

**QUEENSLAND FLOODS COMMISSION OF INQUIRY**

**Requirement to Provide Written Information to Commission of Inquiry**

**William Frazer Wilkinson, Local Disaster Coordinator of Central Highlands Regional Council**

In accordance with section 5 of the *Commissions of Inquiry Act 1950* (Qld), I William Frazer Wilkinson, Local Disaster Management Coordinator, Central Highlands Regional Council, provide the following statement of information as directed by letter dated 22 March, 2011. In providing the information this statement will be relative to the information request for the years 2010/2011.

**1. Local Planning and Preparation, including training, undertaken in advance of and/or in relation to the 2010/11 flood events.**

(a) Leading up to the two flood events in December 2010/11, regularly scheduled LDMG meetings were held on the following dates:

- a. 3 December 2009;
- b. 7 April 2010;
- c. 9 June 2010;
- d. 4 August 2010;
- e. 6 October 2010; and
- f. 1 December 2010.

(b) The following additional LDMG meetings were held during, and following, the two flood events in December 2010:

- a. 3 December 2010 – morning and afternoon;
- b. 4 December 2010;
- c. 27 December 2010;
- d. 28 December 2010;
- e. 29 December 2010;
- f. 30 December 2010;
- g. 31 December 2010;
- h. 1 January 2011;
- i. 2 January 2011;
- j. 3 January 2011;
- k. 4 January 2011; and
- l. 5 January 2011, when the LDMG was stood down and the Recovery Group commenced.

(c) During the December 27 event, Council also held staff briefings at the end of each day where possible.

(d) Council senior and middle managers met a number of times pre-Christmas period to develop staff rosters for the Christmas New Year period. This included

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updating staff contact lists of who would be available in the event of a disaster during the closure period - particularly in light of the season forecasts, and the December 3 event experienced.

- (e) On 8 September 2010 I met with Council's Manager Employee Services to discuss what worked well in 2008, and lessons learnt from an in-house Council perspective. I met again on 14 December 2010 to review support during the December 3 event and staff training needs with QIT Plus Pty Ltd – Guardian software operation.
- (f) Council held several Guardian training sessions with QIT Plus Pty Ltd (Chris Madsen and Phil Glindermann) and LDMG members on 7 September 2010 and 17 December 2010.
- (g) BOM conducted Enviromon training with Council staff on 20 August 2010. Enviromon is the software that manages Council's ALERT system. It records rainfall and river gauge data in real time (including rainfall intensity duration) monitors system checks and enables ALERTS to be set and transmitted via email.
- (h) The Local Disaster Coordinator requested that Sunwater undertake maintenance in the Emerald Irrigation drainage area adjacent to town to remove any obstructions to flow in the drains. Special emphasis was placed on drains within and immediately around the Emerald Township. This was done verbally - before the December 3 event, again post the December 3 event, and post the December 27 event. Contact was made with Neil Farrell with emphasis placed on LN1 drain. Neil indicated Sunwater undertook work on LN1 and other drains and mentioned RR4, RR5 and RR6 drains. This included clearing any stubble that had built up from flows.
- (i) Council's General Manager of Civil Operations and Manager Technical Services was specifically asked to get Council maintenance crews to conduct maintenance work on town drains to remove and clear any blockages. This was done by the Mayor 20 October 2010, 21 November 2010 and 14 December 2010.
- (j) Council and Sunwater conducted a coordinated burn-off in a section of LN1 drain in the middle of town to reduce vegetative growth so that flows would not be compromised. The burn was conducted on 24 August 2010.
- (k) Council checked and cleared flood gates (located on two drains in town) of obstructions. This included responding to and meeting onsite with a couple of residents about the flood gate on Amethyst Drive on 28 December 2010. The concrete abutment on one side of this drain had tilted and was impairing the function of the flood gate. A neighbouring landholder assisted Council clear the flood gate and it was propped completely open, as it would be drowned out by the flood levels expected.
- (l) Council made use of the PowerPoint information obtained from the EMQ 2010 Season Outlook Workshop and presented and discussed this with both the LDMG and Council.
- (m) Key Councillors and Staff attended the 2010 Disaster Management Conference held in Home Hill on June 2-4, 2010.
- (n) LDMG representatives attended a DDMG meeting in Rockhampton on the 3/11/10 and participated in another by teleconference on the 7/12/10.
- (o) A supply of approximately 10,000 sandbags were ordered and stockpiled in advance of the December 27 event. SES had a supply of approximately 3500 bags prior to the December 3 event.

- (p) Council staff worked with BOM hydrologists to service and check Council's ALERT rain and river gauge network was functioning. Equipment was replaced at Raymond on 9 December 2010 and Sapphire gauging station on 8 December 2010.
- (q) I engaged a registered surveyor to check at:
  - a. Bridge deck heights Sapphire Bridge on Retreat Creek at Sapphire 16/9/10 - including stream cross section profile and gradient.
  - b. Retreat Creek crossing at Graves Hill, Sapphire 16/9/10 – including stream cross section profile and gradient.
  - c. Nogoia Railway bridge, Emerald 22/12/10
  - d. Council's sewer and water pumps, Emerald – electrics and lids 20/12/10.
- (r) The LDMG prepared an emergency services map and data PDF tool for the gemfields area. It was developed in consultation with the Gemfields emergency services groups and progress association members. Final content discussions were held at a community meeting at Sapphire on the 18/8/10, followed by a presentation at Gemfields SES shed on 16/11/10 to confirm product was useable and needed no further edits. This was a cooperative project with DERM (Officer Karen Aitchison) and DEEDI (officer Ken Goodwin Mines), following community consultations at the Gemfields. Final folder and DVD's were still being printed and collated when Dec 3 floods unfolded.
- (s) Four additional funding submissions were lodged with Natural Disaster Resilience Funding Program (NDR2). Council was advised by Dept of Community Safety in November 2010 that these were all successful. The submissions were for:
  - a. Flood markers in the Gemfields area;
  - b. Additional river and rain ALERT gauges upper Comet River;
  - c. Installing larger culverts / bridge openings railway line Emerald; and
  - d. Improved signage and Street addressing Bogantungan, Willows and Rutland area.

**2. Mitigation measures implemented immediately prior to, or during, the 2010/11 event.**

- (a) Council was actively preparing for a wet period. A supply of sandbags were provided to SES to distribute and manage at Rolleston, Gemfields and Emerald townships, including truckloads of sand at points that would be easily and safely accessible by the public. Sandbags were not sent to Springsure as there had been no history of flooding affecting residences in the township. This later proved to be an issue as heavy rain on the night of the 27 December 2010 did cause some flash flooding that affected one house downstairs floor.
- (b) More sandbags were ordered and flown in as the floodwaters were rising and stocks were getting low. Additional stockpiles of sand were placed at stockpile points.
- (c) The public took advantage of the sand and sandbags to prepare and protect their homes. It became apparent that some residents were not deploying bags in a manner that was necessarily effective. The LDMG was also concerned about a possible shortage of bags, and subsequently adopted a more strategic approach to ensure sandbags were placed effectively within known vulnerable areas – particularly those that flooded in 2008. To do this, the SES and staff

- from Council and local mining companies filled the bags, delivered them and put them in place with black plastic to protect residences in some vulnerable areas.
- (d) Additional "road closed" signs and barrier boards were ordered and stored. Road message boards were also sourced.
  - (e) Council distributed flood preparedness information to the community through its Summer 2010 newsletter CHRC Regional Roundup. Specific topics included "Disaster Planning Be Prepared", "Emergency Kit Checklist", "Flooding" and links to useful websites. This was circulated throughout the whole shire. A library display was also set up.
  - (f) The LDC (Local Disaster Coordinator) provided a number of Selma Road residences information about what river level height over the Fairbairn spillway would result in water over the floor in their houses so that they could plan accordingly.
  - (g) LDMG also made contact with representative landholders downstream of Emerald on December 3, 4 and 5, and again after December 27 flood event commenced.
  - (h) In between the December 3 and December 27 event, the Sapphire river gauge experienced some calibration issues and whilst the rain gauge was working, the river gauge was not reading accurately. Keith Jarrett, Council staff member who maintains the equipment and I both worked with BOM and EIPRO the suppliers of the equipment to identify causes and implement solutions. In the first instance this involved replacing the gas cylinder, the data recording canister and subsequently the druck was replaced. The LDC maintained regular contact with the SES group leader regarding predicted rainfall forecast by BOM and the need to maintain a manual watch on river levels until such time the gauge was repaired.
  - (i) LDMG maintained regular phone contact with the SES Local Controller and in particular the Rolleston ESU leader and Gemfields Group leader regarding rainfall, river levels and support needed. Councillors and Council executive also maintained regular contact with SES leaders across the region, in particular, Councillor Gail Nixon provided direct support to Rolleston from Springsure office.
  - (j) Council established a car park at the top of Emerald Downs Hill approximately 5km to the north of Emerald on a private property. Residents were encouraged to take their vehicles to this car park and then get free transport back into town. This was done to avoid vehicles being caught in or submerged in rising floodwaters.
  - (k) Council and police issued evacuation notices to residents in flood affected areas as flood waters rose.

### **3. Local participation in EMQ 2010 Pre-season Flood And Cyclone Workshop**

- (a) Three Council representatives, including myself, from the LDMG attended the workshop held in Rockhampton on 14 October 2010.
- (b) This workshop was very useful as it provided a forum to openly discuss the latest predictions, understand the latest information, look at support tools being developed and available from EMQ and BOM, and foster the regional personal networks that are critical during a disaster event.

- (c) EMQ provided a copy of the presentations and information packs on CD. This CD was later used by the DMC to share the information with LDMG and Council.
- (d) Workshop sessions like this are invaluable. It was timely and enabled deliberate discussion at a regional level between State, regional and local disaster management operatives about seasonal outlook and preparedness. This session certainly encouraged Council to ramp up some preparedness activities.

#### **4. Local Participation in EMQs 2010 Consultation Sessions Concerning Proposed Changes to the DM Act**

- (a) The LDMG Chair, Council executive, and I attended the EMQ session in Rockhampton on the 14/10/10.
- (b) The Disaster Management Conference in Home Hill 2/6/10 to 4/6/10 also had a session on the impending changes in the new legislation.
- (c) The EMQ session was valuable – for similar reasons discussed in item 3(d) and also because as it enabled Council and LDMG executive to be clear about the changes.

#### **5. Measures Taken to Train / Equip SES**

- (a) The local SES carries out regular training. It is my understanding that the Emerald SES unit coordinates most training activities, but training and training competencies are monitored by EMQ.
- (b) During 2010, Council implemented a restructure of its SES groups to improve efficiency and effectiveness. This involved considerable planning and discussion with EMQ, Council and SES personnel. The outcome was a transition from four local controllers (the pre-shire amalgamation situation) to one local controller, three deputy local controllers and a number of group leaders underneath. The restructure process was designed to consider how better training support could be provided within CHRC members and across the SES groups in neighbouring Shires.
- (c) The EMQ and BOM climate and season outlook information was shared with the Local Controller who is a representative on the LDMG. It was also verbally discussed with group leaders. EMQ also directly reinforced this information directly with the units. SES executive were clearly made aware of the predicted season and likelihood of heavy rain and flooding sometime during the summer season, and that there was a likelihood of more cyclones this season that would hit the Queensland coast.
- (d) Council provided a new flood boat to the Gemfields SES unit. This was delivered to the Gemfields immediately after the event December 3 event. The Local Controller worked through EMQ flood boat training and competency requirements with the Gemfields group.
- (e) The Gemfields SES vehicle a Toyota Hilux was brought in and fitted with a complete set of new tyres – BF Goodrich Muddies to overcome traction issues

- the unit were experiencing on the gravel and clay roads. This was done 15 December 2010.
- (f) An additional 4WD vehicle was hired during the December flood events and provided to the Emerald SES unit to assist them conduct their activities unhindered.
  - (g) Replacement boat propellers were ordered and provided to the Rolleston ESU unit on the 24/12/10 after Rolleston ESU leader reported it was damaged. Despite Christmas closure, the LDMG chair organised a replacement propeller to be brought out by a car hire firm and Council staff then delivered it to Rolleston by the 26/12/10. The Springsure flood boat was also sent to Rolleston on two occasions because of engine problems on the Rolleston boat – the first on 28/12/10 to 31/12/10, and then again on the 10/1/11.
  - (h) The Local Controller attended the Guardian software training along with other LDMG members on the 17/12/10.
  - (i) Council supported the State and regional EMQ initiatives to assist with cleanup operations in north Queensland after Cyclone Yasi. Council released SES members from their workforce and provided a hire vehicle to transport them to and from Rockhampton airport.
  - (j) Three projects were submitted for funding under the EMQ 2010/11 SES Non-recurrent Subsidy program on 21/12/10:
    - o Upgrade waste water and sewerage treatment system at Emerald group.
    - o Purchase new Toyota Hilux 4WD for Springsure group.
    - o Purchase new computer projection unit Gemfields group.
  - (k) In 2010/11, Council was also completing two key building projects:
    - o New Rolleston ESU building.
    - o New Gemfields SES shed.

**6. Local actions undertaken in advance of and/or with respect to 2010/11 flood in relation to resourcing, coordination and deployment of personnel and equipment**

- (a) In addition to the comments made in Items 1, 2 and 5, the Coordination Centre in Emerald (Council Board Room) was set up on 24 December 2010 with computers and phones in anticipation and preparation for a likely flood event.
- (b) LDMG members were specifically asked to review their staffing and resourcing capacity within their own agencies over the Christmas New Year period.
- (c) A letter was sent to Qld Rail seeking clarity about emergency access use of the rail line in the event of a flood, and seeking clarity about on-ground resources to support the use of the train.
- (d) Plant and equipment were stationed in three separate areas in town that would correspond with likely isolation areas.

**7. Local actions with respect to immediate management, response and recovery operations, including the coordination and deployment of personnel and equipment**

- (a) Regular daily and nightly monitoring of rain and river conditions were conducted.

- (b) Regular discussions occurred with BOM forecasters and hydrologists, and Sunwater.
- (c) For the December 3 event, the Gemfield SES group leader notified the SES Local Controller and I around 0200hrs that floodwaters were raising quickly in Sapphire area. The following action occurred:
  - i. I checked the Enviromon software to look at rain intensities and duration;
  - ii. the Executive of the LDMG met in Coordination Centre and called for an LDMG meeting;
  - iii. landholders on properties immediately downstream from Sapphire to Emerald were telephoned straight away between 3:30-5:30am to alert them;
  - iv. a mini coordination centre was set up. This comprised the LDMG Chair, LDC, CEO, Council media officer, HR Manager, Manager of Governance and Corporate services, Councillors, and EMQ provided one of their staff – Glenn Bell for a week to assist with resupply issues;
  - v. the DDMG were advised;
  - vi. appropriate staff were rostered;
  - vii. other landholders and sector groups likely to be affected further downstream were telephoned;
  - viii. some resupplies were coordinated for isolated properties near Nogoia Comet Junction, and lower Mackenzie/ lower Dawson rivers;
  - ix. as roads in the region were badly cut, Council and LDMG helped coordinate road reports both via Council and TMR websites and media outlets;
  - x. regular media updates were coordinated; and
  - xi. staff and Councillors helped coordinate activities from various area offices including in particular Duaringa, Blackwater, Springsure and Rolleston.
- (d) On 10 December 2010, Council's CEO sent out a clear message to all managers to be proactive in preparing for a possible flood event – this included making arrangements and reporting on any identified issues in relation to:
  - i. Community support groups readiness;
  - ii. Road closure signage and tools;
  - iii. Sandbags and stockpiles of sand;
  - iv. Field and office staff availability;
  - v. Checking LDMG, TMR, and SES member contact lists and availability over the Christmas closure period;
  - vi. Checking toilet and shower arrangements at evacuation centres; and
  - vii. Confirmation of areas where pets and other animals could be taken.
- (e) For the December 27 event, I had been monitoring rainfall through the river / rain gauge network, through consultations with BOM, Sunwater, the local hydrologist and various landholders. As soon as it was apparent a major flood was likely, the following occurred:

- i. I notified the LDMG executive to meet at the coordination centre early in the morning and held a teleconference with BOM, Sunwater and local hydrologist to collectively assess the situation.
- ii. The LDMG was activated at 1200hrs and the DDMG was advised.
- iii. Rostered staff were asked to commence disaster management activities.
- iv. Staff on holidays away from the area were called and advised that they may need to return to assist.
- v. Media releases were prepared and delivered through the LDMG Chair (Mayor) and then placed on CHRC website.
- vi. The ABC established a media operation on-site.
- vii. The Local hydrologist was engaged to work with, and from, the coordination centre.
- viii. Deliberate and regular teleconferences were held with BOM, Sunwater, the local hydrologist and the LDMG executive morning and night to discuss and agree on flood level projections and timings.
- ix. BOM provided the local hydrologist and I direct access to the model runs on their website.
- x. The Coordination centre comprised representatives from QPS, Ambulance, SES, TMR, QFR, EMQ, Council, and QR.
- xi. Notices to prepare for flooding were sent out.
- xii. Sandbag stations were set up.
- xiii. Plant and equipment were stationed in three separate areas in town that would correspond with likely isolation areas.
- xiv. Red Cross and Salvation Army was contacted – the LDMG has a Memorandum of Understanding with Red Cross to manage evacuation centres. The Salvation Army also works with Red Cross in the evacuation centres.
- xv. Once a predicted flood height was known or revised, press releases and SMS messages were sent out, including maps of likely inundation areas.
- xvi. SMS texting was successfully used for the first time – a map of the area to be notified was prepared and seven messages were sent out during the event.
- xvii. Additional on-ground support was sought and obtained from Mackay Regional Council and QIT Plus.
- xviii. Evacuation centres were set up – Emerald Agricultural College, St Patrick's School, Emerald Town hall, and Harvest Life Church. Emerald Cotton Gin was notified that the LDMG may need to use this as an additional evacuation facility. The Cotton Gin was used as a resupply point.
- xix. Evacuation centre details were provided to the public, along with a map of illustrating location of evacuation centres and likely inundation areas. Residents were advised by media to register at the evacuation centres even if staying with friends and relatives. Evacuation notices were hand delivered in key areas and complemented by media.
- xx. The Emerald swimming pool was opened up as an additional showering facility for people in evacuation centres.



- xxi. A survey was undertaken of Aged Persons units (Avalon in Centenary Drive in Emerald) at risk of inundation at 0.8m above 2008 flood height. An assessment of time taken to shift the residents with two ambulances with QAS personnel was undertaken. A request was made to the Meteor Motel to make available ground floor rooms for the possible relocation of these 45 residents – the motel owners were very helpful, even asking their existing tenants to move to upstairs floors. The survey indicated marginal risk of flood inundation. Liaison occurred with the Director of Nursing, Blue Care and the Manager of Avalon and it was agreed to leave the residents where they were, but undertake further sand bagging. This was a sensible decision.
  - xxii. A survey of Emerald hospital was undertaken to assess the risk of inundation at 0.8m above 2008 flood height. The survey resulted in confidence that water would not enter the hospital but Qld Health made its own evacuation call, which caused significant difficulties with the emergency services groups trying to get patients out through floodwaters around the hospital.
  - xxiii. Daily contact was maintained with the ESU leader at Rolleston whilst it was isolated, and support was provided as required.
  - xxiv. Help was given for the set up and resources for a temporary secondary Police station at the airport, and secondary health centre at the Agricultural College.
  - xxv. The LDMG deputy chair established a mini coordination centre in Springsure to assist with managing response and resupply in the southern areas including Rolleston. Many properties were isolated and the Deputy Chair organised medical and food supply drops to a number of properties, supported resupply to Rolleston, and helped coordinate evacuations of some properties.
  - xxvi. In the Eastern areas, Council staff and Duaranga Police helped coordinate local arrangements in those areas.
- (f) The Recovery Team officially commenced on January 5 when the LDMG stood down. The LDMG already had in place a Recovery plan and Community support groups in place before the events. It also had an MOU with Red Cross to manage the evacuation centres.
  - (g) A Recovery Coordinator (Lyle Harmon) was appointed, and four subgroup coordinators and members were appointed. The sub-groups covered the areas – economic, infrastructure, environment and communities. This group was chaired by a Councillor (Kerry Hayes) and was supported by a dedicated communications officer. The Recovery Coordinator is contracted for six months to lead the recovery program to a successful conclusion.
- 8. Local measures taken to preserve vital infrastructure, and to manage, maintain or reinstate supply of essential services – food, water, power, transport, communications and/or sewerage.**
- (a) The CEO sent a clear message to all managers on 10 December 2010 to identify critical infrastructure that might require isolation and or protection from floodwaters and to pro-actively coordinate arrangements to protect this infrastructure.

- (b) The height of sewer and water pump facilities had been accurately surveyed prior to the summer season (including electrical circuit boards). A strategy to protect those pumps located within likely flood risk areas was conducted, including estimating impacts of flood levels at 0.4m above 2008 levels. Some infrastructure was protected with sandbags and other water exclusion methods.
- (c) All water reservoirs in Emerald were filled to capacity prior to the flood. Council staff sandbagged pump houses and camped at the water treatment plant to monitor pumps and flood levels and protect the infrastructure during the peak. In the event that the western pumps and water facility failed, the Manager of Water Utilities had a strategy to manipulate the east reservoir and flow it back to the west.
- (d) In Rolleston, the water treatment plant was inundated. Supply of potable water was affected but restored quickly. Council had previously set up a secondary water supply system that connected to a series of bores fitted with and in-line chlorinator to bring the water to potable standard.
- (e) In Rolleston, the power supply to the sewerage pumps was also inundated. Ergon support was excellent – they had crews down to disconnect and reconnect supplies as soon as possible.
- (f) In Springsure the rising main to the reservoir faulted but water was diverted and the problem was resolved.
- (g) In Duaringa, the three pumps were affected by floodwater, and raw water from Dawson River could not be extracted. Duaringa has a back-up system that ensures there is 70 days supply of potable water even if pumps go out.
- (h) The LDMG notified Coles (Centro shopping complex – 22 speciality stores) on Wednesday 29 December – approximately 48hrs notice prior to flood inundation - that Ergon would be cutting the power. Coles took steps to save and distribute some of the existing food stocks – some of the cold stuffs went to the Salvation Army which was later used to feed evacuees. The LDMG knew that Coles would go under. It wasn't until near the flood peak that it was realised Woolworths would suffer slight inundation (approx 100mm over the floor).
- (i) Two refrigerated vans were also parked up next to the Town Hall – to store this and other food, and in the event that power may have been disrupted it would ensure foodstuffs could be kept stored at safe temperatures.
- (j) Ergon worked closely with the LDMG keeping them informed them of what power would be cut where and when as flood waters rose. Power was disconnected at Bedford and Comet South; and in Emerald along the river – the area roughly from Coles to Waldby Court; at Borilla Groves, Pritchard Road and Racevie. There were other individual properties and rural supplies affected particularly irrigation and water pumps located along the river banks.
- (k) The LDMG requested Telstra to increase available bandwidth for the area.
- (l) Contact was made with QR and QR National prior to the floods about getting access to passenger carriages and these to be pre-positioned in the region (or preferably even in Emerald). The rail line is the only access between east and west of the Nogoa River when the Vince Lester Bridge is cut by floodwater and was used extensively in the 2008 floods. Unfortunately floodwaters had prevented carriages getting to Emerald prior to the December 27 flood event. QR National and Council staff modified a guard van and two box wagons for the safe carriage of people. The train and carriages were unfortunately not

used extensively as floodwaters then cut the rail bridge and damaged the western side of the bridge, closing the rail as a transport option.

- (m) The LDMG established a car park on Emerald Downs Hill to the north of the township and advised residents, particularly those likely to be inundated, to take their cars up to the hill. Residents were then transported by bus back to town. This prevented flood damage to vehicles.
- (n) QAS, QPS and QFR set up a field station and/or staff and equipment on the eastern side of the river.
- (o) Given the state of damage on the main road and Council road network, Council made a resolution permitting landholders in remote areas that Council could (or would) not get access to for a while to undertake minor road work on Council roads to enable them to move around their properties and to neighbouring properties, so that they could secure cattle and move forward with recovery efforts.

**9. Any warning system in place or information concerning weather and flood forecasts or warnings and steps taken to disseminate the information to the community.**

- (a) After the 2008 flood event, a new state-of-the-art Radar was installed in Emerald. Council and BOM also worked together to install an ALERT flood warning system made up of a network of rain and river level gauges that transmit real time data back to the radar and BOM, and to Council. These rain gauges will also be used to calibrate the radar over the next few years.
- (b) The capacity of the rain gauges to measure rainfall intensity duration accurately is high. The rain gauges either have either a :
  - o a 1mm tipping bucket - Mt Mayde, Green Valley, Kulumur Range, Upper Claude, Echo Hills, Glen Rock, Upper Van Dyke, Craigmore, Fairbairn Dam, Sapphire, Valeria, Gregory Highway, Duckponds, Bedford Weir, Rileys Crossing, Humboldt, Roddas Lookout)
  - o a 0.5mm tipping bucket - Middle Ridge
  - o or a 0.2mm tipping bucket - Ducabrook, Raymond, Heathwood, Emerald, Billaboo, Rubyvale, Sunny Park, Florence Vale, Capella, Emerald Radar, Tieri, Middlemount, Bingegang Weir, Dysart, Blackdown Tableland, Arcturus Downs, Springsure Creek, Comet Weir and Avocet.
- (c) The flood ALERT network was only completed in July 2010. It has 38 stations located in the Nogoia, Comet and Mackenzie catchments – 22 rain gauges all completely new equipment, 16 combination rain / river gauges. The Sapphire river gauge station was a completely new installation. All of the other river gauges were 'piggybacked' off existing DERM and Sunwater stations. VHF radio telemetry was installed on all stations with a couple of repeaters so that data can be transmitted real time to the Emerald radar and Emerald CHRC office.
- (d) All of the ALERT network data is available on the BOM website and can be viewed by the public via a number of different ways – either by:
  - o Web Map for Emerald area - <http://www.bom.gov.au/qld/flood/widebay.shtml>

- QLD Rainfall & River Height Data - [http://www.bom.gov.au/qld/flood/rain\\_river.shtml](http://www.bom.gov.au/qld/flood/rain_river.shtml) and click on Baffle, Boyne, Calliope, Dawson, Mackenzie, Fitzroy
  - Latest River Heights for Emerald area - [http://www.bom.gov.au/cgi-bin/wrap\\_fwo.pl?IDQ60289.html](http://www.bom.gov.au/cgi-bin/wrap_fwo.pl?IDQ60289.html)
- (e) I monitored the ALERT network daily and nightly, and made direct phone calls to the Duty Hydrologists and Chief Forecaster at BOM regularly.
- (f) On the 15/12/10, I met with Paula and Andrew Lewis at Waldby Court to discuss and explain the flood water level trigger height at Vince Lester Bridge that residents in the Court needed to begin evacuation on. Andrew and Paula indicated they would make this information clear to the other residents living in the Court.
- (g) On the early hours of Dec 27, LDMG received a number of calls from residents in the upper catchment describing the volume of water coming. Reports came in indicating that the volume of water was 2m higher in the Vandyke, Mantuan and upper Nogoia than any previous flood on local record. This information was shared with BOM and Sunwater. Some of these residents were later evacuated by helicopter to escape rising floodwater.
- (h) As described in Item 7, the LDMG phoned a number of landholders in the path of the water, particularly Retreat, lower Nogoia and lower Comet, and the lower Dawson and Mackenzie area around Tartus.
- (i) The LDMG also set up a number of teleconferences between BOM, Sunwater, the local hydrologist, TMR and some different sectors – Mining (BMA, Ensham and Westfarmers); Irrigators and AgForce; and Grape growers struggling to get picked produce to market.
- (j) From 23 December 2010 to 5 January 2011, 20 LDMG Briefing notes on rain and flooding and about residents undertaking preparation were released to media outlets and posted on the website.
- (k) The approach the LDMG adopted regarding determining flood height predictions was based on a consensus view arising out of a series of regular and deliberate meetings / teleconferences between BOM and Sunwater (and indirectly DERM), and Council's independent local hydrologist. Predictions on flood height were then communicated quickly to the public based on the figure the whole hydrologist panel agreed on. Revised updates were then given as further information came to light.
- (l) The Chair of the LDMG sent out the following Briefing Notes on Rain event and flooding (CHRC website, at retail outlets around town). The full briefing notes have been provided in the first request for information submission to the Commission. The key messages include the following excerpts:
- Briefing Note December 26 Boxing Day morning – *Rainfall over the past twenty four hours in the region has not caused any further problems –the Fairbairn Dam has risen a little more than expected and currently is 1.87m over the spillway. With current flows it is not expected to go above 2m. Once again this will change if we have more rainfall in the catchment. The weather forecast for the next 24-48 hours is for some significant rainfall mainly in the southern and eastern part of the Central Highlands. This is likely to impact particularly on the Comet and Dawson River catchments. Check [www.bom.gov.au](http://www.bom.gov.au) for updates on weather information... A further reminder that people who are travelling are asked to check road conditions and road closures before embarking on their journeys. As I*

*stated yesterday, with so much rainfall in already full rivers, creeks and watercourses the situation could change almost hourly.*

- *Briefing Note December 27 1100hrs – The Bureau of Meteorology has advised that Emerald is facing a minor flood level of just under 3.5m over the spillway at the Fairbairn Dam within the next 72hours....levels were expected to peak at 14m in Emerald without further rain.*
- *Briefing Note December 28 – BOM predictions are that flood levels in Emerald will reach those levels recorded in 2008. The Local Disaster Management Group will provide appropriate evacuation notices to affected residents.*
- *Briefing Note December 29 – As at 7:30am this morning advice to all residents is the following – The Vince Lester Bridge will close at 2:00pm today Wednesday 29<sup>th</sup> December 2010...water should peak at the Nogoa River approximately midday Friday 31<sup>st</sup> December 300mm (12 inches / 1 foot) above the 2008 level.*
- *Briefing Note December 30 – As at 6:30am this morning advice to all residents is the following – Expected peak at the bridge is up to 16.2metres sometime Friday which is 0.8m above 2008.*
- *Briefing Note December 30 – As at 6:00pm this afternoon the following advice is issued to all residents – Expected peak at the bridge is approximately 16.0 metres around midnight tonight, which is 0.6m above the 2008 peak, but less than previously indicated...residents in north Emerald could expect larger rises tonight of up to 60cm before the peak occurs at around 6:00am*
- *Briefing Note December 31 – The Nogoa River peaked at the 16.0 m at 11:30 pm last night.*

(m) The following SMS messages were sent out:

- *Dec 28, 1258hrs  
WARNING: Emerald area residents. Flooding to reach 2008 levels & close Vince Lester Bridge late Wed. afternoon. Evacuation notices to effected residents will follow. Mayor P Maguire*
- *Dec 28, 1756hrs  
Flood info from CHRC - Situation continually monitored -Vince Lester Bridge expected to close Wed PM-Emerald evac centres open-Town Hall today& Ag College Wed. Mayor Peter Maguire*
- *Dec 29, 0914hrs  
Vince Lester closed by 2pm today. Flood equal to 2008 by Thursday. Expected to go higher by Friday. Evacuations will be necessary. Contact CHRC. Mayor Peter Maguire*
- *Dec 29, 1002 hrs  
Flood info from CHRC - Flood at Emerald same level as 2008 at 2am Thurs – Latest estimate flood peak Fri am – up to 0.5metres higher than 2008. Mayor Peter Maguire*
- *Dec 30, 0707hrs  
Urgent flood info for all Emerald residents from CHRC. Please make emergency preparations. Expected peak at bridge 16.2m which is 0.8m above 2008 level*
- *Dec 30, 1001hrs  
Advice from CHRC, residents wishing to get vehicles to high ground*

*proceed to SES complex, Emerald Downs Hill, Capella Road. Bus will transport back. Mayor Peter Maguire*

- Jan 3 731hrs  
*CHRC Advice: Relevant info on insurance & cleanup supplies available on Council website or at Council office. Go to [www.chcr.qld.gov.au](http://www.chcr.qld.gov.au) or ph:1300242686. Mayor Peter Maguire*

- (n) The final flood peak at Vince Lester was 16.05m.
- (o) Having the ABC radio on-site proved invaluable in getting immediate accurate information out to the residents.
- (p) The LDMG Chair (Mayor) was the spokesperson and all advice to residents and the community went out through the Mayor.
- (q) Regular news updates were provided from the LDMG and the website was continually updated. Between 26 December 2010 and 2 January 2011, 21,313 visitors made 79 035 visits to the site, making 222,554 page views. (The average number of visitors per month prior to the flood was 3000.)
- (r) In addition, hard copies were distributed to Red Cross representatives for posting at the Town Hall and St Patrick's School Evacuation Centres. Other sites such as Harvest life and the Agricultural College received them through emails to volunteers.
- (s) Council counter staff and managers manned their phones 24hrs during critical periods during the December 3 and December 27 events.

**10. An indication about the source, accuracy, and timeliness of information in Item 9 or effectiveness of the warning system for local purposes.**

- (a) It would be fair to say that the preparatory steps and information shared with LDMG members and agency representatives was very timely and appropriate for rapid response across all agencies.
- (b) On the morning of 27 December 2010, it was apparent from the ALERT network and the BOM site that rainfall totals and rainfall intensity/ duration (240mm in less than 12 hours on a very wet catchment), would lead to serious flooding. Serious flooding was already occurring in the upper part of the catchment where the heavy rain had fallen. This area Floodwaters would affect Rolleston and Emerald townships, and the rural residents located on the floodplain in the Comet and Nogoia (Fairbairn dam catchment area) catchments initially before the floodwater made its way down the Mackenzie toward Rockhampton.
- (c) Phone call reports were also coming in from various landholders located in the upper Nogoia (Vandyke, Claude and Mantuan area) that the floodwaters in their part of the upper Nogoia were the largest they had seen on record. The area of heavy rain extended along the Carnarvon ranges up to the Springsure Tambo road, and around to Carnarvon Gorge. To the north of this area rainfall totals dropped off significantly.
- (d) The approach the LDMG adopted regarding flood height predictions was based on a consensus view arising out of a series of regular and deliberate meetings / teleconferences between BOM and Sunwater (and indirectly DERM), and Council's independent local hydrologist. These meetings were held morning and night with the LDMG executive to discuss model outputs, and share local information (concerning rain, runoff / river level) provided by rural residents in

the upper catchments. The outcome of this information was then released by the LDMG Chair (Mayor) so that the message was consistent and coming from one authoritative source.

- (e) Rural landholders in the upper parts of the catchment were all watching rain gauges and communicating with each other as they normally do, and relaying information to Councillors and Council staff.
  - (f) The SMS texts proved to be a very effective communication tool and Council has received very positive feedback on its use.
- 11. Local measures undertaken to protect life and public property (such as roads/bridge closures, evacuation arrangements etc) and steps taken to disseminate this to residents before, during and after the 2010/11 events.**
- (a) In addition to the actions set out under Item 2 and Item 7, Council and TMR have worked very closely together in the lead up to the summer season and developed an effective road closure and road conditions report that sits on Councils website.
  - (b) The SMS text messages were used for the first time by Council and proved to be very effective for residents from Emerald to Comet.
  - (c) Council and SES assisted TMR to monitor water over the roads in the shire, put road closure signs in place and man some of these road closure signs in an effort to prevent people driving through. One Council worker was punched in the head by an angry motorist wanting to drive through but being asked to stop.
  - (d) LDMG's approach during the 2010 event was to issue a predicted size of the flood as soon as possible. As better information came to hand that enabled LDMG to confidently revise the prediction, it did so immediately, and notified the public. On the second warning message on the 27 December 2010, a likely inundation map (see Figure1) was prepared and put on the website and also hand delivered to key inundation areas. On the final prediction a second inundation map was prepared and distributed - see Figure 2).
  - (e) A series of briefing notes were prepared and put on Council's website and also placed immediately at counters of key businesses Council thought would be visited by the community around town such as supermarkets and food outlets.
  - (f) A number of different briefing notes (included in the material sent to the Commission) included rainfall advice received from the Bureau of Meteorology and road closure information. They also included advice to assist the community to act and travel safely, and where to evacuate to, and included:
    - i. Briefing Note Boxing Day December 26 – Central Highlands rain event and flooding.
    - ii. Briefing Note December 27 1100hrs - An important notice to Riverview Street residents about evacuation.
    - iii. Briefing Note December 28 – Central Highlands rain event and flooding
    - iv. Potential inundation notice.
    - v. Police warning about not entering and swimming in flood waters.
    - vi. Sandbags notice to residents.
    - vii. Don't forget your medications.
    - viii. Qld Health – important health advice for residents in flood affected areas.

- ix. Emerald Hospital services – and provision of services east and western side of town
- x. Airport transfers QF2406 and QF 2407 1830hrs Dec29.
- xi. Arrangements for 1:25pm Qantas flight Emerald and travel to airport across flooded Nogoa R.

**12. Circumstances of any rescues or evacuations performed in the local area in connection with the flood events including an assessment of the adequacy and timeliness.**

- (a) During the December 3 flood event one family was rescued by the SES and flood boat at Comet. Discussions were held with this family about future self-evacuation strategies and not leaving exit strategy too late. In the December 27 flood event, I rang this family and confirmed they had left the property prior to floodwater reaching a threatening situation.
- (b) During the December 27 flood event Police, SES, Fire and Rescue, Qld Ambulance and Council staff were involved in evacuations.
- (c) Council staff door-knocked key inundation areas and handed out copies of the flood inundation map and evacuation notices.
- (d) A complete list of all evacuation activities conducted by the LDMG is recorded in Council's Guardian software. A report can be prepared for the Commission.
- (e) During the December 27 event, a number of residents that were away on holidays, rang the Coordination centre to let them know that if an evacuation was necessary in their part of town, that they were not currently in Emerald.
- (f) Police pressure was required to move residents located in caravans in the Emerald Showgrounds.
- (g) The timing of the evacuation and relocation of patients from the Emerald hospital by Qld Health was made too late, and made it difficult for emergency service personnel to get patients out of the hospital.

**13. Establishment, operation and performance of any evacuation centre in the local area including any difficulties encountered.**

- (a) No problems were encountered with the evacuation centres. The LDMG had pre-determined its evacuation centres, and had an MOU in place with Red Cross. The Salvation Army and Red Cross activated quickly and had the centres up and running.
- (b) Prior to the floods, Ken Crane (Community Support Officer, Community Recovery, Dept of Communities) had visited Emerald on 30 November 2010 and inspected the evacuation centres with a view to assessing size, space, adequacy, and any additional resources that may need to be brought in.
- (c) The LDMG executive had also approached St Patricks School, Emerald North State School, Harvest Life Christian Church, and Emerald State School to discuss use and access to their grounds and buildings in an event of a flood. These all proved adequate for the task.
- (d) The Emerald Cotton Gin was identified as an evacuation centre but not used this event.



- (e) The Red Cross and Salvation Army, supported by Council staff and an additional consultant employed by Council (Kelly Uhr) did a terrific job.
- (f) The 'Habitat' temporary evacuation centre system was set up by Defence during the flood, but with other evacuation centres coping, this had little use. If it had been erected earlier it would have been more beneficial.
- (g) Having a police presence permanently at the evacuation centres would be useful to overcome and manage disturbances and unruly behaviour – and would also take pressure off community support workers.

**14. Circumstances of any flood-related human fatality within the region.**

- (a) There were no flood related human fatalities in the Central Highlands Regional Council area.

**15. Involvement with State and Federal agencies, including in particular the Qld Police Service, in relation to the provision of emergency response measures.**

- (a) In summary all of the State agencies stepped forward with resources and support during this event and stayed with the LDMG until it was stood down. Without them, Council would not have achieved the successful outcomes it did. All tasks assigned to the State agencies were completed.
- (b) The Queensland Police presence and effort during the event both at LDMG and DDC level, and in particular during the response phase in the coordination centre, was excellent. QPS brought in additional staff to ensure there was sufficient roster capacity and to assist with traffic control, civic behaviour, disturbances, evacuation directions and security patrols.
- (c) At a DDC level the police role was also very effective, supportive and responsive.
- (d) EMQ provided fantastic support in the Coordination Centre, and supervisory support and guidance to SES operations. In the earlier December 3 flood event, EMQ also provided an officer to come out and work with resupply coordination with Council staff as Council had not activated the LDMG during that event.
- (e) Queensland Fire put a big resource effort into our December 27 flood event and responded to a large proportion of tasks. They also managed the air space at a local level.
- (f) Ergon was very responsive and pro-active in notifying both the LDMG and customers, inspecting lines, and re-instating power as quickly as it could post the flood. They did a terrific job.
- (g) Transport and Main Roads did a great job working with Council managing road closures and information about road closures. They also looked at solutions to open up and enable freight truck access as quickly as possible on key roads.
- (h) The Defence personnel played a critical role with resupply using Black Hawk helicopters, and also undertook the setup of the 'Habitat'.

**16. The nature and timing of any communications within the Disaster Management hierarchy, including in particular communications with the**

**DDC, SDC or SRC, and whether any directions were given by the DDC and the nature of those directions.**

- (a) The DDC were pro-active in requesting sitreps on time and clarifying information requirements needed at District and State level.
- (b) Requests for Assistance ("RFAs") were carried out well by the DDC. There was difficulty ascertaining where particular RFAs were in terms of progress or completion. However, following the December 27 event, the DDC took steps to improve and rectify this as the event continued both in Emerald and unfolded in Theodore and Rockhampton.
- (c) The Coordination Centre found it difficult to obtain correct information about what supplies were going to be delivered, and when, to the Emerald airport. This made it difficult to decide what staff were needed to be available when and with what equipment, to assist with unloading.
- (d) Potential risks were created by the use of two radio frequencies for aircraft operating in the area.
- (e) Consideration will need to be given to having air traffic control to assist in emergencies, given the reliance on helicopter resupply and evacuations. Because of the volume of air traffic, consideration will need to be given to restricting air space to aircraft essential to supporting DM.
- (f) There would appear to still be some unnecessary degree of overlap between what each Agency needs to report through their respective hierarchy and what the LDMG report via Sitrep to the DDC and up the line. Opportunities exist to trim duplicate reporting requirements and focus on ensuring the LDMG sitrep covers the more common information needed, and is accepted as accurate.

**17. An assessment of the adequacy of equipment and communications systems in the local area during the 2010/11 flood events.**

- (a) Telecommunication issues were experienced in the Duaringa area – however a call to Telstra manager and a request through DDC saw this issue resolved within 24 hours.
- (b) The ALERT system worked well, despite the fact that installation of some parts of the system had only just been completed in July 2010.
- (c) Also see point 16(d).

**18. Assessment of the adequacy of the community's response in the local area during the 2010/11 flood events.**

- (a) Despite many warnings being provided by SMS, Media and web site, there were still residents who were slow to respond even when some face-to-face contact was made with them.
- (b) Most residents have reported the SMS system used in Emerald was excellent. The only partial limitation was that some residents who had not been flooded in 2008 indicated they did not have an actual 2008 flood reference point to use in their street, because in 2008, floodwater had not reached them. This being said, however, the likely inundation maps issued were relatively accurate predictions about flood affected land. Generally the information provided was accurate and timely, the issue was that some people chose to delay their response.

- (c) Council is considering how the use of Twitter and Facebook could also be used in future events to improve information dissemination.

**19. Measures being proposed planned or implemented to prepare for, mitigate or manage future flood events.**

- (a) Council has undertaken an extensive data capture program with the view to developing better flood plain management understanding and planning decision tools. The data and actions include:
  - i. Peak flood height surveys by a registered surveyor.
  - ii. Survey of key Infrastructure heights AHDm – railway line, road centrelines, and the LN1 drain that runs through Emerald.
  - iii. Survey of floor heights AHDm of critical buildings and infrastructure survey – emergency services (hospital buildings, ambulance, police station etc, evacuation centres, aged persons units.
  - iv. Working with the Spatial Information Unit, DERM in Brisbane and Dept of Community Safety for imagery over Emerald and from Fairbairn Dam to Emerald, so that detailed mapping of water over land could be carried out. The township area has since been accurately digitised.
  - v. Commissioning a helicopter and two photographers to capture low level oblique photography to record water inundation and water behaviour.
  - vi. Booking SPOT 2.5m satellite imagery over the Vandyke area where roads and creeks have been substantially altered during the event.
  - vii. Survey of road centrelines and infrastructure in Rolleston Township. Bluff and Duaringa are planned.
  - viii. Survey of Raymond and Sapphire ALERT river station cross sections post the flood to verify heights and discharge data with BOM.
  - ix. Liaison with John Arrowsmith DCS to book and acquire LIDAR satellite data over Sapphire, Emerald, Rolleston, Bluff and Comet townships and surrounding areas.
  - x. Engaging the local hydrologist to capture flood information and heights in rural areas.
  - xi. Debriefing and workshopping with QIT Plus Guardian software staff and Council staff 2-4 March 2011. Additional training is scheduled with staff – including disaster response training for all senior managers, middle managers and key personnel.
  - xii. Risk assessment will be undertaken and some pumps in Emerald and Rolleston will have their power supplies raised, and permanent bunding protection installed.
  - xiii. Discussions with regional QRail regarding revising the bridge opening size upwards from one bridge span to two bridge spans for the existing drainage at 264.5km. This will cost an additional \$170,000.

**20. Advice on special considerations that should be given to the local area by reason of regional or geographic differences.**

- (a) Consideration needs to be given to a flood mitigation solution to Carnarvon Highway and Dawson Highway at Panorama Creek crossing and Deep

Channel crossing. Rolleston Township has been isolated repeatedly this last twelve months.

- (b) The raising of Vince Lester Bridge in Emerald would also provide additional options in evacuation scenarios and provide a better connectivity for use of services. It would also secure the north south route when coupled with improvements at Rolleston.
- (c) Consideration should be given to providing a secure flood proof road access from southern Qld to central and northern Qld. In some ways the inland route could become highway one with a focus on flood proofing the feeder roads back toward the coast. This would enable the road transport to still service many parts of Queensland that otherwise get cut.
- (d) Consideration should be given to locating a second food distribution centre, possibly in Townsville.

**21. Advice on any feature of the disaster management preparation and planning stages, or the disaster response and recovery operations which presented any difficulty or may require practical or legislative changes to improve future disaster management in the area.**

- (a) No comments at this time.



William Frazer Wilkinson

Figure 1 – First Warning Inundation Map

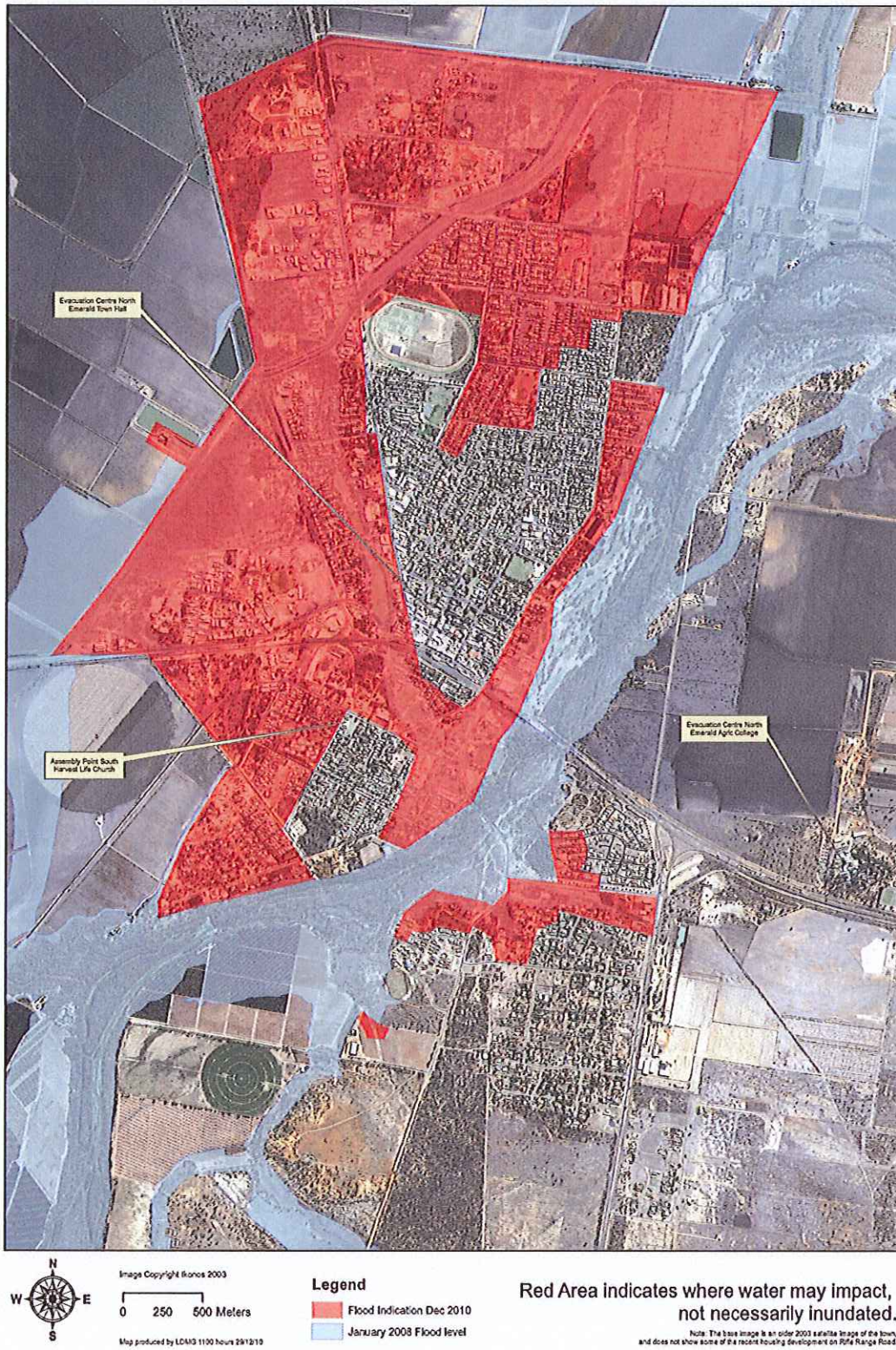


Figure 2 – Second and Final Warning Inundation Map

