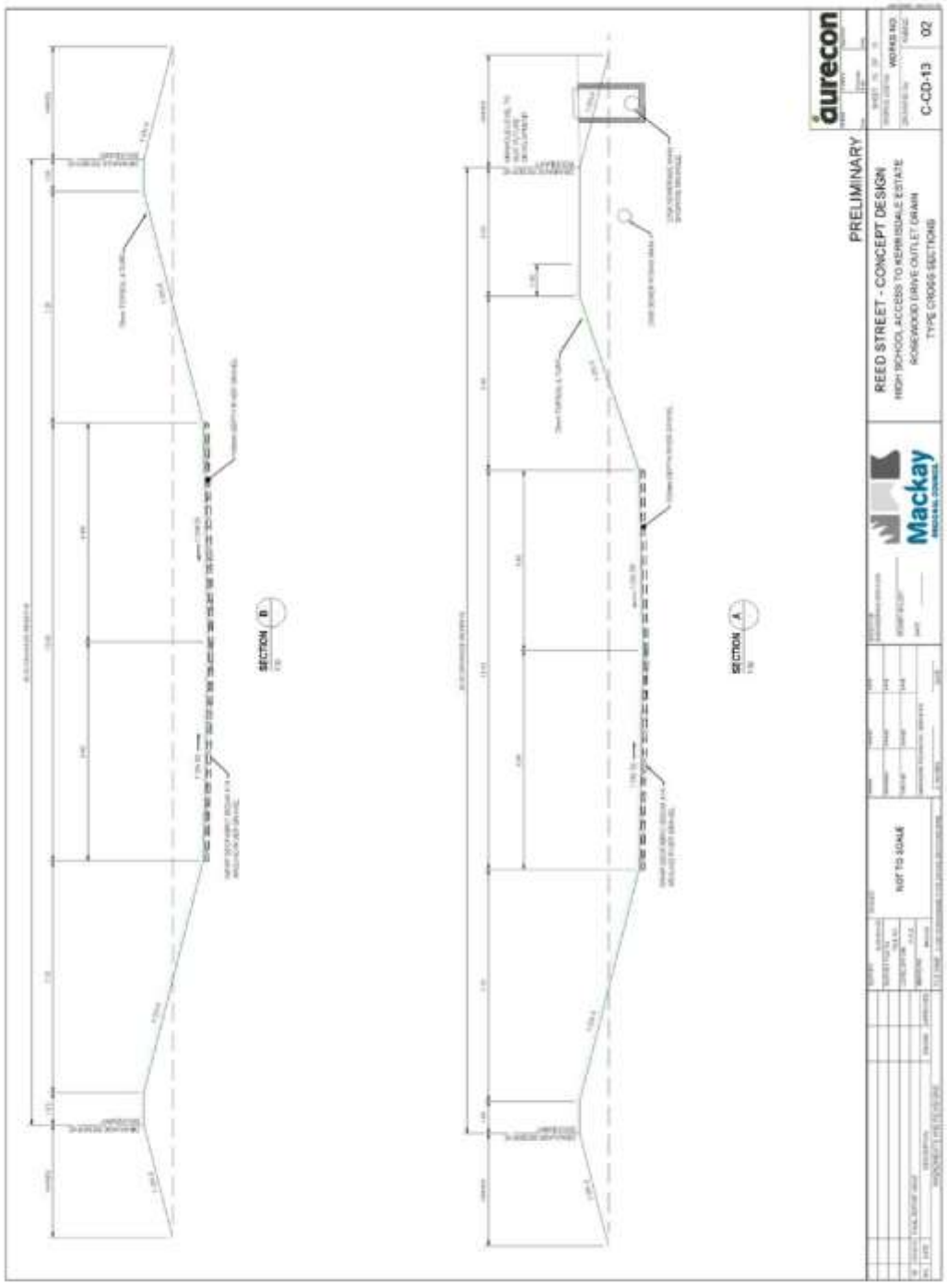
durecon
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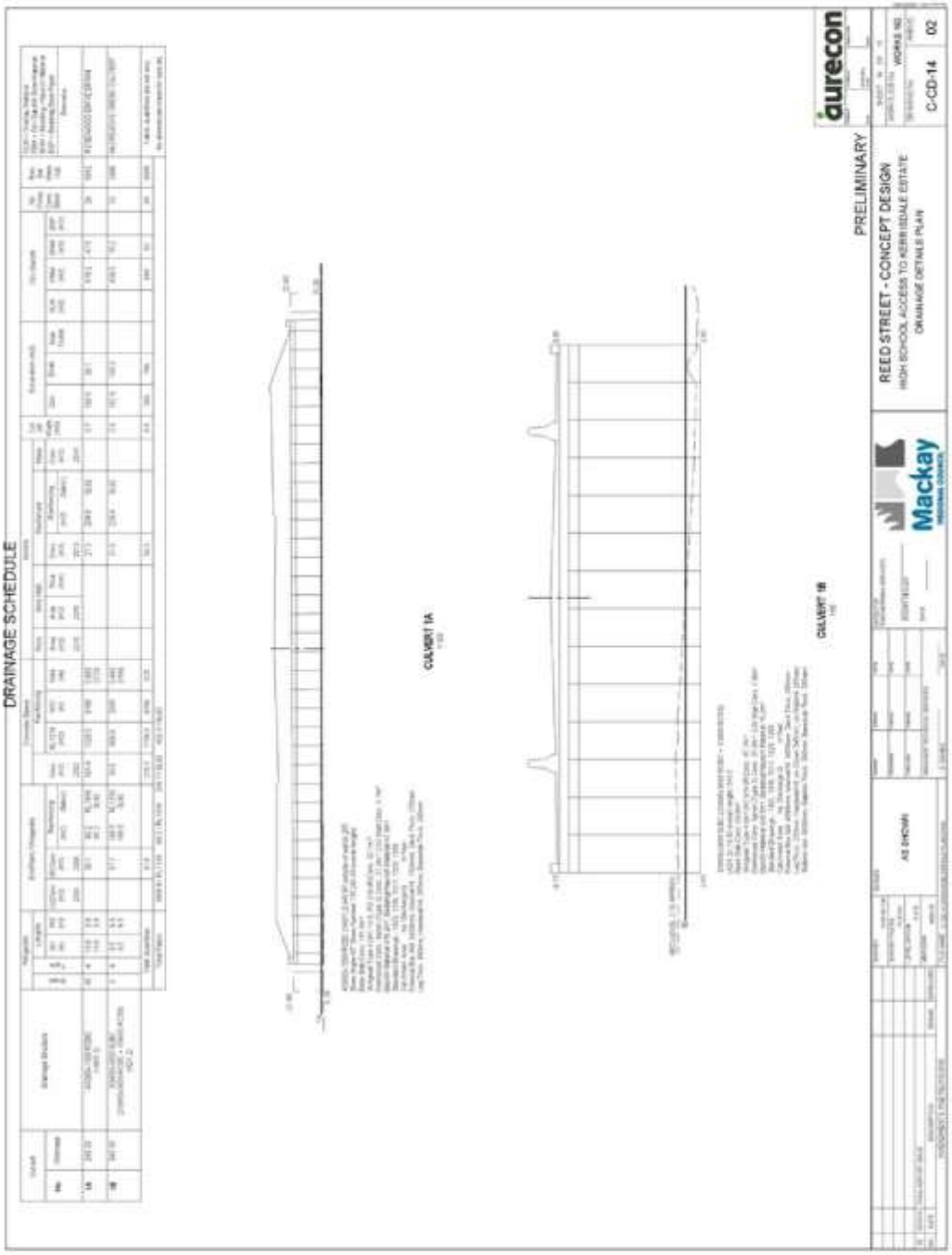
REED STREET - CONCEPT DESIGN
HIGH SCHOOL ACCESS TO KERRISDALE ESTATE
ROSEWOOD DRIVE OUTLET DRAIN
TYPE CROSS SECTIONS
C-CD-13
02
Mackay
NOT TO SCALE
SECTION B
SECTION A


DRAINAGE SCHEDULE
CULVERT 1A
CULVERT 1B
PRELIMINARY
aurecon
Mackay
REED STREET - CONCEPT DESIGN
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DRAINAGE DETAILS PLAN
C-CD-14
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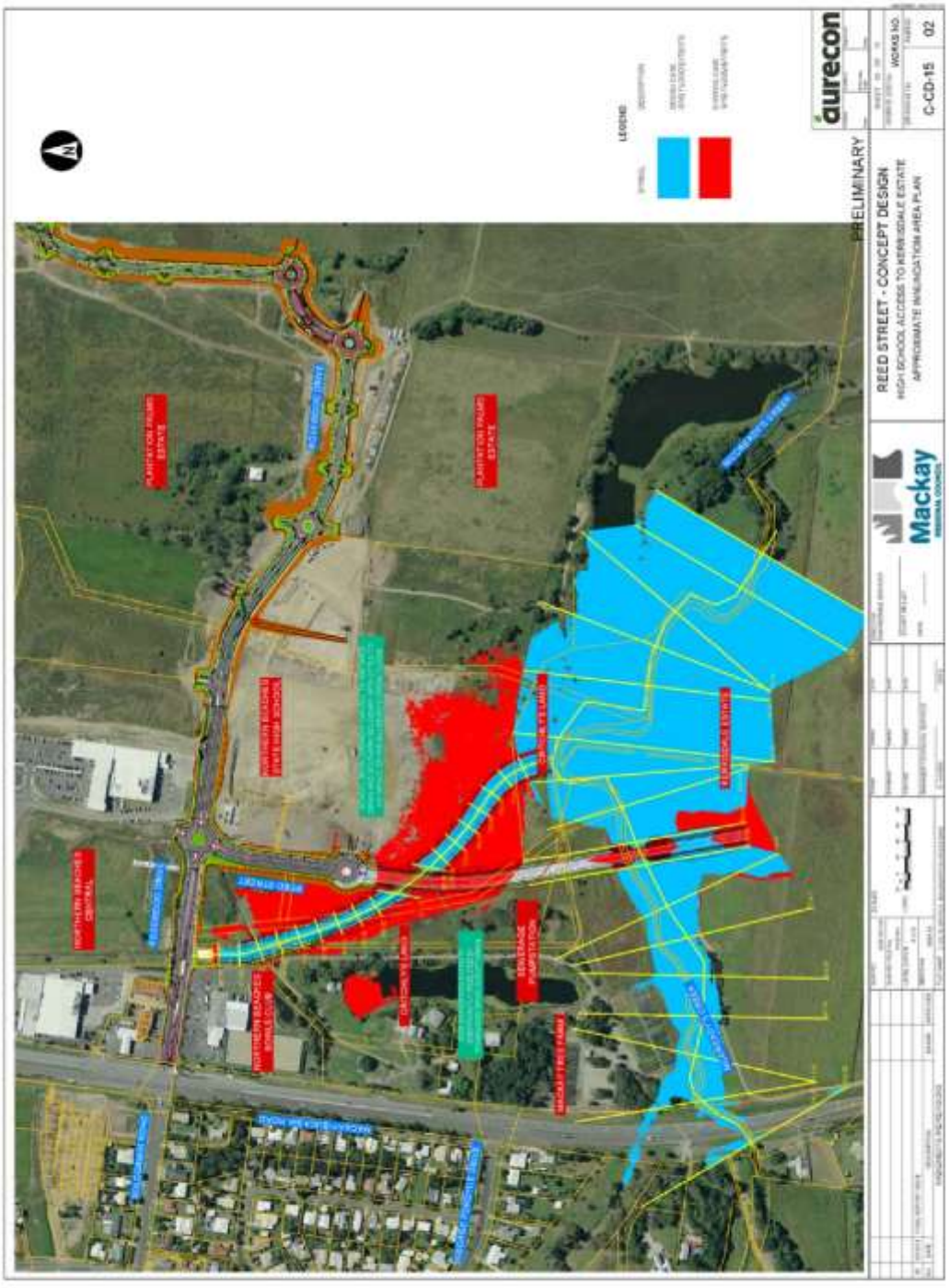
AS SHOWN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REED STREET - CONCEPT DESIGN
HIGH SCHOOL ACCESS TO KERRISDALE ESTATE
APPROXIMATE INUNDATION AREA PLAN
C-CD-15
02
Mackay

Appendix C
Preliminary Drainage Calculations

130912-01 – Preliminary Culvert Sizing

130913-01 – Assessment of Sub-catchment 11

aurecon Leading. Vibrant. Global.

Calculation Sheet

aurecon

Client:	Mackay Regional Council		Date: 12/09/13
Project / Phase:	Reed Street Extension - Concept Design	Project No:	238322-001
Subject:	Preliminary Culvert Sizing	Calc No: 130912-01	By: J Andersen

Sub-catchment 11 / Rosewood Dr Outlet Drain

Design ARI	Flow [1] (m^3/s)	Velocity [2] (m/s)	Invert	WSL [2]	Water Depth	Min. XS Area
100	39	2.47	5.28	6.69	1.41	15.789474

[1] Flow provided by Farr Engineers on behalf on Northern Beach Central. Email dated 17 May 2011 addressed to Colin Kelleher.

[2] Results taken from preliminary Hec RAS model of the open drain between Rosewood Drive and McCreadys Creek

The width of Culvert Required = Min. XS Area / Water Depth	11.2
Recommended Culvert size	4/3000 x 1500 RCBC

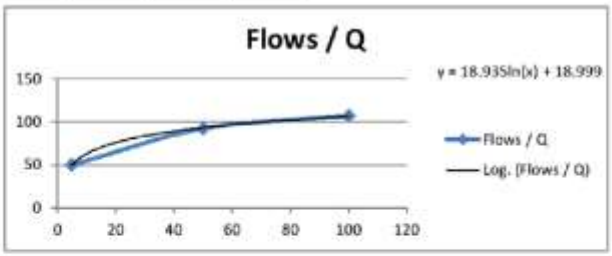
Sub-catchment 9 / McCreadys Creek

The design standard / flow for this culvert is to be based on 20 year ARI or Q20

The KBR, McCreadys Creek Stormwater Drainage Study does not analysed these flows.

The Q20 flow and WSL has been calculated by interpolating KBR Q5, Q50 & Q100 results

KBR Results			
ARI	5	50	100
Flows / Q	49.7	92.09	106.95
WSL	5.7	6.25	6.43

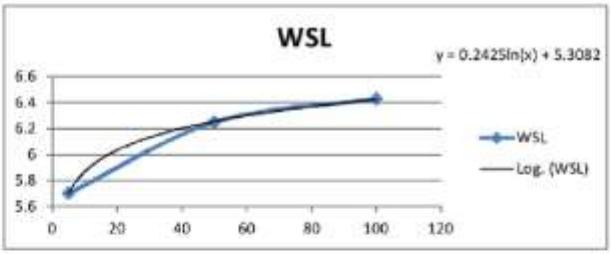


Calculation Sheet

aurecon

Client:	Mackay Regional Council		Date: 12/09/13
Project / Phase:	Reed Street Extension - Concept Design	Project No:	238322-001
Subject:	Preliminary Culvert Sizing	Calc No: 130912-01	By: J Andersen

		% of ARI 100
Use the trend line equation for x / An = 20, Y/ Q =	75.72	0.71



Use the trend line equation for X / ARI = 20, Y/ WSL =	6.03

WSL results to be used for preliminary sizing calcs only.

Design ARI	Flow [1] (m^3/s)	Velocity [2] (m/s)	Invert	WSL [2]	Water Depth	Min. XS Area
20	75.72	2.2	2.708	6.03	3.33	34.419632

[1] Flow provided by Farr Engineers on behalf on Northern Beach Central. Email dated 17 May 2011 addressed to Colin Kelleher.

[2] Results taken from preliminary Hec RAS model of the open drain between Rosewood Drive and McCreadys Creek

The width of Culvert Required = Min. XS Area / Water Depth	10.3

Recommended Culvert size	3/ 3600x 3600 SLBC

Notes:

Calculation Sheet

aurecon

Client:	Mackay Regional Council	Date:	12/09/13
Project / Phase:	Reed Street Extension - Concept Design	Project No:	238322-001
Subject:	Preliminary Culvert Sizing	Calc No: 130912-01	By: J.Andersen

The crossing of McCreadys is located in area mapped amber in relation to waterway barrier works. As such the culvert are to be designed on accordance with DAFF Code Minor Waterway Barrier Works Part 3: Culvert Crossing (WWBW01) April 2013.

As per the above a 3600 High Crown Unit is to be used to allow for all cell to be inset 300mm below the creek bed level as per WWBW01 Appendix 2

The existing main channel is approx. 8.5m wide. The proposed structure has a total clear water way width of 10.8m and as such exceed the WWBW01 requirements to be 100% of the main channel width

3600 x 3600 Crown Units and 3600mm Spanning Slabs are the largest standard culvert manufactured by Rocla. As such if the culvert is required to have an increased height due to an increase in the calculated water surface elevation then a Rolca M-Lock Bridge or similar may become more cost effective solution then custom manufactured SLBC.

Calculation Sheet

aurecon

Client:	Mackay Regional Council		Date: 13/09/13
Project / Phase:	Reed Street Extension - Concept Design	Project No:	238322-001
Subject:	Assessment of Sub-catchment 11	Calc No. 130913-1	By: J.Andersen

Sub-catchment 11	
Catchment Number	Area
11a	9.4
11b	10.1
11c	8.7
11d	22
11e	14.8
11f	22.9

Catchment Discharge Upstream of MBR

Sub Catchments	Area	C100	I (Tc =30min)
11a, 11b, 11c	28.2	1	180.4

C100 based on maximum faction impervious for Urban Residential (0.85). Refer table 4.5.1

Flow =	14.13

Catchment Discharge at McCready's Creek

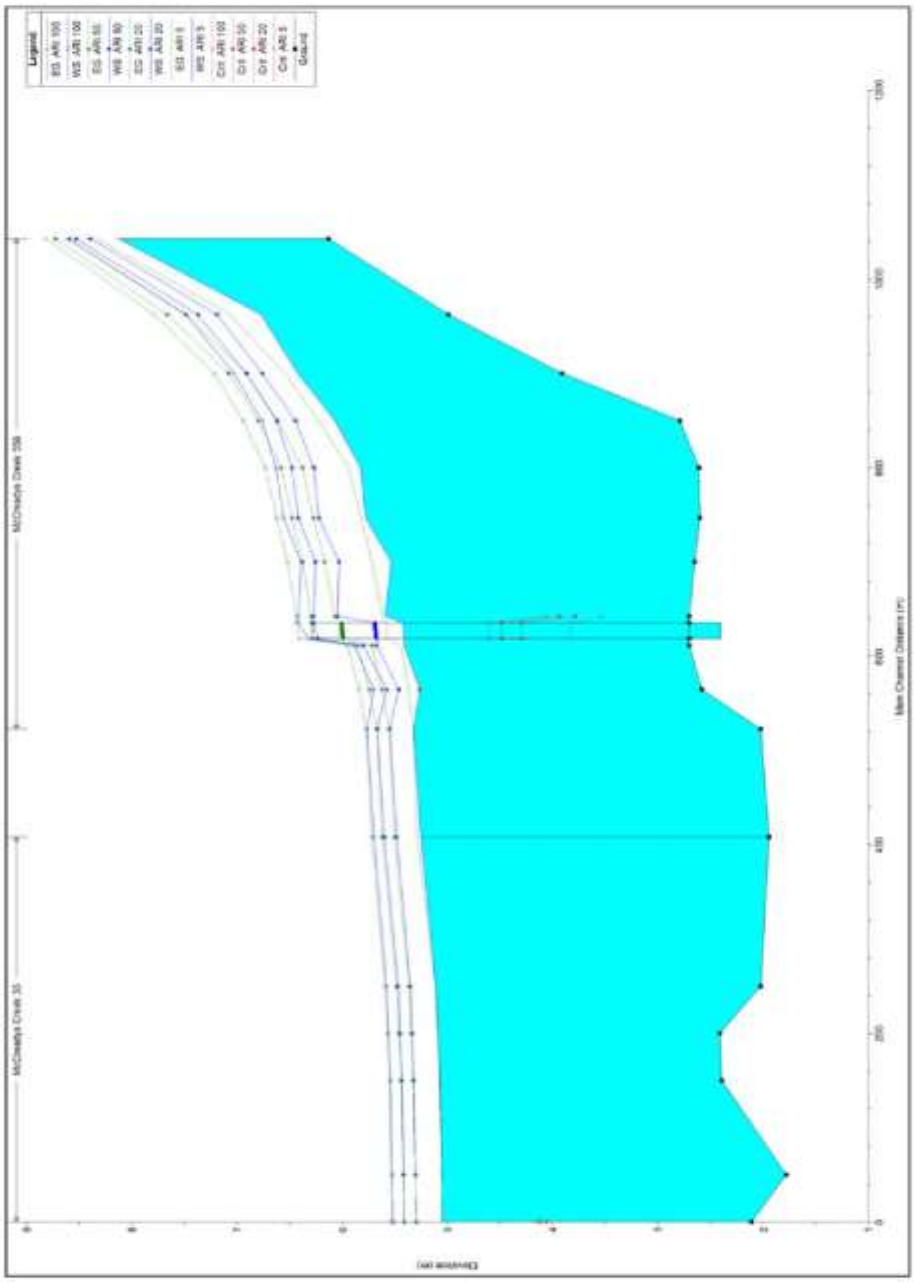
Sub Catchments	Area	C100	I (Tc =60min)
11a, 11b, 11c, 11d 11e, 11f	87.9	1	114.2

Flow =	27.88

Appendix D
HEC-RAS Results

McCreadys Creek and Rosewood Drive Outlet Drain

aurecon Leading. Vibrant. Global.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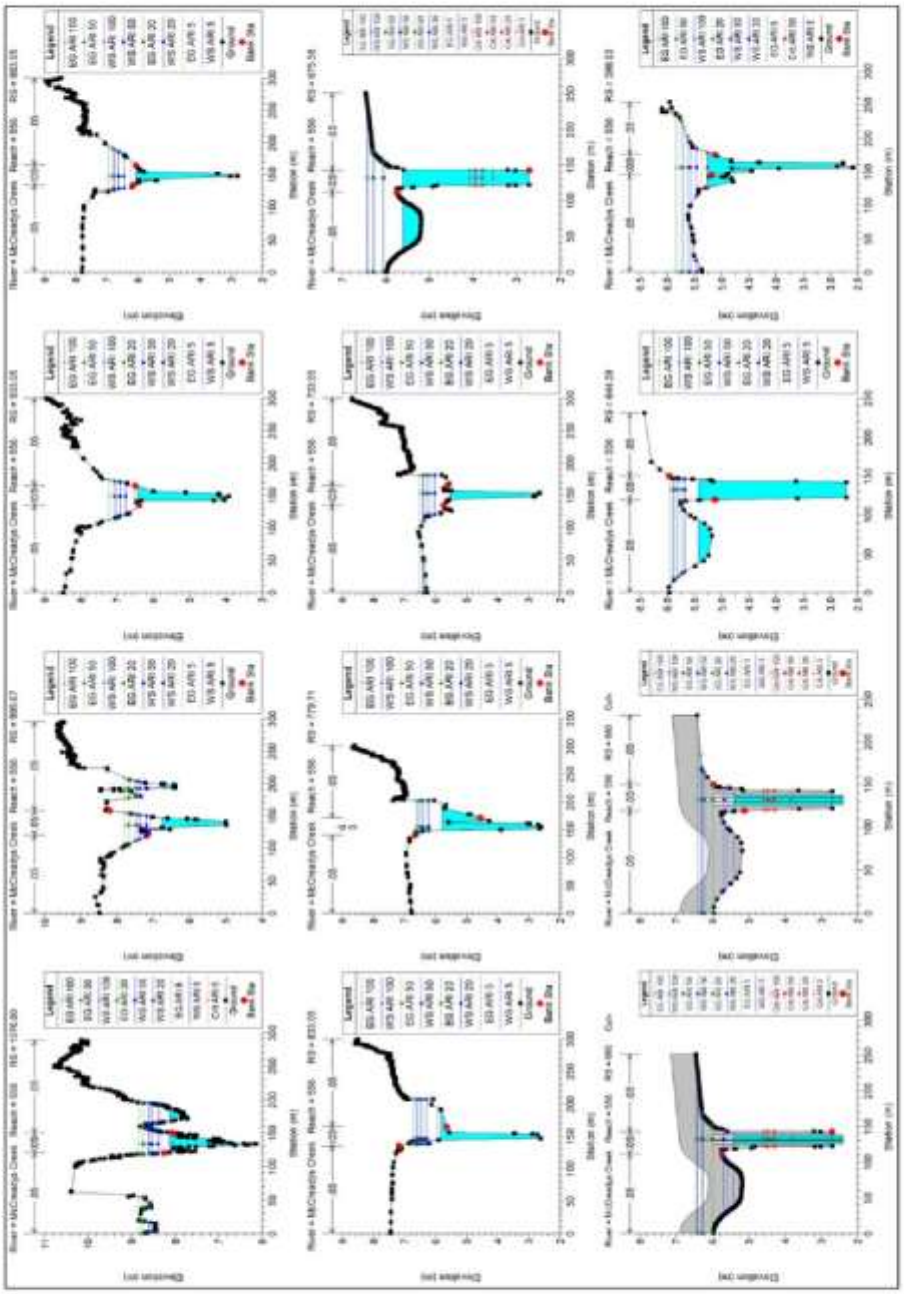
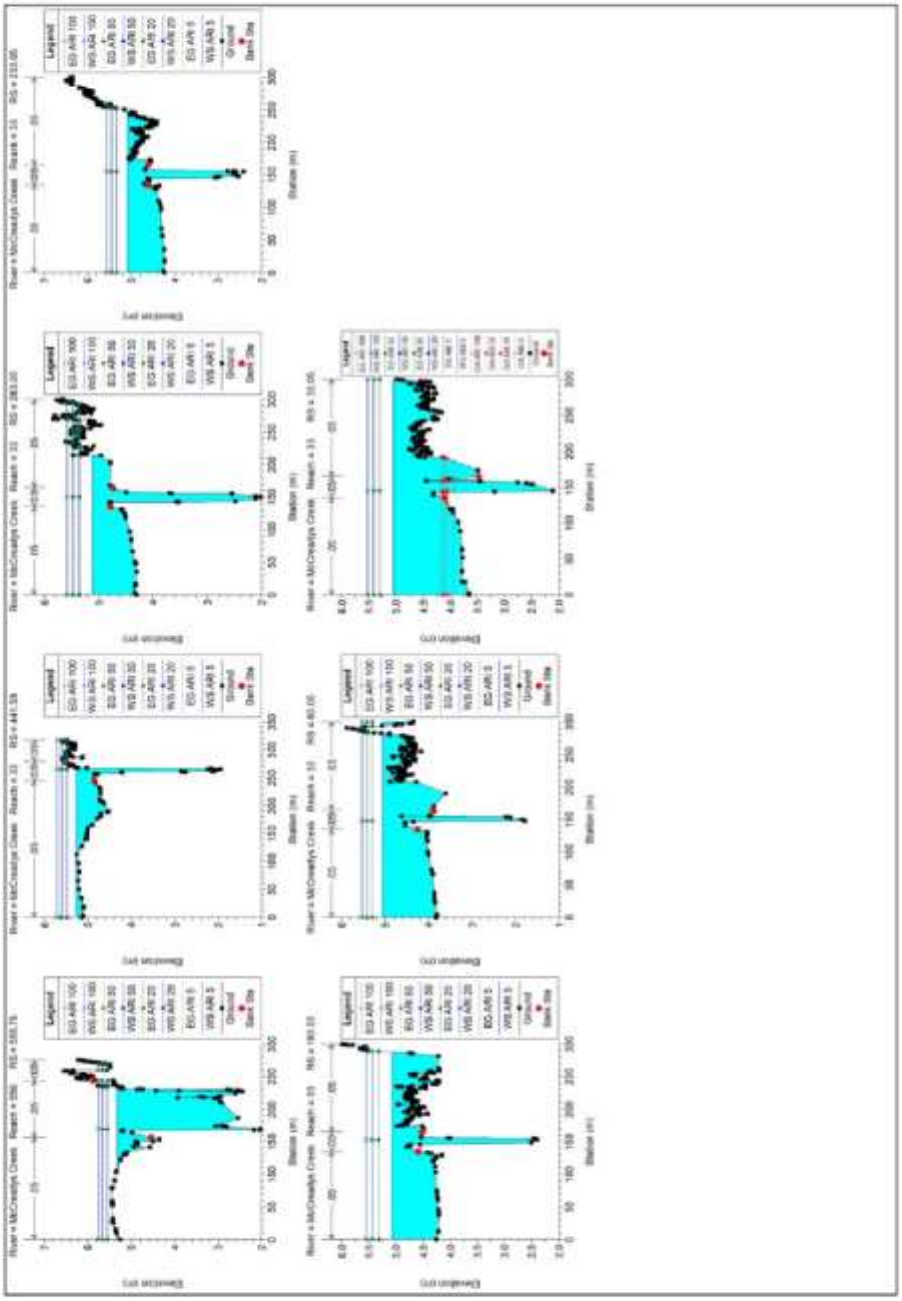
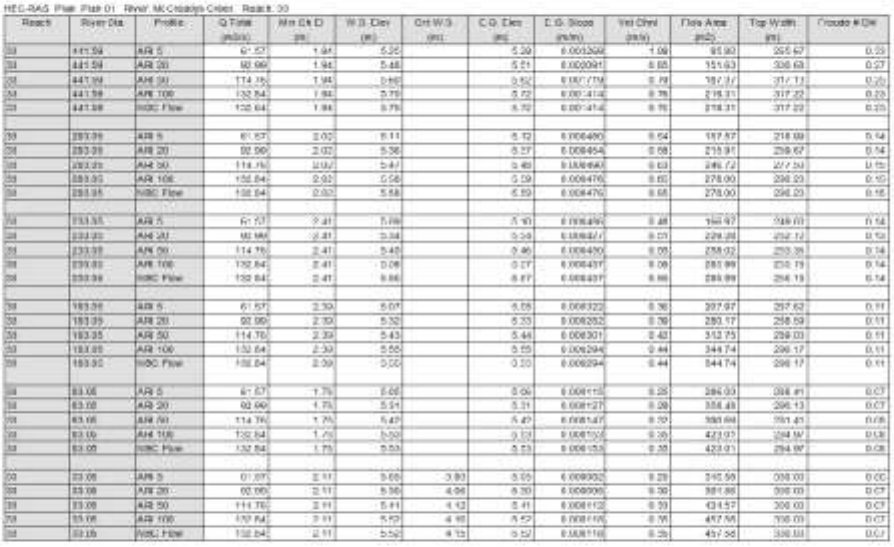
Ground





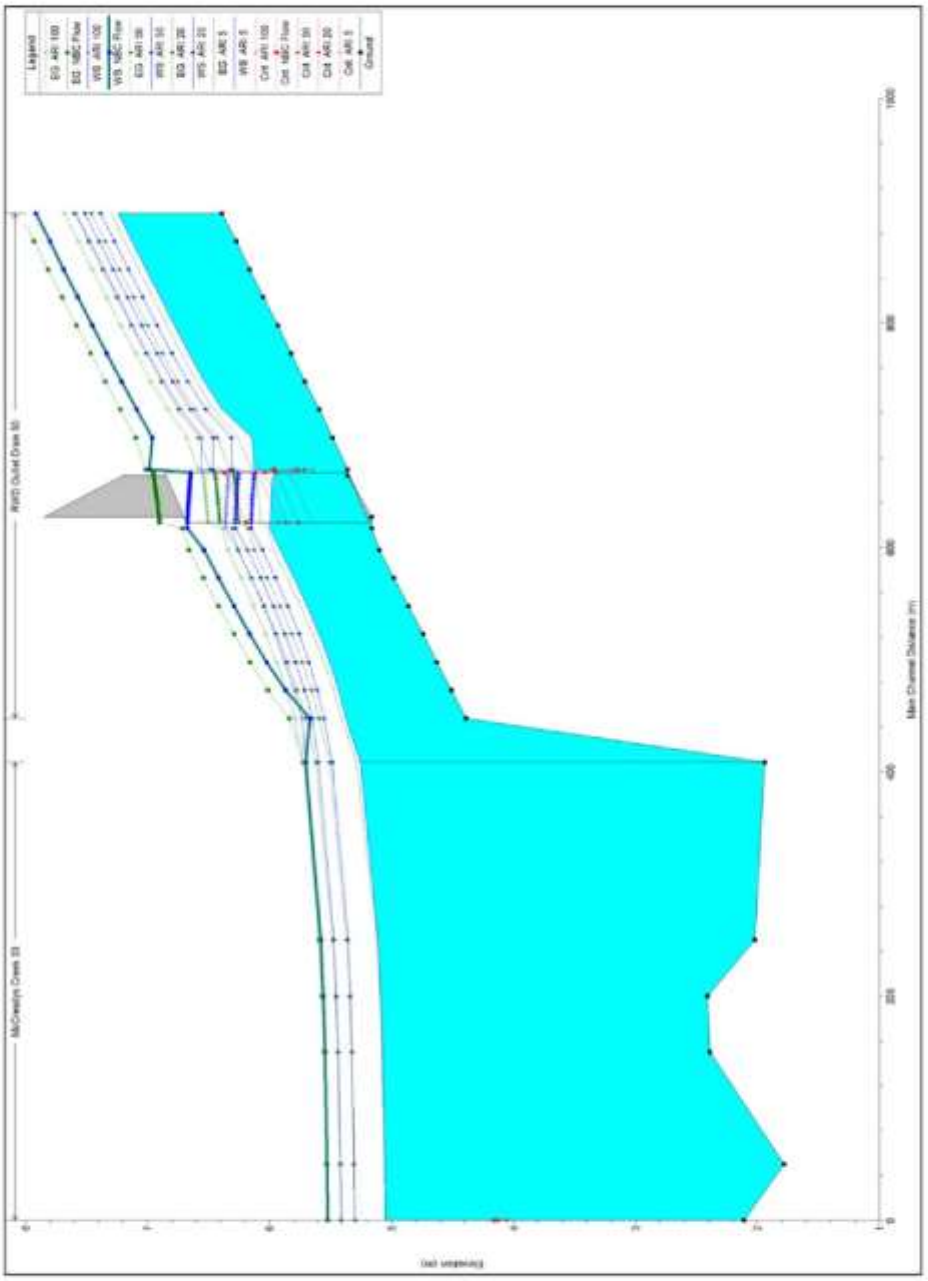
HEC-RAS Plan: Plan 01 River: McCreadys Creek Reach: 556

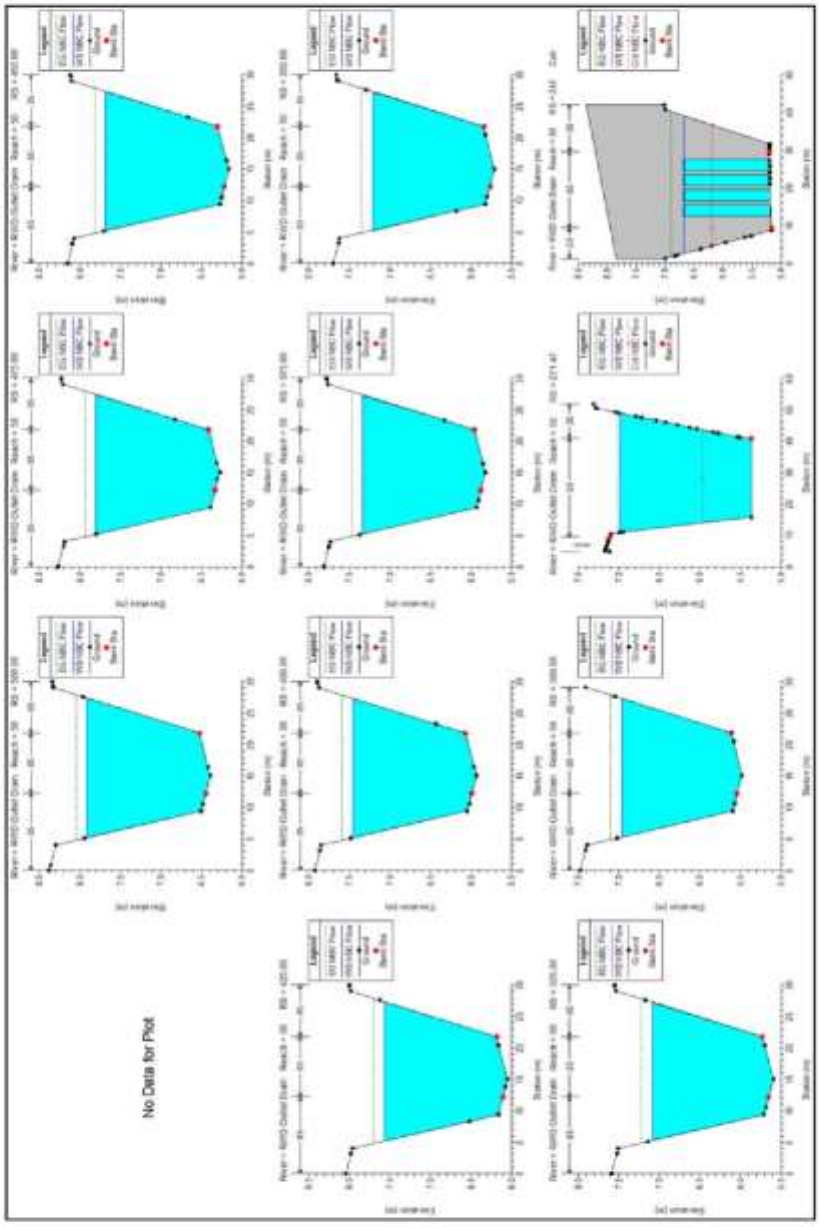
Reach	River Sta	Profile	Q Total	Vel Chnl	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
556	1076.00	ARI 5	49.70	6.13	8.12	8.06	8.33	0.017631	2.09	26.14	48.06	0.78
556	1076.00	ARI 20	73.72	6.13	8.39		8.59	0.012666	2.11	41.13	61.77	0.68
556	1076.00	ARI 50	92.09	6.13	8.53		8.73	0.010254	2.13	50.98	78.59	0.64
556	1076.00	ARI 100	105.95	6.13	8.61		8.82	0.010166	2.21	57.69	93.64	0.65
556	1076.00	NBC Flow	105.95	6.13	8.61		8.82	0.010166	2.21	57.69	93.64	0.65
556	995.67	ARI 5	49.70	4.99	6.77		7.07	0.013760	2.48	21.25	22.98	0.73
556	995.67	ARI 20	73.72	4.99	7.19		7.48	0.015446	2.47	32.05	33.13	0.76
556	995.67	ARI 50	92.09	4.99	7.37		7.65	0.016717	2.47	38.02	48.75	0.78
556	995.67	ARI 100	105.95	4.99	7.48		7.79	0.015786	2.58	45.61	57.59	0.77
556	995.67	NBC Flow	105.95	4.99	7.48		7.79	0.015786	2.58	45.61	57.59	0.77
556	933.05	ARI 5	49.70	3.91	6.42		6.54	0.004758	1.54	32.47	28.24	0.43
556	933.05	ARI 20	73.72	3.91	6.78		6.91	0.005314	1.74	46.21	49.19	0.47
556	933.05	ARI 50	92.09	3.91	6.91		7.08	0.005330	1.87	53.88	53.09	0.48
556	933.05	ARI 100	105.95	3.91	7.00		7.22	0.005358	1.97	58.54	55.62	0.48
556	933.05	NBC Flow	105.95	3.91	7.00		7.22	0.005358	1.97	58.54	55.62	0.48
556	853.05	ARI 5	49.70	2.79	6.07		6.23	0.005556	1.75	28.47	29.26	0.36
556	853.05	ARI 20	73.72	2.79	6.44		6.61	0.006558	1.88	43.79	51.26	0.42
556	853.05	ARI 50	92.09	2.79	6.62		6.80	0.005886	1.91	53.67	57.66	0.39
556	853.05	ARI 100	105.95	2.79	6.76		6.94	0.005542	1.97	61.90	62.39	0.49
556	853.05	NBC Flow	105.95	2.79	6.76		6.94	0.005542	1.97	61.90	62.39	0.49
556	833.05	ARI 5	49.70	2.61	5.82		5.94	0.003818	1.51	14.79	45.36	0.38
556	833.05	ARI 20	73.72	2.61	6.27		6.38	0.003662	1.68	59.65	63.93	0.36
556	833.05	ARI 50	92.09	2.61	6.48		6.58	0.002853	1.54	72.83	65.05	0.34
556	833.05	ARI 100	105.95	2.61	6.58		6.73	0.002772	1.57	82.65	65.86	0.34
556	833.05	NBC Flow	105.95	2.61	6.62		6.73	0.002772	1.57	82.65	65.86	0.34
556	770.71	ARI 5	49.70	2.60	5.78		5.82	0.001053	0.96	59.36	48.26	0.21
556	770.71	ARI 20	73.72	2.59	6.22		6.27	0.001052	1.07	82.65	54.29	0.22
556	770.71	ARI 50	92.09	2.59	6.42		6.45	0.001136	1.15	99.32	55.04	0.23
556	770.71	ARI 100	105.95	2.60	6.56		6.62	0.001254	1.21	101.21	56.27	0.24
556	770.71	NBC Flow	105.95	2.60	6.56		6.62	0.001254	1.21	101.21	56.27	0.24
556	733.05	ARI 5	49.70	2.65	5.53		5.72	0.004468	1.91	26.12	14.68	0.43
556	733.05	ARI 20	73.72	2.65	6.01		6.17	0.005686	1.73	49.95	60.02	0.49
556	733.05	ARI 50	92.09	2.65	6.21		6.38	0.004404	1.67	63.85	63.30	0.43
556	733.05	ARI 100	105.95	2.65	6.36		6.52	0.004168	1.72	76.17	125.64	0.43
556	733.05	NBC Flow	105.95	2.65	6.36		6.52	0.004168	1.72	76.17	125.64	0.43
556	675.58	ARI 5	49.70	2.70	5.06	3.02	5.62	0.000411	0.72	38.65	95.06	0.14
556	675.58	ARI 20	73.72	2.70	6.06	3.76	6.07	0.000451	0.74	103.52	153.57	0.15
556	675.58	ARI 50	92.09	2.70	6.27	3.93	6.29	0.000389	0.73	179.52	198.21	0.14
556	675.58	ARI 100	105.95	2.70	6.42	4.06	6.44	0.000385	0.75	207.42	229.53	0.14
556	675.58	NBC Flow	105.95	2.70	6.42	4.06	6.44	0.000385	0.75	207.42	229.53	0.14
556	660		Culvert									
556	644.59	ARI 5	49.70	2.79	5.41		5.44	0.000670	0.79	78.46	82.32	0.17
556	644.59	ARI 20	73.72	2.79	5.67		5.72	0.000640	1.00	94.84	106.54	0.20
556	644.59	ARI 50	92.09	2.79	5.80		5.85	0.000664	1.11	109.73	126.20	0.22
556	644.59	ARI 100	105.95	2.79	5.89		5.95	0.001118	1.26	120.67	132.08	0.23
556	644.59	NBC Flow	105.95	2.79	5.89		5.95	0.001118	1.26	120.67	132.08	0.23
556	596.03	ARI 5	49.70	2.58	5.26		5.37	0.006649	1.53	35.55	52.25	0.49
556	596.03	ARI 20	73.72	2.58	5.46		5.62	0.007512	1.64	48.61	87.75	0.54
556	596.03	ARI 50	92.09	2.58	5.58	5.27	5.74	0.007466	1.65	62.75	164.93	0.55
556	596.03	ARI 100	105.95	2.58	5.70		5.84	0.005928	1.85	57.84	217.79	0.49
556	596.03	NBC Flow	105.95	2.58	5.70		5.84	0.005928	1.85	57.84	217.79	0.49
556	555.76	ARI 5	49.70	2.62	5.32		5.33	0.000068	0.29	181.85	133.57	0.06
556	555.76	ARI 20	73.72	2.62	5.58		5.59	0.000153	0.39	228.31	251.34	0.09
556	555.76	ARI 50	92.09	2.62	5.67		5.67	0.000179	0.43	257.71	254.54	0.09
556	555.76	ARI 100	105.95	2.62	5.76		5.77	0.000196	0.46	282.92	255.79	0.10
556	555.76	NBC Flow	105.95	2.62	5.76		5.77	0.000196	0.46	282.92	255.79	0.10



HEC-RAS Plan: Plan 01 River: McCready's Creek Reach: 30

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
30	441.59	ARI 5	61.57	1.94	5.35		5.39	0.001268	1.09	85.90	255.67	0.23
30	441.59	ARI 20	92.99	1.94	5.48		5.51	0.000991	0.95	151.63	306.63	0.27
30	441.59	ARI 50	114.76	1.94	5.60		5.62	0.000779	0.79	187.31	317.13	0.25
30	441.59	ARI 100	132.64	1.94	5.70		5.72	0.000614	0.75	216.31	317.22	0.23
30	441.59	WBC Flow	132.64	1.94	5.70		5.72	0.000614	0.75	216.31	317.22	0.23
30	393.59	ARI 5	61.57	2.02	5.11		5.12	0.000490	0.64	117.57	218.69	0.14
30	393.59	ARI 20	92.99	2.02	5.26		5.27	0.000454	0.68	215.91	298.67	0.14
30	393.59	ARI 50	114.76	2.02	5.37		5.40	0.000464	0.83	246.72	277.34	0.15
30	393.59	ARI 100	132.64	2.02	5.48		5.50	0.000470	0.85	278.00	296.23	0.15
30	393.59	WBC Flow	132.64	2.02	5.48		5.50	0.000470	0.85	278.00	296.23	0.15
30	353.59	ARI 5	61.57	2.41	5.09		5.10	0.000499	0.48	164.97	249.01	0.14
30	353.59	ARI 20	92.99	2.41	5.24		5.26	0.000467	0.57	229.28	252.12	0.13
30	353.59	ARI 50	114.76	2.41	5.40		5.46	0.000490	0.65	258.02	253.39	0.14
30	353.59	ARI 100	132.64	2.41	5.56		5.57	0.000497	0.66	283.99	255.19	0.14
30	353.59	WBC Flow	132.64	2.41	5.56		5.57	0.000497	0.66	283.99	255.19	0.14
30	193.59	ARI 5	61.57	2.39	5.07		5.08	0.000322	0.36	207.97	257.62	0.11
30	193.59	ARI 20	92.99	2.39	5.22		5.23	0.000352	0.39	280.17	258.59	0.11
30	193.59	ARI 50	114.76	2.39	5.43		5.44	0.000301	0.42	312.75	259.03	0.11
30	193.59	ARI 100	132.64	2.39	5.60		5.60	0.000294	0.44	344.74	296.17	0.11
30	193.59	WBC Flow	132.64	2.39	5.60		5.60	0.000294	0.44	344.74	296.17	0.11
30	83.59	ARI 5	61.57	1.75	5.05		5.06	0.000115	0.25	284.03	284.41	0.07
30	83.59	ARI 20	92.99	1.75	5.21		5.21	0.000127	0.28	356.48	296.13	0.07
30	83.59	ARI 50	114.76	1.75	5.47		5.47	0.000147	0.32	389.66	351.41	0.08
30	83.59	ARI 100	132.64	1.75	5.53		5.53	0.000153	0.35	423.01	294.97	0.08
30	83.59	WBC Flow	132.64	1.75	5.53		5.53	0.000153	0.35	423.01	294.97	0.08
30	33.59	ARI 5	61.57	2.11	5.05	3.80	5.05	0.000302	0.28	245.59	308.03	0.00
30	33.59	ARI 20	92.99	2.11	5.36	4.04	5.36	0.000906	0.38	381.88	308.03	0.07
30	33.59	ARI 50	114.76	2.11	5.41	4.12	5.41	0.000112	0.39	434.57	308.03	0.07
30	33.59	ARI 100	132.64	2.11	5.52	4.16	5.52	0.000116	0.39	467.56	308.03	0.07
30	33.59	WBC Flow	132.64	2.11	5.52	4.16	5.52	0.000116	0.39	467.56	308.03	0.07

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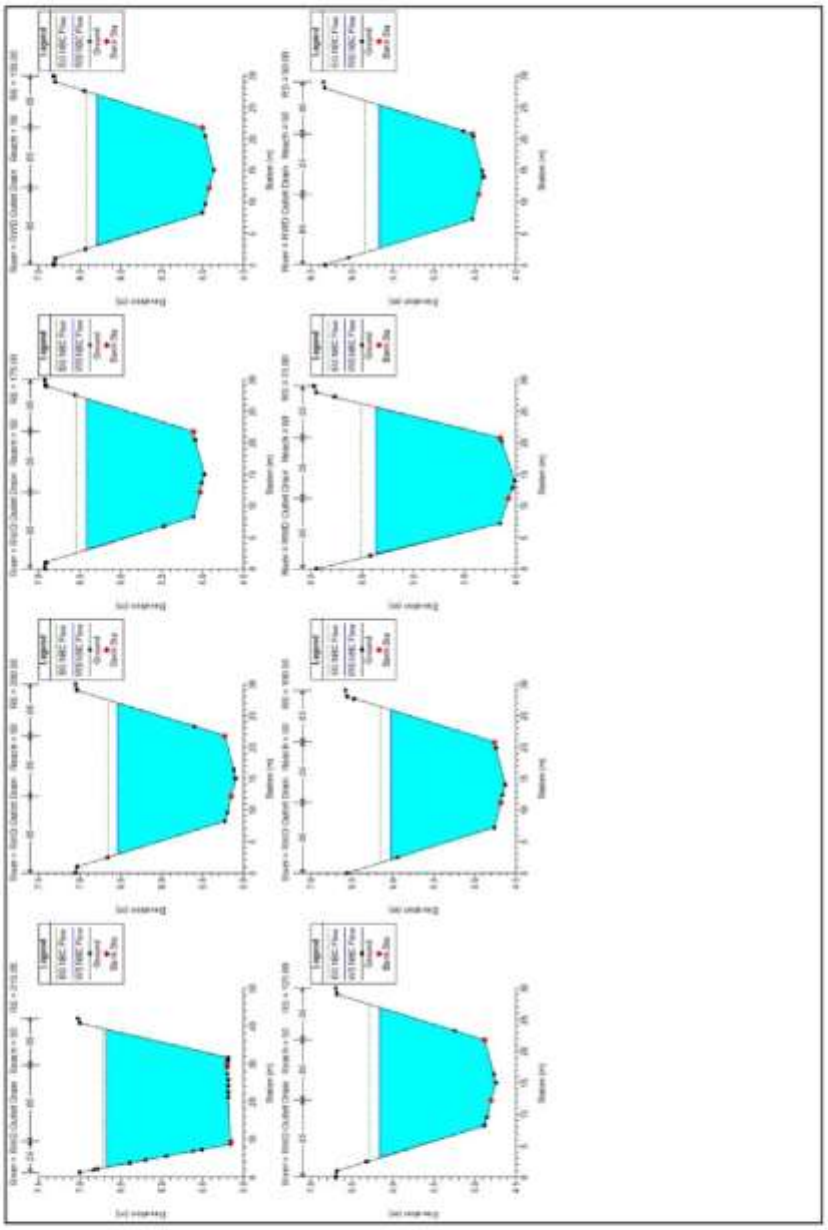

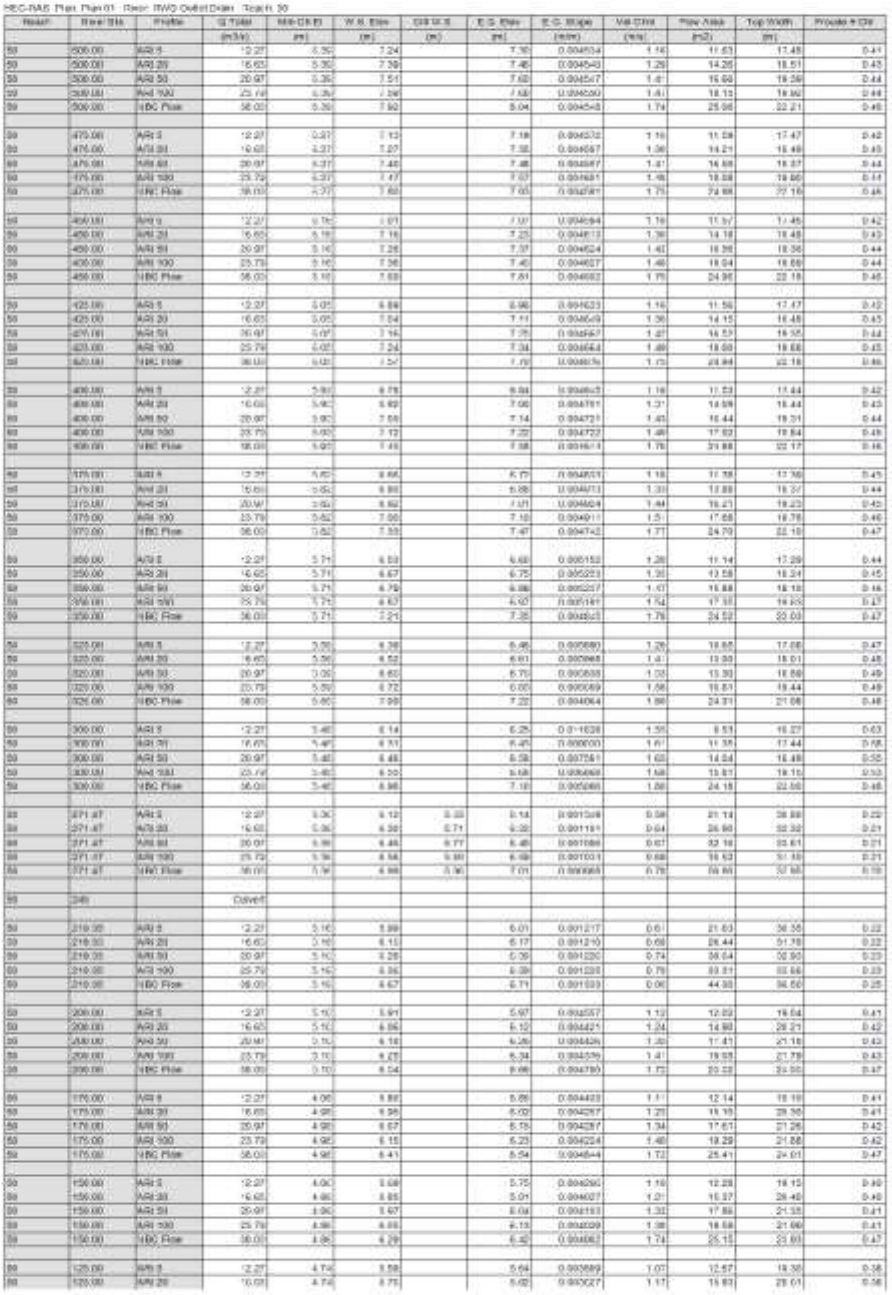

HEC-RAS Plan: Plan 01 River: TWD Outlet Drain Reach: 03 (Continued)

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
03	125.00	ARI 50	20.97	4.74	5.87		6.04	0.003776	1.29	16.37	21.53	0.40
03	125.00	ARI 100	23.79	4.74	5.95		6.03	0.003736	1.34	20.16	22.19	0.40
03	125.00	NBC Flow	36.93	4.74	6.16		6.29	0.005125	1.76	24.90	23.83	0.48
03	100.00	ARI 5	12.27	4.65	5.51		5.65	0.003393	1.02	13.27	19.56	0.36
03	100.00	ARI 20	16.65	4.65	5.68		5.73	0.003152	1.12	16.71	20.82	0.38
03	100.00	ARI 50	20.97	4.65	5.78		5.85	0.003399	1.24	19.00	21.61	0.39
03	100.00	ARI 100	23.79	4.65	5.87		5.94	0.003409	1.29	20.99	22.47	0.39
03	100.00	NBC Flow	36.93	4.65	6.10		6.16	0.004489	1.70	24.46	23.70	0.46
03	75.00	ARI 5	12.27	4.51	5.42		5.47	0.002647	0.97	14.04	19.68	0.33
03	75.00	ARI 20	16.65	4.51	5.61		5.66	0.002451	1.06	17.66	21.16	0.35
03	75.00	ARI 50	20.97	4.51	5.71		5.77	0.002994	1.20	19.90	22.13	0.36
03	75.00	ARI 100	23.79	4.51	5.80		5.86	0.002951	1.25	21.81	22.81	0.36
03	75.00	NBC Flow	36.93	4.51	5.97		6.01	0.004110	1.66	25.44	23.58	0.52
03	50.00	ARI 5	12.27	4.39	5.37		5.41	0.002244	0.90	15.24	20.58	0.30
03	50.00	ARI 20	16.65	4.39	5.55		5.59	0.002154	0.99	19.02	21.79	0.32
03	50.00	ARI 50	20.97	4.39	5.65		5.70	0.002514	1.13	21.12	22.55	0.33
03	50.00	ARI 100	23.79	4.39	5.75		5.79	0.002530	1.16	23.09	23.24	0.33
03	50.00	NBC Flow	36.93	4.39	5.97		6.04	0.003757	1.61	27.79	27.71	0.56

Plan: Plan 01 McCreadys Creek 556 RS: 960 Culv Group: Culvert #2 Profile: ARI 5

Q Culv Group (m3/s)	19.27	Culv Full Len (m)	
# Barrels	1	Culv Vel US (m/s)	1.77
Q Barrel (m3/s)	19.27	Culv Vel DS (m/s)	1.78
E.G. US. (m)	5.62	Culv Inv El Up (m)	2.40
W.S. US. (m)	5.59	Culv Inv El Dn (m)	2.40
E.G. DS (m)	5.44	Culv Frctn Ls (m)	0.01
W.S. DS (m)	5.41	Culv Exit Loss (m)	0.13
Delta EG (m)	0.17	Culv Entr Loss (m)	0.03
Delta WS (m)	0.18	Q Weir (m3/s)	
E.G. IC (m)	4.68	Weir Sta Lft (m)	
E.G. OC (m)	5.61	Weir Sta Rgt (m)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (m)	5.42	Weir Max Depth (m)	
Culv WS Outlet (m)	5.41	Weir Avg Depth (m)	
Culv Nml Depth (m)		Weir Flow Area (m2)	
Culv Crt Depth (m)	1.43	Min El Weir Flow (m)	6.10

Plan: Plan 01 McCreadys Creek 556 RS: 960 Culv Group: Culvert #2 Profile: ARI 20

Q Culv Group (m3/s)	29.43	Culv Full Len (m)	
# Barrels	1	Culv Vel US (m/s)	2.49
Q Barrel (m3/s)	29.43	Culv Vel DS (m/s)	2.50
E.G. US. (m)	6.07	Culv Inv El Up (m)	2.40
W.S. US. (m)	6.05	Culv Inv El Dn (m)	2.40
E.G. DS (m)	5.72	Culv Frctn Ls (m)	0.01
W.S. DS (m)	5.67	Culv Exit Loss (m)	0.27
Delta EG (m)	0.35	Culv Entr Loss (m)	0.06
Delta WS (m)	0.37	Q Weir (m3/s)	
E.G. IC (m)	5.45	Weir Sta Lft (m)	
E.G. OC (m)	6.07	Weir Sta Rgt (m)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (m)	5.69	Weir Max Depth (m)	
Culv WS Outlet (m)	5.67	Weir Avg Depth (m)	
Culv Nml Depth (m)		Weir Flow Area (m2)	
Culv Crt Depth (m)	1.90	Min El Weir Flow (m)	6.10

Plan: Plan 01 McCreadys Creek 556 RS: 960 Culv Group: Culvert #2 Profile: ARI 50

Q Culv Group (m3/s)	33.83	Culv Full Len (m)	
# Barrels	1	Culv Vel US (m/s)	2.75
Q Barrel (m3/s)	33.83	Culv Vel DS (m/s)	2.76
E.G. US. (m)	6.29	Culv Inv El Up (m)	2.40
W.S. US. (m)	6.27	Culv Inv El Dn (m)	2.40
E.G. DS (m)	5.85	Culv Frctn Ls (m)	0.01
W.S. DS (m)	5.80	Culv Exit Loss (m)	0.33
Delta EG (m)	0.44	Culv Entr Loss (m)	0.08
Delta WS (m)	0.47	Q Weir (m3/s)	4.33
E.G. IC (m)	5.75	Weir Sta Lft (m)	38.30
E.G. OC (m)	6.28	Weir Sta Rgt (m)	91.62
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (m)	5.62	Weir Max Depth (m)	0.20
Culv WS Outlet (m)	5.60	Weir Avg Depth (m)	0.14
Culv Nml Depth (m)		Weir Flow Area (m2)	7.72
Culv Crt Depth (m)	2.08	Min El Weir Flow (m)	6.10

Plan: Plan 01 McCreadys Creek 556 RS: 660 Culv Group: Culvert #2 Profile: ARI 100

Q Culv Group (m3/s)	36.88	Culv Full Len (m)	
# Barrels	1	Culv Vel US (m/s)	2.92
Q Barrel (m3/s)	36.88	Culv Vel DS (m/s)	2.94
E.G. US. (m)	6.44	Culv Inv El Up (m)	2.40
W.S. US. (m)	6.42	Culv Inv El Dn (m)	2.40
E.G. DS (m)	5.95	Culv Frctn Ls (m)	0.02
W.S. DS (m)	5.89	Culv Exit Loss (m)	0.38
Delta EG (m)	0.49	Culv Entr Loss (m)	0.09
Delta WS (m)	0.53	Q Weir (m3/s)	11.85
E.G. IC (m)	5.96	Weir Sta Lft (m)	32.96
E.G. OC (m)	6.43	Weir Sta Rgt (m)	96.71
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (m)	5.91	Weir Max Depth (m)	0.34
Culv WS Outlet (m)	5.89	Weir Avg Depth (m)	0.25
Culv Nml Depth (m)		Weir Flow Area (m2)	15.96
Culv Crt Depth (m)	2.20	Min El Weir Flow (m)	6.10

Plan: Plan 01 McCreadys Creek 556 RS: 660 Culv Group: Culvert #2 Profile: NBC Flow

Q Culv Group (m3/s)	36.88	Culv Full Len (m)	
# Barrels	1	Culv Vel US (m/s)	2.92
Q Barrel (m3/s)	36.88	Culv Vel DS (m/s)	2.94
E.G. US. (m)	6.44	Culv Inv El Up (m)	2.40
W.S. US. (m)	6.42	Culv Inv El Dn (m)	2.40
E.G. DS (m)	5.95	Culv Frctn Ls (m)	0.02
W.S. DS (m)	5.89	Culv Exit Loss (m)	0.38
Delta EG (m)	0.49	Culv Entr Loss (m)	0.09
Delta WS (m)	0.53	Q Weir (m3/s)	11.85
E.G. IC (m)	5.96	Weir Sta Lft (m)	32.96
E.G. OC (m)	6.43	Weir Sta Rgt (m)	96.71
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (m)	5.91	Weir Max Depth (m)	0.34
Culv WS Outlet (m)	5.89	Weir Avg Depth (m)	0.25
Culv Nml Depth (m)		Weir Flow Area (m2)	15.96
Culv Crt Depth (m)	2.20	Min El Weir Flow (m)	6.10

Plan: Plan 01 McCreadys Creek 556 RS: 660 Culv Group: Culvert #1 Profile: ARI 5

Q Culv Group (m3/s)	15.22	Culv Full Len (m)	
# Barrels	1	Culv Vel US (m/s)	1.40
Q Barrel (m3/s)	15.22	Culv Vel DS (m/s)	1.40
E.G. US. (m)	5.62	Culv Inv El Up (m)	2.40
W.S. US. (m)	5.59	Culv Inv El Dn (m)	2.40
E.G. DS (m)	5.44	Culv Frctn Ls (m)	0.00
W.S. DS (m)	5.41	Culv Exit Loss (m)	0.07
Delta EG (m)	0.17	Culv Entr Loss (m)	0.10
Delta WS (m)	0.18	Q Weir (m3/s)	
E.G. IC (m)	4.33	Weir Sta Lft (m)	
E.G. OC (m)	5.62	Weir Sta Rgt (m)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (m)	5.42	Weir Max Depth (m)	
Culv WS Outlet (m)	5.41	Weir Avg Depth (m)	
Culv Nml Depth (m)		Weir Flow Area (m2)	
Culv Crt Depth (m)	1.22	Min El Weir Flow (m)	6.10

Plan: Plan 01 McCreadys Creek 556 RS: 660 Culv Group: Culvert #1 Profile: ARI 20

Q Culv Group (m3/s)	23.14	Culv Full Len (m)	
# Barrels	1	Culv Vel US (m/s)	1.96
Q Barrel (m3/s)	23.14	Culv Vel DS (m/s)	1.96
E.G. US. (m)	6.07	Culv Inv El Up (m)	2.40
W.S. US. (m)	6.05	Culv Inv El Dn (m)	2.40
E.G. DS (m)	5.72	Culv Frctn Ls (m)	0.01
W.S. DS (m)	5.67	Culv Exit Loss (m)	0.15
Delta EG (m)	0.35	Culv Entr Loss (m)	0.20
Delta WS (m)	0.37	Q Weir (m3/s)	
E.G. IC (m)	4.98	Weir Sta Lft (m)	
E.G. OC (m)	6.07	Weir Sta Rgt (m)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (m)	5.68	Weir Max Depth (m)	
Culv WS Outlet (m)	5.67	Weir Avg Depth (m)	
Culv Nml Depth (m)		Weir Flow Area (m2)	
Culv Crt Depth (m)	1.61	Min El Weir Flow (m)	6.10

Plan: Plan 01 McCreadys Creek 556 RS: 660 Culv Group: Culvert #1 Profile: ARI 50

Q Culv Group (m3/s)	26.96	Culv Full Len (m)	
# Barrels	1	Culv Vel US (m/s)	2.20
Q Barrel (m3/s)	26.96	Culv Vel DS (m/s)	2.20
E.G. US. (m)	6.29	Culv Inv El Up (m)	2.40
W.S. US. (m)	6.27	Culv Inv El Dn (m)	2.40
E.G. DS (m)	5.85	Culv Frctn Ls (m)	0.01
W.S. DS (m)	5.80	Culv Exit Loss (m)	0.19
Delta EG (m)	0.44	Culv Entr Loss (m)	0.25
Delta WS (m)	0.47	Q Weir (m3/s)	4.33
E.G. IC (m)	5.26	Weir Sta Lft (m)	38.30
E.G. OC (m)	6.30	Weir Sta Rgt (m)	91.62
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (m)	5.81	Weir Max Depth (m)	0.20
Culv WS Outlet (m)	5.80	Weir Avg Depth (m)	0.14
Culv Nml Depth (m)		Weir Flow Area (m2)	7.72
Culv Crt Depth (m)	1.79	Min El Weir Flow (m)	6.10

Plan: Plan 01 McCreadys Creek 556 RS: 660 Culv Group: Culvert #1 Profile: ARI 100

Q Culv Group (m3/s)	29.11	Culv Full Len (m)	
# Barrels	1	Culv Vel US (m/s)	2.31
Q Barrel (m3/s)	29.11	Culv Vel DS (m/s)	2.32
E.G. US. (m)	6.44	Culv Inv El Up (m)	2.40
W.S. US. (m)	6.42	Culv Inv El Dn (m)	2.40
E.G. DS (m)	5.95	Culv Frctn Ls (m)	0.01
W.S. DS (m)	5.89	Culv Exit Loss (m)	0.21
Delta EG (m)	0.49	Culv Entr Loss (m)	0.27
Delta WS (m)	0.53	Q Weir (m3/s)	11.85
E.G. IC (m)	5.42	Weir Sta Lft (m)	32.96
E.G. OC (m)	6.44	Weir Sta Rgt (m)	98.71
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (m)	5.90	Weir Max Depth (m)	0.34
Culv WS Outlet (m)	5.89	Weir Avg Depth (m)	0.25
Culv Nml Depth (m)		Weir Flow Area (m2)	15.96
Culv Crt Depth (m)	1.88	Min El Weir Flow (m)	6.10

Plan: Plan 01 McCreadys Creek 556 RS: 660 Culv Group: Culvert #1 Profile: NBC Flow

Q Culv Group (m3/s)	29.11	Culv Full Len (m)	
# Barrels	1	Culv Vel US (m/s)	2.31
Q Barrel (m3/s)	29.11	Culv Vel DS (m/s)	2.32
E.G. US. (m)	6.44	Culv Inv El Up (m)	2.40
W.S. US. (m)	6.42	Culv Inv El Dn (m)	2.40
E.G. DS (m)	5.95	Culv Frctn Ls (m)	0.01
W.S. DS (m)	5.89	Culv Exit Loss (m)	0.21
Delta EG (m)	0.49	Culv Entr Loss (m)	0.27
Delta WS (m)	0.53	Q Weir (m3/s)	11.85
E.G. IC (m)	5.42	Weir Sta Lft (m)	32.96
E.G. OC (m)	6.44	Weir Sta Rgt (m)	96.71
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (m)	5.90	Weir Max Depth (m)	0.34
Culv WS Outlet (m)	5.89	Weir Avg Depth (m)	0.25
Culv Nml Depth (m)		Weir Flow Area (m2)	15.96
Culv Crt Depth (m)	1.88	Min El Weir Flow (m)	6.10

Plan: Plan 01 McCreadys Creek 556 RS: 660 Culv Group: Culvert #3 Profile: ARI 5

Q Culv Group (m3/s)	15.22	Culv Full Len (m)	
# Barrels	1	Culv Vel US (m/s)	1.40
Q Barrel (m3/s)	15.22	Culv Vel DS (m/s)	1.40
E.G. US. (m)	5.62	Culv Inv El Up (m)	2.40
W.S. US. (m)	5.59	Culv Inv El Dn (m)	2.40
E.G. DS (m)	5.44	Culv Frctn Ls (m)	0.00
W.S. DS (m)	5.41	Culv Exit Loss (m)	0.07
Delta EG (m)	0.17	Culv Entr Loss (m)	0.10
Delta WS (m)	0.18	Q Weir (m3/s)	
E.G. IC (m)	4.34	Weir Sta Lft (m)	
E.G. OC (m)	5.62	Weir Sta Rgt (m)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (m)	5.42	Weir Max Depth (m)	
Culv WS Outlet (m)	5.41	Weir Avg Depth (m)	
Culv Nml Depth (m)		Weir Flow Area (m2)	
Culv Crt Depth (m)	1.22	Min El Weir Flow (m)	6.10

Plan: Plan 01 McCreadys Creek 556 RS: 660 Culv Group: Culvert #3 Profile: ARI 20

Q Culv Group (m3/s)	23.14	Culv Full Len (m)	
# Barrels	1	Culv Vel US (m/s)	1.96
Q Barrel (m3/s)	23.14	Culv Vel DS (m/s)	1.96
E.G. US. (m)	6.07	Culv Inv El Up (m)	2.40
W.S. US. (m)	6.05	Culv Inv El Dn (m)	2.40
E.G. DS (m)	5.72	Culv Frctn Ls (m)	0.01
W.S. DS (m)	5.67	Culv Exit Loss (m)	0.15
Delta EG (m)	0.35	Culv Entr Loss (m)	0.20
Delta WS (m)	0.37	Q Weir (m3/s)	
E.G. IC (m)	4.98	Weir Sta Lft (m)	
E.G. OC (m)	6.07	Weir Sta Rgt (m)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (m)	5.68	Weir Max Depth (m)	
Culv WS Outlet (m)	5.67	Weir Avg Depth (m)	
Culv Nml Depth (m)		Weir Flow Area (m2)	
Culv Crt Depth (m)	1.61	Min El Weir Flow (m)	6.10

Plan: Plan 01 McCreadys Creek 556 RS: 660 Culv Group: Culvert #3 Profile: ARI 50

Q Culv Group (m3/s)	26.96	Culv Full Len (m)	
# Barrels	1	Culv Vel US (m/s)	2.20
Q Barrel (m3/s)	26.96	Culv Vel DS (m/s)	2.20
E.G. US. (m)	6.29	Culv Inv El Up (m)	2.40
W.S. US. (m)	6.27	Culv Inv El Dn (m)	2.40
E.G. DS (m)	5.85	Culv Frctn Ls (m)	0.01
W.S. DS (m)	5.80	Culv Exit Loss (m)	0.19
Delta EG (m)	0.44	Culv Entr Loss (m)	0.25
Delta WS (m)	0.47	Q Weir (m3/s)	4.33
E.G. IC (m)	5.27	Weir Sta Lft (m)	38.30
E.G. OC (m)	6.30	Weir Sta Rgt (m)	91.62
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (m)	5.81	Weir Max Depth (m)	0.20
Culv WS Outlet (m)	5.80	Weir Avg Depth (m)	0.14
Culv Nml Depth (m)		Weir Flow Area (m2)	7.72
Culv Crt Depth (m)	1.79	Min El Weir Flow (m)	6.10

Plan: Plan 01 McCreadys Creek 556 RS: 660 Culv Group: Culvert #3 Profile: ARI 100

Q Culv Group (m3/s)	29.11	Culv Full Len (m)	
# Barrels	1	Culv Vel US (m/s)	2.31
Q Barrel (m3/s)	29.11	Culv Vel DS (m/s)	2.32
E.G. US. (m)	6.44	Culv Inv El Up (m)	2.40
W.S. US. (m)	6.42	Culv Inv El Dn (m)	2.40
E.G. DS (m)	5.95	Culv Frctn Ls (m)	0.01
W.S. DS (m)	5.89	Culv Exit Loss (m)	0.21
Delta EG (m)	0.49	Culv Entr Loss (m)	0.27
Delta WS (m)	0.53	Q Weir (m3/s)	11.85
E.G. IC (m)	5.42	Weir Sta Lft (m)	32.96
E.G. OC (m)	6.44	Weir Sta Rgt (m)	96.71
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (m)	5.90	Weir Max Depth (m)	0.34
Culv WS Outlet (m)	5.89	Weir Avg Depth (m)	0.25
Culv Nml Depth (m)		Weir Flow Area (m2)	15.96
Culv Crt Depth (m)	1.88	Min El Weir Flow (m)	6.10

Plan: Plan 01 McCreadys Creek 556 RS: 660 Culv Group: Culvert #3 Profile: NBC Flow

Q Culv Group (m3/s)	29.11	Culv Full Len (m)	
# Barrels	1	Culv Vel US (m/s)	2.31
Q Barrel (m3/s)	29.11	Culv Vel DS (m/s)	2.32
E.G. US. (m)	6.44	Culv Inv El Up (m)	2.40
W.S. US. (m)	6.42	Culv Inv El Dn (m)	2.40
E.G. DS (m)	5.95	Culv Frctn Ls (m)	0.01
W.S. DS (m)	5.89	Culv Exit Loss (m)	0.21
Delta EG (m)	0.49	Culv Entr Loss (m)	0.27
Delta WS (m)	0.53	Q Weir (m3/s)	11.85
E.G. IC (m)	5.42	Weir Sta Lft (m)	32.96
E.G. OC (m)	6.44	Weir Sta Rgt (m)	96.71
Culvert Control	Outlet	Weir Submerg	0.00
Culv WS Inlet (m)	5.90	Weir Max Depth (m)	0.34
Culv WS Outlet (m)	5.89	Weir Avg Depth (m)	0.25
Culv Nml Depth (m)		Weir Flow Area (m2)	15.96
Culv Crt Depth (m)	1.88	Min El Weir Flow (m)	6.10

Plan: Plan 01 RWD Outlet Drain 50 RS: 245 Culv Group: Culvert #1 Profile: ARI 5

Q Culv Group (m3/s)	12.27	Culv Full Len (m)	
# Barrels	4	Culv Vel US (m/s)	1.69
Q Barrel (m3/s)	3.07	Culv Vel DS (m/s)	1.26
E.G. US. (m)	6.14	Culv Inv El Up (m)	5.36
W.S. US. (m)	6.12	Culv Inv El Dn (m)	5.18
E.G. DS (m)	6.01	Culv Frctn Ls (m)	0.04
W.S. DS (m)	5.99	Culv Exit Loss (m)	0.06
Delta EG (m)	0.13	Culv Entr Loss (m)	0.03
Delta WS (m)	0.13	Q Weir (m3/s)	
E.G. IC (m)	6.11	Weir Sta Lft (m)	
E.G. OC (m)	6.14	Weir Sta Rgt (m)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (m)	5.96	Weir Max Depth (m)	
Culv WS Outlet (m)	5.99	Weir Avg Depth (m)	
Culv Nml Depth (m)	0.41	Weir Flow Area (m2)	
Culv Crt Depth (m)	0.47	Min El Weir Flow (m)	7.85

Plan: Plan 01 RWD Outlet Drain 50 RS: 245 Culv Group: Culvert #1 Profile: ARI 20

Q Culv Group (m3/s)	16.65	Culv Full Len (m)	
# Barrels	4	Culv Vel US (m/s)	1.82
Q Barrel (m3/s)	4.16	Culv Vel DS (m/s)	1.43
E.G. US. (m)	6.32	Culv Inv El Up (m)	5.36
W.S. US. (m)	6.30	Culv Inv El Dn (m)	5.18
E.G. DS (m)	6.17	Culv Frctn Ls (m)	0.04
W.S. DS (m)	6.15	Culv Exit Loss (m)	0.08
Delta EG (m)	0.15	Culv Entr Loss (m)	0.03
Delta WS (m)	0.16	Q Weir (m3/s)	
E.G. IC (m)	6.28	Weir Sta Lft (m)	
E.G. OC (m)	6.32	Weir Sta Rgt (m)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (m)	6.12	Weir Max Depth (m)	
Culv WS Outlet (m)	6.15	Weir Avg Depth (m)	
Culv Nml Depth (m)	0.50	Weir Flow Area (m2)	
Culv Crt Depth (m)	0.58	Min El Weir Flow (m)	7.85

Plan: Plan 01 RWD Outlet Drain 50 RS: 245 Culv Group: Culvert #1 Profile: ARI 50

Q Culv Group (m3/s)	20.97	Culv Full Len (m)	
# Barrels	4	Culv Vel US (m/s)	1.96
Q Barrel (m3/s)	5.24	Culv Vel DS (m/s)	1.59
E.G. US. (m)	6.49	Culv Inv El Up (m)	5.36
W.S. US. (m)	6.46	Culv Inv El Dn (m)	5.18
E.G. DS (m)	6.30	Culv Frctn Ls (m)	0.04
W.S. DS (m)	6.28	Culv Exit Loss (m)	0.10
Delta EG (m)	0.18	Culv Entr Loss (m)	0.04
Delta WS (m)	0.19	Q Weir (m3/s)	
E.G. IC (m)	6.44	Weir Sta Lft (m)	
E.G. OC (m)	6.49	Weir Sta Rgt (m)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (m)	6.25	Weir Max Depth (m)	
Culv WS Outlet (m)	6.28	Weir Avg Depth (m)	
Culv Nml Depth (m)	0.59	Weir Flow Area (m2)	
Culv Crt Depth (m)	0.68	Min El Weir Flow (m)	7.85

Plan: Plan 01 RWD Outlet Drain 50 RS: 245 Culv Group: Culvert #1 Profile: ARI 100

Q Culv Group (m3/s)	23.79	Culv Full Len (m)	
# Barrels	4	Culv Vel US (m/s)	2.04
Q Barrel (m3/s)	5.95	Culv Vel DS (m/s)	1.68
E.G. US. (m)	6.59	Culv Inv El Up (m)	5.36
W.S. US. (m)	6.56	Culv Inv El Dn (m)	5.18
E.G. DS (m)	6.39	Culv Frctn Ls (m)	0.04
W.S. DS (m)	6.36	Culv Exit Loss (m)	0.12
Delta EG (m)	0.20	Culv Entr Loss (m)	0.04
Delta WS (m)	0.20	Q Weir (m3/s)	
E.G. IC (m)	6.54	Weir Sta Lft (m)	
E.G. OC (m)	6.59	Weir Sta Rgt (m)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (m)	6.33	Weir Max Depth (m)	
Culv WS Outlet (m)	6.36	Weir Avg Depth (m)	
Culv Nml Depth (m)	0.64	Weir Flow Area (m2)	
Culv Crt Depth (m)	0.74	Min El Weir Flow (m)	7.85

Plan: Plan 01 RWD Outlet Drain 50 RS: 245 Culv Group: Culvert #1 Profile: NBC Flow

Q Culv Group (m3/s)	38.00	Culv Full Len (m)	
# Barrels	4	Culv Vel US (m/s)	2.47
Q Barrel (m3/s)	9.50	Culv Vel DS (m/s)	2.12
E.G. US. (m)	7.02	Culv Inv El Up (m)	5.36
W.S. US. (m)	6.99	Culv Inv El Dn (m)	5.18
E.G. DS (m)	6.71	Culv Frctn Ls (m)	0.05
W.S. DS (m)	6.67	Culv Exit Loss (m)	0.19
Delta EG (m)	0.30	Culv Entr Loss (m)	0.06
Delta WS (m)	0.31	Q Weir (m3/s)	
E.G. IC (m)	6.99	Weir Sta Lft (m)	
E.G. OC (m)	7.02	Weir Sta Rgt (m)	
Culvert Control	Outlet	Weir Submerg	
Culv WS Inlet (m)	6.64	Weir Max Depth (m)	
Culv WS Outlet (m)	6.67	Weir Avg Depth (m)	
Culv Nml Depth (m)	0.88	Weir Flow Area (m2)	
Culv Crt Depth (m)	1.01	Min El Weir Flow (m)	7.85

Appendix E
Rosewood Drive Culvert – Design Information

Email from Farr Engineers and HEC-RAS results

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Katherine Visini

From: Truong Nguyen [tnguyen@farrengineers.com.au]
Sent: 17 May, 2011 1:27 PM
To: 'Colin Kelleher'
Cc: Andrew Farr; Katherine Visini
Subject: 209137 Northern Beaches Central (Stage 2) - McCready's Creek Inlet Channel Analysis (Preliminary)

Col

In relation to the drainage channel downstream of the Rosewood Drive crossing (I have nominally called it *'McCready's Creek Inlet Channel'*), we have undertaken a preliminary HEC-RAS analysis using the suggested alignment shown in the attached (PDF titled *'MRC Suggested Alignment.pdf'*). This file was provided with the *Northern Beaches Central DA-2008-19*. The total channel width i.e. bed with and bank egaste to 30m to fit within the proposed total easement width as shown on the aforementioned drawing.

Channel section geometry as follows:

- 24m base width
- 1:3 side batters
- Manning's 'n' for both base and batters = 0.043 for long grass (as per *MRC Engineering Guideline D5 Stormwater Drainage Design*)

The analysis has been undertaken with the geometry for the **Rosewood Drive crossing downstream invert level of 6.5m AHD** and the **outlet of the channel at McCready's Creek assumed to be approximately 5.0m AHD**.

The analysis was undertaken for the following scenarios:

- Scenario 1 - Q100 flow (38 cumecs) with tailwater condition being *McCready's Creek Q100 of 7.9m AHD*;
- Scenario 2 - Q100 flow (38 cumecs) with tailwater condition of *Normal Depth i.e. uniform flow condition within channel*; and
- Scenario 3 - Nominal channel flow of 10 cumecs with tailwater condition being *McCready's Creek Q100 of 7.9m AHD*.

For all scenarios, the normal depth boundary condition value (for upstream, and downstream for Scenario 2), was determined by trial-and-error convergence.

The results for each scenario as detailed with the attached PDFs are as follows:

Scenario 1

Channel Upstream Water Level (at Rosewood Drive) = **8.07m AHD**
Channel Downstream Water Level (at McCready's Creek) = **7.90m AHD**

Scenario 2

Channel Upstream Water Level (at Rosewood Drive) = **7.82m AHD**
Channel Downstream Water Level (at McCready's Creek) = **7.46m AHD**

Scenario 3

Channel Upstream Water Level (at Rosewood Drive) = **7.91m AHD**
Channel Downstream Water Level (at McCready's Creek) = **7.90m AHD**

As can be seen, the highest water level which can be expected at the Rosewood Drive crossing is 8.07m AHD, which occurs in Scenario 1. Scenario 1 assumes the peak flow from the channel's catchment coincides with the McCready's Creek peak, which we feel is an unlikely scenario as there would be some time difference between peak discharges arriving at the point in question. The extent is unable to be quantified at this point, however this conservative assumption yields the above-mentioned result.

17-May-11

You will note when viewing the attached 'perspectives', that the Q100 flows for the channel are unable to be carried by the assumed geometry - even for a 'normal depth' tailwater condition (Scenario 2) i.e. where the outlet water level does not control. The spill over the banks is likely a result of the bend incorporated into the channel. Whilst not yet tested, I believe this may not result if the channel were a straight channel into McCready's Creek.

Please provide any comments.

Regards

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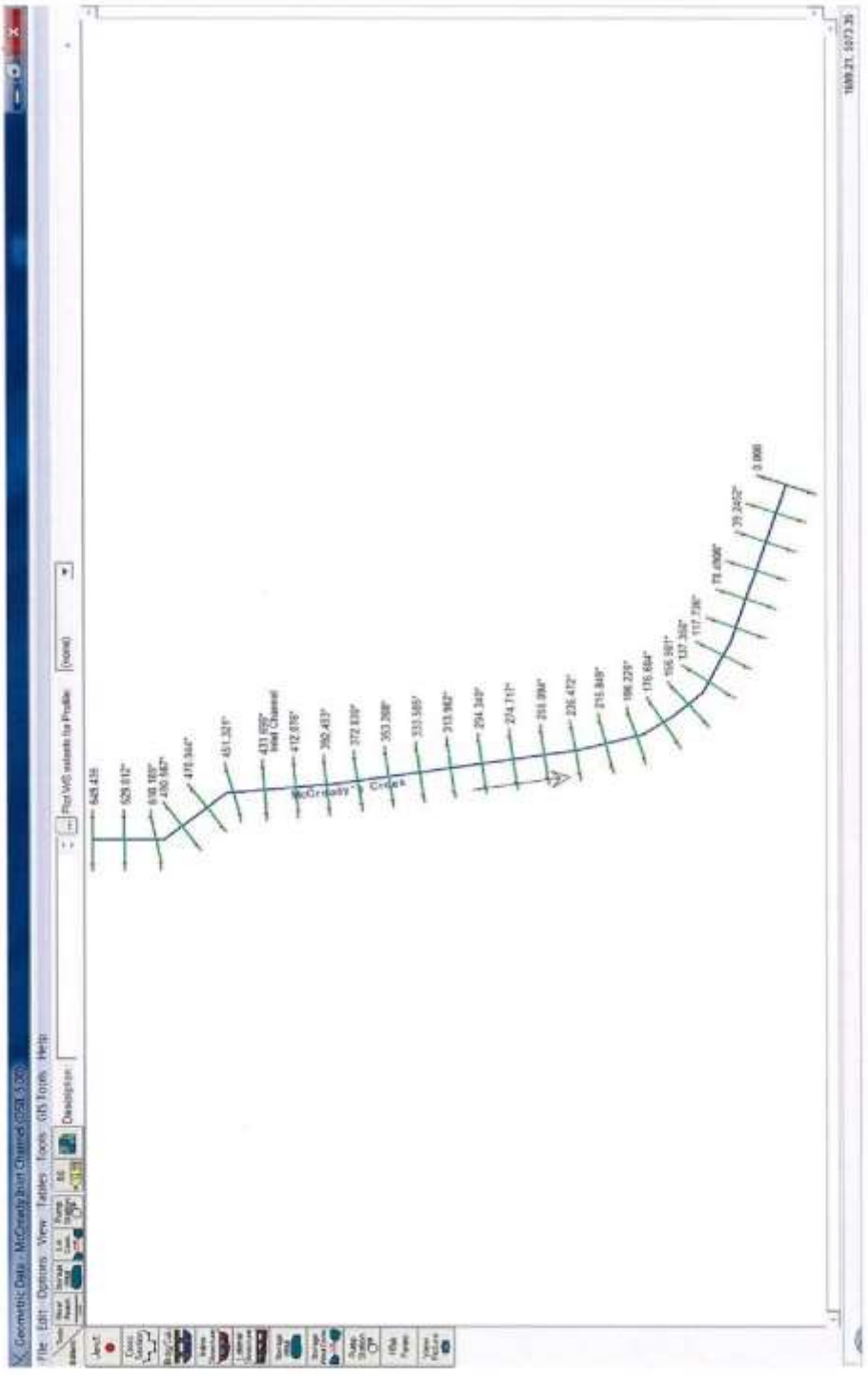
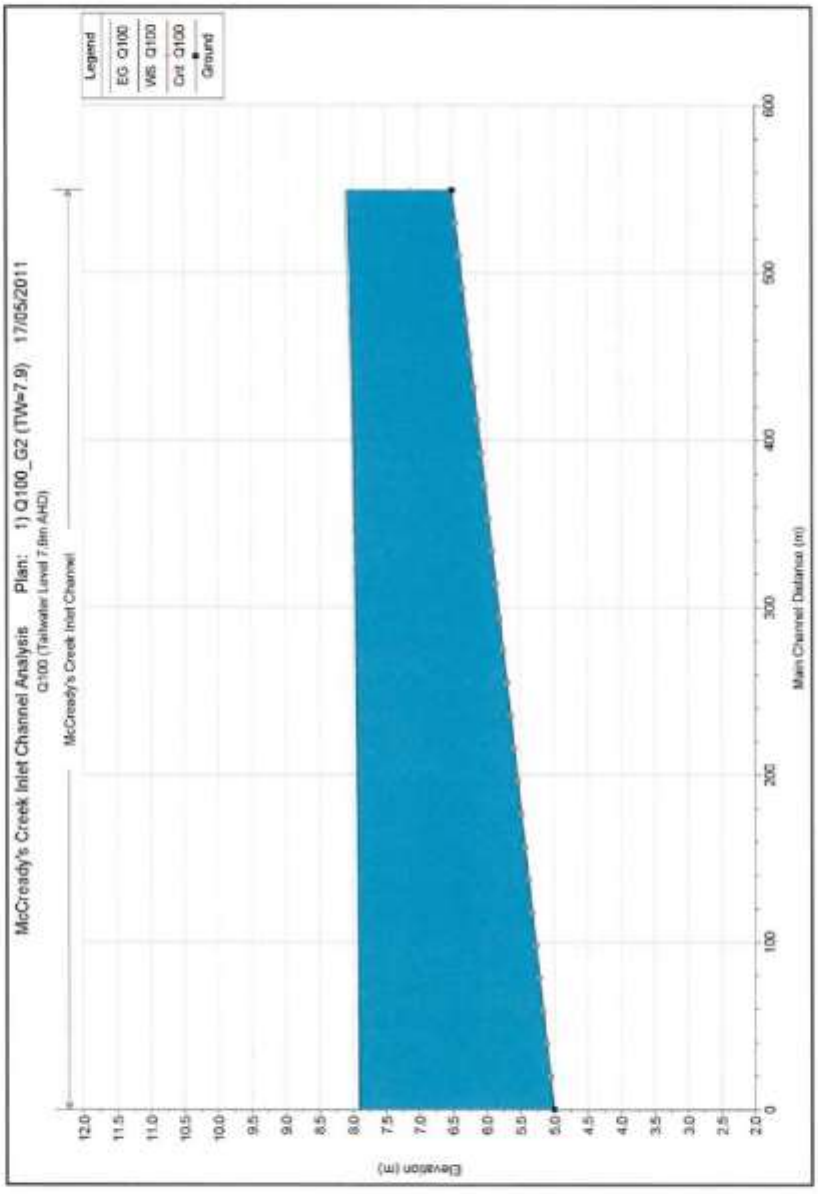
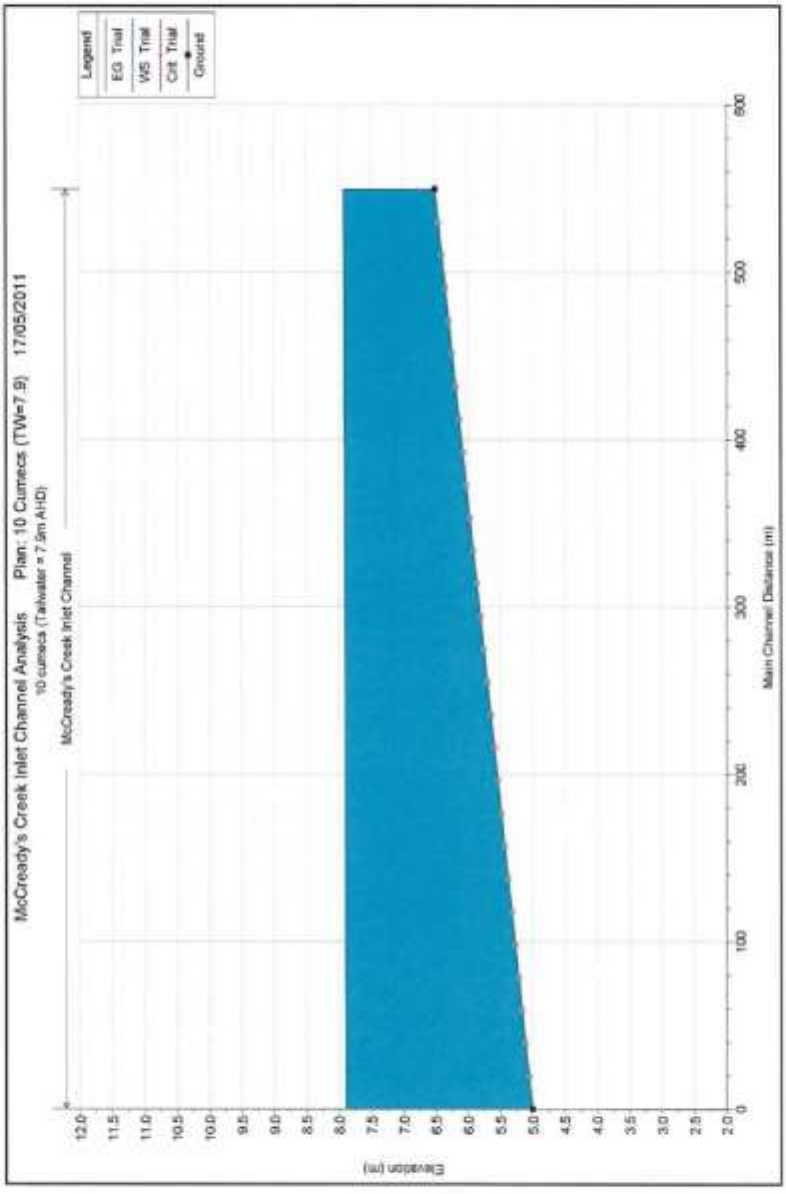
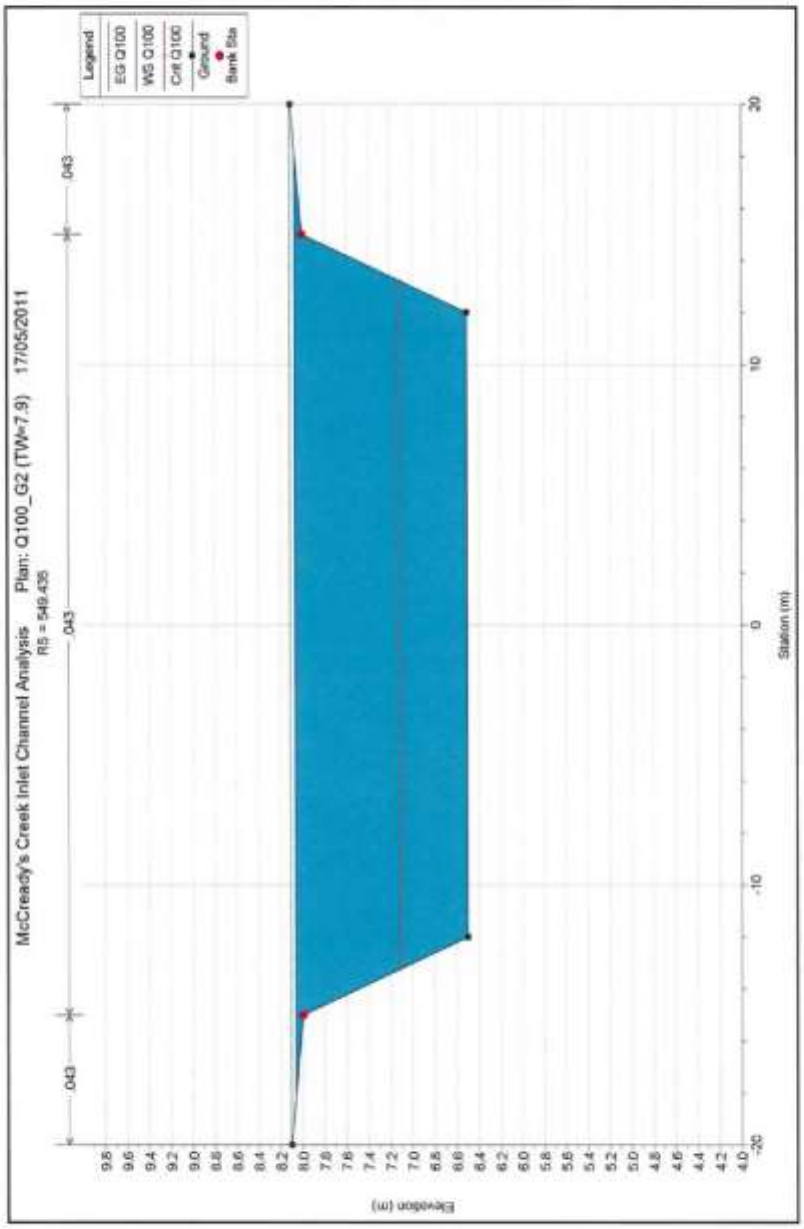
17-May-11




McCready's Creek Inlet Channel Analysis Plan: 1) Q100_G2 (TW=7.9) 17/05/2011
Q100 (Tailwater Level 7.9m AHD)
McCready's Creek Inlet Channel
Legend
EG Q100
WS Q100
Crit Q100
Ground
Elevation (m)
Main Channel Distance (m)


McCready's Creek Inlet Channel Analysis Plan: 10 Cumecs (TW=7.9) 17/05/2011
10 cumecs (Tailwater = 7.9m AHD)
McCready's Creek Inlet Channel
Legend
EG Trial
WS Trial
Crit Trial
Ground
Elevation (m)
Main Channel Distance (m)


McCready's Creek Inlet Channel Analysis Plan: Q100_G2 (TW=7.9) 17/05/2011
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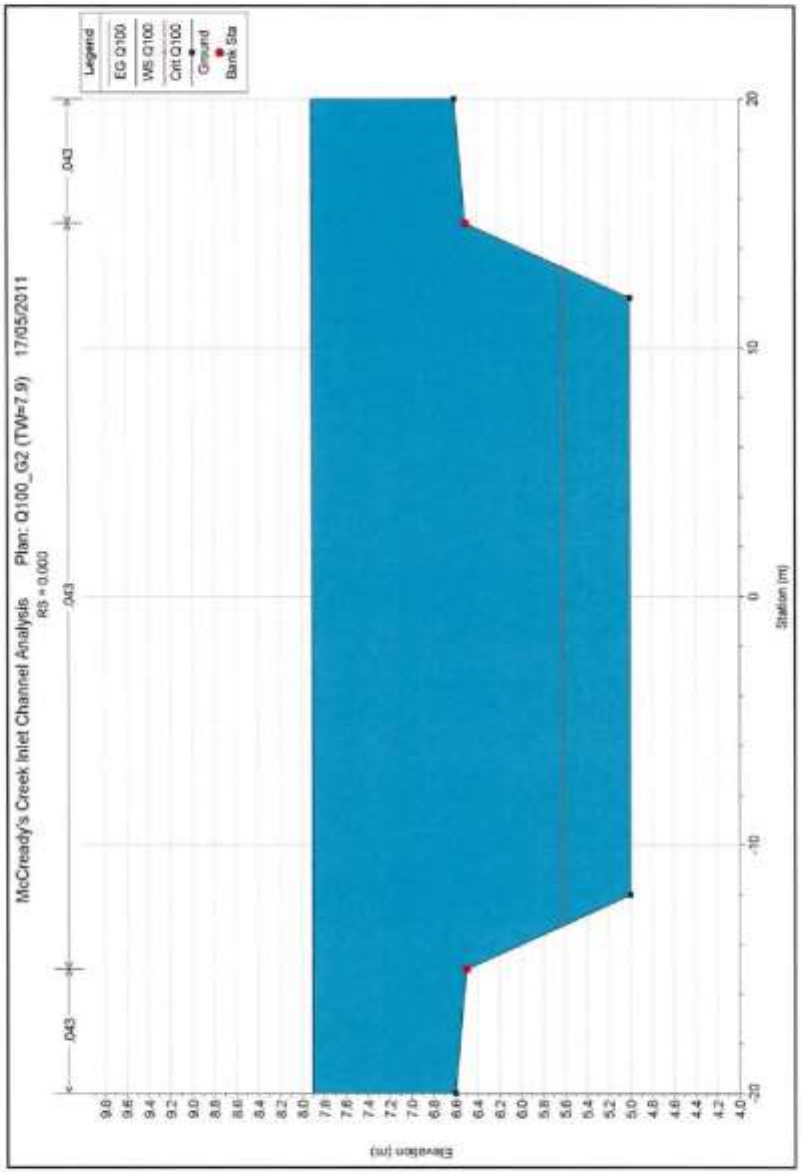
Legend
EG Q100
WS Q100
Crit Q100
Ground
Bank Sta
Elevation (m)
Station (m)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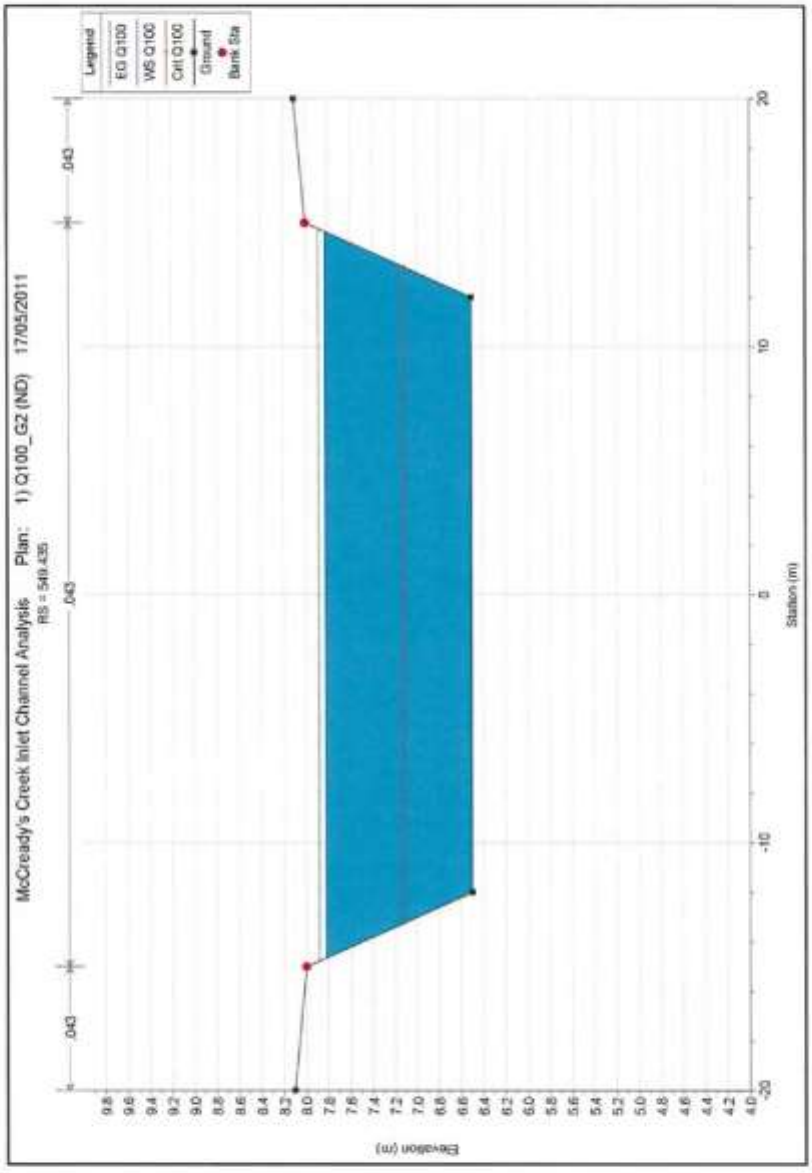
Crit Q100
Ground
Bank Sta
Elevation (m)
Station (m)


McCready's Creek Inlet Channel Analysis Plan: 1) Q100_G2 (ND) 17/05/2011
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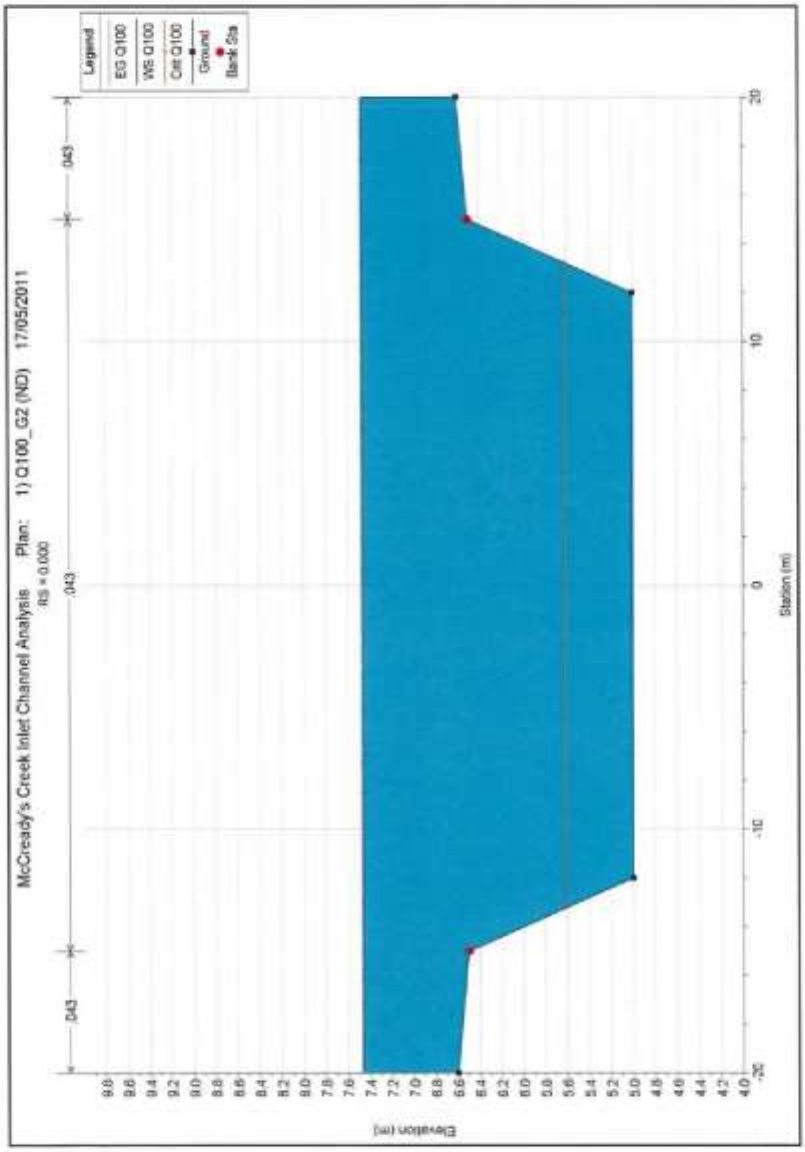
Legend
EG Q100
WS Q100
Crit Q100
Ground
Bank Sta
Elevation (m)
Station (m)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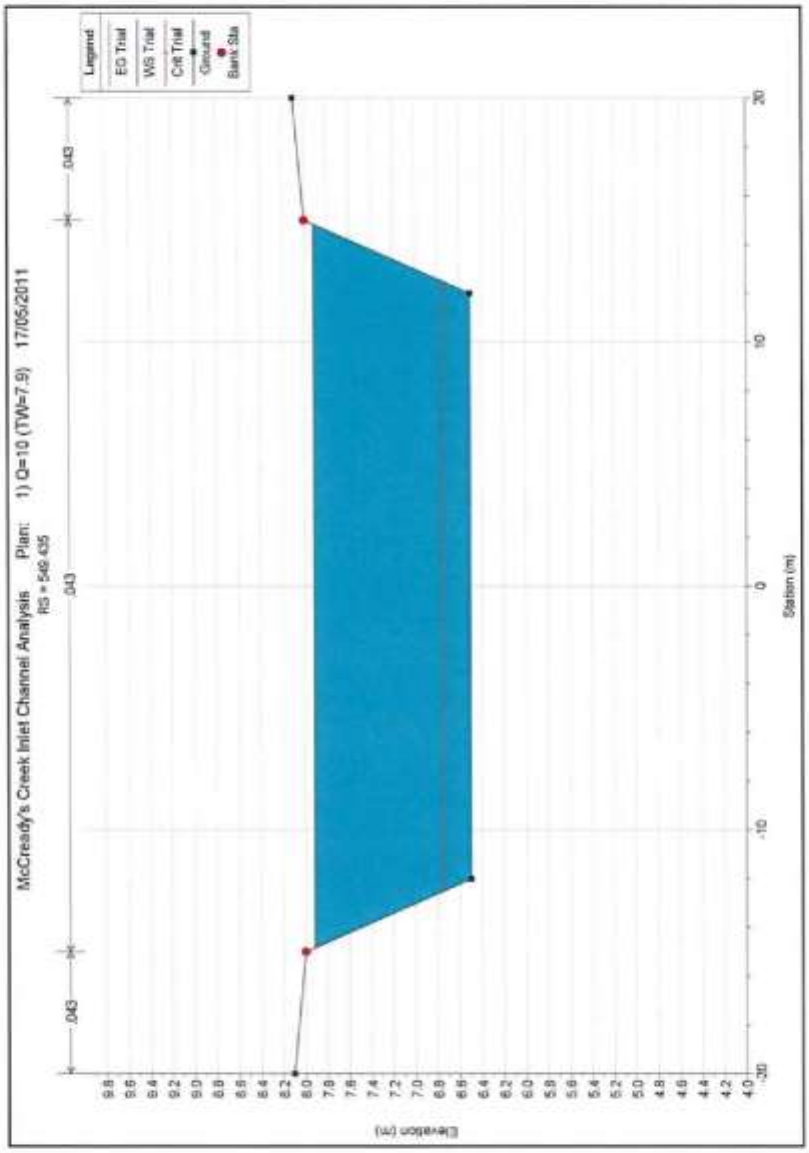
Elevation (m)
Station (m)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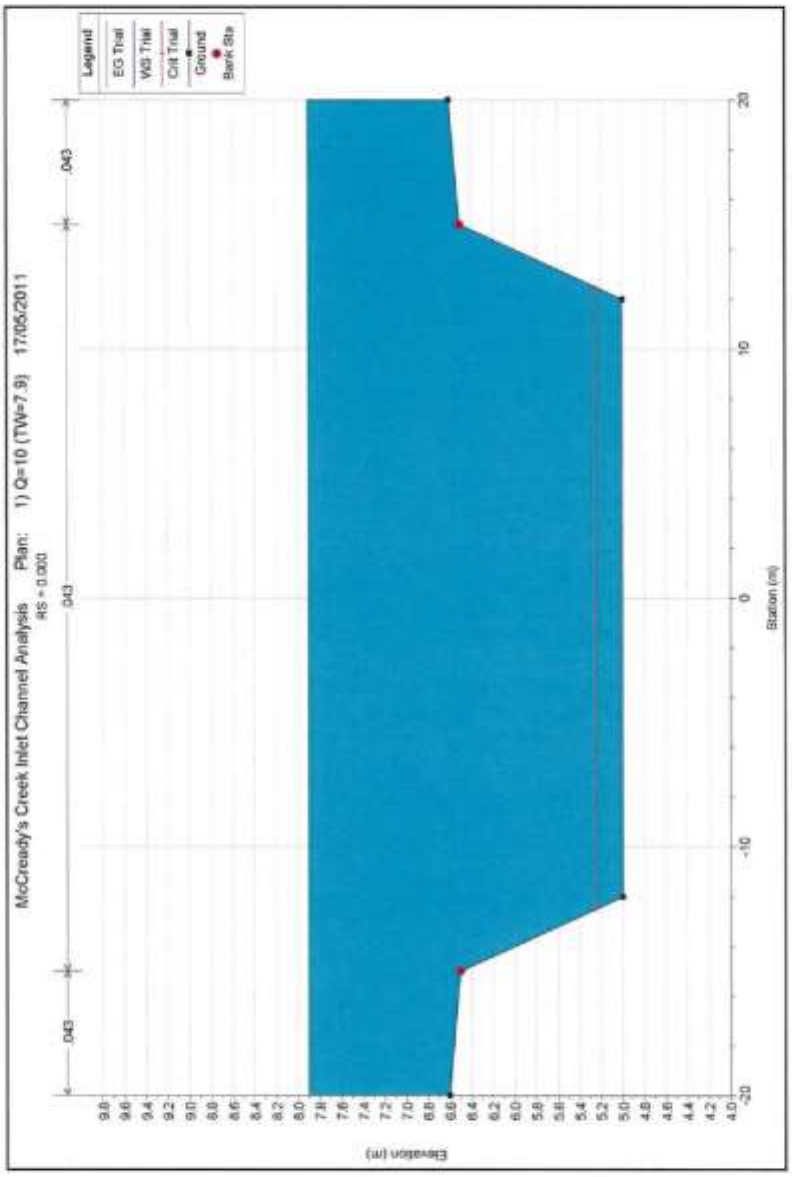
WS Trial
Crit Trial
Ground
Bank Sta
Elevation (m)
Station (m)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Crit Trial
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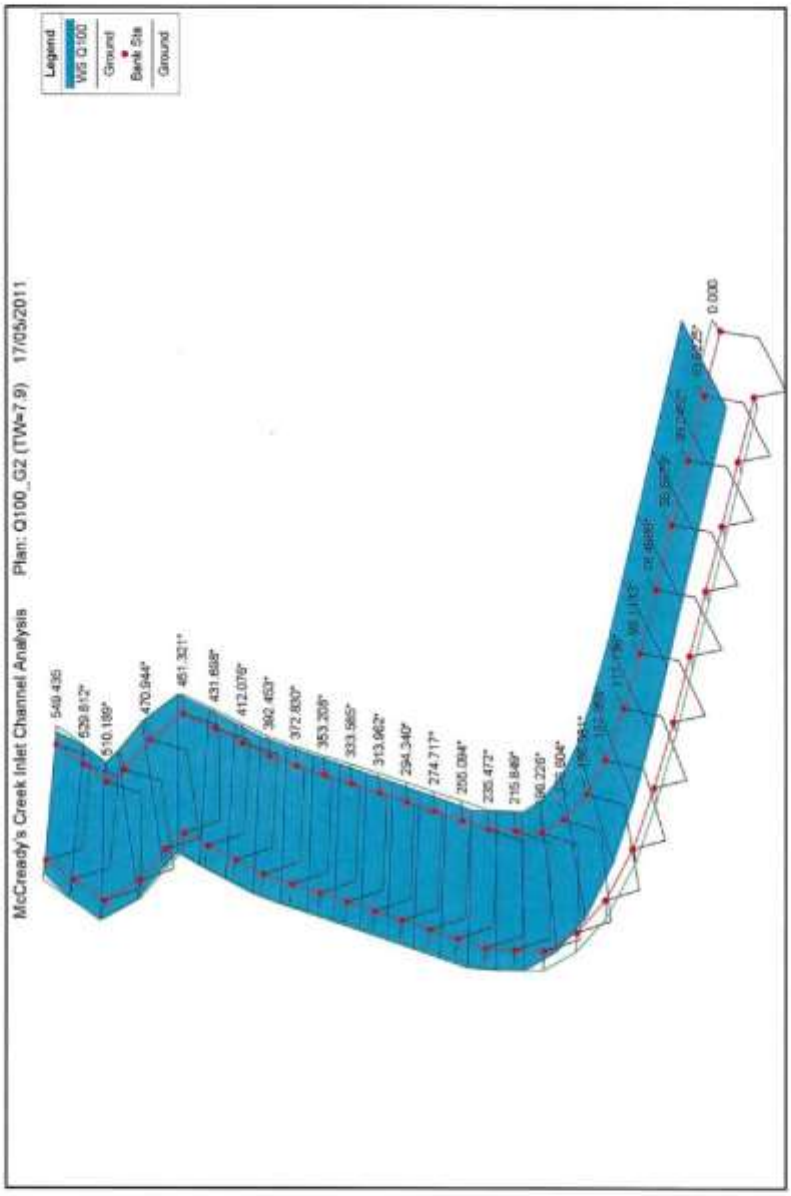
Bank Sta
Elevation (m)
Station (m)


Legend
WS Q100
Ground
Bank Sta
Ground
McCready's Creek Inlet Channel Analysis
Plan: Q100_G2 (TW=7.9)
17/05/2011
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529.812*
510.189*
470.944*
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431.698*
412.076*
392.453*
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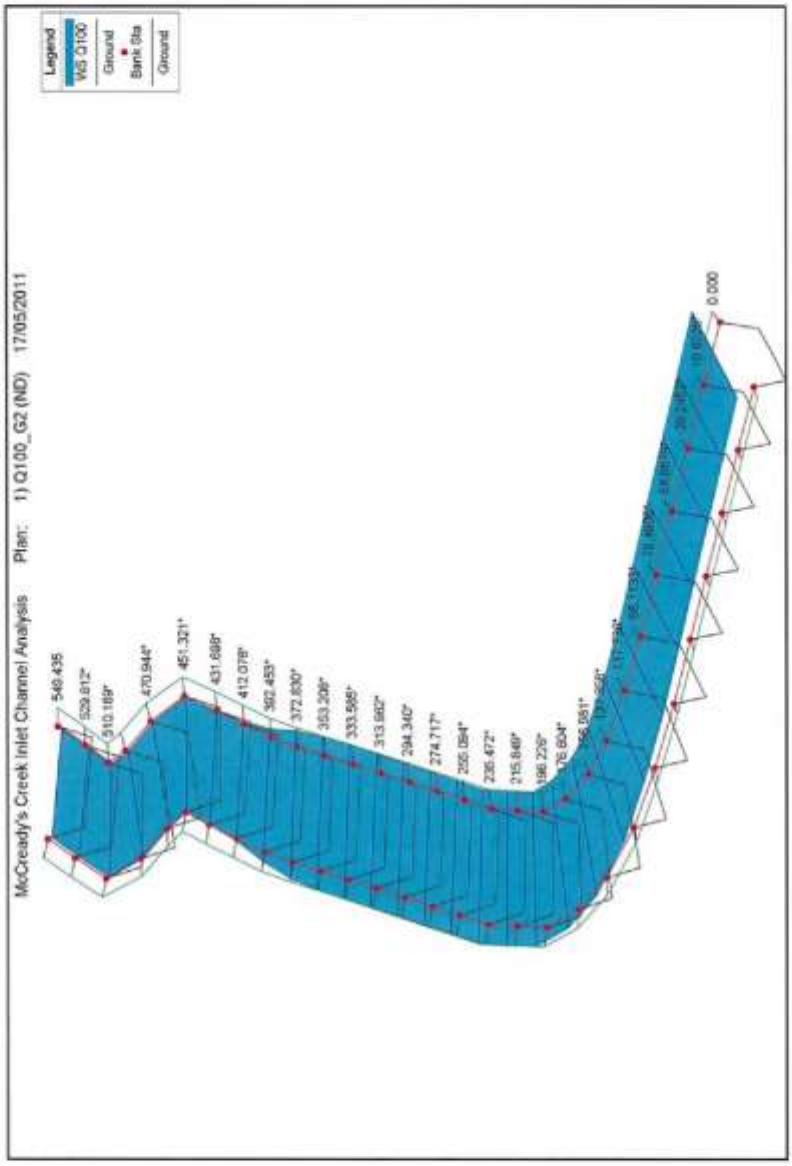
Legend
WS Q100
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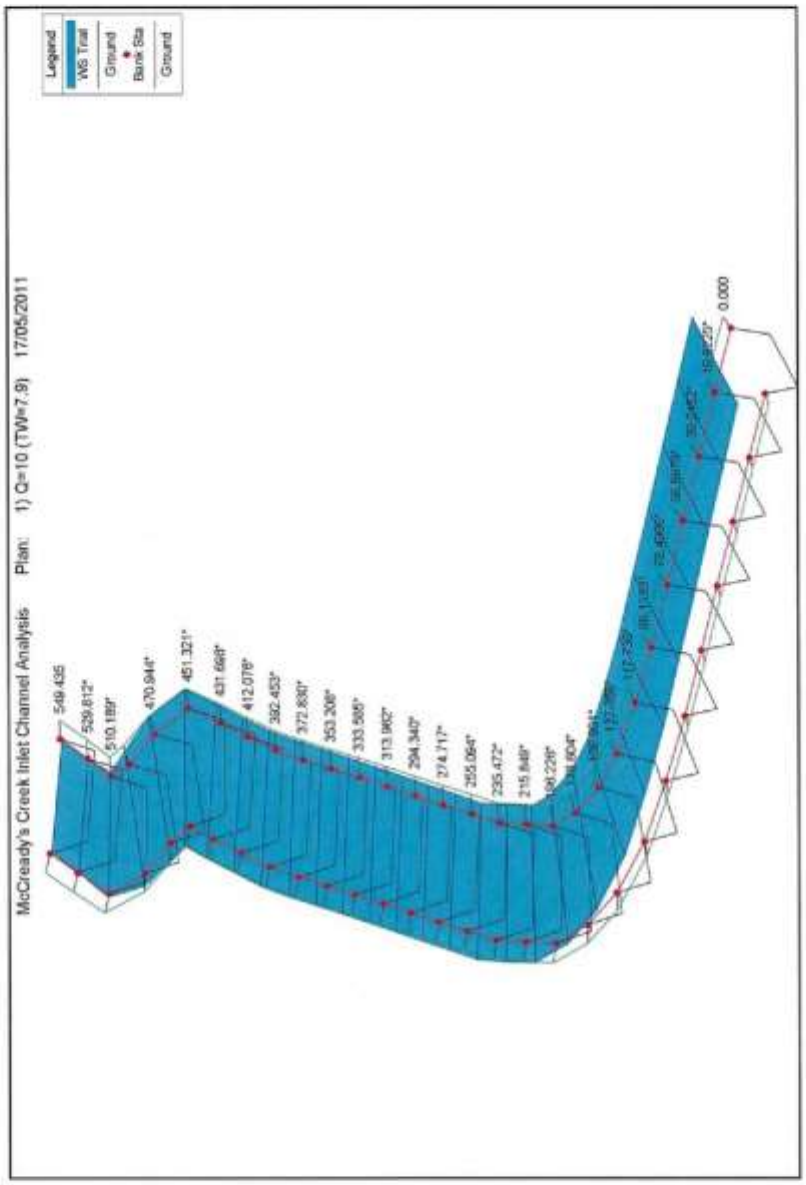
Bank Sta
Ground
McCready's Creek Inlet Channel Analysis Plan: 1) Q100_G2 (MD) 17/05/2011
549.435
529.812*
510.189*
470.944*
451.321*
431.699*
412.078*
392.453*
372.830*
353.206*
333.585*
313.962*
294.340*
274.717*
255.094*
235.472*
215.849*
196.226*
176.604*
0.000


Legend
WS Trial
Ground
Bank Sta
Ground
McCready's Creek Inlet Channel Analysis Plan: 1) Q=10 (TW=7.9) 17/05/2011
549.435
529.612*
510.189*
470.944*
451.321*
431.698*
412.076*
392.453*
372.830*
353.208*
333.585*
313.962*
294.340*
274.717*
255.094*
235.472*
215.849*
196.226*
176.604*
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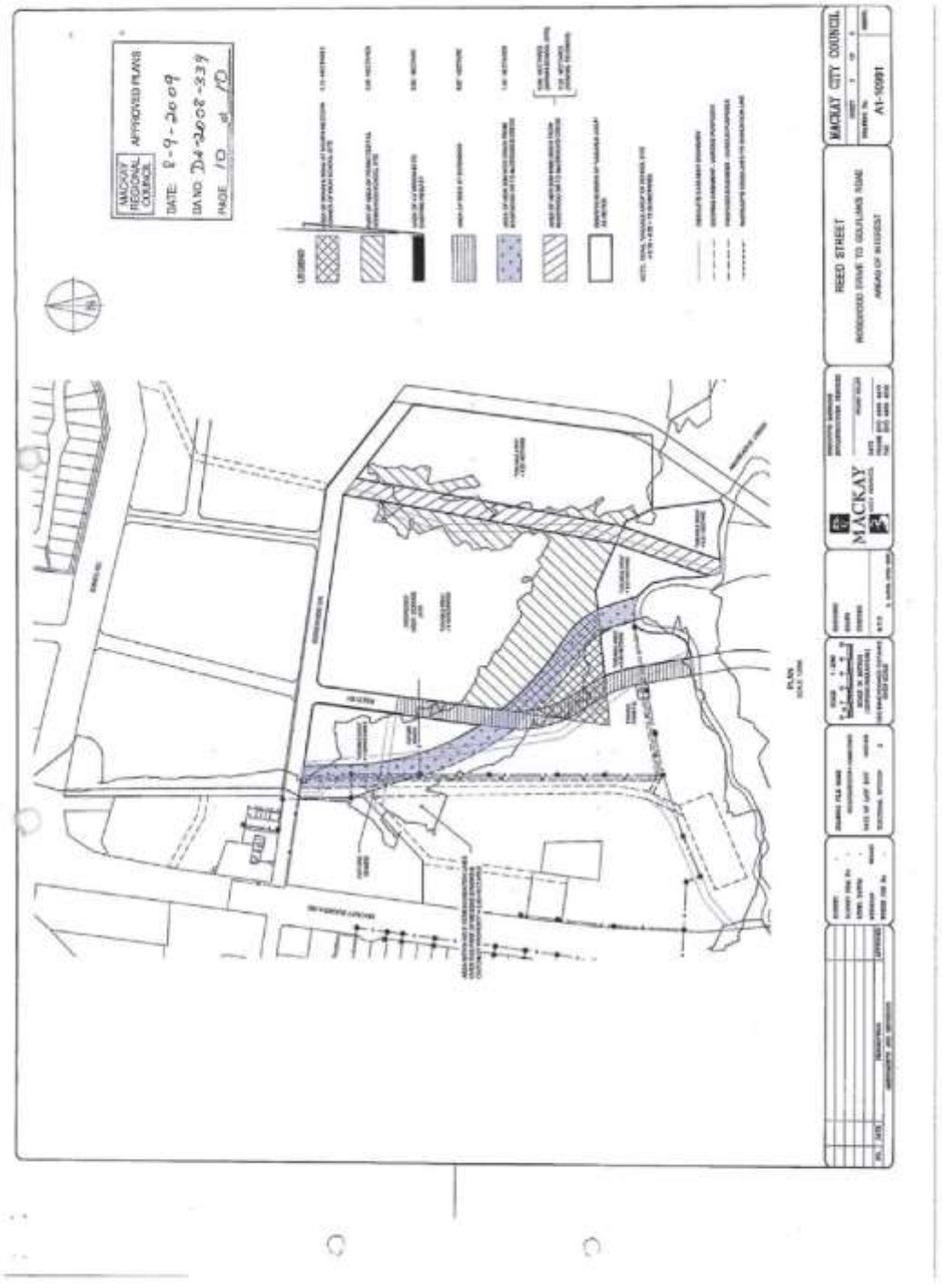
137.358*
117.736*
98.113*
78.490*
58.868*
39.245*
19.622*
0.000


MACKAY REGIONAL COUNCIL
APPROVED PLANS
DATE: 8-9-2009
DA NO: D4-2008-239
PAGE 10 of 10
MACKAY CITY COUNCIL
REED STREET
MACKAY

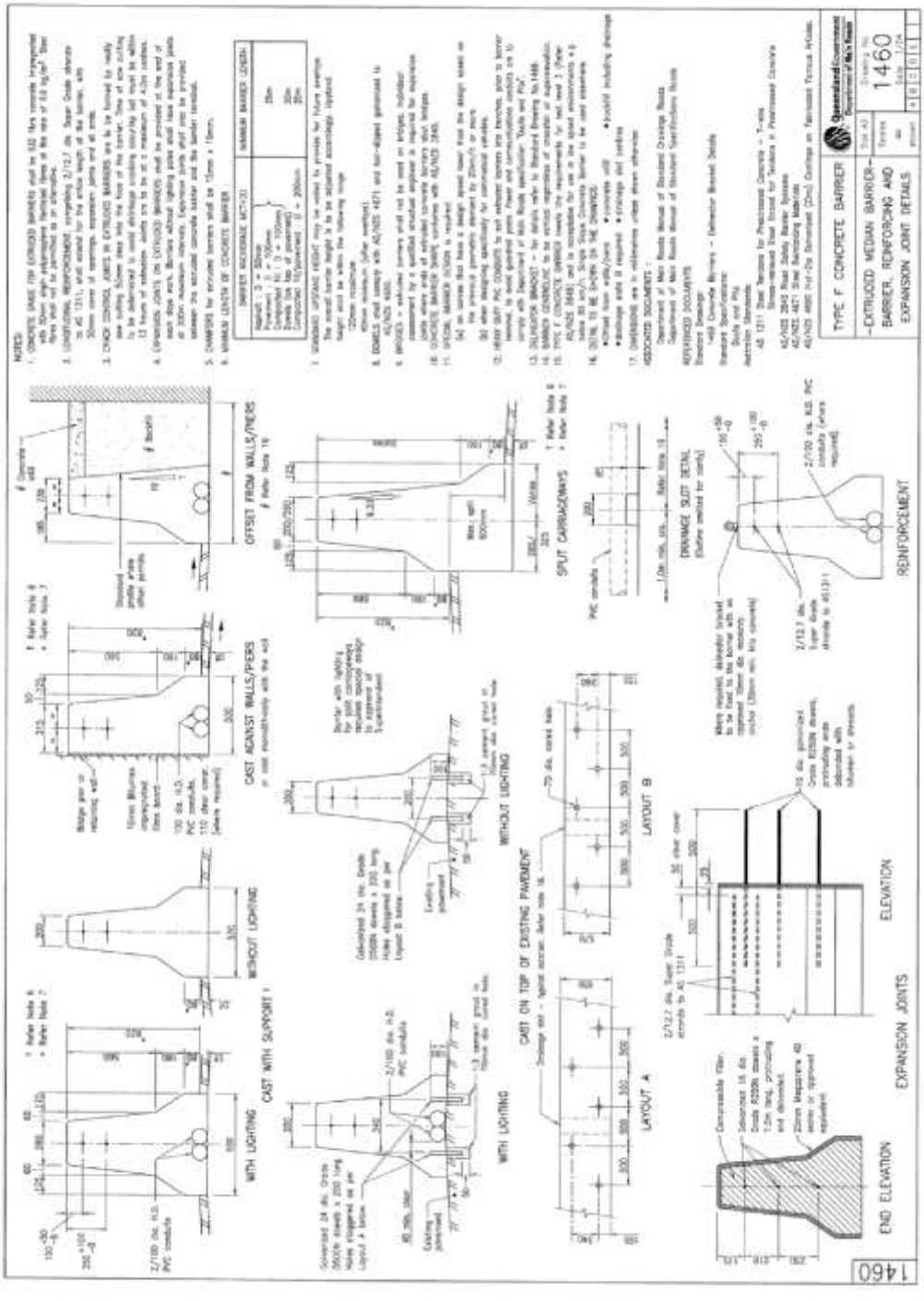
Appendix F
Safety Barrier Standard Drawings

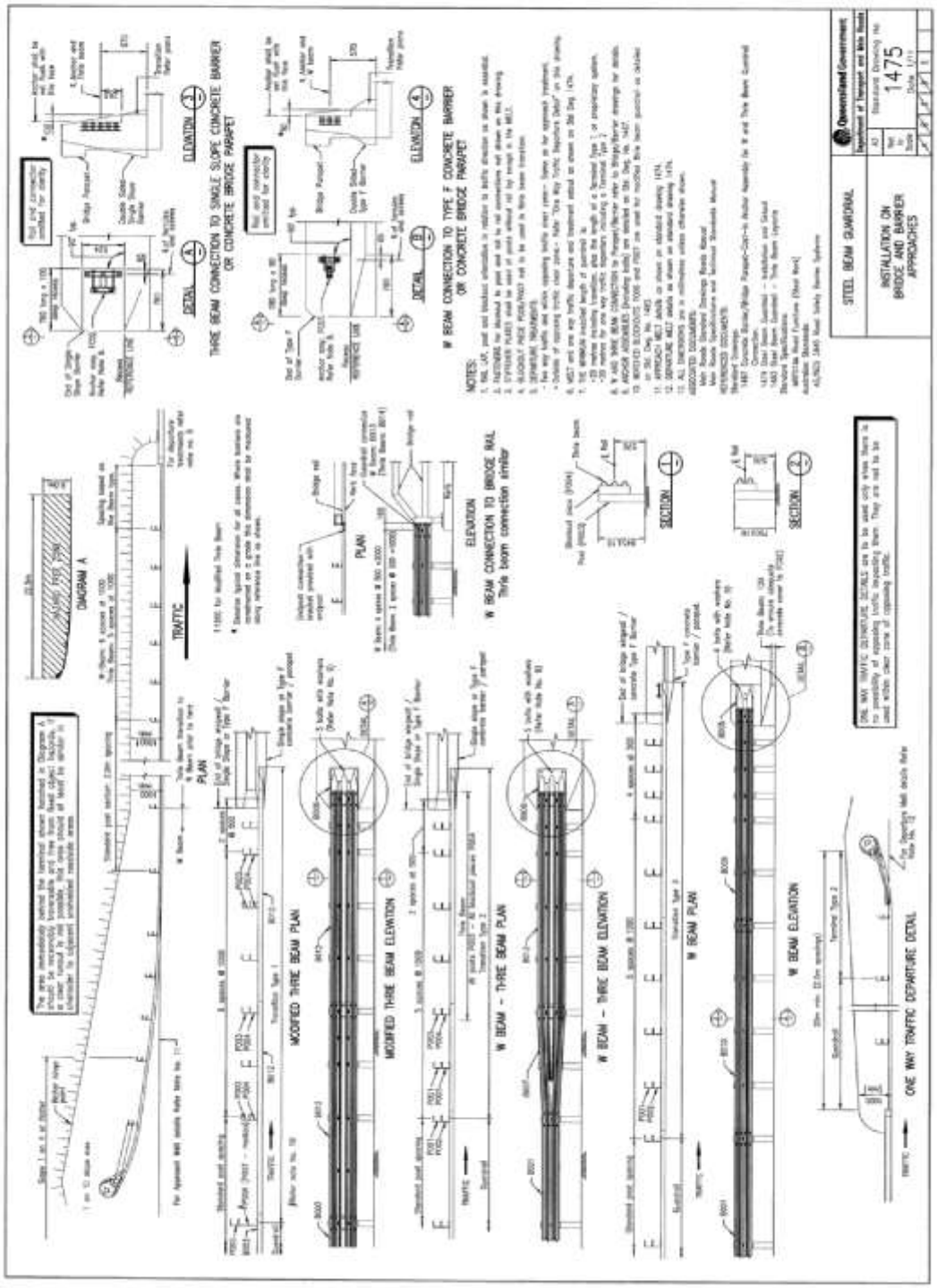
TMR 1460 – Type F Concrete Barrier

TMR 1475 – Steel Beam Guardrail

Ingall CAB-STD-61 – ET2000 Plus NCHRP 350 Test Level 3

aurecon Leading. Vibrant. Global.


TYPE F CONCRETE BARRIER
EXTRUDED MEDIAN BARRIER-
BARRIER, REINFORCING AND
EXPANSION JOINT DETAILS
1460
CAST WITH SUPPORT
WITHOUT LIGHTING
WITH LIGHTING
OFFSET FROM WALLS/PIERS
CAST AGAINST WALLS/PIERS
SPLIT CARRIAGEWAYS
DRAINAGE SLOT DETAIL
REINFORCEMENT
CAST ON TOP OF EXISTING PAVEMENT
LAYOUT A
LAYOUT B
END ELEVATION
EXPANSION JOINTS
ELEVATION


STEEL BEAM GUARDRAIL
INSTALLATION ON BRIDGE AND BARRIER APPROACHES
Queensland Government
Department of Transport and Main Roads
Standard Drawing No 1475
THREE BEAM CONNECTION TO SINGLE SLOPE CONCRETE BARRIER OR CONCRETE BRIDGE PARAPET
W BEAM CONNECTION TO TYPE F CONCRETE BARRIER OR CONCRETE BRIDGE PARAPET
NOTES:
DIAGRAM A
TRAFFIC
PLAN
ELEVATION
DETAIL
MODIFIED THREE BEAM PLAN
MODIFIED THREE BEAM ELEVATION
W BEAM – THREE BEAM PLAN
W BEAM – THREE BEAM ELEVATION
W BEAM PLAN
W BEAM ELEVATION
SECTION
ONE WAY TRAFFIC DEPARTURE DETAIL

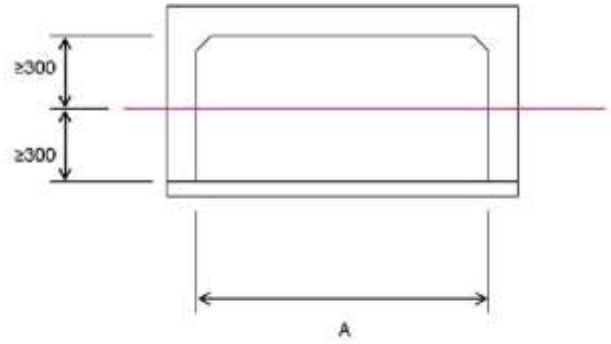
Appendix G
Waterway Barrier Works
Exert

WWBW01 – Appendix 2: Amber Crossing Design Example

aurecon Leading. Vibrant. Global.

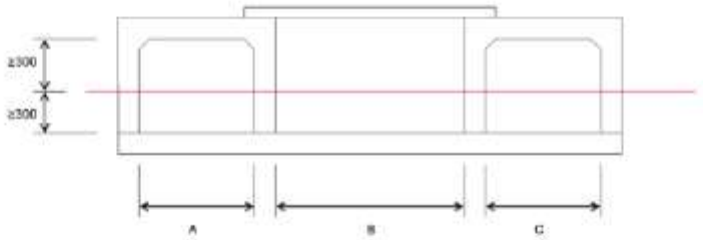
Amber waterways

Single cell >300 mm below bed level, cell aperture >2.4 m or 100% main channel width.



A ≥ 2400 or 100% of main channel width.

All cells ≥300 mm below bed level, combined cell aperture aperture ≥2.4 m or 100% main channel width.



A+B+C ≥ 2400 or 100% of main channel width.

Appendix H
Budget Cost Estimate

Estimate

Preliminary Rocla Quote for Major Culvert Structures

aurecon Leading. Vibrant. Global.

MACKAY REGIONAL COUNCIL

REED STREET RECONSTRUCTION

School Access TO Kerisdale Development

SUBURB : Rural View

SUB PROGRAM : [Sub Program]

COST No. : [Cost Number] ROAD No. : [Road Number]

REVISION DATE : [Month] / [Year]

SUMMARY OF ESTIMATE

1001	SITE ESTABLISHMENT	$ 25,100
1002	PROVISION FOR TRAFFIC	$ 18,000
1003	ENVIRONMENTAL MANAGEMENT	$ 186,810
2001	DRAINAGE	$ 1,644,049
2002	PROTECTIVE TREATMENTS	$ 221,460
3001	EARTHWORKS	$ 752,641
3003	LANDSCAPE AND REVEGETATION WORKS	$ 200,205
4001	UNBOUND PAVEMENTS	$ 377,359
5001	SPRAYED BITUMINOUS SURFACING	$ 14,756
5002	ASPHALT PAVEMENTS	$ 125,220
6001	ROAD FURNITURE	$ 143,450
6002	PAVEMENT MARKING	$ 7,869
6003	ELECTRICAL CONDUIT AND PITS	$ 80,300
6004	TRAFFIC SIGNAL AND ROAD LIGHTING FOOTINGS	$ 21,000
	WATER AND SEWERAGE RETICULATION	$ 398,831
	MISCELLANEOUS MRC TASKS	$ 15,000
	SPECIFIED WORKS TOTAL	**$ 4,232,050**
22000	DEVELOPMENT PHASE WORK MANAGEMENT	$ 235,461
32000	IMPLEMENTATION PHASE WORK MANAGEMENT	$ 179,742
41000	FINALISATION PHASE PROJECT MANAGEMENT	$ 15,000
50000	PRINCIPAL'S OBLIGATIONS	$ 1,453,318
60000	PRINCIPAL'S CONTINGENCY ITEMS	$ 1,223,114
	PRINCIPAL SUPPLIED ITEMS / UNSPECIFIED WORKS TOTAL	**$ 3,106,636**
	PROJECT TOTAL	**$ 7,338,685**

MACKAY REGIONAL COUNCIL

REED STREET RECONSTRUCTION

School Access TO Kerisdale Development

SUBURB : Rural View

SUB PROGRAM : [Sub Program]

COST No. : [Cost Number] **ROAD No. :** [Road Number]

REVISION DATE : [Month] / [Year]

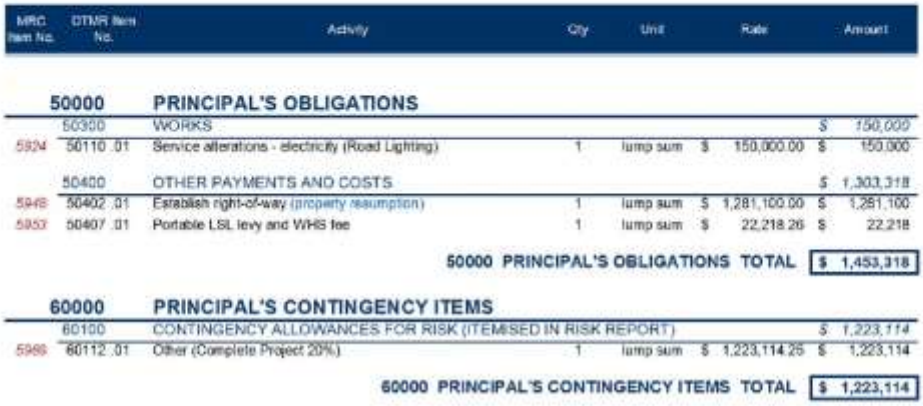
MRC Item No.	DTMR Item No.	Activity	Qty	Unit		Rate		Amount
	1001	**SITE ESTABLISHMENT**						
	1100	CONTRACTOR'S SITE FACILITIES AND CAMP - MRS28					$	25,100
4000	1101 .01	Contractor's site facilities	1	lump sum	$	25,100.00	$	25,100
		1001 SITE ESTABLISHMENT TOTAL					**$**	**25,100**
	1002	**PROVISION FOR TRAFFIC**						
	1200	PROVISION FOR TRAFFIC - MRS02					$	18,000
4002	1201 .01	Provision for traffic	1	lump sum	$	7,500.00	$	7,500
4003	1202 .01	Traffic Management Plan	1	lump sum	$	500.00	$	500
8050	.01S	Relationship Management (Refer Supp Spec No. 8050)	1	lump sum	$	5,000.00	$	5,000
8051	.01S	Coordination with Service Authorities (Refer Supp Spec No. 8051)	1	lump sum	$	5,000.00	$	5,000
		1002 PROVISION FOR TRAFFIC TOTAL					**$**	**18,000**
	1003	**ENVIRONMENTAL MANAGEMENT**						
	1300	ENVIRONMENTAL MANAGEMENT - MRS51					$	166,810
4014	1330 .01	Environmental Inspections	1	lump sum	$	15,000.00	$	15,000
4015	1331 .01	Develop Environmental Management Plan (Construction)	1	lump sum	$	10,113.10	$	10,113
4016	1332 .01	Implement Environmental Management Plan (Construction)	1	lump sum	$	151,696.51	$	151,697
4017	1333 .01	Environmental Licences, Permits and Approvals	1	lump sum	$	5,000.00	$	5,000
4018	1341 .01P	Water quality monitoring, if ordered (Provisional Quantity)	1	lump sum	$	5,000.00	$	5,000
		1003 ENVIRONMENTAL MANAGEMENT TOTAL					**$**	**186,810**
	2001	**DRAINAGE**						
	2100	REMOVAL/DEMOLITION - MRS03					$	500
6151	2102 .01	Removal or demolition of culvert end structures	1	lump sum	$	500.00	$	500
	2200	SUPPLY OF CULVERTS - MRS03					$	565,534
6335	2203 .57	Supply of concrete box culvert components, 3000 x 1500	177.6	m	$	2,227.33	$	395,574
6357	2203 .79	Supply of concrete box culvert components, 3600 x 3600	33.6	m	$	4,154.58	$	139,594
6366	2204 .08	Supply of concrete spanning slabs, 3600mm	16.8	m	$	1,807.54	$	30,367
	2220	INSTALLATION OF CULVERTS - MRS03					$	263,690
6489	2223 .57	Installation of concrete box culvert components, 3000 x 1500	177.6	m	$	1,045.00	$	185,592
6491	2223 .79	Installation of concrete box culvert components, 3600 x 3600	33.6	m	$	1,553.33	$	52,192
6500	2224 .08	Installation of concrete spanning slabs, 3600mm	16.8	m	$	1,553.33	$	26,096
	2240	SUPPLY AND INSTALLATION OF CULVERTS - MRS03					$	115,160

MRC Item No.	DTMR Item No.	Activity	Qty	Unit	Rate	Amount
6522	2241 .11	Supply and installation of concrete pipe culvert components, Class 2, 375mm diameter	280	m	$ 175.00	$ 49,000
6527	2241 .16	Supply and installation of concrete pipe culvert components, Class 2, 450mm diameter	140	m	$ 220.00	$ 30,800
6532	2241 .21	Supply and installation of concrete pipe culvert components, Class 2, 525mm diameter	104	m	$ 310.00	$ 32,240
6537	2241 .26	Supply and installation of concrete pipe culvert components, Class 2, 600mm diameter	8	m	$ 390.00	$ 3,120
	2300	CONCRETE IN CULVERTS AND END STRUCTURES - MRS03				$ 514,600
6732	2302 .01	Concrete bases in culverts	217	m3	$ 1,200.00	$ 260,400
6738	2308 .01	End structures to culverts, reinforced concrete	98	m3	$ 1,800.00	$ 176,400
6742	2313 .01	Aprons to culverts, reinforced concrete	65	m3	$ 1,200.00	$ 78,000
	2400	PAVEMENT DRAINAGE - MRS03				$ 142,165
	2404	**Concrete kerb and channel**				
6796	2404 .10	MRC Barrier (Refer MRC Std Dwg A3-00865)	941	m	$ 65.00	$ 61,165
	2414	**Concrete access chambers**				
6821	2414 .01	MRC Standard Manhole (900 x 900) (Refer MRC Std Dwg A3-866)	2	each	$ 2,500.00	$ 5,000
	2417	**Precast concrete side inlet gullies with cast-in-place pit (Refer MRC Std Dwg A3-3883 uno)**				
6834	2417 .01	incorporating type 'S' (2400mm long) Lintel, Kerb in Line, 900 x 835 chamber	2	each	$ 4,000.00	$ 8,000
6836	2417 .03	incorporating type 'S' (2400mm long) Lintel, Lip in Line, 900 x 835 chamber	17	each	$ 4,000.00	$ 68,000
	2500	SUBSURFACE DRAINAGE - MRS03				$ 42,010
	2501	**Subsoil drains**				
8107	.01S	Subsoil drains, Type C (Refer MRC Std Dwg A3-867) (Refer Supp Spec No. 8107)	941	m	$ 35.00	$ 32,935
	2503	**Subsoil drain outlet connection**				
6850	2503 .01	100 mm diameter, broken into stormwater structure	21	each	$ 150.00	$ 3,150
6851	2503 .02	100 mm diameter, including headwall and flood-flap and rip-rap protection	3	each	$ 750.00	$ 2,250
	2504	**Subsoil drain clean-out**				
6853	2504 .01	100 mm diameter (Refer MRC Std Dwg A3-867)	21	each	$ 175.00	$ 3,675
					2001 DRAINAGE TOTAL	**$ 1,644,049**
	2002	**PROTECTIVE TREATMENTS**				
	2600	PROTECTIVE TREATMENTS - MRS03				$ 221,460
6874	2631 .02	Hand placed concrete paving, monolithically cast median/island, [195] mm thick	32	m2	$ 292.50	$ 9,360
6874	2631 .03	Hand placed concrete paving, footpaths and bikeways	2089	m2	$ 100.00	$ 208,900
8205	.01S	Stencilling to island/median/raised platform concrete surfaces, [details, ie. reference to project drawing or standard drawing] (Refer Supp Spec No. 8205)	32	m2	$ 100.00	$ 3,200
					2002 PROTECTIVE TREATMENTS TOTAL	**$ 221,460**
	3001	**EARTHWORKS**				
	3100	EARTHWORKS, PREPARATION - MRS04				$ 49,437
4500	3101 .01	Clearing and grubbing (Road)	15742	m2	$ 0.50	$ 7,871
4500	3101 .02	Clearing and grubbing (Open Drain)	16565	m2	$ 0.50	$ 8,283
4502	3103 .01P	Stripping of topsoil (Provisional Quantity as directed, Road)	1574.2	m3	$ 4.50	$ 7,084
4502	3103 .02P	Stripping of topsoil (Provisional Quantity as directed, Open Drain)	1656.5	m3	$ 4.50	$ 7,454
4503	3104 .01	Ground surface treatment under embankment, standard	14998	m2	$ 1.25	$ 18,745

MRC Item No.	DTMR Item No.	Activity	Qty	Unit		Rate		Amount
	3200	EARTHWORKS, EXCAVATION - MRS04					$	107,321
4512	3201 .01	Road excavation, all materials	1645	m3	$	15.00	$	24,675
4515	3204 .01	Excavation for structures, all materials, McCready's Creek Headwall and I/D Works	250	m3	$	15.00	$	3,750
4519	3208 .01	Special excavation, all materials, Open Drain	5050	m3	$	8.00	$	40,400
4523	3215 .01P	Excavation and disposal of Unsuitable Material in and below confined excavations (Provisional Quantity as directed)	899.76	m3	$	15.00	$	13,496
8211	.01PS	Dewatering of trenches and confined excavations, if ordered (Provisional Sum) (Refer Supp Spec No. 8211)	1	lump sum	$	25,000.00	$	25,000
	3300	EARTHWORKS, EMBANKMENT - MRS04					$	442,883
4526	3301 .01	Road embankment	9561	m3	$	35.00	$	334,635
4528	3303 .01	Special embankment from all sources, Fill to Open Drain (Cut to Fill)	3810	m3	$	5.00	$	19,050
4529	3304 .01	Supply and installation of geotextile, strength class Bidum A14, filtration class TBC to Open Drain Base	11893	m2	$	7.50	$	89,198
	3400	EARTHWORKS, SUBGRADE - MRS04					$	56,026
4532	3401 .01P	Testing of existing material below subgrade level in cuttings (Provisional Quantity if ordered)	5	per set	$	1,500.00	$	7,500
4533	3402 .01P	Subgrade treatment Type A in cuttings and in embankments (Provisional Quantity if ordered)	6066	m2	$	3.50	$	21,231
4534	3403 .01P	Subgrade in cuttings, subgrade treatment Type B, replace with subgrade fill material (Provisional Quantity if ordered)	363.96	m3	$	75.00	$	27,297
	3500	EARTHWORKS, BACKFILL - MRS04					$	96,972
4546	3502 .01	Backfill with select backfill material, to Unsuitable	899.76	m3	$	75.00	$	67,482
4552	3508 .01	Backfill with rock fill, to Open Drain Base (River Gravel)	589.8	m3	$	50.00	$	29,490
						3001 EARTHWORKS TOTAL	$	752,841
	3003	LANDSCAPE AND REVEGETATION WORKS						
		MRC LANDSCAPING & HORTICULTURAL TREATMENT (Refer Supp Spec No. 8300)					$	200,205
8300	.01S	Landscaping & Horticultural Treatment	1	lump sum	$	35,475.00	$	35,475
8307	.01S	Vegetation of slopes 3H:1V or flatter, turfing	3439	m2	$	10.00	$	34,390
8311	.01S	Vegetation of open drains, with turfing surface protection	13034	m2	$	10.00	$	130,340
						3003 LANDSCAPE AND REVEGETATION WORKS TOTAL	$	200,205
	4001	UNBOUND PAVEMENTS						
	4150	UNBOUND PAVEMENTS TYPE 2 - MRS05					$	377,359
4542	4152 .02	Subtype 2.2, unbound pavement, base course (150mm thick)	777.45	m3	$	110.19	$	85,665
4547	4154 .01	Subtype 2.4, unbound pavement, subbase course (150mm thick)	909.9	m3	$	105.24	$	95,760
4552	4155 .03	Subtype 2.5, unbound pavement, lower subbase / subgrade replacement	1941.12	m3	$	100.94	$	195,934
						4001 UNBOUND PAVEMENTS TOTAL	$	377,359
	5001	SPRAYED BITUMINOUS SURFACING						
	5010	SUPPLY OF COVER AGGREGATE - MRS22					$	2,187
4700	5011 .02	Supply of cover aggregate precoated, 7 mm nominal size	29	m3	$	75.42	$	2,187
	5100	SPRAYED BITUMINOUS SURFACING (EXCLUDING EMULSION) - MRS11					$	12,569
4710	5102 .01	Primerseal, grade MC5, spray rate 1.0 L/m², including supply of binder and adhesion age all areas	5183	litre	$	1.48	$	7,645
4719	5112 .02	Spreading cover aggregate 7 mm, [spread rate] m²/m³, [location]	29	m3	$	169.79	$	4,924
						5001 SPRAYED BITUMINOUS SURFACING TOTAL	$	14,756

MRC Item No.	QTMR Item No.	Activity	Qty	Unit		Rate		Amount
	5002	**ASPHALT PAVEMENTS**						
	5500	DENSE GRADED ASPHALT - MRS30					$	125,220
4757	5503 .01	Dense graded asphalt, DG14 mix	620	tonne	$	201.97	$	125,220
		5002 ASPHALT PAVEMENTS TOTAL					**$**	**125,220**
	6001	**ROAD FURNITURE**						
	6110	GUIDANCE AND INFORMATION SYSTEMS - MRS14A					$	5,000
4770	6121 .01	Supply of regulatory, warning and hazard sign faces, as listed in Clause 1.3 of Annexure MRS14A.1	1	lump sum	$	2,500.00	$	2,500
4774	6131 .01	Installation of regulatory, warning and hazard signs, as listed in Clause 1.3 of Annexure MRS14A.1	1	lump sum	$	2,500.00	$	2,500
	6140	ROADSIDE STRUCTURES - MRS14					$	57,500
4783	6181 .04	Fencing, 1220 mm high, tubular steel fence, Type 3 (MRC Std Dwg A3-3895)	230	m	$	250.00	$	57,500
	6140	ROADSIDE STRUCTURES - MRS14A					$	80,950
4788	6151 .01	Concrete traffic barrier, Type F, without conduit, with dowels	40	m	$	630.00	$	25,200
4795	6161 .01	Steel beam guardrail, w beam	15	m	$	250.00	$	3,750
4797	6163 .01	Steel beam guardrail, terminal type ET2000	4	each	$	8,000.00	$	32,000
4798	6164 .01	Steel beam guardrail, transition type 1	4	each	$	5,000.00	$	20,000
		6001 ROAD FURNITURE TOTAL					**$**	**143,450**
	6002	**PAVEMENT MARKING**						
	6300	LINE MARKING - MRS45					$	6,009
4808	6301 .01	Spotting only for longitudinal lines	1477	m	$	0.50	$	739
4809	6311 .01	Dividing line, broken 100 mm wide, 3000mm line length, 9000mm gap length, colour white, material paint	473	m	$	3.50	$	1,656
4831	6319 .01	Edge line, 150 mm wide, colour white, material paint	964	m	$	3.50	$	3,374
4841	6323 .01	Outline, 150 mm wide, colour white, material paint	40	m	$	3.50	$	140
4846	6331 .01	Transverse lines (stop lines, holding lines, markings at Stop and Give Way signs, pedestrian crosswalk lines, arrows, shapes, symbols and numerals), colour white, material paint	1.35	m2	$	75.00	$	101
	6350	RAISED PAVEMENT MARKERS - MRS45					$	1,860
4856	6351 .01	Retroreflective raised pavement markers	124	each	$	15.00	$	1,860
		6002 PAVEMENT MARKING TOTAL					**$**	**7,869**
	6003	**ELECTRICAL CONDUIT AND PITS**						
	6500	CONDUIT AND CONDUIT FITTINGS UNDERGROUND - MRS91					$	80,300
5406	6507 .01	Supply and installation of 2 of C100L (Ergon Conduits) mm, HDUPC, ridged conduit(s), in verge	444	m	$	50.00	$	22,200
5408	6509 .01	Supply and installation of C100l mm, HDUPVC, ridged conduit, bored or jacked	166	m	$	350.00	$	58,100
		6003 ELECTRICAL CONDUIT AND PITS TOTAL					**$**	**80,300**
	6004	**TRAFFIC SIGNAL AND ROAD LIGHTING FOOTINGS**						
	6700	ROAD LIGHTING FOOTINGS - MRS92					$	21,000
5434	6701 .01	Road lighting pole footing, 800 mm diameter	12	each	$	1,750.00	$	21,000
		6004 TRAFFIC SIGNAL AND ROAD LIGHTING FOOTINGS TOTAL					**$**	**21,000**
		WATER AND SEWERAGE RETICULATION						
		SEWER RISING MAIN (Refer Supp Spec No. 8800)					$	54,650

MRC Item No.	DTMR Item No.	Activity	Qty	Unit	Rate	Amount
		Supply & installation of new sewer rising main, including fittings and appurtenances, 200 dia PVC-O	331	m	$ 150.00	$ 49,650
		Pressure testing of mains as per MRC Standards along entire length, including materials and plant to carry out testing, to [pipe size/type]	1	lump sum	$ 5,000.00	$ 5,000
		SEWER GRAVITY MAIN (Refer Supp Spec No. 8800)				$ 93,500
		Supply & installation of new sewer gravity main, including fittings and appurtenances, 225 dia PVC SN8	305	m	$ 200.00	$ 61,000
		Supply all materials, excavate and construct maintenance holes, including epoxy coating and bolt down covers as required	5	each	$ 5,000.00	$ 25,000
		Pressure and ovality testing of gravity mains as per MRC Standards along entire length, including materials and plant to carry out testing, to [pipe size/type]	1	lump sum	$ 5,000.00	$ 5,000
		Hydrostatic testing of maintenance holes as per MRC Standards	5	each	$ 500.00	$ 2,500
		WATER MAIN (Refer Supp Spec No. 8800)				$ 250,681
		Supply & installation of new water main, including fittings and appurtenances, 375 dia, DICL	471	m	$ 511.00	$ 240,681
		Pressure testing of mains, as per MRC Standards, along entire length, including materials and plant to carry out testing, to [pipe size/type]	1	lump sum	$ 5,000.00	$ 5,000
		Disinfection of mains, as per MRC Standards, including bacteriological testing by an accredited testing authority	1	lump sum	$ 5,000.00	$ 5,000
					WATER AND SEWERAGE RETICULATION TOTAL	$ 398,831
		MISCELLANEOUS MRC TASKS				
		AS-CONSTRUCTED DOCUMENTATION				$ 15,000
5919	.01PS	Supply as-constructed documentation (in accordance with the Technical Specification) (Provisional Sum)	1	lump sum	$ 15,000.00	$ 15,000
					MISCELLANEOUS MRC TASKS	$ 15,000
	22000	**DEVELOPMENT PHASE WORK MANAGEMENT**				
	22200	DETAILED DESIGN				$ 235,461
5800	22201 .01	Environmental	1	lump sum	$ 35,000.00	$ 35,000
5803	22204 .02S	Geotechnical (pavement) investigations	1	lump sum	$ 12,500.00	$ 12,500
5805	22206 .01	Hydraulic studies and report	1	lump sum	$ 25,000.00	$ 25,000
		Concept Design	1	lump sum	$ 28,000.00	$ 28,000
5808	22209 .01	Engineering survey (Mackay Regional Council)	1	lump sum	$ 7,500.00	$ 7,500
5811	22211 .01	Road Design - General (Mackay Regional Council)	1	lump sum	$ 2,500.00	$ 2,500
5812	22211 .02	Road Design - General	1	lump sum	$ 126,961.50	$ 126,961
					22000 WORK MANAGEMENT TOTAL	$ 235,461
	32000	**IMPLEMENTATION PHASE WORK MANAGEMENT**				
	32200	CONTRACT ADMINISTRATION				$ 179,742
5849	32201 .02	Superintendent (consultant)	1	lump sum	$ 126,961.50	$ 126,961
5851	32202 .01	Inspection	1	lump sum	$ 35,200.00	$ 35,200
5853	32204 .01	Survey	1	lump sum	$ 17,580.12	$ 17,580
					32000 IMPLEMENTATION WORK MANAGEMENT TOTAL	$ 179,742
	41000	**FINALISATION PHASE PROJECT MANAGEMENT**				
	41600	COMPLETE PROJECT HANDOVER REPORT				$ 15,000
5865	41602 .01	Process as-constructed drawings (through Plan Room)	1	lump sum	$ 15,000.00	$ 15,000
					41000 FINALISATION PHASE PROJECT MANAGEMENT TOTAL	$ 15,000

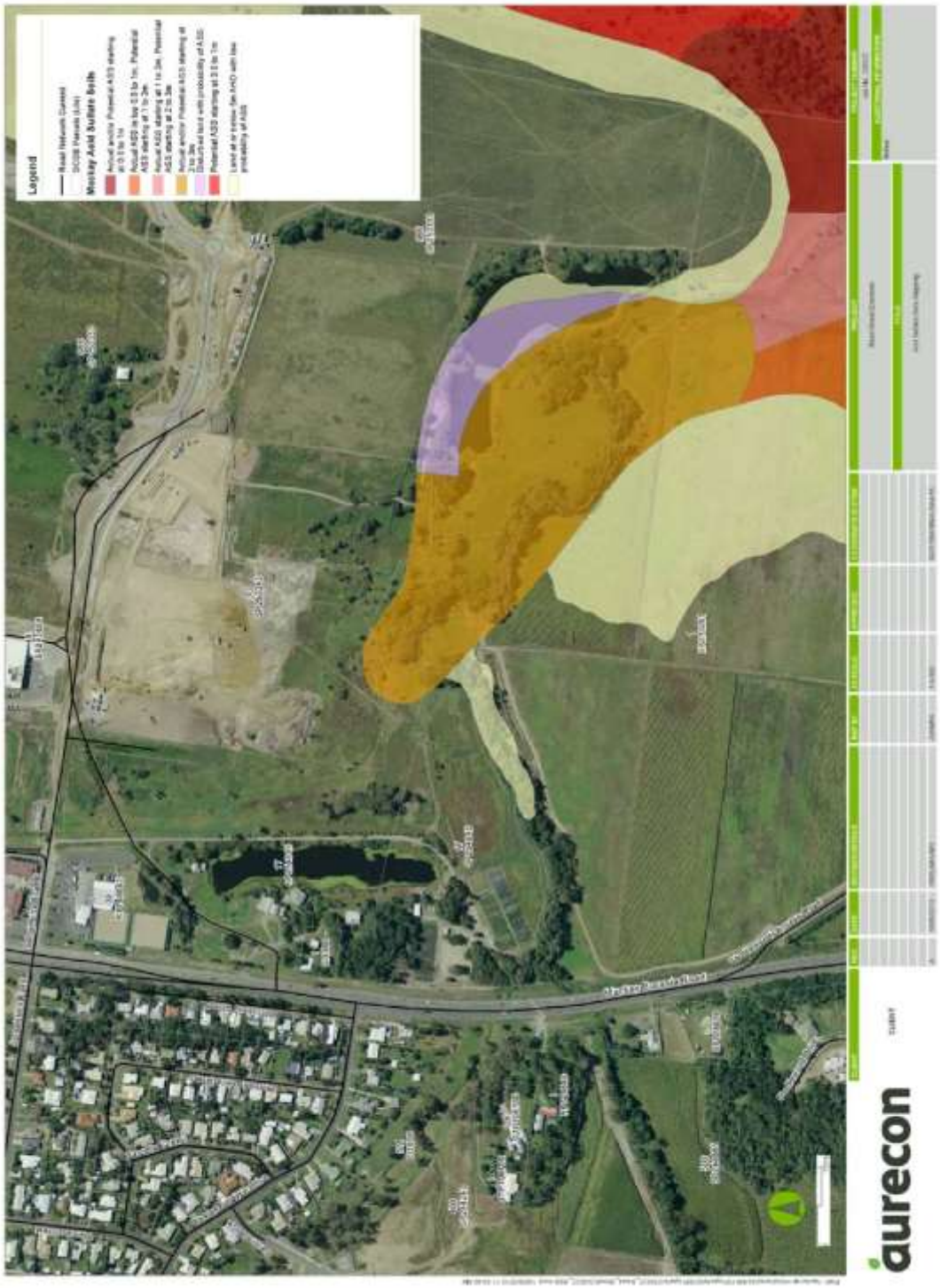


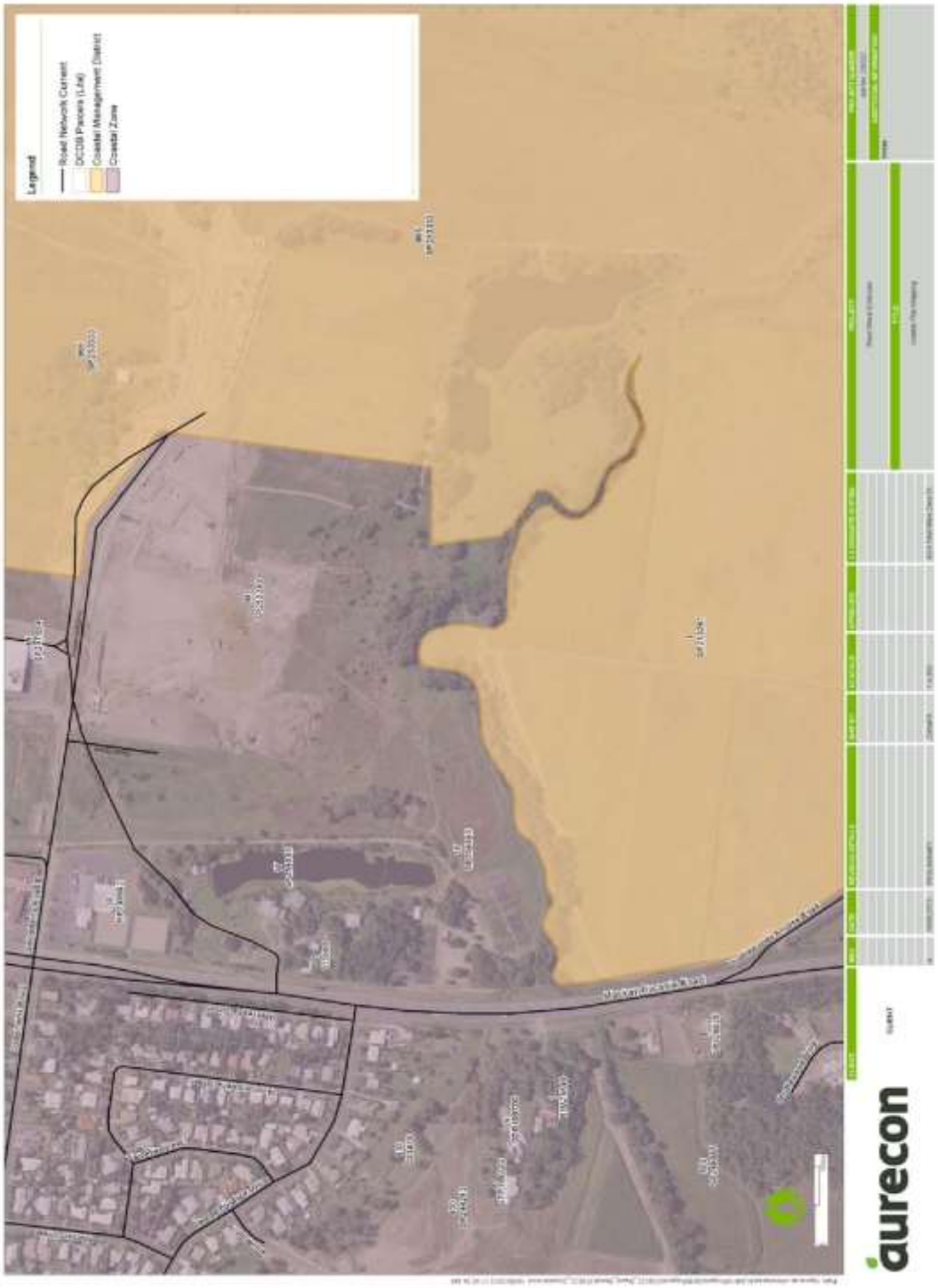
MRC Item No.	DTMR Item No.	Activity	Qty	Unit	Rate	Amount
50000		**PRINCIPAL'S OBLIGATIONS**				
	50300	WORKS				*$ 150,000*
5924	50110 .01	Service alterations - electricity (Road Lighting)	1	lump sum	$ 150,000.00	$ 150,000
	50400	OTHER PAYMENTS AND COSTS				*$ 1,303,318*
5948	50402 .01	Establish right-of-way (property resumption)	1	lump sum	$ 1,281,100.00	$ 1,281,100
5953	50407 .01	Portable LSL levy and WHS fee	1	lump sum	$ 22,218.26	$ 22,218
		50000 PRINCIPAL'S OBLIGATIONS TOTAL				**$ 1,453,318**
60000		**PRINCIPAL'S CONTINGENCY ITEMS**				
	60100	CONTINGENCY ALLOWANCES FOR RISK (ITEMISED IN RISK REPORT)				*$ 1,223,114*
5986	60112 .01	Other (Complete Project 20%)	1	lump sum	$ 1,223,114.25	$ 1,223,114
		60000 PRINCIPAL'S CONTINGENCY ITEMS TOTAL				**$ 1,223,114**

MRC Estimate and Annexures v130609A Page 7 of 7

Appendix I
Environmental and Planning Mapping

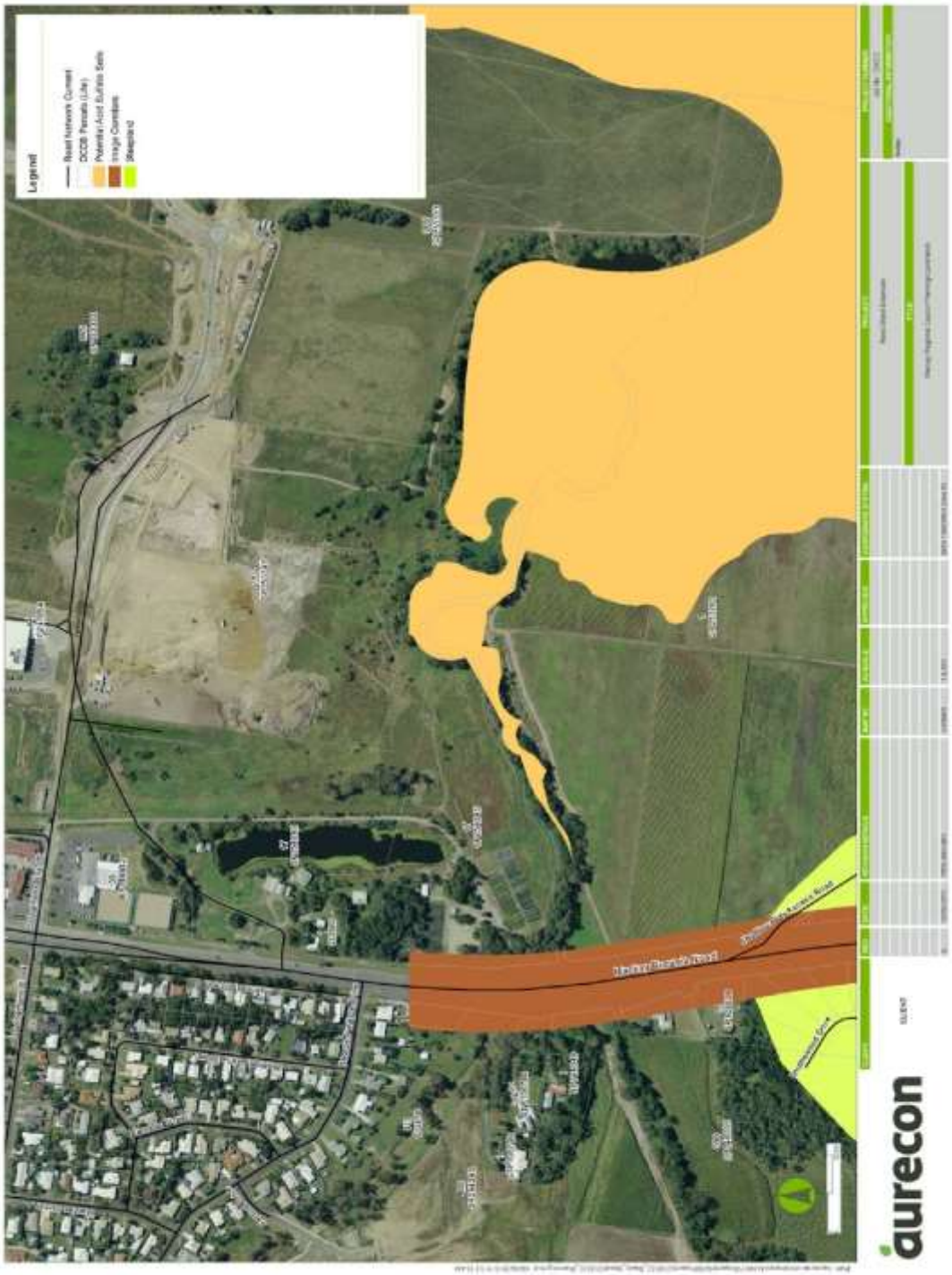
aurecon Leading. Vibrant. Global.


Legend
aurecon


Legend
Road Network Current
DCDB Parcels (Lite)
Coastal Management District
Coastal Zone
aurecon

Legend
aurecon

Legend
aurecon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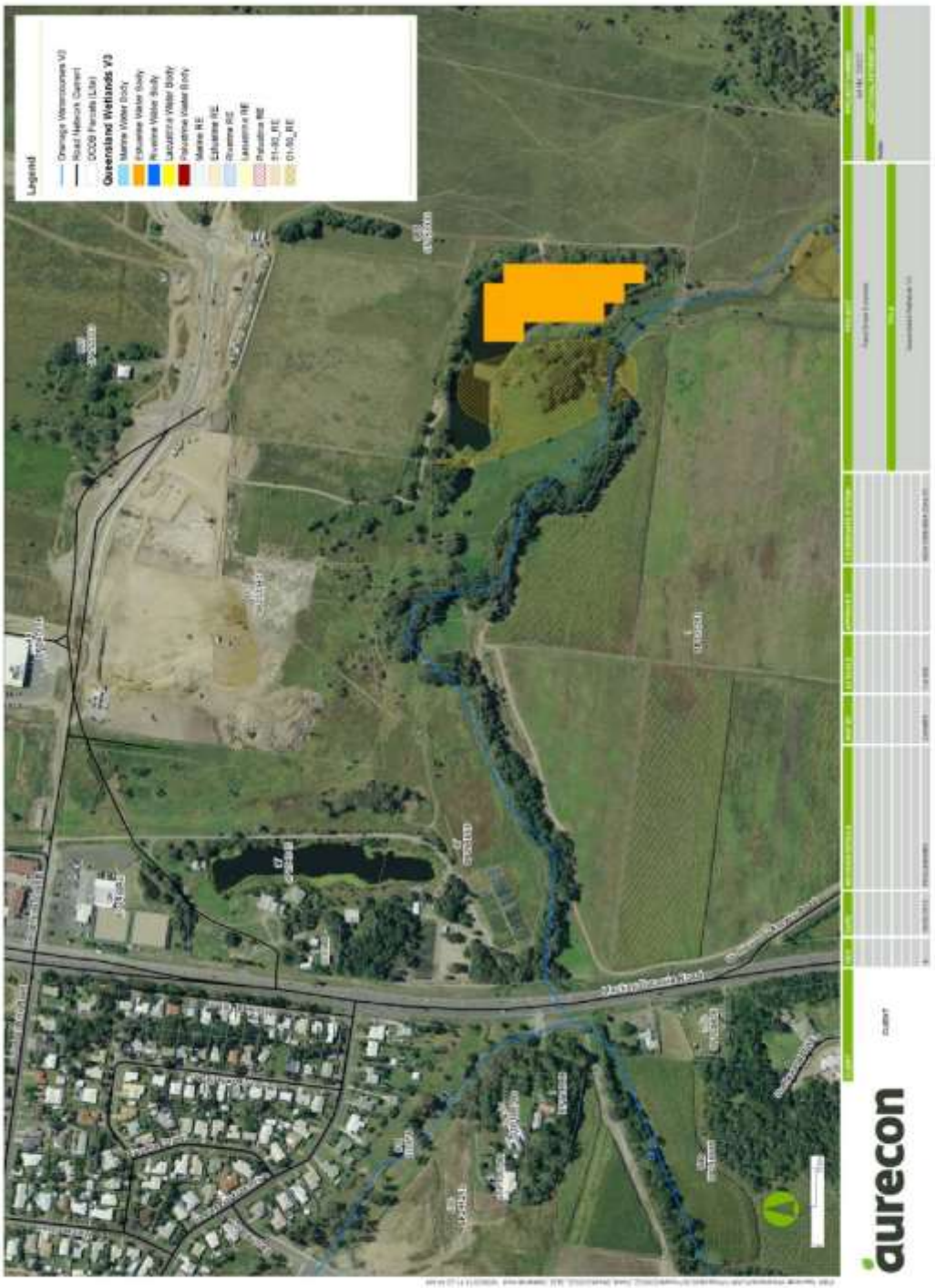
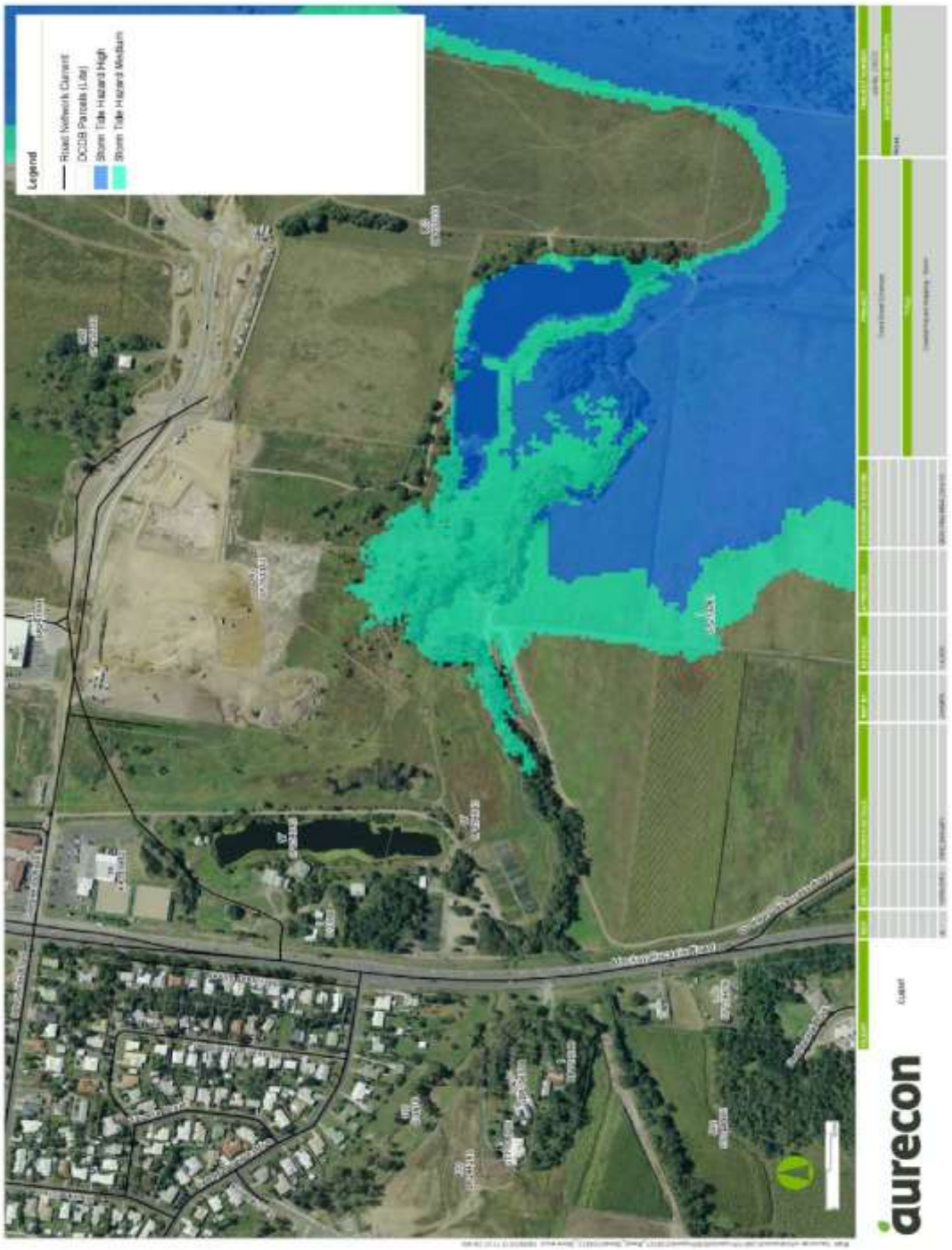

Legend
Queensland Wetlands V3
aurecon

Legend
aurecon

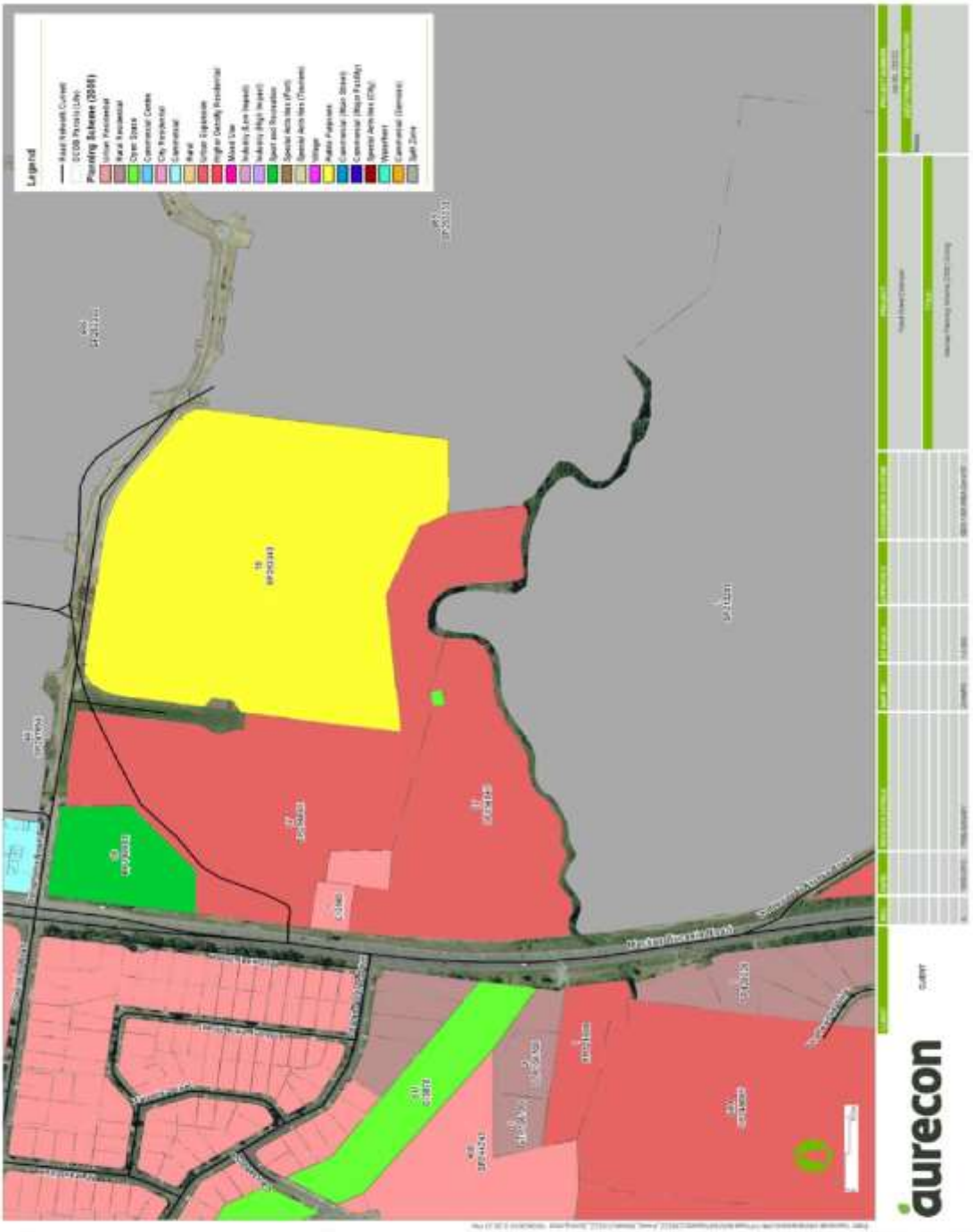
Legend
aurecon


Legend
Road Network Element
DCSB Parcels (Lite)
Storm Tide Hazard High
Storm Tide Hazard Medium
aurecon

Legend
DCDB Parcel Types
Easements
Parcels
Roads
Water
Mackay Bucasia Road
aurecon

Legend
Waterway Barrier Works Steam
Low
Moderate
High
Main
aurecon

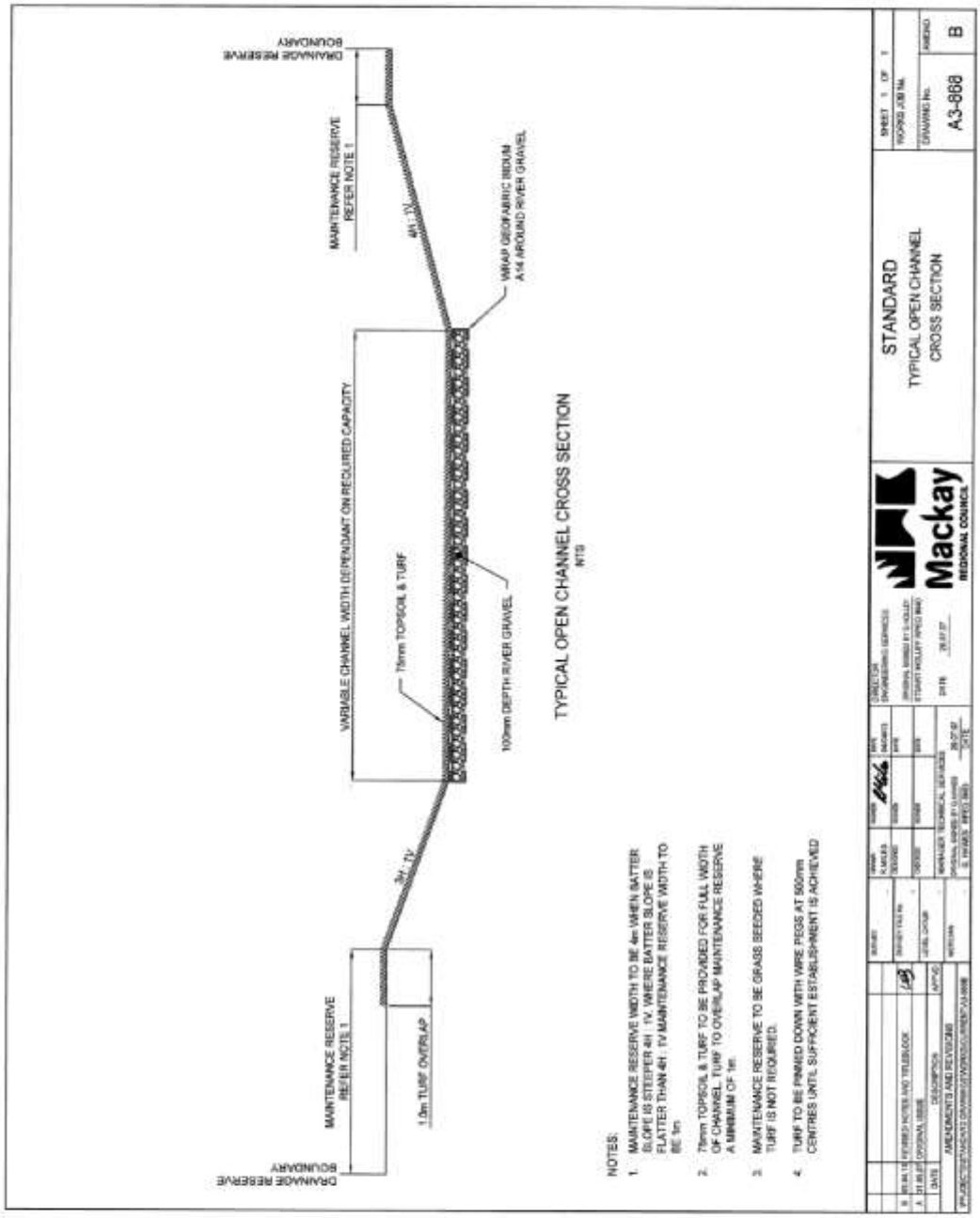
Legend
aurecon


Legend
aurecon

Appendix J
Open Drain Standard

A3-00868B – Open Drain

aurecon Leading. Vibrant. Global.


DRAINAGE RESERVE BOUNDARY
MAINTENANCE RESERVE REFER NOTE 1
1.0m TURF OVERLAP
3H : 1V
VARIABLE CHANNEL WIDTH DEPENDANT ON REQUIRED CAPACITY
75mm TOPSOIL & TURF
100mm DEPTH RIVER GRAVEL
WRAP GEOFABRIC BELOW & UP AROUND RIVER GRAVEL
4H : 1V
TYPICAL OPEN CHANNEL CROSS SECTION
NTS
NOTES:
1. MAINTENANCE RESERVE WIDTH TO BE 4m WHEN BATTER SLOPE IS STEEPER 4H : 1V. WHERE BATTER SLOPE IS FLATTER THAN 4H : 1V MAINTENANCE RESERVE WIDTH TO BE 1m
2. 75mm TOPSOIL & TURF TO BE PROVIDED FOR FULL WIDTH OF CHANNEL. TURF TO OVERLAP MAINTENANCE RESERVE A MINIMUM OF 1m
3. MAINTENANCE RESERVE TO BE GRASS SEEDED WHERE TURF IS NOT REQUIRED.
4. TURF TO BE PINNED DOWN WITH WIRE PEGS AT 500mm CENTRES UNTIL SUFFICIENT ESTABLISHMENT IS ACHIEVED
Mackay
REGIONAL COUNCIL
STANDARD
TYPICAL OPEN CHANNEL
CROSS SECTION
A3-868
B

aurecon

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W aurecongroup.com

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Mackay REGIONAL COUNCIL
Community and Client Services
Monthly Review
19 January - 15 February 2015

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Review of Operations

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Executive Summary

Director Community and Client Services

Highlights

- Mackay Sugar has been secured as a sponsor of the 2015 Heritage Fair to be held at Greenmount Homestead, Sunday 31 May.
- 2015 Sports Expo was well received with over 6,000 people attending.
- Impact assessments have been completed for the Northern Australia Services rollout with the call centre and e-content teams.
- Preparations are underway for 2015 International Women's Day Event – "Make It Happen Expo". This year the program includes inspirational women speakers. The Expo will be held on Friday 6th March at Sarina Cultural Hall. There has been a great response for speakers and organisations to attend.
- Community Development hosted an information session on developing a suicide prevention network for the region. The session was delivered and facilitated by Wesley LifeForce Mission on 3 February. Participants agreed to move forward with the formation of a Mackay Suicide Prevention Network. The first meeting is scheduled for 24 February, 3-4.30pm in the Reception Room.
- Club Connect, Mackay Regional Council's Club Development Program, will be launched at a forum on 8 March at Magpies Sporting Club. Gary Humphries will be the guest speaker.
- The Corner "Land, Sea and Sky" at Gordon White Library attracted 773 under 8's, 223 children aged 8 years and over and 500 adults (parents/carers) – a total of **1496** during the January school holidays.
- Replacement of the Entertainment Centre's 28 year old air conditioning system has been completed ahead of time and on budget. This challenging project which also required major building works should result in significant electricity savings, and enhance audience comfort.
- The Entertainment Centre's ceiling has been painted for the first time since the Centre opened in 1988, and the Clem Forbes mural which adorns the foyer has been cleaned in house. A clean fresh look is discernible.
- First of the Zoysia Grass Trial Plots established in Quota Park.

- Burnt section of the Blue Water Trail has been cleaned up and construction of the replacement section will commence in March.
- Valentine the Green Sea Turtle was found at Mackay Harbour and transported to the Whitsunday Turtle Hospital.
- The second meeting of the MRBG Advisory Board took place on 10 February. A detailed presentation was provided by Lawrie Smith on the overall botanic gardens site and particularly infrastructure elements. Detailed Design project to design all remaining items at the MRBG has gone out to public tender.

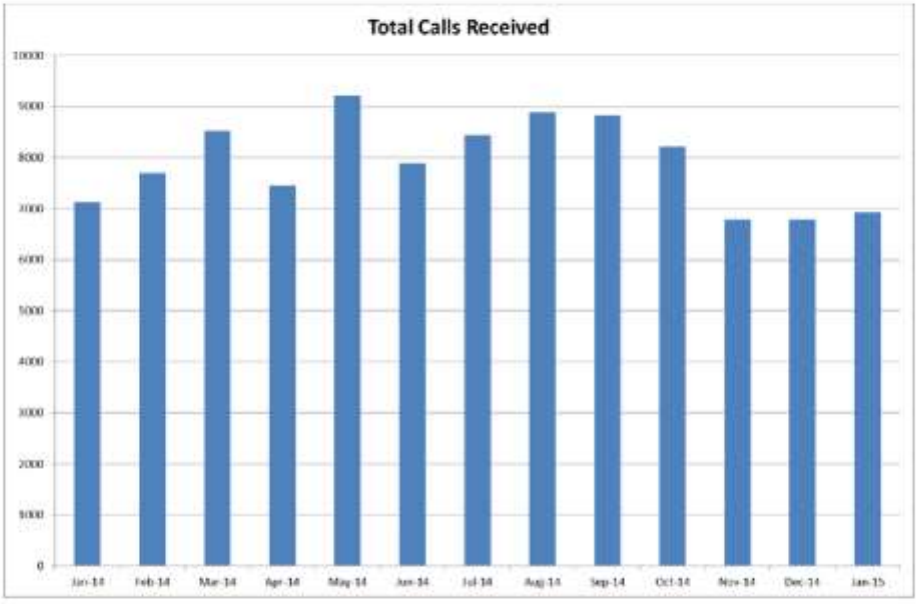
Gerard Carlyon
Director Community and Client Services

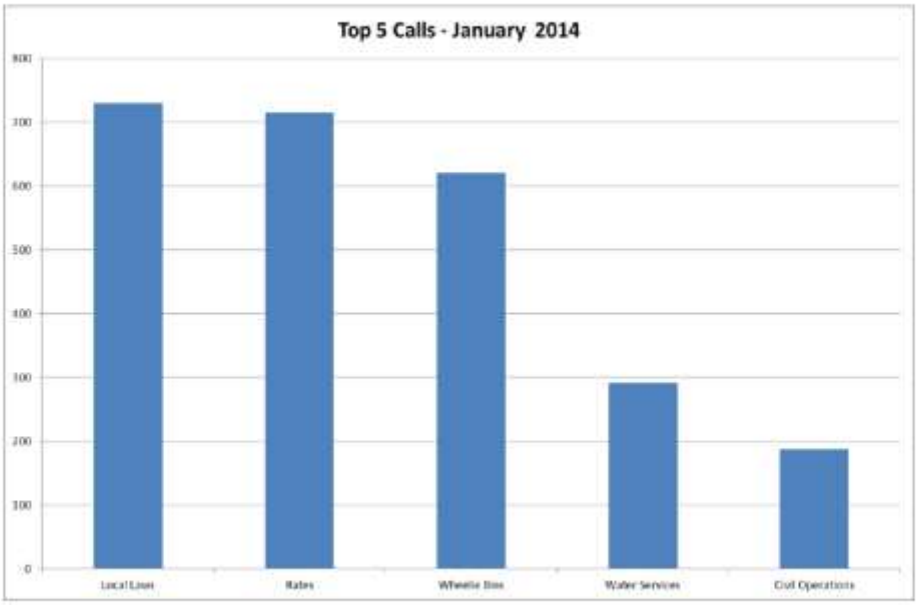
Community Lifestyle

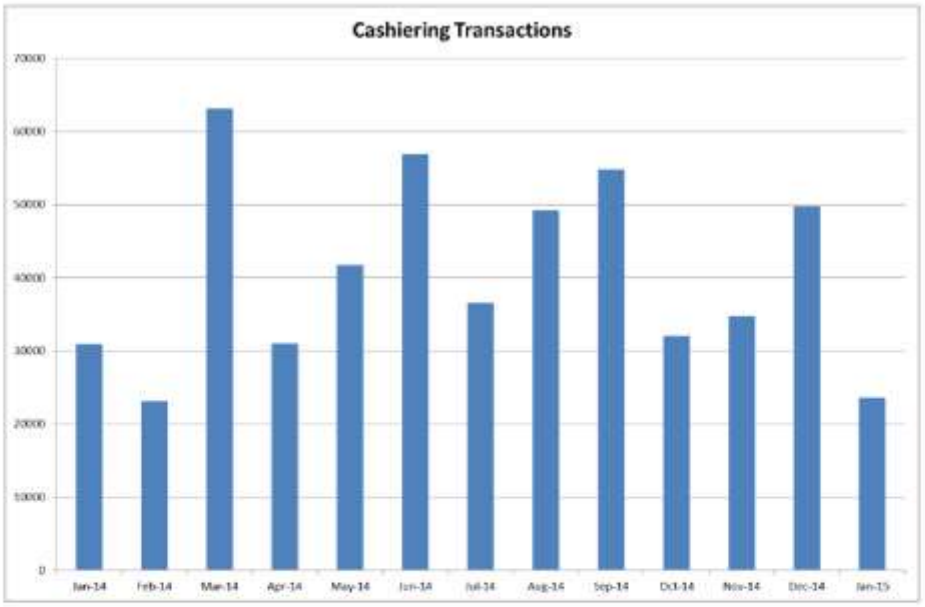
Client Services

Initiatives

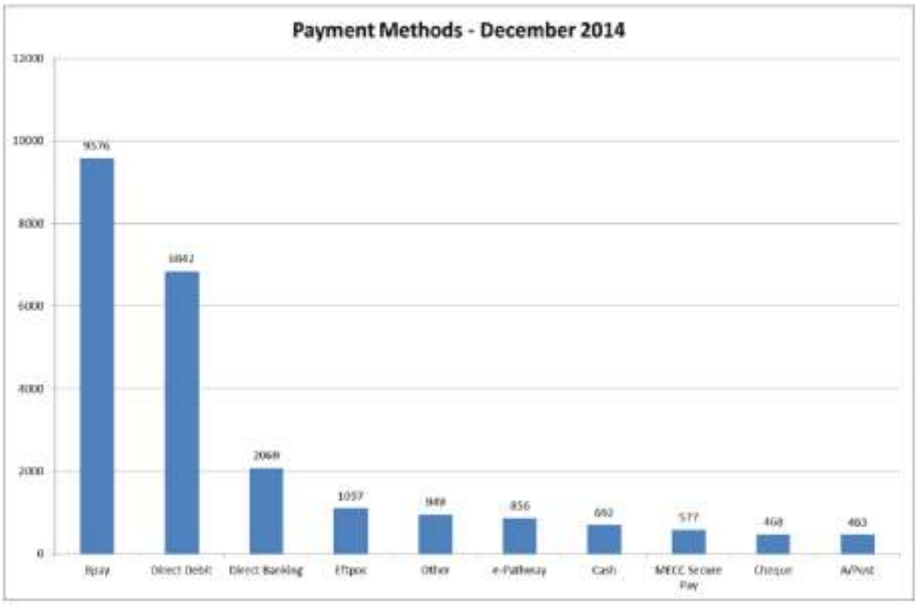
- All MRC staff were invited to register for myH2o portal. Testing is well underway with minimal teething problems identified.
- All staff have received training on the J Track portal which is a valuable tool for assisting with bin related enquiries.

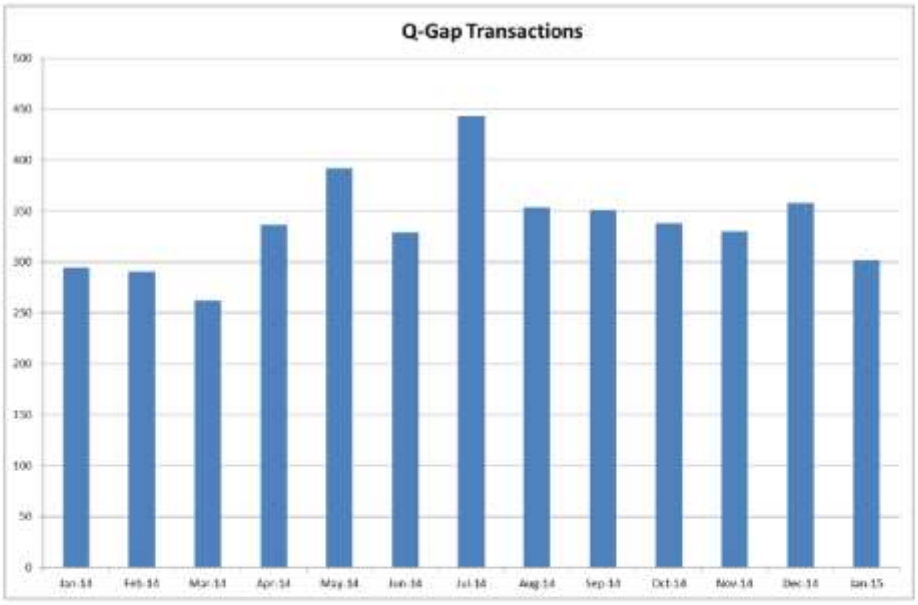


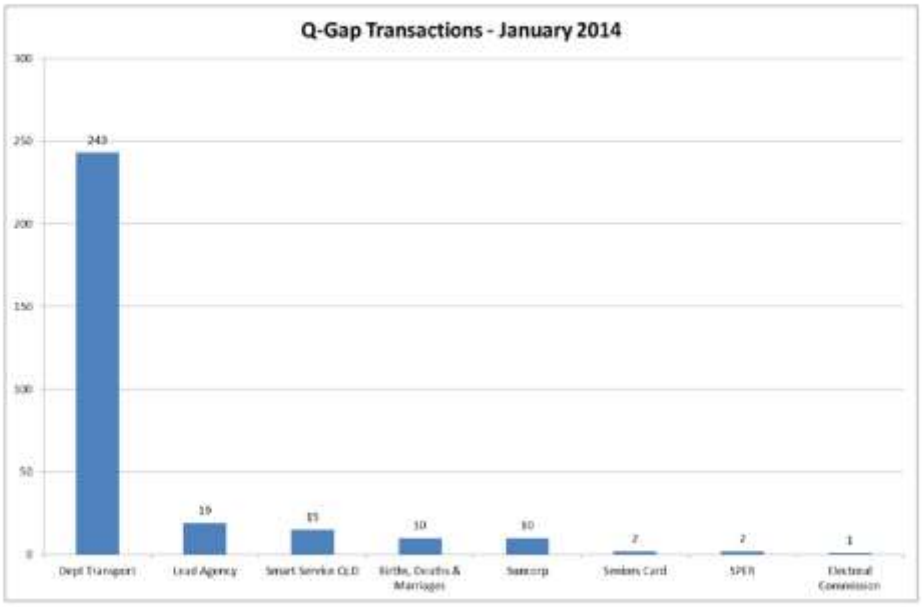


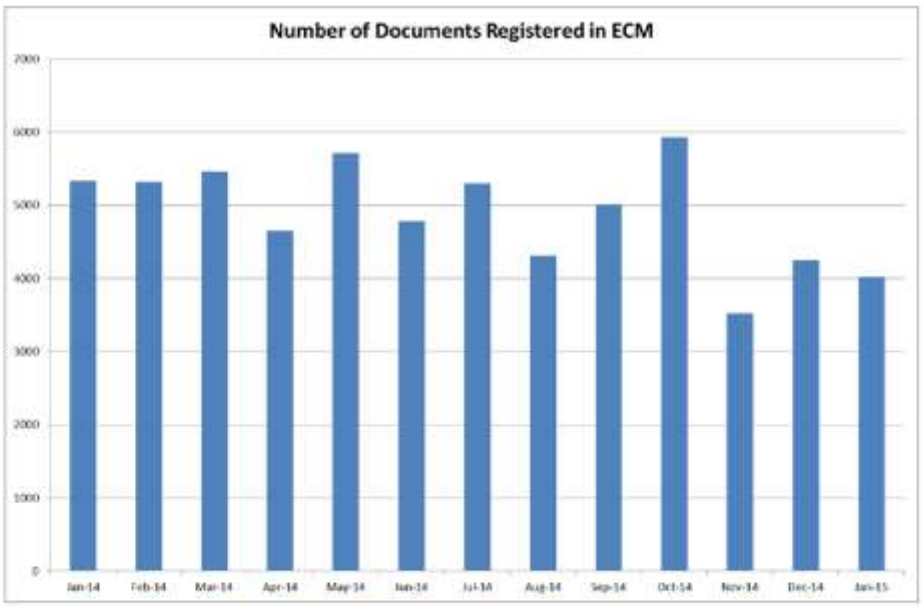


The decrease in payments in January may be attributed to the council being open over the Christmas period rather than being closed for a two week period.


Payment Methods - December 2014
12000
10000
8000
6000
4000
2000
0
9576
6842
2069
1057
949
856
692
577
468
463
Bpay
Direct Debit
Direct Banking
Eftpos
Other
e-Pathway
Cash
MECC Scoate Pay
Cheque
A/Post


Q-Gap Transactions
500
450
400
350
300
250
200
150
100
50
0
Jan-14
Feb-14
Mar-14
Apr-14
May-14
Jun-14
Jul-14
Aug-14
Sep-14
Oct-14
Nov-14
Dec-14
Jan-15





Similar to the receipting totals, a reduction in the volumes of documents registered in ECM in January may have been impacted by the council being open over the Christmas period.

Community Programs

Community Development

Emergency Relief food vouchers are available at the Sarina Neighbourhood Centre on Mondays only. Food voucher enquiries totalled 34 with 12 being allocated. Back to School vouchers are also available for school books and uniforms. 2 school vouchers have been allocated.

Community Development has begun planning for the 2015 Seniors Lifestyle Expo with a steering committee formed in early February. The Expo is scheduled for Friday 21 August 2015, 9.00am to 2.00pm at Senior Citizens Centre in Macalister Street.

The Queensland Government has funded the Queensland Council of Social Services (QCOSS) to deliver the Home for Good campaign throughout Queensland as part of its Homelessness to Housing 2020 Strategy. This involves holding a Registry Week in regions of Queensland with the aim to house and support people and end their cycle of homelessness. Mackay's Registry Week will be held on 13-19 April 2015. During the course of the seven days, teams of volunteers and workers from specialist homelessness services will survey as many people who are homeless as possible using a Vulnerability Index tool. The surveys will build a register of people who are homeless, with vital information to help house and support each person and family on that register. Community Development is involved in the organising committee to drive and oversee this project.

Youth Development

The Youth Team has moved into an active planning stage for activities this year – including a major regional youth event for the second half of the year, improving the promotion of our youth services both within and external to the organisation, assisting with the "No Way to Bullying" Week (16 to 20 March) and National Youth Week (10 to 19 April), plus all the requirements associated with the new State Government youth service delivery model.

Ongoing support, counselling, information, referral and mentoring for young people in need in the Pioneer Valley - including young individuals "at risk" as per the State Government funded role of Youth at Risk Initiatives. Approximately 36 young people are receiving individual support for a wide range of issues including coping with abuse, mental health, job hunting, coping at school, relationship/family matters, anti-bullying, social isolation and grief

Currently developing a Sarina Youth Centre brochure to reflect what is offered at the centre for the young people in the locality. Ongoing support, providing information and referral is being undertaken through one on one sessions held at the Sarina Sate High School on Thursday mornings 9am-12pm.

Arts Development

RADF round 3 2014/15 closes Wednesday 18 February. Advertising campaign to promote RADF round 3 and 4 2014/15 commenced on 2 February with 2-week radio advert schedule on Zinc FM and Sea FM. RADF promotion also appeared in Daily Mercury's January 2015 'Council Connect'.

21 current Mackay Creatives Website Project members submitted expressions of interest to exhibit artwork in Artspace Mackay's exhibition *Our Community: Mackay Creatives,* in the Orientation Gallery from 26 March to end of July 2015.

Indigenous

MRC Reconciliation Action Plan is completed and has been endorsed by Reconciliation Australia. The official launch will be held in March 2015.

Local Area Multicultural Partnership (LAMP)

Cultural Diversity Interagency Meeting was hosted on 5 February with 14 people attending. The meeting included presentations from IDEAL Placements, NZ / Pacific Islander community as well as discussion about MRC Cultural Diversity policy.

Successful Waitangi Day celebration was held on 7 February with 500 attendees at the Australia South Sea Islander Lagoons Meeting Hut.

LAMP Officer liaised with Economic Development to finalise details for Chinese New Year celebration to be held on 21 February, 4-8pm at the Victoria Street Markets. Community groups attending on the day include the George Street Neighbourhood Centre (GSNC), Mackay Street Chaplaincy, Mackay Dragon Boat Club, Time Out Tai Chi, Chinese Lion Dancers and Thai Dancers.

Co-ordinated Advocacy in the Multicultural Sector (CAMS)

State Government advised that the submission for further funding under the Diversity Delivers program for an Australian South Sea Islander specific role was unsuccessful.

CAMS Officer is working with representatives from Bundaberg, Rockhampton, Mackay and Burdekin to form an initial steering committee to develop a Queensland Australian South Sea Islander Representative group. Currently the group is consulting Australian South Sea Islanders in each of the regions asking them to nominate 2 representatives to be part of this state-wide representative organisation.

Community Grants Program

Round 2 closed on 6 February. A total of 37 applications have been submitted. The Committee Assessment Meeting will be held on 5 March.

Sport and Recreation

Sports Expo & Sign on Day was hosted on Sunday 8 February. 107 groups from 55 different sports and recreational activities took part in a very successful event with approximately 6000 people in attendance. Shane Webcke, Jemma Wilson (World Enduro champion) and Cowboys Robert Lui and Ben Spina were the official guests this year. Central Qld Blokart Club won the best booth competition. They received $500 Sports Power voucher for their effort. Additionally this year each sporting club received a $500 Zinc voucher for advertising.

Museums

Pioneer Valley Museum at Mirani

- Closed 11 December 2014 – 3 March 2015
- Commenced work on display changes week ending 6 February
- Won the Community Group Award at Pioneer Valley Australia Day celebration

Mackay Museum

- Reopened on 5 February 2015
- Visitor numbers: 6 (est.)
- Volunteers mounted displays on the Mackay railway station platforms for the Queensland Rail 150 Years celebration on Saturday 31 January 2015

Sarina Historical Society and Museum Inc.

- Due to currently working on display changes (commencing 6 February) the Museum will be open Tuesdays and Wednesdays up until 7 April 2015, when the 3-day opening will resume, Tuesdays, Wednesdays and Fridays.
- Volunteers mounted displays on the Sarina railway station platforms for the Queensland Rail 150 Years celebration on Saturday 31 January 2015

Greenmount Homestead

- Visitor Numbers: 81
- Weddings: 1

Inkind Assistance

Applicant	Request	Cost
Mackay Host Lions	Provision of 10 General waste bins, 10 Recycle bins in support of Waitangi Day	$233.50
Seaforth Progress & Sports Association	Provision of 3 general waste bins, 3 recycle and waiver of park booking fees in support of their Australia Day Party.	$397.00
Sarina Australia Day Committee	Provision of 6 general waste bins in support their Australia Day Party	$85.68
Seaforth Progress & Sports Association	Provision of 2 general waste bins, 2 recycle bins and waiver of park booking fees in support of their Community Come & Try Day.	$141.50

Mackay's Māori Kapa Haka Group performs at Waitangi Day (NZ Day) celebrations at the Australia South Sea Islander Hut in the Botanic Gardens. The day attracted 500 visitors.

Cr Steindl, Central Qld Blokart Club and Shane Webcke at the 2015 Sports Expo & Sign on Day

Valley District Youth Council members performing an original poem "You Know You're An Aussie when..." at the Pioneer Valley Australia Day celebrations at Marian Primary School.

Libraries

Young People's Services

- Programs designed to encourage early literacy in children and their families had a total of 203 in attendance compared to **178** from 2014.

Community Services

- Ten avid readers opened the *Between the Lines Book Club* year with much animated discussion about Anthony Doerr's novel *All the Light We Cannot See*.
- Mirani Book club first meeting for the year was cancelled due to storms.
- Three stalwart stitchers attended Social Sewing Saturday despite the election.

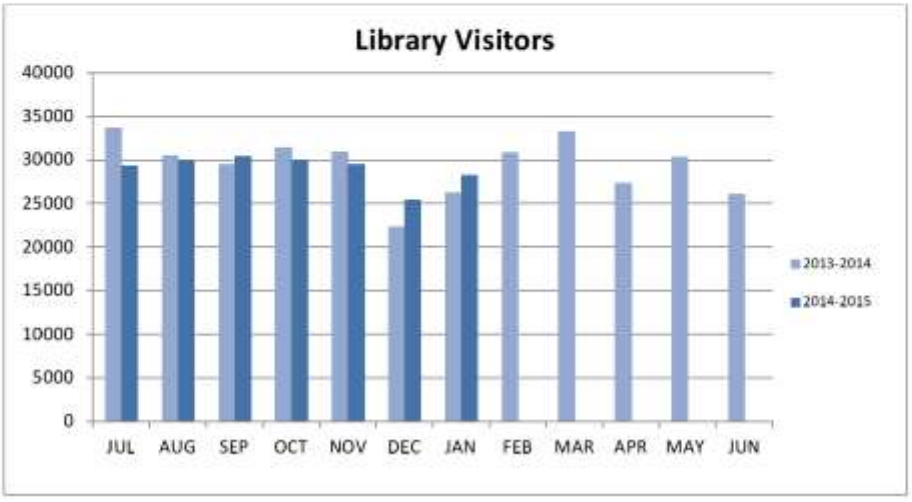
Heritage Collection

- 52 researchers visited the Carmel Daveson Research Room in January compared to 40 in 2014. 11 research inquiries were actioned compared to 16 in 2014.

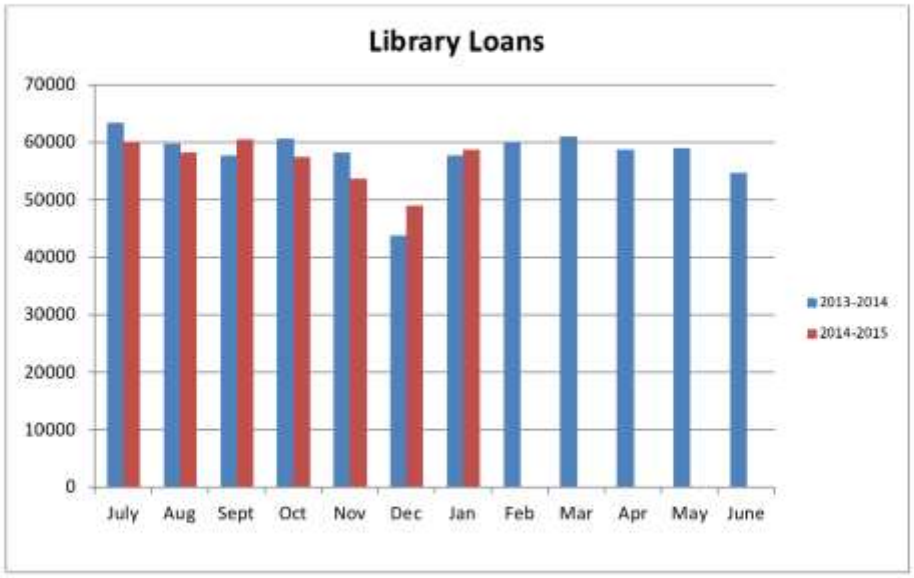
Statistics

- Public computers totalled **2522** bookings and **2190** hours of use, compared with 2814 and 2277 respectively in 2014, and a total of **1294** hours Wi-Fi accessed (913 hours in 2014).
- Assistive Technology equipment was used for a total of 43 hours.
- 7 requests received for Ask the Library enquiries.
- Database hits including The Computer School, Who Else Writes Like, Who Next, Transparent Language Online and Literacy Planet totalled **1541.**

- Top 3 library website visits for the month of January:
  - WebOPAC
  - Library Home
  - Opening Hours



*Increased visitors in December and January due to open hours.



Top 5 Reserved Titles in January
The Maze runner [DVD]
American sniper : the autobiography of the most lethal sniper in U.S. military history / Chris Kyle with Scott McEwen and Jim DeFelice.
The missing and the dead / Stuart MacBride.
The murder of Allison Baden-Clay / David Murray.
The Veronicas [sound recording]/

Artspace Mackay

Overview

- There was good attendance at the opening of *Scan lines*, an amazing exhibition looking at new media art in Australia over the last four decades. Compiled by Lux Media Arts, Artspace was the first venue in a national tour. Lux have very cleverly designed interactive elements into the exhibition, acting as 'ice breakers' for the public who can sometimes feel a little alienated by media art. It's great fun to change the 'box' remotes and make the artwork do something different!
- Gallery staff are ramping up preparations for coming exhibitions and public programs, and are undertaking planning. There are some very exciting exhibitions around the corner, including a

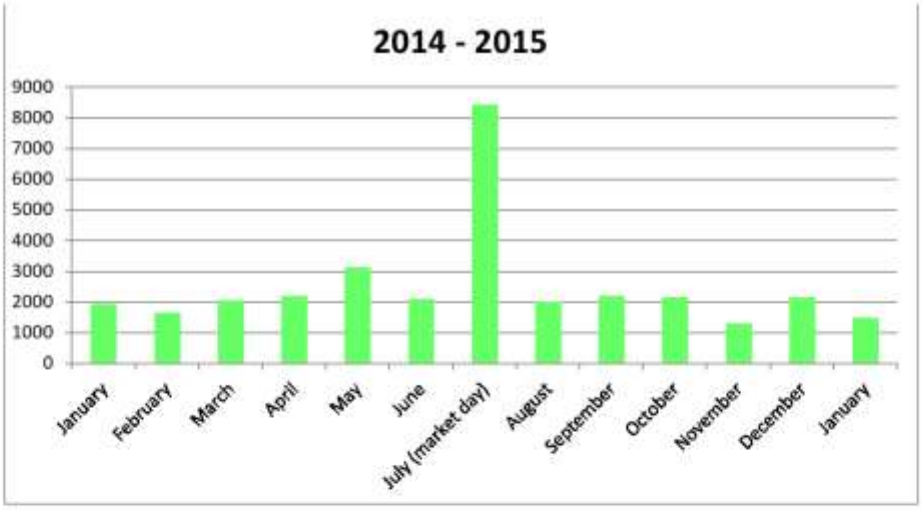
new exhibition from the Qld Art Gallery, a jewellery exhibition from the National Gallery of Australia, the National Photographic Portrait Prize from the Portrait Gallery in Canberra and a huge photography exhibition from the Museum of Contemporary Art Australia in Sydney. These are all high quality exhibitions that can be enjoyed by everybody, and are accompanied by a wide range of public programs and workshops.

- The gallery will be live-streaming a talk by cult film director David Lynch, from GOMA's Cinemateque, there will be video art-making workshops being held for teachers and teenage students, and Qld Art Gallery's fabulous annual family art activity day is being extended to a week which we are holding during the Easter school holidays. March will also see the beginning of our year-long BMA Kidspace program for toddlers, and we've kicked off our Sunday Cinema again with the first film in our Australian drama series.

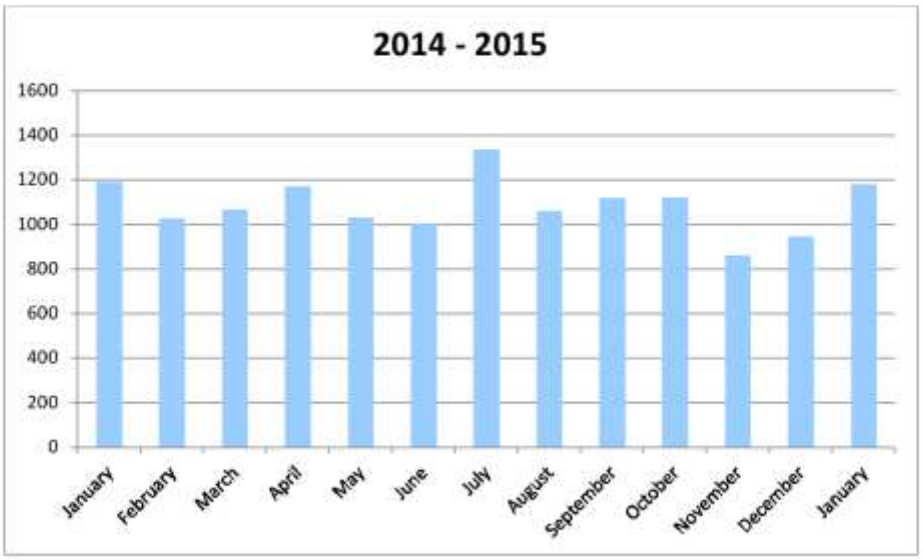
Visitors

- 1,494 (including Town Hall) people visited between 19 January and 15 February.

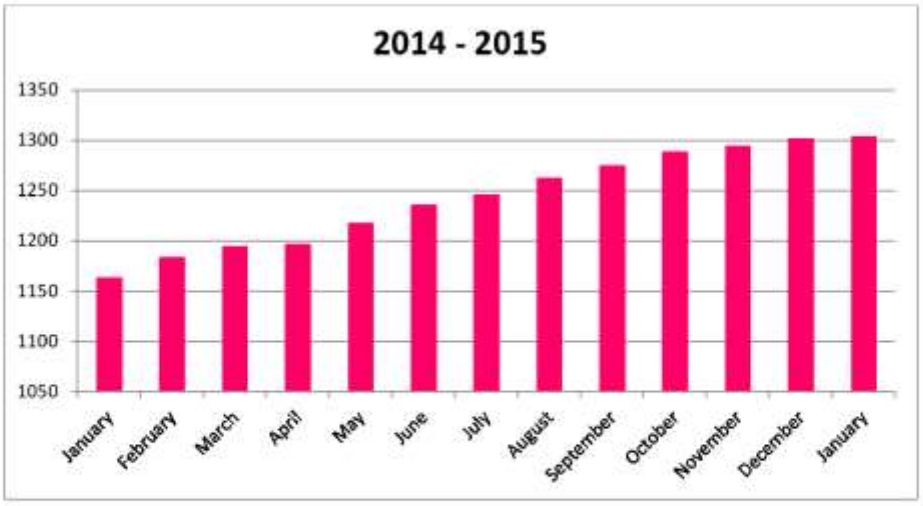
Attendance figures



Website Visits



E-newsletter subscribers



Exhibitions

New exhibitions

Foyer Gallery	13th Feb – 5th Apr	*New Sensation: Recent Acquisitions*
McAleese Gallery	13th Feb – 5th Apr	*Scanlines*

New Sensation: Recent Acquisitions (Foyer Gallery)

This exhibition brings together some of the most recent and exciting additions to the Mackay Regional Council art collection featuring etchings, linocuts, artists books and photographs by contemporary Australian artists including Euan Macleod, Ron McBurnie, Michael Cook, Billy Missi and David Frazer.

This distinctive selection of recent donations and purchases highlights and expands on an already strong and well-respected collection. Known particularly for being the largest artists' book collection in regional Australia, Mackay Regional Council's collection which is managed by Artspace Mackay now enjoys an exciting new focus on contemporary indigenous art.

These acquisitions have been made possible through business and community sponsorship, donations from the community and artists themselves and the support of our fundraising arm, Artspace Mackay Foundation.

Scan lines (McAleese Gallery)

Featuring the work of fourteen leading artists, Scan lines is the first of its kind: a comprehensive group exhibition that surveys the heritage of new media art in Australia.

Scan lines includes iconic works selected from the dLux archive of over 30 years of media art and is supported by an online archive. Developed by the University of New South Wales in association with dLux MediaArts, the Museum of Contemporary Art Australia and the Australian Network for Art and Technology, scanlines.net is a unique and comprehensive archive of media art history in Australia specifically designed as an education and academic resource.

dLux MediaArts have taken the opportunity to develop an innovative, high quality education resource with teachers and secondary students in mind.

Public Programs & Education

19-25 Jan	Drop-in activities for families. Australia day bunting	Foyer Gallery	112
3 & 4 Feb	Blue care group tours for aged care with dementia	McAleese Gallery	17
13 Feb	Scan lines exhibition opening	McAleese and Foyer Galleries	76
14 Feb	Scan lines exhibition Floor talk	McAleese Gallery	19
		Total attendees at public programs from 19 Jan to 15 Feb:	**224**

Mackay Entertainment & Convention Centre and Events

Management

- The provision of food and beverage services are now being delivered in house. Many of the ex Grinders team were offered positions, and an internal restructure of MECC staffing and operations ensued, to ensure a cost effective quality service can be offered. The Friends of the Theatre assisted financially; purchasing Grinders equipment that was at the Centre so operations could continue unimpeded. The Centre has now successfully catered for all events from 1 January without any discernible change.
- Completed the three way partnership between Mackay and Isaac Councils and the Anywhere Theatre Festival which culminated with the Anywhere Festival launch held at Oaks Apartments. An exciting range of topical entertainment will occur in the Mackay City Centre, Moranbah and Dysart as part of the Festival, which is part economic development, and part arts and cultural development. The Festival commences in March.
- 27 Friends of the Theatre have received their Responsible Service of Alcohol certification and volunteer labour is now being used with paid labour which partly defrays the costs of the MECC's new Food & Beverage service.
- Assisted Mackay District Rugby League and Mackay Cutters with the St George Illawarra v Cutters match, and the Cowboys v Broncos NRL trial match.
- Continued to assist stakeholders from the newly formed Casey Avenue Stadium Board who prepare to take over day to day operations of Mackay Stadium.

Mackay Entertainment and Convention Centre

Overview

- There were no performing arts hires over this period as the theatre has been shut down to have new air conditioning installed and painting has also taken place. Hires in the Convention Centre include Council the Australia Day Awards, Citizenship Ceremony, and Sports Expo, other hires included HLB Mann Judd, Daily Mercury, Reef Catchments and AUSCOAL Superannuation.
- The Friends of the MECC were awarded the inaugural Australia Day Award for outstanding Arts & Cultural Group in the region. The Friends Committee and the Friends working on the event were welcomed on to stage to receive the Award. The Award has created significant pride with the Friends Association, and the MECC is delighted that this hard working group who have over 350 people as members continues to grow, adapt to change and continues to be recognised in the region.

Capital Program

- Airconstruct Pty Ltd has finished the replacement air-conditioning for the Entertainment Centre ahead of schedule.
- Painting works including painting of the Entertainment Centre foyer ceiling have been completed.
- All capital works have either now been fully acquitted or are organised for completion.

Entrepreneurial

- No entrepreneurial shows have been held in this period.

Performance

Type	# of Events	Actual Attendance
Awards Evening	2	536
Event	1	130
Exhibition	1	2500
Workshop	1	20
TOTAL	5	3286

as at JAN 2015

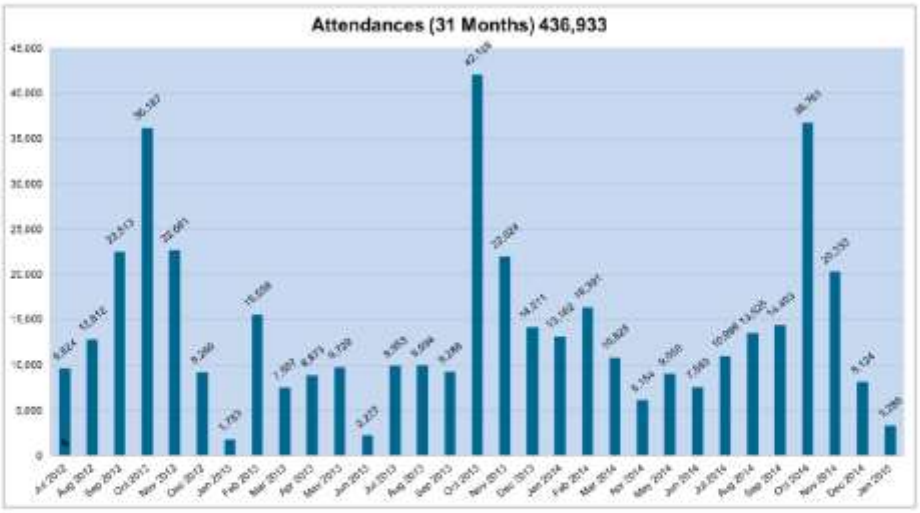
Non-Financial Indicators	Target	Year to date
Number of Performances fully cost recovered	50%	50%
Minimum number of catered functions	140	72
(excluding performances)		
Average attendance at shows	Auditorium 550	Auditorium 341
	Foyer/space 100	Foyer/space 86
	Halls 600	Halls 356
	One Hall only 200	One Hall only 176
Number of non-utilised days	90	42
Number of Performances at the MECC	200	200
Yearly occupancy of facility	175,000	107,428
Customer Hire Satisfaction	80%	86%

Mackay REGIONAL COUNCIL

Community and Client Services 19 January - 15 February 2015

3 Year Comparisons

	2014-15				2013-2014				2012-2013			
	Performances	Events	Attendance	External Ticket Sales	Performances	Events	Attendance	External Ticket Sales	Performances	Events	Attendance	External Ticket Sales
JUL	17	17	10,996	305	28	15	9,953	9,229	24	23	9,624	1,772
AUG	28	17	13,525	843	13	17	9,994	3,225	12	27	12,812	4,390
SEP	18	42	14,403	1,784	15	26	9,286	902	20	27	22,513	4,262
OCT	114	14	36,761	4,575	116	23	42,128	1,202	118	31	36,187	247
NOV	16	33	20,333	754	19	23	22,024	1,700	18	38	22,661	1,163
DEC	7	17	8,124	0	10	43	14,211	760	8	20	9,260	352
JAN	0	5	3,286	1,500	0	121	13,162	0	1	4	1,783	0
FEB					4	19	16,391	0	4	13	15,558	5,437
MAR					17	26	10,825	1,408	7	19	7,507	2,350
APR					12	8	6,154	0	14	18	8,873	4,038
MAY					11	27	9,050	0	15	16	9,729	3,094
JUN					17	12	7,593	256	5	11	2,227	4,902
TOTAL	200	145	107,428	9,761	262	360	170,771	18,682	244	247	158,734	32,007



Stadium

- Mackay Cutters vs St George Illawarra Dragons match played
- Brisbane Broncos vs North Queensland Cowboys match attracted a 98.75% capacity based on set up for 8000 people. It is highly pleasing to report the set up for this match was well received by the community, and temporary and costly infrastructure such as scaffolded seating was not bought in, saving both time and money
- Assistance continues to be provided to the incoming Casey Avenue Stadium Board
- With the agreement of the Casey Avenue Stadium Board, Council officers have contracted PBR (Professional Bull Riding), to occur again at the Stadium this year. This well supported attraction will take place at Stadium Mackay in September this year.
- Officers are also assisting Casey Avenue Stadium Board, with another event hire for later this year, this event should be a welcome addition to the Stadium's calendar of events.
- Nitro Circus at Stadium Mackay will be held in April. Careful planning is taking place to ensure all aspects of event management are in train.

Festivals and Events

- Excellent feedback has been received regarding the 2014 New Year's Eve celebrations. Main sponsors Wide Bay Australia who sponsored several fireworks displays in Queensland as part of New Year's Eve, declared Mackay to be a role model event, and our example of event delivery and the treatment of sponsors was highlighted to other Wide Bay Australia sponsored events
- Planning for the Anywhere Festival has completed, the Festival brochure launched, and this Festival will take place in March
- Planning for the annual Easter Carnival is complete, and a new event layout for this year is necessary given the redevelopment works taking place in the Mackay City Centre. New partners, sponsors and activities have been organised so that this event remains topical and well supported.
- Planning and programming for the 2015 Festival of Arts is almost complete.

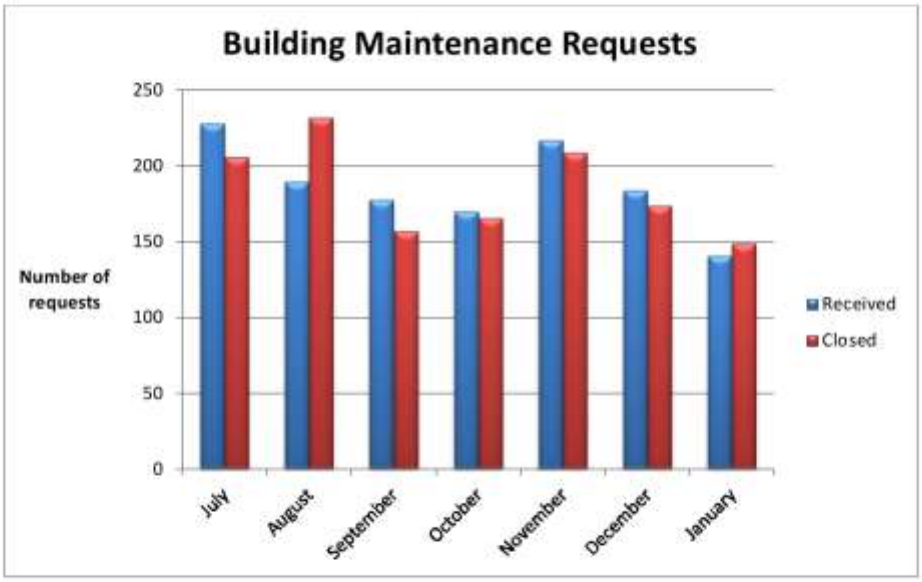
Anywhere Festival Launch at Oaks Apartments

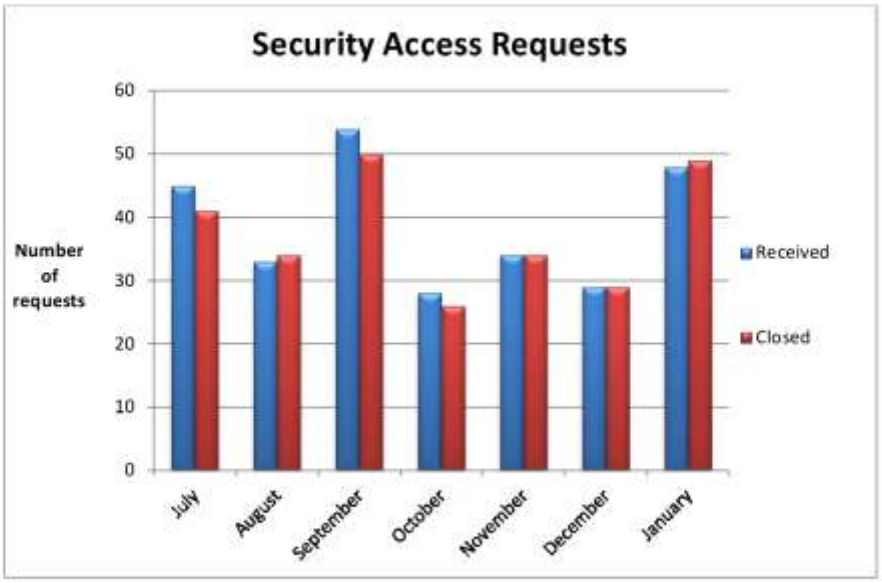
The MECC set for Australia Day Civic Awards

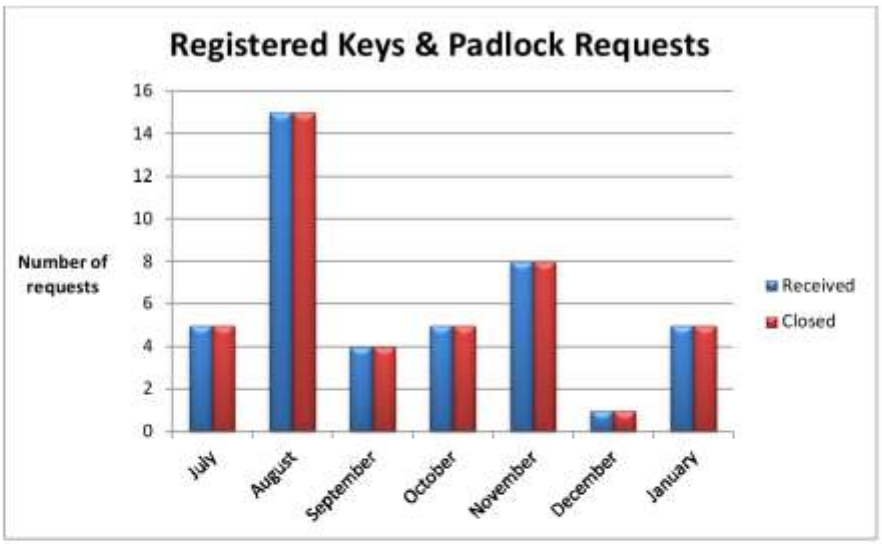
Property Services

Management

- Facilitated Property Services input into managing logistics of staff relocation, office space design and fit out to accommodate the needs of several Departments including Northern Australian Services, this work also incorporated establishment of short term lease arrangements.




Security Access Requests
Number of requests
60
50
40
30
20
10
0
July
August
September
October
November
December
January
Received
Closed


Registered Keys & Padlock Requests
Number of requests
16
14
12
10
8
6
4
2
0
July
August
September
October
November
December
January
Received
Closed

Land Matters

Leases

Property Services has received several enquiries from different Telecommunication Carriers to lease sites for new towers in the region, mainly in the Andergrove / Northern Beaches areas. NBN have also requested Council to look into additional sites.

The program is currently undertaking work on approx. 30 leases.

Land and Buildings

To meet the growing and diverse nature of land dealings within Council, changes have been made to the Property Services structure involving the relocation of responsibilities for land acquisition to Council's Legal Counsel.

This will allow Property Services to start undertaking inspections including negotiations with property owners to address issues raised in regards to Council Freehold Land and Trustee Land including dividing fences and monitoring compliance of community based and commercial lease conditions.

Co-ordination of land asset data and inspections of built infrastructure will also be improved.

Property Services working in collaboration with Sport & Recreation Co-ordinators, Regulatory Services and the Grants Officer can now provide a holistic land management service to both internal and external clients.

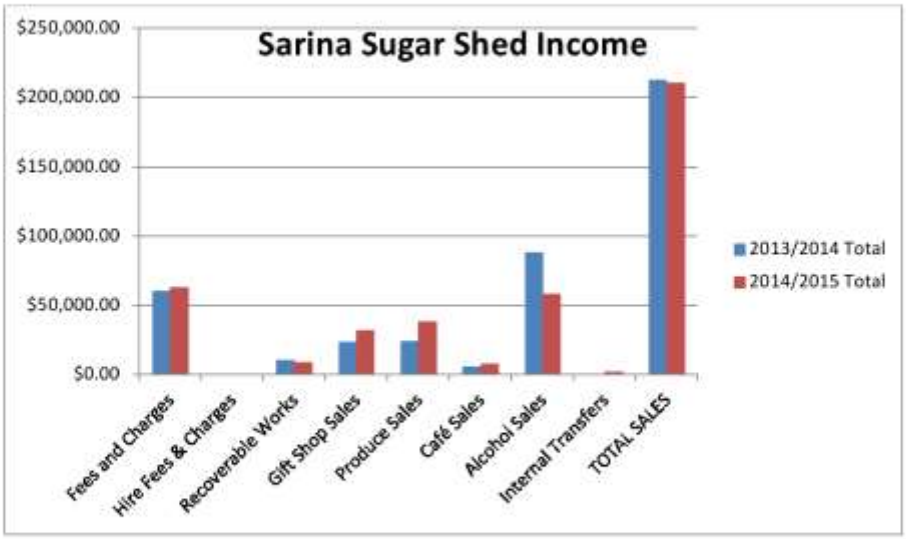
Sarina Sugar Shed

Sales at the Sarina Sugar Shed have steadied as usual for the January/February period. This allows time for planning and preparing for the upcoming season.

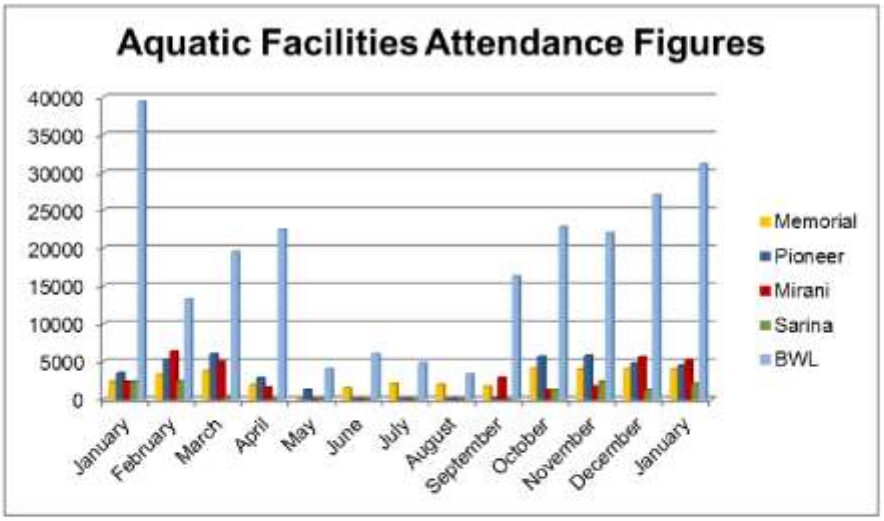
Batch No. 4 of Sugar Shed Rum will be released in April, and will incorporate a special bottle and label commemorating 100 years of Anzacs. This is a joint effort with the Sarina RSL Club.

Group bookings from conferences and events in the Mackay region are starting to filter in creating strong forward bookings. Sarina Sugar Shed has been working with processors, suppliers, farmers and Restaurants involved in the Mackay, Isaac, and Whitsunday Regional Food Council Agritourism Development Project. Building strong relationships with groups in these areas which will see more Sugar Shed products distributed around the regions.

The Sarina Sugar Shed will be entering the Mackay Isaac Tourism Awards and is awaiting the outcome of its submission in the 2015 Australian Distilled Spirits Awards. Judging is to take place in the next couple of weeks.



Aquatic Facilities



Note on attendances:

Bluewater Lagoon

Closed late July and August (attendance in August reflect contractor attendance)

Memorial Swim Centre

Closed May 2014

Pioneer Swim Centre

Closed June, July August

Mirani Swim Centre

Closed May, June, July and August

Sarina Swim Centre

Closed June, July and August, September 2014 (May, June, July and August 2013), December 13 – 26 inclusive (Qld Education requirement)

Corporate Communications and Marketing

Management

The Australia Day Awards presentation ceremony at the MECC was a success, with the new format well received by all nominees and provided a strong sense of civic pride on the night.

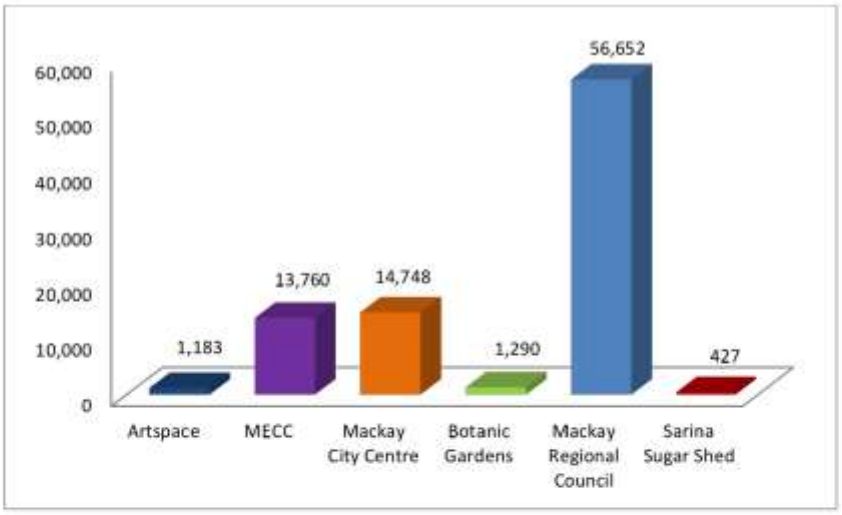
Members of the team played a key role in delivering another hugely popular Sports Expo and Sign-on day in February. Now in its fifth year, the event has become an integral part of promoting an active, healthy lifestyle.

Interviews held for the Social Media-Website Officer with an appointment due shortly.

#MackayPride campaign gains traction in the community with work finalised on new designs for the soon to be launched Waste trucks. A Facebook competition conducted during January received almost 100 entries, where entrants had to comment on what makes them proud.

Collaborated with Queensland Rail to welcome the Steam Train to Mackay and used the visit to run a week-long Facebook competition, which proved very successful.

Website visits for January



Strong figures recorded for the website, with the Community Attitude Survey showing that over 67 per cent of residents get their council information from the website.

Facebook

Facebook numbers 7860

Twitter

Followers: 1213

YouTube

Video views: 2377

Estimated minutes watched: 4617

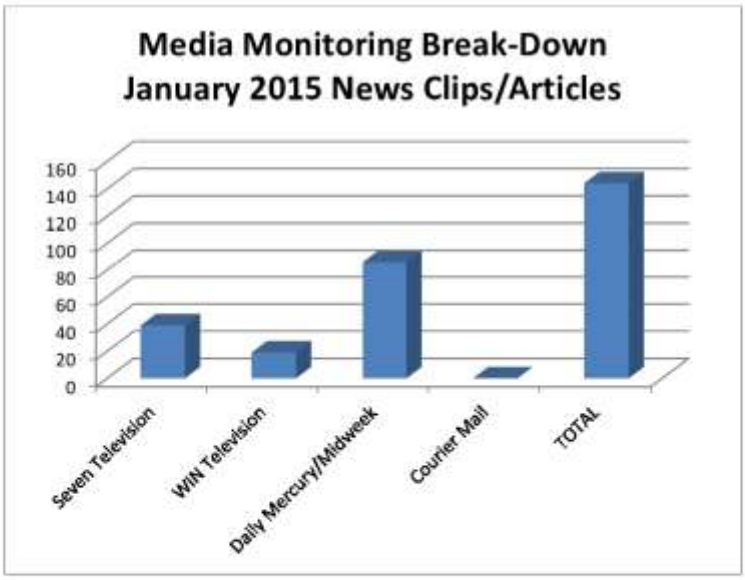
Top videos

#MackayPride views has now hit over 4,000

Bowen Basin Service Link DVD posted **212** views in January, while the video produced on the 2015 Australia Day awards, that featured on Facebook had **87** views.

General

Slow month due to holidays, with only 144 media mentions



- Mixed response from the eight community funded events for Australia Day. Some provided positive feedback, while others were a little disappointed with attendances. A review will be held to ascertain funding requirements for 2016 Australia Day.

- Citizenship Ceremony held on Australia Day for about 50 new citizens.
- Facebook promotion for #MackayPride. Prizes provided by Sarina Sugar Shed, Economic Development and MECC

Mayor with winner of #MackayPride Facebook competition

- Facilitated special welcome and distributed tickets to not-for-profit groups for the Rail 150 Steam Train arrival. A group of Bushrangers arranged a special hold-up during the train trips to raise funds for Mackay Foundation. Over $700 was raised as part of the event.
- Mayor presented funds to Mackay Foundation and Macrossan & Amiet Foundation as part of council's eChristmas card campaign
- Delivered another highly successful Sports Expo & Sign On Day in February. LGAQ Ambassador Shane Webcke, his third visit in four years, was a huge hit with all attendees.
- Draft report provided for Community Attitude Survey and has been given to councillors and SLPT for consideration. Report due to be released to community in early March.
- Internal Social Media Policy has been produced and implemented within the team

Shane Webcke and Cr Steindl talk to local sporting groups.

Parks and Environment

Management

- Met with representative of Surf Life Saving Queensland to discuss management of contracted services.
- Undertook analysis and briefing for priority coastal projects.
- Preparation of the draft 2015/16 Capital Works Program for Parks and Environment.

Parks Operational Planning

- Responded to 21 internal referrals for feedback on designs and development applications affecting parkland assets.
- Finalising input into the Open Space Planning Policy in collaboration with Strategic Planning.
- Completed conceptual designs for proposed capital works projects.

Parks Building Services Activities

Electrical Operations

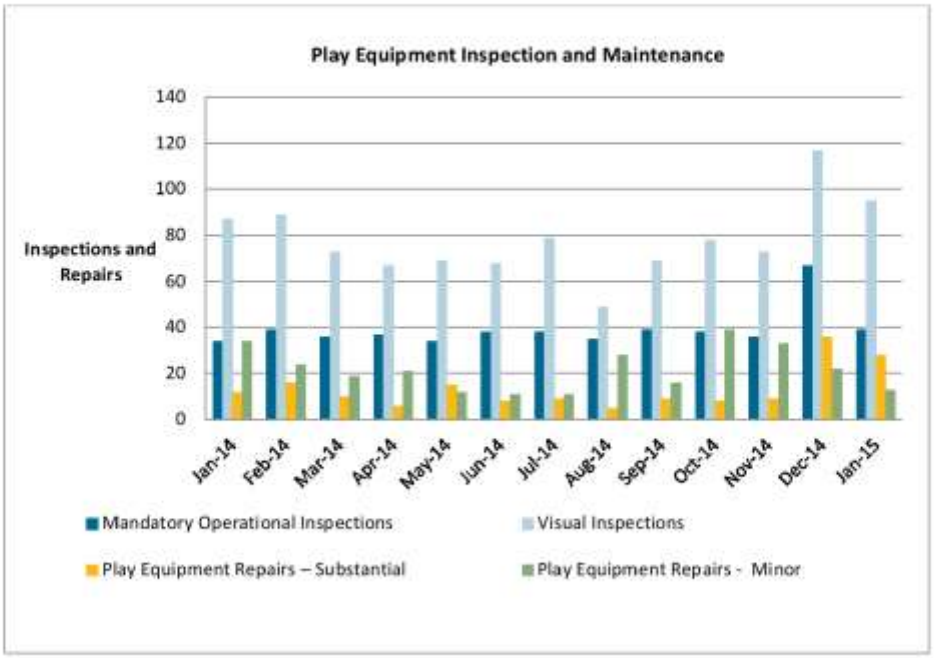
- Three maintenance runs through all traffic signals were completed and twelve lamps replaced. Eight emergency responses to traffic signals were actioned.
- One site hut connection/disconnection was completed and repairs to council owned street lighting completed at two locations. Testing and tagging was conducted in three work areas/teams.
- Eight electrical repairs to park lighting, switchboards, barbeques and amenities.

Public Amenities

- A substantial amount of graffiti was cleaned and/or walls repainted at Illuka Park amenities.
- Two sharps containers and a cubicle indicator bolt were replaced following vandalism at Queens Park amenities.
- Three stainless steel toilet pans are currently being installed at George Johnson Park amenities.
- Guttering was repaired at Vic Bridger Park amenities, Calen.

Park Furniture and Playgrounds

- Two deteriorated timber park seats at Haliday Bay were removed and have been replaced with new aluminium bench seats. An aluminium picnic setting at Seaforth foreshore was also repaired.
- Four picnic shelters and two barbeque shelters at Quota Park have been cleaned and painted to match the recently installed new shade structure and play equipment.
- Fourteen repairs to fencing and gates were completed at various locations.



Other work Completed - City Centre, Bluewater Quay and Bluewater Trail

- 9,000 Sqm of concrete and path cleaned with blower.
- 4,000 Sqm of concrete and path cleaned with high pressure water cleaner.
- 5 bags of rubbish and 15 shopping trolleys removed from the river bank.

Capital Works - In progress

- Ken Burgess Orchid House - Garden bed edging is being replaced with concrete edging.
- Quota Park Play Equipment and Shade Replacement – Old play equipment and shade sails are being replaced. Turf is currently being established to finish off the project.
- Sarina Cemetery - Construction of a rotunda is in progress.
- Pitkin St Park Walkerston – This small project involves the provision of new seating.

Capital Works Projects Completed

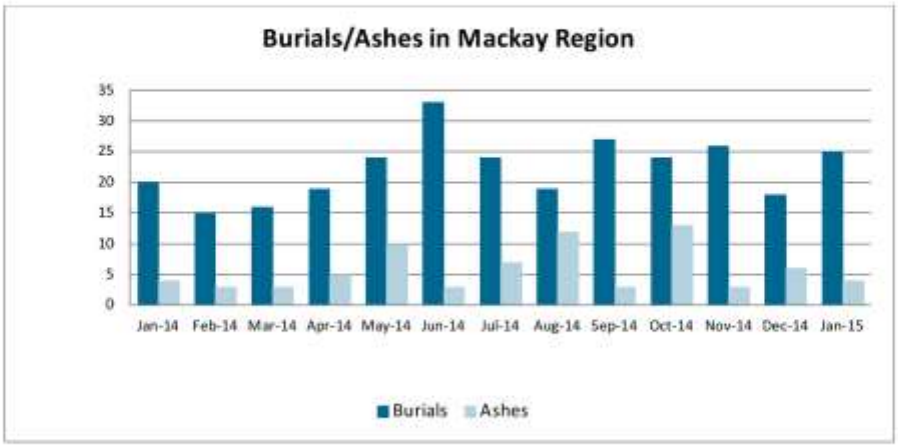
Grendon St Amenities
Demolition in progress

Grendon St Amenities
Completed and area finished with turf

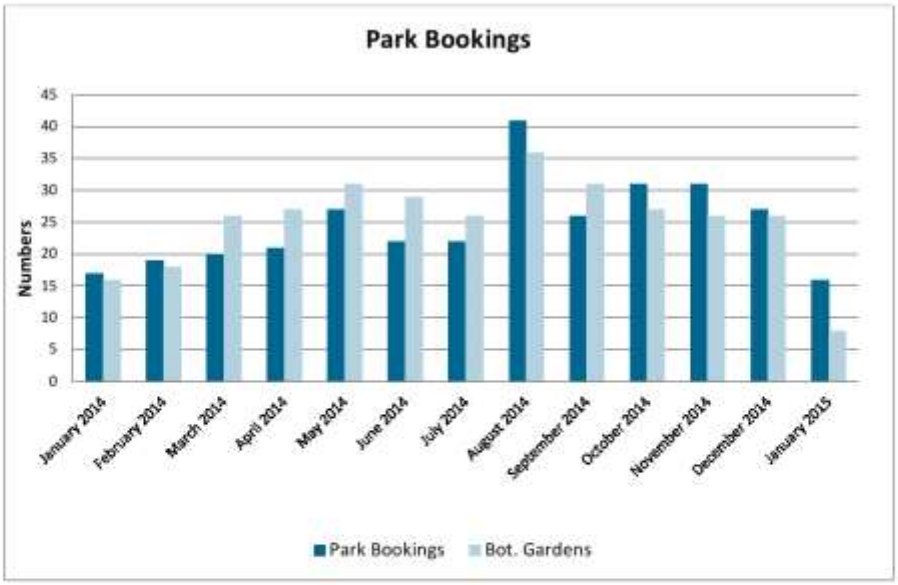
Pioneer Street to Schapers Rd Walkway
Replacement of 11 sections of path to remove trip hazards

Seaview Park Bucasia Play Equipment
Combo and shade structure replacement

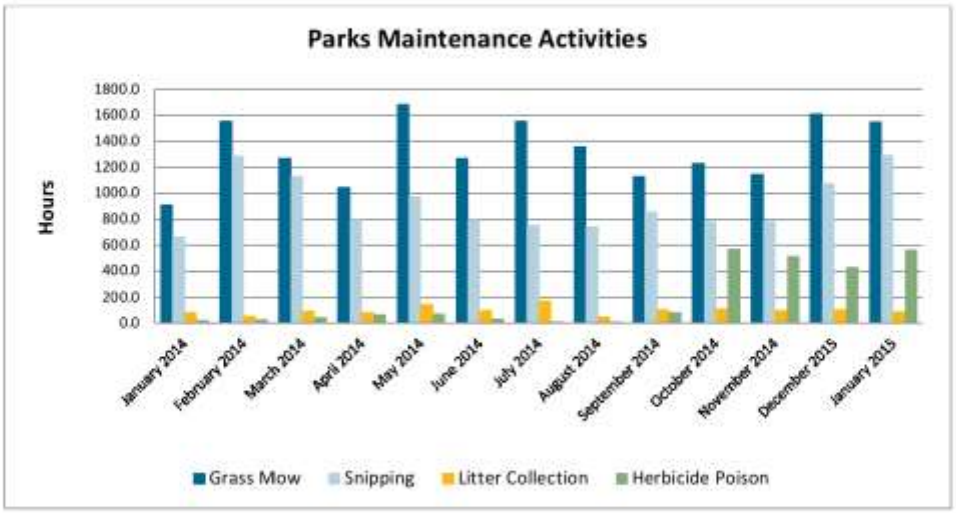
Cemeteries



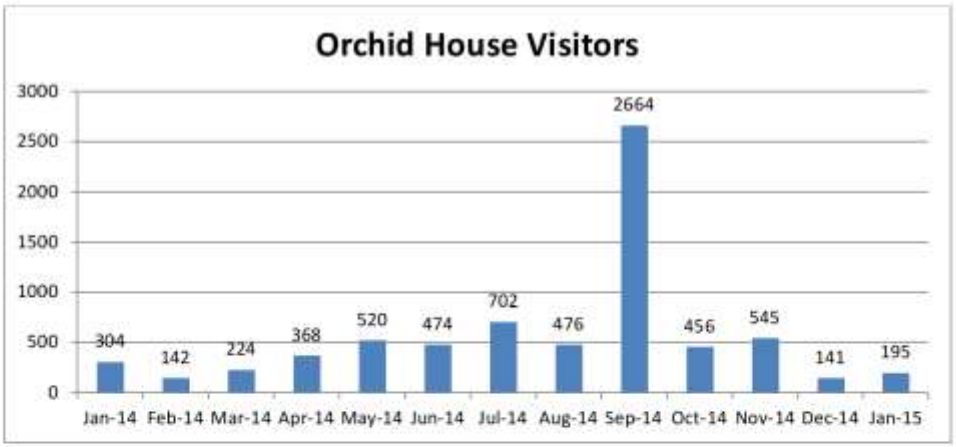
Administration – Parks Bookings



Grass Maintenance Activities



Horticulture



Plants Grown in the Nursery and Planted out by Horticulture Staff:
140mm Plants – 630
Larger Plants – 95

Natural Environment and Marine Beach Activities

Natural Environment Plan Priority Project Implementation

Coastal Projects

- Blacks beach spit – weed control underway, welcome sign, bench seats and track markers installed
- Blacks beach zone C – all major works competed including surveying, tree removal, stump grinding, fence construction, access track remediation. Weed control work and tree planting has commenced. Currently investigating opportunities for community involvement in site maintenance under supervision. Bushfire management plan currently in development.
- Grasstree Beach – contractor engaged to undertake weed control.
- Sandfly Creek Environmental Reserve – survey, modelling and design of Gross Pollutant Trap (GPT) underway. Site preparation for revegetation work currently being undertaken following community consultation period.
- Seaforth reserves – community consultation undertaken and fencing works commenced.
- Far Beach South – engagement undertaken for fencing project.

Waterway Projects

- Blackrock Creek fishway – concept design underway.
- Landings Rd, Koumala – community engagement plan developed and communications underway, including online survey on the Connecting Mackay website.
- Lagoons Creek – landscape drawings completed, environmental management plans in development.
- Demolyns lagoon – management plan completed.

Environmental Ranger Activities

- Waste dumping - information notices sent to three properties in Whitehaven Drive Blacks Beach Cove, in relation to green waste dumping in the wetland. Infringement notice issued to property in Grasstree Beach for illegal littering.
- Illegal structures - Letter of demand sent to property in Coral Drive regarding shed on council land.
- Illegal access and camping - Warning notices issued for four vehicles driving on Shoal Point Beach.
- Illegal clearing- Letter of demand sent to property on O'Reilly Ave regarding illegal tree removal and planting another without permission on the road reserve. Investigations underway regarding tree removal off Buoro St Ball Bay and Adamson Street.

Mackay Natural Environment Centre Activities

- Natural Environment Centre Nursery delivered over 2600 plants from the nursery including 500 for Midge Point, 1000 for Blacks Beach zone C, 800 for McEwens Beach and 300 for Harbour Beach and we received our first external order for 428 plants from Qld Parks and Wildlife.
- Volunteer program underway – with disability volunteers, Pioneer Catchment and Landcare members, Youth Justice workers, staff on light duties and the Green Army Team all spending time propagating plants and sorting seed in the nursery

Other Projects

- Stormwater management – contractor engaged to maintain assets until the end of the financial year
- The Green Army team have been working along the Blue River Trail, Janes Creek and Demoleyns Lagoon.
- Preparation of Management Plan for Keeleys Rd wetlands commenced.
- Beach access off Nautilus Park Shoal Point was repaired following storm damage
- A brochure was developed to provide an update on the Coastal Project

Council supplied plants for coastal revegetation at the Midge Point

Valentine the Green Sea Turtle was found at Harbour Beach and transported to the Whitsunday Turtle Hospital

A seating installed at Blacks Beach Spit overlooking McCreadys Creek

Fencing works completed Blacks Beach zone C

Mackay Regional Botanic Gardens

Horticultural and Site Works

- Horticultural works shifted to the more typical summertime activities at the Mackay Regional Botanic Gardens (MRBG). Mowing, hedging and pruning, weed control and mulch took up the majority of the horticultural tasks. Some planting occurred around the main visitors centre, whilst the Malta Garden received a revamp as the Cactus collection garden was transformed into a 'Mediterranean Garden' after feedback from both the Maltese community and visiting public to create a more typical 'Maltese' theme.
- The drill bit sculpture "Wheels of Industry" that once featured in Artspace Mackay, was installed in the Coal Garden next to the 'Palaeobotany walls'. The sculpture compliments the thematic design of this garden.
- Other works included extensive timber and deck oiling, and numerous pathway repairs.

Bugs, Beetles and Bees school holiday activities

"Whose egg is it now?" by Uta Wild

View from Mt Blackwood reconnoitre

Eumundi Quandong *Elaeocarpus eumundi* in the wild at Mt Blackwood

Community Interaction

Guided Walks

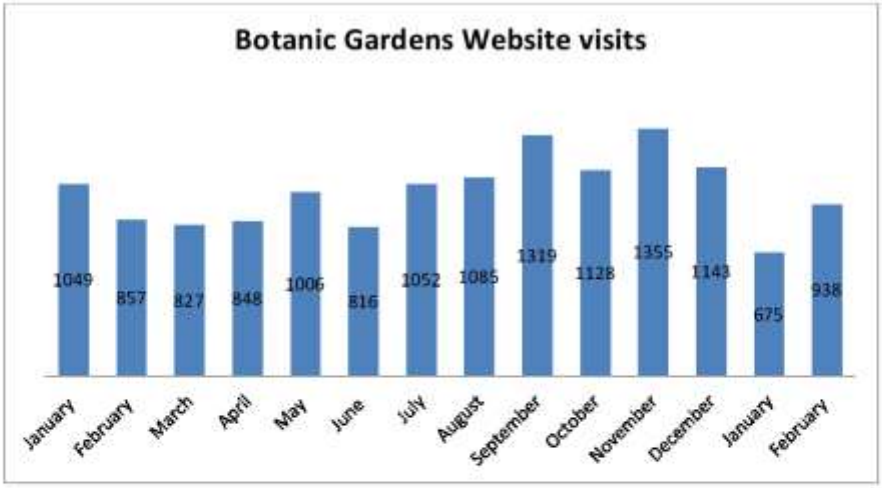
Planning commenced for the first joint Gardens Friends/Society for Growing Australian Plants (SGAP Mackay) guided walk in mid-2015 to Mt Blackwood. At the heart of the MRBG story was the 'rediscovery' of Mt Blackwood Holly *Graptophyllum ilicifolium*, by SGAP Mackay members in the late 1980's. With the permission of Queensland Parks and Wildlife Service, a reconnoitre was held on December 15 2014 and again on February 9. With a number of special 'high altitude' plants recorded, with several yet to be included in the MRBG living collection, and several distinct regional ecosystems viewable.

School Holiday Activities

School holiday activities occurred on Wednesday January 21 to Friday January 23. Children were introduced to bugs, beetles and bees either in observation containers, photographs, pinned specimens in the meeting room or on plants and flowers during a walk through the botanic gardens.

Exhibitions

'SUNDAY PAINTER' an exhibition by Uta Wild is now on show in the Lagoons Gallery from Wednesday January 21 to Sunday March 1. Local artist Uta Wild is a well-known painter in traditional and figurative abstraction images. Born in Ravensburg, Germany, Uta has won many art prizes and has sold her works both nationally and overseas. The Lagoons Gallery is open Wednesday to Friday 10am - 3pm and Weekends from 9am - 4pm.



Mackay Regional Council
Matsuura Advisory Committee

MINUTES OF MEETING

Monday, 23 February 2015
Venue: Ground Floor Lunch Room, Gordon Street Administration Building

Attendance: Cr Alison Jones, Cr Dave Perkins, Bill Molloy, Karen Hurford, Virginia Flynn, Robert Ryan, Leah Chambers.

Apologies: Margaret Browne, Jane Carrello, Akiko Doolan Shona Norris.

ITEMS	COMMENTS	ACTION / RECOMENDATION	DATE TO BE COMPLETED
• Confirmation of minutes	The minutes of the previous meeting were received.		
• Business arising from the previous minutes	It was previously suggested that the Mackay Pride video be forwarded to Matsuura as a means of promoting our region. Leah Chambers advised that the video will instead be presented as a gift to the attendees at the Formal Dinner during the 2015 Matsuura Tour. With regards to the gifts, Cr Jones advised that she will pass on the information regarding the commemorative coins that are available from Carrolls Newsagency.	Nil Cr Jones to speak with Officers from the Mayor's Office who now has responsibility for the Citizens tours.	
• Correspondence	Nil		
• Scholarship Program 2015	The students have not been advised regarding their successful/unsuccessful application as yet. We are currently waiting on the travel agency to forward costings for the students so these can be sent out with the letters. The committee discussed options regarding notifying students.	Leah Chambers to advise students via email regarding their application, advising that a follow-up letter will be sent which will include acceptance forms and costings.	24 February 2015

ITEMS	COMMENTS	ACTION / RECOMENDATION	DATE TO BE COMPLETED
• Sister Cities Mackay	There were no representatives present at the meeting. Cr Jones had a copy of the minutes from the previous Sister Cities Mackay Meeting which were read out at the meeting. The minutes highlighted the suggestion of a Fish Festival in Mackay. This was discussed by the committee regarding the potential benefits for the region.		
• Future Meeting Dates	Cr Perkins suggested moving the meeting dates to a time closely following the Sister Cities Mackay meeting, allowing the committee to receive the information earlier. It was agreed by those present that the Committee Meetings be scheduled for the 2nd Monday of the month, commencing 9 March 2015.	Leah Chambers to update meeting requests for Committee members.	
• General Business	**Karen Hurford** – The recent CLAIR Newsletter, a publication of the Japan Local Government Centre, contained a story requesting school exchange partners. The committee discussed the benefits of such an exchange and Leah Chambers will contact various schools to gauge interest in participating in the program. **Cr Jones** – A meeting was recently held with the Mayor's office regarding the 2015 Citizen's Tour to Matsuura, (proposed for early November). Kathryn Smith is assisting with the transition and further information will be provided as it becomes available. Bill Molloy suggested sending the expressions of interest information to the service clubs once it becomes available.	Leah Chambers to contact Matsuura and the Mackay Language Teachers network with a view to connecting schools.	
• Date and Time of Next Meeting	Monday 9 March 2015 at 5pm, in the Administration Building Ground Floor Lunch Room. The meeting closed at 5.47pm.		

Mackay Regional Council
Fields of Dreams Advisory Committee

MINUTES OF MEETING

Tuesday, 3rd February 2015
Venue: Mackay Regional Council – Sarina Office

Attendance: Cr T Morgan, Mrs J Boswood, Mrs G Murray, Mrs C Scott, Mrs N Lang, Mrs G Mansfield (Sugar Shed Coordinator) Mrs M Watson (Sarina Arts Council), Mrs J Bickell (Sarina Arts Council), Mrs B James, Mrs M McDowell (Neighbourhood Centre Officer) and Mr A De Brincat (Manager Property Services)

Apologies: **Cr G Martin,** Mr G Carlyon (Director Community & Client Services), Mr R Ailwood, Mr P Owen (Manager Parks & Environment)

ITEMS	COMMENTS	ACTION / RECOMMENDATION	DATE TO BE COMPLETED
• Confirmation of minutes	Members resolved that the minutes from the Committee Meeting held on the 14th October 2014 as presented be received and adopted.		
• Business arising from the previous minutes	Members referred to the attached Action List to review actions arising from the previous meeting.		
• Facility Operations			

ITEMS	COMMENTS	ACTION / RECOMMENDATION	DATE TO BE COMPLETED
○ Sarina Sugar Shed	• Entrance to Parkland - Signage in the Field of Dreams needs to be reviewed especially the main entrance sign that is faded and unreadable.	• Sugar Shed Coordinator to undertake signage audit in consultation with committee members and obtain quotations to implement audit recommendations.	07/04/2015
	• Cars driving at speed passed playground and driving right up to the playground instead of parking in designated areas.	• Manager Property Services to obtain information on the following matters from the Ross Willis – Building Services Coordinator: ➢ Normal process for fencing playgrounds in similar environments to the Field of Dreams playground which is bordered by a commercial and public access road. ➢ Installation of speed signs and speed bump to control speed on the access road. ➢ Installation of bollards or a barrier to stop vehicles driving through parkland and up to the playground.	07/04/2015
○ Sarina Tourist Information Arts & Crafts Centre	• Mt Pelion School Building – Update on building project. Works are progressing well with a power supply upgrade being undertaken to cater for the new building.	•No action required.	N/A
	• Landscaping around centre buildings. Initial inspection has been held, feedback from Council's Operational Forward Parks Planner	• Manager Property Services to obtain information for the next committee meeting.	07/04/2015

ITEMS	COMMENTS	ACTION / RECOMMENDATION	DATE TO BE COMPLETED
	required. • Sarina Art Council – Interested in using the Sarina Art Gallery. Representatives from the Sarina Art Council presented information to the committee on work being undertaken to regenerate the Arts Council and their concept of utilising the Art Gallery for workshops and exhibitions. Members were advised that a Sarina business person was also interested in using the Art Gallery building as a café with members of the Sarina Historical Centre raising concerns with the viability of the café proposal and the ability of the Art Council to keep the building open for 5-6 days per week. Sarina Historical Centre representatives requested that the building be assigned to the centre to display their railway collection.	•Manager of Property Services to discuss the matter with the Artspace Director and arrange a meeting of interested parties to progress the Art Council's proposal.	07/04/2015
○ Sarina Historical Centre	• Cleaning of tables under trees was undertaken on a weekly basis, this practice has stopped – do we need to submit a request to the Parks & Environment Program. Members of the Sarina Historical Centre further raised concerns with the condition of the grounds, standard of garden maintenance and grass build up around buildings being caused by mowers not being fitted with catchers. It was further agreed that consideration should be given to replacing the old and deteriorating concrete table and chairs with new park furniture.	• Manager of Property Services to confirm the cleaning and ground maintenance schedule for the Field of Dreams with the Manager of Parks & Environment to ensure that required scheduled works are being performed.	07/04/2015.

ITEMS	COMMENTS	ACTION / RECOMMENDATION	DATE TO BE COMPLETED
	• Toilets for after-hours use in the Field of Dreams – volunteers have been advised by a few people over the Christmas period that they had gone to the Field of dreams to have a meal in the cool only to have to go home because there are no toilets available for after-hours use. Members agreed that this matter should be monitored to ascertain the demand given the possible damage the existing facilities could incur if they were to be left open. • Building of shade shelter over the table where the pine tree has been removed.	• No further action required at this stage. • Matter to be referred to Building Services Coordinator for consideration.	N/A 07/04/2015
• General Business	• Parks & Environment have reviewed the request for the additional fencing for the playground and do not recommend additional fencing is required at this location. The existing partial fencing (See photo attached) along the road side of the playground is sufficient, taking into account the low traffic volume and speed at this location. Parents are required to adequately supervise their children whilst using the playground.	• Matter has been dealt with in the above Sugar Shed area.	N/A
• Date of Next Meeting	• The next Committee Meeting will be held at 2:15pm on the 7 April 2015 at the Mackay Regional Council – Sarina Office.		
• Meeting Closed	• 3.45pm		

CHARACTER AND HERITAGE ADVISORY COMMITTEE
13 February 2015 at 8.30, 1st Floor Reception Room
Administration Building, Gordon Street
MINUTES

ATTENDANCE: Cr Dave Perkins (Chair), Cr Chris Bonanno, Jaco Ackerman (Manager Strategic Planning), Michael St Clair (Strategic Planning Officer), Brian Osborne (Museum Coordinator), Berenice Wright (Local Historian), Phil Martin (Mackay Historical Society & Museum), Carolyn Scott (Sarina Historical Society & Museum), Norma Lang (Sarina Historical Society & Museum), Melanie Piddocke (Qld Museums), Lawrence Booth (Manager Community Lifestyle), Kate Balderson (Mackay Library), Trish Roderick (Mackay Library), Alisha Stewart (Department of Environment and Heritage Protection – Mackay Office), Peter Todd (Department of Environment and Heritage Protection – Brisbane Office), Yevonne Sullivan (Administration Assistant Strategic Planning).

APOLOGIES: Cr Greg Martin, Anna Thurgood (Manager Artspace), James Carless (Project Manager City Centre Projects).

1. BUSINESS ARISING OUT OF MINUTES OF PREVIOUS MEETING

1.1 Court House (Victoria Street)

Council attended a pre-start meeting where the contracted builders met with the Department of Justice to discuss the schedule of the works. The contract has been awarded to local company Crusade Developments. Scaffolding has now been erected on part of the site and it is anticipated that the works will take up to 6 months to complete.

The Department of Justice will liaise with council and provide updates on the works as it progresses and is liaising with DEHP on the necessary approvals on heritage matters.

Action: *Strategic planning to provide a copy of the maintenance report to committee.*

Strategic planning will continue to keep in contact with the Department of Justice.

1.2 Wood Street Redevelopment

Over the past two years Council has sent numerous letters to Telstra (property owner) noting its concern for the appearance of the building. Given that the owner has recently undertaken minor maintenance to the façade and the structural components of the building are not of concern, there is limited further action which the Committee can pursue in this matter.

However, given the location and significance of the building it is suggested that communications are maintained with the property owners in order to encourage them to be a corporate partner in the beautification of the city.

Action: *Strategic planning to maintain communications with the property owner and to provide updates on the surrounding revitalisation works within the city centre.*

2. BUSINESS ARISING

2.1 DEHP update

The Department of Environment and Heritage Protection has recently undergone a number of restructures. In the past local Mackay office dealt with both compliance and assessment, however all assessment matters are now undertaken out of the Brisbane office, while

compliance matters are addressed by the local office. DEHP expressed that Council is welcome to approach both the Mackay and Brisbane office as required.

2.2 DTMR/Ergon Heritage City Enquiries

There have been no enquiries received since the last meeting.

2.3 Heritage Signage

Brian Osborn met with Corporate Communications to discuss Heritage signage for Greenmount Homestead and the standard heritage signage to be used throughout the region. A new sign for Greenmount is being prepared however it may not be completed before the Heritage Fair. It was agreed that the standard brown/white branding that is currently in use for heritage will continue to be used through the region. The committee asked DEHP if the State had any guidelines relating to heritage signage state wide.

Action: *Peter Todd (DEHP) to send Michael St Clair a copy of the current guidelines on Heritage signage. Brian Osborn to liaise with Corporate Communications to finalise the signage designs.*

2.4 Pine Islet Lighthouse

Lawrence Booth (Manager of Community Lifestyle) advised the committee of his new role with the Northern Australian Services and that the Pine Islet Lighthouse project would be now managed by Robert Ryan as the acting Manager.

Lawrence provided the committee with an overview of the Action Plan which was formulated at the last meeting of the Pine Islet Lighthouse Revitalisation Working Group.

2.5 Heritage Awards 2015

Michael St Clair is currently updating the Award Guidelines and preparing to approach potential sponsors.

Brian Osborn suggested that the Awards be presented on the main stage prior to or after the performance by guest performer Graeme Connors and that this timing may attract with the exposure of the awards and potential sponsors.

Action: *Michael St Clair to distribute Award Guidelines, Sponsor benefits and the draft brochures to the Committee members for comment by 20 February 2015.*

2.6 Jubilee Park Rotunda

Councils Landscape Architect, Gavin Taylor, is seeking assistance from Committee sourcing of heritage materials and imagery to be considered for the next stage of the project.

Given the Committee only meets bi-monthly it was suggested that the Committee's role be limited to an advice/review role.

The review Berenice Wright undertook of the Stage 1 material was noted and thanks was extended.

3. GENERAL BUSINESS

3.1 Street Naming

Background information received from GIS regards Watsons Lane was tabled. Berenice advised that she is currently working on a project with Mercy College which involves Watsons Lane and other streets in South Mackay.

Action: *Berenice Wright to advise committee on her findings relating to whom the street was named after.*

3.2 Cemetery Walks

Berenice Wright advised that the funding for the Mackay Historical Society and Museum Mackay Cemetery project has been withdrawn and the project is on hold.

Action: *Cr Perkins to follow up on the status of the funding.*

3.3 Old Commonwealth Building – Victoria Street

Council attended a meeting with local DEHP officers on 12 February 2015 to discuss outstanding issues relating to the restoration of the Old Commonwealth building. The outcome was that the owner should lodge an application for an exemption certificate to DEHP to allow the works to recommence. Jaco Ackerman expressed that DEHP took a very pro-active role in dealing with the situation and that their outcome based approach was appreciated. The internal & external work that has been carried out to date is in keeping with the Heritage integrity of the building.

3.4 Open House

The Open House festival is a community event which has been held in a number of cities including Brisbane, Toowoomba, Ipswich and Maryborough. The event involves opening up heritage buildings to the public for tours and events. Peter Todd expressed that the event has been very well received in other cities.

Action: *Strategic planning to research the Open House concept and provide feedback to the Committee at the next meeting.*

3.5 Pioneer Shire Building

The renovations have progressed to lockup stage and it is anticipated to be completed by end of March with an official opening planned. Council has a signed lease with a tenant for the building.

3.6 ANZAC Display

The Mackay Military will be holding a display at the showgrounds during the week leading up to commemorative celebrations.

3.7 Mackay – Sarina Steam Train

It was noted that the Mackay – Sarina Steam Train trip hosted on the 31 January 2015 was a success and that a great job was undertaken by all groups involved.

Future Meeting Dates for 2015
10 April 2015
(Note: 6 April Easter Monday)
12 June 2015
14 August 2015
9 October 2015
11 December 2015

4. MEETING CLOSURE

The meeting closed at 9:30 am.

Meeting recorded by: **Yevonne Sullivan**

PINE ISLET LIGHTHOUSE REVITALISATION WORKING GROUP

ACTION PLAN

What	Why	How	Who	By When
1. Revitalise the Pine Islet Preservation Society	• To oversee the upkeep of the internal workings/mechanisms, run open days etc.	• Obtain copy of Preservation Society's Constitution • Check for currency and relevance • Check required office bearers. New roles suggested: ○ Volunteer Coordinator ○ Promotions Coordinator ○ Maintenance Coordinator • Contact past members for information about operations of the Society • Develop Expression of Interest document • Advertise Expression of Interest to coincide with Port Binnil's Marine Festival using NQBP, Mackay Tourism and Port Binnli Databases • Arrange appropriate media • Conduct an Open Day for interested Committee members (weekend of 13 – 14 June 2015 to coincide with Marine Festival) • Invite Dr Melanie Piddocke, CQ MDO and Brian Osborn, Museums Coordinator to be on the Committee	• Robert Ryan • Robert Ryan • Robert Ryan • Victoria Berardi • Robert Ryan • All • Victoria Berardi • Ben Anderson • Robert Ryan/Victoria Berardi • Robert Ryan	
2. Lock in commercial tourism opportunities	• Ensure on-going viability of the lighthouse and	• Approaches to be made to local operators such as Reeforest Adventure Tours and Megaforce Charters	• Stephen Schwer	

What	Why	How	Who	By When
	maintain it as a regional tourism asset	• Operator/s to pay an annual fee to the Preservation Society for the rights to operate tours		
3. Lighthouse Maintenance	• Resolve on-going maintenance issues to preserve the lighthouse as a regional tourism asset	• Conduct a Condition Audit of Lighthouse • Obtain estimates of cost to carryout works • Offer naming rights opportunities to potential corporate sponsors such as Dalrymple Bay Coal Terminal or Lighthouse Seafood Restaurant • Funds to be quarantined for maintenance purposes • Launch sponsorship during Marine Festival • Review displays, etc., within Lighthouse structure to make it more appealing to tourists – interpretive material	• Victoria Berardi • Robert Ryan • Robert Ryan (DBCT)/Ben Anderson (Lighthouse) • Robert Ryan • Stephen Schwer and Dr Melanie Piddocke	• Completed
4. Project planning workshop	• Develop an action plan to drive project forward			• In progress

Working Group Members

Robert Ryan, Acting Manager Community Lifestyle, Mackay Regional Council
Brian Osborn, Museums Coordinator, Mackay Regional Council
Victoria Berardi, NQBP Corporate Relations Commercial, North Queensland Bulk Ports Corporation
Stephen Schwer, General Manager, Mackay Tourism
Ben Anderson, Mackay Marina Sales Centre
Dr Melanie Piddocke, CQ Museums Coordinator, Museums Queensland