

# PERFORMANCE & SERVICE COMMITTEE MEETING

# AGENDA

# 28 APRIL 2015

Your attendance is required at a meeting of the Performance & Service Committee to be held in the Council Chambers, 232 Bolsover Street, Rockhampton on 28 April 2015 commencing at 9.00am for transaction of the enclosed business.

ACTING CHIEF EXECUTIVE OFFICER 22 April 2015

Next Meeting Date: 26.05.15

### Please note:

In accordance with the *Local Government Regulation 2012*, please be advised that all discussion held during the meeting is recorded for the purpose of verifying the minutes. This will include any discussion involving a Councillor, staff member or a member of the public.

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## 1 OPENING

### 2 PRESENT

Members Present:

The Mayor, Councillor M F Strelow (Chairperson) Councillor C E Smith Councillor C R Rutherford Councillor G A Belz Councillor S J Schwarten Councillor A P Williams Councillor R A Swadling Councillor N K Fisher

In Attendance:

Mr R Holmes – Acting Chief Executive Officer

## 3 APOLOGIES AND LEAVE OF ABSENCE

## 4 CONFIRMATION OF MINUTES

Minutes of the Performance & Service Committee held 24 March 2015

# 5 DECLARATIONS OF INTEREST IN MATTERS ON THE AGENDA

### 6 BUSINESS OUTSTANDING

6.1 BUSINESS OUTSTANDING TABLE FOR PERFORMANCE AND SERVICE COMMITTEE

File No:	10097
Attachments:	1. Business Outstanding Table for Performance and Service Committee
Responsible Officer:	Robert Holmes - Acting Chief Executive Officer
Author:	Robert Holmes - Acting Chief Executive Officer

### SUMMARY

The Business Outstanding table is used as a tool to monitor outstanding items resolved at previous Council or Committee Meetings. The current Business Outstanding table for the Performance and Service Committee is presented for Councillors' information.

### **OFFICER'S RECOMMENDATION**

THAT the Business Outstanding Table for the Performance and Service Committee be received.

# BUSINESS OUTSTANDING TABLE FOR PERFORMANCE AND SERVICE COMMITTEE

# Business Outstanding Table for Performance and Service Committee

Meeting Date: 28 April 2015

Attachment No: 1

Date	Report Title	Resolution	Responsible Officer	Due Date	Notes
25 March 2014	Fire Management Plan for Mt Archer	THAT Council approve that resources be deployed towards the development of a Fire Management Plan for Mt Archer and its surrounds and that the plan be presented to the table in July 2014.	Michael Rowe	01/04/2015	Strategy complete. Implementation plan under peer review.
29 July 2014	Renewable Energy Solutions	THAT a report on renewable energy solutions that may be able to be implemented across Council facilities be brought back to the table.	Sharon Sommerville	05/08/2014	Researching information for report to be presented late 2015.
23 September 2014	Tender - Lease of Vacant Council Land	<ul> <li>THAT under Section 227 of the Local Government Regulation 2012, Council invites tenders for the lease of the following properties for the purpose consistent with the planning scheme: <ul> <li>James Street, Gracemere;</li> <li>Lot 117 Capricorn Highway, Gogango;</li> <li>22 Hallett Street, Berserker;</li> <li>199 Peter Street, Berserker;</li> <li>229-235 Peter Street, Berserker; and</li> <li>Part 90 Cavan Street, Koongal (adjoining Rose Lane)</li> </ul> </li> <li>THAT Council resign trusteeship over the following resources to the State of Queensland (Department of Natural Resources and Mines): and</li> <li>Lot 188 Port Curtis Road, Port Curtis; and</li> <li>Part 90 Cavan Street, Koongal (adjoin Cavan Street and Cavan Lane).</li> </ul>	Kellie Anderson	30/04/2015	Delay due to TC Marcia.

Date	Report Title	Resolution	Responsible Officer	Due Date	Notes
24 February 2015	Disposal of part of Lot 1 on CP848928 known as 131 Richardson Road, Park Avenue to the adjoining owner	THAT the Committee: 1. Approves the sale of the identified portion of Lot 1 on CP848928 (approximately 187m2) to the owners of the adjoining property at Lot 18 on SP190913 in accordance with the Local Government Regulation 2012, Section 236(c)(iv); and 2. Authorises the Chief Executive Officer (Coordinator Property and Insurance) to finalise negotiations for the sale of the land subject to the terms and conditions outlined within this report.	Kellie Anderson	30/05/2015	Purchase advised of decision to sell land. Waiting for their acceptance of Council conditions before progressing.
24 March 2015	Disaster Management Policy	<ul> <li>THAT Council adopt the updated Disaster Management Policy as detailed in attachment to this report.</li> <li>THAT Council provide training to the elected representatives in regards to Disaster Management and communication strategies.</li> </ul>	Martin Crow	07/04/2015	
24 March 2015	Cyclone Marcia - Creeks & Waterways Clean up - Council and Private Property Protection	THAT the information report on the creek and waterway clean-up be received and that the works be suspended at \$1M then reassessed. That Council liaise with the Capricorn Conservation Council, Fitzroy Catchment Co-ordinating Committee and the Central Queensland Pest Management Group as an advisory panel regarding the strategies to maintain the ecological sustainability of the North Rockhampton waterways impacted by TC Marcia.	David Bremert	07/04/2015	

## 7 PUBLIC FORUMS/DEPUTATIONS

### 7.1 DEPUTATION - ROCKHAMPTON SALOON CAR CLUB INC

File No:	456
Attachments:	Nil
Authorising Officer:	Michael Rowe - General Manager Community Services
Author:	Peter Owens - Manager Arts and Heritage

### SUMMARY

Members of the Rockhampton Saloon Car Club Inc. will attend the meeting at 9.00am to make a presentation to Council on Council charges for the Rockhampton Showgrounds.

### OFFICER'S RECOMMENDATION

THAT the deputation by the Rockhampton Saloon Car Club Inc. be 'received'.

### 7.2 DEPUTATION - DEPARTMENT OF STATE DEVELOPMENT

File No:	4932
Attachments:	Nil
Authorising Officer:	Robert Holmes - Acting Chief Executive Officer
Author:	Robert Holmes - Acting Chief Executive Officer

### SUMMARY

Department of State Development representative will be attending the meeting to outline the services available and highlight the key projects the Department is currently working on.

### **OFFICER'S RECOMMENDATION**

THAT the deputation from Department of State Development be received.

### 8 OFFICERS' REPORTS

## 8.1 LOCAL GOVERNMENT REPRESENTATION ON FITZROY BASIN ASSOCIATION BOARD

File No:	1104	4
Attachments:	1.	Letter from Fitzroy Basin Association
Authorising Officer:	Evan	Pardon - Chief Executive Officer
Author:	Evan	Pardon - Chief Executive Officer

### SUMMARY

Appointment of a local government representative on the Board of Fitzroy Basin Association.

### OFFICER'S RECOMMENDATION

THAT Councillor \_\_\_\_\_\_ be nominated by Rockhampton Regional Council as the local government representative on the Board of Fitzroy Basin Association.

### BACKGROUND

CQ-ROC is required to appoint a replacement local government representative on the Fitzroy Basin Association (FBA) Board, in light of the resignation of Councillor Leo Neill-Ballantine from Gladstone Regional Council (refer attached letter from FBA).

Councillor Ballantine was appointed to the FBA Board by the CQLGA in September 2012. His resignation in December 2014 has resulted in a vacancy on the FBA Board.

CQ-ROC is now seeking nominations from member Councils for a Councillor who may wish to be on the Board for FBA.

The Chief Executive Officer suggests that the term would be until March 2016 and the Councillor doesn't necessary need to be an executive member of CQ-ROC but would report to CQ-ROC and Rockhampton Regional Council on FBA matters.

# LOCAL GOVERNMENT REPRESENTATION ON FITZROY BASIN ASSOCIATION BOARD

## **Letter from Fitzroy Basin Association**

## Meeting Date: 28 April 2015

**Attachment No: 1** 

20 March 2015



PO Box 139 Rockhampton Q 4700 Phone: (07) 4999 2800 www.fba.org.au

Mr. Stuart Randle Secretary Central Queensland Regional Organisation of Councils C/- Gladstone Regional Council PO Box 29 Gladstone DC QLD 4680

Dear Stuart,

#### RE: Local Government Representatives on Fitzroy Basin Association Board

Thank you for your phone call to the Fitzroy Basin Association (FBA) Board Secretary on 18 March 2015 regarding local government representation on the FBA Board in light of the resignation of Councillor Leo Neill-Ballantine.

Councillor Leo Neill-Ballantine was appointed to the FBA Board by the Central Queensland Local Government Association (CQLGA) in September 2012, along with Councillor Gail Godwin-Smith from Central Highlands Regional Council. I have enclosed for your perusal a copy of a letter received by Jenny Moore, CEO of CQLGA in September 2012 advising of the Councillor appointments.

Councillor Neill-Ballantine's resignation in December 2014 has resulted in a vacancy on the FBA Board. If you have an alternate Councillor that is willing to join the FBA Board can you please respond advising the name and contact information for the Councillor.

The appointment term of local government representatives to the FBA Board has not been determined by CQLGA, nor is a specified term stated within the FBA Constitution. I would recommend that local government representatives are appointed for a two year period to the FBA Board to align with the half terms of local councillor appointments.

Could you please forward this recommendation onto your represented councils and advise if our recommendation is accepted.

Should you wish to discuss this matter further please contact me on 0408 416 120 or paul.birch@fba.org.au.

Yours sincerely,

QR

Paul Birch Chief Executive Officer

### 8.2 REQUEST FOR DONATION FROM DIVISION 6 COUNCILLOR DISCRETIONARY FUND - GRACEMERE LAKE GOLF CLUB

File No:	8295
Attachments:	Nil
Authorising Officer:	Robert Holmes - Acting Chief Executive Officer
Author:	Megan Careless - Executive Support Officer

### SUMMARY

Councillor Greg Belz requesting approval to donate \$2000 from his Division 6 Councillor Discretionary Fund to the Gracemere Lake Golf Club.

### OFFICER'S RECOMMENDATION

THAT approval be granted to donate \$2000 from Division 6 Councillor Discretionary Fund to the Gracemere Lake Golf Club to assist with costs of replacing failed clubhouse doors and upgrade to clubhouse security following TC Marcia.

### BACKGROUND

Councillor Greg Belz is requesting to donate \$2000 from his Division 6 Councillor Discretionary Fund to the Gracemere Lake Golf Club to assist with repairs experienced during TC Marcia.

The Gracemere Lake Golf Club would like to replace failed clubhouse doors and upgrade to their clubhouse security.

File No:	8041
Attachments:	<ol> <li>Letter from Rockhampton Eisteddfod Association</li> <li>Eisteddfod Timetable</li> </ol>
Authorising Officer:	Michael Rowe - General Manager Community Services
Author:	Catherine Hayes - Manager Community Standards and Compliance

### 8.3 PARKING FOR EISTEDDFOD - PILBEAM THEATRE AND WALTER REID CENTRE

### SUMMARY

Manager Community Standards and Compliance seeking Councils direction on the enforcement of parking at the Pilbeam Theatre and Walter Reid Cultural Centre during the 2015 Rockhampton Eisteddfod.

### OFFICER'S RECOMMENDATION

THAT Council resolves to not undertake parking patrols of the Pilbeam Theatre carpark during the following periods:

- 27 April 2015 to 1 May 2015 both dates inclusive
- 11 to 22 May 2015 both dates inclusive and
- 1 to 5 June 2015 both dates inclusive.

### COMMENTARY

Correspondence has been received from the Rockhampton Eisteddfod Association, as attached, seeking assistance regarding the use of carpark spaces in proximity to the Walter Reid Cultural Centre and behind the Pilbeam Theatre. More specifically they have requested a means by which the need to pay for parking at the Pilbeam Theatre could be negated throughout the Eisteddfod.

The 2014 Eisteddfod was held just after the introduction of paid parking at the Pilbeam Theatre. The carpark was not patrolled during the 2014 event.

Parking fees at the Pilbeam Theatre are 70 cents per hour, \$5 per day and \$20 per week.

The issuing of permits is not considered an effective means of addressing this request especially given the short timeframe until the event.

### CONCLUSION

The Rockhampton Eisteddfod Association has requested a means by which the need to pay for parking in the vicinity of Walter Reid Cultural Centre and at the Pilbeam Theatre could be negated throughout the Eisteddfod. To foster this significant community cultural event this report proposes parking patrols of the Pilbeam Theatre not be undertaken during the weeks when the event is being held at the Theatre.

# PARKING FOR EISTEDDFOD -PILBEAM THEATRE AND WALTER REID CENTRE

# Letter from Rockhampton Eisteddfod Association

Meeting Date: 28 April 2015

Attachment No: 1

7803304 - 24/03/2015



#### ROCKHAMPTON EISTEDDFOD ASSOCIATION INC

PO BOX 9836 FRENCHVILLE QLD 4701 Phone: 49272036

23 March 2015

Councillor Rose Swadling Rockhampton Regional Council PO Box 1860 ROCKHAMPTON Q 4700

Dear Councillor Swadling

Action Officer SUPLING ECS
2 4 MAR 2015
Task to: ZZTCONCHORSIP
QDAN: <u>249 v. 7 Ket 1. 2.3</u> Box No: Years: 1

Commencing on 27 April the Rockhampton Eisteddfod Association will be celebrating Rockhampton's 80<sup>th</sup> Eisteddfod, an historic milestone of considerable significance in the social and cultural fabric of our community. Over recent times the Association has enjoyed the generous assistance provided by Rockhampton Regional Council as the Eisteddfod's Major Sponsor for which the Association, competitors and their parents are all most grateful.

The purpose in writing to you at this time is twofold. First, as the Association's co-Patron we are seeking your assistance and advice regarding the use of car park spaces in proximity to the Walter Reid Cultural Centre, and also behind the Pilbeam Theatre. With regard to the former, in 2014 you assisted us to obtain temporary parking permits for the weeks of the Eisteddfod and this greatly assisted those of our members who were engaged in conducting the sections held at that venue. It would be greatly appreciated if you could advise whether such permits could be made available again for 2015. The Pilbeam Theatre parking poses a somewhat more difficult issue with the introduction of paid parking. Throughout the days when sections are being held at the Pilbeam Theatre the Association considers that the need to pay for parking will impose a further burden on our competitors and their supporters. We would appreciate it if you could advise a means by which the need to pay for parking at the Pilbeam Theatre could be negated throughout the Eisteddfod. We would be happy to meet with you to discuss this possibility if your schedule allows. Please advise on the above telephone number if it is possible to meet with you at a convenient time for yourself.

Secondly, the 80<sup>th</sup> Eisteddfod will conclude with a Community Gala Concert to be performed in the Pilbeam Theatre at 1.30 p.m. on 6 June. The Association would be delighted if you are able to attend the Concert and extends to you a warm invitation to attend in your role as our co-Patron.

It would be much appreciated if you could provide your advice regarding the questions of car parking, and also your availability to attend the Gala Concert. Of course the Association well recognises your other commitments, and will understand should you be unable to join with us as we continue Rockhampton's fine cultural heritage. However, we do hope that your schedule will allow your attendance.

Yours sincerely

40

Les Killion President

# PARKING FOR EISTEDDFOD -PILBEAM THEATRE AND WALTER REID CENTRE

# **Eisteddfod Timetable**

Meeting Date: 28 April 2015

**Attachment No: 2** 



### 2015 ROCKHAMPTON EISTEDDFOD DATES (as at 19 Oct 2014)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
19 April	20 April	21 April	22 April	23 April	24 April	25 April
1091-0904-09031		Piano	Piano	Piano	Piano	
26 April	27 April	28 April	29 April	30 April	1 May	2 May
	Instrumental	Instrumental	Instrumental	Instrumental	Instrumental	
3 Мәу	4 May	5 May	6 May	7 May	8 May	9 May
	BEEF WEEK	BEEF WEEK	BEEF WEEK	BEEF WEEK	BEEF WEEK	Highland
10 May	11 May	12 May	13 May	14 May	15 May	16 May
Dance	Dance	Dance	Dance	Dance	Dance	Dance
17 May	18 May	19 May	20 May	21 May	22 May	23 May
Dance	5 & D	S & D + Signing Choirs	5 & D	5&D	5 & D	5 & D
Digital Plano						
24 May	25 May	26 May	27 May	28 May	29 May	30 May
5 & D	5&D	5 & D	Vocal	Vocal	Vocal	Vocal
31 May	1 June	2 June	3 June	4 June	5 June	6 June
Vocal	Vocal	Vocal	Vocal			Gala Concert

PIANO: 21 APRIL - 24 APRIL	HIGHLAND: 9 MAY
DIGITAL PIANO: 17 MAY	DANCE: 10 MAY - 17 MAY
INSTRUM: 27 APRIL - 1 MAY	5&D: 18 MAY - 26 MAY
CONCERT: 6 JUNE ( Afternoon )	VOCAL: 27 MAY - 3 JUNE

Detailed timetables for each discipline will be available below as they are confirmed.



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### 8.4 EDITH STREET, EGANS HILL CONNECTION

File No:	2759
Attachments:	1. Options for Edith St connection
Authorising Officer:	<b>Robert Holmes - Acting Chief Executive Officer</b>
Author:	David Bremert - Manager Civil Operations

### SUMMARY

Department of Transport and Main Roads (DTMR) is relocating the Bruce Highway near Edith Street further away to cater for the construction of a new bridge. As part of this, DTMR is relocating the intersection and reconnecting the new intersection to the existing road as part of the project.

A resident has requested that Council seals the balance of Edith Street to complement the DTMR works.

### OFFICER'S RECOMMENDATION

THAT Option 2 seal Edith Street and Egan Street depicted in blue in the Attachment to this report be selected as the preferred option and Civil Operations undertake the works to a maximum cost of \$90,000.

### BACKGROUND

Edith Street, Egan's Hill on the southern side of the Bruce Highway is being relocated further south due to the new Yeppen Bridge and roadwork's by DTMR. DTMR is going to move the intersection marked red on the attachment. DTMR will then construct and seal the new Edith Street intersection and connect it back to the existing road.

A nearby resident has requested that the remaining section approximately 150 metres long be upgraded by Council to coincide with the DTMR works.

Three options exist for the works:

- 1. Do nothing leave the gravel section of road as is;
- Option 1 Seal rest of Edith St (about 150m) and T intersection shown in green on map;
- 3. Option 2 Seal Edith St and Egan St in front of houses (total length 420m) shown in blue on map.

DTMR have commenced the relocation of the intersection works.

### **BUDGET IMPLICATIONS**

Three options exist:

- 1. Do nothing nil cost
- 2. Option 1 Seal rest of Edith St \$30,000
- 3. Option 2 Seal Edith St and Egan St \$90,000

The cost of either option can be accommodated in the current budget through the following item:

Capital Rural Roads re-sheeting – Budget \$1,910,000 predicted expenditure is \$1,700,000 – the under spend is mainly due to Cyclone Marcia emergent works being undertaken and not Councils capital funds.

### LEGISLATIVE CONTEXT

DTMR was not obliged to extend the works any further than the indicated red line on the attachment.

### STAFFING IMPLICATIONS

Civil Operations Rural Section could deliver the works.

### **RISK ASSESSMENT**

To reduce dust issues on the section of Edith Street and Egan Street for the residents and this will also improve safety.

### CONCLUSION

It is considered that the request is warranted and would complement the new Yeppen Road project. That Option 2 would improve the area for the residents who have had to put up with the dust and noise throughout the construction of the South Yeppen project.

# EDITH STREET, EGANS HILL CONNECTION

# **Options for Edith Street connection**

Meeting Date: 28 April 2015

Attachment No: 1



### 8.5 FUNCTIONAL REVIEW OF GLENMORE WATER TREATMENT PLANT

File No:	105		
Attachments:	1. Functional Review of Glenmore Water Treatment Plant		
Authorising Officer:	Robert Holmes - Acting Chief Executive Officer		
Author:	Robert Holmes - Acting Chief Executive Officer		

### SUMMARY

The source raw water quality for the Glenmore Water Treatment Plant, following TC Marcia, in late February and early March 2015 created conditions of considerable duress and challenges for process capability at the Glenmore Water Treatment Plant, resulting in lower (and unacceptable to many) water quality in finished water delivered from the Plant to the Rockhampton community. The review was instigated as a matter of course following an incident that had a negative impact on service delivery such as that which occurred post TC Marcia. There were also requests from the Mayor and Councillors for such a review and the review has been conducted and the findings will be presented to the meeting by Ralph Woolley, principal of WATERONE who conducted the review in conjunction with Rod Lehman of Water Strategies.

### OFFICER'S RECOMMENDATION

- 1. THAT the report Rockhampton Regional Council Glenmore Water Treatment Plant Functional Review and Audit be received;
- 2. THAT budgetary consideration be given to the recommended improvements at the Glenmore Water Treatment Plant as outlined in Section 5 of the report referred to in Recommendation 1 above.

### BACKGROUND

The source raw water quality for the Glenmore Water Treatment Plant, following TC Marcia, in late February and early March 2015 created conditions of considerable duress and challenges for process capability at the Glenmore Water Treatment Plant, resulting in lower (and unacceptable to many) water quality in finished water delivered from the Plant to the Rockhampton community. Similar raw water conditions have been rarely experienced previously and were not anticipated to have such a deleterious effect on treated water quality.

The event resulted from water quality issues resulting from the effects of Tropical Cyclone Marcia. The flood runoff following the cyclone tended to be localised in nature and of relatively short, high impact duration in select catchments, nominally Alligator Creek. This run-off was not diluted or pushed through with flows from elsewhere in the Fitzroy catchment or with rainfall after the main event as generally occurs with similar severe weather events.

The review was instigated as a matter of course following an incident that had a negative impact on service delivery such as that which occurred post TC Marcia. There were also requests from the Mayor and Councillors for such a review and the CEO was charged with the responsibility to arrange this review with a report to be presented to the Council at the earliest opportunity.

### COMMENTARY

The objective of the review was to assess the adequacy and efficacy of the current water treatment processes and infrastructure at the Glenmore Water Treatment Plant to deal with the variable quality of source water that is experienced in the Fitzroy catchment generally, and in extreme weather events such as was experienced during TC Marcia.

The review was also to assess the following, including comments on the complexities of those matters with reference to risks, cost and practicalities:

- what modifications could have been implemented to the treatment process to address this matter;
- what other actions could have been taken; and
- the appropriateness of the corrective actions taken by FRW personnel in dealing with the TC Marcia situation.

An Improvement Plan (IP) was also to be developed in conjunction with RRC operators and staff. The IP was formatted as prioritised actions with indicative costs and timing for delivery. The intent of the IP was to build on the work already in place and planned for GWTP, working within the boundaries of existing limitations of the plant process, layout and structures.

Arrangements were made for WATERONE in association with Water Strategies to undertake the review as per the above, and attached to this report is the consultant's report entitled *Rockhampton Regional Council Glenmore Water Treatment Plant Functional Review and Audit* (Attachment 1). That report was prepared following site investigations at the GWTP on 23 and 24 March 2015 and interviews of relevant staff involved in the management and treatment processes at FRW.

# FUNCTIONAL REVIEW OF GLENMORE WATER TREATMENT PLANT

# Functional Review of Glenmore Water Treatment Plant

Meeting Date: 28 April 2015

**Attachment No: 1** 

Rockhampton Regional Council Glenmore Water Treatment Plant Functional Review and Audit



March 2015

WATERONE In association with Water Strategies

### Prepared by: WATERONE

4 Stanley Street Booval, QLD 4304 ABN 51 165 504 017 Contact Ralph Woolley Mobile 0411 854 235

#### Prepared for:

Rockhampton Regional Council PO Box 1860 Rockhampton QLD 4700

#### **EXECUTIVE SUMMARY**

On 20 February 2015 Cyclone Marcia hit Rockhampton as a Category 3, after crossing through areas north of Rockhampton as a Category 5 system. The cyclonic event resulted in relatively high rainfall in the coastal zone, east of the dividing range, notable in the vicinity of Marlborough and environs, which drain via Alligator Creek into the Lower Fitzroy River. The cyclone also caused runoff that rapidly filled Callide Dam from about 75% to full capacity, necessitating release of water from the automatic bottom gates for dam safety reasons.

The peak flow from the Callide Dam releases and Dawson River reached the Glenmore WTP site on 25-27 February 2015. Flow over the Barrage stopped within days of the peak; however Alligator Creek which is a tributary of the Fitzroy River continued to flow and contribute water with very low dissolved oxygen (essentially near zero mg/L) to the Fitzroy River downstream to the Barrage.

During the river flow event the low dissolved oxygen levels in the raw water made treatment to remove manganese very difficult, as the Glenmore WTP process has not been designed to remove manganese. This is because most of the time the concentration of manganese in the raw water is so low as not to cause problems in the treated water. Whilst temporary measures were put in place to assist in the removal of manganese during the event, the organically complexed manganese ions were very difficult to treat with the existing treatment facilities. As a result, concentrations of manganese in the treated water exceeded the ADWG aesthetic guideline values for a number of days and the ADWG health guideline value for approximately one day. The main effects on the community were some taste concerns and discoloration in the supplied, treated water. No short term health effects were noted. It must be emphasized that manganese is an essential element for body metabolism and is normally accessed via food and drink pathways. Health limits in the ADWG are conservatively estimated based on typical ingestion rates for manganese from all sources.

At no time during this event was there evidence that treated water quality presented a risk to community health, as has been indicated by residual chlorine concentrations in the water treatment plant and the network. Independent laboratory test results for bacteriological content in the treated water from the plant did not show any positive results and no added health risk to the community was in evidence. The level of consumer complaints was significant. However, the actions taken by RCC of providing bottled water directly to customers, flushing the individual house mains and following this up with a mains flushing program were commendable actions in the circumstance.

In terms of management of the supply source in the Barrage, it is considered to have been an appropriate course of action to release poor quality, low dissolved oxygen water downstream in the circumstance of the river flow event. Such a release of river water, at the earliest possible time, could also be applied in the future, with notification to the regulator.

From the review, it is considered that the operation of the treatment plant was at the best of the staff's ability and achieved good results in the circumstances. The near zero dissolved oxygen in the raw water accompanied by dissolved, organically complexed manganese ions is generally a rare occurrence, although it could occur in any year under some river flow conditions. The last similar event was reportedly to have occurred in the early 1980s, although there is evidence of a similar, less obtrusive event following cyclone Oswald in 2013.

The use of chlorine dosing to oxidize the manganese ions is an appropriate method of controlling manganese (and iron) in our view, although the shortcomings of chlorine oxidation became apparent during the event. Additional chlorine dosing in itself may not have provided an improved result in itself, if available.

Glenmore Water Treatment Plant Functional Review and Audit

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Actions undertaken to provide additional chlorine dosing post flocculation and pre-filtration were appropriate steps to take to maintain the oxidation process. Council staff was able to rapidly put in operation a chlorine pre-dosing system utilizing an existing dosing line and existing chlorinator equipment. A temporary aeration system was also installed although it may not have been all that effective. Other measures to provide pre-dosing onto the filters were also put in place. Alternative measures such as using potassium permanganate would have required new equipment and involved considerably more time to establish. Potassium permanganate also requires more intense operational oversight to avoid overdosing, and carries significant WH&S issues that are of concern, but can be adequately managed through good operational practice.

Overall the plant continued to produce high quality water apart from the manganese problems. Dosing of powdered activated carbon at the inlet to the sedimentation tanks would have no doubt contributed to limiting the taste and odour in the treated water, leading to a lessening of consumer complaints.

#### RECOMMENDATIONS

A number of recommendations are provided, as follows:

- Improve chlorine pre-dosing capability by providing more redundancy and capacity for the chlorination system
- Provide additional chlorine dosing points (i.e. midway along the sedimentation basin and prior to the filters)
- Carry out bench scale testing of samples of Alligator Creek water for manganese removal, organic constituents and other qualities
- Carry out further investigation to determine optimum conditions for the use of chlorine for oxidation
  of manganese. This should involve trials using cationic polymers and trials at varying pH of
  coagulation
- Investigate the installation of an aerator in the river near the raw water intake
- Investigate the installation of an oxygen or hydrogen peroxide dosing system just downstream of the raw water pumps
- Investigate the possibility of converting the unused fluoride dosing plant for handling and dosing of
  potassium permanganate, in conjunction with installation of alkali dosing capability (sodium
  hydroxide) to control the pH of permanganate oxidation
- For added plant redundancy provide increased capability for chlorine dosing, by provision of two
  electrically heated chlorine evaporators and two additional chlorinators of increased capacity
  (nominally double current maximum)
- Review a change in the operational target for treated water manganese concentration to 0.02mg/L as a 95percentile value.

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#### 1 INTRODUCTION

#### 1.1 Why the study

This study was commissioned by the Rockhampton Regional Council (RCC) following an extended period in March 2015 when the Glenmore Water Treatment Plant (WTP) did not produce treated water which complied with the target water quality requirements for manganese. Elevated manganese concentrations in the treated water caused dirty water problems in the distribution system resulting in a number of water quality complaints. Manganese was the only water quality parameter that did not meet RCC's targets.

As a result of this problem, the RCC commissioned this study to:

- Investigate and report on the sequence of events and the cause of the problem;
- Investigate and report on Council's response to the problem;
- Investigate and report on whether any more could have been done;
- Investigate and report on possible improvements for the future.

#### 1.2 Source

The Rockhampton and Capricorn Coast Water Supply Schemes are supplied with raw water drawn from the Fitzroy Barrage. The Barrage sits at the lower end of the Fitzroy River Catchment, which is the second largest in Australia covering in excess of 140,000 km<sup>2</sup>. Due to the size of the catchment and the predominantly sub-tropical climate, the system is subject to highly variable but historically reliable flows with an average discharge between 5,000,000 and 6,000,000 ML/year. Fitzroy River Water (FRW) operates the Barrage in accordance with a Resource Operations Plan (ROP), which defines the requirement for storage management, environmental flows and water quality as well as other monitoring that is required to be performed. Releases from the Barrage impoundment are made by controlling the operation of 18 vertical lift gates that separate the freshwater from the downstream estuary using a fully automated control system. Figure 1 shows a site map indicating the approximate location of the Barrage, the Glenmore WTP and Alligator Creek.

#### 1.3 WTP INTAKE

The Glenmore WTP intake structure is located approximately 5 km upstream of the Fitzroy Barrage. The intake is designed to provide four different depths from which water can be abstracted for treatment. The intake depths vary from being close to the surface to more than 5 m deep. At the time of the recent event water was being sourced from the intake nearest to the surface, this being on the downstream side of the intake tower. It is noted that the intake near the surface would have had the best quality water.

#### 1.4 WATER TREATMENT PLANT

The Glenmore WTP supplies treated water to residents in Rockhampton, Gracemere, The Caves and also the Capricorn Coast via the Rockhampton to Yeppoon Water Supply Pipeline. The plant was commissioned in 1971 and was designed with a capacity of 72 ML/d. The plant was upgraded during 1996 with the addition of tube settlers in the second half of horizontal flow sedimentation basins, adding a roof covering to this second half of the sedimentation basin and later with a filter refurbishment in 2009. It now has a rated capacity of 120 ML/d. The maximum demand recorded to date of 114 ML/d was in 2002/2003 prior to the introduction of water meters in Rockhampton. Since consumption-based charging commenced in 2005, maximum demand on the Glenmore WTP has been approximately 100 ML/d. At the time of this current event, the treatment capacity of the plant was in the range of 50ML/day to 60ML/day.

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The treatment plant has been designed so that it can treat water with high colour and turbidity.

The treatment plant is a conventional plant with the following processes:

- Inlet works with coarse mesh screens;
- Inlet chamber currently with an aeration system;
- Chemical dosing, coagulation and flocculation;
- Sedimentation in horizontal flow, rectangular sedimentation basins with tube settlers;
- Sand Filtration; and
- Disinfection.

RRC use polyaluminium chlorohydrate, PAC 23, Orica as the main coagulant and this is dosed at the end of the aeration chamber. Chlorine can be dosed at the inlet to the aeration chamber and PAC can be dosed at the inlet to the flocculation basins. Polyacrylamide (NALCLEAR\* 8170 PULV) is dosed in the second bay of each flocculation tank as a water clarification aid. Pac dosing (Acticarb PS1000, Activated Carbon Technologies) is used for taste and odour control, for removal of soluble organics and if necessary for removal of cyanobacteria. The final step of disinfection is by using chlorine gas, normally aiming for a residual concentration of 1.0mg/L in the treated water leaving the plant. pH is adjusted to a target of 7.6 to 7.8 using hydrated lime. The treatment plant has been designed so that it can treat water with high colour and turbidity, with turbidity in excess of 2000 NTU on occasions. A subsequent modification to the plant was the reinstallation of pre-chlorination dosing facilities following the cyclone Oswald in 2013. This was done to enable oxidation treatment for iron, manganese and cyanobacteria.

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#### 2 EVENT DESCRIPTION

#### 2.1 SEQUENCE OF EVENTS

On 20 February 2015 Cyclone Marcia hit Rockhampton as a Category 3 crossing through areas north of Rockhampton as a Category 5 system. The cyclone event resulted in relatively high rainfall in the coastal zone, east of the dividing range, notable in the vicinity of Marlborough and environs, which drain via Alligator Creek into the Lower Fitzroy River. The cyclone also caused runoff that rapidly filled Callide Dam from about 75% to full capacity necessitating release of water from the automatic bottom gates for dam safety reasons.

The peak flow from the Callide Dam releases and Dawson River reached the Glenmore WTP site on 25-27 February 2015. Flow over the Barrage stopped within days of the peak, however the Alligator Creek which is a tributary of the Fitzroy River continued to flow and contribute water with very low dissolved oxygen (essentially near zero mg/L) to the Fitzroy River downstream to the Barrage.

It is not entirely clear how much the Callide Dam releases contributed to the reduced dissolved oxygen but it is clear that that Alligator Creek discharge was the major contributor. Elevated raw water manganese concentrations started to appear at the Glenmore WTP sometime after the 3 March 2015 and by 5 March 2015 there was the first exceedance of the ADWG aesthetic guideline for manganese in the treated water (0.2 mg/L measured concentration, in excess of the 0.1 mg/L ADWG aesthetic guideline value). The aesthetic guideline relates to the colour of the water and its potential for staining as well as taste issues. There was then a period of about eight days when the Glenmore WTP struggled to control the manganese concentration in the treated water and a further period of five days when the manganese concentration in the treated water some control but above the ADWG aesthetic guideline (until about 22 March 2015).

There was only a short period of less than one day when the treated water manganese concentration exceeded the desirable health guideline of 0.5 mg/L. The health guideline value has been set to limit total daily ingestion of manganese from all sources including food. It is important to recognize that manganese is an essential element for good health in normal healthy people as an essential element in developing good blood quality and in assisting body metabolism.

The manganese concentrations noted above were taken at the treatment plant and with mixing in the City's reservoirs it would be expected that the peaks experienced at the treatment plant would be somewhat diluted, and thus result in lower concentrations being measured at the consumption locations. Nevertheless during this period there were a number of customer complaints about dirty water.

The low dissolved oxygen levels in the raw water during this event made treatment to remove manganese very difficult. This is because the Glenmore WTP has not been designed to remove manganese (or iron) as the manganese (and iron) concentration in the raw water is normally very low. Treatment to remove iron and manganese at these low concentrations is not required.

It is noted that after the aftermath of Cyclone Oswald in 2013 a similar downward trend in dissolved oxygen occurred. However before the dissolved oxygen concentrations became critical the river flows increased and flushed out the low dissolved oxygen water. The only previously known similar event reportedly occurred in the 1980s (around 1983). Whilst it does appear that the recent event is a rare event, it could potentially have occurred twice in two years, making it an important consideration in assessing treatment capability. During the recent event Council operational staff utilised one of the two chlorinators to dose chlorine into the plant inlet using existing disused dosing pipework. This enabled partial oxidation of the manganese. Council staff also installed an aeration system in the plant inlet chamber.

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Figure 2.1 .Site map indicating the approximate locations of the Barrage, the Glenmore WTP and Alligator Creek.

## 2.2 WATER QUALITY IMPACTS

2.2.1 HEALTH

The Australian Drinking Water Guidelines reports the following in regard to the health guideline for manganese:

Manganese is an essential element and is required by mammals and birds for normal growth. Manganese deficiency affects bone, the brain and reproduction in a number of animal species. Although no specific symptoms have been described in humans, it has been suggested that manganese deficiency may be associated with anaemia and, in children, with bone disorders.

In humans, manganese toxicity has occurred mainly as a result of inhalation of manganese dust over long periods. By the oral route, manganese is regarded as one of the least toxic elements.

In one case involving heavy consumption of highly contaminated well water, resulting symptoms included lethargy, increased muscle tone, tremor and mental disturbances. Concentrations of manganese were over 14 mg/L; however, concentrations of other metals were also high and the reported effects may not have been due solely to manganese.

Experiments with laboratory animals have shown no adverse effects other than a change in appetite and a reduction in the metabolism of iron in haemoglobin synthesis.

There is no firm evidence that manganese is carcinogenic. Some studies indicate that it may, in fact, have an anticarcinogenic effect. Some in vitro studies using mammalian and bacterial cells have reported that manganese acts as a mutagen.

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The health-based guideline value for manganese in drinking water can be derived as follows:

0.5mg/l= 10mg/dayx0.1/2 l/day

where:

- 10 mg/day is the amount of manganese that can be safely consumed from all sources (WHO 1973).
- 0.1 is a proportionality factor based on the assumption that 10% of daily intake is attributable to the consumption of water.
- L/day is the estimated maximum amount of water consumed by an adult.

The maximum tolerable daily intake value includes adequate safety factors, so no additional safety factors are necessary. This value exceeds the concentration at which manganese can cause taste and odour problems.

#### 2.2.2 Aesthetic

The Australian Drinking Water Guidelines reports the following in regard to the aesthetic guidelines for manganese:

The aesthetic guideline of 0.1 mg/L at the customer's tap is based on practical experience and has been reported by utilities to be acceptable to customers. The discretionary target of 0.01 mg/L at the treatment plant is also based on experience; that although manganese accumulates in distribution systems, a plant producing 0.01 mg/L generally does not generate customer complaints, while a concentration of 0.02 mg/L or more tends to lead to various problems.

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# 3 PLANT PERFORMANCE DURING EVENT

## 3.1 OVERVIEW OF EVENT

During the cyclone the upstream Callide Dam made an automatic release from its gates at the bottom of the dam. This in conjunction with flow in the Dawson River caused a flood peak, which travelled downstream to the Barrage. Unlike most similar events the flood peak passed fairly rapidly and the Barrage quickly stopped overflowing. Just after the flood peak passed the Glenmore WTP site, it was noticed that Alligator Creek, a tributary of the Fitzroy River, was discharging a very black plume of water into the river and contributing a major portion of the flow in the river. Alligator Creek has a substantial area of wetlands and low lying land and it appeared that these areas were acting as a retarding basin and slowly releasing flow to the Fitzroy River following the cyclone.

The initial discharge was highly coloured and had very low dissolved oxygen (Refer Figure 3-1). It was thought that this colour was due to organic material being released from the wetlands and low lying land. Note from Figure 3-1 the higher dissolved oxygen concentrations in the Fitzroy River upstream of Alligator Creek on 6 March 2015.

#### FIGURE 3-1 - DISSOLVED OXGEN AND PH READINGS ALLIGATOR CREEK AND FITZROY RIVER

Date	Alligator Creek Upstream		Alligator Creek at Boat Ramp (Site 1)		Fitzroy River just upstream up from Alligator Creek Boat Ramp	Fitzroy River, Glenmore WTP	
	Dissolved Oxygen Conc mg/L	рН	Site	Dissolved Oxygen Conc mg/L	рН	Dissolved Oxygen Conc mg/L	Dissolved Oxygen Conc. mg/L
6/3/2015 – 1 pm	1.25	6.07	Site 4 – 200 m up from boat ramp	1.07	6.30	7.09	
11/3/2015	0.5		Upstream	1.66		5.77 – 4.99	0.46-0.26
12/3/2015 - 2 pm to 4.30 pm	0.68		300 m upstream	1.07		5.16 - 4.95	0.96-0.40
16/3/2015 9.30 am - 1pm	3.60 - 4.41		300 m upstream	5.03 - 5.99		5.04 - 5.02	2.39 top 0.6 m
18/3/2015 – 10 am – 2.00 pm							2.34 – 0.88
20/3/2015 – 11 am – 3.00 pm							4.52 - 1.14

It is interesting to note that despite the very low dissolved oxygen concentrations in Alligator Creek during this event, the pH values were just below neutral at approximately pH 6.0.

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Following the cyclone and the passing of the Fitzroy River, peak the Alligator Creek was estimated to be releasing somewhere between 8,000 and 16,000 ML/d into the Fitzroy River giving a travel time of about 4 to 5 days down to the Glenmore WTP site. Referring to Figure 3-1 it can be seen that the DO at the Alligator River site on 6/3/2015 was 1.25 mg/L and five days later at the Glenmore WTP site was 0.46 - 0.26 mg/L. The DO at the Alligator Creek site on 11/3/2015 was 0.50 mg/L and five days later at the Glenmore WTP was 2.39 mg/L on the top 0.6 m and 0.50 mg/L below. It would be expected some re-aeration of the river is likely to increase dissolved oxygen concentrations as the water travels downstream, although the results discussed above suggest that reaeration has had only a minimal effect on the dissolved oxygen concentration in the river.

The most common forms of manganese (Mn) found in water are manganese (II) and manganese (VII), which are both soluble, and manganese (IV), which is insoluble. Mn<sup>4+</sup> results from oxidation of Mn<sup>2+</sup> by air. Less oxygen (i.e. low dissolved oxygen) implies more Mn<sup>2+</sup> because less of the manganese is being oxidized to Mn<sup>4+</sup>. Therefore water with low dissolved oxygen has greater amounts of soluble manganese, which is more difficult to treat. In addition iron and manganese may often combine with organic matter to form chemical complexes that are difficult to treat. In the case of the water in Alligator Creek it is thought that it may be of that nature and for example some of the manganese may be bound in a Mn-porphyrin complex that forms chloroplasts (organelles found in plant cells and eukaryotic algae that conduct photosynthesis) rather than existing in ionic forms that are more readily treatable. This bound manganese would be difficult to detect by usual methods of analysis for manganese and measurements of manganese concentrations in the raw water may in fact been much higher.

At the treatment plant the low dissolved oxygen concentration of the raw water and the complex form of the manganese make treatment very difficult. The approach adopted was to install an aeration system to partially oxidise the manganese and iron followed by chlorine dosing at the inlet, post flocculation and pre-filtration to complete the oxidation. These methods can be effective for removal of iron and manganese provided there is adequate detention time and pH levels are optimum.

The aeration system provided at the plant inlet had a very short detention time and being shallow in depth, oxygen transfer rates would likely be low. It is considered that the aeration system at the Glenmore WTP may not be all that effective.

Chlorine can be a successful for oxidizing iron but may not be all that successful with manganese where reaction times of 12 hours or longer are needed at pH 6, and 2-3 hours at pH 8. There is a dependence on hydroxide ion concentration, with the reaction rates being slow below pH 9 (The Cooperative Research Centre for Water Quality and Treatment, "The Removal of Manganese from Drinking Waters"). The pH values at the plant inlet varied from 6.90 to 7.06 during the period 1 March 2015 through to 22 March 2015. This is at the lower end of the scale for optimum removal of manganese.

Chlorine which produces hypochlorous acid when added to water can react with naturally occurring organic matter (NOM) such as humic and fulvic acids to produce trihalomethanes (THMs) and other disinfection by-products. An indication of the NOM content of the water can be ascertained with reference to the dissolved organic carbon (DOC) concentration. Laboratory test results for 11 March 2015 for the raw water show that the raw water had a DOC concentration of 15.0 mg/L reducing to 6.2 mg/L following treatment (approximately 60% removal). Whilst the raw water DOC is high the removal efficiency is good. It is noted that the Total Organic Carbon (TOC) in the raw water increased from 9.4 mg/L on 11 February 2015 to 16 mg/L on 11 March 2015 (note – no DOC reading was available for 11 February 2015).

During this event chlorine was dosed at the plant inlet, pre-sedimentation and pre-filtration. Chlorine dosing at these locations has a greater propensity to generate THMs as the chlorine is added when NOM is present in much greater concentrations than post filtration. By contrast when chlorine is used for disinfection following filtration, the risk of generating THMs and other disinfection by-products is minimized as a large portion of the NOM will

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have been removed by coagulation, flocculation, sedimentation and filtration. As noted above approximately 60% of the DOC is removed by the treatment process at the Glenmore WTP.

THMs tend to increase in the distribution system with increased THMs occurring where there are long detention times in the system. For example the total THM recorded at the treatment and distribution system between 14 and 16 March 2015 varied from 120  $\mu$ g/L at the treatment plant to 210  $\mu$ g/L at Johnson Road (Fred Thorsem Park). These values were within the ADWG limit of 250  $\mu$ g/L.

The ADWG also notes that:

In view of the safety factors used in the derivation of the guideline value, it is unlikely that short-term consumption of water containing significantly higher concentrations of trihalomethanes would pose a health risk.

## 3.2 TARGET MANGANESE CONCENTRATIONS

Currently RCC has the following targets for manganese concentration in the treated water:

•	Aesthetic target	0.1 mg/L (0.1 mg/L)
•	Health target	0.5 mg/L (0.5 mg/L)

As at the 2 April 2015, the GWTP was still dosing chlorine at the inlet to the plant, with raw water Manganese concentrations measured around 0.6mg/L in the raw water and around 0.05mg/L in the treated water. This concentration in the treated water meets the ADWG values as above. Note that the ADWG recommended guidelines are shown in brackets.

#### The ADWG also states the following:

At concentrations exceeding 0.1 mg/L, manganese imparts an undesirable taste to water and stains plumbing fixtures and laundry. Even at concentrations of 0.02 mg/L, manganese will form a coating on pipes that can slough off as a black ooze. Some nuisance microorganisms can concentrate manganese and give rise to taste, odour and turbidity problems in distribution systems. A discretionary target of 0.01 mg/L is suggested at the treatment plant.

Many water utilities now adopt the discretionary target limit of 0.01 mg/L or thereabouts rather than the nominal 0.1 mg/L for the aesthetic limit for manganese. For example Seqwater has adopted an absolute limit of  $\leq$  0.03 mg/L and  $\leq$  0.02 mg/L as a 95-percentile limit.

For manganese, the treated water from the Glenmore WTP averaged < 0.001 mg/L (average value) with a range of (0.0001 to 0.567) over the period 2009 to 2013 (RCC Drinking Water Quality Management Plan). The low manganese concentrations in the treated water probably negates the problem associated with build up of manganese coatings on distribution pipe walls. Nevertheless the adoption of a lower target would be desirable and is recommended.

## 3.3 FLOW RATE

During the recent event the plant flow rate was operating in the range 50-65 ML/d increasing to 80-85 ML/d during the week of when mains flushing were commenced. The 50-65 ML/d is 42-54% of the estimated plant capacity of 120 ML/d. Thus the plant was only lightly loaded and operating well within its rated capacity.

## 3.4 BARRAGE

During the event RCC took the decision to flush the low DO water out of the Barrage. Post event approval from the State regulator was requested from RRC on the basis that this was a necessary action for protection of

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community health. There may have been some negative impacts on other water users however it is considered that this action was probably the single most important action to prevent an ongoing water quality problem.

# 3.5 INTAKE

The intake tower of the river was taking water from the highest level intake. This is the best that could be done.

## 3.6 AERATION

A temporary aeration system was installed in the inlet chamber. The short detention time and shallow depth of water in the flume where the aerator diffusers were located would suggest that there will be minimal benefits from the aeration system.

### 3.7 CHEMICAL DOSING AND FLOCCULATION

For normal water quality conditions no special chemicals are used for the removal of residual iron and manganese as the raw water concentrations are relatively low and well below the ADWG aesthetic guideline values for treated water. During the event RCC operational staff used chlorine to oxidise the iron and manganese to an insoluble precipitate. This was done by connecting one of the two chlorinators to an existing disused dosing line and predosing with chlorine at the plant inlet. Supplementary dosing was also provided post flocculation and prefiltration. Chlorine is often used as an oxidant for iron and manganese by pre-dosing at the plant inlet or prior to filtration. However use of chlorine may require some pH adjustment to ensure that the time required for oxidation is less than the detention time available between the plant inlet and filtration. Otherwise the manganese may not be fully oxidized within the treatment plant resulting in the manganese oxidizing in the distribution system. From our preliminary calculations it appears that the chlorine dose applied was more than would normally be expected for manganese removal which indicates that there was probably a very high chlorine demand from the NOM or that the raw water manganese concentrations were in fact much higher than measured (Refer Section 3.1). It is noted that the plant has no provision for pH adjustment at the plant inlet, as it is normally not required. Experience with manganese removal at other plants suggests that a small increase in pH might significantly improve the manganese removal by reducing the time required for oxidation. Without this ability the plant operators could not make any adjustment to the pH when the raw water pH was less than optimum. From our observation, use of chlorine was not fully effective during the peak in the raw water manganese concentration and following the peak for a number of days. Further work is necessary to determine what needs to be done to improve the effectiveness of chlorine if similar events occur in the future.

Under the circumstances of this event there were few other options available to RCC operational staff to manage the high concentrations of manganese in the raw water. The only other option that may have been possible would have been to rig up a temporary dosing facility for potassium permanganate. Potassium permanganate is a more powerful oxidant requiring a shorter detention time for oxidation. Rigging up a potassium permanganate dosing system would have been far more complicated requiring a temporary chemical storage and mixing system, chemical dosing and pipework. Additional WH & S issues would also have to have been dealt with. This option may have been possible but would have taken much longer to set in place.

RCC use polyaluminium chlorhydrate (PAC), Pac 23a as the coagulant. The advantage of PAC is that it is effective over a wide pH range and normally does not require pH adjustment at the inlet for optimum performance. Work done on another project that the Study Team were involved with suggested that PAC may not perform as well as alum in dirty water conditions or be as effective in removing dissolved organic compounds. However neither of these matters is critical to the performance during this recent event. We see no issues with the continued use of PAC as the primary coagulant.

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A coagulant aid is used in the process to assist flocculation. The type that is applied at the plant is the common type utilized for river flow turbid water applications and there is no concern with the use of the applied polyelectrolyte.

Dosing of powdered activated carbon for taste and odour compound control in the inlet to the flocculation chambers is good operating practice and may have limited the incidence of taste complaints from consumers in this event.

### 3.8 SEDIMENTATION

The sedimentation tanks performed well in the recent event producing water of low turbidity prior to filtration. It is thought that the manganese that was easily oxidisable had settled out in the first half of the sedimentation basin and the dissolved unoxidised manganese either remained in solution or formed a very fine colloidal floc that travelled through to the end of the basin. The detention times in the sedimentation basins for a flow of 50 ML/d was estimated to be 4.2 hours, which is more than adequate for settlement.

### 3.9 FILTRATION

The filters continued to remove turbidity to target levels during the event. The only issue with the filters was the uncertainty about whether the manganese was oxidized before it passed through the filters and the manganese dioxide was leaching through the filters or whether the manganese was resolubilising as it passed through the filters. Note that the filters typically produce water with turbidity of <0.1 NTU, with 0.3 NTU used as a setpoint to trigger a backwash (as per the USEPA Long Term 2 Enhanced Surface Water Treatment Rule). Maintenance of these values should ensure that there is no breakthrough of Cryptosporidium during such events.

## 3.10 DISINFECTION

Disinfection was adequate at all times, based on weekly test results for bacteriological quality on tests undertaken by third party, independent laboratory; Ecoscope Environmental.

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## 4 **RRC** PERFORMANCE

#### 4.1 RCC RESPONSES TO CYCLONE MARCIA

A timeline summary outlining the response by the RCC operational staff is outlined following:

- 20 February 2015 Cyclone Marcia passed through Rockhampton on 20 February 2015.
- 25 February 2015 flood peak arrives at the Glenmore WTP. The flood peak passes fairly rapidly and water levels stabilized in the Barrage fairly quickly.
- 2 March 2015 Iron and manganese tests performed on potable water and the iron reading was 2.0 -2.5 mg/L (too high) whilst the manganese reading was < 0.1 mg/L (OK);</li>
- 3 March 2015 A perceptible change in the raw water quality was noted due to the low dissolved oxygen, high colour and some odour issues;
- 4 March 2015 RCC performed iron and manganese tests on the raw water and the reading was 2.0-2.5 mg/L for iron and <0.1 mg/L for manganese. Discolouration of the treated water in the distribution system was noted;
- 5 March 2015 A reading of 0.3 mg/L was noted for manganese in the potable water and this
  was the first recorded instance of an exceedance of the manganese ADW aesthetic guideline.
  Calcium hypochlorite tablets were placed in the filter channels to boost the chlorine levels in
  the water pre-filtration. The aerator grid was installed in the inlet channel to boost the low
  dissolved oxygen in the raw water;
- 6 March 2015 additional chlorine dosing provided to filters;
- 9 March 2015 chlorine predosing at the plant inlet commenced.
- 11 March 2015 first exceedance of the manganese ADW health guideline. Controlled release from Fitzroy Barrage improves water quality;
- 12 March 2015 raw water manganese concentrations still increasing but gradual improvement in manganese concentrations in treated water with concentrations stabilizing at about 0.2 mg/L by 14 March 2015;
- 14 March 2015 raw water manganese concentration peaks at 1.0 mg/L by 19 March 2015 but stabilized at 0.2 mg/L in treated water. Still above ADW aesthetic guideline;
- 22 March 2015 raw water manganese concentrations fall and treated water manganese concentrations back under control.

Apart from manganese the Glenmore WTP met water quality targets for all parameters for the duration of the event. Figure 4-1 shows the history of the raw water turbidity, raw water dissolved oxygen and raw water manganese concentrations. Note the delayed peak in the elevated manganese concentrations.

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## FIGURE 4-1 EVENT HISTORY

### 4.2 APPROPRIATENESS OF CORRECTIVE ACTIONS

Overall Council staff performed well in difficult circumstances. The corrective actions undertaken were appropriate although earlier implementation of chlorine predosing may have been beneficial. It is noted however the shortcomings of the existing treatment systems may not have resulted in all that much difference to the end result.

# 4.3 APPLICATION OF PLANT AND EQUIPMENT

The Glenmore WTP plant and equipment was able to be utilized effectively during the event however a number of shortcomings were identified which made treatment of the water difficult. The chlorine pre-dosing system had been reactivated following cyclone Oswald in 2013 specifically for the purpose of manganese control. It had never been used prior to this 2015 event as manganese and iron concentrations are normally sufficiently low as to not require any special treatment.

During this event one of the two available chlorinators was used to direct chlorine to the plant inlet for pre-dosing. If one of the two units had failed it would have been necessary to stop predosing and to use the remaining workable unit for disinfection of the treated water. One of the recommendations of this report is to consider the addition of additional chlorine dosing capacity.

The other shortcoming that was identified was the need for provision of additional chlorine dosing points, one about midway along the sedimentation basin and the other pre-filtration. This is another recommendation of this report.

## 4.4 TIMING OF ACTIONS

Timing of the actions under difficult circumstances was adequate although as noted previously earlier implementation of the chlorine pre-dosing may have been beneficial. Also, it may have been possible to have released low quality water earlier from the Barrage, however, the release of water has other implications for other water users who have water allocations and rights, which need to be considered and communicated to affected parties.

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#### 4.5 **RESOURCING**

Adequate resources were always available to do the required work in terms of operational and maintenance staff. It is noted that operational staff worked extra hours to ensure that the plant and distribution system continued to function effectively during difficult circumstances including power outages;

## 4.6 **RESPONSE CAPABILITY**

The policy of staffing within RRC to maintain core internal skills in-house and to utilize additional personnel from external sources, as and when required for support operational and maintenance activities, is commended. This approach to resource management provides the skill base for quick responses in difficult and also in extraordinary circumstances.

The authors also acknowledge and confirm that RCC personnel have built and utilized their networks of experienced/skilled persons for assistance in provision of technical support, advice and material in this recent event, at short notice. The networks included other members of the Queensland Water Directorate, water service providers (e.g. Mackay Water) and consultants.

#### 4.7 What other actions could be undertaken

The response was adequate within the capability of the plant. Improvements to the results will require some additional work and possibly capital investment. Refer Section 5.

#### 4.8 CUSTOMER IMPACTS

During the event a number of customer complaints were received about dirty water. These are summarized in Figure 4-2.

Date	Day of Week	Number of Complaints
5/3/2015	Thursday	9
6/3/2015	Friday	20
9 March 2015	Monday	4
10 March 2015	Tuesday	11
11 March 2015	Wednesday	4
12 March 2015	Thursday	9
13 March 2015	Friday	18
14 March 2015	Saturday	12
15 March 2015	Sunday	4
16 March 2015	Monday	3
18 March 2015	Wednesday	14
19 March 2015	Thursday	3
20 March 2015	Friday	5

#### FIGURE 4-2 CUSTOMER COMPLAINTS DURING EVENT

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WATERONE in association with Water Strategies		
23 March 2015	Monday	7
24 March 2015	Tuesday	4
Total	Sunday	127

When a complaint was received the water mains to these properties were flushed and bottled water offered to the complainant. From 9 March onwards RCC commenced flushing additional mains based on an assessment of the critical suburbs. Approximately 100+ locations were flushed in the first few days increasing to 210 locations per day, and then ramping back to 40 locations per day. Mains flushing is continuing at the time of writing this report.

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# 5 PATHWAYS TO IMPROVEMENT

## 5.1 PRIORITISATION

Whilst the March 2015 event could be considered a rare event there is the potential for it to reoccur within one or two years. As such it is recommended that RCC should set in place appropriate measures to enable the water treatment plant to continue producing water to RCC water quality targets for the duration of such events. It is considered that any proposed works should be:

- Of low capital cost
- Easy to install
- Effective in achieving the treated water quality
- Fit within existing plant constraints and operation
- Enhances current operational capability

## 5.2 Options

Potential options to overcome similar problems in the future have been identified as follows:

Prior to the Treatment Works

- Releases from the Barrage to flush the system
- Aeration in the river at the intake tower
- Oxygen or hydrogen peroxide injection into the raw water pipeline downstream of the raw water pumps

Within the Treatment Works

.

- pH adjustment with caustic soda in pretreatment
- Potassium permanganate dosing at the plant inlet
- Improvements to the chlorine dosing system as follows:
  - Increased chlorine dosing capacity
  - $\circ$   $\;$  Chlorine dosing midway along the sedimentation basin
- Chlorine dosing pre-filtration
- Installation of greensand filters

# 5.3 Releases from the Barrage to flush the system

One of the most effective ways of avoiding low dissolved oxygen and hence manganese problems is to flush the low DO water out of the barrage so that the plume of low oxygen water can be removed from the system. The effect of the barrage flushing can be seen on the following figure.

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A large volume of water may need to be released from the Barrage to flush out the low dissolved oxygen water and this comes with some political issues. Release would only be desirable if there is a reasonable flow in the Fitzroy River to replenish the water lost through the release. Discussions should be held with the Regulator to ensure that there are no impediments to similar actions being taken in the future should similar water quality deterioration occur.

### 5.4 Aeration in the river at the intake tower

It would be possible to improve the dissolved oxygen concentration of the raw water entering the water treatment plant by providing an aeration system near the raw water intake. The aeration system would only be required to be used if dissolved oxygen concentrations decreased to below about 4 mg/L.

The aeration system could consist of a grid of fine bubble diffusers (<2 mm) connected by pipe to a blower located on the river bank. The bubble diffusers and pipework could be installed ready for use and the blower only provided when required. The aeration system should improve the dissolved oxygen over a large area around the intake and only require a relatively small blower to achieve good mixing. Typically 550 m3/air/km2/hr is required to adequately mix water bodies and hence for turnover only an 8.8 cum/hr blower would be required for the Barrage. However to increase the DO to reasonable levels it is likely that a significantly higher blower capacity would be required.

A fine bubble air diffuser would be preferred to a surface aerator as it has a higher oxygen transfer rate and the mechanical parts (i.e. the blower and drive unit) can be located on land. The effectiveness of the aeration system would need to be investigated further as there are several factors that will impact on its performance as follows:

- Oxygen transfer rates will be less in summer when the temperatures are higher. This will require a larger blower;
- There will be a residual oxygen demand from the NOM and sediments in the barrage that will require an
  additional oxygen input;
- The zone of influence of the aeration system and the consequent increased contact time will need to be investigated as it is anticipated that a relatively long contact time will be required for significant improvement in the dissolved oxygen concentration.

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# 5.5 OXYGEN INJECTION INTO THE RAW WATER PIPELINE DOWNSTREAM OF THE RAW WATER

### PUMPS

An alternative would be to inject oxygen or hydrogen peroxide into the rising main just downstream of the raw water pumps. The short detention time available (order of minutes) favours the use of hydrogen peroxide which is a much more powerful oxidant. There are also some inherent WH&S risks with the use of liquid oxygen or hydrogen peroxide, which would require the provision of the necessary safety provisions and training of operators.

# 5.6 PH ADJUSTMENT WITH CAUSTIC SODA

As previously noted pH adjustment above pH 7.0 will increase the rate of oxidation of manganese using chlorine. pH adjustment would best be done using sodium hydroxide. This would require some additional chemical dosing equipment, dosing pipelines and chemical storage. It would be desirable to carry out some bench scale testing of the Alligator Creek water to determine the benefits. Figure 5-2 shows the effect of varying pH on the oxidation of manganese by free chlorine for one raw water source in the USA. This is indicative only as the effect of pH is likely to vary from raw water source to raw water source.



FIGURE 5-2 EFFECT OF SOLUTION PH AND OXIDANT DOSAGE ON THE OXIDATION OF SOLUBLE MANGANESE BY FREE CHLORINE (REF SOURCE: CHEMISTRY OF WATER TREATMENT – RAW WATER - NEW RIVER TEMPERATURE 68<sup>0</sup>F (20<sup>0</sup>C))

# 5.7 INCREASED CHLORINE DOSING

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During the March 2015 event chlorine predosing was implemented. Chlorine pre-dosing was approximately 85% of the capacity of one chlorinator unit, in the range of 15 to 18 kg/hr. For a plant flow of approximately 50 ML/d this equates to a dose rate of approximately 8.2 mg/L. With the raw water manganese concentration peaking at 1.0 mg/L the chlorine dose required by the stoichiometric equation is 1.3 x 1.0, which equates to 1.3 mg/L. Most literature however suggests that in practice the actual dose rate may need to be in excess of 4 times the stoichiometric dose rate. Even with 4 times, for a 1.0 mg/L manganese concentration, the dose rate only equates to 5.2 mg/L which is well short of the 8.2 mg/L that was required during this period. It is thus apparent that either the measured manganese concentration may not be reflecting the true manganese concentration (possible test method limitations) and/or there is also a very high demand for the chlorine by the NOM (organic material). As noted in Section 3.1 some of the manganese appears to be bound in a Mn-porphyrin complex that forms chloroplasts (organelles found in plant cells and eukaryotic algae that conduct photosynthesis) rather than existing in ionic forms that are more readily treatable. This bound manganese would be difficult to detect by usual methods of analysis for manganese and so the true manganese concentration may be higher than the values determined using the standard laboratory test. Further investigation of this is recommended.

It is also reported that "it is necessary to have a minimum of 0.5 mg/L free available chlorine throughout the treatment plant for effective removal" of manganese (Chemistry of Water Treatment pp371). During the event it has been reported that chlorine residuals at the end of the sedimentation basins were as low as 0.02 mg/L and in the filters down to 0.03 mg/L (Refer Figure 5-3). This suggests the need for additional intermediate chlorine dosing points as these would enable better control of chlorine dosing as the water moves through the plant as a means to improve chlorine oxidation, however, there remains some doubt that chlorine oxidation may not be adequately successful in removal of manganese concentrations to acceptable concentrations.

Date	Time	Free Chlorine Residual					
		End of PTS	End of Sed Tank 1	End of Sed Tank 2	Filter Block 3		
14/3/2015	15:05	0.01	0.02		0.17		
14/3/2015	23:15	0.03		0.07	0.08		
16/3/2015	01:15	0.03		0.04	0.03		
17/3/2015	01:00	0.03	0.03		0.19		
21/3/2015	17:30	0.04			0.06		
	22:30	0.03	0.03		0.22		
22/3/2015	14:30	0.03			0.05		
	20:30	0.03	0.04		0.033		

FIGURE 5-3 FREE CHLORINE RESIDUAL THROUGH PLANT

It is also noted that there are two chlorinators each of a capacity of 20 kg/hr. Normally these two units operate under a duty/standby arrangement. However during the recent event one of the units was being used for predosing and the other for post chlorination. Thus both units were operating as duty units with no standby, presenting an unacceptable risk to continued plant operations.

A second risk related to the removal of chlorine gas from the 920kg drums from the gas outlet valve. The Orica Operating Manual advises that the gas phase takeoff per drum is 9.0kg/hr @ 25 degrees centigrade. Chlorine dose

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rates were 15 to 18kg/hr at the inlet of the plant, and at 4 to 10 kg/hr (estimated, to be confirmed) to the treated water, giving a total flow rate of 19 to 28 kg/hr and occasionally up to 30 kg/hr for total chlorine dosing. All chlorine flows were coming from the three drums that were interconnected, where a maximum takeoff of gas should not have been greater than 27 kg/hr. The total flows were at or near the limit of recommended chlorine takeoff from the gas phase of the drums, leaving no spare capacity for additional dose at the above dosing points or for other locations through the plant.

At the summer temperatures in Rockhampton, minimum of around 22-24 degrees to maximum of around 36 to 38 degrees, there was limited likelihood of freezing the drum outlet pipes. Interconnection in itself runs some risk of cross distillation from drum to drum if temperature differentials were to develop between chlorine drums. This can be quite dangerous if the drums were interconnected through the liquid phase outlet valves.

For added redundancy and increased capacity for chlorine dosing, modifications to the installation would be good practice, i.e. provision of two electrically heated evaporators and two additional chlorinators of increased capacity (nominally double current maximum). This capacity would be a useful tool for increased chlorination of the treated water if that ever became necessary in an emergency, as it has done in many other locations.

The dose requirements must also be qualified by the fact that flow through the plant during this event was in the range 50 to 55 ML/day for the majority of the time (peaking to 85 ML/day when mains flushing was well underway), nominally less than half the stated plant capacity of 120 ML/day. Thus higher chlorine demand would be required for higher plant flows.

#### 5.8 POTASSIUM PERMANGANATE DOSING AT THE PLANT INLET

Potassium permanganate is a stronger oxidant than chlorine as noted by the following comparison of the oxidation potential of common oxidants in comparison to chlorine:

•	Fluorine	2.32
•	Hydroxyl radical	2.06
٠	Ozone	1.52
٠	Hydrogen peroxide	1.31
•	Potassium permanganate	1.24
•	Chlorine	1.00

Potassium permanganate is a more effective oxidant than chlorine and oxidation rates are rapid at pH levels above 5. The dose needed varies with the pH and the amount of NOM. The optimal pH for manganese not associated with NOM is 7.2-7.3, when a contact time of < 5 min is adequate (Degrémont, 1991). Up to 20 min may be necessary if there is substantial NOM. Generally though Mn++ ions are not strongly complexed by humic and fulvic acids. Waters of manganese levels of 0.15-0.38 mg/L gave best results with a permanganate dose of 0.4-0.5 mg/L at pH 7.5, and overdosing by 0.1 mg/L did not cause any adverse effects in the distribution system caused by possible further reactions to ultimately form Mn++ or insoluble oxides. (The Cooperative Research Centre for Water Quality and Treatment, "The Removal of Manganese from Drinking Waters")

In view of the faster reaction time, potassium permanganate may overcome some of the difficulties associated with using chlorine. As with chlorine pH adjustment may be advantageous. Concerns about overdosing of manganese can be addressed by installing on-line monitoring equipment. In addition the horizontal flow sedimentation basins enable 'visual' determination of overdosing as witnessed by a 'purple haze' in the water.

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There are some additional workplace health and safety issues that would need to be considered but in view of the infrequency of the need for potassium permanganate dosing this should not necessarily be seen as a constraint to using potassium permanganate.

If it was to be used it would require storage facilities, dosing pumps, dosing lines and monitoring equipment. It has been suggested that the existing fluoride dosing system could be readily adapted for use with potassium permanganate. As this plant has been mothballed due to a policy shift by RRC, it may be appropriate to convert the fluoride dosing facility to a potassium permanganate dosing system. It may also be possible to provide a dual functionality with this dosing system, in order to cater for any reversal in the policy of RRC on fluoride dosing to the water supply. In the event that potassium permanganate treatment was necessary for a short period, the fluoride dosing could be turned off. There is not likely to be any effect on community health as fluoride ingestion, via the drinking water supply, generates dental health benefits through long term exposure.

A concept design would need to consider the suitability of the existing equipment for a functionality change, such as storage volumes, feeders, mixing and dosing pump rates. Such a conversion would be expected to cost in the vicinity of 30% of the \$1.5million cost of a completely new installation; i.e. \$400 to 500K as a guide.

### 5.9 GREENSAND FILTERS

The Cooperative Research Centre for Water Quality and Treatment reports on the use of greensand filters for treatment of manganese in their paper "The Removal of Manganese from Drinking Waters" that:

A process based on greensand (Degrémont, 1991) uses a zeolite mineral as the filter media to which permanganate is added either continuously or intermittently to form a continuously regenerated thin surface coating of MnO2. It acts as an adsorbent/catalyst for Mn++ removal and oxidation as in equations (1-3). Sometimes chlorine is added as well to ensure oxidation (Craig et al., 1997). At Veolia's Noosa plant reservoir destratification is employed, then lime to pH 9-10 and permanganate if the raw water manganese is above 0.1 mg/L, pre-filter chlorination and coated dual media. The product water has a manganese level of 0.001 mg/L. There remain many questions about the mechanism of the reactions that occur.

Once converted to greensand the filters operate continuously in this mode requiring a continuous or intermittent dose of chlorine or potassium permanganate to ensure the regeneration of the surface coating of MnO2. Normally the Glenmore WTP does not require pre-dosing with chlorine and it would be preferable not to pre-dose with chlorine unless absolutely necessary. As the manganese problem only occurs on a very irregular basis the preferred solution would be one that could be operated as and when required and not as a continuous permanent installation.

## 5.10 DISCUSSION

The options listed in Section 5.2 and discussed in the following sections is not an exhaustive list of options that could be considered. The options that have been considered are options that can be fit within the constraints of the existing plant without significant structural or process changes.

A comparison of the options is provided in Figure 5-4.

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FIGURE 5-4 COMPARISON OF OPTIONS

Option		Capital Cost	Easy to complete/install	Effective in achieving treated water quality	Fits within existing plant constraints and operation	Comment
1.	Releases from Barrage	None	Yes	Yes	Yes	Preferred option but may not always be possible
2.	Aeration at the raw water intake tower	Moderate \$400-500K	Yes	Possibly	Yes	Should be investigated further
3.	Oxygen or hydrogen peroxide injection in the raw water rising main	Moderate \$200-300K	Yes	Unlikely	Yes	Should be investigated further
4.	pH adjustment with caustic soda	Moderate \$200-300K	Yes	Likely	Yes	Should be investigated further
5.	Increased chlorine dosing flexibility	High \$600-700K	Yes	Possibly	Yes	Should be implemented regardless
6.	Potassium permanganate dosing	Moderate \$400-500K	Yes	Likely	Yes	Recommended if chlorine found to be unsuitable
7.	Greensand filters	High \$800-1000K	No	Yes	Yes	Not recommended as requires continual chlorine pre- dosing

In Figure 5-4, low cost means "Low Cost" \$50,000 to \$100,000, "Moderate Cost means \$100,000 to \$500,000 and "High Cost" means greater than \$500,000. Estimates include 30% for contingency and 40% for project management and overheads.

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Development of concept designs for selected improvement options will provide a better indication of projected costs for budget purposes. A provisional sum of \$150 to 200K should be sufficient to develop concept designs that would be suitable for tender purposes.

The preferred approach is as follows:

- Set in place procedures to enable releases from the Barrage should the dissolved oxygen levels at the raw water intake tower fall to say some nominal mg/L. Consider the need for some upstream on-line monitoring in Alligator Creek;
- Investigate the aeration option at the intake tower to ascertain whether this will have any benefits;
- Investigate the use of oxygen or hydrogen peroxide dosing in the raw water rising main;
- Carry out jar testing using Alligator Creek water to determine optimum pH range and coagulant chemicals for using chlorine as an oxidant and to confirm that chlorine can meet treated water targets for manganese;
- Investigate the use of potassium permanganate for oxidation of manganese in Alligator Creek water.
- For permanganate oxidation, consider conversion of the existing fluoride plant for use as a potassium permanganate dosing plant.

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## 6 CONCLUSIONS

It is not entirely clear how much the Callide Dam releases contributed to the reduced dissolved oxygen but it is clear that that Alligator Creek discharge was the major contributor. Elevated raw water manganese concentrations started to appear at the Glenmore WTP sometime after the 3 March 2015 and by 5 March 2015 there was the first exceedance of the ADWG aesthetic guideline for manganese in the treated water (0.2 mg/L measured concentration, in excess of the 0.1 mg/L ADWG aesthetic guideline value). The aesthetic guideline relates to the colour of the water and its potential for staining as well as taste issues. There was then a period of about eight days when the Glenmore WTP struggled to control the manganese concentration in the treated water and a further period of five days when the manganese concentration in the treated water some control but above the ADWG aesthetic guideline (until about 22 March 2015).

During the dirty water event the low dissolved oxygen levels in the raw water made treatment to remove manganese very difficult as the Glenmore WTP process has not been designed to remove manganese, as its removal is not a problem for most of the time. It is noted that after the aftermath of Cyclone Oswald in 2013 a similar downward trend in dissolved oxygen occurred. However there were only a few days where the dissolved oxygen levels reduced before increasing again as larger river flows moved the potentially problematic raw water downstream and over the Barrage. Anecdotally it has been reported that a similar event to this year's event reportedly occurred in the 1980s around 1983.

Fortunately the plant did have a chlorine dosing facility available at the plant inlet, which is not regularly used. This was put into service enabling partial oxidation of the manganese at the inlet to the treatment process. Council staff also installed an aeration system in the plant inlet chamber. As a consequence of the 2013 event Council installed chlorine pre - dosing pipework, and this system was then available for this recent, 2015 event.

It is our view that the main cause of the problem was the very low dissolved oxygen concentrations in Alligator Creek and elevated concentrations of manganese. There was minimal increase in the dissolved oxygen concentrations in the Fitzroy River as the Alligator Creek plume travelled downstream, indicating that the manganese is not readily oxidised. It has been suggested that the manganese may be bound within a complex organic compound and thus difficult to treat. Whilst treatment using pre-dosing with chlorine was found to be effective to some extent, there was a period when it was not effective in removing manganese to target concentrations. The reasons why it was not effective is unclear.

At no time during this event was there evidence that treated water quality presented a risk to community health, as has been indicated by residual chlorine concentrations in the water treatment plant and the network. Independent laboratory test results for bacteriological content in the treated water from the plant did not show any positive results and no health risk to the community outside of normal good operations.

In terms of management of the supply source in the Barrage, the release of water from the Barrage for a period of time to flush poor quality, low dissolved oxygen water downstream was a correct action in the circumstance. Such a release at the earliest possible time could also be applied in the future, with the notification to the regulator.

The authors have reviewed a range of operational data from the Glenmore Water Treatment, with excellent cooperation of all operational staff.

The use of chlorine dosing to oxidize the manganese ions is an appropriate method of controlling manganese (and iron) in our view, although the shortcomings of chlorine oxidation became apparent during the event. Additional chlorine dosing in itself may not have provided an improved result in itself, if available.

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Actions undertaken to provide additional chlorine dosing post flocculation and pre-filtration were appropriate steps to take to maintain the oxidation process. Council staff were able to rapidly put in operation a chlorine predosing system utilizing an existing dosing line and existing chlorinator equipment. A temporary aeration system was also installed although it may not have been all that effective. Other measures to provide pre-dosing onto the filters were also put in place. Alternative measures such as using potassium permanganate would have required new equipment and involved considerably more time to establish. Potassium permanganate also requires more intense operational oversight to avoid overdosing, and carries significant WH&S issues that are of concern, but can be adequately managed through good operational practice.

Overall the plant continued to produce high quality water apart from the manganese problems. Dosing of powdered activated carbon at the inlet to the sedimentation tanks would have no doubt contributed to limiting the taste and odour in the treated water, leading to a lessening of consumer complaints.

Dosing of Poly Aluminium Chloro Hydrate PAC and polyelectrolyte were the correct dose requirements based on floc formation and residual turbidity through the plant processes and most likely resulted in the good performance of bacteriological results as measured across the system. Also, the dosing of powdered activated carbon at the inlet to the sedimentation would have contributed to limiting the taste and odour in the treated water, leading to a lessening of consumer complaints.

The following options require consideration for improvements to process operations at GWTP, as follows:

- Releases from the Barrage to avoid low dissolved oxygen concentrations in the raw water during similar events – this may have more significant political implications than other options;
- Improving chlorine pre-dosing capability by providing more redundancy and capacity for the chlorination system and additional dosing points (i.e. midway along the sedimentation basin and prior to the filters). Installing an aerator in the river near the raw water intake. This would require some trials to check the effectiveness;
- Conversion of the redundant fluoride dosing plant for handling and dosing of potassium permanganate.
- Install alkali dosing capability (sodium hydroxide) to control the oxidation pH for application with chlorine and/or permanganate oxidation.
- Consideration of alternative and/or supplemented oxidation treatment capability such as provision of
  oxygen injection in the raw water pipeline just downstream of the raw water pumps. This would also
  require some trials to check effectiveness;

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File No:	805				
Attachments:	1. Rockhampton Region Fire Management Strategy (Firescape Science)				
	2. Mount Archer Bushfire Risk Assessment (Firescape Science)				
	3. Bushfire Management Strategy Final				
Authorising Officer:	Michael Rowe - General Manager Community Services				
Author:	Margaret Barrett - Manager Parks				

# 8.6 ROCKHAMPTON REGION FIRE MANAGEMENT STRATEGY

# SUMMARY

This report presents work completed in late 2014 on the development of a Regional Bushfire Strategy for Rockhampton Region.

# OFFICER'S RECOMMENDATION

THAT

- 1. Council receive the reports from Firescape Science (shown as attachments 1 and 2 in the report);
- 2. Council approve the publication of the *Rockhampton Regional Council Bushfire Management Strategy;*
- 3. Council approve the implementation of Fire Management Strategy recommendations:
  - allocation of Council's fire management resources, (provision of heavy plant and equipment for fire-fighting or fire break construction) towards three regional priorities – the Mount Archer iZone, the Mount Morgan iZone and reducing the overall risk in high fire frequency rural areas;
  - b) Council staff involved in bushfire management will benefit greatly from increased training opportunities and better information and processes to guide their annual fire programs;
  - c) Each parcel of Council land within or alongside very high bushfire hazard areas should be individually assessed and integrated into the current fire management practices on adjacent land;
  - d) Cooperative arrangements with State agencies involved in fire management need to be formalised and improved. There are considerable benefits to be gained if all parties are effectively working together to use the limited resources available for managing bushfire risk.

# COMMENTARY

The planning for, mitigation of risk and preparation of response and recovery activities relating to natural disasters is a significant role for Council. While the majority of the responsibility for protection of life and property from fire lies with State agencies; there are roles and responsibilities that Council can and should perform.

# BACKGROUND

Managing bushfire risk within the Region is one of Council's responsibilities under the Disaster Management Act (Qld) 2003.

As one of the areas with fire risk, the Mount Morgan Shire had a fire management regime in place with identified control lines and maintenance programs in place with community and stakeholders.

In the period since amalgamation, Rockhampton Regional Council has applied funds from the Natural Disaster Resilience Program (State Government Department of Local Government, Community Recovery and Resilience) to implement a range of controls; the most recent of these was the construction of a fire control line, in 2013-14, in conjunction with Qld National Parks & Wildlife Service (QPWS), on Mount Archer. This control line was constructed to QPWS standards. Prior to and during the construction, discussions were held on the development of a Memorandum of Understanding between Council, Qld Parks & Wildlife Service and Qld Fire & Emergency Services. The MOU wasn't completed and hasn't been signed.

In 2014 Council engaged Firescape Science to prepare 1) A Fire Management Strategy for the Region and 2) A specific Fire Management Plan for Mount Archer. These reports are attached at Attachment 1 & 2. The reports provide

- information on history of fire and fire management in the region;
- detailed analysis of the responsibilities, obligations and current activities of stakeholders;
- risk-based approach to assessing bushfire risk, including maps of risk ratings for the Region;
- identification of priority areas and recommendations for Council in the management and prevention of fire risk.

A summary document has been compiled from the Firescape Science reports (*Rockhampton Regional Council Bushfire Management Strategy*) for publication on the Council website, see attachment 3.

One recommendation from the Firescape Science report is not recommended for adoption at this time. Council will continue the current approach to community action planning, by working with interested local communities and groups, eg the Mount Morgan Disaster Management group.

A regional fire plan (or series of fire plans for the high priority areas) will be prepared from the Firescape Science report for inclusion in the Local Disaster Management Plan.

# PREVIOUS DECISIONS

In June 2011, Council approved a regional fire risk mitigation plan for Council's Parks and Reserves (*Fire Risk Mitigation Plan 2011 – Council Parks and Reserves*)

In March 2014, Council approved the deployment of resources towards the development of a Fire Management Plan for Mt Archer and its surrounds. The Mount Archer report (see Attachment 2) was prepared.

# BUDGET IMPLICATIONS

Parks operational budget has traditionally had an allocation of approx. \$60,000 for fire mitigation.

# LEGISLATIVE CONTEXT

Managing bushfire risk within the Region is one of Council's responsibilities under the Disaster Management Act (Qld) 2003 and Local Disaster Management Plan (LDMP).

# STAFFING IMPLICATIONS

Council doesn't have dedicated functions that are specifically focused on bushfire management activities; the following existing functions support bushfire management and risk reduction:

- Disaster Management related functions are assigned to the Disaster Management Officer;
- Land use planning arrangements are outlined in the planning scheme and regulated by Development Assessment;

• Land management associated responsibilities are assigned to Community Services (Parks and Community Standards & Compliance).

# **RISK ASSESSMENT**

Council's Risk Register includes a risk associated with the lack of holistic fire management planning.

# CORPORATE/OPERATIONAL PLAN

Living, Learning & Leisure

- Outcome A safe, caring and healthy community that we all belong to
- Service: Disaster Management Ensure Council has appropriate disaster management strategies in place in the event of potential risk and natural hazards

Activity – Maintain a disaster management response capability able to meet the community's needs when required.

Service: Parks & Open Space

Activity – Maintain the Region's sports fields, parks, gardens, playgrounds and open spaces

# CONCLUSION

Integrated bushfire management planning requires cooperation from government, landowners, community groups and the general public. This report outlines recommendations for Council in progressing this work.

# ROCKHAMPTON REGION FIRE MANAGEMENT STRATEGY

# Rockhampton Region Fire Management Strategy (Firescape Science)

Meeting Date: 28 April 2015

**Attachment No: 1** 

# **Rockhampton Regional Council**

# **Regional Bushfire Management Strategy**



**Prepared for** 

**Rockhampton Regional Council** 

by

**Firescape Science** 

November 2014



# Executive summary

Council's interests span life and property concerns on behalf of residents, provision of community utilities and services (e.g. water, sewerage, communication links), provision of other key infrastructure on Council land, management of large Council properties, and support for regional infrastructure such as power and transport. Rockhampton Regional Council has traditionally provided general assistance when bushfires have occurred within the region, but no fire management plans have been developed to identify specific functions, the resources required for service delivery or where resources should be allocated.

Managing bushfire risk within the region is one of many responsibilities of the RRC under the *Disaster Management Act (Qld) 2003* and Local Disaster Management Plan (LDMP). The LDMP identified the need for Rockhampton Regional Council to prepare a fire management strategy to mitigate the risk of wildfires in the region. This area is large and complex, extending across more than 6,500 km<sup>2</sup> of land and covering a range of social, economic and environmental contexts. These aspects can change in character and importance from year to year and RRC requires a consistent and repeatable process to cost-effectively address their fire mitigation needs. This project was initiated to assess potential bushfire risk across the region, identify priority areas and commence a process to assist Rockhampton Regional Council (RRC) in the management and prevention of bushfire risk.

Bushfire risk was assessed consistent with the National Emergency Risk Assessment Guidelines (NERAG) methodology of risk management. Bushfire risk is described in terms of likelihood variables (factors affecting the probability of fire) and consequence variables (the impacts of these fires). Primary data used was the Bushfire Prone Area (BPA) classification of bushfire hazard developed by the Queensland Government, and data layers identifying Regional Council interests.

Identification and analysis of bushfire risk was completed using two inter-related approaches – a broad, qualitative assessment focusing on fire history and current fire management and a semi-quantitative GIS analysis of relevant variables.

The GIS analysis used a numerical weighting for each of the relevant likelihood and consequence variables and combined these in a simple equation to arrive at a total numerical value for bushfire risk for any given location. Bushfire risk scores were then categorized into high, medium and low values to provide guidance to RRC across the region.

# Key findings from the qualitative assessment

- There are very high bushfire hazard ratings, and a high fire frequency, on the vegetated and hilly country in the region. These areas can be broadly grouped into four land units - the western hills (and the eastern slopes of Goodedulla National Park), the central ridge line (from Morinish to Stanwell), the Mount Archer area and the southern hills around Mount Morgan.
- There can be a very large variation in the frequency and extent of fire between years. Estimating bushfire potential and identifying vulnerable locations should be undertaken as each fire season approaches.
- In most areas, the BPA classification accurately identifies, or corresponds with, areas where fires are most frequent and extensive. However specific local conditions and temporal changes in conditions make this relationship an indicator rather than a predictive tool.
- The level of bushfire risk increases where residential buildings and essential infrastructure are exposed to fire. The key focus is the "iZone", the interface between the flammable vegetation and the habited areas. It is these vulnerable areas where the greatest management intervention is required.

# Key findings from the GIS analysis

- The primary purpose of the GIS analysis was to provide a tool for assessing bushfire risk consistently across the entire region. The result is a flexible, spatially based process that can be applied across a range of scales and include any variables considered relevant and changing fire conditions.
- The GIS tool applied in this report begins what should be an on-going process of regular use and development by Council officers. Its usefulness will increase with increasing use in planning and operations. New

information and techniques will become available (for example, improved fuel load estimates) which will greatly improve the accuracy of predicting where and when the highest risk occurs.

- By explicitly incorporating specific conditions and Council interests, managers can assess the relative importance of different variables in creating an elevated level of bushfire risk in any given context.
- The results of the analysis confirm the importance of focusing fire management in the Mount Archer and Mount Morgan areas. In the Mount Archer locality, the importance of the urban/bushland boundary (iZone) and the Council land and recreational land use at Guthrie Street Park is emphasized. Around Mount Morgan the iZone boundary is more variable and complex with highest risk associated with rural residential settlements, the Water and Recreation Reserve (201 RN836502) and the 66kV power line.
- The large blocks of remnant vegetation on hilly, sloping land had high associated fire risk. In these locations the risk is widespread and diffuse, requiring a different response to the two key locations identified above.
- The results indicate that a strategic framework for bushfire management should focus on three main elements – the Mount Archer iZone, the Mount Morgan iZone and reducing overall risk across all high fire frequency rural lands.

# Recommended next steps

Drawing on the conclusions from the regional assessment of bushfire hazard and risk, and incorporating the views of key stakeholders, the following actions are recommended.

(1) Council allocates its fire management resources, such as provision of heavy plant and equipment for fire-fighting or fire break construction) towards three regional priorities – the Mount Archer iZone, the Mount Morgan iZone and reducing the overall risk in high fire frequency rural areas.

- (2) Council encourages and supports the development of community fire plans to address the particular fire conditions that apply in different localities of the region. These plans will reflect the local requirements of each community. The plans need to be action-oriented and integrated with the relevant Rural Fire Brigade structure and operations. To be effective, community fire plans will require a commitment to their implementation, potentially by identifying responsibilities through a formal agreement process (e.g. MoU).
- (3) Council staff involved in bushfire management will benefit greatly from increased training opportunities and better information and processes to guide their annual fire programs.
- (4) Each parcel of Council land within or alongside very high bushfire hazard areas should be individually assessed and integrated into the current fire management practices on adjacent land.
- (5) Cooperative arrangements with State agencies involved in fire management need to be formalized and improved. There are considerable benefits to be gained if all parties are effectively working together to use the limited resources available for managing bushfire risk.

# Abbreviations

AVHRR	Advanced Very High Resolution Radiometer
BOM	Bureau of Meteorology
DES	Department of Emergency Services (Qld)
DSITIA	Department of Science, Information Technology Innovation and Arts (Qld)
DSDIP	Department of State Development, Infrastructure and Planning (Qld)
DNPRSR	Department of National Parks, Recreation, Sports and Racing (Qld)
LDMP	Local Disaster Management Plan Rockhampton
LUMP	Land Use Mapping Product
MODIS	Moderate Resolution Imaging Spectroradiometer
NAFI	Northern Australia Fire Information
NERAG	National Emergency Risk Assessment Guidelines
NOAA	National Oceanic and Atmospheric Administration
QFES	Queensland Fire and Emergency Service
QPWS	Queensland Parks and Wildlife Service (within DNPRSR)
RE	Regional Ecosystem
REDD	Regional Ecosystem Description Database
SIDC	State Interdepartmental Committee (DES) for Bushfire management
SPP	State Planning Policy
TMR	Department of Transport and Main Roads (Qld)

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# 1. Introduction

# 1.1 Overview

Rockhampton Regional Council engaged Firescape Science to review and analyze available information on bushfires and fire management in the region. The purpose is to provide a regional and strategic assessment of bushfire risk that identifies areas of highest risk and recommends cost effective options for managing this risk.

Council has an obligation to manage bushfire risk to address public interest concerns about the safety and wellbeing of residents and visitors to the region and as part of its responsibilities under the *Disaster Management Act (Qld) 2003*.

The study area is defined by the local government boundaries and the assessment of bushfire risk, is set within the climatic and economic context of the Rockhampton region.

Managing bushfire risk is a complex task that extends across tenures and administrative boundaries. It is also inherently variable over time, changing with weather conditions, random ignition events and developing patterns of settlement and land use.

Given these conditions, it is imperative that Council has a clear understanding of its role in regional fire management and knows where the highest bushfire risk is located.

# **1.2 Content and structure of report**

The assessment report follows a logical step-by-step approach consistent with the NERAG guidelines for (disaster) risk management<sup>1</sup>. It examines context, assesses bushfire risk, evaluates that risk, leading to a management response to the highest priority concerns.

The Regional Bushfire Management Strategy presents a summary of methods, relevant information and conclusions in this risk assessment. The appendices (A –

<sup>&</sup>lt;sup>1</sup>This is the Australian standard for assessing emergency risk – a copy can be obtained from <u>http://www.em.gov.au/Publications/Program%20publications/Pages/NationalEmergencyRiskAssessm</u>entGuidelines.aspx

G) provide a detailed account of the information and analysis used to arrive at these conclusions. Appendix H provides guidelines for annual operations to aid implementation of the strategy.

The relevant report sections and supporting appendices are listed in Table 1.

NERAG REPORT SECTIONS		APPENDICES	NOTES ON CONTENT
CONTEXT AND METHODS	<b>2. Methods</b> 2.1 Definitions, concepts and methods of risk assessment	Appendix A	Overview of theory and practice of risk assessment
	2.2 Methods and data sources used in this report.	Appendix B	Detailed description of methods used in this strategy
	this report	Appendix C	References, information and data sources
RISK ASSESSMENT	3. Regional Council interests	Appendix D	Discussion and list of Council interests potentially threatened by bushfires
	4. Qualitative regional assessment	Appendix E	Fire strategy consultation (September 2014)
	of bushfire risk	Appendix F	Summary of the results of consultation with local stakeholders
	4.1 Fire history and Bushfire Prone Areas		Summary and discussion on distribution and frequency of bushfires
	4.2 Regional bushfire management	Appendix G	Summary and discussion of current regional fire management and Council's role
		Appendix H	Checklists to assist with annual action plans
	5. GIS based assessment of bushfire risk		Overlay of Council interests and bushfire hazard and weighted variables
			Discussion of use of GIS in managing bushfire risk
EVALUATION	6. Evaluation of bushfire risk		Identifies strategic priorities and provides options for improving current management practice
RESPONSE	7. Recommendations		Recommends a response to the identified bushfire risks

Table 1.	Content	and	structure	of	report
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# 2. Methods

# 2.1 Definitions, concepts and methods of risk assessment

A more detailed description of risk assessment methodologies and a comprehensive list of definitions are presented in Appendix A.

Risk is described in terms of "likelihood" (the probability that a particular event will occur) and "consequences" (the impact of that event).

Bushfire hazard is the probability (the "likelihood") that a severe fire will occur. Bushfire Prone Area classification is a measure of this hazard. Bushfire risk is estimated by combining the level of hazard with the potential consequences of fire.

These consequences are the impacts of bushfires on Council interests. For Rockhampton Regional Council, bushfire hazard becomes bushfire risk in areas where fire threatens Council's interests.

The analysis of risk requires key likelihood and consequence variables to be identified and examined for their contribution to the overall level of risk presented by a severe bushfire. This is best illustrated by a "bow-tie" diagram (Figure 1).


Figure 1. Bow-tie diagram of risk associated with bushfires.

The overall level of risk in a given situation is the combined effect of the two types of variables (likelihood and consequences). There are a number of ways these variables can be combined to calculate the level of risk.

### 2.2 Methods and data sources used in this report

Risk assessment for this strategy is based on a qualitative regional assessment, a GIS analysis of relevant data layers and consultation and advice from local stakeholders and fire managers.

A detailed discussion of the methods and data sources used in this strategy is provided in Appendix B and Appendix C.

#### Qualitative regional assessment

This was a desk-top collation and analysis of available information from across the region to identify where Council is most exposed to bushfire risk. It focuses on four key topics, namely:

- Council interests the assets and community values that could be threatened by bushfires (Appendix D)
- Consultation with local stakeholders this occurred throughout the project and during an intensive series of meetings with stakeholders in September 2014 (Appendix E)
- Fire history information recorded on satellite imagery gave insight into the frequency and distribution of bushfires in the region (Appendix F)
- Council's role in regional fire management overview of contribution of Regional Council to bushfire management in the region (Appendix G)

The qualitative regional assessment also relied on the use of spatial data and mapping to inform its conclusions.

#### GIS based assessment of bushfire risk

Spatial data was used in this strategy in two ways:

- a simple overlay of likelihood and consequence variables to provide a visual image of Council's interests and bushfire hazard
- a semi-quantitative assessment to provide a numerical measure of bushfire risk

In the semi-quantitative assessment, each variable is assigned numerical weighting and the weightings are combined in an additive manner to give a numerical measure of bushfire risk in any given location.

Maps can be produced to show these values grouped into different priority categories (e.g. low, medium, high and very high fire risk).

Information from public domain sources was combined with Council data to generate the map layers in this report. Different data combinations were investigated to test 'logic' and the resulting representation of known on-ground issues. Before undertaking the final analysis, numerical weightings were adjusted to reflect discussions with Council Officers.

### 3. Regional Council interests

Council interests are assets and community values which are potentially threatened by bushfires (Appendix D). These can be grouped into three or four categories:

- personal safety the safety of residents and visitors to the region
- property the protection of buildings, infrastructure and land
- other community values protection of biodiversity, recreation opportunities and amenity
- operational impacts the impact of bushfires on the operations of Council

Documenting and considering each of these interests plays an important part of evaluating risk and in deciding on priorities for fire management. The most important interests have the highest consequences (if impacted by fire) and should direct where Council concentrates its efforts in this regard.

The important Council interests include:

• life and property of residents

- key community utilities and services (water, sewerage, communication links) and other key infrastructure on Council land
- management of large Council properties
- key regional infrastructure (power, transport)
- major economic centres (industrial and manufacturing)

# 4. Qualitative regional assessment of bushfire risk

# 4.1 Fire history and Bushfire Prone Areas

The Bushfire Prone Area (BPA) mapping was combined with fire scar mapping<sup>2</sup> to determine the correlation between the level of hazard (BPA) and the actual incidence of fires (Appendix F).

# Fire history and distribution

- There are areas in the region that experience more frequent and larger bushfires than the surrounding areas
- The geographic distribution of fires demonstrates the influence of sloping land in creating large and dangerous fires. In all the major fire seasons, the largest and most frequent fires occurred on sloping land
- The following areas and localities have a high frequency of fire (as recorded the MODIS fire scar data)
  - Central ridge and hills The ridge line and sloping land extending from the southern end of Morinish, through Kalapa and across Stanwell locality to the Mount Morgan area. Significant fire scars are recorded in these hills in 2003, 2008, 2010 and 2013.
  - Mount Morgan district The hills and sloping land surrounding Mount Morgan from Bouldercombe in the north to Fletcher Creek

<sup>&</sup>lt;sup>2</sup> MODIS satellite imagery, available from the NAFI web site

in the south. This area experienced significant fires in the 2005, 2009, 2010, 2011 and 2012 fire seasons.

- Mount Archer area The very high fire hazard levels alongside high density residential areas makes this a key location in the fire strategy. The fire scar data only records major fires in 2009, however QPWS have documented frequent fires in the years preceding this date.
- There can be large variation in the occurrence and extent of fire between years. From 2000 to 2002, in 2004 and in 2007 there were few significant fire scars recorded in the region. In contrast, there has been high to very high fire activity between 2008 and 2012.

### Fire hazard (BPA) and fire history

A comparison of the BPA classification and fire scar records (Appendix F) indicates the following:

- The BPA map showing 'high' fire hazard areas largely corresponds with areas where fires are more frequent and extensive.
- Some locations with a high fire hazard may not experience frequent fires due to specific local conditions. For example, the hills alongside the Fitzroy River in Morinish (north) have possibly avoided major fires due to the extent of cleared land surrounding these hills. Major bushfires may also occur in areas classed as medium hazard; for example, in and around Goodedulla National Park.
- Major fires can occur as irregular events in local areas and in contrast to fire conditions in most of the surrounding land. For example, in 2009 there are only two areas of fire scars – over most of Mount Archer and a large proportion of Bushley, Boulder Creek and Nine Mile Creek localities near Mount Morgan. Similarly in 2003 the only fire scars recorded are extensive areas over Alton Downs, Dalma and (south) South Yaamba localities. These localities rarely show fire scars in any of the other years since 2000 including the major fire year of 2011.

#### 4.2 Regional bushfire management

Bushfire management in Rockhampton region (Appendix G) is similar to all other regions in Queensland. There are multiple agencies and organizations, sometimes cooperating and sometimes acting separately to manage bushfire risk.

Rockhampton Regional Council has a critical role in these efforts, particularly as part of its responsibilities under the *Disaster Management Act (Qld) 2003*. Council currently makes a significant contribution to overall regional fire management efforts to reduce bushfire risk.

The major findings from the review of current fire management include:

- Managing bushfire risk must be seen in the context of Council's role and responsibilities under the *Disaster Management Act (Qld) 2003.*
- Current cooperative planning and actions amongst various fire management agencies is addressing bushfire risk in priority areas. However many respondents in the consultation process indicated that significant efficiencies could be gained by having a more strategic, transparent, and coordinated approach. Specific fire management activities by individuals and agencies have successfully used limited resources to reduce the overall level of bushfire risk in certain localities, but this tends to be ad hoc in its application and focused on individual concerns of each agency.
- The Rural Fire Brigades, with support from QFES, provide an essential service to the community and play a critical role in managing bushfire risk. It should be a Council priority to work with and support these organizations.
- Other agencies also make significant contributions to regional risk management through effective management of their land and assets. For example, QPWS has invested significant resources in fire management at Mount Archer. DNRM has played an essential role at Mount Morgan.
- The inherent variability of bushfires makes it difficult to plan ahead and allocate resources to meet a constantly changing level of risk. This

variability should make annual fire action plans, early warnings and seasonal outlooks an integral part of fire management planning.

• Similarly, early detection of fires, based on monitoring efforts that reflect the predicted level of risk, can greatly reduce the level of bushfire risk.

Rockhampton Regional Council has made a major contribution to regional bushfire risk management through education, coordination and on-ground works and activities. The fire lines completed in partnership with QPWS and DNRM at Mount Archer and Mount Morgan provide critical infrastructure to mitigate the possible effects of bushfire in these two vulnerable, high risk locations.

# 5. GIS based assessment of bushfire risk

A GIS analysis was undertaken using public domain data, with the first iteration used to guide discussion with local fire managers (in September 2014). The analysis was refined based on discussion with stakeholders and additional data provided by Council.

# 5.1 Overlay of Council interests and bushfire hazard

The region-wide view of Council interests overlaid on bushfire hazard ratings is shown in Figure 2.



Figure 2. Overlay of Council interests and fire hazard across region

Council interests are concentrated around the developed urban and residential areas, which largely occur outside the very high bushfire hazard areas. The greatest exposure to bushfire risk is around Mount Morgan and along the eastern side of Rockhampton. For example, Figure 3 shows the Mount Archer area where a high fire hazard threatens community land, council assets and values.



Figure 3. Overlay of Council interests and bushfire hazard at Mount Archer.

The data were examined at large and small scales across the region. Key conclusions drawn from this investigation include:

• The urban zone most exposed to bushfire risk is the residential area on the summit of Mount Archer. The foothills along the eastern side of the Rockhampton city are also exposed, but to a lesser extent. Newly completed fire lines and regular fuel reduction activities near both locations have significantly reduced this risk in recent years.

- The urban zone at Mount Morgan (particularly where currently occupied) is adequately separated from high fire hazard areas in most locations.
- There are high levels of bushfire risk to individual houses and structures scattered amongst the vegetation in high fire hazard areas. Important areas in this respect include:
  - the extensive rural residential and rural settlements around Mount Morgan
  - residential dwellings along the Rockhampton Yeppoon Road
- A similar threat may occur with individual rural homesteads in the high fire hazard areas, particularly in the more densely settled areas of the rural zone. These include rural areas SE of Mount Morgan (Fletcher Creek, Nine Mile and Bajool) and along the eastern side of the central ridge line (Dalma, Stanwell).
- The level of risk in this context will be highly variable and depend largely on the actions of the land holder. Most rural homesteads know the risk presented by bushfires and have adequate protection in place. However not everyone is well prepared and the threat is real and ever-present.
- Most of key Council infrastructure is located in developed areas away from the high fire hazard areas. However there are significant Council assets along the iZone in the Mount Archer areas (e.g. water reservoirs, power lines and recreational facilities).
- There are significant areas of Council land within the high bushfire hazard areas surrounding both Mount Archer and Mount Morgan. Each property will require an individual assessment of bushfire risk which considers current land use and access, and conditions in surrounding land.
- Regional community utilities and services that are most exposed to bushfire risk are the 66kV / 132kV power lines and communication towers.

- Biodiversity values are also concentrated in the hills and high fire frequency areas where National Parks and State Forests are surrounded by rural properties of varying sizes.
- There are important biodiversity values in the wetlands along the Fitzroy River. These present a lower level of bushfire hazard and risk in otherwise cleared and low fire hazard landscapes.

### 5.2 GIS semi-quantitative risk assessment

Results from the formal GIS-based risk assessment (Figure 4) shows that the largest contiguous areas of high bushfire risk are mostly where significant biodiversity values are threatened by fire. This high risk rating is due to the cumulative total of the weightings given to protected areas and the presence of threatened ecosystems or species within them. (Digital data supporting the analysis has been supplied to the RRC GIS unit).



Figure 4. Bushfire risk mapping across the region

Although the protection of biodiversity is not the highest priority for Council, these high value biodiversity areas are important. In addition to their conservation value, there are always rural properties and homesteads in and around the protected area estate.

Figure 4 also shows Council interests with respect to the bushfire risk map, indicating how the overall analysis can be used to highlight highest risk areas for Rockhampton Region.

Examining the bushfire risk map at a larger scale (Figure 5) reveals the components of the relatively high level of risk in more detail. The high risk scores at Mount

Morgan are driven by the presence of extensive Council lands, power lines, rural residential settlement and community purpose reserves.



Figure 5. Bushfire risk mapping - Mount Morgan township.

### 5.3 GIS assessment as a management tool

A GIS assessment of bushfire risk is a tool that could be developed further and used on a regular basis to guide where and how Council allocates staff and resources to fire management. As a management tool, advantages include:

- Providing a region-wide perspective on bushfire risk as a guide to annual fire planning and operations
- Guidance on high risk areas across a range of scales, from regions to property specific assessments
- Identification of less apparent high bushfire risk areas
- Gives flexibility and adaptability to changing conditions and priorities

The analysis completed here provides insight into how data layers can be manipulated to improve the usefulness of the process and how different weightings on each variable can change the outcomes.

Using a semi-quantitative assessment process, different maps are produced if different weightings are applied. Weightings on consequence variables are set to reflect the priorities of the managers and this may change over time. The variables used to calculate the likelihood of fire can be amended to incorporate new developments in the understanding and modelling of bushfires. For example, Statewide BPA hazard categories could be improved with more accurate estimates of fuel load in the local context.

#### 6. Evaluation of bushfire risk in region

Evaluating the bushfire risk was based on the results of qualitative and quantitative assessments and the advice from local stakeholders to decide where and how Council should focus its management effort to get the best results. The aim is to enable Council to set priorities.

#### 6.1 Regional fire management priorities

Based on the information and analysis used in this report, three priority areas for bushfire management can be identified. These are the iZone boundary areas at Mount Archer and Mount Morgan and the extensive, high fire frequency rural lands. Each of these priorities will have its own requirements, key locations and special characteristics (Table 2). The third priority, "rural lands", includes all privately owned rural properties in the high fire hazard hills of the region. These are land units where fire management is a shared responsibility with multiple other agencies, organizations and individual landowners.

#### Table 2. Regional bushfire management priorities

#### Mount Archer iZone

- interface with high density urban areas (Rockhampton and summit housing and infrastructure); there are also vulnerable low density residences in nearby rural areas

- significant investment in fire lines and on ground management in recent years has greatly lowered the risk in this location

Requirements	Key locations	Options for improving management	
<ul> <li>current management effort and investment</li></ul>	<ul> <li>Residential settlement on summit of</li></ul>	<ul> <li>establish a Rockhampton (Rural) Fire Brigade</li></ul>	
needs to be maintained including	Mount Archer <li>Guthrie Street Park and "First</li>	group to participate in the management of the	
maintenance of fire lines and community	Turkey" access route where	urban iZone <li>formalize the cooperative arrangements</li>	
information/education programs <li>improved cooperation with QPWS</li> <li>better understanding and documentation</li>	significant Council land and	between QPWS and Council with a MOU <li>participation in annual work programs with all</li>	
of bushfire risk to residences along the	recreational users are exposed to	relevant agencies (including Livingstone Shire	
Yeppoon Road corridor	bushfire risk	Council, utilities and service providers)	

#### Mount Morgan iZone

- highly variable interface with high bushfire hazard areas; there are large areas of Council land surrounding township; there are also Rural Residential areas and isolated rural residences bordering and within the highest hazard category; the 66VK power line servicing the township crosses a significant distance within high bushfire hazard areas

- there is an extensive network of fire lines in and around the township

Requirements Key locations Options for improving		Options for improving management	
-	current management effort and investment needs to be maintained including maintenance of fire lines and community information/education programs need more detailed and individual assessments for Council land and vulnerable residences	<ul> <li>Rural Residential settlements north and south of town</li> <li>the Water and Recreation Reserve (201 RN836502) east of the township</li> </ul>	<ul> <li>improved early warning and detection processes for more effective preparedness by the community</li> <li>systematic and comprehensive assessment of bushfire risk for specific Council interests</li> <li>increased investment in fuel reduction actions and cooperation with relevant State agencies and power authorities</li> </ul>

High fire frequency rural lands

- rural lands surrounding and within the three high fire frequency areas of hilly country in the region (west, central and south). Multiple tenures and land management agencies makes effective cooperative management imperative

- Council's interests primarily concern safety for rural homesteads, protection of biodiversity and fuel load reduction efforts

Re	equirements	Key locations	Options for improving management
-	establish formal cooperative arrangements with relevant agencies	<ul> <li>southern hills (Mount Morgan district), particularly along Burnett</li> </ul>	<ul> <li>enhanced and targeted education programs, support landowners to prepare for fire events</li> </ul>
-	review and assess the bushfire risk to rural residences in high fire hazard areas	Highway north and south of town	<ul> <li>focus support and effort on relevant Rural Fire Brigade groups</li> </ul>
-	participate in annual multiple agency planning for these rural areas		<ul> <li>improve early detection of bushfires in vulnerable areas</li> </ul>

#### 6.2 Improvements to current bushfire management practice

In addition to the recommendations concerning bushfire management above, the consultation completed for this report identified other options for consideration:

- (1) A detailed operational strategy will clarify the role of different departments/personnel within Council and provide the framework for coordinating future bushfire management activities. Annual operational fire plans for key areas are a basic requirement for being prepared and for the effective used of funds.
- (2) Information requirements are substantially the same each year, which allows standardized check-lists and templates to be used. The effort required to collate and analyse data each year will decline over time as processes become established. Assuming fire plans are prepared for priority areas, sample checklists to assist annual implementation are provided in Appendix H.
- (3) The wide range of freely available spatial data is a valuable resource for fire management planning. It can be used by operational Council officers with training and support (e.g. using the NAFI site to identify active fires and examine fire history information or fire scars to better understand landscape functioning in the local area).
- (4) Community Action Plans, based on the model developed by QFES, need to be developed for key locations. The relevant Rural Fire Brigade will be central to the development and implementation of these plans.
- (5) The integration of fire information from Council and QFES services can be improved.
- (6) Council weed control operations can be combined with fire management for the benefit of both activities. Fire applications depend on the species. Fire can assist broadscale weed control by directly killing individual plants, or by removing adults and providing access to spray herbicide on emergent seedlings. Conversely, fire can facilitate weed spread if the disturbance regime is to frequent. Other species,

such as introduced high biomass grasses (e.g. Guinea Grass), affect fire behavior, usually with negative consequences as high fuel loads result in more intense fires.

- (7) Arson is a significant issue in the region that requires better monitoring, education and enforcement procedures.
- (8) Prescribed burning should focus on early (cool) burns and be guided by soil moisture and weather conditions.
- (9) Inter-agency cooperation on fire management can be improved by having clarity and accountability with respect to the resources and effort that each agency contributes to regional fire management.
- (10) Officers attending RIDC meetings need to have the authority to make budget and staff time commitments on behalf of their organizations.
- (11) Regional Council would benefit from a dedicated fire officer (similar to a senior ranger in QPWS) as the principal point of contact and manager of fire-related activities. If this is not possible, this role should be assigned to an existing land manager position and this person equipped (or given guidance) for undertaking fire planning activities on behalf of council.

### 7. Recommended next steps

The following actions are recommended:

- (1) Council allocates its fire management resources towards three regional priorities – the Mount Archer iZone, the Mount Morgan iZone and reducing the overall risk in high fire frequency rural areas.
- (2) Council supports the development of community fire plans to address bushfire risk in different localities in the region. These must be integrated with the relevant Rural Fire Brigade or State agency activities.

- (3) Council staff involved in bushfire management should be supported with increased training opportunities and access to information to guide their annual fire programs.
- (4) Each parcel of Council land, within or alongside very high bushfire hazard areas, be individually assessed and, if relevant, integrated into the current fire management practices on adjacent land.
- (5) The cooperative arrangements with State agencies involved in fire management need to be improved upon. A major step in this direction would be formal agreements (MOU) that clearly define roles and responsibilities and provide a process for documenting the contribution of each agency.

All parties will benefit if multiple agency forums and working groups are effectively working together in using the limited resources available to manage bushfire risk.

### Appendix A. Definitions, concepts and methods of risk assessment

### CONTENTS

- 1. Key concepts and definitions
- 2. Risk management framework
- 3. "Bow-tie" diagram of bushfire risk
- 4. Definitions

### Key concepts and definitions

There are a range of methods used to assess risk from natural and manmade causes and there can be a lack of consistency in the definitions of key words and concepts in the literature<sup>3</sup>.

### Likelihood, consequences, bushfire hazard and bushfire risk

Risk is usually described in terms of "likelihood" and "consequences" and this report adopts these concepts as a framework for assessing bushfire risk.

Likelihood is a general description of the probability that a particular event will occur. Consequences are the impact of that event to the specific persons or organizations concerned.

Risk assessment models combine these two variables in one of three ways – qualitative, quantitative or semi-quantitative. Qualitative methods largely rely on expert opinion and a broad scale analysis of relevant factors. Quantitative methods use a numerical measure of probability and value (for example, the economic value of threatened assets). Semi-quantitative methods combine elements from both of these approaches.

Bushfire hazard is the probability that fire will occur and cause significant damage. That is, it is a measure of the likelihood of severe fire. Bushfire risk combines the

<sup>&</sup>lt;sup>3</sup> The COAG Inquiry report (Ellis, *et al* 2004) identifies this as an important issue and offers its own set of definitions which are used in this report with minor changes to some definitions.

probability of bushfire with a measure of the impact of that fire on life and property and other values.

For example, there can be very high bushfire hazard in a certain location but the bushfire risk is low if there are few sources of ignition or few consequences (e.g. in remote locations). Bushfire risk will always increase near residential areas because the potential impact is greater, irrespective of the bushfire hazard that applies to the area<sup>4</sup>.

### Risk management framework

Risk management encompasses the entire process of identifying, assessing and responding to emergency risk (Figure 1). The National Emergency Risk Assessment Guidelines (NERAG) is the Australian standard for risk management<sup>5</sup>.



Main Elements of the Disaster Risk Management Process

Figure 1. NERAG risk management framework

<sup>&</sup>lt;sup>4</sup> This is consistent with Leonard and Blanchi (2012) which underlies the rationale for Bushfire Prone Area classifications.

<sup>&</sup>lt;sup>5</sup><u>http://www.em.gov.au/Publications/Program%20publications/Pages/NationalEmergencyRiskAssess</u> <u>mentGuidelines.aspx</u>

The first step, context, is used to identify the factors ("variables") that are found in a particular area which affect the level of risk. The following three steps (identify, analyse and evaluate) is where the risks are assessed and priorities established for responding to these risks.

#### "Bow-tie" diagram of bushfire risk

The scenario illustrated in a bushfire "bow tie" diagram (Figure 2) is about the likelihood and consequences of a severe bushfire event and the significance of these consequences to RRC. These diagrams identify causal factors (likelihood variables) and the impacts (consequence variables) which precede, and follow, a (severe fire) event.

For example, a key factor (primary variable) in bushfires is fuel load and this depends on a number of other factors (secondary variables) such as seasonal rainfall effects on vegetation growth, the type of vegetation and when the last fire occurred in this location.

Similarly the consequences of these fires can be broken up into a range of impacts (primary and secondary consequences). Damage to property, for example, may result in loss/damage to homes or commercial buildings, disruption to essential services, loss/damage to community facilities and disruption to access/transport corridors.

The relationship between these variables and the bushfire event is also illustrated in the diagram. It allows us to identify where management intervention is possible and where it may be most effective. These interventions are called "barriers" (to reduce likelihood) and "controls" (to limit consequences).

For instance, the influence of weather and type of vegetation on high fuel loads is beyond the control of managers but the history of fire is something that can be manipulated (by conducting control burns or slashing). The reduction in fuel load is a "barrier" that reduces the probability the event will occur.

"Controls" over the consequences is about mitigating the impacts after the event. A fire break for example, can make a significant difference to the consequences of a severe bushfire near residential areas.

The position of these barriers and controls in the diagram can demonstrate how some interventions can affect a number of variables simultaneously and make the investment in time and resources more cost effective. For example, accurate early warning and early fire detection systems ("controls") could reduce the level of risk across all consequences identified in the diagram.



Figure 2. Bow tie diagram to demonstrate interaction of variables in bushfire risk assessments.

# Definitions

Terminology	Meaning	
Buffer	a strip or block of land on which the fuels are reduced to provide protection to surrounding lands	
Burning program	all the prescribed burns scheduled for a designated area over a nominated period of time	
Bushfire	an unintentional fire occurring in native vegetation, including a grass fire	
Bushfire hazard	the source of potential harm, expressed qualitatively or quantitatively; the propensity of an area to ignite and create destructive fires; generally based on the natural attributes of a place (vegetation, fuel load, slope, weather)	
Bushfire Prone Area	classification of land into bushfire hazard categories; provides a measure of the likelihood of a severe fire	
Bushfire risk	a measure of the impact of fire on the assets and values of community (e.g. life and property, environmental impact); it is measured by consideration of both (likelihood and consequences of a fire	
Consequence	the impact of fire, expressed qualitatively or quantitatively, on the interests (i.e. the assets and values) of the person or organisation concerned.	
Council interests	the Council assets and community values that may be threatened by bushfires	
Fire break	any natural or constructed discontinuity in a fuel bed used to segregate, stop, and control the spread of a wildfire, or to provide a fire line from which to suppress a fire	
Fire danger	a measure of the probability that severe fires will occur based on weather conditions (temperature, humidity, wind speed and direction)	
Fire line	a natural or constructed barrier, or treated fire edge, that allows for vehicular access used in fire suppression and prescribed burning	
Fire management	all activities associated with the management of fire-prone land, including the use of fire to meet land management goals and objectives	
Fire regime	the history of fire (intentional or unintentional) at a particular location or area including the frequency, intensity and season of burning. It may also include proposals for the use of fire in a given area (i.e. the intended fire regime)	

Terminology	Meaning	
Fire season	the period(s) of the year during which fires are likely to occur, spread and potentially cause damage	
Flammability	the ease with which a substance is set on fire	
Fuel	any material such as grass, leaf litter and live vegetation which can be ignited and sustain a fire. Fuel is usually measured in tonnes per hectare	
Hazard reduction burning	the controlled application of appropriate fire regimes for the reduction or modification of available fuels within a predetermined area	
iZone	interface zone; an area where any structures are located adjacent to or amongst flammable vegetation	
Likelihood	a general description of probability (the chance of occurrence) or frequency (the number of occurrences per unit time). (Source AS/NZS 4360:2004)	
Prescribed burning	the controlled application of fire under specified environmental conditions to a predetermined area; may have broader application than hazard reduction burns.	
<b>Risk assessment</b> the overall process of risk identification, risk analyst evaluation (Source AS/NZS 4360:2004)		
	a staged process of identifying the highest risk areas by estimating fire hazard and assessing the consequences should a bushfire occur	
Risk management	overall process of identifying the highest risks and responding to reduce this level of risk	
RRC Interests	these are the community assets and values held by Rockhampton Regional Council such as land, infrastructure and biodiversity values; used to estimate "consequences" variables	
Wildfire	an unplanned fire; a generic term, which includes grass fires, forest fires and scrub fires	

#### Appendix B. Risk assessment methods

#### **Overview of methods**

Bushfire risk assessment was based on a broad, region-wide qualitative assessment of fire hazard and risk, and a semi-quantitative GIS analysis of bushfire risk.

For the broad regional assessment, information (including GIS data layers) was collated and analysed relating to:

- fire hazard
- fire history
- the location and type of Council interests
- current bushfire management practices

In the semi-quantitative method, a numerical weighting for each of the variables was used to calculate overall risk.

#### **Qualitative regional assessment**

The qualitative assessment involved research and review of available information and data. This was combined with an on-going process of consultation and advice from local fire managers and Council officers.

### Fire frequency and distribution

The frequency and distribution of past fires in a region can be assessed using satellite fire scar and fire frequency records provided by NAFI<sup>6</sup>.

The fire scar mapping presents a record of fires in the region on a monthly basis using MODIS satellite imagery<sup>7</sup>. Fire frequency data shows the number of times an area has been affected by fire over a given period of time. This information is derived from AVHRR data from NOAA satellites.

 <sup>&</sup>lt;sup>6</sup> <u>http://www.firenorth.org.au/nafi2/</u>
 <sup>7</sup> MODIS <u>satellite; 250m x 250m pixels.</u>

Both sources of data need to be used carefully. The MODIS data can sometimes erroneously record surface water or cleared paddocks as "fire" scars. QPWS records of bushfires at Mount Archer indicate the fire scar data did not record extensive areas of fire in the years prior to the major fires of 2009. This may be due to the small patchy distribution of fires and/or heavy cloud or vegetation cover masking the fires. The NOAA data only records the largest of fires and underestimates the occurrence and extent of fires.

In spite of these limitations to the data, it can be assumed that most of the records do record fire events and they are sufficiently accurate to indicate the distribution and timing of fires at the regional scale. A brief discussion of this data in the Rockhampton region is provided in Appendix F.

Field inspections and a more detailed examination of the records would make these data more accurate and more useful.

# Council interests and current fire management

Information for these assessments was gathered from published documents, the internet, public domain data layers and advice and directions from Council officers. An important source of information on Council priorities and policy directions was the draft Planning Scheme (2014) currently subject to final public review and comments.

More detailed accounts of Council interests and regional management is provided in Appendices D and G.

### Semi-quantitative GIS assessment

The GIS assessment was based on an overlay of the Bushfire Prone Area classifications with data that identifies council and community interests (Figure 1).

Each likelihood and consequence variable was assigned a numerical weighting and these were added to get a numerical total. The total weighted value of an area was further classed into one of four categories (levels) of bushfire risk – low, medium, high and very high.



Figure 1. Summary of conceptual steps used in the GIS analysis to estimate bushfire risk.

The likelihood variables inherent in the BPA categories are fuel load, weather and location (slope). There are other variables influencing the likelihood of bushfires, such as sources of ignition, which are not included in the BPA categories or this GIS assessment.

The weightings assigned to the BPA (likelihood) categories are

Very High	30
High	20
Medium	10

Consequence variables are "Council interests" and each is given a weighting that reflects its value or importance (Table 1).

Category	Consequence variable	Weighting
Life and Property	Urban residential	8
	Rural residential	7
	Council land	4
	Services <sup>8</sup>	8
	Utilities <sup>9</sup>	8
	Transport & communication	8
	Power lines – 132v	3
	Power lines – 66v	1
	State roads	2
	Railway	1
	Manufacturing/Industrial	8
	Forestry production	3
	Mining	7
Other community values	Biodiversity	
(biodiversity)	RE - endangered fire sensitive	7
	RE - endangered	4
	RE- fire sensitive	3
	RE- Of concern fire sensitive	4
	RE - Of concern	1
	Biodiversity	
	National Parks, State Forests	3
	Nature Refuges	3

Table	1. List of	consequence	weightings	applied t	o Council	interests

<sup>&</sup>lt;sup>8</sup> LUMP 'services' are all areas classified as commercial services, public services, recreation and culture, defence facilities – urban and research facilities. For this GIS exercise, 'services' was extended to incorporate waste treatment and disposal areas. See: http://www.agriculture.gov.au/abares/aclump/land-use/alum-classification-version-7-may-2010.

<sup>&</sup>lt;sup>9</sup> LUMP 'utilities' are all areas classified as fuel powered electricity generation, hydro electricity generation, wind farm electricity generation, electricity substations and transmission, gas treatment, storage and transmission, water extraction and transmission. See: http://www.agriculture.gov.au/abares/aclump/land-use/alum-classification-version-7-may-2010

#### Appendix C. Information and data sources

#### References

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- State Disaster Management Group (Qld), (2010) *Disaster Management Policy Framework.* Policy statement from Queensland Department of Community Safety.
- Queensland Government (2014) State-wide Bushfire Hazard Area (Bushfire Prone Area) Mapping Update – 31 July 2014. Fact Sheet Version 10.

# Data sources

Category	Variable name	Source		
Likelihood	Bushfire Prone Areas (2014)	Public Safety Business Agency & Rural Fire Service Qld		
		Downloaded from Queensland Government Information Service, 3 Feb 2014		
Consequence	Land use mapping product (LUMP) (2014)	The State of Queensland (Department of Science, Information Technology,		
– Life and	Data extracted	Devente a de diference de la construction de la con		
property	- Manufacturing & industrial	Downloaded from Queensland Government Information Service, 13 June 2014		
	- Urban residential	2011		
	- Services, waste, utilities, transport & communication			
	- Rural living, rural residential			
	- Production forestry			
	- Mining			
	Railway (2014)	The State of Queensland (Department of Natural Resources and Mines)		
		Downloaded from Queensland Government Information Service, 4 June 2014		
	132kV powerline corridor (2011)	Powerlink Queensland		
		From internal GIS resources		
	66kV powerline corridor	Rockhampton Regional Council		
		Provided by Rockhampton Regional Council, 21 October 2014		
Consequence - Biodiversity	Regional Ecosystems (2011)	The State of Queensland (Department of Science, Information Technology, Innovation and the Arts)		
		Downloaded from Queensland Government Information Service, 4 June 2014		
	National Parks (2013)	The State of Queensland (Department of National Parks, Recreation, Sport		
	Nature Refuges (2012)	and Racing)		
		From internal GIS resources		

### Appendix D. Council interests

Council interests include any assets or values potentially threatened by fire. Documenting and considering each of these interests plays an important part of the evaluation of risk and in deciding on priorities for fire management.

In the risk assessment process, Council interests become "consequences" when they are impacted by bushfires.

Council interests can be generally divided into two categories – assets that Council owns or operates and community assets and values that are shared with people and agencies throughout the region.

Some interests apply widely across the region and Council operations. For example, safety and economic impacts are relevant wherever severe bushfires occur. However where they occur on Council land they become more important.

Council land and facilities includes reserves, undeveloped freehold, Council infrastructure and buildings, recreational access and facilities, Council roads and conservation areas.

The potential impact of bushfires on Council operations can present significant risk to how Council discharges its responsibilities for providing services and in managing land use through the planning scheme and associated policy.

Where community values occur on other tenures that are the primary responsibility of other agencies, bushfire management is a shared responsibility.

Essential Council infrastructure is largely outside of high risk areas except where it is located in the Mount Archer or Mount Morgan areas. It is assumed current management in these areas adequately mitigates the level of risk to relevant Council assets.

Essential infrastructure held by the State and other agencies may be exposed to high bushfire risk and the appropriate management response will require cooperative actions between Council and the relevant agency.

There are also a number of high biodiversity areas subject to significant bushfire risk which will have to be addressed cooperatively with relevant community groups and State agencies. In Table 1, each Council interest is identified with notes regarding context and bushfire risk. Where relevant, the weighting assigned to the consequence variable used in the GIS assessment (November 2014) is provided.
Table 1. Council interest with weightings	attributed during	g GIS	assessment.
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Category	Council Interest	Weight	Notes
Life and Property	Safety for residents		<ul> <li>the safety of people is of the highest priority,</li> <li>includes those engaged in recreation on Council land or via Council</li> </ul>
	recreation		access routes
	Urban residential	8	Specific value – should be individually assessed at a more detailed level of
	Rural residential	7	planning - threats to housing presents risks to property and the safety of people
	Rural homesteads		- characteristics of the iZone significantly affect the level of risk
	Council land	4	Specific value – should be individually assessed at a more detailed level of planning
			- these properties include a range of tenures, lot sizes and land use
	Services	8	- community wellbeing and safety will depend on the continued provision of
	Utilities	8	services and basic living requirements
	Power lines – 132v	3	disaster
	Power lines – 66v	1	
	Communication towers		
	Roads – local (Council)		- vehicular and pedestrian access routes are important assets to b
	Roads – Main Roads	2	protected for safety (escape) reasons and to provide access for fire management purposes
	Rail corridors	1	······································
	Manufacturing/Industrial	8	- various commercial businesses operating in the region contribute to the
	Commercial	8	economy and support local families
	Horticulture / cropping		
	Mining	8	
	Forestry plantations	3	
Other	Biodiversity		- the protection of biodiversity is an important community and Council
Values	RE - endangered fire	7	- State categories allocated to each RE type are used in the GIS
	RE - endangered 3 assessment for	assessment for the RRC Fire Strategy	

Category	Council Interest	Weight	Notes
	RE- fire sensitive	4	
	RE- Of concern fire sensitive	1	
	RE - Of concern		
	Biodiversity		- these are high biodiversity value areas and often important recreational
	National Parks	3	areas
	State Forests	3	
	Nature Refuges	3	
	Wetlands		Specific value – should be individually assessed at a more detailed level of planning
			<ul> <li>wetlands are important for many reasons</li> </ul>
			<ul> <li>included in the above biodiversity categories</li> </ul>
	Recreational opportunities		- bushfires can diminish the available recreational opportunities
	Smoke, amenity, scenic values		- smoke can be a significant health and safety issue
	Cultural values		Specific value – should be individually assessed at a more detailed level of planning
			<ul> <li>cultural values were not included in this fire risk assessment</li> </ul>
			<ul> <li>fire and fire management practices are often central to Aboriginal cultural values</li> </ul>
Operational	Future development areas		- the impact of fire can be broader than life and property concerns and may
effectiveness	Implementation of policy	include effects on the functioning of co	include effects on the functioning of community services, operational
	Land management costs		
	Community preparedness		
	Council reputation, liability		

### Appendix E. Fire strategy consultation (Rockhampton, September 2014)

### Disclaimer

The following summary is based on notes taken by the consultant during a series of meetings with local fire managers and Council officers 17-19 September 2014. They are presented as brief, "dot-point" comments and information. None of the content can be attributed to any one person or organization.

### **Objectives**

- 1. Present results of GIS Fire Hazard Analysis to date
- 2. Identify regional fire management issues requiring resolution
- 3. Overview the current operating environment for fire management in the region
- 4. Identify the priority areas for on-ground activities (consider policies and practices)
- 5. Obtain feedback on strategy framework to date
- 6. Clarify issues and current situation in Mount Archer area to revise draft plan

### Summary of meetings and key findings

### Rockhampton Regional Council meeting - Rockhampton Golf Club

- The main control areas are Mount Archer & Mount Morgan
- Need for strategy a key aspect is to help operational staff to make decisions; plus give policy/direction on fire-fighting assistance (Should RRC staff be involved? In which case who? And what training is required?)
- Information needs need an improved process for providing information on RRC position (to neighbours etc); currently working on organization-wide access to data
- Possible communication tools e.g. generic checking system: on what to do; mechanism/trigger to check conditions (and outline procedures required to get approvals). Could include pre-fire checklist and burn proposal proforma; general fire information for staff (e.g. resource material such as QPWS guidelines, NAFI web site for tracking or mapping fires)
- For the GIS analysis Consequences to consider include water supply, strategic infrastructure mapping, critical infrastructure mapping (e.g. water pipeline). Would like to see telecommunication towers considered but currently no up-to-date GIS data available to show tower locations
- Consider iZone rural urban interface and local law; one of the main issues in the iZone is the division of responsibility and attitudinal differences between the urban brigade (fight -fire) and rural brigade (light fuel reduction fires)
- Consider matters of state ecological significance & matters of local ecological significance
- Current situation a Regional Interdepartmental Committee operates, with meetings twice a year; also Fire Management Groups; all large landholders responsible for their own patch
- Planting dry vine forest behind houses has been encouraged by RRC to reduce risk in certain areas
- Mount Morgan particular issues with the vacant blocks of land (exmining area); boundary issues with houses located on ridges

- Mount Morgan needs resources; State land and RRC interests; there is an informal plan that is implemented each year, but needs ground-truthing. Maybe helpful to prepare a chart to summarise the plan, key steps required each year (advance planning) and to use as a communication tool regarding fire-related works in the area
- Cost sharing issues with QPWS and QFES (Rural)

## Capricorn Conservation Council – CCC office

- Main issues are with Mount Morgan and Mount Archer, Berserker Range (with fires often starting in Livingstone Shire)
- Mount Archer
  - introduced grasses on the edges and along creek lines (which enhance the fires spreading into area)
  - student projects have been undertaken there; general discussion on influence of climate change, different vegetation types, control of shrub layer
  - graziers regularly burnt their properties but this has declined due to urbanization and changing land use; now burning more regularly again and this has increased native species
  - evidence of 'thinning' on hills (may be able to compile historic photo sequence to demonstrate)
  - long term monitoring desired (needs to be included in Mount Archer plan)
  - main issue is Frazer Park and subdivision on top of ridge; weed management a key issue; especially guinea grass, and other introduced grasses
- iZone significant focus for management; small blocks are burning less because landholders can't meet permit conditions eg can't do earthworks (whereas large landholders have machinery); rural residential land owners often rely on rural brigades rather than take responsibility for their land.
- Residential subdivisions are an issue in some locations (e.g. where subdivision backs onto hill) and/or along Rockhampton/Yeppoon corridor.

- Concerns that QPWS resources (to manage land set aside for conservation purposes) goes into urban protection.
- Overall fire issues and inappropriate fire regimes affect connectivity, loss of species, vegetation thinning, weed spread.
- Issues with Transport Main Roads burning and vegetation clearing practices – excessive clearing of trees.
- Wetland burning local expertise is available (Jim Tait); burning flood plain country beneficial.
- Defence does it well (Shoalwater Bay Livingstone shire; Livingstone shire has a fire plan).
- Many wildfire ignitions through arson, on school holidays, and fires that escape from landholders.
- Planting vine scrub species is beneficial for wildfire mitigation.
- CCC have previously prepared "Green Corridors" document with creek profiles, species lists, waterway management guidelines; this provides useful resource for rehabilitation, baseline monitoring etc.

## **Operational staff from QPWS, QDRM and QFES (at Botanic Gardens)**

- The main wildfire season (Sept-Dec) is when the northerly winds start and as soon as the wet season starts, the fire season is over. Early burns are carried out as soon as the country is dry enough to burn. One prescribed burn is effective for one year in terms of reduced fuel loads; usual schedule is to burn problem areas every 2-3 years.
- There's not too much community resistance to burning since the 2009 wildfire; the seriousness of that got people on side to the idea of fuel reduction burning.
- High biomass grasses are not as much of an issue in RRC area (compared with the far north), except for guinea grass.
- Arson is a big issue every year, especially at Mount Morgan and the Gladstone area; there is a need to involve police to prosecute the arsonists; other wildfires are caused by escaped fires.

- Key issue was RRC making a financial contribution there are plenty of meetings, but this needs to be followed up with actions.
- One of the main actions is establishing and maintaining fire control lines; a maintenance schedule needs to be established.
- RRC needs to send someone who can make decisions to regional coordination fora; for example, someone who can commit council equipment or commit RRC to action items; RRC needs to have a stake in the process, and fire needs to be considered a priority.
- Community action plans should be prepared for different areas that align the role of each different agency; Les Williams from QFES has prepared an example draft plan. Once community action plans are prepared MOUs need to be signed for the different agencies to commit to their implementation.

## Mount Morgan

- There is significant Council land in the township and RRC needs to be part of wider planning which would include setting up different burning blocks
- Maintenance money is required for tracks and/or use of equipment owned by RRC.
- The level of track maintenance needs to be considered in terms of value for money. The quality of the track needs to be fit the purpose and not necessarily to road construction standards.
- It is recommended that RRC employ someone in a role similar to a QPWS senior ranger. This person would be a fire specialist, interested in fire and one of their key duties would be to supervise breaks and to participate in community action planning, and be the primary point of contact for other agencies conducting burns in the region.
- The highest priority is to have a cooperative approach. Identify the key priority areas to be managed, the action to be taken and to ensure that regular monitoring occurs (accountability). Need commitment to supply priority equipment and maintain tracks.

### Community action plans

- Community action plans would have an operational component, which would be reviewed every year before commencement of the fire season. Deliverables and targets would be made clear and subsequent reporting would help to improve the system. Note that prescribed burning is not always the answer; some fuel reduction could also be achieved by slashing and mowing etc.
- Community action plans need to be developed through talking to local people with local knowledge e.g. QPWS, QFES, Rural Fires, fire wardens.
- It is recommended to have a standard fire risk template for use by all agencies.
- It is recommended that the draft community action plans already prepared are collected together and prepared in full for RRC priority areas. QPWS could assist in identifying which ones to target first, and who to engage with.

### iZone

- Currently the iZone draws on rural brigades to defend them against wildfire, which depletes resources from the more rural areas.
- It is recommended that RRC/QFES investigate establishing the "Rockhampton City Brigade". This would be an iZone based Rural Fire Brigade with people trained similar to other brigades and able to assist on fire lines. These people would also become "reserves" and able to assist with fire management in the more rural areas if necessary.
- Where fuel reduction is required near houses, support is required to ensure these burns are implemented safely and effectively.
- Community action plans are critically important in the iZone areas and would assist in the issuing of permits. For RRC land in particular, it's important to involve one of the Rural Fire Brigades in preparing the community action plan or burn proposal to facilitate permit approval by the local urban brigade.
- It is recommended that RRC talk to QFES about the issuing of permits for the iZone to ensure there is some understanding of the issues at the urban/rural interface regarding the lighting of fires.

### Planning

- New subdivisions should have a bushfire plan and it needs to be clear who manages reserve lands. It is recommended that new developments have a ring road around their extremity, separating the houses from nearby bushland which would provide an easily maintained firebreak, and minimize vegetation dumping over fences by neighbours.
- A secondary issue is the status of unformed roads, where roads are gazetted but not built even though houses have been established.
- There have been some good examples of joint agency burns. For example, the RRC Pest Management team worked with DNRM to conduct burns at Mount Morgan. At the moment, QPWS, QFES and DNRM conduct much of the work for RRC and are looking for a greater contribution.

### Communications

- QFES operates a system called iMacMedia and has a Facebook page to get information out on planned burns. This is working really well and RRC is participating and this needs to be continued.
- NAFI hotspots are checked and NAFI firescars are factored in to fire management planning. DNRM and QPWS uses their own fire history records. DNRM would like to share their fire history information amongst the agencies but different data access levels need to be established, (e.g. track locations may not suitable for the public domain).

## RRC weeds officer (RRC office, Gracemere)

- There's a wide range of weeds in the area, some that fire management could assist in their control, and some that fire management needs to be wary not to spread weeds further. They do some burns in conjunction with Des Buck from DNRM who does some burning on the USL.
- The RRC weed unit is small, and runs off the back of other groups, so it's essential they work in with others. Implementation tends to be ruled by responses to complaints rather than according to planned strategy.

### QPWS (QPWS office)

- There's a concern regarding fire management being too late overall. For example, winter burns after frost has dried the grass. QPWS would recommend burning earlier when there is higher soil moisture. QPWS now pays more attention to fuel curing, and do a moisture test that is more accurate for working out timing. Overall they believe a review of timing of prescribed burns would be beneficial across the whole region.
- Dry season burning is gradually degrading riparian areas and burning every year also degrades the landscape (death by 1000 cuts).
- QPWS has invested significant resources into fire management since 2009 and this has resulted in significant improvements.
- QPWS is putting effort into conducting early burns along with follow up activities to fill in the gaps where fire did not carry sufficiently to provide a break. They aim to revisit areas every few years and there's a need to acknowledge that these double burns are sometimes needed.
- State wide audits are underway, and findings to date indicate that not as many burns are being undertaken as indicated in pre-season burn proposals. This emphasizes the need for implementation of all planned burns and other management actions.
- The RIDC and Fire Management Groups could work more effectively than they currently do and include key operational people.
- With respect to ecological issues, guinea grass is spreading up the slopes and affecting the regeneration of other species eg cycads. Guinea grass control is recommended.
- Try to work with radio tower authorities locations are known generally and try to monitor these as often as possible. Overall these assets need to be better documented and, in cooperation with relevant authorities, better monitored.
- It is recommended the NAFI tool be improved by NAFI linking with QFES FireWeb.

 Main recommendation for RRC is to assist with provision of plant and equipment, should consider other mitigation techniques where appropriate (e.g. slashing) and ensure development proposals enforce construction of the access behind new estates.

## **Deputy Mayor**

- General discussion on the comments received to date and the general direction that the plan was taking. Mount Archer is seen as a key high risk location where management should be maintained or improved.
- Key recommendations that have arisen in the consultation completed to date, were discussed and generally accepted as useful ideas. These key points are:
  - The need for Community Action Plans
    - Review existing drafts and formalise with MOU commitments and clear annual implementation process
    - RRC to participate in Fire Management Groups in priority areas
    - MOU to cover communications & equipment
    - Aim to meet early in the season for planning up-coming activities and have council representative who can make decisions
  - Develop fire plans for specific reserves
    - Consider range of options for fuel reduction (slash, burn, mowing)
    - Consider weed management as part of fire program
  - Reinforce need for town planning considerations in bushfire prone areas
  - o Training staff
    - General info on fire management, fire issues and resources available
    - Formal training to assist on fire-lines (select staff, not generic staff training)

Improved communication related to fire management (within council; externally)

## Appendix F. Fire frequency and distribution

### Bushfire hazard across the region

The Bushfire Prone Area classification uses a combination of weather, slope and fuel load to calculate "fire line intensity" – a measure of the likelihood of severe fire. A detailed explanation of this methodology has been published (Leonard, J. *et al* 2014) and is available on the Department of Science, Information Technology, Innovation and the Arts<sup>10</sup>.

The three variables used to estimate the level of hazard are:

- <u>Potential Fuel Load</u> has been derived from a combination of field assessments and expert appraisals. It represents the amount of combustible fuel that would typically accumulate in a defined vegetation class if it had not been burnt for 10 years or more, or managed to reduce fuel loads. (i.e. if no management actions have been undertaken).
- Fire Weather Severity (FWS) is based on an established model that combines a range of weather parameters (such as temperature, recent precipitation, current wind speed and relative humidity) into a single weather index that can be used to predict fire behavior. Calculations on a three hourly basis, from 1979 to 2011, forms the data used to create the FWS map layer.
- <u>Topographic slope</u> is an important parameter controlling fire spread, the rate of fuel consumption and thus potential fire intensity. Data is derived from satellite recordings (SRTM source) which have been used to create the smoothed digital elevation model (DEM-S) by Geoscience Australia. The DEM-S was used for calculating slope in the BPA analysis.

Bushfire hazard mapped across the region (Figure 1) reflects the importance of topography/slope in increasing the likelihood of severe fire. The highest fire hazard is consistently found in the hills and ridge lines in the region. These areas will also have relatively high levels of fuel as their rugged characteristics will limit land use and vegetation clearing.

<sup>&</sup>lt;sup>10</sup> <u>http://longpaddock.qld.gov.au/rainfallandpasturegrowth/index.php?area=qld</u>

The north Morinish hills have high fire hazard ratings but have experienced a low incidence of bushfires over the years.



Figure 1. Bushfire Prone Area mapping and major high fire hazard areas in region.

## Changing bushfire hazard over time

The BOM fire warning process<sup>11</sup> is also a measure of bushfire hazard which uses weather conditions and climatic patterns as the variables affecting the likelihood of fire.

There are five major fire seasons (periods of maximum fire activity) recognized in Australia. The fire seasons get progressively later in the year moving from north to south across Australia. Rockhampton region lies between a winter/spring season to

<sup>&</sup>lt;sup>11</sup> <u>http://www.bom.gov.au/weather-services/bushfire/about-bushfire-weather.shtml</u>

the north and a summer season in the south - its fire season is spring; September, October, November.

The climate is sub-tropical, with distinct wet / dry seasons and a mean annual rainfall of 800mm at Rockhampton. Rainfall can lead to high growth and increased fuel loads in the following dry season, enhancing the level of fire hazard. The relationship between high rainfall and subsequent increased fire activity depends in part on how dry the following year is, as well as grazing levels on different properties and other local factors. The major fire season of 2011 followed exceptionally high rainfall throughout the region in 2010.

## Fire history and distribution

Given the limitations of the satellite fire scar data, only broad conclusions about the frequency and distribution of bushfires can be made.

Fires commonly occur from August through to January with the greatest number of fire scars usually seen in October – November.

More extensive fire follows the periodic occurrence of high annual rainfall; the rain leads to increased vegetative growth and greater fuel loads in the following dry season.

When the MODIS annual fire scar data is compared across the years, there is a pattern of widely fluctuating fire frequency and extent (Table 1).

Year	% of region	High Fire Months	Main Localities Affected	Notes
2000	very low			No fire scar records
2001	very low			No fire scar records
2002	very low			No fire scar records
2003	low	June	Alton Downs,	significant proportion of Alton Downs (in June);
			Dalma,	large area Dalma, parts of Sth Yaamba; only fire scars recorded in RRC region
2004	very low			No fire scar records
2005	low	Sept. Oct.	Mount Morgan	large areas around Mount Morgan hills (particularly Nine Mile, Boulder Creek);
		Nov.		a few small scars to north;
2006	low	Nov.	Glenroy	large scars eastern and northern boundary areas of Goodedulla National Park;
				small single scars Mount Morgan, Gogango, Kabra;
2007	very low			No fire scar records for region
2008	medium	Sept, Oct,	Morinish,	extensive fire scars along the central ridge line (Morinish Sth, Morinish, Ridgelands,
		Nov	Morinish South Kalpa	Dalma, Stanwell
			South, Kaipa	large fire scars SW Mount Morgan (Fletcher Creek, Bajool), Westwood (around Hwy);
				scattered large fire scars on western hills (Gogango and Glenroy);
2009	medium	Sept, Oct	Bouldercombe,	large contiguous fire scars around Mount Morgan hills which extending east into Boojal
			Mount Morgan,	and north (Sth) Bouldercombe.(Sept – Oct)

 Table 1. Annual frequency, distribution and extent of fire scars in region.

Year	% of region	High Fire Months	Main Localities Affected	Notes
			Mount Archer	large fire scar over most of Mount Archer ranges (Oct);
				two other large fire scars in the Glenroy locality in April and December;
2010	high	Jan, Aug Sept, Oct,	central and west localities;	many small to medium fire scars from north to south boundary of region; almost all are located west of central ridge line;
2011	Very high	Sept, Oct Nov	Across many central and west localities;	large contiguous fire scars over the central ridge line and south over the Mount Morgan hills; significant fire scars extend further west; includes significant proportion of following localities Bajool, Fletcher Creek, Nine Mile Creek, Oakey Creek, Boulder Creek, Bushley, Kalpa, Morinish South; large fires in Marmor, Gogango, Glenroy, Morinish;
2012	high	Oct, Nov, Dec, Jan	Mount Morgan, Goodedulla National Park;	significant fire scar area north and south of Mount Morgan (Bouldercombe, Nine Mile) and at Kalpa; . largest contiguous fire scar in Glenroy including significant part of Goodedulla National Park;
2013	high	Oct Nov Dec	Mount Morgan, Glenroy, Gogango	large contiguous fires over areas east of the town and along the Burnett Highway; also significant fires Stanwell, Morinish South and along the Fitzroy River ; small fire scars scattered along ;length of central ridge (Boulder Creek to Ridgelands);. two very large fire scars in western hills (Gogango and Glenroy)

There are years when no fire scares are recorded in the RRC region (e.g. 2000 – 2002, 2004, 2007). However this period of relatively low fire frequency changed in 2008 when significant fires occurred in the central ridge area and further north and west.

Over the following four years, significant fires activity occurred in the western localities with the highest proportion of the region affected in 2011. In this fire season large contiguous areas were burnt along the NW/SE central ridge line with additional large fire scars west of this ridge line (Figure 2).



Figure 2. Fire scars in 2011.

This pattern in the annual fire scar data is similar to other places in Queensland<sup>12</sup> including the peak in bushfire events in 2011 and more frequent fires over recent years.

The combined impact of bushfires in the six years since 2008 has affected a large proportion of all lands west of the central ridge line between Mount Morgan and the southern parts of Morinish (Figure 3).

<sup>&</sup>lt;sup>12</sup> Firescape Science found a very similar pattern in the fire scar data for south west Queensland.



Figure 3. Fire scars between 2009 and (mid) 2014

The NOAA fire frequency data shows a smaller area affected but confirms the locations where the largest fires are concentrated and the increase in bushfire events over recent years (Figure 4).



Figure 4. NOAA fire frequency 1997 - 2010

### Appendix G. Regional fire management and Council

### Multiple agency arrangements

Regional fire and emergency services are organised in this region under the *Fire and Emergency Services Act 1990.* A state wide system of administrative arrangements is in place to coordinate the activities of multiple agencies involved in providing these emergency services. Local government is a lead agency in disaster management and in particular, response and recovery from disasters.

Queensland Rural Fire Service (QRFS) plays a lead agency role in coordinating fire management activities and responses.

Similar to elsewhere in Queensland, there are a large number of separate agencies with responsibilities for fire management within their particular area of interest. Agencies such as Queensland Rail and state government agencies (e.g. TMR and QPWS) have active fire management units and annual fire programs. The volunteer Rural Fire Brigades play a crucial role in community efforts to control the level of bushfire risk in the region.

Fires do not respect administrative boundaries and these various community interests and responsibilities often overlap. To effectively manage the bushfires it is essential that each of the separate players cooperate and pool their resources and efforts.

## Relevant RRC policy

Bushfire risk management is one part of council's comprehensive Local Disaster Management Plan (2013) and an important focus for development control under the (new) draft Planning Scheme (2014).

### Rockhampton Local Disaster Management Plan (LDMP)

Regional Council have lead agency role that includes planning, preparedness and coordination with other agencies. In particular, a key role is established in the immediate response to a disaster – such as, emergency preparations, evacuation of

residents and recovery. A severe and damaging bushfire is one of the disasters addressed in the plan.

Preparedness is a priority under the LDMP and includes measures such as:

- Improving the early warning systems and information availability
- Improved public education activities
- Planning and preparedness
- A Communication Sub Plan outlining a strategy for improving warning systems for natural disasters.

The LDMP also specifies Town Planning controls and guidelines that will reduce risk from disasters (discussed below).

Part of the plan is a Hazards Register where specific risks are identified – these include high fire hazard areas:

- along the eastern boundary of the city (Parkhurst, Cawrral, Mount Archer, Frenchville, Koongal Lakes) and rural areas traversed by Yeppoon Road
- across rural areas mainly between September and start of wet season

### Draft Planning Scheme (2014)

The planning scheme explicitly takes a risk management approach to hazards consistent with the LDMP.

The new Planning Scheme (2014), currently subject to public consultation and review, includes a range of policy and regulatory controls to minimize the risk posed by bushfires. These measures include:

- a preferred settlement pattern that concentrates residential and infrastructure development to certain locations and key transport corridors; higher density development is located away from high risk areas and are fully serviced, allowing for more effective emergency response
- a natural hazard policy that endorses a risk assessment and response approach to land use planning including protecting identified land for "hazard mitigation works" from encroachment by development

- detailed requirements for risk assessment and management processes<sup>13</sup>
- a separate bushfire policy section that sets out how the bushfire hazard overlay (the Bushfire Prone Area mapping) is to be applied
- two levels of bushfire risk management are envisaged in the plan a reliability assessment (of the bushfire hazard overlay) and a site specific Fire Management Plan where potential risk is high
- additional provisions concern mitigation options (such as location, design, building materials and landscaping) and non-vegetated buffers around buildings and structures

## Current RRC fire management activities

Council currently plays a key role in disaster preparation, response and recovery and bushfires are one source of risk that is addressed. The disaster management unit in RRC includes a dedicated officer who is employed in the preparation, response and treatment of (disaster) risk.

With respect to bushfire risk, council continues to contribute to multiple agency management actions which are coordinated by QFES and/or bilateral agreements with individual agencies. This may include participation and/or supply of plant and equipment to prescribed burns and emergency responses. Council participates in an annual meeting prior to the onset of the fire season that includes all relevant government agencies (the Regional Inter-departmental Committee or RIDC).

Following repeated fires from 2007 leading to the extensive and catastrophic fires of 2009, the Mount Archer area has been the focus of recent fire management activities. This has been led by QPWS, the primary landholder here, who coordinate activities by both local governments (includes Livingstone Shire), QFES and Rural Fire Brigades. Actions include annual prescribed burns, slashing to reduce fuel loads near the residential areas on the summit and maintaining fire breaks and fire lines.

RRC/QPWS received significant funding to construct fire lines around vulnerable residential areas and the construction phase is now complete. There are major fire

<sup>&</sup>lt;sup>13</sup> This section (6.3.3) applies to "industrial activities" but can be assumed to have wider application to disaster risk management resulting from all natural hazard in all areas.

lines constructed along the eastern edge of the city, around Mount Morgan and in (west) Bajool.

A major RRC contribution to reducing fire risk to the community comes from the application of their Planning Scheme and building regulations.

In addition, council provides education and information programs to better prepare residents for various natural disasters including bushfires.

## Appendix H. Resource kit for implementing the fire strategy

## 1. Annual Action Plan

Priority	Zone/area	Tasks required	Who	Complete by
1	Protection	Mowing and slashing around houses in protection zones; low intensity burns away from buildings as required Check firebreaks and undertake maintenance as required Identify areas proposed for fuel reduction burns, prepare burn proposals and undertake planned burns		May/July (Depending on rainfall)
2	Wildfire mitigation	Fuel reduction burns in key areas Liaise with neighbours, QPWS, QFES, RFBs and DTMR as required to discuss preferences for a controlled burning program		May/July (Depending on rainfall)

## Consider:

- Firebreak construction or maintenance
- Discussion with neighbours
- Permit to Light and permit from DTMR if necessary
- Equipment check
- Plan review (do this over the wet season; consider the fires in the previous year, the results of monitoring; management objectives)

More detailed planning is required immediately before burning to ensure safe burning practices. Guidance is given in sections 2, 3 and 4 below; these checklists should be used each year to identify the specific actions that need to be undertaken.

The suggested process for more detailed planning is outlined in Figure 1. This process can be applied at the internal council level, or to facilitate discussions with other agencies.





### 2. Annual fire management assessment

Fire activities need to be thought out each year before the burning season. An Annual Fire Management Assessment is required to check current fuel loads, weather conditions, recent fires (especially the location of wildfires), track conditions and new or altered infrastructure.

The Annual Fire Management Assessment needs to begin as soon as the country becomes accessible after the wet season (e.g. tracks must be inspected by May – June each year to check to see if maintenance is required and to ensure that this maintenance is undertaken). The assessment involves:

Action	Timing each year
Complete Fire Reports and mapping of fires that occurred over the previous 6 to 12 months.	Dec - Jan
Inspect areas burnt the year before. How does the country look? Are fuel loads high? Is ground cover healthy? Does the coming year's burning program need to be revised?	April - May
Inspect tracks that are important for the coming year's burning program. Are tracks suitable for 4WD vehicles with water tanks? Schedule track maintenance as required.	May – June
Check the burn proposal areas. How much grass (fuel load) has grown over the wet season?	May – June
Check the weather forecasts, dryness of the grass (i.e. curing), and creek lines or soil moisture. Think about how a fire is likely to spread or behave.	May - June
Review burn tactics based on current knowledge of track location and condition, weather, fuel loads and burns that have already taken place in the area.	June

**EACH YEAR** - look at the areas proposed for burning and prepare a burn proposal (see sections 3 and 4) to show what you plan to do. Critical sections are "**Preparing** for the Burn" (what you need to do ahead of time) and "**Plan for lighting the fire**" (Where will it be lit from? What job will each person do? How far is it likely to go?).

### 3. Before burning – general approach

#### Checklist: before conducting annual burn program

### Approvals:

- Obtain approvals for the annual burn program. (Or provide approvals to partner agencies)
- Organisation conducting the burn needs to obtain a Permit to Light a few weeks in advance of the planned burns.
- Several fire permits will often be required over the course of the year; try to
  organise the initial permit to cover the early dry season, to accommodate the
  majority of burns at the start of the season. Neighbours or other affected
  landholders will also need to apply for a fire permit if a proposed burn will include
  sections of their property.
- Obtain authority from Department of Transport and Main Roads where burning on the edge of State controlled main roads.
- All people participating in proactive burning operations must have Level 1 fire training, which is recognised by the Queensland Fire and Emergency Service. The person in charge of fires should have Level 2 accreditation.

### Liaison:

- Contact neighbours and discuss the planned burn program for the upcoming year, including opportunities for joint burns.
- Prepare/review the communication strategy to inform the local community about proposed activities, the need for proactive management and actions they should take to reduce the risk of wildfire.

## Update wildfire response procedures:

- Ensure emergency contacts are up to date.
- Update maps, including fire history, tracks, water points etc.
- Create a list of procedures and people to contact for scenarios for wildfires in different sections of the region.
- Keep paper copies of maps of current tracks, water points, infrastructure and fire history, to give to personnel assisting with fires.

### Checklist on the days immediately before planned burns

- Check weather forecast; especially check that winds are not predicted to be high speed (e.g. > 15 km per hour). Check that wind speed is not predicted to increase during the proposed burning operation. Think about likely changes in wind direction. Will this be an advantage or disadvantage to the plan?
- Check the Rural Fires website to confirm a fire ban has not been declared (http://www.ruralfire.qld.gov.au/Fire\_bans\_restrictions.html).
- Ensure each person involved with the fire has the correct protective safety equipment, including fire retardant overalls, gloves, safety boots, smoke goggles and mask, helmet and radio.
- Check all vehicles and fire units are operational.

## Checklist for the day of the planned burn

- Call relevant neighbours and airport if burning near their vicinity.
- Call FireCom to let them know the fire is a planned burn.
- Complete council, Rural Fire Brigade (or other agencies) safety procedures.
- Erect smoke hazard signs on roads if necessary.
- Carry weather meter, camera and GPS and note book to record details of burn.
- Check or vehicles and fire units are operational prior to igniting fire.
- Ensure each person involved with the fire is wearing the correct protective safety equipment, including fire retardant overalls, gloves, safety boots, smoke goggles and mask, helmet and radio. Each person should have a water bottle to carry and extra drinking water must be carried in vehicles.

4. Burn proposal				
Name of Fire Management Area				
Reason for the burn:				
Values under risk within or near the burn area to consider:				
Preparing for the Burn:				
Ignition tactics and crew movements:				
Fall back option:				
Assessment criteria for success:				

### 5. After burning – general approach

#### Checklist: after conducting the annual burn program

- Document the results and evaluate whether the burning program achieved the objectives. There are four aspects to consider:
  - 1. Mapping the areas burnt
  - 2. Keeping records of weather conditions and fuel curing at the time of ignitions, and fire behaviour during the burns
  - Recording the initial result of burning i.e. scorch heights, % burnt and unburnt
  - 4. Evaluating outcomes in terms of operational success and/or the response of vegetation (e.g. Inspect for recruitment of natives, % weed mortality, or if permanently marked transects are in place for detailed monitoring of ecological outcomes, arrange for these to be revisited so plant responses can be documented).
- Prepare the fire report and keep records in a location that is readily accessible to council staff.

### Further information

### Mapping the areas burnt

 A GIS layer of fire history each year should be created for the Rockhampton Regional Council area and updated over time. The GIS layer can be obtained from fire scar mapping available on the internet, from satellite hotspot data available on the internet (see <u>http://www.firenorth.org.au</u>), from on-ground knowledge of ignition points and burnt areas, or by overlaying GPS points of burnt areas recorded in the field.

## Recording weather conditions and fuel curing at the time of ignition

 Recording weather, fuel conditions and fire behaviour at the time of burning should be kept as simple as possible. These data provide valuable information on fire behaviour during different conditions and over time. Information will normally be recorded in a field notebook in the first instance, but the key points need to be transcribed and made available in digital format. The suggested format for these fire records is in the table associated with the fire history layer on a GIS. (Alternatively, use an Excel spreadsheet).

### Recording the initial result of burning

- Recording the initial post-fire results needs to be time efficient. Useful details that can be collected the day or week after a fire include:
  - the typical (average) height of canopy scorch;
  - percentage of the landscape burnt;
  - information on combustion of weeds;
  - Information on fire behaviour, such as whether a fire stopped at a particular creek or track.
- Because a number of small burns are to be implemented in a short time period (early dry season), records only need to be made for a couple of example burns, unless conditions are different when burning a particular Fire Management Area.

### Evaluating outcomes

 Evaluating operational success involves a debriefing after the fire event and discussing what went well, what didn't and what can be improved for next time. Record this information in the fire report.

Inspecting the response of plants after fire is best done after a number of months have passed and rain has fallen. This gives plants sufficient time to regenerate. Evaluation should be straight forward and address a specific issue, such as inspecting whether the fire promoted the germination of native trees or shrubs. This can be assessed by searching for new seedlings (which differ from coppicing plants that are attached to burnt stems), or determining whether the fire killed particular weed species. This could involve counting the proportion of dead and re-coppicing target weeds while walking through the burnt area. Photos of post-fire regeneration are valuable, especially if linked to the exact location via a GPS point and/or a distinctive land mark.

6. Reporting and review			
Date of fire report:			
General location and date of fire:			
A. Duration of fire	Weather before the fire was		
Ignition time and date:			
Extinction time and date:			
Fire details	Weather during the fire was		
The fire was a Planned burn			
The cause was:	the fire was		
Known Possibly			
Lightning			
Machinery			
Arson			
Escaped burn			
Unknown			

# Fire History Map

The area burnt is shown on the Fire History Map (attached). It shows where the fire started and the direction the fire travelled.

Map reliability is:



Hand drawn onto map after flying over

Mapped using a GPS on the ground

Map obtained from the NAFI site (<u>www.firenorth.org.au</u>)

## B. Outcomes of the fire

Fire Management Area	Objective	Estimate of fire intensity	Result/comment

## C. Fire summary

Overall, the fire management operation went.....

## D. Implications for next season?

Revisit the fire plan, if a specific plan is in place for the area, giving particular attention the actions planned for the coming year.

### 7. Wildfire response procedures

If a wildfire is detected, a procedure needs to be in place to document who should be contacted and who will respond to the fire. This should be prepared separately by Council/operational staff in order to fit within existing systems and communication protocols. The following is provided as a guide.

### Pre fire-season safety CHECK:

Residential areas in high risk areas are buffered from the surrounding bush by mowing, slashing or an accessible fire break.

The following items are in working order and easy to access:

Heavy machinery (e.g. tractors, dozer, grader)		
Protective clothing (e.g. wool/cotton	material; cloth for face protection; gloves)	
Hessian bags or old woollen blanket	s for wetting	
Water containers (metal buckets, drums etc)		
Shovels		
Water pumps	Matches	
Water tank for vehicle (slip-on unit)	Container for drinking water	
Knap sack spray	Fire extinguisher	
Radios & batteries	Axe	
First aid kit	Fire action map (see below; prepared for high risk areas)	
Hoses		
Rakes or rake-hoes	Torch	
Chainsaw	Drip torch	
#### During the fire season the plan is to:

- Ensure all safety gear is up to standard
- Encourage landowners to maintain low fuel loads (grass, sticks and leaves) in areas around buildings and infrastructure
- Ensure good water supply in built areas
- Encourage landowners to ensure property water supplies are in good condition
- Note condition of water supplies on council land
- Monitor fires in the region using the internet (<u>www.firenorth.org.au</u>), or by talking to neighbours or QFES staff
- Encourage landowners to review QFES guidelines on personal safety and house protection in the event of a bushfire (potentially as a joint initiative with QFES public education programs)
- The emphasis for wildfire control is protection of life and property. For the remainder, depending on fire and weather conditions, be prepared support back-burning into the fire and working in with neighbours.

A copy of RRCs planned response to wildfires has been provided to others (e.g.

QFES, members of the Local Disaster Management Group).

#### If there is a wildfire:

The steps to take are:

- Ensure personal safety and the safety of others in the immediate vicinity of the fire
- Ensure the safety of the vehicle and equipment, and if possible (or relevant) infrastructure
- Contact supervisor/office and advise them of the wildfire
- Give your location & fire details (location, size, direction of spread, flame height, vegetation/fuel, terrain, immediate threats).
- State who is at the fire and your intentions
- Say what assistance is required
- Assess the situation. If it is safe, and you are likely to succeed, take reasonable actions to extinguish or control the wildfire.

### Emergency contacts

IN AN EMERGENCY <u>ALWAYS</u> DIAL 000		
		000
Police	Rockhampton	
Qld Fire and Emergency Services		000
State Emergency Service		132 500
(for floods, fire, storms)		
Qld Ambulance Service	Emergency	000
	Non Emergency	131 233
	Local Ambulance	
Hospital		
Fire Warden for the area		
(Phone number may change from time to time, check current details at http://mapping.dcs.qld.gov.au/external/firewardenfinde	er/)	
Deputy Fire Warden		
Rural Operations Area Office		

At all times the order of priority for wildfire suppression is:

- Protection of human life
- Protection of substantial property or infrastructure on the land or neighbouring landholdings
- Protection of productive resource areas, and natural and cultural resources

#### Information for fire fighters

The following information is on the 'Fire Action Map' for each priority area:

Fire action maps need to be updated each year so any changes that may affect firefighters are recorded.

#### During the fire season the plan is to

- ✓ Maintain low fuel loads on council land adjoining residential areas, council infrastructure and sites of historic or cultural significance
- ✓ Ensure good water supply in built areas
- ✓ Note condition of water supplies (including creeks, rivers and waterholes)
- Monitor fires in the region using the internet (<u>www.firenorth.org.au</u>), or by talking to neighbouring property owners/managers or QFRS staff
- Review QFES guidelines on personal safety and house protection in the event of a bushfire

## ROCKHAMPTON REGION FIRE MANAGEMENT STRATEGY

## Mount Archer Bushfire Risk Assessment (Firescape Science)

Meeting Date: 28 April 2015

**Attachment No: 2** 



#### MANAGING FIRE FOR SAFETY & SUSTAINABILITY

### **BUSHFIRE RISK ASSESSMENT**

### **MOUNT ARCHER LOCALITY**



(Image: abc.net.au, 19.10.2009)

### Dr Leasie Felderhof & Paul Fisk

### November 2014

(Version 2 – amended version of report provided to Rockhampton Regional Council in July 2014)

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### Acronyms

AOI	Area of Interest
DES	Department of Emergency Services
QFES	Queensland Fire and Emergency Service
QPWS	Queensland Parks and Wildlife Service (within DNPRSR)
RE	Regional Ecosystem
REDD	Regional Ecosystem Description Database
RIDC	Regional Interdepartmental Committee (DES) for Bushfire management
SIDC	State Interdepartmental Committee (DES) for Bushfire management
SPP	State Planning Policy
VMA	Vegetation Management Act 1999

#### 1. Introduction

Mount Archer lies to the east of Rockhampton, a major regional town in central Queensland. It is an area characterized by rugged hills, incised drainage lines and open forests and grasslands. The area is frequently burnt by wildfire. A number of intense and destructive fires over recent years have highlighted the risk to the community posed by this situation.

Rockhampton Regional Council (RRC) engaged Firescape Science to review available information on fire history and fire management in this area (the Mount Archer study area) and to advise on the highest bushfire risk areas for Council, with recommendations to improve/ increase resilience and/ or mitigation measures.

#### 1.1 Study area and area of interest

The Study Area is the area between Yeppoon Road in the north and Emu Park Road in the south and centered on Mount Archer National Park and adjoining State Forests. This is the same area included in the QPWS fire management plan (QPWS 2010).

The study area includes lands which lie outside of the RRC boundaries and within Livingstone Shire Council. It encompasses a large interconnected landscape of forested hills and grasslands which together make one coherent fire management unit.

The Area of Interest (AOI) for this report are lands along the urban – bushland interface (also called the "iZone", Byrne 2009) immediately east of the city and under-developed rural lands bordering the National Park (Figure 1). The AOI includes areas within RRC boundaries where buildings and people are potentially exposed to the impacts of fires.



Figure 1. Study area and area of interest. The pale yellow lines show property boundaries.

#### 1.2 Data sources

There are a number of primary information sources relevant to the study area used in this report. In particular, the comprehensive fire management strategy "Fire Management System – Mount Archer National Park and State Forests" (QPWS 2010) was a key document.

Other references and sources of information include:

- Local Disaster Management Plan (RRC 2013)
- the proposed RRC Planning Scheme (RRC 2014)
- Bushfire Prone Area classifications
- GIS data from RRC (land interests) and QPWS (fire breaks)
- consultation with key stakeholders.

#### 2. Fire and fire management in the study area

#### 2.1 Fire history

The QPWS report (QPWS 2010) provides an overview (and map) of fire history in the National Park and State Forests (Figure 2). There were major fires over a significant proportion of the study area in 1992, 1994, 1997, 2005, 2006 and 2009.

In 2009 there was a catastrophic fire at Mount Archer that engulfed most of the study area (Figure 2) and destroyed one house.



Figure 2. Fire history 2007 – 2009; extract from QPWS (2010).

Most fires result from arson and escaped controlled burns, with many originating from the southern and eastern sections of the study area. There also appears to be a relationship between recreational use and fire ignition; many fires have come from the "First Turkey" location on the Moores Creek road and fires are more frequent during the September school holidays (QPWS 2010).

#### 2.2 Administrative context and stakeholders

Central to the study area is the Mount Archer National Park and adjoining State Forests (administered by QPWS) which are surrounded by urban and rural freehold properties and a scattering of community purpose reserves and dedicated roads.

QPWS is the lead agency for fire management in the National Park and State Forest areas, with Rockhampton Regional Council (RRC) and Livingstone Shire Council overlapping these tenures to the west and east respectively.

The key stakeholders in fire management in the study area are:

- Queensland Parks and Wildlife Service (QPWS),
- Department of Natural Resources and Mines
- Queensland Fire and Emergency Services (QFES),
- Rockhampton Regional Council (RRC), and
- local Rural Fire Brigades.

There are other stakeholders with specific areas of responsibility and assets to be protected from fire including infrastructure and service providers who have assets within or alongside the study area (e.g. Telstra, Ergon Energy and Powerlink Queensland, Department of Transport and Main Roads). There are also a significant number of private landholders within the study area and AOI.

Fire management in the study area needs to be considered in its regional context. Similar to other regions in Queensland, the State government (QFES) coordinates fire management activities in the study area.

There is an annual RIDC meeting of key agencies in March to coordinate fire management arrangements in the region and develop annual operational fire plan.

RRC is involved in this meeting and other inter-agency coordination and planning meetings through its role and responsibilities under the *Disaster Management Act 2003*.

#### 2.3 Current fire management activities

The Mount Archer locality has been subject to more detailed and specific planning and bushfire management activities than much of the surrounding region. In 2001, a fire management strategy for Berserker Wilderness Area (encompassing Mount Archer National Park and State Forest) was completed (Berserker Wilderness Land Management Committee 2001).

The 2009 fires led to greatly enhanced public understanding of the threats posed by bushfires and significant investment in planning and bushfire risk management activities by relevant agencies.

As the main landholder in the study area, QPWS makes the greatest contribution to land management actions taken to reduce bushfire hazard and risk. The volunteer Rural Fire Brigades also make a significant contribution and are a crucial element in managing the threats posed by bushfires.

In 2001 a detailed fire plan was developed for Mount Archer National Park and neighbouring properties in both Rockhampton Regional Council and Livingstone Shire Council areas. An update of this fire strategy was completed in May, 2010 (QPWS 2010).

This document provides detailed information and maps relating to fire management in the study area. It identifies nine fire management zones, each with a set of prescriptions for fire management activities (Figure 3).



Figure 3. Fire management zones from (QPWS 2010)

Importantly for RRC, the plan has specific requirements for the residential area and infrastructure on the summit of Mount Archer. Under this plan, cooperative actions by RRC and QPWS are required to implement fuel reduction burns within the National Park areas and manage bushfire mitigation zones buffering the residences and infrastructure. This includes fuel reduction by slashing and re-vegetating key areas with fire resistant species.

The QPWS plan is strictly focused on National Park tenures and does not address issues at the boundary with other tenures (e.g. Council land at Guthrie Street Park) and does not incorporate the effect of fires lines along the eastern boundary of the city.

#### 2.4 RRC role in fire management

RRC has a lead agency role in preparing, managing and responding to major disasters in the council region under the Local Disaster Management Plan<sup>14</sup>. This is a comprehensive plan that addresses all aspects related to major disasters (including bushfires). It includes policy prescriptions and commitments related to education, coordination, fire mitigation and preparation, emergency response and recovery.

RRC has a Local Disaster Management Unit and employs a Disaster Management Officer and a SES Local Controller (shared with Livingstone Shire Council).

Bushfire risk and response is only one of a number of issues that are addressed through the statutory requirements of the *Disaster Management Act.* 

Council plays an important role and makes a major contribution to community-wide efforts to deal with bushfires and the risks they present. They are active in multiple agency cooperative actions, community education and in their planning and development control functions related to bushfires.

In recent years, RRC has been active in two aspects of bushfire management in the Area of Interest. The recreational areas and bushfire mitigation zones at the summit of Mount Archer are jointly managed by RRC and QPWS. This includes participating in fuel reduction works by slashing undergrowth and supporting controlled burns.

<sup>&</sup>lt;sup>14</sup> All local councils are required to produce these plans under the *Disaster Management Act 2003* – the Act sets out detailed prescriptions for dealing with all aspects of major disasters.

The other major contribution by RRC has been its involvement in applying for funding and participating in the construction of fire control lines along the eastern edge of the city. This was a joint RRC and QPWS project.

After the 2009 fires, the Mount Archer Control Line was designed and constructed with funding contributions from QPWS and National Disaster Resilience Funding programs. There is now a complete barrier of fire breaks along the boundary of Rockhampton, from Emu Park Road in the south to Yeppoon Road in the north.

A draft Strategic Plan and agreement<sup>15</sup> on fire management along these fire control lines is currently under consideration. This plan addresses fire management in the locality and cooperative arrangements to implement these activities between QFES, QPWS, Rural Fire Brigades and RRC.

RRC commitments under this draft agreement include:

- on-going maintenance of the Rockhampton city fire control lines outside of the National Park
- engagement in cooperative actions with QPWS to manage fire around Mount Archer summit and Fraser Park
- provision of plant and equipment for completion of the last section of fire line north to Yeppoon Road
- developing applications to funding bodies for capital works and fire management activities
- an MOU with QPWS and other agencies to formalise these arrangements.

QPWS is responsible for all fire lines within the National Park and State Forests and fuel reduction prescribed burning across all tenures in the study area.

<sup>&</sup>lt;sup>15</sup> Draft "Strategic Plan – Fire Control Lines – Mount Archer Berserker Ranges", December 2013.

#### 3. Assessment of bushfire risk

#### 3.1 Methodology - Likelihood, consequence and local conditions

"Fire hazard" describes characteristics of fire in terms of the probability the area will ignite and severity of the fire that results; "fire risk" combines this fire hazard with considerations of the impact that such a fire will have on people and property. For example, an area located in a remote, unpopulated area, may have a high fire hazard rating but will have a low fire risk.<sup>16</sup>

In this report, we adopt the terminology of Leonard, *et al* (2014) and Leonard and Blanchi (2010) to refer to these two variables as "likelihood" and "consequences".

The approach taken here is a qualitative assessment of fire risk based on an assessment of hazard (likelihood) and the potential impact of fire (consequences), taking into account local factors and conditions which are found in the study area.

The main attributes used to define the two variables at Mount Archer are:

- "Likelihood" –based primarily on the Bushfire Prone Area classifications combined with local knowledge of fire history and the mitigation of fire hazard by land management agencies;
- "Consequences" RRC assets and values which could be threatened by bushfire.

The likelihood of bushfires in this locality is uniformly high (see discussion below) and as a result, the assessment of bushfire risk depends on the vulnerability of RRC assets and values to bushfire.

<sup>&</sup>lt;sup>16</sup> See detailed explanation in Leonard and Blanchi 2012;

#### 4. The likelihood of fire in the study area

The Bushfire Prone Area methodology<sup>17</sup> of estimating the likelihood of bushfire is derived by combining the effect of a number of influences on the probability that severe fire will occur. These factors include topography, average climatic conditions and the type and fuel load of vegetation. The cumulative probability of all these factors are then grouped into three fire intensity categories – very high, high and moderate.

Almost the entire study area (and AOI) is classed as Very High bushfire intensity under the Bushfire Prone Area classifications (Figure 4).



Figure 4. BPA categories in RRC lands (transparent grey) in Mount Archer locality.

This measure of bushfire hazard is broad and indicative only and there will be considerable variation in the probability of severe bushfires within each of the three categories.

<sup>&</sup>lt;sup>17</sup> Leonard, *et al* (2014) provides a detailed description of the methodology.

Factors that will heighten or reduce the level of hazard include slope and landforms, previous fire history, presence of fire resistant vegetation, weather conditions and sources of ignition.

For example, the proximity of a major regional city to a large connected area of bush land means there are many sources of ignition and this will increase the already very high level of hazard. Fires are lit by people as acts of arson, as honest mistakes when planned fires escape and through negligence (e.g. a cigarette from a car window).

In general terms, the likelihood of fire is inherent to the ecology of a place and the prevailing climate and weather conditions. That is, it is largely outside the control of land managers.

However the level of fire hazard can be mitigated to some extent by preventative actions – for example, reducing fuel loads with controlled burns and slashing undergrowth or by planting fire resistant species. All of these preventative measures are applied in the study area and this has resulted in a significant reduction in fire hazard in the locality.

The frequency of ignition can also be reduced through education programs and community engagement and/or by strict enforcement of relevant permits and regulations.

#### 5. The consequences of bushfire for Rockhampton Regional Council

Consequence (impact) is a variable in overall bushfire risk which can be significantly modified by planning and preventative actions of land managers. The impact of fire will depend on a number of factors including the exposure of people and buildings, the value of those buildings and the resilience of structures to fire.

For example, the east city fire breaks significantly reduce the bushfire risk in this location by reducing the exposure of residential areas to fire. They provide a barrier to a fire front and allow for relatively easy access by fire vehicles and personnel. Council reservoirs have relatively low consequence values as they are unlikely to be damaged in most fire intensities (i.e. they have high resilience and there is easy access to fight the fire front).

#### 5.1 Impact of bushfires on the local community

For RRC, these consequences can be grouped into three categories:

- Threats to life and property
- Impact on community and private land use
- Impact on biodiversity and other environmental values.

#### 5.1.1 Threats to life and property

This is an obvious potential consequence of bushfires and is recognized as the highest priority for RRC and other stakeholders.

#### High density residential areas

At the summit of Mount Archer and along the eastern edge of Rockhampton city, residential suburbs lie within and alongside extensive areas of bush land that have a very high probability of intense bushfires.

Attempts are made to mitigate this high level of hazard by ensuring fuel loads are reduced on an annual basis both close by and further afield in rural and conservation

lands. Although the consequences of bushfire can be reduced by controlling building location, design and materials to minimize vulnerability to fire, the Mount Archer summit area has a legacy whereby these steps were not taken when the initial development was undertaken. Constructed fire breaks allow firefighters access to, and for residents to escape from, an advancing fire front however educational programs and early warning systems need to be in place.

All of these mitigating factors currently apply to both of the threatened suburban areas (Fraser Park and eastern suburbs) resulting in a significant reduction in overall bushfire risk.

Maintaining this lower level of risk will require an annual investment in maintenance and capacity building. The task now, and in the future, is to ensure that the investment in time and resources that underpins this reduced bushfire risk is sustained in the long term.

#### RRC land and infrastructure

There are approximately 47 separate freehold and reserve properties, owned or administrated by RRC which are adjacent to, or within, large areas of vegetated land (i.e. within the AOI). They range in size from less than ½ ha to 119 ha. Many of these properties are undeveloped and many have little or no access to constructed roads.

Most of the reserves are for Park and Recreation purposes and many of these are on higher sloping land above foothill residential areas that cannot be developed for any active public purpose. Other reserve purposes include Drainage, Local Government – Quarry and Local Government – Waste Disposal. Structures on some of these freehold and reserve lands include water tanks, park picnic facilities, informal tracks and storm water drainage works.

The consequences for these assets are low – there are few assets exposed to bushfires and most are either resilient to damage or of relatively low value (e.g. picnic tables).

#### Other privately owned land and structures

There are over 50 medium to large privately owned freehold properties within the AOI and outside of the high density urban areas. Many of these are over 50ha in size and the largest is approximately 200ha.

Most of these appear to be undeveloped although there may be isolated sheds / residences and/or pastoralism and fencing that could not be identified by a limited review of aerial imagery.

The consequences in this situation vary greatly – fire risk may be low due to inherent low value of some structures and clearings, road access and available equipment may mitigate the possible impacts. It can also be assumed that the capacity of rural landholders to protect themselves is greater than that found in the residential suburbs. In other situations the risk may be high depending on the extent of clearings around residential and other high value structures, the level of remoteness and the accessibility of evacuation routes.

These underdeveloped rural lands, located between the urban fringe of the city and the National Park, present a range of issues and complications for fire managers. There are many landholders and many approaches to land management and use. Access is often very difficult or absent.

As a result, a significant consequence of bushfires here is that fires may be difficult to contain and will spread into surrounding parts of the study area.

#### 5.1.2 Impact on community and private land use

Another consequence of bushfires is a reduction in the land use options for the community and private landholders. In many cases, this is a temporary impact that does not continue long after the fire event.

Of particular importance are the potential consequences of a bushfire threatening the lives of recreational users who are walking the tracks in times of heightened bushfire hazard. RRC has some responsibility in this regard as many of the entry points to tracks lie on RRC land (for example, on Mount Archer summit and at German Street Park).

There are four tracks starting from the Mount Archer summit area which enter the National Park and vary in length from 500 m to 14 km.

RRC has a greater responsibility for the access points that arise on the urban fringe of Rockhampton. The most important is the Moore's Creek track through German Street Park reserve land. Council currently has a locked gate on this track/entrypoint although it is unclear how effective this is in excluding vehicles. This reserve is also the location of a dedicated mountain biking track. See <u>http://www.rockymtb.org/trails/</u>

The fire safety of people using this reserve and other tracks needs to be considered by Council. One approach may be to monitor weather and fuel load conditions and respond to increased fire hazard with track closures and educational programs.

#### 5.1.3 Impact on biodiversity and other environmental values

Council has responsibilities to protect important biodiversity values and maintain the natural condition of the (undeveloped) lands it owns or controls.

Within the AOI, most areas have mapped regional ecosystems<sup>18</sup> (REs) that are classed as Least Concern according to the *Vegetation Management Act 1999* (VMA). However there are two REs in the AOI that are classed as Of Concern - *Eucalyptus tereticornis* woodland (11.3.4) and Coolibah woodland (11.3.3). Both of these ecosystems are found on alluvial plains alongside drainage lines and creeks and both can be degraded by intense bushfires.

The importance of these alluvial plains as biological resources increases the consequences from bushfires and raises the bushfire risk. This applies to the following catchments and creek floodplains within the AOI (Figure 5):

- along the length of Yeppoon Road in the Limestone Creek locality;
- the catchment south of Peak Hill (and proposed New Urban zone);
- creek floodplains in German Street Park area;

<sup>&</sup>lt;sup>18</sup> Regional Ecosystem mapping data; Vegetation Management Supporting Map (20/07/2014); <u>http://www.ehp.qld.gov.au/ecosystems/biodiversity/regional-ecosystems/maps/index.php</u>

- alongside the lower parts of Pilbeam Drive;
- alongside Peltophorum Drive;
- in the valley alongside Rockonia Road.

There is one listed species in the AOI, a cycad which is classed as Endangered. Records indicate it is found close to roads and settlements but this may reflect ease of access rather than its natural distribution and it is likely to found elsewhere in the study area.

The consequences of bushfire for biodiversity values close to the urban areas is low to moderate – most of the AOI has relatively low biodiversity value but there are significant values and enhanced bushfire risk along the drainage lines and creeks, especially where they have been invaded by guinea grass. The presence of guinea grass results in continuous cover with a high fuel load that act as a wick, promoting the spread of fire onto the hillslopes.

The rural lands east of the city and adjoining the National Park contain larger, connected corridors of floodplain ecosystems. The consequences of severe fire in these locations are moderate to high with respect to biodiversity values.



Figure 5. Identified locations within the AOI with significant regional ecosystems. Note there are no endangered ecosystems in this map extent.

#### 5.2 Council obligations and responsibilities

There are indirect consequences of fire on Council resources and decision making. A general consequence relates to Council's legal and moral obligations to protect life and property. The community expects to have a local government that works for the best interests of its constituents. Poor fire management would have a negative effect on Council's standing in the community.

Managing bushfire likelihood and its consequences is essential for RRC to effectively use its resources to protect life and property. Council has entered into agreements with other agencies to cooperatively act to mitigate bushfire hazard and to respond to emergencies. It has clear responsibilities to maintain the fire break protecting the east city fire line.

There may also be legal liabilities with respect to development approval decisions that could lead to increased bushfire risk. In particular, it is important the Planning Scheme provides mechanisms to locate development away from high bushfire hazard areas, that subdivision design includes features that minimizes fire risk, and that design and construction of buildings creates fire resistant structures.

The new draft Planning Scheme (RRC 2014), currently subject to public consultation and State approval processes, adopts the Bushfire Prone Area mapping as a regulatory overlay (the Bushfire Hazard overlay).

This defines areas where considerations of bushfire risk are important, however within these defined areas, the level of hazard and subsequent risk to any developments will vary with site specific conditions. For example, steep slopes and the presence or absence of fire breaks will affect the overall level of risk.

That is, development applications within the extensive Bushfire Hazard overlay will usually have to be subject to detailed site specific planning and assessment to avoid unacceptable levels of risk from bushfires.

#### 6. Conclusions

Bushfire risk for Council in the Mount Archer area can be grouped into three categories – very high, high and medium. The categories only apply to Council interests which occur within or adjoining areas of very high bushfire hazard. That is, although there is very high fire risk to biodiversity within parts of the National Park this is not a primary responsibility for Council and therefore not an identified very high risk for Regional Council.

#### (1) Very high risk – life and property and essential community infrastructure

- a. eastern edge of city
- b. Mount Archer summit residential areas and infrastructure
- c. Pilbeam Drive to Mount Archer summit
- d. German Street Park mountain bike track and access to 'First Turkey' area
- e. essential community infrastructure (e.g. power, water supply, communication towers)

#### (2) High risk – rural lands and other Council infrastructure/properties

- a. rural homesteads on vegetated sloping land adjoining the city and Parkhurst; includes areas south of city (Tollridge St, Rockonia Road) and residences south of the Rockhampton-Yeppoon Road.
- b. water reservoirs (x 5) along edge of city,
- c. developed Council land (Figure 4) with facilities and/or public use.

# (3) Medium risk – other community interests, other State infrastructure and biodiversity

a. undeveloped Council land (Figure 4)

- b. walking tracks and recreational users (particularly long distance tracks)
- c. infrastructure owned and operated by State agencies and utilities (e,g, Main roads, railway, 132 kV power lines)
- d. biodiversity values and conservation land management

#### 7. Recommendations

## (a) Council establishes priorities for fire management along the eastern boundary of the city.

This will require a review of available information by Council officers familiar with the range of Council interests and bushfire hazard in the locality (AOI). The methods applied in this report (likelihood + consequences = risk) can be used to clarify the level of risk at this detailed scale.

# (b) The relationship and cooperative operations between Council, QPWS and QFES needs to be formalized and improved.

Consultation with local stakeholders suggests the current arrangements are not functioning effectively. One attempt to improve this situation is the draft fire control line agreement (2012) regarding the maintenance of the fire control lines at Mount Archer. This seeks to clarify responsibilities and contributions (e.g. funding, staff, equipment) by each party to the agreement. The intention is for the agreement and commitments to be 'locked in' with a formal MOU.

The Mount Archer agreement must be considered in its regional context and the contributions made by all agencies to managing bushfire risk across the region. For example, the contributions of agencies to managing bushfire risk at Mount Morgan is relevant to, and may influence, what Council can provide at Mount Archer.

### (c) Council to assume responsibility for management and a significant proportion of the maintenance costs, for the east city and Mount Archer fire control lines outside of the National Park.

These fire control lines provide an important barrier to bushfires for residences and Council infrastructure and should be managed as community assets as part of Council operations.

The costs of maintaining these control lines can be shared with other agencies (in the context of region-wide agreements) and supported by a community based group of affected residents and landholders (perhaps similar to a Rural Fire Brigade unit).

This is essentially what the terms of the draft fire control line agreement (2012) sets out to establish. However this draft agreement is now dated and only addresses the particular requirements of this section of fire control lines. This agreement needs to be re-visited in the broader context of multiple agencies and fire management issues in the region.

A brief discussion of ideas and options for Regional Council with respect to on-going management of these structures and nearby bush areas is presented in Recommendation (d) below and in Appendix 1.

# (d) Consideration to be given to incorporating construction and maintenance of fire control lines into Council's road works operations.

Council already has considerable capacity (and responsibility) for constructing and maintaining roads. Access is an essential factor affecting both the likelihood and consequences of severe bushfires. For example, it can be very important to have access for management purposes and emergency response.

There is an opportunity for RRC to make a significant contribution to regional fire management efforts by integrating its road works program with the requirements for accessing and controlling bushfires. Part of this approach may be to create a new road classification ("fire control road") that has its own construction standards and is explicitly not for public (vehicular) access purposes.

## (e) Council should use available information to better anticipate when severe fire conditions will apply.

The science of bushfires is a large and developing field of research and when combined with local knowledge, has considerable predictive powers. Council should investigate options for developing and implementing a "warning system" that anticipates future bushfire risk.

This will allow Council to prepare for fire events, identifying when and where extra resources will be required over the next year. It could also reduce risk by providing a short to mid-term trigger for track closures and warnings to recreational users.

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# Appendix 1. Agency responsibilities for fire management and maintenance of fire control lines

The 2012 draft agreement and strategy for the Rockhampton city fire control lines has not been signed off and implemented for a number of reasons. The issues associated with Rockhampton fire lines occur repeatedly with all fire lines in the region. This report recommends that this draft agreement be put to one side and addressed as one part of an integrated, region-wide approach to the broader issue of agency contributions and coordination. Action could be driven through the RIDC for Bushfires or the LDMG.

Key stakeholders to include are State agencies (QPWS, DNRM, QFES) and Regional Council. In different site-specific contexts they may also include private landholders and community infrastructure agencies (such as Ergon, TMR, Qld Rail, etc) who also have a legal responsibility to manage fire on their properties.

When it comes to deciding who contributes what to fire management there is considerable uncertainty and there are no specific guidelines or standards. Each has different priorities, legal obligations, capacities and available budgets. In the end, contributions are decided as negotiated outcomes amongst stakeholders.

Firescape Science has had brief discussions with key stakeholders regarding this issue and can provide the following ideas and recommendations for consideration by Regional Council.

1. Council should work towards reaching a formal agreement which specifies the contributions expected from all parties. It should be based on existing structures and processes. For example, it will require close cooperation with QFES as the key State fire management agency and arrangements would be reviewed or operate through annual RIDC meetings and established communication systems.

2. There should be two levels of agreement – a regional strategic approach that establishes processes and broad responsibilities and a number of detailed community or locality based plans that address the particular needs of a given location.

3. RRC should document its contributions to fire management as an accountability measure and as a lever in negotiations. This will encourage other parties to do likewise.

4. Individual landholders (including vacant lots) in the high fire risk areas should be a particular focus for educational purposes and as a source of contributions to fire management activities. A specific data base of names and contact details is a first step in this direction.

These landholders have a legal obligation to manage the fire hazard on their property. In addition, they are crucial to providing access across private property which is essential to maintaining fire lines and in implementing necessary controlled burns on both sides of the line.

5. Consistent annual processes should be developed that include review and analysis of predictive tools to assess the likely level of risk in the coming fire season, annual inspections of fire lines, regular maintenance of fire fighting equipment/vehicles and regular educational efforts to encourage those most at risk to prepare.

6. Within Council, improvements can be made to enhance effectiveness and contribute to, and encourage, region wide cooperative efforts. These include implementing the recommendations contained in this report (e.g. accepting responsibility for key fire control lines and incorporating maintenance of these as part of its road operations).

The associated Regional Fire Strategy (Firescape Science 2014) also contains relevant recommendations such as developing and using GIS systems to prioritise, organise and direct fire management activities.

## ROCKHAMPTON REGION FIRE MANAGEMENT STRATEGY

### **Bushfire Management Strategy Final**

Meeting Date: 28 April 2015

**Attachment No: 3** 





### Mayor's Message

Bushfire has the potential to cause widespread devastation, as the Australian community has witnessed, particularly in catastrophic bushfires experienced in Victoria.

The Rockhampton Region is a diverse landscape with large areas of bushland amongst regional centres, towns, farming and grazing properties and the infrastructure and industries that support them.

As urban areas expand closer to bushland it often results in an increased risk to property damage or even worse, loss of life as a result of bushfires.

Following repeated fires from 2007 leading to the extensive and catastrophic fires of 2009, the Mount Archer area has been the focus of recent fire management activities.

Along with other key priority areas, this strategy outlines Council's involvement in the coordinated and managed prevention of bushfire management in our Region. I would like to take this opportunity to thank and acknowledge the assistance from experts from the Queensland Fire and Emergency Service, Queensland Rural Firebrigade Service, Queensland Department of Community Safety, Parks and Wildlife Service, Natural Resources and Mines and Council officers in the development of this strategy.

A coordinated approach to bushfire management is vital. Understanding the risk bushfire poses in our Region so that best practice future planning and mitigation efforts are put in place to reduce the risk of bushfire impacts is vital to potentially preventing loss to life and property.

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Rockhampton Regional Council Bushfire Management Strategy


# **Our Strategy**

#### Managing bushfire risk is a complex task that extends across land tenures and administrative boundaries.

It is also inherently variable over time, changing with weather conditions, random ignition events and developing patterns of settlement and land use. Given these conditions, it is imperative that Council has a clear understanding of its role in regional fire management and knows where the high bushfire risk is located.

Council manages bushfire risk to address public interest and concerns about the safety and wellbeing of residents and visitors to the Region and as part of its responsibilities under the *Disaster Management Act* (*Qld*) 2003.

#### **Our Mission:**

Improving the coordinated and managed prevention of bushfire with a risk based approach to bushfire management in our Region. Council's role in regional bushfire management involves:

• Disaster Planning and Management: An integrated approach

to bushfire prevention, preparedness, response and recovery.

- Development Control: Ensuring new development is located outside of bushfire hazard areas and reducing the risk using fire resistant building materials and water access.
- Mitigation Activities: Working with State agencies to monitor and mitigate fire control lines, back burning and enforcing overgrown allotments, regulations, urban area burning permits, slashing and weed control.
- Building Community
   Awareness

Ensuring that bushfire risk is understood by providing information to promote bushfire preparedness and awareness. The purpose of this Bushfire Management Strategy is to provide a regional and strategic assessment of bushfire risk, identify priority areas of risk and outline coordinated, proactive and cost effective processes in the management and prevention of this risk.

Identifying Council's and the community's interests plays an important part in evaluating risk and in deciding on priorities for fire management. The most important interests have the highest consequences if impacted by fire and direct priorities where Council concentrates mitigation efforts.

## Council prioritises key interests in relation to bushfire as follows:

- Life and property of residents
- Key community utilities and services
- Key regional infrastructure
   (power, transport)
- Major economic centres (industrial and manufacturing).



## Bushfire Risk Management

The National Emergency Risk Assessment Guidelines for (disaster) risk management follows a logical step-by-step approach to Disaster Risk Management. It examines context, assesses bushfire risk, and evaluates that risk, leading to a management response to the highest priority concerns.

Risk is usually described in terms of "likelihood" and "consequence". These concepts are used as a framework for assessing bushfire risk. **Likelihood** is a general description of the probability that a particular event will occur.

**Consequence** is the impact of that event to the specific persons or organisations concerned.

Bushfire hazard is estimated by combining the likelihood that a fire will occur with the potential consequences of the fire. A Geographical Information System (GIS) analysis of bushfire risk is collated and analysed incorporating:

- Fire hazard
- Fire history
- Location and type of Council interests
- Current bushfire management practices.

The first step in the Disaster Risk Management Process is to establish the context and identify the risk.

To establish the context for bushfire risk, a broad assessment focusing on the Region's fire history and current fire management practices is undertaken.

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#### Main Elements of the Disaster Risk Management Process





## Identifying Risk

#### **OUR REGION'S FIRE HISTORY**

Developing an understanding of the bushfire history in the Region is an important part of bushfire risk management. Known recent bushfire events, as well as local knowledge provided by fire agency experts and the community are matched with results from a desktop review of satellite imagery of fire scars in our Region.

The Northern Australian Fire Information Site (NAFI) is publically available and uses satellite imagery to record fire scars of past fires.

#### **FIRE MANAGEMENT PRACTICES**

Fire management or prevention practices include activities that land owners and communities put in place to prepare for and respond to bushfire events. These include fire control line construction and maintenance, fuel reduction through burning or clearing (slashing, mowing etc) and having the resources and equipment available in order to fight fires.

The risk of fire is increased if these prevention and preparation activities are incomplete.

#### The following area and localities have a high frequency of fire as recorded by fire scar data.

**Central ridge and hills:** The ridge line and sloping land from the southern end of Morinish, through Kalapa and across Stanwell to the Mount Morgan area. Significant fire scars were recorded in these hills in 2003, 2008, 2010 and 2013.

Mount Morgan district: The hills and sloping land surrounding Mount Morgan from Bouldercombe in the north to Fletcher Creek. This area experienced significant fires in the 2005, 2009, 2010, 2011 and 2012 fire seasons.

#### **Mount Archer area:**

The very high fire hazard levels alongside urban residential areas makes this a key location in the fire strategy. The fire scar data only records major fires in 2009, however **Oueensland Parks and Wildlife** Services have documented frequent fires in the years preceding this date.

#### **Fuel Reduction**

An effective means to prevent fire is to reduce the fuel load (i.e. food for the fire). Fuel reduction can be performed through back-burning or by clearing vegetation through slashing or mowing.

In the Region, there is a multiagency approach to fuel reduction prior to bushfire season. Site based assessments are carried out annually and these assist in determining the responsibility, location and timing of reduction activities.

#### **Fire Trails**

Sometimes called fire control lines or fire breaks, these are cleared linear tracks of land, located to provide a barrier between (usually) bushland and developed infrastructure. They function as a barrier or fuel-free area to an encroaching fire and can also be the area from which a fire is fought/ attacked.

Effectiveness of fire trails in reducing risk and prevention of fire spread relies on regular maintenance and management of these areas.



## Bushfire Analysis

Once a broad assessment focusing on fire history and current fire management practices has been conducted, a Geographical information System (GIS) analysis of relevant variables that contribute to increasing the bushfire hazard is completed.

The primary purpose of GIS analysis in bushfire analysis is to provide a tool for assessing bushfire risk consistently across the entire Region.

Geographical Information System (GIS) analysis uses a numerical weighting for each of the relevant likelihood and consequence variables and combines these in a simple equation to arrive at a total numerical value for bushfire risk for any given location.

Bushfire risk scores are then categorised into very high, high, medium and low values across the Region and represented in a geographical map format.

The result is a flexible, spatially based process that can be applied across a range of scales and include any variables considered relevant as well as changing fire conditions.



The three variables used to estimate the level of hazard are:

 Potential Fuel Load represents the amount of combustible fuel that would typically accumulate in a defined vegetation class.

• Fire Weather Severity (FWS) is based on an established model that combines a range of weather parameters (such as temperature, recent precipitation, current wind speed and relative humidity) into a single weather index that can be used to predict fire behaviour.

• Topographic slope is an important parameter influencing fire spread, the rate of fuel consumption and thus potential fire intensity.

#### **HOW IS BUSHFIRE MAPPING** USED?

State Government Bushfire Prone Area Mapping provides a measurement of the level of hazard, taking into consideration the hazard variables

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Disaster management information, such as fire control lines and scheduled fuel reduction burns can be applied using mapping from disaster response. Council uses the State wide mapping methodology developed to identify Bushfire Prone Areas that support bushfire hazard provisions of Queensland's State Planning Policy, which came into effect in December 2013. Bushfire hazard mapping is used in Council's Planning Scheme as a Bushfire Hazard Overlay and includes associated and Code provisions.

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## Bushfire High Priority Areas

Based on the information and analysis, three priority areas for bushfire management can be identified in our Region. An area where any structures are located adjacent to or amongst flammable vegetation are known as Interface Zone (iZone). The iZone boundary areas are at Mount Archer and Mount Morgan and the extensive, high fire frequency rural lands. The third priority, "rural lands", includes all privately owned rural properties in the high fire hazard hills of the Region where fire management is a shared responsibility with multiple other agencies, organisations and individual landowners. Each of these priority areas will have its own requirements, key locations and special characteristics.



- Interface with high density urban areas (Rockhampton and summit housing and infrastructure); there are also vulnerable low density
- Significant investment in fire lines and on ground management in recent years has greatly lowered the risk in this location.
- Highly variable interface with high bushfire hazard areas; there are large areas of Council land surrounding township; there are also Rural Residential areas and isolated rural residences bordering and within the highest hazard category; the 66VK power line servicing the township crosses a significant distance within high bushfire hazard areas.
- There is an extensive network of fire lines in and around the township.
- Rural lands surrounding and within the three high fire frequency areas of hilly country in the Region (west, central and south). Multiple tenures and land management agencies makes effective cooperative
- Council's interests primarily concern safety for rural homesteads, protection of biodiversity and fuel load reduction efforts.



#### **Key locations**

- Residential settlement on summit of Mount Archer
- Guthrie Park and "First Turkey" access route where significant Council land and recreational users are exposed to bushfire risk.

#### **Key locations**

- Rural residential settlements north and south of Mount Morgan township
- The Water and Recreation Reserve east of Mount Morgan township.

#### Key locations

Southern hills (Mount Morgan district), particularly along Burnett Highway north and south of town.

#### Requirements

Current management effort and investment needs to be maintained including fire lines and community education programs. Improved cooperation with QPWS. Better understanding and documentation of bushfire risk to residences along the Yeppoon Road corridor.

#### Requirements

Current management effort and investment needs to be maintained including maintenance of fire lines and community information/education programs. Need more detailed and individual assessments for Council land and vulnerable residences.

#### Requirements

Establish formal cooperative arrangements with relevant agencies. Review and assess the bushfire risk to rural residences in high fire hazard areas. Participate in annual multiple agency planning for these rural areas.

#### Options for improving management • Establish a Rockhampton (Rural) Fire

- Brigade group to participate in the management of the urban iZone Formalise the cooperative
- arrangements between QPWS and Council with a MOU
- Participation in annual work programs with all relevant agencies.

#### **Options for improving management**

- Improve early warning and detection processes for more effective preparedness
- Systematic and comprehensive
- assessment of bushfire risk Increase investment in fuel reduction
- actions Formalise the cooperative arrangements between DNRM and Council with a MOU.

#### **Options for improving management**

- Enhance and target education programs, support landowners to prepare for fire events
- Focus support and effort on relevant Rural Fire Brigade groups
  Improve early detection of bushfires in vulnerable areas.

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## **Regional** Approach

The management and prevention of Bushfire Risk requires a collaborative and integrated approach between responsible agencies.

#### PLANNING AND DEVELOPMENT

A major RRC contribution to reducing fire risk to the community comes from the application of the Planning Scheme and building regulations.

The bushfire hazard overlay map and code provides detailed information on areas of land within the Rockhampton Region that have been or could be impacted by a bushfire, and seeks to ensure new development and redevelopment either avoids or becomes increasingly resilient to bushfire risk.

This will be achieved by:

- Progressively reducing the intensity of existing development in bushfire hazard areas over time,
- Clearly specifying the appropriate bushfire protection measures required for new development.
- Avoiding the further subdivision of land for urban uses in bushfire hazard areas where risk cannot be mitigated by design, siting and layout, and
- Protecting and retaining bushfire hazard areas that contribute to our natural environment and landscape through their environmental and scenic amenity values.

It is important to understand that the bushfire hazard overlay code does not deal with building code requirements for structures in bushfire hazard areas. The building code will require all buildings in a designated bushfire hazard area (areas on the overlay map) to meet the requirements of AS3959-2009 – the Australian Standard for the Construction of Buildings in Bushfire-prone Areas.

#### What are overlays?

Overlays indicate areas and places that may be sensitive to the effects of development, have hazard constraints or contain valuable resources which call for additional assessment criteria. These may relate to a natural hazard such as bushfire, flooding or landslide. The Planning Scheme contains specific requirements that must be addressed for development <u>on land within an overlay area.</u> If a property is affected by an overlay it means that any proposed future use must address, as part of the assessment, any specific requirements outlined in the overlay code that are affecting the property.



## **Coordinated** Bushfire Management

#### COORDINATED FIRE MANAGEMENT PARTNERSHIPS

An integrated, regional approach to bushfire management relies on clear communication and understanding of roles, access to reliable and relevant data and information, predictive and long term planning, and the development of systems and process to continually improve response and recovery activities.

Coordinating fire management planning with all agencies to achieve the desired outcomes is essential in the development of any Council Fire Management Strategy. Agencies include but are not limited to:

- Queensland Fire and Rescue
   Authority,
- · Local Rural Fire Brigades,
- Local Urban Fire Brigades,
- Queensland Parks and Wildlife Service,
- Queensland Department of
   Primary Industries (Forestry),
- State Emergency Services, and
- Queensland Police Force.

With respect to bushfire risk, Council continues to contribute to multiple agency management actions which are coordinated by Queensland Fire and Emergency Service and/or bilateral agreements with individual agencies.

This may include participation and/or supply of plant and equipment to prescribed burns and emergency responses. Council participates in an annual meeting prior to the onset of bushfire season that includes all relevant government agencies (the Regional Inter-Departmental Committee).

Fire management is an aspect of land management that all agencies must consider. Regardless of the current or future proposed land uses, fire is a factor that must be considered. Actions that require a coordinated response include annual prescribed burns, slashing to reduce fuel loads near the residential areas on the summit, and maintaining fire breaks and fire lines. Rockhampton Regional Council and Queensland Parks and Wildlife Services received significant funding to construct fire lines around vulnerable residential areas. There are major fire lines constructed along the eastern edge of the city, around Mount Morgan and in West Bajool.

This has been led by Queensland Parks and Wildlife Services, the primary landholder who coordinates activities by local governments, QFES and Rural Fire Brigades.

#### Memorandum of Understanding

The cooperative arrangements with State agencies involved in fire management is an opportunity to be improved through a Memorandum Of Understanding (MOU).

A major step in this direction would be formal agreements (MOU) that clearly define roles and responsibilities and provide a process for documenting the contribution of each agency.



#### **MITIGATION ACTIVITIES**

The Regional Bushfire Management Strategy provides Council with a framework to integrate existing bushfire management activities into regional multi-agency approaches to bushfire risk management.

#### **Bushfire Priority Area Risk** Assessments

The analysis of the regional risk assessment identified three high priority iZone areas. The development of local management plans for each iZone has been identified as priority to reduce the risk of bushfire in high risk areas. Local management plans identify the bushfire risk at the local level, document prevention, protection and mitigation activities, and outline the process for response and recovery activities at a local scale.

#### **Maintaining Fire Trails**

One of the most cost effective options for reducing bushfire risk is through the creation and development of fire trails. Fire trails are cleared tracks of land strategically located to provide a barrier to the encroaching fire and provide an important tool in mitigation activities. Fire trails require partnerships with multiple organisations and landholders in order to be created and maintained.

Local management plans incorporate annual maintenance schedules for fire trails located in each priority area.

#### **Fuel Reduction Burns**

One of the key variables that determine the level of bushfire hazard is the amount of material available to be burnt or fuel the fire. This is often referred to as the potential fuel load. An effective means to reduce the fuel load in an area is with the use of fuel reduction burns or back burning, which are fires that are started, controlled and monitored under strict conditions. Site based assessments are carried out annually and are used to determine the timing and location of fuel reduction burns each year.

All landholders (including private) identified in the "iZone" are encouraged to carry out regular site based assessments and strategic fuel reduction burns when deemed necessary.

Fuel reduction burns not only reduce the amount of combustible material, but if planned well and used effectively they can also have a positive impact on the ecological condition of land by removing weeds and increasing biodiversity.



#### EDUCATION AND AWARENESS

Education and awareness programs can significantly reduce bushfire risk by enhancing the community's ability to predict, prepare, prevent and respond to bushfire risk.

The Queensland Fire and Emergency Service provide a comprehensive series of guidelines for the community and regular training opportunities for Rural Fire Brigade volunteers and Council officers. This ensures that individuals and organisations are equipped with the skills and knowledge to not only respond to emergency situations but carry out mitigation activities.

Council currently plays a key role in disaster preparation, response and recovery and bushfires are one source of risk that is addressed. The disaster management unit is responsible for Council's role in the preparation, response and treatment of disaster risk.

#### National Bushfire Warning System

Early detection systems is an important part of preparing for bushfires.

A National Bushfire Warning System has been implemented that contains a new fire danger rating. The Fire Danger Rating (FDR) is an early indicator of potential danger and should act as your first trigger for action.

The higher the rating the greater the need for you to act.

The FDR is an assessment of the potential fire behaviour, the difficulty of suppressing a fire, and the potential impact on the community should a bushfire occur on a given day.

A Fire Danger Index (FDI) of 'lowmoderate' means that fire will burn slowly and that it will be easily controlled, whereas a FDI in excess of 'catastrophic 100+' means that fire will burn so fast and so hot that it will truly be uncontrollable.

#### Fire Danger Rating





#### 8.7 SUBMISSION TO THE INQUIRY INTO THE FUTURE ROLE AND CONTRIBUTION BY REGIONAL CITIES

File No:	5333	
Attachments:	1. Draft Submission on the Role and Contribution by Regional Capitals to Australia	
Authorising Officer:	Robert Holmes - Acting Chief Executive Officer	
Author:	Rick Palmer - Manager Economic Development	

#### SUMMARY

This report contains a draft submission outlining Council's view on the future role and contribution from regional capitals to Australia.

#### OFFICER'S RECOMMENDATION

THAT Council endorse the submission which is to be made to the Senate's Rural & Regional Affairs and Transport References Committee.

#### COMMENTARY

On 11 February 2015 the senate moved that the following matters be referred to the Senate Rural and Regional Affairs and Transport References Committee for inquiry and report by 1 December 2015:

The future role and contribution of regional capitals to Australia, including:

- An assessment of current demographic trends and the changing role of regional capitals;
- An analysis of current funding provided to regional capitals
- An analysis of the benefit of additional funding regional capitals could receive based on population, demand for services and their strategic importance for the region, state or country
- Investment challenges and opportunities to maintain or grow regional capitals, including infrastructure, community and human services, communications and natural resources
- Incentives and policy measures that would support sustainable growth in regional capitals
- The impact the changing environment will have on regional capitals; and
- Any other matters

Submissions need to be submitted to the Committee Secretary by 30 April 2015.

A draft submission is attached to this report:

#### **Queensland Regional Capitals Alliance**

Council is a member of this alliance together with the Toowoomba, Mackay and Cairns Regional Councils and Townsville City Council.

AEC Group is finalizing a report which can be used to increase the funding which Alliance members receive from the Queensland Government. The project's long-term aim is to treble the population of the Alliance members over the coming 30 years.

The draft report has been the source of some of the information contained in the submission.

#### BACKGROUND

The *Regional Capitals Australia Issues and Positioning Paper* prepared by Essential Economics found Australian Regional Capitals exhibited the following socio-economic characteristics:

### Population

Population growth in Regional Capitals has outpaced the national average, with 550,000 additional persons accommodated in the Regional Capitals between 2001-2011 and this includes 110,000 new overseas migrants. This ongoing population 'absorption' role is highlighted with respect to growth projections which indicate an additional 1.0 million persons will be living in the Regional Capitals by 2026.

#### Socio-Economic Disadvantage

Regional Capitals are relatively disadvantaged in a national context, with lower incomes, lower educational attainment and higher unemployment rates all contributing to this situation.

#### Output and Productivity

Regional Capitals are responsible for approximately \$210 billion in economic output annually, which represents approximately 16% of total national economic output per annum. However, productivity per Regional Capital worker is approximately 10% lower than the national average

#### Industry Structure

Compared to national averages, the Regional Capital workforce is over represented in the service sector, construction and mining; has similar representation in manufacturing, transport, postal and warehousing, agriculture, forestry and fishing; but is underrepresented in professional and financial services.

### Labour Force

Regional Capitals have an unemployment rate of 6.2% which is significantly higher than the national rate of 5.4%. Importantly, the labour force of the Regional capitals is projected to increase by a further 465,000 persons between 2011-2026, presenting a serious challenge in terms of achieving sustainable local job creation. Investment in skills development will be an important factor in reducing regional unemployment rates.

#### Job Provision

Regional Capitals have a high job provision rate (providing 1 job for every 1 labour force participant) which highlights their important regional service role with significant number of jobs provided in retail, health care, education, social assistance and residential care services. However, some underrepresentation in job provision is noted, especially in terms of professional, technical and finance-related services, indicating measures which attract higher value jobs to Regional Capitals should be a priority.

#### Skills Base

Regional Capitals has relatively poor Year 12 completion rates, and a considerably lower proportion of residents hold bachelor level and above qualifications. Further, Regional Capitals workers also have a higher propensity to be occupied in manual occupations and a lower presence in professional and managerial occupations. This situation highlights the need for actions that improve school retention rates and bolster skills and training.

#### **Business and Investment**

Regional Capitals accommodate 14% of all Australian-based businesses and contribute 10% of the value of all building investment annually; however, this needs to be considered against the fact that the Regional Capitals accommodate 17.5% of the nation's population, thus highlighting the need to stimulate more inward investment and local business growth.

#### Liveability

Property prices in most Regional Capitals are considerably lower than in metropolitan areas, and this comparative advantage should continue to be promoted, along with cultural and natural factors, to attract new residents, skills and investment into these areas.

# SUBMISSION TO THE INQUIRY INTO THE FUTURE ROLE AND CONTRIBUTION BY REGIONAL CITIES

# Draft Submission on the Role and Contribution by Regional Capitals to Australia

Meeting Date: 28 April 2015

Attachment No: 1

## Draft Submission to the Inquiry by the Senate's Rural & Regional Affairs and Transport References Committee into the Future Role and Contribution by Regional Capitals to Australia

Rockhampton Regional Council submits the following in regard to the issues identified by the Senate Rural and Regional Affairs and Transport References Committee:

Overall, Council supports the development of Australia's second tier regional cities into vibrant centres that have a critical mass of population of between 250,000 and 5,000 residents. Deliberate policy and funding measures are required at both Federal and State levels to facilitate this scale of growth. The strength of Australia's regional cities will have a substantial impact on the national economy and society, and reduce the growth pressures on the State capitals and provide alternative lifestyle choices for our population.

## Issue 1

## Assess the current demographic trends and the changing role of regional capitals

In *The Regional Capitals Australia Issues and Positioning Paper* Essential Economics found growth in Australian regional capitals has outpaced the national average, with 550,000 additional persons accommodated in the regional capitals between 2001-2011 and this includes 110,000 new overseas migrants. This ongoing population 'absorption' role is highlighted with respect to growth projections which indicate an additional 1 million residents will live in the regional capitals by 2026.

The population of the Rockhampton Region has grown ahead of the average for Australian regional capitals over the past 12 years. The population of the current Rockhampton Region Council has increased from 70,480 in 2001 to 82,551 in 2013, an increase of 12,071 or an average yearly increase of 1.71% over the 12 year period. In the decade from 2001-11 the population of Australian regional capitals grew by an average of 1.54%, 0.17% lower than the Rockhampton Region's average over that period.

With the continued growth of Central Queensland, especially with the opening up of the Galilee Basin's coal resources, the Rockhampton Region's population is likely to continue to grow at a rate above the rate for other Australian regional capitals. Rockhampton is well positioned to continue to provide a wide range of goods and services to Central Queensland and especially to coal mining and gas operations in the Bowen, Galilee and later Surat Basins.

Opportunities in agriculture will also support the Region's continued growth as the Fitzroy Basin shifts from the range cattle grazing to more intensive animal production and horticulture. The growing of mandarins, grapes and avocados beside the Nogoa River and watered from the Fairbairn Dam highlight horticultural opportunities in the wider Fitzroy Basin.

An increased presence by the Australian Defence Force is the Rockhampton Region is another structural change which could significantly increase the Region's population. The Rockhampton Region is Central Queensland's principal service centre with effective infrastructure and strong community foundations. This role will grow, especially if Federal Government decides to take active steps to grow Australia's second tier cities.

According to *The Regional Capitals Australia Issues and Positioning Paper* while Australian regional capitals have many strengths, they also have:

- Comparatively high unemployment rates;
- Relatively high socio-economic disadvantage in the national context with lower incomes, lower educational attainment and higher unemployment rates;
- Lower worker productivity than the national average;
- Under representation in professional and finance services;
- Poor education completion rates with a bias to manual occupations and away from professional and managerial roles; and
- Comparatively low levels of investment when their populations size is taken into account.

## Issue 2 Analyse current funding provided to regional capitals

Rockhampton Regional Council, like all other Australian local governments, receives Financial Assistance Grants from the Federal Government to spend generally on the advancement of its community.

However, the Rockhampton Region does not receive any funding from the Federal or State Government because it is Central Queensland's regional capital. It receives a variety of funding from the State Government (mainly for specific purposes), but nothing because the Region fulfils a regional capital role.

Further government funding is required by regional capitals to offset some of their comparative disadvantages and to enable them to make an even greater contribution to Australia.

## Issue 3

## Analyse the benefit of additional funding regional capitals could receive based on population, demand for services and their strategic importance for the region, state or country

Rockhampton Regional Council urges the Federal Government to introduce a scheme similar to the Western Australian Royalties for the Regions Program on a national level to grow Australian regional capitals. There is already clear interest from the Australian State Governments to develop second tier cities behind the capitals.

For many years the Western Australian Government, irrespective of its political colour, had ignored the northern areas of the State and focused on developing the south western corner

around Perth. The current Western Australian Government is making genuine attempts to expand its population outside this corner.

Since its inception in 1859, the Queensland Government has put significant funding into developing its regional capitals and it has complex communities in Cairns, Mackay, Rockhampton, Toowoomba and Townsville. These cities, which have effective infrastructure and vibrant economies, have formed the Queensland Regional Capitals Alliance to ensure they grow and possibly develop into Queensland's second tier cities.

Now is an ideal time for the Federal Government to grasp the nettle and contribute significant recurrent funding to Australia's regional capitals to ensure population growth takes place around the nation, rather than being principally restricted to the Sydney-Melbourne-Canberra triangle. The use of the existing hard and soft infrastructure in the regional capitals is the key to building liveable communities away from the state capitals.

So far, Australia has had three generations of growth. The first was to settle the entire nation, the second to build the capital cities and the third to settle the coastal areas. The time is ripe for the fourth – to expand the regional capitals so they, like the Gold Coast, Newcastle and Wollongong, truly become second tier cities behind the capitals.

The New South Wales Government has also done good work in this space with its Evocities Program and the grants under the Regional Relocation (Home Buyers Grant) Act 2011 leading the way.

Queensland, Victoria and South Australia all have their separate initiatives to encourage the population growth away from the capital cities.

## Issue 4

## Investment challenges and opportunities to maintain or grow regional capitals, including infrastructure, community and human services, communications and natural resources

The growth of the Australian regional capitals will take advantage of many of the investments which governments at all levels have made over the past 200 years, particularly in infrastructure.

Regional capitals possess thriving economies with good potential for long-term growth and sustainability.

As the AEC Group's Regional Queensland Capitals Alliance Report outlines regional capitals are "vibrant and thriving with a wide range of different lifestyle options, mixing urban environments with access to more rural areas to provide greater diversity of choice for residents. The regional capitals also provide ready access to many natural tourism assets and scenic landscapes."

Regional capitals provide residents with most of the same services that are found in the capitals. This, however, is provided without the same congestion as the regional capitals have a calmer way of life.

Residents have a lower cost of living, while still having a good choice of business and job opportunities.

The development of the regional cities will have the following benefits for government:

- Growth centres facilitating economic diversity and resilience;
- Provision of a broad range of goods and services to their regional communities;
- Provision of critical infrastructure and services to their region;
- Cost efficient;
- Manageable and sustainable local and regional governance; and
- Critical mass of business and population.

## Issue 5

# Incentives and policy measures that would support sustainable growth in regional capitals

Relative to North America and Europe, Australia's regional development and associated regional cities policies are immature. This is in part due to Australia's lower population. However, international experience in building and transforming regional cities should be taken into account when formulating local policies.

A network of strong regional cities with populations between 245,000 and 500,000 residents will generate improved critical mass for these cities to be sustainable in terms of their economic and community infrastructure and services.

Rockhampton Regional Council requests the Federal Government to develop a suite of programs to transform Australia's regional capitals into second tier cities.

The operations of the Western Australian Royalties for the Regions Program and the New South Wales Evocities Program provide a good starting point.

Council suggests the Federal Government should use its taxation powers to make it more attractive for people to relocate to the regional capitals. The New South Wales Government has adopted this approach with its Regional Relocation grants.

## Issue 6 Impact the changing environment will have on regional capitals

There is currently an opportunity in the Australian political landscape to develop second tier cities behind the capitals. Each of the State Governments has been working towards this objective in their own way.

The Federal Government should use its tax powers to make it more attractive for people to shift to the second tier cities.

This will take some political determination as there will be many distractions along the way. There is an element of picking winners and the Federal Government should not steer way from that.

The issues which give rise to this opportunity include:

- Urbanisation in 2014 ABS found 87.3 per cent of Australian live in cities;
- Aging population the result of fewer children and technological change which has enabled people to live longer;
- Skills shortages and turnover major impediment to economic growth;
- Smart technology and speed of change opening new opportunities;
- Social media changing the way people communicate;
- Shifting consumer trends and preferences growing household savings, shift to services consumption and online retailing;
- Home based work many more people are taking advantage of the opportunities to work at home; and
- Need for basic infrastructure much of this has been already provided in the regional capitals.

## Issue 7 Any other matters

To be a regional capital, a community should:

- Provide goods, services and employment to its Region;
- Have a thriving local economy with diverse business and job opportunities;
- Offer capacity for long-term growth and sustainability;
- Have sustained population growth;
- Be cost efficient; and
- Be uncongested and provide a calmer way of life.

## **Rockhampton Region's Characteristics**

The socio-economic characteristics of the Rockhampton Region have a number of similarities with the characteristics identified by Essential Economics in its *Regional Capitals Australia Issues and Positioning Paper*. In addition, there are also a number of differences.

The Region's characteristics are as follows:

## Population

The population of the current Rockhampton Region Council has increased from 70,480 in 2001 to 82,551 in 2013, an increase of 12,071 or an average yearly increase of 1.71%. over the 12 year period In the decade from 2001-11 the population of the Regional Capitals grew by an average of 1.54%, 0.17% lower than the Rockhampton Region's average over 12 years.

## Socio-Economic Disadvantage

In 2011, when the Rockhampton Regional Council included the Livingstone Shire Council, the Region scored 966 on the SEIFA index. 35.2% of the Region's population fell in quintile 1, the most disadvantaged. Quintile 2 contained 24.3%, quintile 3 19.1%, quintile 4 12.6% and quintile 5 (least disadvantaged) 8.8%.

## **Output and Productivity**

The gross regional product of the Rockhampton Region in 2013-14 was \$5.85 billion, 2.16% of Queensland's gross state product. In 2011 median total personal income in the Rockhampton Region was \$46,041 per year. More than 70% of the Rockhampton Region workforce is employed full-time (works at least 35 hours a week). Almost 18% work 1-24 hours a week, while more than 11% work for between 25 and 34 hours a week.

## **Industry Structure**

The Rockhampton Region workforce has particular strengths in electricity, gas, water & waste services, retail trade, transport, postal & warehousing, public administration & safety, education & training and healthcare & social assistance. It is comparatively neutral in accommodation & food services, manufacturing, wholesale trade, rental, hiring & real estate services, administrative & support services, information media & telecommunications and arts & recreation services. The Rockhampton Region workforce is under represented in agriculture, forestry & fishing, mining, construction, professional, scientific & trade services, and financial & insurance services.

## Labour Force

In September 2014 the Region had a labour force of 43,992 people, of which 2,927 or 6.7% were unemployed. In comparison the national unemployment rate was 6.2%. The Region's largest numerical work sector is health care & social assistance with 5308 workers (507 blue collar and 4781 white collar) followed by retail with 3992 workers (784 blue collar and 3200 white collar). Third is education & training with 3491 workers (312 blue collar and 3156 white collar) followed by public administration & safety 2551 workers (492 blue collar and 1997 white collar) and manufacturing (1803 blue collar and 712 white collar).

## **Job Provision**

In 2011 managers and professionals make up 28.7% of the Rockhampton Region workforce, a lesser number than for Australia as a whole. Another 15.9% were technicians and trade workers, 10.7% community & personal service workers and 9.9 per cent sales workers. The proportions in these three categories were higher than those nationwide. Machinery operators and drivers made up 6.8% of the regional workforce and 10.5% were labourers.

### **Skills Base**

In 2011, 9.7% of the Rockhampton Region workforce did not complete Year 8, 33.6% left school after Year 9 or 10 and only 45.4% completed Years 11 or 12. Almost half the Region's workforce had a qualification, with 19.9% having a certificate, 5.1% a diploma or advanced diploma and 10.0% a bachelor's degree or higher. The most common fields of study in which non-school qualifications have been obtained are engineering & related technologies (18.9%), which is significantly higher than Australia as a whole. Other highly represented fields of study were management & commerce (12.9%), health (9.5%), society & culture (8%) and education (7.3%).

## **Business and Investment**

In 2011 the median total personal income in the Rockhampton Region was \$30,368 per year, while the median total family income was \$74,724. There were 303 new housing approvals for the year ending 31 December 2014, which were valued at \$98.4 million. In 2012, there were 69 registered businesses per 1,000 residents, almost 50 per cent lower than the Australian average of 94. Construction accounted for almost a fifth of the Region's 4,994 registered businesses, followed by agriculture, forestry & fishing with 13.8%. These reflect the predominance of single person sub-contractors and family businesses in these sectors.

## Liveability

For the year ending 30 June 2014 1,628 residential dwellings were sold in the Rockhampton Region. The median sale price for the 1,444 detached houses was \$305,000, while the median sale price for the 184 attached dwellings was \$340,000. These median prices are significantly lower than in urban Australia.

Council has identified the following six projects as ones which will provide it with a significant impetus to treble in size in the coming 30 years and become an Australian second tier city:

- 1) Rockhampton CBD Masterplanning & Redevelopment
- 2) Rockhampton Airport Defence Precinct
- 3) Gracemere Urban Growth Infrastructure
- 4) Parkhurst Urban Growth Infrastructure
- 5) Rockhampton CBD Stadium & Convention Centre Complex
- 6) Gracemere Industrial Area Growth Infrastructure
- 7) Third Fitzroy River Bridge and Ring Road
- 8) Lower Fitzroy Infrastructure Project

### 8.8 COUNCIL DELEGATIONS TO CHIEF EXECUTIVE OFFICER

File No:	4107	
Attachments:	1. Instrument of Delegation - Peaceful Assembly Act 1992	
	2. Instrument of Delegation - Tobacco and Other Smoking Products Act 1998	
	3. Instrument of Delegation - Prostitution Act 1999	
	4. Instrument of Delegation - Queensland Competition Authority Act 1997	
	5. Instrument of Delegation - State Penalties Enforcement Act 1999	
Authorising Officer:	Tracy Sweeney - Manager Workforce and Strategy Ross Cheesman - General Manager Corporate Services	
Author:	Kerrie Barrett - Coordinator Corporate Improvement & Strategy	

### SUMMARY

This report seeks Council's approval of delegations under State legislation to the position of Chief Executive Officer.

## OFFICER'S RECOMMENDATION

THAT:

1. Council resolves as per section 257 of the *Local Government Act 2009* to delegate to the Chief Executive Officer, the exercise of powers contained in schedule 1 of the Instruments of Delegation attached to this report:

- 1. Peaceful Assembly Act 1992
- 2. Tobacco and Other Smoking Products Act 1998
- 3. Prostitution Act 1999
- 4. Queensland Competition Authority Act 1997
- 5. State Penalties Enforcement Act 1999

2. All prior resolutions delegating the powers under these Acts listed to the Chief Executive Officer are repealed. These powers must be exercised subject to any limitations contained in schedule 2 of the attached Instruments of Delegation.

#### COMMENTARY

MacDonnells Law has identified new and/or amended delegable powers under the Acts listed within the Officer's Recommendation. Subsequently, each Instrument of Delegation containing new legislative updates/amendments for each Act has been prepared for Council's consideration and is attached to this report.

Listed below are the titles of the Acts and the sections relevant to each Act that have been identified as new, amended or additional delegable powers to be delegated from Council to the position of the Chief Executive Officer (CEO) in the Instrument of Delegation.

#### Changes to Delegable Powers

#### Attachment 1 – Peaceful Assembly Act 1992

For Councillor's information, the purpose of this Act is to provide for the recognition, exercise and any necessary and reasonable restrictions of the right of peaceful assembly, and for related purposes. MacDonnells Law has undertaken a minor periodic review resulting in removal of sections 11(2)(a), 13(1)(a), 13(2), adjusted 11(1), 11(5), 13(1)(c), 13(3), addition of 13(1)(d), 15(1).

This Act is not sub-delegated.

## Attachment 2 – Tobacco and Other Smoking Products Act 1998

Minor periodic review resulting in a minor amendment to section 26ZO(3) and addition of powers relating to Smoke-Free Outdoor Places and Appointment of Authorised Persons, sections 26ZPD (3), 28(2), 28(3).

This Act is not regulated by Council, therefore not sub-delegated.

#### Attachment 3 - Prostitution Act 1999

Minor periodic review resulting in the removal of section 640(2) and amendment of section 63B and addition of sections 26(2) and 52(2), powers to investigate disciplinary action against a licensee and approved manager.

This Act is not sub-delegated.

## Attachment 4 - Queensland Competition Authority Act 1997

Minor periodic review resulting in the removal of sections 18B(2) and 36A(3) and amendment to sections 13C(2)(b), 13C(2)(c), 13C(3)(b) and 13C(3(c)), powers relating to pricing practices relating to monopoly business activities.

This Act is not sub-delegated.

#### Attachment 5 - State Penalties Enforcement Act 1999

Minor periodic review resulting in the amendment of sections 23(5), 57(5) and 157(2), and addition of section 150(2)(a)(ii), related to determining an acceptable way of taking of payments.

Once Council has resolved to delegate to the CEO, the exercise of powers contained in schedule 1 of the Instruments of Delegation attached to this report, subject to any limitations contained in schedule 2, the sub-delegates will be given specific delegations according to their respective areas of responsibility subject to the same general conditions and, where appropriate, specific limitations. Without such powers and delegations, officers would be unable to complete work activities related to their position under required Acts without reference to Council.

#### BACKGROUND

Without powers being delegated to the CEO and subsequently sub-delegated to relevant positions, Council operations would be impeded significantly as separate resolutions would be required to allow decisions to be made for a vast number of operational activities that are undertaken on a daily basis.

In relation to amendments to the legislative Acts listed, Council's legal advisor, MacDonnells Law, provides a regular service of updates/amendments for relevant state legislation to Council. The information provided herein is as recommended by MacDonnells Law.

#### PREVIOUS DECISIONS

The previous Instruments of Delegation for the Acts listed within this report were last considered and approved by Council at the following meetings:

Legislation	Meeting Date
Peaceful Assembly Act 1992	10 August 2010
Tobacco and Other Smoking Products Act 1998	10 August 2010
Prostitution Act 1999	10 August 2010
Queensland Competition Authority Act 1997	10 August 2010

State Penalties Enforcement Act 1999	13 August 2013
Clate Fondities Enforcement / lot 1999	10 / luguol 2010

### LEGISLATIVE CONTEXT

Section 257 of the *Local Government Act 2009* allows Council to delegate its powers to one or more individuals or standing committees, including to the CEO. Pursuant to section 257(4) of the *Local Government Act 2009* a delegation to the CEO must be reviewed annually by Council.

To further streamline the decision making process, section 259 of the *Local Government Act* 2009 allows the CEO to sub-delegate the powers (including those delegated to him by Council) to another Council employee where appropriate.

### LEGAL IMPLICATIONS

Important legal principles which apply to the delegation proposal set out in this report are:-

- Council at all times retains power to revoke the delegation. Accordingly, Council retains ultimate control.
- Council, as delegator, has responsibility to ensure that the relevant power is properly exercised. Council will therefore continue to supervise and oversee the exercise of its powers.
- A delegation of power by Council may be subject to any lawful conditions which Council wishes to impose. The imposition of conditions enables Council to impose checks and balances on its delegations. However, the delegated power cannot be unduly fettered.
- The delegate must exercise a delegated power fairly and impartially, without being influenced by or being subject to the discretion of other individuals.

### CONCLUSION

This report includes the Instruments of Delegation for the relevant legislative Acts incorporating some sections that are yet to be delegated from the Council to the CEO.

Once Council has resolved to delegate to the CEO, the exercise of powers contained in schedule 1 of the Instruments of Delegation attached to this report subject to any limitations contained in schedule 2 of the Instruments of Delegation, the Sub-delegates will be given specific delegations according to their respective areas of responsibility subject to the same general conditions and, where appropriate, specific limitations.

It is recommended that Council resolve in accordance with section 257 of the *Local Government Act 2009* to delegate exercise of powers contained in schedule 1 of the attached Instruments of Delegation subject to limitations contained in schedule 2.

# COUNCIL DELEGATIONS TO CHIEF EXECUTIVE OFFICER

# Instrument of Delegation -Peaceful Assembly Act 1992

Meeting Date: 28 April 2015

Attachment No: 1



### **INSTRUMENT OF DELEGATION**

Peaceful Assembly Act 1992 ("PEAA")

Under section 257 of the *Local Government Act 2009*, **ROCKHAMPTON REGIONAL COUNCIL** resolves to delegate the exercise of the powers contained in Schedule 1 to the Chief Executive Officer.

These powers must be exercised subject to the limitations contained in Schedule 2.

All prior resolutions delegating the same powers to the Chief Executive Officer are repealed.

Instrument of Delegation Peaceful Assembly Act 1992

## Schedule 1

## Peaceful Assembly Act 1992 ("PEAA")

Entity power given to	Section of the PEAA	Description
Local Authority	4 - definition of "representative" - paragraph (b)	Power to nominate an officer of Council to be Council's representative.
Local Authority	10(2)(b)	In the specified circumstances, the power to give a notice of permission for a public assembly stating Council does not oppose the holding of the assembly.
Local Authority	11(1)	In the specified circumstances, power to, specify conditions to which the giving of the notice is subject.
Local Authority	11(4)	In the specified circumstances, power to consult, or attempt to consult, with -
		<ul> <li>(a) if there is a body known to Council to represent persons who have a significant interest in the place of assembly - the body; or</li> </ul>
		(b) in any other case - each person, body or agency (an "interested person") known to you to have a significant interest in, or responsibility for, the place of assembly.
Local Authority	11(5)	In the specified circumstances, power to fix a reasonable time and place for holding the consultations.
Local Authority	12(1)	In the specified circumstances, power to apply to a Magistrates Court for an order refusing to authorise the holding of an assembly.

Instrument of Delegation Peaceful Assembly Act 1992

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Entity power given to	Section of the PEAA	Description
Local Authority	13(1)(b)	In the specified circumstances, power to form the opinion, on reasonable grounds, that if the assembly were to be held -
		<ul> <li>the safety of persons would be likely to be placed in jeopardy; or</li> </ul>
		(ii) serious public disorder would be likely to happen; or
		<li>(iii) the rights or freedoms of persons would be likely to be excessively interfered with.</li>
Local Authority	13(1)(c)	In the specified circumstances, power to consult, or attempt to consult, with each person, body or agency (an "interested person").
Local Authority	13(1)(d)	Power to engage in mediation process.
Relevant Authority	13(3)	In the specified circumstances, power to fix a reasonable time and place for holding the consultations.
Relevant Authority	15(1)	Power to notify organiser in writing that relevant authority does not oppose the holding of the assembly.

Instrument of Delegation Peaceful Assembly Act 1992

	Schedule 2 Limitations to the Exercise of Power		
1.	Where Council in its budget or by resolution allocates an amount for the expenditure of Council funds in relation to a particular matter, the delegate in exercising delegated power in relation to that matter, will only commit the Council to reasonably foreseeable expenditure up to the amount allocated.		
2.	The delegate will not exercise any delegated power in relation to a matter which, to the delegate's knowledge adversely affects, or is likely to adversely affect, the Council's relations with the public at large.		
3.	The delegate will not exercise any delegated power in relation to a matter which has already been the subject of a resolution or other decision of the Council (including a policy decision relating to the matter).		
4.	The delegate will not exercise any delegated power in a manner, or which has the foreseeable affect, of being contrary to an adopted Council policy or procedure.		
5.	The delegate will only exercise a delegated power under this resolution in a manner which complies with the requirements of Council's Planning Scheme and any exercise of power which involves a departure from or variation of those requirements will only be undertaken by Council.		
6.	The delegate will not exercise any power which can not lawfully be the subject of delegation by Council.		

Instrument of Delegation Peaceful Assembly Act 1992

# COUNCIL DELEGATIONS TO CHIEF EXECUTIVE OFFICER

# Instrument of Delegation - Tobacco and Other Smoking Products Act 1998

Meeting Date: 28 April 2015

**Attachment No: 2** 



## INSTRUMENT OF DELEGATION

#### Rockhampton Regional Council Tobacco and Other Smoking Products Act 1998

Under section 257 of the *Local Government Act 2009*, **Rockhampton Regional Council** resolves to delegate the exercise of the powers contained in Schedule 1 to the Chief Executive Officer.

These powers must be exercised subject to the limitations contained in Schedule 2.

All prior resolutions delegating the same powers to the Chief Executive Officer are repealed.

Instrument of Delegation Tobacco and Other Smoking Products Act 1998

#### Schedule 1

#### Tobacco and Other Smoking Products Act 1998 ("TOSP")

#### Part 2C - Smoke-Free Outdoor Places

#### **Division 3 - Other outdoor places**

Entity power given to	Section of TOSP	Description
Local Government	26ZO(3)	In the specified circumstances, power to give the chief executive information about the local government's administration and enforcement of the matter.

## Division 4 – Prohibition on smoking at public transport waiting points and malls by local governments

Entity power given to	Section of TOSP	Description
Local Government	26ZPD(3)	In the specified circumstances, power to give the chief executive information about the local government's administration and enforcement of the local law.

#### Part 3 - Monitoring and enforcement

#### Division 1 – Appointment of authorised persons and other matters

Entity power given to	Section of TOSP	Description
Local Government	28(2)	Power to appoint any of the following persons as an authorised person for the local government and its area:
		(a) an employee of the local government;
		(b) if another local government consents, an employee of the other local government; or
		(c) another person under contract to the local government.
Local Government	28(3)	Power, together with CEOs of other local governments, to appoint an employee of one of the local governments another person under contract to one of the local governments as an authorised person for the local governments' area.

Instrument of Delegation Tobacco and Other Smoking Products Act 1998

Schedule 2

## Limitations to the Exercise of Power

- Where Council in its budget or by resolution allocates an amount for the expenditure of Council funds in relation to a particular matter, in exercising delegated power in relation to that matter, the delegate will only commit Council to reasonably foreseeable expenditure up to the amount allocated.
- 2. The delegate will not exercise any delegated power in relation to a matter which, to the delegate's knowledge, adversely affects, or is likely to adversely affect, Council's relations with the public at large.
- 3. The delegate will not exercise any delegated power contrary to a resolution or other decision of Council (including a policy decision relating to the matter).
- 4. The delegate will not exercise any delegated power in a manner, or which has the foreseeable effect, of being contrary to an adopted Council policy or procedure.
- 5. The delegate will only exercise a delegated power under this resolution in a manner which complies with the requirements of Council's Planning Scheme, and any exercise of power which involves a departure from or variation of those requirements will only be undertaken by Council.
- 6. The delegate will not exercise any delegated power which cannot lawfully be the subject of delegation by Council.

Instrument of Delegation Tobacco and Other Smoking Products Act 1998

# COUNCIL DELEGATIONS TO CHIEF EXECUTIVE OFFICER

# Instrument of Delegation -Prostitution Act 1999

Meeting Date: 28 April 2015

**Attachment No: 3** 



## **INSTRUMENT OF DELEGATION**

#### Rockhampton Regional Council Prostitution Act 1999

Under section 257 of the *Local Government Act 2009*, **Rockhampton Regional Council** resolves to delegate the exercise of the powers contained in Schedule 1 to the Chief Executive Officer.

These powers must be exercised subject to the limitations contained in Schedule 2.

All prior resolutions delegating the same powers to the Chief Executive Officer are repealed.

Instrument of Delegation Prostitution Act 1999
### Schedule 1

## Prostitution Act 1999 ("PROA")

### Part 3 - Licensing System

#### Division 1 – Brothel licenses

Subdivision 2 – Licence cancellation and disciplinary action

Entity power given to	Section of PROA	Description
Authority	26(2)	Power to investigate disciplinary action against a licensee.

### **Division 2 – Approved managers**

### Subdivision 2 – Certificate cancellation and disciplinary action

Entity power given to	Section of PROA	Description
Authority	52(2)	Power to investigate disciplinary action against an approved manager.

## Part 4 - Development Approvals for Brothels

### Division 2 - Particular provisions about development applications

Entity power given to	Section of PROA	Description
Assessment Manager	63B	<ul> <li>Within 10 business days after receiving a development application, the power to give the Authority:</li> <li>(a) a copy of the application; and</li> <li>(b) a written notice stating whether the development application is required to be subject to code assessment or impact assessment under the Planning Act.</li> </ul>

### **SCHEDULE 4 - DICTIONARY**

Entity power given to	Section of PROA	Description
Local Government	Schedule 4 - definition of 'authorised officer of a relevant local government'	Power to, in writing, authorise an officer of Council for the <i>Prostitution Act 1999</i> .

Instrument of Delegation Prostitution Act 1999

Schedule 2

## Limitations to the Exercise of Power

- Where Council in its budget or by resolution allocates an amount for the expenditure of Council funds in relation to a particular matter, in exercising delegated power in relation to that matter, the delegate will only commit Council to reasonably foreseeable expenditure up to the amount allocated.
- 2. The delegate will not exercise any delegated power in relation to a matter which, to the delegate's knowledge, adversely affects, or is likely to adversely affect, Council's relations with the public at large.
- 3. The delegate will not exercise any delegated power contrary to a resolution or other decision of Council (including a policy decision relating to the matter).
- 4. The delegate will not exercise any delegated power in a manner, or which has the foreseeable effect, of being contrary to an adopted Council policy or procedure.
- 5. The delegate will only exercise a delegated power under this resolution in a manner which complies with the requirements of Council's Planning Scheme, and any exercise of power which involves a departure from or variation of those requirements will only be undertaken by Council.
- 6. The delegate will not exercise any delegated power which cannot lawfully be the subject of delegation by Council.

Instrument of Delegation Prostitution Act 1999

# COUNCIL DELEGATIONS TO CHIEF EXECUTIVE OFFICER

# Instrument of Delegation - Queensland Competition Authority Act 1997

Meeting Date: 28 April 2015

**Attachment No: 4** 



# INSTRUMENT OF DELEGATION

## Rockhampton Regional Council Queensland Competition Authority Act 1997

Under section 257 of the *Local Government Act 2009*, **Rockhampton Regional Council** resolves to delegate the exercise of the powers contained in Schedule 1 to the Chief Executive Officer.

These powers must be exercised subject to the limitations contained in Schedule 2.

All prior resolutions delegating the same powers to the Chief Executive Officer are repealed.

Instrument of Delegation Queensland Competition Authority Act 1997

## Schedule 1

### Queensland Competition Authority Act 1997 ("QCAA")

# Part 3 - PRICING PRACTICES RELATING TO MOMOPOLY BUSINESS ACTIVITIES

## Division 1 – Application of part

Entity power given to	Section of QCAA	Description
Local Government	13C(2)	In the specified circumstances, the power to give written notice to the authority in relation to nominating a local government as a nominated local government.
Local Government	13C(2)(b)	Power to authorise a nominee to receive notices by giving signed statement.
Local Government – 'nominee'	13C(2)(c)	In the specified circumstances, the power to agree to Council being authorised to receive notices by giving signed statement
Local Government	13C(3)	In the specified circumstances, the power to give written notice to the authority in relation to nominating a local government as a nominated local government.
Local Government	13C(3)(b)	Power to authorise a nominee to receive notices by giving signed statement.
Local Government – Nominee	13C(3)(c)	In the specified circumstances, the power to agree to Council being authorised to receive notices under the QCAA for all the local governments by giving signed statement.

### Division 2 - Declarations of monopoly business activities

Entity power given to	Section of QCAA	Description
Responsible Local Government for a Local Government Entity	18B(1)	<ul> <li>Power to ask the Minister— <ul> <li>(a) to declare a government business activity that is a significant business activity to be a monopoly business activity; and</li> <li>(b) if the declaration is made - to refer the government monopoly business activity to the authority under section 23 or 23A of the QCAA</li> </ul> </li> </ul>
Responsible Local Government / Local Government Entity	19(5)(b)	In the specified circumstances, the power to make submissions to the Minister about an intended declaration.

Instrument of Delegation Queensland Competition Authority Act 1997

Entity power given to	Section of QCAA	Description
Responsible Local Government	36A(4)	In the specified circumstances and as soon as practicable after a decision is made under section 36A(2) of the QCAA, the power to— (a) notify the decision and the reasons for the decision by gazette notice; and
		(b) give a copy of the decision and the reasons for the decision to the specified entities.

### Part 5 - Access to services

### Division 2 – Declarations of services

## Subdivision 4 - Declaration by Minister

Entity power given to	Section of QCAA	Description
Local Government Entity / Responsible Local Government	84(3)(b)	In the specified circumstances, the power to make submissions to the Ministers about an intended declaration.

Instrument of Delegation Queensland Competition Authority Act 1997

Schedule 2

## Limitations to the Exercise of Power

- Where Council in its budget or by resolution allocates an amount for the expenditure of Council funds in relation to a particular matter, in exercising delegated power in relation to that matter, the delegate will only commit Council to reasonably foreseeable expenditure up to the amount allocated.
- 2. The delegate will not exercise any delegated power in relation to a matter which, to the delegate's knowledge, adversely affects, or is likely to adversely affect, Council's relations with the public at large.
- 3. The delegate will not exercise any delegated power contrary to a resolution or other decision of Council (including a policy decision relating to the matter).
- 4. The delegate will not exercise any delegated power in a manner, or which has the foreseeable effect, of being contrary to an adopted Council policy or procedure.
- 5. The delegate will only exercise a delegated power under this resolution in a manner which complies with the requirements of Council's Planning Scheme, and any exercise of power which involves a departure from or variation of those requirements will only be undertaken by Council.
- 6. The delegate will not exercise any delegated power which cannot lawfully be the subject of delegation by Council.

Instrument of Delegation Queensland Competition Authority Act 1997

# COUNCIL DELEGATIONS TO CHIEF EXECUTIVE OFFICER

# Instrument of Delegation -State Penalties Enforcement Act 1999

Meeting Date: 28 April 2015

**Attachment No: 5** 



## **INSTRUMENT OF DELEGATION**

Rockhampton Regional Council State Penalties Enforcement Act 1999

Under section 257 of the *Local Government Act* 2009, **Rockhampton Regional Council** resolves to delegate the exercise of the powers contained in Schedule 1 to the Chief Executive Officer.

These powers must be exercised subject to the limitations contained in Schedule 2.

All prior resolutions delegating the same powers to the Chief Executive Officer are repealed.

Instrument of Delegation State Penalties Enforcement Act 1999

### Schedule 1

### State Penalties Enforcement Act 1999 ("SPEA")

### Part 3 - Infringement Notices

#### **Division 1 - Service of infringement notices**

Entity power given to	Section of SPEA	Description
Administering Authority	15(1)	Power to approve the form of the infringement notice.

### Division 3 - Obligations and options under infringement notices

Entity power given to	Section of SPEA	Description
Administering Authority	23(3)(b)	Power to approve of an acceptable way, other than the approved form, of making an application for payment of fine through instalments.
Administering Authority	23(5)	In certain circumstances, power to approve application.

### Division 4 - Withdrawal and re-issue of infringement notice

Entity power given to	Section of SPEA	Description
Administering Authority	28(1)	Power to withdraw an infringement notice at any time before the fine is paid or discharged under this Act.
Administering Authority	28(2)(a)	Power to serve on the alleged offender a withdrawal notice in the approved form.

### Part 4 - Enforcement orders

### Division 1 - Default commences enforcement process

Entity power given to	Section of SPEA	Description
Administering Authority	33(1)	Power to give to SPER for registration a default certificate for the relevant infringement notice offence.
Administering Authority	33(2)(b)	Power to approve of an acceptable way, other than the approved form, for how an election may be made.

#### Division 6 - Cancellation of certain enforcement orders

Entity power given to	Section of SPEA	Description
Administering Authority	57(5) <sup>1</sup>	Power to:         (a)       start a proceeding against an applicant for the offence; or         (b)       accept payment of the fine in full as stated in the infringement notice for the offence; or         (c)       issue a fresh infringement notice for the offence.

The procedure for initiating proceedings is under the Justices Act 1886.

Instrument of Delegation State Penalties Enforcement Act 1999

Part 9 -	Miscellaneous						
	Division 2 - Oth	er enforcement related provisions					
Entity power given to	Section of Description						
Administering Authority	150(2)(a)(ii)	Power to determine an acceptable way of taking payment.					
Administering Authority	157(2)	Power to sign a certificate for evidentiary purposes.					

### **Division 3 - General**

Entity power given to	Section of SPEA	Description
Administering Authority	162	Power to approve forms for use as infringement notices.

Instrument of Delegation State Penalties Enforcement Act 1999

Schedule 2

## Limitations to the Exercise of Power

- Where Council in its budget or by resolution allocates an amount for the expenditure of Council funds in relation to a particular matter, in exercising delegated power in relation to that matter, the delegate will only commit Council to reasonably foreseeable expenditure up to the amount allocated.
- 2. The delegate will not exercise any delegated power in relation to a matter which, to the delegate's knowledge, adversely affects, or is likely to adversely affect, Council's relations with the public at large.
- 3. The delegate will not exercise any delegated power contrary to a resolution or other decision of Council (including a policy decision relating to the matter).
- 4. The delegate will not exercise any delegated power in a manner, or which has the foreseeable effect, of being contrary to an adopted Council policy or procedure.
- 5. The delegate will only exercise a delegated power under this resolution in a manner which complies with the requirements of Council's Planning Scheme, and any exercise of power which involves a departure from or variation of those requirements will only be undertaken by Council.
- 6. The delegate will not exercise any delegated power which cannot lawfully be the subject of delegation by Council.

Instrument of Delegation State Penalties Enforcement Act 1999

# 9 STRATEGIC REPORTS

9.1 SUMMARY BUDGET MANAGEMENT REPORT FOR THE PERIOD ENDED 31 MARCH 2015

File No:	8148
Attachments:	<ol> <li>Income Statement - March 2015</li> <li>Key Indicator Graphs - March 2015</li> </ol>
Authorising Officer:	Ross Cheesman - General Manager Corporate Services
Author:	Alicia Cutler - Manager Finance

## SUMMARY

Manager Finance presenting the Rockhampton Regional Council Summary Budget Management Report for the period ended 31 March 2015.

## OFFICER'S RECOMMENDATION

THAT the Rockhampton Regional Council Summary Budget Management Report for the period ended 31 March 2015 be "received".

## COMMENTARY

The attached financial report and graphs have been compiled from information within Council's Finance One system. The reports presented are as follows:

- 1. Income Statement (Actuals and Budget for the period 1st July 2014 to 31 March 2015), Attachment 1.
- 2. Key Indicators Graphs, Attachment 2.

Council should note in reading this report that normally after the completion of the first nine months of the financial year, operational results should be approximately 75% of budget. All percentages for operational revenue and operational expenditure are measured against the adopted budget.

The percentages reported for capital revenue and capital expenditure are measured against the adopted budget with carryovers i.e. including carry-over capital budgets from 2013/14.

## Effects of Cyclone Marcia

Substantial costs have been incurred toward the event (approximately \$9.3million actuals at 31 March 15), which are in the process of having a budget allocated in the Revised Budget. Early indications are that the event will have a substantial impact upon the operating position. Interim claims for Counter Disaster, Emergent Works and Insurance Damage are being prepared for costs incurred to the end of March, which should produce some reimbursement prior to the end of Financial Year. Current projections are showing that the event itself could cost Council over \$10 million out-of-pocket. This figure is a conservative estimate as the success of the claims will only be assured once approved and there are still many unknowns in this regard. Full details will be provided in the revised budget discussions which will be one of the topics within the Budget Workshops scheduled early May.

The following commentary is provided in relation to the Income Statement:

Total Operating Revenue is reported at 89%. Key components of this result are:

Net Rates and Utility Charges are at 96% of budget. This positive variance is due to the second levy of General Rates and Utility Charges for 2014/2015 being processed during January 2015.

- Fees and charges are behind budget at 64%. This result is partly due to Council's Planning section being behind budget due to a number of factors. Airport passenger fees are also behind budget as a result of lost revenue due to Tropical Cyclone Marcia.
- Private and Recoverable Works are ahead of budget at 79% due to a large portion of works being completed for Main Roads on the Yeppoon Road reseal program.
- Grants and Subsidies are ahead of budget at 89% which remains the same as February. For most grant programs there is still the forth quarterly payment to be received so it is anticipated the grants program will achieve budget expectations.
- Interest Revenue is well ahead of budget at 96%. Traditionally interest revenue remains ahead of budget for the first portion of the financial year and then moves closer to budget during the second half of the financial year. There is scope to increase the Interest Revenue budget during the budget revision.
- Other Income is at 82%. This positive variance is mostly due to the income of the Arts & Heritage Unit being ahead of budget, which is counterbalanced by a comparative increase in expenditure.
- > The results for other line items are in proximity of the benchmark percentage.

<u>Total Operating Expenditure</u> is reported at 78%. Due to substantial committals this percentage decreases to 69% when committals are excluded. Key components of this result are:

- Employee costs are below budget at 72%. This is partly due to the circumstance that transactions for employee benefit accruals are only done comprehensively at financial year-end.
- Contractors and Consultants expenditure is over budget at 112% when committals are included. When committals are excluded this drops to 72%. Of the \$6.2 million of committals \$2.5 million relates to contractors still working on the Tropical Cyclone Marcia emergent and reconstruction works.
- Materials and Plant expenditure is at 93%. Due to substantial committals also in this area the percentage decreases to 64% when committals are excluded. Again Tropical Cyclone Marcia is having an affect here with \$3.7 million of committals being attributed to emergent and reconstruction works.
- Finance Costs are behind budget at 66%. The third quarterly loan repayment to Queensland Treasury Corporation was paid during March. There is scope to reduce the Interest Expense budget during the December budget revision.

The following commentary is provided in relation to capital income and expenditure, as well as investments and loans:

<u>Total Capital Income</u> is at 49% of budget. NDRRA funding is to be reviewed and split between Operating Revenue and Capital Revenue, potentially altering the current mix of Operating and Capital Grant Revenue.

<u>Total Capital Expenditure</u> is at 68% of budget with committals, or approximately 41% of budget without committals. Resources normally assigned to Capital Works were reallocated to assist with Disaster Recovery tasks in the wake of Tropical Cyclone Marcia.

Further the projections are that there will be a reduction in the Capital Expenditure program overall within the revised budget.

<u>Total Investments</u> are approximately \$97.9M as at 31 March 2015 up from \$92.5M at 28 February 2015.

<u>Total Loans</u> are \$147.1M as at 31 March 2015. The final loan repayment for 2014/2015 is due mid-June.

## CONCLUSION

Total operational revenue being ahead of budget at 89% is mostly due to the second levy of General Rates and Utility Charges for the year. Operational Expenditure at 78% is in proximity to budget when committed expenditure is considered.

Capital revenue remains behind budget at 47% despite a large increase in February, however a review of NDRRA funding may increase the allocation to Capital revenue. Capital expenditure excluding committed expenditure is currently at 41% of budget. This is partly attributable to the carry-over capital addition to the adopted budget.

The February budget revision progress is entering its final stages. This revision will address most of the variances detailed in this report with the inclusion of Tropical Cyclone Marcia financial impacts. As indicated in the report, the Revised Budget will be the worked through in detail during a Council Budget Workshop.

# SUMMARY BUDGET MANAGEMENT REPORT FOR THE PERIOD ENDED 31 MARCH 2015

# **Income Statement - March 2015**

Meeting Date: 28 April 2015

**Attachment No: 1** 

### Income Statement For Period July 2014 to March 2015 75% of Year Gone

RRC		75% of Year O				
<b>N</b> NC	Adopted Budget	YTD Actual	Commitments	YTD Actuals (inc commitments)	% of Adopted Budget	
	\$	\$	\$	\$		
OPERATING						
Revenues						
Net rates and utility charges	(124,312,081)	(119,022,399)	0	(119,022,399)	96%	
Fees and Charges	(28,728,960)	(18,436,384)	0	(18,436,384)	64%	
Private and recoverable works	(7,977,114)	(6,333,421)	0	(6,333,421)	79%	
Rent/Lease Revenue	(2,973,053)	(2,240,884)	0	(2,240,884)	75%	
Grants Subsidies & Contributions	(14,798,353)	(13,183,594)	0	(13,183,594)	89%	
Interest revenue	(2,588,470)	(2,480,786)	0	(2,480,786)	96%	
Other Income	(3,960,139)	(3,243,575)	0	(3,243,575)	82%	
Total Revenues	(185,338,169)	(164,941,043)	0	(164,941,043)	89%	-
Expenses						
Employee Costs	70,866,820	50,633,292	313,000	50,946,292	72%	
Contractors & Consultants	15,759,452	11,409,591	6,236,073	17,645,664	112%	
Materials & Plant	18,730,644	11,922,094	5,433,045	17,355,138	93%	
Asset Operational	19,139,029	12,379,939	1,284,745	13,664,685	71%	
Administrative Expenses	10,568,893	6,327,116	1,621,528	7,948,644	75%	
Depreciation	44,437,366	33,328,025	0	33,328,025	75%	
Finance costs	10,063,252	6,632,814	0	6,632,814	66%	
Other Expenses	1,480,408	1,060,548	15,353	1,075,901	73%	
Total Expenses	191,045,863	133,693,419	14,903,744	148,597,163	78%	
Transfer / Overhead Allocation						
Transfer/Overhead Allocation	(10,352,252)	(5,162,971)	0	(5,162,971)	50%	
Total Transfer / Overhead Allocation	(10,352,252)	(5,162,971)	0	(5,162,971)	<b>50</b> %	
TOTAL OPERATING POSITION (SURPLUS)/DEFICIT	(4,644,557)	(36,410,594)	14,903,744	(21,506,850)	463%	
CAPITAL	Adopted Budget	August Revised (Inc Carry Forward)	YTD Actual	Commitments	YTD Actuals (inc commitments)	% of Revised Budget
Total Developers Contributions Received	(3,600,000)	(3,600,000)	(1,781,601)	0	(1,781,601)	49%

Total Developers Contributions Received	(3,600,000)	(3,600,000)	(1,781,601)	0	(1,781,601)	49%
Total Capital Grants and Subsidies Received	(6,344,000)	(10,897,134)	(4,979,699)	0	(4,979,699)	46%
Total Proceeds from Sale of Assets	(6,575,000)	(6,581,455)	(3,575,000)	0	(3,575,000)	54%
Total Capital Income	(16,519,000)	(21,078,589)	(10,336,300)	0	(10,336,300)	49%
Total Capital Expenditure	80,462,491	99,636,904	40,927,111	27,199,526	68,126,637	68%
Net Capital Position	63,943,491	78,558,315	30,590,811	27,199,526	57,790,337	74%
TOTAL INVESTMENTS			97,994,883			
TOTAL BORROWINGS			147,168,654			

Page 1 of 1

# SUMMARY BUDGET MANAGEMENT REPORT FOR THE PERIOD ENDED 31 MARCH 2015

# **Key Indicator Graphs - March 2015**

Meeting Date: 28 April 2015

**Attachment No: 2** 

# **KEY INDICATOR GRAPHS – March 2015**













## 9.2 CORPORATE SERVICES DEPARTMENT - MONTHLY OPERATIONAL REPORT

File No:	1392
Attachments:	<ol> <li>Finance Monthly Report - March 2015</li> <li>Workforce &amp; Strategy Monthly Report - March 2015</li> <li>Corporate &amp; Technology Monthly Report - March 2015</li> </ol>
Authorising Officer:	Robert Holmes - Acting Chief Executive Officer
Author:	Ross Cheesman - General Manager Corporate Services
Authorising Officer: Author:	Robert Holmes - Acting Chief Executive Officer Ross Cheesman - General Manager Corporate Serv

## SUMMARY

The monthly operations report for the Corporate Services department as at 31<sup>st</sup> March 2015 is presented for Councillor's information.

## **OFFICER'S RECOMMENDATION**

THAT The Corporate Services Departmental Monthly Operations Report as at 31<sup>st</sup> March 2015 be "received".

## COMMENTARY

It is recommended that the monthly operations report for the Corporate Service department as at 31<sup>st</sup> March 2015 be received.

# CORPORATE SERVICES DEPARTMENT - MONTHLY OPERATIONAL REPORT

# **Finance Monthly Report - March 2015**

# Meeting Date: 28 April 2015

**Attachment No: 1** 

# MONTHLY OPERATIONS REPORT

# FINANCE SECTION

# Period Ended March 2015

# VARIATIONS, ISSUES AND INNOVATIONS

## Innovations

Operational Budget submissions are currently being undertaken in the new Finance One budget module. The post-Cyclone Marcia budget revision is nearing completion and will be the subject of a Council workshop early May.

## Improvements / Deterioration in Levels of Services or Cost Drivers

As a result of Tropical Cyclone Marcia, the rates due date was extended for 30 days which will have a knock-on effect to the rates collection balances.

Similarly, budget workshops were rescheduled and the new budget adoption is now planned for the 9<sup>th</sup> July 2015.

## LINKAGES TO OPERATIONAL PLAN

## 1. COMPLIANCE WITH CUSTOMER SERVICE REQUESTS

The response times for completing the predominant customer requests in the reporting period for *Finance* are as below:

			Current Month NEW Requests		TOTAL Under		Completion Avg		Avg	Avg	Avg Duration	Avg
	Balance B/F	Completed in Current Mth	Received	Completed	INCOMPLETE REQUESTS BALANCE	Long Term Investigation	Standard (days)	Time (days) Current Mth	Time (days) 6 Months	Time (days) 12 Months	(days) 12 Months (complete and incomplete)	Completion Time (days) Q3
Rates Enquiry	8	7	58	56	3	0	3	9 1.13	9 2.30	9 1.99	1.39	9 2.26

# Comments & Additional Information

Activity has reduced from previous month's peak from the issue of Rate Notices.

## 2. <u>COMPLIANCE WITH STATUTORY AND REGULATORY REQUIREMENTS</u> INCLUDING SAFETY, RISK AND OTHER LEGISLATIVE MATTERS

# Safety Statistics

The safety statistics for the reporting period are:

	FIRST QUARTER						
	Jan	Feb	Mar				
Number of Lost Time Injuries	1	0	0				
Number of Days Lost Due to Injury	7	6	0				
Total Number of Incidents Reported	0	0	0				
Number of Incomplete Hazard Inspections	0	0	1				

# Risk Management Summary

Example from Section Risk Register (excludes risks accepted/ALARP)

Risk	Current Risk Rating	Future Control & Risk Treatment Plans	Due Date	% Completed	Comments
Lack of funds for capital works resulting in degradation of existing assets causing unusable assets and public liability claims	High 5	Enhanced capital expenditure reporting for monitoring purposes. Improved Asset Management and Financial Planning	30/6/15	50	Credit Review completed and 10 year Capital submissions due early February. TC Marcia has meant delays in evaluating 10 year submissions
The use of inaccurate GIS data by external and internal users will lead to litigation and a lack of integrity for internal and external users.	Moderate 5	Continued review of integrity of existing data	30/06/15	75	Ongoing

# Legislative Compliance & Standards

Legislative Compliance Matter	Due Date	% Completed	Comments		
Audited Statement completed by end of October	31/10/14	100%	Financial complete	statements by Due	

Legislative Compliance Matter	Due Date	% Completed	Comments
			Date.
Annual Budget adopted by 1 August	01/08/14	100%	Budget adopted in June
Asset Register must record its non-current physical assets	30/06/15	75%	Ongoing
A community financial report must be prepared for the Annual Report	30/10/14	100%	Community Financial Report now complete
A Local Government must have a Debt Policy, Investment Policy and a Revenue Policy	01/08/14	100%	Included with the Budget adoption
Trust Fund Management in accordance with the Local Government Regulation	30/06/15	75%	Ongoing
Monthly Financial report prepared for the monthly meeting of Council	30/08/14	100%	Ongoing
A Local Government must set an Asset Recognition threshold	30/06/15	100%	Amount set – changes proposed in respect of Asset Classes only.

# 3.ACHIEVEMENT OF CAPITAL PROJECTS WITHIN ADOPTED BUDGET AND APPROVED TIMEFRAME

No capital projects are relevant to the Finance Section.

# 4.ACHIEVEMENT OF OPERATIONAL PROJECTS WITHIN ADOPTED BUDGET AND APPROVED TIMEFRAME

As at period ended October 2014 - 33.3% of year elapsed.

Project	Revised Budget	Actual (incl. committals)	% budget expended	Explanation
Improve Information for Better Asset Management and Financial Planning	\$95,000	\$20,000	21%	Project is complete and in progress of financial acquittal.

## 5. DELIVERY OF SERVICES AND ACTIVITIES IN ACCORDANCE WITH COUNCIL'S ADOPTED SERVICE LEVELS

## Adopted/Operational Service Level Standards & Performance

Service Level	Target	Current Performance
Levy rates within 1 week of predicted dates in revenue statement	100%	100%
Manage the recovery of unpaid rates and charges in accordance with the Revenue Management Policy, achieving an overdue balance of less than 6%	<6%	2.98% achieved in Feb

Please note the service levels depicted in the above table are operational standards only and have not been formally adopted by Council.

## **FINANCIAL MATTERS**



## EOM General Ledger - FINANCE Operational Only

As At End Of March								
Report Run: 16-Apr-2015 14:37:24 Excludes Nat Accs: 2802,2914,2917,2924								
	Adopted Revised Commit +							
	Budget	Budget	Actual	Variance	On target			
	\$	\$	\$	%	75% of Year Gone			

### FINANCE

<u>Finance</u>					
Revenues	(95,000)	0	(1,250)	1%	x
Expenses	766,333	740,486	541,117	71%	1
Transfer / Overhead Allocation	0	0	76	0%	x
Total Unit: Finance	671,333	740,486	539,943	80%	x
Business Administration					
Expenses	0	0	3	0%	x
Total Unit: Business Administration	0	0	3	0%	×
Accounting Services					
Revenues	0	(3,500)	(2,692)	0%	~
Expenses	1,152,937	1,145,937	806,423	70%	~
Transfer / Overhead Allocation	12,750	7,800	5,466	43%	~
Total Unit: Accounting Services	1,165,687	1,150,237	809,196	69%	~
Revenue & Treasury					
Revenues	(357,060)	(451,000)	(390,194)	109%	~
Expenses	1,712,304	1,794,323	1,290,386	75%	x
Transfer / Overhead Allocation	0	1,120	1,164	0%	x
Total Unit: Revenue & Treasury	1,355,244	1,344,443	901,355	67%	~
Financial Systems & Projects					
Expenses	405,052	401,052	289,920	72%	~
Transfer / Overhead Allocation	0	0	15	0%	x
Total Unit: Financial Systems & Projects	405,052	401,052	289,935	72%	1
Asset Management					
Revenues	(3,600)	(3,600)	(5,850)	163%	~
Expenses	1,862,503	1,807,100	1,049,085	56%	1
Transfer / Overhead Allocation	30,000	30,000	27,104	90%	x
Total Unit: Asset Management	1,888,903	1,833,500	1,070,339	57%	~
Total Section: FINANCE	5,486,220	5,469,718	3,610,771	66%	1
Grand Total:	5.486.220	5 469 718	3 610 771	66%	





# CORPORATE SERVICES DEPARTMENT - MONTHLY OPERATIONAL REPORT

# Workforce & Strategy Monthly Report -March 2015

Meeting Date: 28 April 2015

Attachment No: 2

# MONTHLY OPERATIONS REPORT WORKFORCE AND STRATEGY SECTION

# Period Ended 31 March 2015

## VARIATIONS, ISSUES AND INNOVATIONS

## Innovations

Nil for this reporting period.

## Improvements / Deterioration in Levels of Services or Cost Drivers

No Monthly Action Plans (MAPs) are currently being issued. The Safety unit are currently in the configuration phase with the new Safety Data Management System (Riskware) and we are hoping that by the end of April, any relevant MAP items will be logged in this system and monitored electronically, rather than paper based.

The Monthly Action Plans (MAPs) are fundamental actions that have been recognised in the WH&S Plan to be conducted each month over the year. These assist with the implementation of the SafePlan system to ensure the system is implemented consistently across all areas of Council.

# LINKAGES TO OPERATIONAL PLAN

## 1. COMPLIANCE WITH CUSTOMER SERVICE REQUESTS

The response times for completing the predominant customer requests in the reporting period for Workforce and Strategy are as below:

		Current Month NEW Requests TOTAL		TOTAL	DTAL Under Completion Avg		Avg	Avg Avg		Avg Duration		Avg	
	Balance B/F	Completed In Current Mth	Received	Completed	INCOMPLETE REQUESTS BALANCE	Long Term Standard Investigation (days)	Completion Time (days) Current Mth	ation Completion Complet Jays) Time (days) Time (da t Mth 6 Months 12 Mont		(days) Completion 12 Months Time (days) (complete and Q3 Incomplete)		mpletion ne (days) Q3	
Administrative Action Complaints	0	0	1	0	1	0	36	0.00	0.00	40.17	4.00	•	0.00
W&S - Complaints Management Process (NOT CSO USE)	5	4	11	7	5	0	30	9 3.00	9 10.00	0.78	8.15	•	7.00

COMMENTS

## 2. <u>COMPLIANCE WITH STATUTORY AND REGULATORY REQUIREMENTS</u> INCLUDING SAFETY, RISK AND OTHER LEGISLATIVE MATTERS

## Safety Statistics

The safety statistics for <u>Workforce & Strategy</u> in the reporting period are:

	Jan 15	Feb 15	Mar 15
Number of Lost Time Injuries	0	0	0
Number of Days Lost Due to Injury	0	0	0
Total Number of Incidents Reported	0	0	1
Total number of Incomplete Hazard Inspections		1	

The safety statistics for <u>All of Council</u> in the reporting period are:

	31 January 2015	28 February 2015	31 March 2015		
Number of Lost Time Injuries	2	3	7		
Number of Days Lost Due to Injury	35	39	35		
Total Number of Incidents Reported	19	27	42		
Total number of Incomplete Hazard Inspections	33 (17 current month)				

The graph below displays the number of lost time injuries (LTI) claims lodged across Council There was a total of seven lost time injury claims lodged for March 2015.



# Risk Management Summary

Potential Risk	Current Risk Rating	Future Control & Risk Treatment Plans	Due Date	% Comp	Comments
Corporate Risks			1	1	1
A legislatively compliant SafePlan is not implemented, monitored and reviewed effectively, for the whole of council, its workers and contractors, to achieve the acceptable compliance level with annual WH&S audits resulting in: increased worker injuries, legislative breaches/legal action, reputational damage, reduced service levels, increased costs and non-compliance with a key council objective.	Low	Ongoing annual audits will be conducted. Continuing to rectify the actions from the 2014 Workplace Health & Safety System Audit. A third Party Workplace Health & Safety system audit due in late 2015. Rectifications resulting from the Workplace Health & Safety system audit will be addressed and assessed in the annual internal audit of the Workplace Health & Safety systems.	December 2015	5%	Safety unit currently working to rectify actions from the 2014 audit RAP that was developed. Due to providing assistance with the recovery of cyclone Marica no actions have been completed in March, however work has now recommenced on the audit RAP.
Section Risks					
Council's rehabilitation & injury management procedures cannot achieve lost time injury rate reductions, increasing injury claims & insurance premiums.	Low	Finalise development of the Leadership Training Program and complete 1st round of training.	Ongoing	100%	93 supervisory staff have completed training. Round 6 commenced 14 April 2015.
Supervisory and managerial staff not having the skills and knowledge of Council's HR Policy and Procedures resulting in litigation, industrial disputes, poor	Moderate	Finalise PEP Project. (1) Policy Enhancement Project currently underway to ensure policy coverage while	30 June 2014	100%	Project completed in early 2014.

Potential Risk	Current Risk Rating	Future Control & Risk Treatment Plans	Due Date	% Comp	Comments
recruitment practices and outcomes, legislative breaches, inappropriate managerial action.		adopting contemporary best practice.			
		Finalise development of the Leadership Training Program	31 May 2014		93 supervisory staff have completed training.
		and complete 1st round of training.			Round 6 commenced 14 April 2015.
Council's payroll function fails to accurately record and process employee wages and entitlements resulting in an inability to pay employees on time and accurately, potential employee dissatisfaction, Industrial disputes, financial impacts and reputation damage.	Moderate	Multiskilling of Administration and HR staff	30 June 2015	97%	Informal multiskilling program in place.

# Legislative Compliance & Standards

Legislative Compliance Matter	Due Date	% Completed	Comments
Prepare and adopt annual 2015/16 operational plan	27 June 2015	50%	Feedback for the current 2014/15 plan sought from LT and no updates to current format were requested. As such, the 2015/16 draft will be prepared and considered in line with budget. GM's will be contacted in May to provide input into the draft 2015/16 plan.
Quarterly written assessment of progress towards implanting the 2014/15 annual operational plan	24 February 2015	100%	Results of the Quarter Two review were presented to Performance and Services Committee 24 February 2015. The report was re- tabled in March for information purposes. Quarter Three results will be presented to May Performance and Services Committee.
Report on the results of the implementation of the annual operational	26 August 2014	100%	The results were included with the Q4 review results
Legislative Compliance Matter	Due Date	% Completed	Comments
---	------------------------	----------------	---
plan			in a single report to Performance and Services Committee 29 July 2014.
Provide for the implementation of the Qld Plan by aligning local government planning to the strategic direction of the Qld Plan	N/A	100%	One page document titled 'Council's Community and Corporate Plan Alignment with the Qld Plan' developed and endorsed by LT during August 2014.
Update of Workplace Health & Safety documents to meet the new legislative requirements	31 December 2015	80%	Documents continue to be updated so that Council remains compliant
Report breaches of the Workplace Health & Safety Act and Regulation as necessary to the division within specified legislative timeframes	As soon as practicable	100%	Council has been compliant in this regard for the current reporting period
Workplace Health and Safety Audit	December 2015	0%	LGW to advise of expected audit date.
Rectification Action Plan (2014 Audit)	As soon as practicable	5%	Work commenced on the RAP from the 2014 Audit.
WHS Infringement Notices issued to Council are remedied within required timeframes	As per notice	100%	No current notices to report.
Performance Reviews	Various		All performance reviews for the period July 2013 to June 2014 were due to Workforce & Strategy 29 August 2014.
			14 out of 491 performance reviews are yet to be completed.
Outdated employee immunisations, tickets, and/or licenses	Various	-	Overdue matters being followed up
Outdated legislative compliance mandatory training and/or qualifications	Various	-	Overdue matters being followed up

#### 3. <u>ACHIEVEMENT OF CAPITAL PROJECTS WITHIN ADOPTED BUDGET AND</u> <u>APPROVED TIMEFRAME</u>

No capital projects are relevant to the Workforce and Strategy Section.

#### 4. <u>ACHIEVEMENT OF OPERATIONAL PROJECTS WITHIN ADOPTED BUDGET</u> <u>AND APPROVED TIMEFRAME</u>

As at period ended March 2015 – 75% of year elapsed.

Project	Explanation
WHS Management System	The system has been loaded onto Council's sever and is being configured. Training has been provided to administrators and will be provided to key uses and flow through to the workforce. It is expected the system with be implemented by the end of April 2015.
Infringement Notice Policy documents	Policy has been finalised and was presented to Performance & Service Committee 26 August 2014. The Enforcement Strategy, which is subordinate to both the policy and the procedure, was finalised in December 2014. The Infringement Notice Administration Procedure is yet to be finalised by the relevant units. It is anticipated that the procedure will be finalised in the coming period.
Strategic Community Plan	LT considered and endorsed a proposal for a new Strategic Community Plan early February 2015. The plan development is now in progress but is slightly behind schedule due to the recent TC Marcia events.
Service Level Review Project	The pre-planning for the first phase of this project has commenced in Parks Maintenance by the GM Community Services and Manager Parks. The official project will not commence until such pre-planning is complete and a solid baseline of data established. Unfortunately, the impact of TC Marcia has meant that the pre-planning stage has been somewhat delayed, however will move forward when time permits. The GM Community Services has indicated to the Project Facilitator that he intends to table information to Council before the official project commences to ensure Councillors have an understanding of international standards for these activities.
Aurion Project	Work continues to progress to schedule with process mapping of Aurion tasks almost completed. The Aurion Consultant is scheduled onsite in early May. A report on outcomes and recommendations is anticipated by the end of June 2015.

#### 5. <u>DELIVERY OF SERVICES AND ACTIVITIES IN ACCORDANCE WITH COUNCIL'S</u> <u>ADOPTED SERVICE LEVELS</u>

Service Delivery Standard	Target	Current Month's Performance
Recruitment positions finalised within 30 working days (refer graph below)	100%	82%
Policies reviewed within 10 working days	100%	100%
Acknowledge job applications within 2 working days of the advertising close date. (as per policy/procedure)	100%	100%
Employee pays processed and paid within 3 working days after the period end date	100%	100%
Payroll accuracy	100%	99.95%
Hazard Inspections completed as per the adopted Matrix	100%	100%

#### **Recruitment Timeframes**

Some delays in recruitment have occurred during the reporting period. These delays are primarily due the delays due to the TC Marcia recovery impacts and the completion of preemployment screening checks.



#### Establishment

FTE Positions	Period	Workforce & Strategy	Council
Starting Point	1 January 2014	30.05	838.9
Same Time Previous Year	31 March 2014	30.27	829.47
Previous Month	28 February 2015	31.44	837
Current Month	31 March 2015	32.44	848

FTE Positions is the total full time equivalent positions approved and recorded in Aurion excluding casual positions and including approved vacancies.

#### Changes to Workforce & Strategy Establishment

• Temporary Administration Officer (3488) created for a three month period to assist during period of staff leave.

The FTE positions of 848 as at March 2015 include the following apprentices and trainees across Council:

Apprentices	Trainees
14	10

#### **Changes to Council Establishment**

Decreases:

Nil to Report

Increases

- Creation of 10 temporary Gardener positions to assist with TC Marcia recovery work.
- 1 temporary Administration Officer in Workforce & Strategy.

#### FTE Positions Internal / External Split

The percentage split for approved full time equivalent positions excluding casual positions and including approved vacancies currently sits at 56% (475) internal and 44% (372) external.

#### Casual Hours – March 2015

There are currently a total of 53 casuals actively employed by Council of which 40 were engaged during the reporting period. The engaged casual employees collectively have worked the total number of 2149.75 hours during the month of March.



#### **Casual Hours by Section – March 2015**

The following list shows the total number of hours worked by casual employees by Section and Unit in the reporting period as provided by the responsible operational area.

Section	Unit	Commentary	No. of hours	Percentage of cost recovery
Arts & Heritage	Art Gallery	Casuals utilised for exhibition pack up/installation and preparation – Bayton Award and Deco exhibitions; Casual staff were also involved in 3 days of workshops organised by the Australian Council for the Arts as part of an Audience Engagement Program; other public program requirements.	275.25	0%
Arts & Heritage	Heritage Services	Shearing shed functions – 2 functions	171	100%

Arts & Heritage	Venue	Casual cleaner working on TC clean-up,	827.25	65.7%
-	Operations	technical staff and stage manager on		
		EVITA, casual gardener on TC clean-up		
		and Beef2015 preparation. Box Office		
		casuals working fee for service for hirers.		
Communities &	City Child	Hours used to cover annual and sick	285.5	
Facilities	Care Centre	leave and rostered days off so that		
		required staff to child ratios can be		
		maintained		
Communities &	Client	Hours used to cover absences of staff due	137	
Facilities	Services	to leave, rostered days off; Saturday shift		
		at NS Library		
Communities &	Facilities	Covering leave and rostered days off,	41.35	
Facilities		Saturday shift at the Library		
Parks	Parks	Casual utilised as backfill for annual leave	190.4	
	Recreation	and training. Role converted to		
	Services	permanent and recruitment finalised.		
Corporate &	Customer	Training required for new Customer	37	
Technology	Service	Service HERO and assistance with rates		
	Centre	period.		
Regional		Assist with inaugural events including	140	
Promotions		customer service, public relations and		
		marketing support.		
Workforce &	Human	Casual utilised to assist with staff	45	
Strategy	Resources &	shortages in Administration and Payroll.		
	Payroll			
TOTAL			2149.75	

The above casual hours for March 2015 by employment type includes the following HERO hours.

Section	Unit	No. of hours
Parks	Parks Recreation Services	5.5
Corporate & Technology	Customer Service Centre	37
Regional Promotions		140
Workforce & Strategy	Human Resources & Payroll	45
TOTAL		227.5

### **FINANCIAL MATTERS**

Financial performance as expected for reporting period.



#### End of Month General Ledger - (Operating Only) - WORKFORCE & STRATEGY

	Δs	At End Of Mar	ch		011201	
Report Run: 16-Apr-20	15 14:09:00 Exclu	ides Nat Accs: 2801	2 2914 2917 29	74		
report ten. 197 pr 20	Adopted Adopted Budget Budget (Pro Rata YTD)		YTD Actual	YTD Commit + YTD Actual Actual		On target
	\$	\$	\$	\$	%	75% of Year Gon
WORKFORCE & STRATEGY						
Workforce & Strategy						
2 - Expenses	328,610	246,458	276,914	277,674	84%	x
3 - Transfer / Overhead Allocation	0	0	2,057	2,057	0%	x
Total Unit: Workforce & Strategy	328,610	246,458	278,97 <b>1</b>	279,730	85%	x
Corporate Improvement & Strategy						
1 - Revenues	(3,500)	(2,625)	(2,692)	(2,692)	77%	1
2 - Expenses	477,643	358,232	281,591	285,591	60%	~
3 - Transfer / Overhead Allocation	13,500	10,125	8,070	8,070	60%	~
Total Unit: Corporate Improvement & Strategy	487,643	365,732	286,969	290,969	<b>60</b> %	~
Human Resources						
1 - Revenues	0	0	(1,161)	(1,161)	0%	1
2 - Expenses	1,712,914	1,284,686	1,056,394	1,068,915	62%	~
3 - Transfer / Overhead Allocation	8,700	6,525	7,422	7,422	85%	x
Total Unit: Human Resources	1,721,614	1,291,211	1,062,655	1,075,176	62%	~
Safety & Training						
1 - Revenues	(37,000)	(27,750)	(41,958)	(41,958)	113%	1
2 - Expenses	1,221,316	915,987	756,264	877,045	72%	~
3 - Transfer / Overhead Allocation	65,000	48,750	44,296	44,296	68%	1
Total Unit: Safety & Training	1,249,316	936,987	758,602	879,383	70%	~
						,
Grand Lotal:	3,787,183	2,840,387	2,387,197	2,525,259	67%	v

# CORPORATE SERVICES DEPARTMENT -MONTHLY OPERATIONAL REPORT

# Corporate & Technology Monthly Report - March 2015

Meeting Date: 28 April 2015

**Attachment No: 3** 

# MONTHLY OPERATIONS REPORT CORPORATE & TECHNOLOGY SECTION

# Period Ended March 2015

## VARIATIONS, ISSUES AND INNOVATIONS

#### Section Update

#### RTI / IP Application Status:

Four new applications were received under the Right to Information Act/Information Privacy Act, two were completed, one was withdrawn, leaving four outstanding applications. All applications were completed within legislated timeframes. No documents were released administratively this month. No external reviews were received for the month, but one outstanding review was completed, leaving three outstanding. All current applications are progressing in accordance with legislative timeframes.

#### Innovations

#### Doing Business with Council Forum

The Doing Business with Council 2015 Forum was conducted on Wednesday 25 March 2015, with a total of 120 suppliers in attendance.

The objective of the forum was for suppliers to gain an understanding of:

- Why the bureaucracy;
- Council's procurement processes;
- Navigating the tender document;
- How tenders are evaluated and awarded; and
- Hints to improve your tender submission.

The forum agenda also included presentations from State Development and WHSQ representatives.

By all reports the forum was well received.

#### Buying Local Outcomes

Analysis of Council's goods and services expenditure over the period 1 February to 31 March 2015:

- Total spend \$18.2M
- Local spend \$12.8M (<u>70%</u>)
- CQ spend \$636K

This expenditure on Council's goods and service includes the T.C. Marcia details available at the time of analysis. The 70% local spend is an excellent result, noting that there will always be a range of goods and services that are not readily available within the region.

# Improvements / Deterioration in Levels of Services or Cost Drivers

Nil to report

# LINKAGES TO OPERATIONAL PLAN

## 1. COMPLIANCE WITH CUSTOMER SERVICE REQUESTS

The response times for completing the predominant customer requests in the reporting period for <u>March 2015</u> are as below:

	Balance B/F	Completed in Current Mth	Current M Req	onth NEW uest	TOTAL INCOMPLETE REQUESTS BALANCE	Under Long Term Investigation	Completion Standard (days)	Avg Completion Time (days) Current Mth	Avg Completion Time (days) 6 Months	Avg Completion Time (days) 12 Months	Avg Duration (days) 12 Months (complete and incomplete)	Avg Completion Time (days) Q3
Accounts Payable Enquiry	0	0	1	1	0	0	2	<b>2</b> .00	<u> </u>	<mark>0</mark> 1.25	0.33	0.67
Bookings Enquiry	0	0	3	3	0	0	3	• 1.33	• 2.06	<mark>0</mark> 2.56	1.61	<u> </u>
Insurance: Mower / Slasher / Whipper / Snipper	1	0	4	1	4	0	90	9.00	<b>0</b> 10.75	<b>0</b> 20.33	19.97	<mark>0</mark> 5.57
Insurance: Personal Accident / Injury	25	2	2	0	25	0	120	<b>0</b> 1.00	<u> </u>	<mark>0</mark> 2.78	93.38	<mark>0</mark> 1.00
Insurance: Public Liability / Property Damage Public Property	16	7	46	37	18	2	90	<b>0</b> 2.41	<b>2</b> .53	<b>3</b> .83	7.27	<b>2</b> .41
Leased Premises - General Enquiry	0	0	2	2	0	2	5	<b>0</b> 1.00	<b>0</b> 1.57	• 1.65	1.00	<mark>0</mark> 1.50
Rates Searches	9	9	131	127	4	0	3	<b>0</b> 1.60	<u> </u> 1.63	<b>0</b> 1.63	1.40	<b>0</b> 1.63

## 2. <u>COMPLIANCE WITH STATUTORY AND REGULATORY REQUIREMENTS</u> INCLUDING SAFETY, RISK AND OTHER LEGISLATIVE MATTERS

# Safety Statistics

The safety statistics for the reporting period are:

	Third Quarter					
	Jan	Feb	March			
Number of Lost Time Injuries	0	0	0			
Number of Days Lost Due to Injury	11	0	2			
Total Number of Incidents Reported	1	5	0			
Number of Incomplete Hazard Inspections	0	2	2			

#### Risk Management Summary

Section Risk Register (excludes risks accepted/ALARP)

Potential Risk	Current Risk Rating	Future Control & Risk Treatment Plans	Due Date	% Compl eted	Comments
Corporate Recordkeeping software (ECM) doesn't meet strategic records management requirements in relation to systematic electronic records archival and disposal resulting in failure to dispose/archive eRecords.	High	The Records Archiving, Retention and Disposal (RARRD) project commenced in 2012 to develop a corporate solution to cover eRecords (including more effective hardcopy disposal recording).	TBA	30%	On hold due to higher project priorities. ECM upgrade planned for May 2015 implementation is expected to include functionality to better facilitate the archive and disposal functions for electronic records.
Operational degradation or failure of Council's Two-way radio communications system resulting in failed regional communications for daily operations and emergency disaster management.	High	Commence planning and implement a replacement RRC regional two-way radio communications system. Two stage plan-1. Replace the Rockhampton City Two-way system. 2. Integrated regional solution taking in the Gracemere infrastructure.	TBD	5%	Currently assessing available solutions leading to system design.

#### Legislative Compliance & Standards

Legislative Compliance Matter	Due Date	% Completed	Comments
A local government must review its procurement policy annually.	30/06/15	0%	To be completed annually in June.

#### 3. <u>ACHIEVEMENT OF CAPITAL PROJECTS WITHIN ADOPTED BUDGET AND</u> <u>APPROVED TIMEFRAME</u>

Project	Start Date	Expected Completion Date	Status	Budget Estimate	YTD actual (incl committals)			
CAPITAL WORKS PROGRAM								
FLEET (CP440)								
Fleet Asset Renewal Program	1/07/2014	30/06/2015	Ongoing	\$5,887,500	\$5,492,753			
Comment: YTD represents 93 Budget includes 2013/14 carry	% of budget over budget	expenditure a	and is made	e up of actuals	and committals.			
INFORMATION TECHNOLOG	GY (CP230)							
IT Asset Renewal & Upgrade Program	1/07/2014	30/06/2015	Ongoing	\$1,664,059	\$943,675			
Comment: YTD represents 57% of budget expenditure and includes committals. Budget includes 2013/14 carryover budget.								
BUSINESS SUPPORT & DEVELOPMENT (CP630)								
Property Sales	1/07/2014	30/06/2015	Ongoing	-\$278,084	-\$404,389			
Comment:	Comment:							

#### 4. <u>ACHIEVEMENT OF OPERATIONAL PROJECTS WITHIN ADOPTED BUDGET AND</u> <u>APPROVED TIMEFRAME</u>

As at period ended <u>March 75%</u> of year elapsed.

Project 2014/15		Actual	% budget	Explanation	
Budget		(incl. committals)	expended		
Customer Service After Hours Operation	\$65,000	\$40,351	62%	Propel after hours call centre service.	

Project	Project Start Date	Project Completion Date	% Completed	Comments
Implementation of OIC RTI / IP Review Recommendations.	April 2014	June 2015	90%	12 of 14 recommendations completed; with 1 partially completed and 1 commenced in Mar 15.
Review of Councils Contract Manual (Supply Chain Website).	June 2014	June 2015	40%	Post de- amalgamation review and update.
Information and Communication Technology Strategic Plan 2015-20 development.	July 2014	Dec 2014	100%	ICT Strategic Plan addresses IT Mobility, eServices and Corporate System Consolidation. Strategy Adopted

## 5. <u>DELIVERY OF SERVICES AND ACTIVITIES IN ACCORDANCE WITH COUNCIL'S</u> <u>ADOPTED SERVICE LEVELS</u>

Service Delivery Standard	Target	Current Performance
IT support services provided within service levels outlined in the IT Service Catalogue.	95%	94%
Ensure availability of system up-time during core business hours (excluding planned outages).	99%	100%
Maintain the ratio of customer queries satisfied by Customer Service Officers, without referral to departments.	80%	79%
Customer Service Call Centre answering 75% of incoming calls within 45 seconds.	75%	65%
Process records on the day of receipt as per Recordkeeping Charter.	95%	100%
Process Right to Information/Information Privacy (RTI/IP) applications within legislative timeframes.	100%	100%
Manage centralised tendering and contracting functions in accordance with legislative requirements and Council policy.	100%	100%
Ensure supplier payments are made within stated trading terms.	90%	88%
Ensure staff purchasing activity is compliant with legislation and policy.	100%	100%

Service Delivery Standard	Target	Current Performance
Ensure top 100 suppliers by dollar value under formal purchasing agreements (contracts).	90%	90%
Maximise Council property occupancy rates.	98%	100%
Ensure tenanted properties in any month, have current lease agreements and public liability insurance.	80%	84%
Process insurance claims within procedural timeframes.	100%	100%
Maintenance of the risk monitoring and reporting regime by providing a quarterly risk report to the Council and Leadership Team on all current high and very high risks assessed as not ALARP (unacceptable).	100%	100%

### **Fleet Services**

Ensure internal plant hire operations deliver budgeted net surplus.



Plant Hire Operations Budget (Surplus)	\$ 9,541,500
Year to Date (Surplus)	\$ 7,999,497

#### **Procurement & Logistics**

Contracts Awarded for March: Qty 5

11488 – ITQ S & D of Rising Main Sewer Reticulation at Kershaw Gardens – NQ Water Services Pty Ltd - \$130,260

11509 – Mt Morgan WTP Storage Area – Bell Thomasson Builders - \$33,930

11494 - Construction of New Gracemere Hall Carpark – Brian Fogarty - \$56,139

11543 - NDRRA Program Management and Coordination - Shepherd Services Pty Ltd - \$50,0000

11526 - Arborist Services for Restoration of Botanic Gardens - Arbor Australis Consulting, Power Clear - Schedule of Rates

Customer Requests Completed Monthly & Top 5 Customer Requests												
	April	Мау	June	July	August	September	October	November	December	January	February	March
Requests Logged	3678	3540	3028	3733	3517	3667	3415	3171	2717	3747	3702	4643
Same month Completed	2751	2792	2450	3077	2830	2969	2680	2469	2710	2797	2845	3651
% completed same month	75%	79%	80%	82%	80%	81%	78%	78%	99%	74%	76%	78%
Completed Total for Month	3486	3858	3037	3925	3422	3383	3325	3132	2749	3276	3569	4315
Total Pending	2464	2073	2027	1627	1723	1919	1941	1912	1888	2332	2393	2649
Top 5 Requests for Month	Mossies W/Animal Rates Inf Enq Cdec	D/Planner W/Leak T/Trim COA Bin RRC	D/Planner W/Animal W/ Leak Meter Mtce Facilities Mgt	Inf Enq W/Animal D/Plan Cdec W/Leak	Inf Enq D/Planner W/Animal T/Trim W/Leak	Meter Mtce D/Planner C/Dec Park Gen W/Leak	Inf Enq D/Plan Park Gen Rates T/Trim	Inf Enq D/Plan Meter Mtce W/Leak C/Dec	C/Dec W/Leak D/Plan Inf Enq T/Trim	T/Trim Park Gen D/Plan W/Leak Pothole	T/Trim W/Leak Park Gen D/Planner Bin RRC	D/Water W/Leak P/Disaster Bin RRC D/Plan

Total uncompleted customer requests up to 3 months old:	1891
Total uncompleted customer requests between 3 to 6 months old:	298
Total uncompleted customer requests greater than 6 months old:	460

Conquest Work Order & Investigation Long Term up to 3 i Conquest Work Order & Investigation Long Term between 3 to 6 i Conquest Work Order & Investigation Long Term greater than 6 in

months old:	745
months old:	168
months old:	274

Request Completed: Requested task or action has been completed (not just work order raised), or complaint has been investigated, action taken and correspondance finalised.

Conquest Work Order: A Work Order has been raised for maintenance, repair or future planned action.

Investigation Long Term: Requested task, action or complaint assigned to internal or external investigation, may include, but not limited to: Insurance, Planning, Legal, Civil or Domestic matter

Key:	P/Disaster - Parks Disaster Related Request	Inf Enq - Infringement Enquiry - Local Laws	D/Water - Drinking Water Quality		
	D/Plan - Duty Planner	T/Trim - Tree Trim	W/Leak - Water Leak		
	Bin RRC - Replace Bin RRC	Meter Mtce - Meter Maintenance	Pothole - Sealed Roads		

# FINANCIAL MATTERS

Operational Budget Status for month ending March 2015

	Adopted Budget	Adopted Budget (Pro Rata YTD)	YTD Actual	YTD Commit + Actual	Var	On target
	\$	\$	\$	\$	%	75% of Year Gone
CORPORATE AND TECHN						Conto
IT Services						
1 - Revenues	(100,658)	(75,494)	(67,014)	(67,014)	67%	x
2 - Expenses	5,124,996	3,843,747	3,840,847	4,174,077	81%	×
3 - Transfer / Overhead Allocation	21,525	16,144	15,799	15,799	73%	$\checkmark$
Total Unit: IT Services	5,045,863	3,784,397	3,789,631	4,122,862	82%	×
Coordinator - Technology Inf	ra					
2 - Expenses	195,261	146,446	104,691	104,691	54%	~
3 - Transfer / Overhead Allocation	0	0	(2,386)	(2,386)	0%	1
Total Unit: Coordinator - Technology Infra	195,261	146,446	102,305	102,305	52%	$\checkmark$
Records Management						
1 - Revenues	(12,000)	(9,000)	(12,283)	(12,283)	102	$\checkmark$
2 - Expenses	720,387	540,290	519,758	519,859	% 72%	1
3 - Transfer / Overhead Allocation	0	0	16	16	0%	x
Total Unit: Records Management	708,387	531,290	507,491	507,593	72%	$\checkmark$
Property & Insurance						
1 - Revenues	(599,041)	(449,281)	(549,948)	(549,948)	92%	1
2 - Expenses	2,609,865	1,957,398	2,354,025	2,389,480	92%	x
3 - Transfer / Overhead Allocation	9,738	7,304	5,907	5,907	61%	$\checkmark$
Total Unit: Property & Insurance	2,020,562	1,515,421	1,809,984	1,845,439	91%	×
Fleet Services						
1 - Revenues	(252,000)	(189,000)	(230,584)	(230,584)	92%	$\checkmark$
2 - Expenses	13,396,080	10,047,060	9,386,295	9,947,735	74%	$\checkmark$
3 - Transfer / Overhead Allocation	(16,562,000)	(12,421,500)	(13,179,691)	(13,179,691)	80%	$\checkmark$
Total Unit: Fleet Services	(3,417,920)	(2,563,440)	(4,023,980)	(3,462,540)	101 %	$\checkmark$
Corporate & Technology						
1 - Revenues	0	0	(340)	(340)	0%	$\checkmark$
2 - Expenses	665,201	498,901	417,837	441,011	66%	$\checkmark$
3 - Transfer / Overhead Allocation	0	0	1,000	1,000	0%	x
Total Unit: Corporate & Technology	665,201	498,901	418,497	441,672	66%	$\checkmark$
Procurement & Logistics						
1 - Revenues	(850)	(638)	(150)	(150)	18%	x
2 - Expenses	1,429,848	1,072,386	1,044,565	1,046,242	73%	1
3 - Transfer / Overhead Allocation	35,086	26,315	22,299	22,299	64%	$\checkmark$
Total Unit: Procurement & Logistics	1,464,084	1,098,063	1,066,714	1,068,392	73%	$\checkmark$
Customer Service						
1 - Revenues	(262,000)	(196,500)	(163,200)	(163,200)	62%	×
2 - Expenses	1,719,530	1,289,647	1,192,638	1,194,354	69%	$\checkmark$
3 - Transfer / Overhead Allocation	0	0	198	198	0%	×
Total Unit: Customer Service	1,457,530	1,093,147	1,029,636	1,031,352	71%	$\checkmark$
Grand Total:	8,138,968	6,104,226	4,700,279	5,657,074	70%	· /

# 10 NOTICES OF MOTION

Nil

# 11 URGENT BUSINESS/QUESTIONS

Urgent Business is a provision in the Agenda for members to raise questions or matters of a genuinely urgent or emergent nature, that are not a change to Council Policy and can not be delayed until the next scheduled Council or Committee Meeting

# 12 CLOSED SESSION

In accordance with the provisions of section 275 of the *Local Government Regulation 2012*, a local government may resolve to close a meeting to the public to discuss confidential items, such that its Councillors or members consider it necessary to close the meeting.

#### RECOMMENDATION

THAT the meeting be closed to the public to discuss the following items, which are considered confidential in accordance with section 275 of the *Local Government Regulation* 2012, for the reasons indicated.

#### 13.1 Deputation - Rockhampton Saloon Car Club Inc.

This report is considered confidential in accordance with section 275(1)(h), of the *Local Government Regulation 2012*, as it contains information relating to other business for which a public discussion would be likely to prejudice the interests of the local government or someone else, or enable a person to gain a financial advantage.

#### 13.2 Deputation - Department of State Development

This report is considered confidential in accordance with section 275(1)(h), of the *Local Government Regulation 2012*, as it contains information relating to other business for which a public discussion would be likely to prejudice the interests of the local government or someone else, or enable a person to gain a financial advantage.

#### 13.3 Legal Matters as at 31 March 2015

This report is considered confidential in accordance with section 275(1)(f), of the *Local Government Regulation 2012*, as it contains information relating to starting or defending legal proceedings involving the local government.

#### 13.4 NRL game at Browne Park

This report is considered confidential in accordance with section 275(1)(h), of the *Local Government Regulation 2012*, as it contains information relating to other business for which a public discussion would be likely to prejudice the interests of the local government or someone else, or enable a person to gain a financial advantage.

#### 13.5 Economic Development Unit

This report is considered confidential in accordance with section 275(1)(h), of the *Local Government Regulation 2012*, as it contains information relating to other business for which a public discussion would be likely to prejudice the interests of the local government or someone else, or enable a person to gain a financial advantage.

## **13 CONFIDENTIAL REPORTS**

### 13.1 DEPUTATION - ROCKHAMPTON SALOON CAR CLUB INC.

File No:	456
Attachments:	1. Letter from Rockhampton Saloon Car Club Inc.
	2. Previous Report - Rockhampton Saloon Car Club Trustee Permit Rockhampton Showgrounds
Authorising Officer:	Michael Rowe - General Manager Community Services
Author:	Peter Owens - Manager Arts and Heritage

This report is considered confidential in accordance with section 275(1)(h), of the *Local Government Regulation 2012*, as it contains information relating to other business for which a public discussion would be likely to prejudice the interests of the local government or someone else, or enable a person to gain a financial advantage.

#### SUMMARY

Members of the Rockhampton Saloon Car Club Inc. will attend the meeting at 9.00am to make a presentation to Council on Council charges for the Rockhampton Showgrounds.

#### 13.2 DEPUTATION - DEPARTMENT OF STATE DEVELOPMENT

File No:	4932
Attachments:	Nil
Authorising Officer:	<b>Robert Holmes - Acting Chief Executive Officer</b>
Author:	Rick Palmer - Manager Economic Development

This report is considered confidential in accordance with section 275(1)(h), of the *Local Government Regulation 2012*, as it contains information relating to other business for which a public discussion would be likely to prejudice the interests of the local government or someone else, or enable a person to gain a financial advantage.

#### SUMMARY

Department of State Development representative will be attending the meeting to outline the services available and highlight the key projects the Department is currently working on.

#### 13.3 LEGAL MATTERS AS AT 31 MARCH 2015

File No:	1392
Attachments:	1. Legal Matters - March 2015
Authorising Officer:	Tracy Sweeney - Manager Workforce and Strategy Ross Cheesman - General Manager Corporate Services
Author:	Kerrie Barrett - Coordinator Corporate Improvement & Strategy

This report is considered confidential in accordance with section 275(1)(f), of the *Local Government Regulation 2012*, as it contains information relating to starting or defending legal proceedings involving the local government.

#### SUMMARY

Coordinator Corporate Improvement & Strategy presenting an update of current legal matters that Council is involved in as at 31 March 2015.

#### 13.4 NRL GAME AT BROWNE PARK

File No:	7771
Attachments:	Nil
Authorising Officer:	Robert Holmes - Acting Chief Executive Officer
Author:	Rick Palmer - Manager Economic Development

This report is considered confidential in accordance with section 275(1)(h), of the *Local Government Regulation 2012*, as it contains information relating to other business for which a public discussion would be likely to prejudice the interests of the local government or someone else, or enable a person to gain a financial advantage.

#### SUMMARY

This report outlines a request for support received from the CQ NRL Bid for an NRL game to be played at Browne Park, Rockhampton in August 2015.

## 13.5 ECONOMIC DEVELOPMENT UNIT

File No:	8355
Attachments:	Nil
Authorising Officer:	Robert Holmes - Acting Chief Executive Officer
Author:	Rick Palmer - Manager Economic Development

This report is considered confidential in accordance with section 275(1)(h), of the *Local Government Regulation 2012*, as it contains information relating to other business for which a public discussion would be likely to prejudice the interests of the local government or someone else, or enable a person to gain a financial advantage.

#### SUMMARY

This report outlines the work in which the Economic Development Unit has been involved since 10 March 2015.

# 14 CLOSURE OF MEETING