

**QUEENSLAND FLOODS COMMISSION OF INQUIRY**

**Requirement to Provide Written Information to Commission of Inquiry**  
**Andrew William FULTON, Director Infrastructure & Planning Services**  
**Bundaberg Regional Council**

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In accordance with *Section 5 of the Commissions of Inquiry Act 1950 (Qld)*,  
I, Andrew William FULTON, Director Infrastructure & Planning Services,  
Bundaberg Regional Council, provide the following statement of  
information as directed by letter dated 25 August 2011 (Reference  
1683924).

Statement Prepared By:-

**Mr Andrew William FULTON**  
**Director Infrastructure & Planning Services**  
**Bundaberg Regional Council**

....

Signature

7 September 2011

Dated

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### **PART A – Reference 1683924**

The Council's planning scheme policy or other Council policy about sewerage and stormwater drainage infrastructure applicable to the following suburbs ('the Relevant Suburbs') at any time since 1 October 2010:-

Question 1

- |    |                  |    |                   |
|----|------------------|----|-------------------|
| a. | Avoca;           | m. | Drinan;           |
| b. | Avondale;        | n. | Electra;          |
| c. | Bargara;         | o. | Gin Gin;          |
| d. | Bargara Lakes    | p. | Gooburrum;        |
| e. | Branyan          | q. | Millbank;         |
| f. | Bucca;           | r. | Moore Park Beach; |
| g. | Bundaberg;       | s. | Mundubbera;       |
| h. | Bundaberg East;  | t. | North Isis;       |
| i. | Bundaberg North; | u. | Redridge          |
| j. | Bundaberg South; | v. | Thabeban;         |
| k. | Bundaberg West;  | w. | Woongarra         |
| l. | Bungadoo;        |    |                   |

The Council's drainage plans applicable to the Relevant Suburbs at any time since 1 October 2010;

Question 2

The standards applicable to property owners or developers who seek to connect to a Council stormwater drain or sewerage infrastructure owned the Council since 1 October 2010;

Question 3

Whether and how the Council monitors the capacity of its stormwater drainage and sewerage infrastructure, and in particular, assesses the suitability of its capacity for existing and future needs;

Question 4

The existing and future needs for stormwater drainage or sewerage infrastructure within the Relevant Suburbs, including any report, study, investigation or briefing note prepared or commissioned by Council;

Question 5

The use of backflow prevention devices, including any plans to expand, upgrade or investigate the use of these devices, in the Relevant Suburbs;

Question 6

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The effect of the flooding, including any investigations, studies, reports or briefing notes about this, which occurred in the months of December 2010 and January 2011 on the following:-

Question 7

- a. the Council's waste water treatment plants and their operation; and
- b. surrounding areas

Any steps the Council has taken in response to the flooding referred to in 7 (above), including any investigations, studies, reports, briefing notes or plans to upgrade the plants whether prepared or commissioned by the Council.

Question 8

## **ATTACHMENTS**

Name

Attachment A .....	<u>Drainage Drawings – Avoca</u>
Attachment B .....	<u>Drainage Plans – Avondale</u>
Attachment C .....	<u>Drainage Plans – Bargara</u>
Attachment D .....	<u>Drainage Plans – Bargara Lakes</u>
Attachment E .....	<u>Drainage Plans – Branyan</u>
Attachment F .....	<u>Drainage Plans – Bundaberg</u>
Attachment FI .....	<u>Drainage Drawings – Bundaberg Central</u>
Attachment G .....	<u>Drainage Plans – Bundaberg East</u>
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Attachment L .....	<u>Drainage Plans – Gin Gin</u>
Attachment M .....	<u>Drainage Plans – Gooburrum</u>
Attachment N .....	<u>Drainage Plans – Millbank</u>
Attachment O .....	<u>Drainage Plans – Moore Park Beach</u>
Attachment P .....	<u>Drainage Plans – Redridge</u>
Attachment Q .....	<u>Drainage Plans – Thabeban</u>
Attachment R .....	<u>Drainage Plans – Woongarra</u>
Attachment S .....	<u>Bundaberg City 2010-11 Flood spot levels</u>
Attachment T .....	<u>Burnett River Flood Levels Metadata</u>
Attachment U .....	<u>Flood Overview Notes</u>
Attachment V .....	<u>Bundaberg Engineering Design Planning Scheme Policy</u>
Attachment W .....	<u>Bundaberg Engineering Design Planning Scheme Policy –</u> <u>Standard Drawings</u>
Attachment X .....	<u>Burnett Shire Development Works Planning Scheme Policy</u>
Attachment Y .....	<u>Burnett Shire Development Works Guidelines</u>
Attachment Z .....	<u>Isis Shire Planning Scheme Policy 6/07 – Development Standards</u>
Attachment AA .....	<u>Kolan Shire Policy 5 – Design and Construction Standards</u> <u>for Infrastructure Works</u>

## ATTACHMENTS

Name

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Attachment AB .....	<u>Bundaberg City Planning Scheme</u>
Attachment AC .....	<u>Burnett Shire Planning Scheme</u>
Attachment AD .....	<u>Isis Shire Planning Scheme</u>
Attachment AE .....	<u>Kolan Shire Planning Scheme</u>
Attachment AF .....	<u>Bundaberg City Drainage Analysis and Catchment Management Plan 1996</u>
Attachment AG .....	<u>Bundaberg Regional Council Saltwater Creek Flood Study February 2010</u>
Attachment AH .....	<u>Coastal Small Steams Flood Study – Final Report November 2010</u>
Attachment AI .....	<u>Coastal Small Steams Flood Study – Final Report – Drawing Addendum Nov 2010</u>
Attachment AJ .....	<u>Coastal Small Steams Flood Study – Broad Scale Assessment Modelling Results Nov 2010</u>
Attachment AK .....	<u>Burnett Shire Aus-Spec#1 Extract – Stormwater</u>
Attachment AL .....	<u>Burnett Shire Aus-Spec#1 Extract – Sewer</u>
Attachment AM .....	<u>Queensland Urban Drainage Manual</u>
Attachment AN .....	<u>Bundaberg Regional Council – Stormwater Overview Plans</u>
Attachment AO .....	<u>Catchment Plan Bundaberg</u>
Attachment AP .....	<u>Bundaberg Sewerage Planning Report 2008</u>
Attachment AQ .....	<u>Bundaberg City Council Planning Strategy for Bundabergs Wastewater Plants</u>
Attachment AR ...	<u>Wastewater Treatment and Effluent Management Master Plan 2009</u>
Attachment AS .....	<u>Coastal Sewerage Reticulation Planning 2010</u>
Attachment AT .....	<u>Gin Gin Sewerage Treatment Plant Report 2009</u>
Attachment AU .....	<u>10 Year Forward Capital Stormwater Program</u>
Attachment AV .....	<u>2011/2012 Drainage Capital Works List</u>
Attachment AW .....	<u>10 Year Forward Capital Sewerage Program</u>

**PART A**

(Reference 1683924)

1. **The Council's planning scheme policy or other Council policy about sewerage and stormwater drainage infrastructure applicable to the following suburbs ('the Relevant Suburbs') at any time since 1 October 2010:-**

- |                            |                             |
|----------------------------|-----------------------------|
| a. <b>Avoca;</b>           | m. <b>Drinan;</b>           |
| b. <b>Avondale;</b>        | n. <b>Electra;</b>          |
| c. <b>Bargara;</b>         | o. <b>Gin Gin;</b>          |
| d. <b>Bargara Lakes;</b>   | p. <b>Gooburrum;</b>        |
| e. <b>Branyan;</b>         | q. <b>Millbank;</b>         |
| f. <b>Bucca;</b>           | r. <b>Moore Park Beach;</b> |
| g. <b>Bundaberg;</b>       | s. <b>Mundubbera;</b>       |
| h. <b>Bundaberg East;</b>  | t. <b>North Isis;</b>       |
| i. <b>Bundaberg North;</b> | u. <b>Redridge;</b>         |
| j. <b>Bundaberg South;</b> | v. <b>Thabeban;</b>         |
| k. <b>Bundaberg West;</b>  | w. <b>Woongarra;</b>        |
| l. <b>Bungadoo;</b>        |                             |

1. In response to this, the following is provided (reply should be read in conjunction with answer to Question 3):-

1.2 Bundaberg City

1.2.1 The Bundaberg Engineering Design Planning Scheme Policy (Attachment V) and Standard Drawings (Attachment W) contained within the Planning Scheme for Bundaberg City (Attachment AB) states that 'The policy shall be used in assessment and approval of Operational Works applications made to Council.' Additionally, the Reconfiguring a Lot Code and Flood Management Code refer to the policy when nominating particular design and construction standards.

1.2.2 This Policy applies to the following relevant suburbs:-

- Avoca
- Branyan (part)
- Bundaberg
- Bundaberg East
- Bundaberg North
- Bundaberg South
- Bundaberg West
- Millbank
- Thabeban
- Woongarra (part)

### 1.3 Burnett Shire

1.3.1 The Development Works Planning Scheme Policy (Attachment X) and Development Works Guidelines (Attachment Y) contained within the Planning Scheme for Burnett Shire (Attachment AC) states that *'The purpose of this policy is to communicate the Local Government's position with respect to development works by stating the information the Local Government may request from an applicant to assist it in making an Operational Works Application'*. Additionally, the Development Infrastructure Works Code refers to the policy when nominating particular design and construction standards.

1.3.2 This Policy applies to the following relevant suburbs:-

- Avondale
- Bargara
- Bargara Lakes
- Branyan (part)
- Bucca
- Electra
- Gooburrum
- Moore Park Beach
- Woongarra (part)



#### 1.4 Isis Shire

1.4.1 Planning Scheme Policy 6/07 – Development Standards (Attachment Z) contained within the Planning Scheme for Isis Shire (Attachment AD) states that *'This document shall provide the necessary requirements associated with the Operational Works design and construction.'* Additionally, the Infrastructure Code refers to the policy when nominating particular design and construction standards.

1.4.2 This Policy applies to the following relevant suburbs:-

- North Isis
- Redridge

#### 1.5 Kolan Shire

1.5.1 Policy 5 – Design and Construction Standards for Infrastructure Works (Attachment AA) contained within the Planning Scheme for Kolan Shire (Attachment AE) provide standards, specifically standard drawing, as nominated by the Infrastructure Works Code.

1.5.2 This Policy applies to the following relevant suburbs:-

- Bungadoo
- Drinan
- Gin Gin

**2. The Council's drainage plans applicable to the Relevant Suburbs at any time since 1 October 2010;**

2.1 To assist the Commission, overview plans of the Regions stormwater pipe drainage are provided in addition to all drainage plans as applicable to the relevant suburbs (Attachments).

2.2 Overview Plans (Attachment AN) – Bundaberg Regional Council – Stormwater Overview Plans

2.3 Overview Plan (Attachment AO) – Catchment Plan Bundaberg

2.4 Council's drainage plans applicable to the relevant suburbs are listed below:-

**2.1.1 Avoca**

Attachment A – Drainage Drawings – Avoca

**2.1.2 Avondale**

Attachment B – Drainage Drawings – Avondale

**2.1.3 Bargara**

Attachment C – Drainage Drawings – Bargara

**2.1.4 Bargara Lakes**

Attachment D – Drainage Drawings – Bargara Lakes

**2.1.5 Branyan**

Attachment E – Drainage Drawings – Branyan

**2.1.6 Bucca**

None Available.

**2.1.7 Bundaberg**

Attachment F – Drainage Plans – Bundaberg

Attachment F1 – Drainage Plans – Bundaberg Central

**2.1.8 Bundaberg East**

Attachment G – Drainage Plans – Bundaberg East

**2.1.9 Bundaberg North**

Attachment H – Drainage Plans – Bundaberg North

**2.1.10 Bundaberg South**

Attachment I – Drainage Plans – Bundaberg South

**2.1.11 Bundaberg West**

Attachment J – Drainage Plans – Bundaberg West

**2.1.12 Bungadoo**

None Available.

**2.1.13 Drinan**

None Available.

**2.1.14 Electra**

Attachment K – Drainage Plans – Electra

**2.1.15 Gin Gin**

Attachment L – Drainage Plans – Gin Gin

**2.1.16 Gooburrum**

Attachment M – Drainage Plans – Gooburrum

2.1.17 **Millbank**

Attachment N – Drainage Plans – Millbank

2.1.18 **Moore Park Beach**

Attachment O – Drainage Plans – Moore Park Beach

2.1.19 **Mundubbera**

Not within Bundaberg Regional Council boundaries.

2.1.20 **North Isis**

None Available.

2.1.21 **Redridge**

Attachment P – Drainage Plans – Redridge

2.1.22 **Thabeban**

Attachment Q – Drainage Plans – Thabeban

2.1.23 **Woongarra**

Appendix R – Drainage Plans – Woongarra

**3. The standards applicable to property owners or developers who seek to connect to a Council stormwater drain or sewerage infrastructure owned the Council since 1 October 2010;**

3.1 Stormwater

3.1.1 In respect to the standards applicable to property owners or developers who seek to connect to a Council stormwater drain owned by Council, the following is provided:

3.1.1.1 Bundaberg City Council – refer extract of the Bundaberg City Engineering Design Planning Scheme Policy – Volume 1 (Stormwater) (Attachment V). This volume also refers to the Queensland Urban Drainage Manual Volume 1 and 2 (Attachment AM), Water Resources Commission, Local Government Engineers Association, Brisbane 1992. However, Bundaberg Regional Council defaults to the later version of Volume 1 - February 2007;

3.1.1.2 Burnett Shire Council, Isis Shire and Kolan Planning Scheme – refer extract of Burnett Shire Council's AUS-SPEC #1 – Chapter D5 – Stormwater Drainage Design (Attachment AK). Note:

3.1.1.2.1 Isis Shire Council in its Planning Scheme Policy 6/07 refers to AUS-SPEC #1 (Isis Shire Council) for drainage - Council defaults to the Burnett Shire Council version of AUS-SPEC #1; and

3.1.1.2.2 Kolan Shire Council in its Planning Scheme Policy 5 refers to AUS-SPEC #1 for drainage - Council defaults to the Burnett Shire Council version of AUS-SPEC #1.

3.1.1.3 Isis Shire Council section 6.6 of its Planning Scheme Policy 6/07 provides for major storm events for  $Q_{100}$  ARI for all development types except rural where the major event is  $Q_{50}$  ARI;

### 3.2 Sewerage

3.2.1 In respect to the standards applicable to property owners or developers who seek to connect to a Council sewerage infrastructure owned by Council, the following is provided:-

3.2.1.1 Bundaberg City Council – refer to extract of the Bundaberg City Engineering Design Planning Scheme Policy – Volume 1 (sewerage) (Attachment V).

3.1.2.2 Burnett Shire Council, Isis Shire and Kolan Planning Scheme – refer extract of Burnett Shire Council's AUS-SPEC #1 – Chapter D12 – Sewerage System (Attachment AL).

3.1.2.3 Isis Shire Council in its Planning Scheme Policy 6/07 refers The Water Act (2000) and subsidiary Regulations and /or WSA Sewerage Code of Australia (with Queensland Addendum) for Childers and Woodgate.

3.1.2.4 Kolan Shire Council in its Planning Scheme Policy 5 refers to WSA Sewerage Code and the Sewerage Pumping Code of Australia.

**4. Whether and how the Council monitors the capacity of its stormwater drainage and sewerage infrastructure, and in particular, assesses the suitability of its capacity for existing and future needs;**

4.1 Stormwater

4.1.1 Council does not physically measure the stormwater capacity of trunk stormwater infrastructure. Council operates and maintains a number of computer models for its major trunk stormwater drainage lines. These models predominantly cover areas in the City and Coast and identify Q<sub>100</sub> drainage levels. The models for the City are based on the GHD stormwater Study 1996 and are in RAFTS/HEC. These models are being updated to SWMM on an on-going basis. The models are used primarily to assess the impact of development and to ascertain development conditions accordingly. The models are also used for long-term planning for the drainage network. Upgrading of the Saltwater Creek SWMM model is complete. Upgrading of the Bundaberg Creek SWMM model is approaching completion. (See Attachment AO)

4.1.2 Hinterland Regions – Former Isis and Kolan Shire

4.1.2.1 The Apple Tree Creek Flood Study by Cardno MBK provides Q<sub>100</sub> flood levels in the Apple Tree Creek area. No other models exist for the hinterland areas.

4.1.3 The following attachments are pertinent:-

4.2.1 Attachment AF – Bundaberg City Drainage Analysis and Catchment Management Plan 1996

- 4.2.2 Attachment AG – Bundaberg Regional Council Saltwater Creek Flood Study February 2010
- 4.2.3 Attachment AH – Coastal Small Steams Flood Study – Final Report November 2010 \*\*
- 4.2.4 Attachment AI – Coastal Small Steams Flood Study – Final Report – Drawing Addendum Nov 2010 \*\*
- 4.2.5 Attachment AJ – Coastal Small Steams Flood Study – Broad Scale Assessment Modelling Results Nov 2010 \*\*

**\*\* NOTE:** Not adopted by Council and still considered preliminary.

## 4.2 Sewerage

- 4.2.1 Sewerage flow measurement is undertaken at all Council sewerage pump stations and all Wastewater Treatment Plant inlets. All measuring equipment is linked to a SCADA system and data logged accordingly. All flow metres are linked to SCADA alarms as are pump station overflows. This data is used as calibration data for Council's computer sewer models. Currently the model is MOUSE by DHI. Council has recently purchased Sewer GEMS from Bentley International. This sewer model has improved sewer scenario analysis.
- 4.2.2 Council's sewerage planning engineer utilises these models to identify system requirements and identify areas requiring further investigation and upgrade. Sewer models are also used to address the impact of development proposals as well as being used for long-term growth planning. Population growth is based on data produced by State Government (PIFU) and in recent times, the Draft Wide Bay Burnett Regional Plan.



4.2.3 In addition, the data is used to identify 'leaky' catchments. Council addresses excessive infiltration through an ongoing program of CCTV inspections, jump-up repairs, raising sewer manholes and a sewer relining program.

**5. *The existing and future needs for stormwater drainage or sewerage infrastructure within the Relevant Suburbs, including any report, study, investigation or briefing note prepared or commissioned by Council;***

**5.1 Stormwater**

**5.1.1 Avoca, Branyan, Bundaberg, Bundaberg East, Bundaberg North, Bundaberg South, Bundaberg West, Bungadoo, Drinan, Electra, Millbank**

5.1.1.1 Council is about to undertake updated flood modelling of the Burnett River. The results of this will input into flood management provisions within the new Bundaberg Regional Council Planning Scheme to be completed in 2013. This is expected to address Burnett River flooding issues in these localities

**5.1.2 Bucca, Avondale**

5.1.2.1 Council is about to undertake updated flood modelling of the Kolan River. The results of this will input into flood management provisions within the new Bundaberg Regional Council Planning Scheme to be completed in 2013. This is expected to address Kolan River flooding issues in these localities

5.1.3 Avoca, Branyan, Bundaberg, Bundaberg East, Bundaberg North, Bundaberg South, Bundaberg West, Millbank, Thabeban, Woongarra

5.1.3.1 These areas will be addressed by new localised flooding stormwater models developed within SWMM. The results of this will input into flood management provisions within the new Bundaberg Regional Council Planning Scheme to be completed in 2013. The first of these models – Saltwater Creek, is complete (Attachment AG). This affects Bundaberg, Bundaberg West, Bundaberg South. The second model addressing Bundaberg Creek, which will soon be completed affects Bundaberg, Bundaberg East, Woongarra.

5.1.4 Bargara, Bargara Lakes

5.1.4.1 These areas will be addressed by new localised flooding mapping of coastal streams (See Attachment AH). The results of this will input into flood management provisions within the new Bundaberg Regional Council Planning Scheme to be completed in 2013.

5.1.5 Future Growth Areas

5.1.5.1 The Draft Wide Bay Burnett Regional Plan identifies the main growth areas to be Bundaberg East, Kepnock and parts of Woongarra, coastal areas between Burnett Heads and Elliott Heads and Branyan. It is expected that significant stormwater infrastructure will be required in these areas. This stormwater infrastructure will be provided by developers.

5.1.6 2011/2012 Drainage Program – Relevant Suburbs

- 5.1.6.1 Avoca – Extend drain in Robina Park;
- 5.1.6.2 Avondale – Purchase land and construct drain in township;
- 5.1.6.3 Bargara – Upgrade drain downstream of Beach Milleu Subdivision; minor upgrade Durden Road;
- 5.1.6.4 Bargara Lakes – Upgrade stormwater drain in vicinity of entrance from Woongarra Scenic Drive;
- 5.1.6.5 Branyan – Replace washed out culvert on Arcadia Drive;
- 5.1.6.6 Bundaberg – Works to drain at 4A Toonburra Street;
- 5.1.6.7 Bundaberg North – Upgrade stormwater in Hanbury Street; works to open drain in Wilmott Street; drainage works – Bonney Street, Whittington Road and Loeskow Street;
- 5.1.6.8 Bungadoo – Replace culverts on Wallaville-Goondoon Road and Halford Drive; replace Gerambulyan Bridge;
- 5.1.6.9 Drinan – Replace culverts – Sheepstation Creek;
- 5.1.6.10 Gooburrum – Construct/enlarge open drain east of Zorzan Subdivision; construct drain across Melaluca Drive; construct drain within Zorzan Subdivision;
- 5.1.6.11 Moore Park Beach – Consultants investigating stormwater/groundwater issues at Royal Parade, Sandpiper Drive; outlet at Murdochs Road;
- 5.1.6.12 Redridge – Drainage relocation and improvements, Mahogany Park;
- 5.1.6.13 Thabeban – Install pumps on Ring Road detention basin; improvements to drainage at The Strand/Langbeckers Road;
- 5.1.6.14 Woongarra – Drainage improvements, Chards Road area;

5.1.6.15 See 2011/2012 Drainage Capital Works List  
(Attachment AV).

5.1.6 Bundaberg Regional Council's 10 Year Forward Capital Program  
(Stormwater)

5.1.6.1 This program identifies the projected expenditure for the next 10 years. Council has not identified the specific projects it intends to undertake with this proposed expenditure. (Attachment AU)

5.2 Sewerage

5.2.1 Avoca, Branyan, Bundaberg West, Bundaberg South (Part),  
Millbank

5.2.1.1 The following upgrades are planned:-

5.2.1.1.1 Millbank Treatment Plant to be upgraded  
(27,000 – 30,000 EP), effluent re-use scheme to  
be developed;

5.2.1.1.2 Growth in Branyan to be provided with trunk  
mains to service future development;

5.2.1.1.3 Sugarland Pump Station to be decommissioned  
and alternative trunk main provided;

5.2.1.1.4 Bourbong Street Pump Station to be upgraded;

## 5.2.1.1.5 See:-

5.2.1.1.5.1 Bundaberg Sewerage Planning Report 2008 (Attachment AP)

5.2.1.5.2 Bundaberg City Planning Strategy for Bundaberg's Wastewater Plants 2009 (Attachment AQ)

5.2.2 Bundaberg, Bundaberg East, Bundaberg North – East catchment

5.2.2.1 Proposed Rubyanna Wastewater Treatment Plant to be constructed (50,000 EP Stage 1; 90,000 EP Stage 2);

5.2.2.2 East Wastewater Treatment Plant to be decommissioned with flows diverted to proposed Rubyanna Wastewater Treatment Plant;

5.2.2.3 North Treatment Plant to be decommissioned and diverted to East Wastewater Treatment Plant (proposed Rubyanna Wastewater Treatment Plant);

5.2.2.4 Hartnell Street Pump Station to be upgraded;

## 5.2.2.5 See:-

5.2.2.5.1 Bundaberg Sewerage Planning Report 2008 (Attachment AP)

5.2.2.5.2 Wastewater Treatment and Effluent Management Master Plan 2009 (Attachment AR)

5.2.2.6 Provision of trunk mains to Gahans Road area;

5.2.2.7 Provision of trunk mains to Kepnock/Ashfield area;

5.2.2.8 Decommission Limpus Crescent Pump Station and divert;

5.2.3 Thabeban

5.2.3.1 Thabeban Catchment - Thabeban Wastewater Treatment Plant to be upgraded (2,700 – 9,000 EP);

5.2.3.2 Provision of upgraded trunk mains within catchment;

5.2.3.3 See:

5.2.3.3.1 Bundaberg Sewerage Planning Report 2008  
(Attachment AP)

5.2.3.3.2 Bundaberg City Planning Strategy for  
Bundaberg's Wastewater Plants 2009  
(Attachment AQ)

5.2.4 Coastal Catchments – Bargara

5.2.4.1 Bargara Wastewater Treatment Plant – development of effluent re-use scheme;

5.2.5 Coastal Catchments – Burnett Heads to Elliott Heads

5.2.5.1 Provision of trunk infrastructure and pump stations to service development within these communities and connect to proposed proposed Rubyanna Wastewater Treatment Plant;

5.2.5.2 See:-

5.2.5.2.1 Coastal Sewerage Reticulation Planning 2010  
(Attachment AS)

5.2.6 Coastal Catchments – Moore Park Beach

5.2.6.1 Preliminary studies have been undertaken to look at provision of sewerage to Moore Park Beach. Council has made no commitment to this infrastructure at present;

5.2.6.2 See:-

5.2.6.2.1 Coastal Sewerage Reticulation Planning 2010  
(Attachment AS)

5.2.7 Gin Gin

5.2.7.1 Gin Gin Sewerage Treatment Plant currently being upgraded and re-use scheme being developed;

5.2.7.2 See:-

5.2.7.2.1 Gin Gin Sewerage Treatment Plant Report 2009  
(Attachment AT)

5.2.8 Not Sewered

5.2.8.1 Avondale, Bucca, Bungadoo, Drinan, Electra, Gooburrum, North Isis, Redridge, Woongarra, Gin Gin

5.2.9 Bundaberg Regional Council 10 Year Forward Capital Sewerage Program – (Attachment AW)

**6. *The use of backflow prevention devices, including any plans to expand, upgrade or investigate the use of these devices, in the Relevant Suburbs;***

6.1 There are no significant backflow prevention devices for the purpose of stormwater flood control operating in the Region. Stormwater flaps exist on some outlets to control tidal inundation. These exist in the suburbs of Bargara, Bargara Lakes, Bundaberg, Bundaberg East, Bundaberg North and Moore Park Beach.

**7. *The effect of the flooding, including any investigations, studies, reports or briefing notes about this, which occurred in the months of December 2010 and January 2011 on the following:-***

- a. *the Council's waste water treatment plants and their operation; and***
- b. *surrounding areas;***

7.1 Council's Wastewater Treatment Plants and their operation

7.1.1 Council operates eight (8) significant Wastewater Treatment Plants together with a number of minor plants. The December 2010 – January 2011 flood event affected Council's two largest Wastewater Treatment Plants, namely Millbank and East, which are both situated adjacent on the Burnett River in Bundaberg.



### 7.1.2 Millbank

7.1.2.1 During the flood the Millbank Wastewater Treatment Plant was physically isolated from surrounding land and the majority of its operating machinery submerged. The plant was unable to treat delivered wastewater during the period 28 December 2010 to 5 January 2011 and for a period of 2 days following the flood peak commencing 13 January 2011.

7.1.2.2 On 28 December 2010 the plant was electrically isolated to facilitate an orderly shutdown of the treatment chain. Some electrical components were removed at that time prior to inundation. The physical structure of the plant was not damaged by the floods, however, electrical operating components were damaged by water ingress. The plant recommenced partial operation on 5 January 2011. The Treatment Plant operations were returned to normal over the weeks following 5 January 2011 by cleaning and repair of electrical components, tanks and associated tasks.

7.1.2.3 Over the period of no or partial operation of the Treatment Plant, following 28 December 2010, the delivered wastewater in a highly diluted state was discharged to the flood waters by an overflow pipe configured in a by-pass mode around the non-operating Treatment Plant elements. During the period of the second flood peak, 13-14 January 2011, the delivered wastewater was partially diverted to the East Wastewater Treatment Plant via existing sewerage infrastructure.

### 7.1.3 East

7.1.3.1 During the December 2010 – January 2011 flooding event, the East Wastewater Treatment Plant was partially affected by inundation of its lower areas. These areas comprised sludge beds, sludge storage areas, chlorination ditch and secondary sedimentation tanks. Other parts of the treatment trains were not affected by flood water. The plant was able to treat delivered wastewater as normal until 28 December 2010 when the electricity supply was discontinued to the lower levels (areas with chlorination ditch etc). The remainder of the plant remained operational.

7.1.3.2 Partial treatment operations continued until 5 January 2011 within the design capacity of the plant. The balance, in a highly diluted state, discharged to flood waters. The Treatment Plant operations were returned to normal over the weeks following 5 January 2011.

7.1.3.3 As stated earlier, during the period of the second flood peak, 13-14 January 2011, effluent was transferred to East Wastewater Treatment Plant from the Millbank Wastewater Treatment Plant via existing infrastructure. No major capital plant required replacement in the East Treatment Plant as a result of the floods.

7.1.4 See Also Attachment U – Flood Overview Notes

7.1.5 Sewerage Pump Stations that were inundated were returned to operation as soon as possible such that local health issues were minimised. No major capital plant (wastewater treatment or reticulation) required replacement as a result of the floods.

7.2 Surrounding Areas

7.2 Council staff went to significant effort to capture accurate flood level data across the Region following the December 2010 – January 2011 flood event. The community involvement with this was encouraged through media and Council's website. This data is provided in the attachments below. The data will be most useful in calibrating future flood modelling.

7.2.1 Attachment S – Bundaberg City 2010-11 Flood spot levels

7.2.2 Attachment T – Burnett River Flood Levels Metadata

**8. Any steps the Council has taken in response to the flooding referred to in 7 (above), including any investigations, studies, reports, briefing notes or plans to upgrade the plants whether prepared or commissioned by the Council.**

8.1 Council has budgeted \$200,000 for the review and development of a Burnett River flood model extending across its entire Local Government Area. Council has also budgeted \$40,000 for a flood model of the Kolan River. Council is in the process of drafting a new Planning Scheme which will incorporate updated and more comprehensive flood provisions. This work is expected to be completed in 2013.

- 8.2 In recognising the importance of stormwater drainage planning, Council is in the process of reallocating a current technical position to focus on stormwater drainage planning.

Statement Prepared By:-

**Mr Andrew William FULTON**

Director Infrastructure & Planning Services  
Bundaberg Regional Council

Signature

7 September 2011

Dated