

Submission to Queensland Floods Commission of Inquiry

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The following is Bundaberg Regional Council's (BRC) submission on points relevant to the floods commission of inquiry and observations from the 2010/11 floods that impacted upon Bundaberg Regional Council area.

1. Background of Bundaberg Regional Council

Bundaberg Regional Council was formed on the 15 March 2008 as a result of the merging of Bundaberg City Council, Burnett Shire, Isis Shire and Kolan Shire Councils.

Bundaberg Region, strategically situated at the southern end of the Great Barrier Reef and stretching from the Burrum River to Baffle Creek, is comprised of 6,451 sq km and is home to more than 95,000 people, with our population expected to grow to over 153,000 people within twenty years

Bundaberg Regional Council has a coastline of 100 kilometres, stretching from Buxton and Woodgate Beach in the south, through to Coonarr, Elliott Heads, Coral Cove, Innes Park, Bargara, Burnett Heads, Moore Park Beach, Winfield and the southern bank of Baffle Creek.

Bundaberg is the commercial enterprise capital of the region, it's southern gateway is the town of Childers and it northern gateway the town of Gin Gin. Bundaberg region has significant horticultural production in sugar cane, small crops, fruit and nuts. Its economy is also driven by manufacture of iconic products such as Bundaberg Rum and Bundaberg Brewed Drinks. Wide Bay Australia Building Society Head Office is in Bundaberg. Tourism plays a major role in the economy.

2. History of Floods in Bundaberg

The Bureau of Meteorology advises the following on its website:

BURNETT RIVER CATCHMENT - ASSESSMENT OF THE FLOOD POTENTIAL

Major flooding requires a large scale rainfall situation over the Burnett River catchment. The following can be used as a rough guide to the likelihood of flooding in the catchment:

Average catchment rainfalls in excess 200mm in 48 hours, may result in stream rises and the possibility of moderate to major flooding and local traffic disabilities in the middle to lower reaches of the Burnett River extending downstream.

Average catchment rainfalls in excess 300mm in 48 hours, may result in significant stream rises and the possibility of major flooding and local traffic disabilities in the middle to lower reaches of the Burnett River extending downstream.

Previous floods in the Burnett River are as follows:

- January 1890 – 9.04m
- February 1893 – 8.91m
- **February 1942 – 8.48m***
- July 1954 – 7.26m
- February 1971 – 6.70m
- May 1983 – 3.88m
- March 1992 – 3.24m
- May 1998 – 2.50m

3. Events Leading up to and Following the 2010-11 Floods

Significant rainfall in the 6-8 weeks leading up to the major rain event in December, 2010 meant that all dams and catchments were full and land saturated. Additional heavy rainfall was experienced between 23rd -27th December, 2010, and a highest astronomical tide of 3.27m occurred on Thursday, 23rd December, 2010.

Bundaberg registered its highest December rainfall in history, with 573mm falling. Paradise Dam spilled for the third time in history, the Fred Haigh dam overflowed for the first time in 2 decades, and the Cania Dam spilled for the first time in history.

There was a 7.92m peak in the Burnett River on the evening of Wednesday 29th December which was the highest flood level experienced in the district since 1942 (8.48m)* - highlighted above

During the period 28th December though to 31st December, 2010 the following events occurred:-

- Local Disaster Management Group and District Disaster Management Group activated
- Liaisons with State Disaster Management Group to coordinate whole of Government cross-agency effort
- Constant watch on weather forecasts and river heights.
- 2005 Bundaberg City Council Flood Level Survey – identified 380 properties likely to be inundated up to 8m - provided important base data for State Emergency Services (SES) and Council staff to door knock individual properties that were likely to be inundated.
- Encouraged Self Evacuation to Family & Friends
- Riverdale Caravan Park evacuated.
- Evacuation centre established at Bundaberg Civic Centre
- Houses and businesses in East and North Bundaberg inundated
- Evacuation and coordination centre established at Bundaberg North High School
- Bruce Highway closed

From 31st December, 2010 onwards:-

- Several visits by Government Dignitaries and Officials
- Recovery Centre established at Police Citizens Youth Centre (PCYC) – multi-agency support services available
- Evacuation Centres closed
- All displaced people provided emergency accommodation and support as required.
- Clean-up commenced
- Recovery Plan initiated
- Recovery Sub Groups were established:
 - ✓ Economic Recovery
 - ✓ Human and Social
 - ✓ Built and Natural Environment

Following receipt of reports from various agencies, it was determined that it was likely 294 residences and up to 200 business were affected during the first event

A second flood event of 5.75m occurred in Bundaberg on Thursday 13th January 2011. Several residences and businesses were flooded a second time. The second inundation severely hampered the clean up and recovery program

The image below shows the extent of the flooding.



4. River Heights Monitoring Stations – Burnett River System

Bundaberg Regional Council has the following rivers within its Council area:

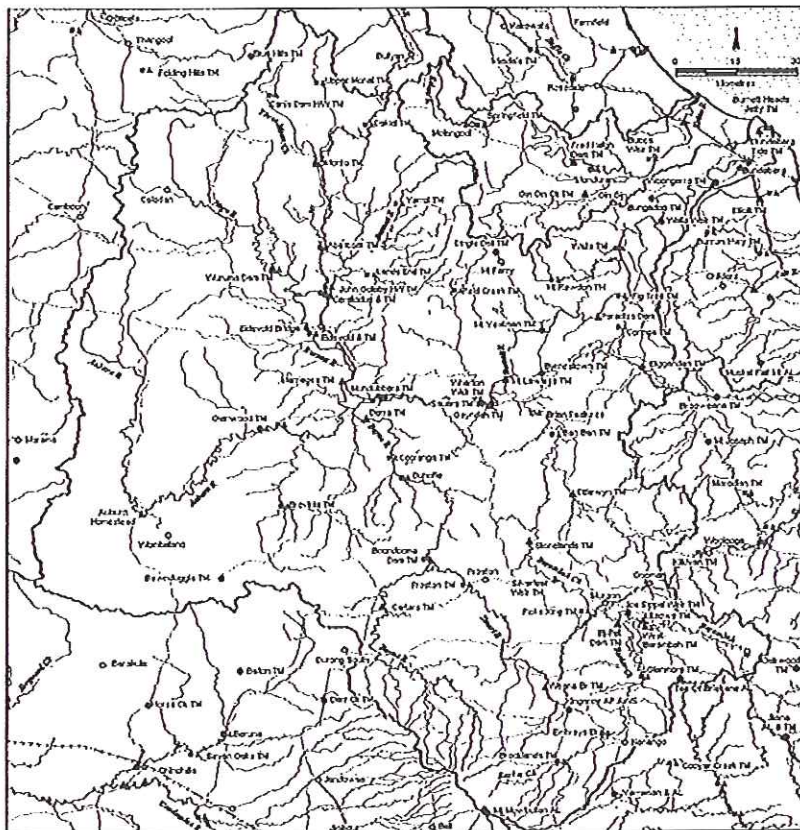
- Burnett
- Elliott
- Burrum
- Isis
- Cherwell
- Gregory
- Kolan
- Perry
- Boyne
- Plus numerous creeks and streams.

The Burnett River is the largest amongst that group and has a catchment of approximately 33,000 square kilometres, with waters coming from as far south west as the Bunya Mountains (Kingaroy District), west to about 70 kms from Taroom and north west to about 30 – 40 kms from Biloela.



Australian Government
Bureau of Meteorology

MAP 136.1



<ul style="list-style-type: none"> ○ Manual Heavy Rainfall Station ○ Daily Reporting Rainfall Station △ Manual River Station ● Telemetry Rainfall Station ▲ Telemetry River Station 	<p align="center">BURNETT RIVER FLOOD WARNING NETWORK</p>	<ul style="list-style-type: none"> — Major Roads — Railway <p align="right">Revised Nov 2009</p>
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Map 136.1 - Burnett River Flood Warning Network

Copyright © 2009 Australian Government Bureau of Meteorology

There are 38 monitoring stations on the system, of which several are automated. Council is unaware of which gauges are automated now, and this due to the formation and restructuring of Sunwater and changing relationships with its clients and landholders in the catchments. During high flood events these stations can become inoperable due to the gauge being submerged or loss of power.

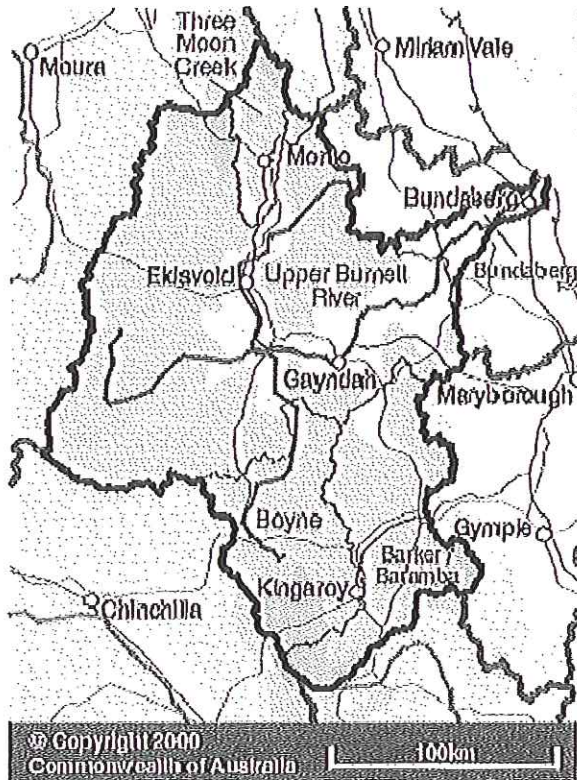
Over the years, there was a system of manual readings of various gauges, however, it is believed that several arrangements have ceased due to change of land ownership, the landholder or person no longer available to undertake the readings. The loss of the gauges limits forecasting for down river flooding.

Water catchments on the Burnett River have been designed and constructed for irrigation and water storage purposes – not flood mitigation, and at the time of the flooding events, were full to capacity.

The water storages are:

- Paradise Dam
- Ned Churchwood Weir
- Ben Anderson Barrage
- Bjelke Petersen Dam
- Joe Sippel Weir
- Silver Leaf Weir
- Cania Dam
- Youlambie Weir
- Monto Weir
- Bazley Weir
- Avis Weir
- Mulgildie Weir
- Wuruma Dam
- John Goleby Weir
- Kirar Weir
- Jones Weir
- Claude Wharton Weir
- Boondooma Dam
- Isis Balancing Storage
- Woongarra Balancing Storage

It should be noted that the catchment of the Burnett River funnels into a relatively small flood plain in the Bundaberg Reach as depicted below.



With all the above water storages at capacity, significant flows were being added to the Burnett River during the rain events of December and January. During the events, Sunwater estimated that depending on the flows it takes between 20 and 30 hours for the water to go from Paradise Dam to Bundaberg and approximately 8 to 10 hours from Walla Weir to Bundaberg.

In addition to the catchment flows, there was heavy local rain and environmental flows from the already saturated farmlands and water courses.

Paradise Dam was completed in November, 2005, and Council is not aware if any significant flood modelling was undertaken during the planning or construction of the Paradise Dam.

5. River Heights Monitoring Stations – Kolan River System

The Fred Haigh Dam on the Kolan River system has a catchment of 1310 square kilometres and has four (4) monitoring stations. Council is unaware which stations are automated.

The dam has a capacity of 562, 000 mega litres and also overtopped the spillway during the events, the last time being in 1992 as a result of Cyclone



Fran. The LDMG continued to monitor the system during the events. There was no reported damage to residences by flooding from the dam.

Recommendation

- *Councils are advised of which gauges are automated and which are manual.*
- *The automated monitoring gauges are fitted with back up devices.*
- *That a manual system and protocols be established to read water depths on river and flood gauges should automated devices fail*
- *Systems be developed to provide adequate and timely information to Council and Emergency Services during flood events*
- *Sunwater undertake immediate comprehensive flood modelling of Paradise Dam and the associated effects up and downstream.*

6. Bureau of Meteorology – Flood Forecasting

The flooding event for Bundaberg Region commenced in early December 2010, and during the early part forecasting was available via the Bureau's web site. However, as the flood situation worsened, and more systems went into flood, it was clear from the Local Disaster Management Group's point and Council, that the Bureau and its Flood Forecaster's capacities were being stretched. It became necessary for the LDMG to contact the Bureau for flood information rather than the Bureau advising affected Local Governments

Council commends and compliments Bureau staff for their dedication and capabilities. At no stage were the staff not courteous nor did they fail to get back to Council when they said they would. It is Council's opinion that resources became limited during the heights of the floods.

One possible solution that may help for future events is that a forecaster/s or group be nominated as a Case Manager for a system. This will improve the quality and timeliness of information provided, allowing the LDMG to make enhanced decisions for the community.

Recommendation

- *Additional resources are allocated to Bureau of Meteorology to assist with flood and storm forecasting.*
- *Case Managers suitably resourced with relief capacity be appointed for riverine system flooding forecasts during flood events*

7. Training

Bundaberg Regional Council, along with numerous other Local Governments was formed from the amalgamation process.

Bundaberg Regional Council was fortunate in that it did not have an extensive turnover of staff and that it had a number of senior staff with extensive service within their previous Council. Accordingly, Bundaberg Regional Council staff had a good knowledge of the former local governments that were amalgamated to form Bundaberg Regional Council.

Similarly, there are a number of elected representatives with long associations with the regional Council area. The LDMG members, with assistance from EMQ, received training on the legislation as it stood at Amalgamation.

BRC has established a strategic informal alliance with North Burnett, South Burnett, Fraser Coast, Gympie, and Banana Regional Councils to purchase and to where possible undertake joint training of Emergency Operations Centre software. Gladstone Regional Council has also joined the alliance in the information exchange, assistance and collaboration towards enhanced preparedness.

BRC has been proactive in the community with public meetings, meetings with focus groups, training for the Well Being and Community Recovery Committee. Council has been represented on the State Reference Groups for Storm Tides and Building Community Resilience. Council has also been represented at Disaster Management Conferences and various workshops.

Whilst the Council may have had experienced staff and Councillors, and continued preparations and training for Disaster Management, there was no opportunity for either Council, Emergency Management Queensland or the Queensland Police Service to provide any significant training for the amended *Disaster Management Act 2003*, which was amended in November 2010.

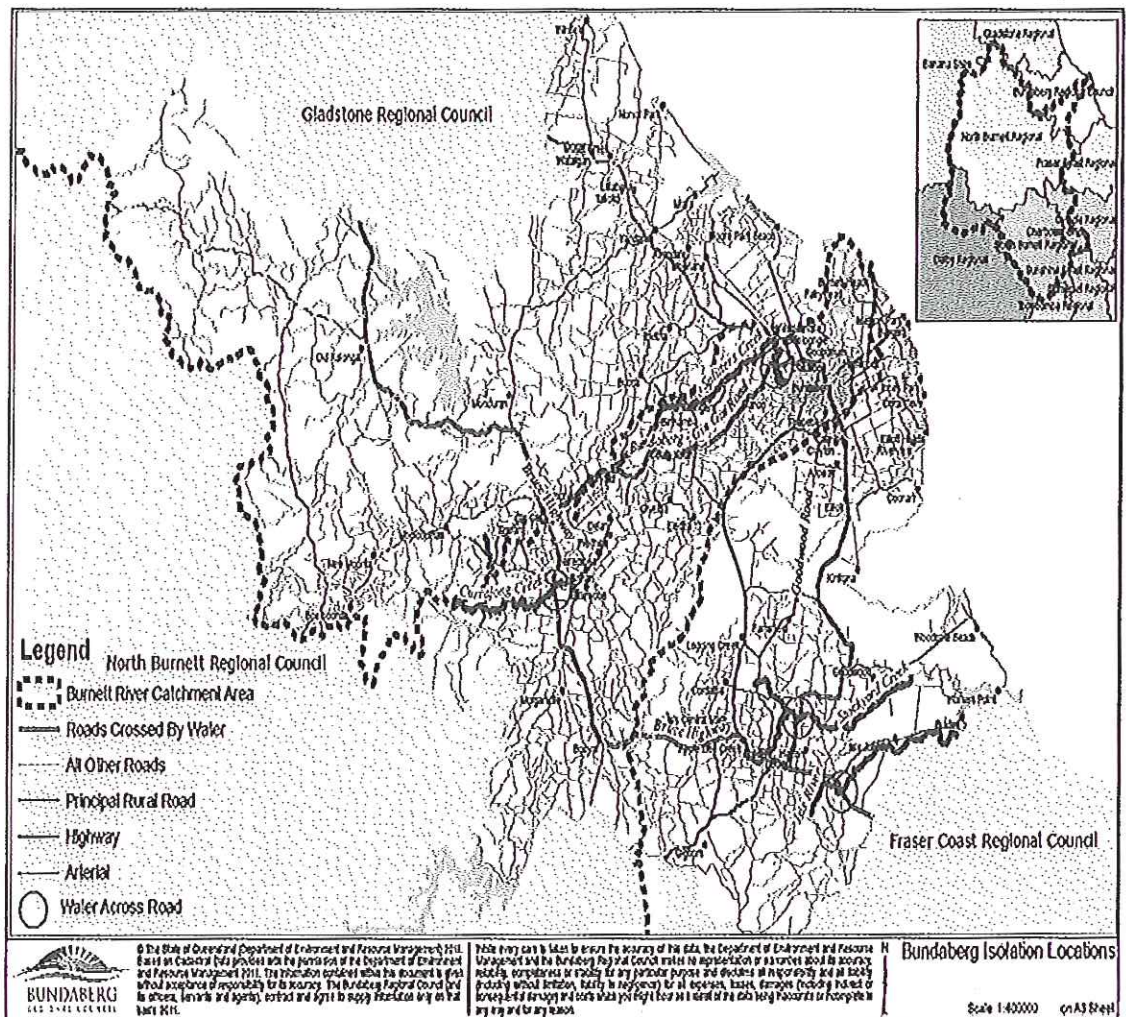
It is essential that both elected representatives and Council staff be trained in the responsibilities of the relevant components of the legislation.

Recommendation

- ***Emergency Management Queensland deliver training to local governments of the roles and responsibilities as described in Disaster Management legislation and the Disaster Management Act 2003 as revised.***

8. Transportation

During the floods the Bruce Highway was cut at Currajong Creek, south of Gin Gin, and at the Isis River, south of Childers. (a new bridge with projected improved flood immunity is currently under construction) Bundaberg – Gin Gin Road was cut at Splitters Creek and Goodwood Road was cut in numerous locations including Stockyard Creek, Elliott and Gregory Rivers. This effectively isolated Bundaberg from other parts of Queensland via road. During the event Bundaberg and Childers remained connected by road. (Refer to attached map.)



During the flood events the Bruce Highway was open south of Rockhampton to Gin Gin. Road transport was possible between Gin Gin and Gladstone, which was not significantly affected by the floods. By raising various sections of the Bruce Highway, road transport could be effective from Maryborough to



Gladstone. This will reduce the impact of travelling public on the sustainability of smaller communities during disaster events.

Bundaberg Airport remained open and operational during the entire events and was used as a distribution point for resupply via ADF Hercules aircraft to Bundaberg and other areas. Queensland Travel Train Service was generally operational but was interrupted and did experience some minor delays.

Bundaberg Port was closed due to the flooding and only opened in the first week of March with a limited capacity due to the silting of the river.

Recommendation

- *A guaranteed flood free rail link is provided between Bundaberg and Brisbane,*
- *That the Bruce Highway is raised to a higher level at Currajong Creek.*
- *The Bruce Highway is raised at Cherwell River.*

9. Trade & Rail Links

QR Freight Services from Bundaberg used road transport and therefore, was non operational during the flood event.

The Bundaberg region accommodates over 95,000 residents and is a major horticultural and agricultural producer.

At the time of the flood, over 1,000 tonnes of fresh produce was stranded in the region due to road and Port closures.

The QR network remained open for most of the flooding event but BRC was advised that QR Freight primarily uses road transport and did not have the infrastructure to carry refrigerated product via their train network.

As grocery supplies dwindled with no prospect of resupply via road, commercial arrangements with the major grocery chains discouraged resupply via local producers.

BRC had some success in negotiating this stalemate, which saw some resupply to stores and prevented the total waste of product stored locally on farms.

Recommendation

- *QR Freight be provided the capacity and authorisation to transport essential goods by rail, during disaster events.*
- *Queensland Rail Travel Train is given priority to transport passengers and freight affected by disasters on the rail network.*
- *A guaranteed flood free connection for rail is established between Bundaberg and Brisbane.*
- *Negotiations be conducted with the major grocery chains to develop protocols to bypass traditional commercial arrangements in the event of a disaster to prevent wastage of available produce*

10. Bundaberg Port & Burnett River Navigation Channel

Bundaberg Port is strategically located on the southern end of the Great Barrier Reef, providing easy access to the mainland from outside the Great Barrier Reef. The Town Reach Marina, dry docking facilities and marine repairs is a significant reason for Bundaberg being the destination as a major clearance Port for recreational yachts.

At the time of the flooding event, there was in excess of 100,000 tonnes of raw sugar in the bulk sugar terminal at Burnett Heads. The flood caused the swing basin and channel to fill with silt and the Port facility was closed to large vessels. The Port remained closed for 10 weeks and although some dredging work has been done by Gladstone Ports Corporation, the Port has not been repatriated to its previously advertised depth of 9.5 AHD.

During the flooding events, the Town Reach Marina, Marine repair and resupply facilities, and channel markers were either destroyed, or substantially damaged. Marine Safety Queensland is to be complimented for addressing the channel markings as soon as practical. At this point in time, recreational, commercial and international crafts negotiating the Burnett River are subject to the tides as there is no channel available during all tide situations and in particular low tide.

Recommendation

- *Adequate resources and funding be provided to re-establish the navigation channel to the Town Reach in the Burnett River for all tide situations.*
- *The Port of Gladstone continue to dredge the Channel and Swing basin to the previous depth of 9.5 AHD*

11. Volunteer Marine Rescue

Volunteer Marine Rescue, Bundaberg, had available resources to assist during flood situations; however, as the service is not indemnified to assist vessels without the owners' permission. Accordingly the LDMG was unable to use this resource to advantage.

Recommendation

- *Indemnification be given to the Volunteer Marine Rescue Service to recover and/or facilitate their actions to secure unattended marine craft during disaster events.*

12. Planning Provisions – Flood Overlay

Bundaberg Regional Council currently has a flood overlay (map) and flood management code, within the Bundaberg City Planning Scheme, for the former Bundaberg City Council area. The flood overlay requires that buildings are code assessable within the flood overlay areas. Floor levels of residential premises in the flood overlay area, are required to be 300mm above the Defined Flood Event in the Planning Scheme.

The code assessment requires Council approval to build within the flood overlay area. (Refer to the planning documents being provided through the information directive from the Commission.)

It should be noted that properties in the former Bundaberg City, that were subject to code assessment and were required to have habitable floor level above the flood overlay floor heights were not affected. It is noted that the properties that were impacted were constructed prior to the flood code coming into effect.

Under the Bundaberg Regional Council's planning scheme, for the former Bundaberg City, commercial and industrial properties can be granted a concession on the floor height above a defined flood event. i.e. a concession to lower the floor level from 300mm above the defined flood, to at its lowest, the defined flood event

Recommendation

- *Council be provided resources from the State Government to undertake a study of all areas in Bundaberg Regional Council, subject to river flooding.*
- *State Legislation be amended to facilitate the necessary amendments to incorporate results of updated flood studies.*

13. Flood Mitigation Strategies

The Burnett River breached its banks during the flood event which caused significant flooding in North and East Bundaberg. North Bundaberg is also subject to inundation from below the town reach. Given the flow in the river, if there hadn't been a breach of the Burnett River in North Bundaberg, flooding may have been lower.

During the second event, on the 13th January, 2011, the Burnett River rose to 5.76 metres, resulting, in the inundation of a number of premises for a second time.

The removal of residential premises below the 6.50m flood level would address some minor flood level issues. This would address approximately 23 residences in the former Bundaberg city. Flooding of residences from the Perry River may involve 7 properties (data is still being collated). It is unknown at this point of the number of properties that may be affected in the former Burnett Shire, but it is expected the numbers would be limited.

Recommendation

- *Funding provision be made for the construction of levee banks on the Burnett River in the Bundaberg City area.*
- *State & Federal Funding be provided to purchase and remove residences below 6.5m flood level or to be raised to above the designated flood levels in the former Bundaberg City Council area.*
- *Funding is provided for future removal of residential buildings where the habitable floor level was inundated by a flood of 6.5m outside the former Bundaberg City Council subject to studies.*

14. Commercial Fishing/Marine Operations

During the flood events a significant proportion of marine operations were destroyed or incapacitated, navigation channels became unserviceable and marine businesses were unable to operate. Businesses include marinas, trawling fleet, recreational operators and slipway. A significant trawling fleet operates out of the Burnett River.

Since deregulation in commercial fishing, industry in the region has been struggling, and now has impacted by the floods.

Recommendation

- *The commercial marine operations are provided with financial assistance to recover from the recent flood events.*

- *That the Burnett River from Burnett Heads to the City of Bundaberg be cleared of post-flood debris to allow full access at all times by vessels*

15. Telecommunications

Due to the strong currents in the Burnett River the submarine connection on the Telstra link became unserviceable. As a consequence, telecommunications was lost with the Gin Gin and Moore Park Beach areas. Telstra is to be complimented for making it a priority to re-establish a temporary solution. The telecommunications industry is a commercial network; however, it is required to provide essential communications during disaster events. It is understood other service providers worked to assist the disaster situation.

Recommendation

- *Bundaberg Regional Council be provided with appropriate resources to provide alternate means of communication in the event that commercial telecommunication networks fail during disaster events.*

16. Volunteers

During the events a significant number of well meaning people offered their services to assist in various ways. Many of these people were not registered as volunteers, and therefore did not have background checks, or appropriate insurance cover and their skills and abilities could not be confirmed.

There is no clear indemnity for Councils/Organisations that use volunteers after a disaster event who are not registered with an accredited volunteer organisation

Recommendation

- *A State policy and procedure be adopted to rapidly engage volunteers during disaster events.*
- *Local Governments and other Response & recovery Agencies are indemnified from litigation as a result of volunteers assisting with response and recovery arrangements.*

17. Resupply

During and immediately after the event, there were significant shortages of essential and other items. Transport agencies who were marooned in various locations had produce, however, due to contractual arrangements; they were not permitted to supply other vendors.

Further, due to supplier arrangements, various carriers, including QR Freight, would have been in breach of supply arrangements had they transported various goods.

Bundaberg region is a major supplier to Queensland and Australia of fruit, vegetables, herbs and nuts, and significant quantities were held in storage, but because of supplier arrangements, those goods were not made available to local supermarkets. The irony of the situation was that local supermarket shelves were bare despite the regions ability to provide produce, not just locally but state wide and nationally.

However, when contacting store managers of various major chain food outlets, there appeared to be no coordination between the requirements of local stores and state distribution networks. There was no consultation with the LDMG as to what was considered as essential during the resupply program. Furthermore, there was panic buying when in a number of instances there was more than adequate local supply for during isolation.

Council contacted medical institutions during the event and it was apparent that suitable arrangements were in place. No further action was necessary other than to support the district support for a convoy of trucks.

Recommendation

- *Policy be provided for variations in contracts for the supply of goods and services during declared disaster events.*
- *Policy determination be made on clear definition of essential as applies to supplies and services*

18 Activation Procedures

During the recent disaster events across Queensland, there was confusion across organisations to their status during the emergencies.

Commonly used by the majority of response agencies is the following process to identify an organisations status:

- Alert
- Standby
- Activate
- Stand down
- Debrief

The table below depicts the alternative procedures adopted by certain disaster management proponents and this was evident during state-wide teleconferences..

		ALERT	STAND BY FORWARD LEVEL ONE	STAND BY FORWARD LEVEL TWO	STAND UP LEVEL ONE	STAND UP LEVEL TWO	STAND DOWN
	Triggers	<ul style="list-style-type: none"> • One or more LDMG's operational • Awareness that threat may be wide spread 	<ul style="list-style-type: none"> • Need for DDMMG to manage potential ops. 	<ul style="list-style-type: none"> • Threat level indicates DDMMG support may be required 	<ul style="list-style-type: none"> • Request for support received from LDCC • Large threat is imminent 	<ul style="list-style-type: none"> • Impact in the District • Coordinated support required • Significant state resources committed 	<ul style="list-style-type: none"> • All LDMG's stood down • Recovery arrangements functioning • Agencies revert to core business
	Actions	<ul style="list-style-type: none"> • XO brief DDC on Level of LDMG's • Analysis of threat • Contact LDC's 	<ul style="list-style-type: none"> • Initial contact made with all LDC's • Communication procedures established • Planning commenced for support to LDCC • Advise State regarding status of DDMMG • Establish all contacts • Set up email systems 	<ul style="list-style-type: none"> • Receipt of Sitreps • Brief DDMMG Core Members • Warning orders given to DDMMG • Planning for potential support to LDMG's • DDC support unit briefed 	<ul style="list-style-type: none"> • Develop situational awareness • Pass on urgent warnings • Commence Sitreps to SDCC • Roster developed for DDC • DDC activated with required staff • Forward planning commenced • SDCC advised DDMMG stood up • Regular Sitreps provided to SDCC 	<ul style="list-style-type: none"> • DDC activated and roster commenced • Logistics, operations planning and administrative cells in place • Coordination of state support commenced • Receive advice from State Disaster Coordinator 	<ul style="list-style-type: none"> • Final Sitrep to SDMMG • Debrief of DDC staff • Debrief of DDMMG staff • Finalisation of expenditure • Transition to recovery

Recommendation

- A definitive direction be issued on one format for utilisation of activations during disaster management.