

KERRY PLOWRIGHT

# STATEMENT TO COMMISSION OF INQUIRY

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Dated 29 April 2011



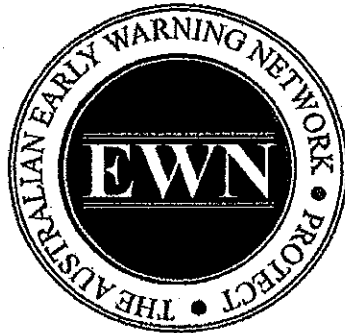
29/04/2011

KERRY PLOWRIGHT

# STATEMENT TO COMMISSION OF INQUIRY

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Dated 29 April 2011



QFCI

Date:

06/05/11

JM

Exhibit Number:

297



29/04/2011

# THE EARLY WARNING NETWORK

## Subjects to be addressed

1. How the Early Warning system operates in Brisbane including who can access the system as an Administrator, how receivers register for the system, whether the system includes mobile location based alerts and methods available to send alerts such as the graphical information system, group alerts and saved alerts.
2. The number and location of persons registered in the Early Warning Network in Brisbane
3. The alert history, including:
  - The originator of the alert
  - The location of alert recipients
  - How the alert recipients were determined
  - The method used to send the alert (whether the alert recipients were selected using the graphical information system or a pre-defined list);
  - Spatial data used to determine alert recipients; and
  - The text of the alert

### In respect of alerts issued on:

- 5 January 2011 at 11:08am;
  - 8 January 2011 at 11:07 am
  - 9 January 2011 at 11:04 pm; and
  - 11 January 2011 at 8:24 am
4. Any problems or limitations encountered in the operation of the Early Warning Network's warning system in Brisbane during the period 5 January 2011 to 11 January 2011

## 1. How the Early Warning Network Operates in Brisbane

### Introduction

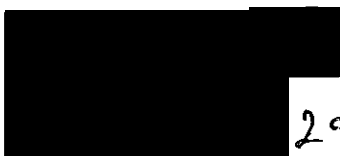
The Early Warning Network (EWN) has been continuously providing early warning services to Brisbane City Council (BCC) since late 2009. Following a yearlong pilot program with EWN, the Brisbane Lord Mayor's Taskforce on Suburban Flooding (LMTSF) established a requirement for local flood advice, forecasting and warning systems. Subsequently in November 2010, Brisbane City Council (BCC) issued an RFT which after careful evaluation of respondents was awarded to EWN.

The RFT and FloodWise Community Access project was specifically concerned with providing:

- creek flood affected residents with warning alerts; and
- residents of Brisbane access to severe weather warning alerts.

BCC residents are able to subscribe to the severe weather alert service:

- online through a dedicated page on the Brisbane City Councils website;
- via the Council's call centre; and
- in writing on an application form lodged with Council



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## THE EARLY WARNING NETWORK

A critical component of the requirement was the capability to define a geographical area likely to be impacted by severe weather and the ability to send alerts to all subscribers within the defined area. When a resident registers to receive warnings, the system automatically geo-locates their address as a latitude and longitude (lat/long). The system utilises the lat/long to determine if a person is in a defined alert area and is accurate to approximately ten metres. In other words a house or property could be selected and alerted from the mapping system, or one side of a street.

The registration process enables customers to be able to choose one or more methods of alert delivery for each service that they register for (sms, email, voice to phone) both on line and via paper registration. The allowable methods of alert being:

- email;
- digitised landline voice message;
- SMS

Subsequent to registration residents are able to change their service, method of alert, location and other details online and to unsubscribe. The scope of the service includes but is not restricted to:

- Registration of residents of Brisbane who wished to subscribe to the alert services at one registration per household;
- Management of registrations including change of details and unsubscribing;
- Verification of creek flood notifications received from Council's FloodWise system;
- Issuing Creek Flooding Alerts to relevant subscribers based on notifications received from Council's FloodWise system and subscribers in the area impacted by the notification;
- Issuing Severe Weather Alerts to subscribers based on information obtained from other sources such as Bureau of Meteorology (BOM) and internal EWN assessments;
- Alerts for Creek Flooding and Severe Weather issued via Email and/or SMS or Voice call to Landline as selected by the subscriber;
- The ability to provide warnings to affected residents for King Tides;
- The ability to alert for other hazards such as bushfire;
- Council ability to access to the system to issue its own Council authored messages in times of emergency; and
- Provision of customer support for service in terms of problems or enquiries.

### Severe Weather Warning Alerts

EWN provides registered Brisbane resident's early warning and advice of potentially severe weather events. Alerts or advisories are based on BOM warnings and/or internal and contracted expert assessment. Alerts are usually issued using a combination EWNs Geographic Notification and Information System (GNIS) and groups. The GNIS enables operators to view locations recently alerted and to whom alerts have already been sent. For any alert issued to BCC residents, a group alert is sent to specified staff informing them of the action and content.



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# THE EARLY WARNING NETWORK

Recent comments to the Commission have reflected on what 'meaning' a recipient might derive from a short message and the potential for undesirable behaviours that might place people at greater risk. This is an excellent point which is why we seek to provide context and situational awareness through a range of alerts leading up to an event. EWN can issue the following types of warnings for severe weather:

1. A national **Severe Weather Outlook** (daily). This provides emergency and OHS managers of large distributed organisations situational awareness at glance;
2. The **Severe Weather and Rainfall Alert** produced for specific locations daily. This expands on situational awareness with a detailed assessment and forecast;
3. **Pre Alerts** are issued to the public within vulnerable locations on days of high threat. If residents receive one of these alerts from us, they need to pay extra attention and take care.
4. **Severe Weather Alerts** are issued over multiple channels for locations expected to be impacted within minutes or hours.

For further information on the processes listed above see attached documents:

**Attachment A.** Example of how EWN issues severe thunderstorm warnings

**Attachment B.** Description of EWN's four layers of warnings for severe weather

In addition to EWN initiated warnings; EWN also sends notifications to residents at the request of Council or after consultation with Council. Examples include specific warnings and notifications during the recent flooding event, King tide alerts and similar. Consultation occurs with Council emergency management regarding additional alert requirements when the threat environment changes or an escalation occurs or is anticipated. This is very much a 24x7 team environment where all resources are pooled to assist in decision making and the language and behavioural aspect of warnings are front and centre.

**Creek Flood Event Notifications** Two years ago we built into our system Auto Alerts for bushfire warnings. This process automatically geo-locates fire incidents and sends messages to anyone located within 2km of that location – namely Watch and Act and Emergency Alerts. We also do the same for flash flooding. Brisbane City Council operates the Flood Wise system. This system utilises a network of gauges that measure rainfall, creek and river levels within areas vulnerable to flooding or flash flooding. A number of these are connected to the EWN system. When activated they send messages via SMS into the EWN Alert Engine. Similar to the bushfire capability these warnings can be automatically delivered to those registered or to a geographic area. We currently capture these alerts so the Alert Operator can authenticate the warning (Cross checks rainfall and other data) before sending it.

Potential creek flooding is recognised when rainfall and creek/stream levels reach predefined trigger points. Creek flood affected residents are then alerted of a potential flood event through the EWN system. Each notification communicates a different message regarding the status of the creek flood event. Residents are expected to carry out their flood ready plans upon advice of a creek flood event. Each local flood/hazard affected community has its own set of creek flood event triggers and different wording for their set of alerts. There are currently three defined notification types:

1. Rainfall indicates likely flooding;
2. Water levels rising indicate flooding likely in next half hour;

## THE EARLY WARNING NETWORK

### 3. Water level has peaked.

EWN first receives notification of potential flooding from Council's FloodWise system and verifies the potential flooding situation using:

- Prevailing weather patterns;
- Radar images;
- Rainfall observations;
- Rainfall & creek level information; and
- Local knowledge i.e. awareness of a King tide which may trigger some gauges.

When necessary EWN seeks Council clarification of the initial creek flood event before sending alerts to customers. **Typical turnaround time for these alerts is three minutes.** Council has access to the system to view all notifications including times and dates, and subscription information for reporting purposes.


*Example of flood alert email. Content is the same for SMS and landline messages with the latter repeated twice.*

# FLOOD ALERT

The Australian Early Warning Network

**Flood Alert 2**

Source: Brisbane City Council



*Dedicated to a better Brisbane*

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Flood Alert 2 - Water level is rising in Norman Creek. Possible flooding in parts of East Brisbane and Woolloongabba in the next half hour.

THE EARLY WARNING NETWORK

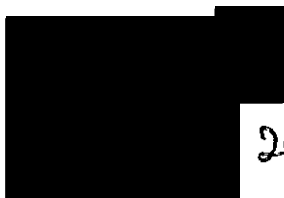
# EWN

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Rolf Rader | Early Warning Network | Unsubscribe

### Who can access the system?

EWN partners such as Brisbane, Townsville, state governments and commercial operations are provided a single administrative access to the system. This access enables administrators to view all records relevant to their users (residents, employees or customers) and to create new administrators, alert groups and to generally manage their account including the ability to send notifications and alerts. Where an administrator wishes to send a message they have created (In addition to EWN generated alerts), most of them request EWN to manage the process on their behalf. The system logs the administrator or person sending an alert.



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# THE EARLY WARNING NETWORK

## How receivers register for the system

Receivers join the system via an online form at the council's website or by mailing in a form provided by council through numerous media and mail campaigns.

Brisbane City Council  
Dedicated to a better Brisbane

18°  
Sunny

Home | Contact Us

Home | Community Support | Emergency Management | Brisbane Early Warning Alert Service | Early Warning Alert Registration Form

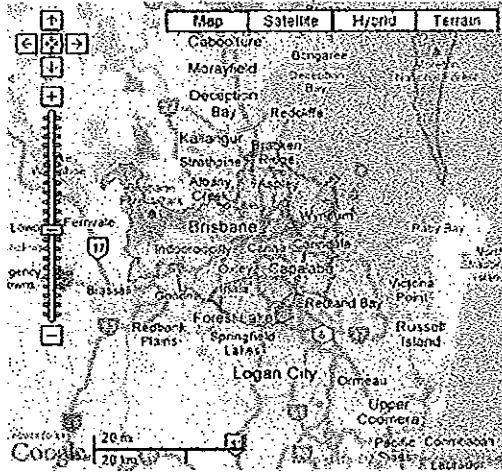
### Early warning alert registration form

The early warning alert service provides severe weather event notification for your local area. Alerts can cover severe thunderstorms, hail, destructive winds, cyclones and flooding. Terms and conditions apply. Register to receive early warning alerts by email, SMS or phone.

\* Required information

- Personal Details \***  
 Title:   
 First Name:   
 Surname:
- Residential address \***  
We will only send you alerts for areas that affect your address.  
 Street Name & Number:   
 Suburb:   
 Postcode:   
 State:
- Email address \***  
We will send your alerts to this email address.  
 Email Address:   
 Confirm Email Address:   
 Email Format:  HTML Emails  Blackberry device
- Choose a password \***  
 Password:   
(Min 6 chars)  
 Confirm Password:
- Optional SMS Alerts**  
Enter your mobile number to also receive your alerts by SMS.  
 Mobile Number:   
(eg. 0421 030 123)
- Optional voice alerts**  
Enter your landline number to also receive your alerts as a recorded message.  
 Landline Number:   
(eg. 07 0000 1234)

**Terms & Conditions**  
 I agree that I have read and accept the Terms and Conditions



[Redacted]

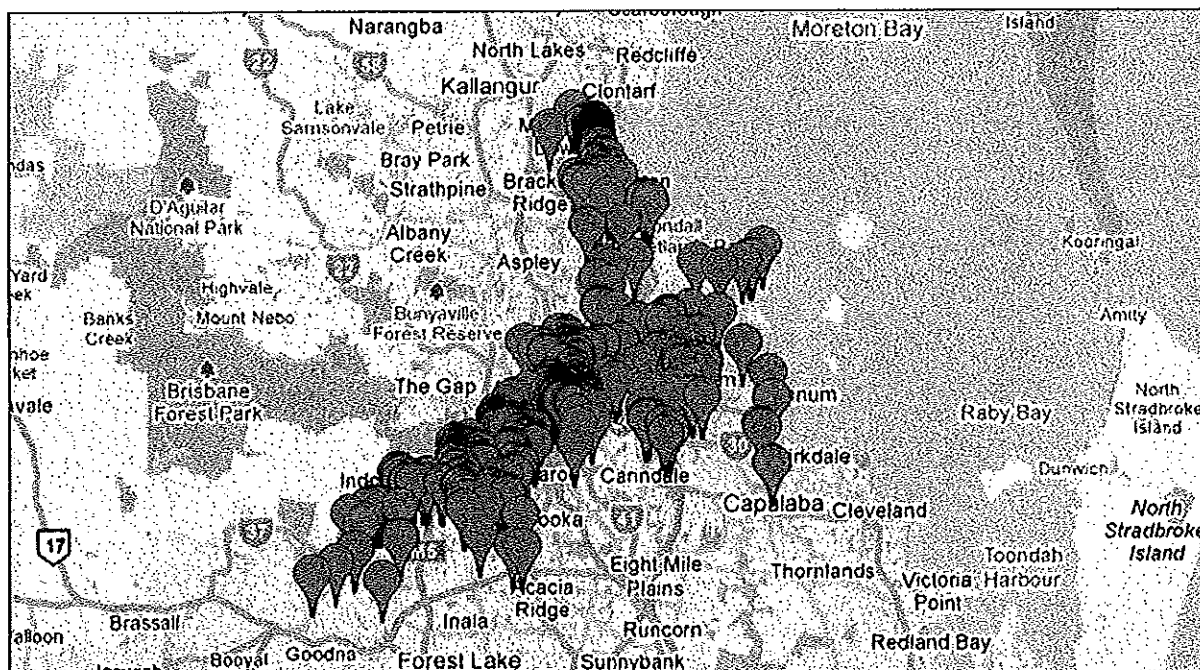
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# THE EARLY WARNING NETWORK

## Quick alerts and saved alerts.

A quick alert is used to send messages simultaneously to a list copied and pasted into the system that combines emails, mobile and landline. Saved alerts allows previous polygons that have been created to be re-used and more importantly polygons or shape files to be imported for use in identifying users in specific areas. Good examples are the king tide shape files. Through these the system can extract all registered users with properties located within the 1.6m or 1.8m high tide mark. These can then be issued warnings when combinations of river height and tides combine to threaten property.

Detailed below are registered users located within the 1.8M king tide mark.



## Auto Alerts

As previously addressed when discussing creek flood alerting, EWN has developed a process we call Auto Alerts. This process automatically geo-locates an incident and creates an alert area surrounding the location. It then sends alerts to all those registered within the area based on how they have requested to be informed. A description of this process is detailed in **Attachment C**.

## Mobile Location Based Alerts

The EWN system provides the ability to send warnings to mobile phones based on their physical locations. The federal government is working to achieve the same for the Emergency Alert system using cell tower broadcasting. A description of the available methodologies is detailed in **Attachment D**.

## Problems and Issues (Q4)

No problems or limitations were encountered in the operation of the Early Warning Network's warning system in Brisbane during the period 5 January 2011 to 11 January 2011.



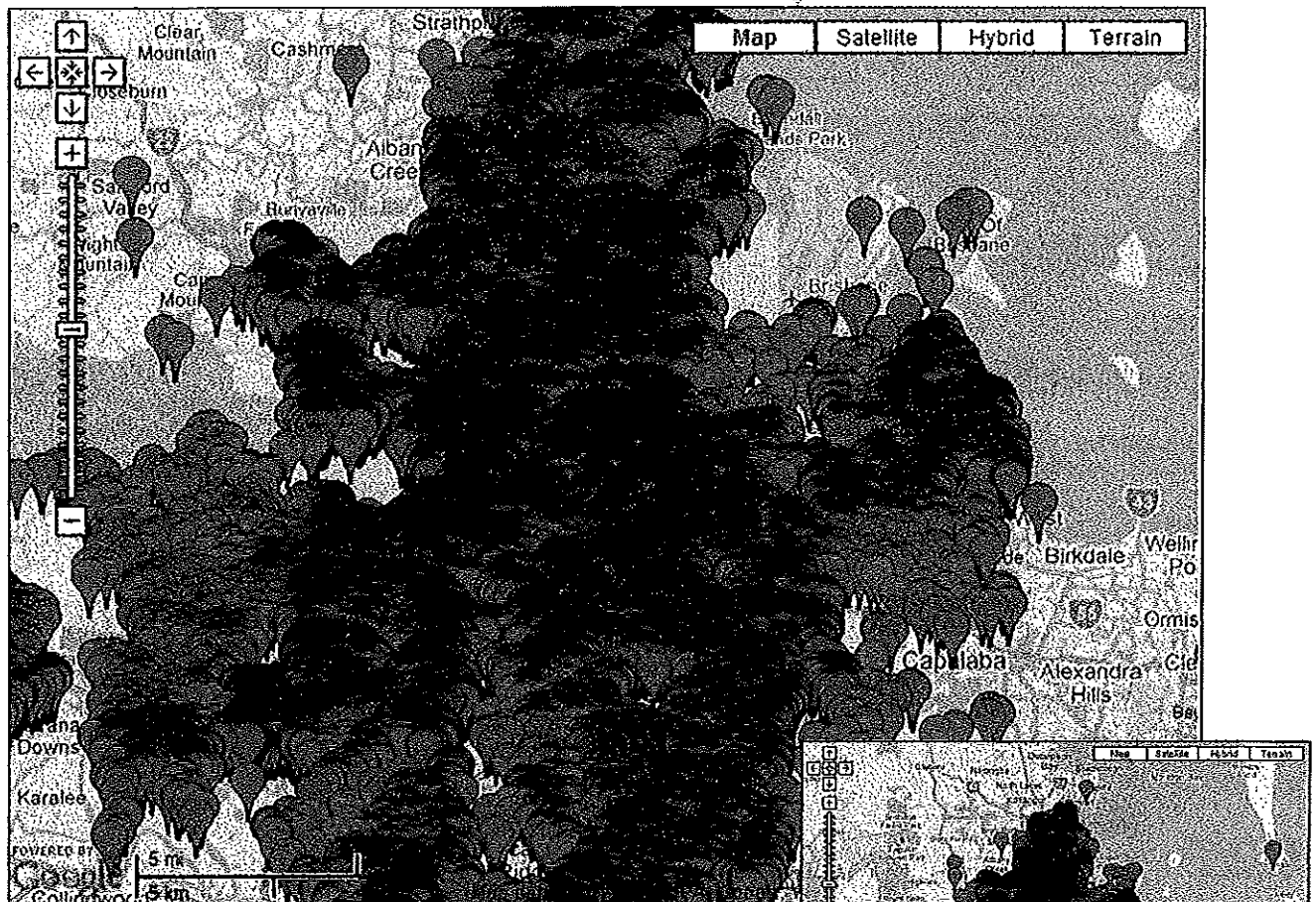
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# THE EARLY WARNING NETWORK

## 2. The number and location of persons registered in the Early Warning Network in Brisbane

Currently 47,000 are registered within the Brisbane City Council Boundaries.

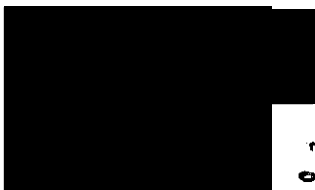


## 3. Alert History

The next few pages detail the alert history for warnings sent to Brisbane City Council residents on:

- 5 January 2011 at 11:08am;
- 8 January 2011 at 11:07 am
- 9 January 2011 at 11:04 pm; and
- 11 January 2011 at 8:24 am

Because of the nature of the threat, alerts were sent to the entire group or all of the Brisbane City Council area – what we call the BCC Inside Group. The alert on the 9<sup>th</sup> was also sent to all FloodWise groups. In each case we sent emails via the GIS. SMS and landline warnings were sent using groups. The methods chosen were simply a matter of preference by the Alert Manager. No spatial data was required to determine alert recipients in these events.



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# THE EARLY WARNING NETWORK

5 January 2011 11:08am EST

Sent by EWN

**SMS content** (18428 sent): QLD Severe Weather: Heavy Rain and Localised Flash Flooding. All of Brisbane at risk from later today, Thursday and into Friday. BCC ewn.com.au

**Landline** (966 sent)


This is an important message from the Early Warning Network and Brisbane City Council. The Bureau of Meteorology has issued a Severe Weather Warning for Heavy Rain and Localised Flash Flooding in your area. This warning is in effect for today, Thursday and into Friday. Repeating, This is an important message from the Early Warning Network and Brisbane City Council. The Bureau of Meteorology has issued a Severe Weather Warning for Heavy Rain and Localised Flash Flooding in your area. This warning is in effect for today, Thursday and into Friday.

**Email content** (19147 sent):

## WEATHER ALERT

THE AUSTRALIAN EARLY WARNING NETWORK

**QLD Severe Weather Warning:  
Heavy Rain and Localised Flash  
Flooding**



*Dedicated to a better Brisbane*

**Source: Bureau of Meteorology**

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for heavy rainfall leading to localised flash flooding and potentially worsening the existing river flood situation  
For people in the Maranoa, Darling Downs and Granite Belt, Southeast Coast, Wide Bay and Burnett and southern parts of the Central Highlands and Coalfields and Capricornia forecast districts.

Issued at 10:55 am on Wednesday 5 January 2011

Synoptic Situation: At 10am EST, a trough extended from northwestern Queensland into the southern Maranoa. The trough is expected to intensify as it moves slowly east over the next 24 hours.

Thundery rain areas with some heavy falls are expected to develop this evening and overnight over the Maranoa, Darling Downs and Granite Belt, Southeast Coast districts and southern parts of the Wide Bay and Burnett district. This heavy rain is expected to extend to the Capricornia districts and remaining parts of the Wide Bay and Burnett district during Thursday. The rain will ease over the Maranoa and western Darling Downs during Thursday.

Heavy rainfall may lead to localised flash flooding and/or worsen current river flooding.


The State Emergency Service advises that people in the affected area should:

- avoid driving, walking or riding through flood waters
- take care on the roads, especially in heavy downpours
- avoid swimming in swollen rivers and creeks

THE EARLY WARNING NETWORK

# EWN

BUREAU OF METEOROLOGY



BoM Radar | Early Warning Network | [Unsubscribe](#)

29/04/11

# THE EARLY WARNING NETWORK

8 January 2011 11:07am EST

Sent by EWN

**SMS content** (18688 sent): QLD Severe Weather: Heavy Rain and Localised Flash Flooding. All of Brisbane at risk from later today, Sunday, Monday and into Tuesday. BCC ewn.com.au

**Landline** (967 sent)

This is an important message from the Early Warning Network and Brisbane City Council. The Bureau of Meteorology has issued a Severe Weather Warning for heavy rain and possible flooding starting later Saturday and continuing over the next few days. Repeating, This is an important message from the Early Warning Network and Brisbane City Council. The Bureau of Meteorology has issued a Severe Weather Warning for heavy rain and possible flooding starting later Saturday and continuing over the next few days.

**Email content** (19395 sent):

## WEATHER ALERT

THE AUSTRALIAN EARLY WARNING NETWORK

**QLD Severe Weather Warning:  
Heavy Rain and Localised Flash  
Flooding**

**Source: Bureau of Meteorology**

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Issued at 11:00 am on Saturday 8 January 2011


Synoptic Situation: At 10am EST, an upper level low was located offshore from the Capricornia district while a low level trough was located off the southern coast.

Heavy rain overnight has weakened recently to showers and isolated thunderstorms. Rain areas are expected to return to the Southeast Coast and Wide Bay and Burnett districts from this afternoon, and increase to moderate to heavy falls at times tonight and Sunday. Heavy rain may lead to localised flash flooding and/or worsen existing river flooding.

The State Emergency Service advises that people in the affected area should:

- avoid driving, walking or riding through flood waters
- take care on the roads, especially in heavy downpours
- avoid swimming in swollen rivers and creeks

Contact the SES on 132 500 for emergency assistance if required.



*Dedicated to a better Brisbane*

THE EARLY WARNING NETWORK

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Best Radar | Early Warning Network | Unsubscribe

29/04/11

# THE EARLY WARNING NETWORK

**9 January 2011 11:04pm EST**

Sent by EWN staff after consultation with BCC emergency management - also sent to seven Floodwise groups (356 emails / 458 SMS / 157 landline)

**SMS content (18767 sent):** BoM advises heavy rain expected starting early hrs of morning, local flooding possible. For available sandbag locations contact BCC 3403 8888.

**Landline: 968**

The Bureau of Meteorology advises heavy rain expected starting early hours of morning, local flooding possible. For available sandbag locations contact Council on 3403 8888.

Repeating, Bureau of Meteorology advises heavy rain expected starting early hours of morning, local flooding possible. For available sandbag locations contact Council on 3403 8888.

**Email content (19472 sent):**

## Local Flooding Possible

### Local Flooding Possible

10-Jan-2011 12:04 AM

The Bureau of Meteorology advises heavy rain expected starting early hours of the morning, local flooding possible. For available sandbag locations contact Brisbane City Council on 3403 8888.

For storm or flood emergencies inside your property boundary, contact the SES on 132 500. Residents should contact Council on 3403 8888 to report issues outside their property boundary such as flooding, downed trees, potholes, stormwater drain blockages or debris blocking roadways. For life-threatening emergencies, phone 000.

It is also important to listen for weather updates and warnings on local radio stations or watch for updates on the Bureau of Meteorology website at [www.bom.gov.au](http://www.bom.gov.au).

Residents can be better prepared for storms and flooding by getting a FloodWise Property Report and downloading the Flood Flag Map for their suburb.

The FloodWise Property Report and Flood Flag Maps are free and will help residents to find out how flooding may affect their property. They are available via Councils website by visiting <http://www.brisbane.qld.gov.au/community-support/emergency-management/index.htm>.

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# THE EARLY WARNING NETWORK

11 January 2011 8.24 EST

Sent by EWN staff after consultation with BCC emergency management.

**SMS content (19214 sent):** QLD Emergency Flash Flood Warning. Very heavy rainfall is spreading S-SW into the greater Brisbane area. Flash flooding is likely in many areas.

BCC ewn.com.au


**Landline (969 sent)**

**Email content (19560 sent):**

## WEATHER ALERT

THE AUSTRALIAN EARLY WARNING NETWORK

**QLD Severe Weather Warning:  
Heavy Rainfall and Flash Flooding**



*Dedicated to a better Brisbane*

**Source: Bureau of Meteorology**

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For people in the Southeast Coast District and the Darling Downs and Granite Belt District southeast of Dalby to Goondiwindi.


Issued at 8:00 am on Tuesday 11 January 2011

Synoptic Situation: At 8am AEST, an upper level low was located over the Darling Downs and Granite Belt district and is forecast to move to the southwest and slowly weaken.

Heavy rain areas and thunderstorms are expected to continue through the Southeast Coast and Darling Downs and Granite Belt today. Heavy falls will lead to localised flash flooding and will worsen existing river flooding.

Currently, an intense slow moving band of rainfall extends from about Maroochydore to Warwick. Rainfall rates in this band are reaching 80 to 100 mm per hour.

Contact the SES on 132 500 for emergency assistance if required.



80M Radar | Early Warning Network | [Unsubscribe](#)



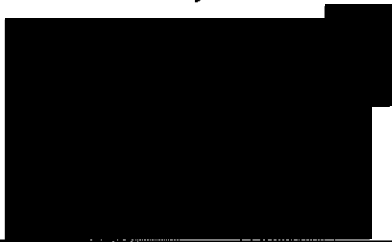
29/04/11

# THE EARLY WARNING NETWORK

I swear that the facts and circumstances stated in this statement are from my knowledge except those which are from information only.  
Sworn by Kerry Maurice Plowright on 29 April 2011 at Kingscliff in the presence of,

*CHESTER CASSON JP. 174505*

Justice of the Peace who is witnessing the statement

  
\_\_\_\_\_  
*K. Plowright*

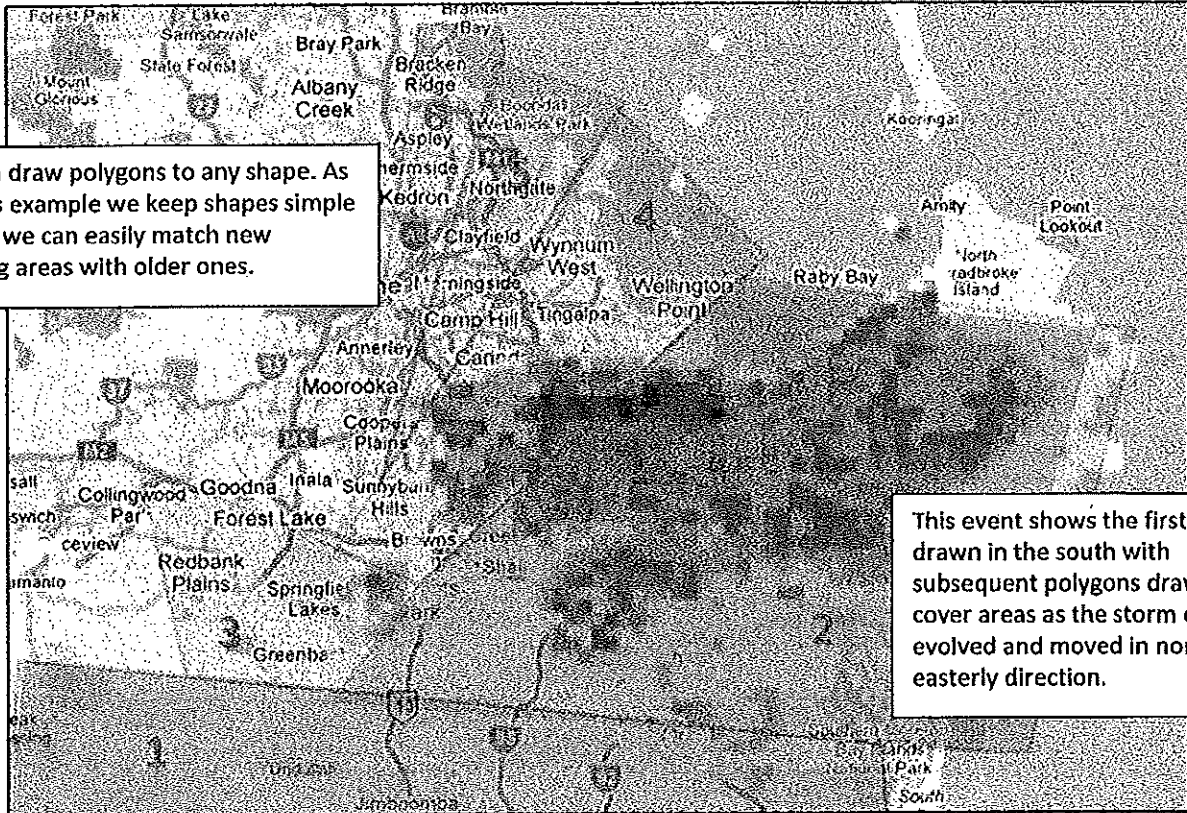
  
\_\_\_\_\_  
*CHESTER CASSON*

# THE EARLY WARNING NETWORK

ATTACHMENT A  
ANATOMY OF SEVERE  
WEATHER WARNINGS

## Anatomy of Severe Weather Warnings

The screen grab below illustrates how over the course of the day, beginning in the south of the state, we tracked a severe thunderstorm event warning those in its path.

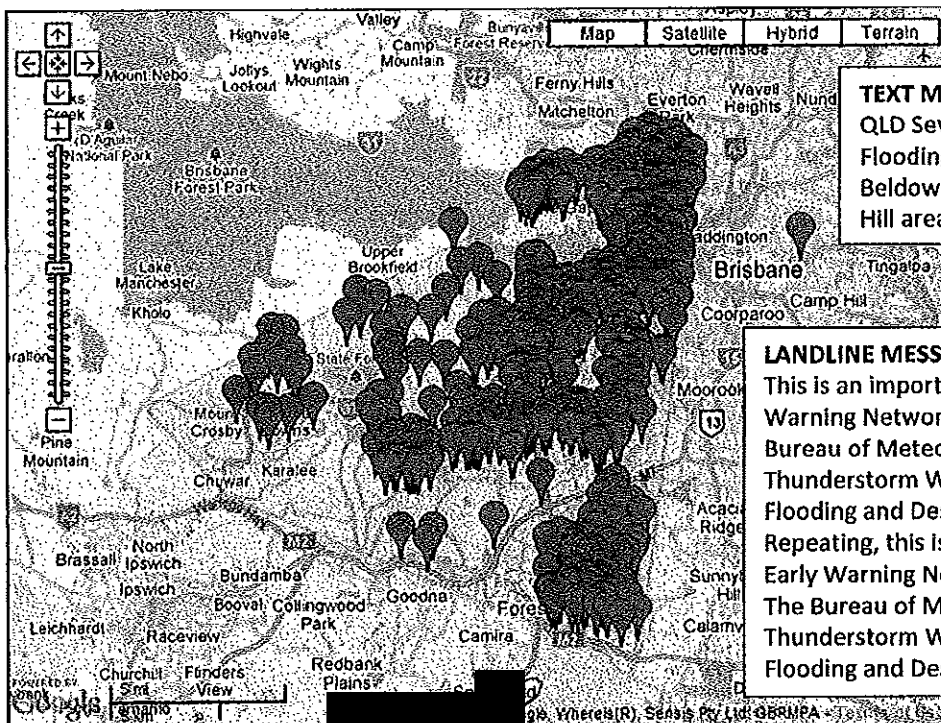


We can draw polygons to any shape. As per this example we keep shapes simple so that we can easily match new warning areas with older ones.

This event shows the first polygon drawn in the south with subsequent polygons drawn to cover areas as the storm cell evolved and moved in north easterly direction.

To view the radar loop for the day, please go to: <http://www.theweatherchaser.com/radar-loop/IDR664-brisbane/2010-12-15-03/2010-12-15-09>

This is part of a report from the GNIS of a warning in the west of the city



**TEXT MESSAGE (SMS)**  
QLD Severe T'Storm: Large Hail, Flash Flooding, Damaging Winds. Beldownie, Kenmore, Marooka, Red Hill areas at risk. BCC ewn.com.au

**LANDLINE MESSAGE**  
This is an important message from the Early Warning Network and Brisbane City Council. The Bureau of Meteorology has issued a Severe Thunderstorm Warning for Large Hail Stones, Flash Flooding and Destructive Winds in your area. Repeating, this is an important message from the Early Warning Network and Brisbane City Council. The Bureau of Meteorology has Issued a Severe Thunderstorm Warning for Large Hail Stones, Flash Flooding and Destructive Winds in your area.

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# THE EARLY WARNING NETWORK

ATTACHMENT A  
ANATOMY OF SEVERE  
WEATHER WARNINGS

Example of email message sent to residents

**WEATHER ADVICE**  
THE AUSTRALIAN EARLY WARNING NETWORK

**Southeast QLD Severe Thunderstorm Warning: Large Hail, Flash Flooding, Damaging Winds**

  
*Dedicated to a better Brisbane*

Source: Bureau of Meteorology

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**SEVERE THUNDERSTORM WARNING**  
for LARGE HAILSTONES and DAMAGING WIND

For people in the BRISBANE CITY

Issued at 6:43 pm Wednesday, 15 December 2010.

The Bureau of Meteorology warns that, at 6:50 pm, severe thunderstorms were detected on weather radar near Ipswich. These thunderstorms are moving towards the northeast. They are forecast to affect Wacol and Archerfield by 7:20 pm and Brisbane CBD, Enoggera Reservoir and Enoggera by 7:50 pm.

Damaging winds, very heavy rainfall, flash flooding and large hailstones are likely.

Emergency Management Queensland advises that people should:

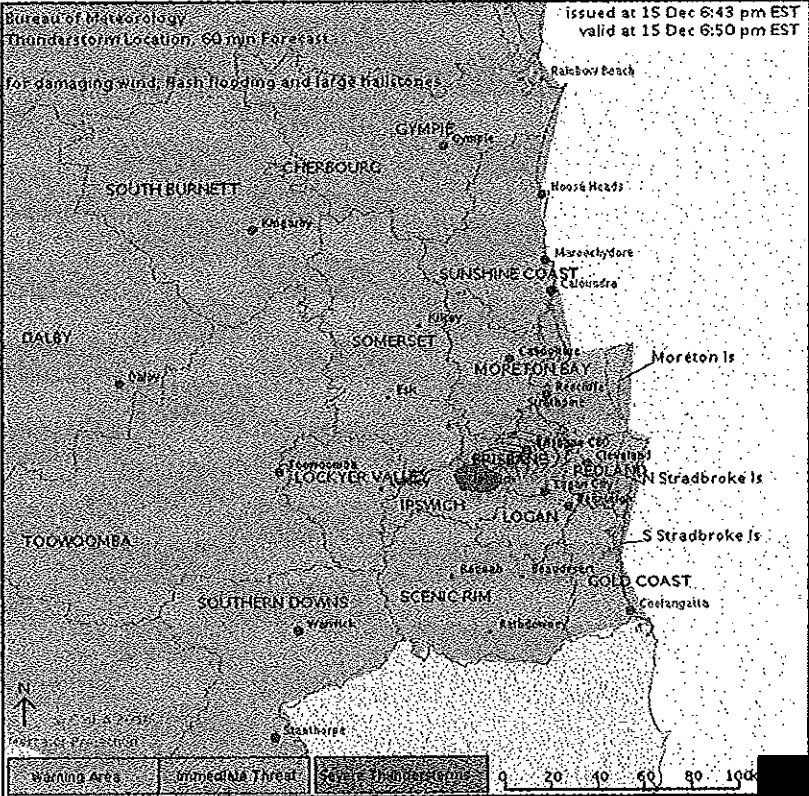
- \* Move your car under cover or away from trees.
- \* Secure loose outdoor items.
- \* Avoid driving, walking or riding through flood waters.
- \* Seek shelter, preferably indoors and never under trees.
- \* Avoid using the telephone during a thunderstorm.
- \* Beware of fallen trees and powerlines.
- \* For emergency assistance contact the SES on 132 500.

The next warning is due to be issued by 7:45 pm.

A more general severe thunderstorm warning is also current for the Wide Bay and Burnett, Darling Downs and Granite Belt, Southeast Coast and parts of the Central Highlands and Coalfields, Capricornia and Maranoa and Warrago districts.

**THE EARLY WARNING NETWORK**  
**EWN**  
FOR THE AUSTRALIAN EARLY WARNING NETWORK

Risk: Severe | Rapidly Evolving | Potentially Fatal



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# THE EARLY WARNING NETWORK

ATTACHMENT B  
EWN WARNING TYPES

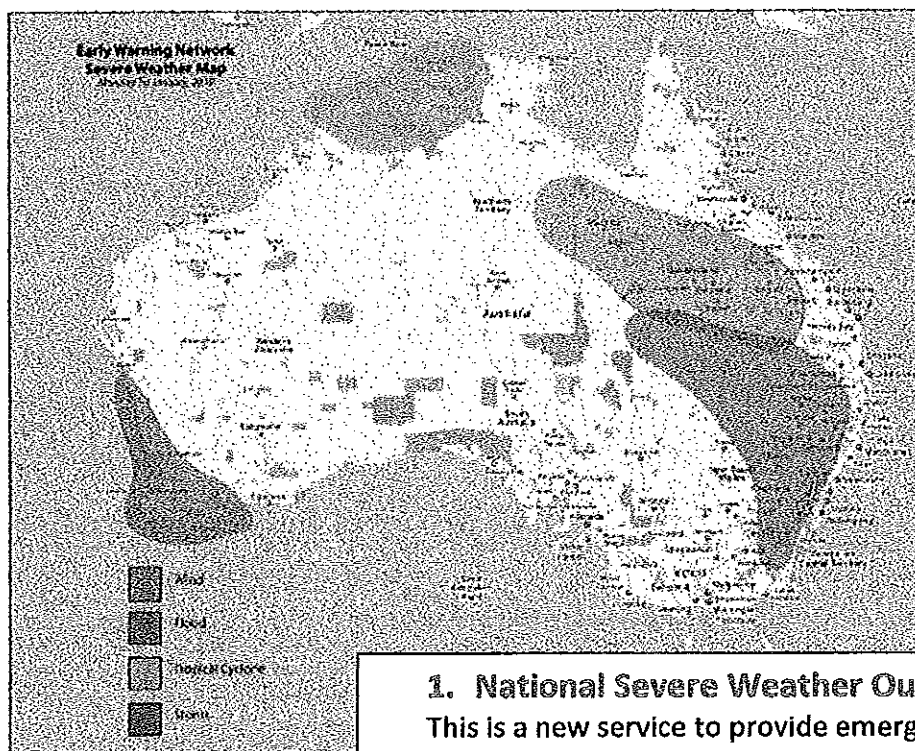
## Context and Situational Awareness

Early Warnings you can understand

### Severe Weather Outlook

#### Early Warning Network

Monday 1st January 2010



#### 1. National Severe Weather Outlook

This is a new service to provide emergency managers of large distributed organisations situational awareness at glance.

Severe Tropical Cyclone Albert (Category 4) is moving slowly eastwards from Darwin and is moving slowly eastwards. Albert is expected to intensify later tonight into a category four system before possibly making landfall late tomorrow south of Darwin about the Port Keats region. However strong winds and heavy rain are being experienced about the northern WA coastline today and will push into the western areas of the Top End overnight. Moisture is streaming across from this system into Queensland and is combining with an upper level trough to produce further heavy falls of around 50-100mm during the next 24 hours resulting in possible flooding. Meanwhile further south over southern Queensland and over the NSW ranges and slopes, a trough will bring thunderstorm activity and will combine with the unstable upper atmosphere to bring severe storms with large hail, damaging winds and heavy rainfall likely though this should mostly remain west of the NSW coast. In Queensland, cloud cover will impact on storm chances over southeast Queensland.

A high pressure system over the Bight will bring fine and mild weather to most of Victoria and South Australia and push warm to hot conditions into Western Australia. However a cold front will push

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# THE EARLY WARNING NETWORK

ATTACHMENT B  
EWN WARNING TYPES

2. The Severe Weather and Rainfall Alert is produced for specific locations daily. This is one of several daily reports we can provide which includes detailed assessments for a specific location.

## WEATHER ALERT

THE AUSTRALIAN EARLY WARNING NETWORK

### Severe Weather and Rainfall Alert

Issued at 0900, 1st of January, 2011 for Brisbane

Today's Severe Weather Threat is: High

**Discussion:** A trough will bring some late afternoon and evening showers and thunderstorms today across the Brisbane region. Due to the very strong instability there is the high chance of hail and strong winds. Overnight storms will weaken into rain areas with the rain clearing during the early to mid afternoon. A drier change will then bring fine weather for Wednesday and Thursday but some isolated showers and storms could redevelop on Friday but at this stage these are not expected to become severe.

### Weather Brief

	Mon 1st	Tue 2nd	Wed 3rd	Thu 4th	Fri 5th
Maximum	33	28	29	30	31
Minimum		23	21	22	23
Brief Forecast	late storm	rain periods clearing later	fine	fine	Chance late shower/storm
Max Rainfall Chance (9am to 9pm)	70%	80%	0%	0%	40%

### Chance of Rainfall

	Mon 1st	Tue 2nd	Wed 3rd
0900 - 1200	0%	85%	0%
1200 - 1500	10%	65%	0%
1500 - 1800	70%	15%	0%
1800 - 2100	70%	5%	0%
2100 - 0900	80%	0%	0%
24 hour rain	15-25mm	15-20mm	0mm

### Severe Weather Threat - Next 24 hours

	Chance Hail 2cm	Chance wind gust 65km/h	Chance wind gust 90km/h
0900 - 1200	0%	0%	0%
1200 - 1500			5%
1500 - 1800	35%	70%	60%
1800 - 2100	25%	60%	35%
2100 - 0900			5%


29/04/11

# THE EARLY WARNING NETWORK

ATTACHMENT B  
EWN WARNING  
TYPES

**WEATHER ALERT**  
THE AUSTRALIAN EARLY WARNING NETWORK

**Thunderstorm and Rain Threat Advice**



*Dedicated to a better Brisbane*

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THUNDERSTORM/RAIN THREAT ADVICE FOR BRISBANE  
Thursday 3 March 2011

An SMS or phone message HAS NOT been issued with this email will be issued if appropriate.

This advice is a heads-up for possible severe thunderstorms late overnight. The main threat is flash flooding though damaging winds are possible in some locations. Areas of rain with some moderate to heavy falls are likely during Friday, persisting until early Saturday.

Recipients are advised to monitor media and the Bureau of Meteorology website.

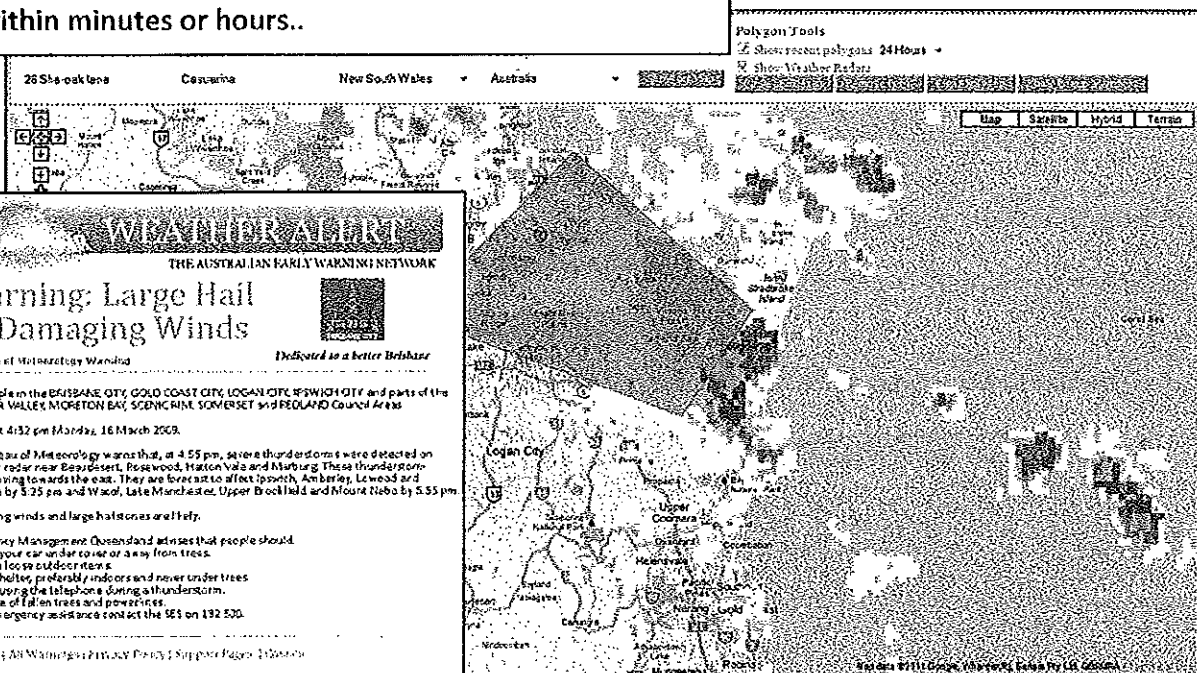
Brisbane forecast from the BoM issued at 4.50am:  
A shower about this morning, increasing in the afternoon with a possible thunderstorm. Light to moderate N/NE winds. Friday: Showers/thunderstorm, late rain



BoM Radar | Early Warning Network | Queensland

3. Pre alerts are issued to the public within vulnerable locations on days of high threat. If you get one of these from us, you do need to pay extra attention and take care.

4. Severe Weather Alert. Warnings are issued over multiple channels for locations expected to be impacted within minutes or hours..



Polygon Tools  
 Show recent polygons 24Hours +  
 Show Weather Radar

26 Sts oaklens Casuarina New South Wales Australia

Map Satellite Hybrid Terrain

**WEATHER ALERT**  
THE AUSTRALIAN EARLY WARNING NETWORK

**Warning: Large Hail & Damaging Winds**

Bureau of Meteorology Warnings *Dedicated to a better Brisbane*

For people in the BRISBANE CITY, GOLD COAST CITY, LOGAN CITY, IPSWICH CITY and parts of the LOCKYER VALLEY, MORETON BAY, SCENIC RIM, SOMERSET and REDLAND Council Areas  
 Issued at 4:32 pm Monday, 16 March 2011.

The Bureau of Meteorology warns that, at 4.55 pm, severe thunderstorms were detected on weather radar near Beerwah, Rosewood, Hatton Vale and Marburg. These thunderstorms are moving towards the east. They are expected to affect Ipswich, Amberg, Leewards and Fernvale by 5:25 pm and Wacol, Lake Manchester, Upper Brookfield and Mount Nibby by 5.55 pm. Damaging winds and large hailstones are likely.

Emergency Management Queensland advises that people should:

- Move your car under cover or away from trees.
- Secure loose outdoor items.
- Seek shelter, preferably indoors and never under trees.
- Avoid using the telephone during a thunderstorm.
- Beware of fallen trees and powerlines.
- For emergency assistance contact the SES on 132 520.

Radar: All Warnings | Privacy Policy | Support Page | Home

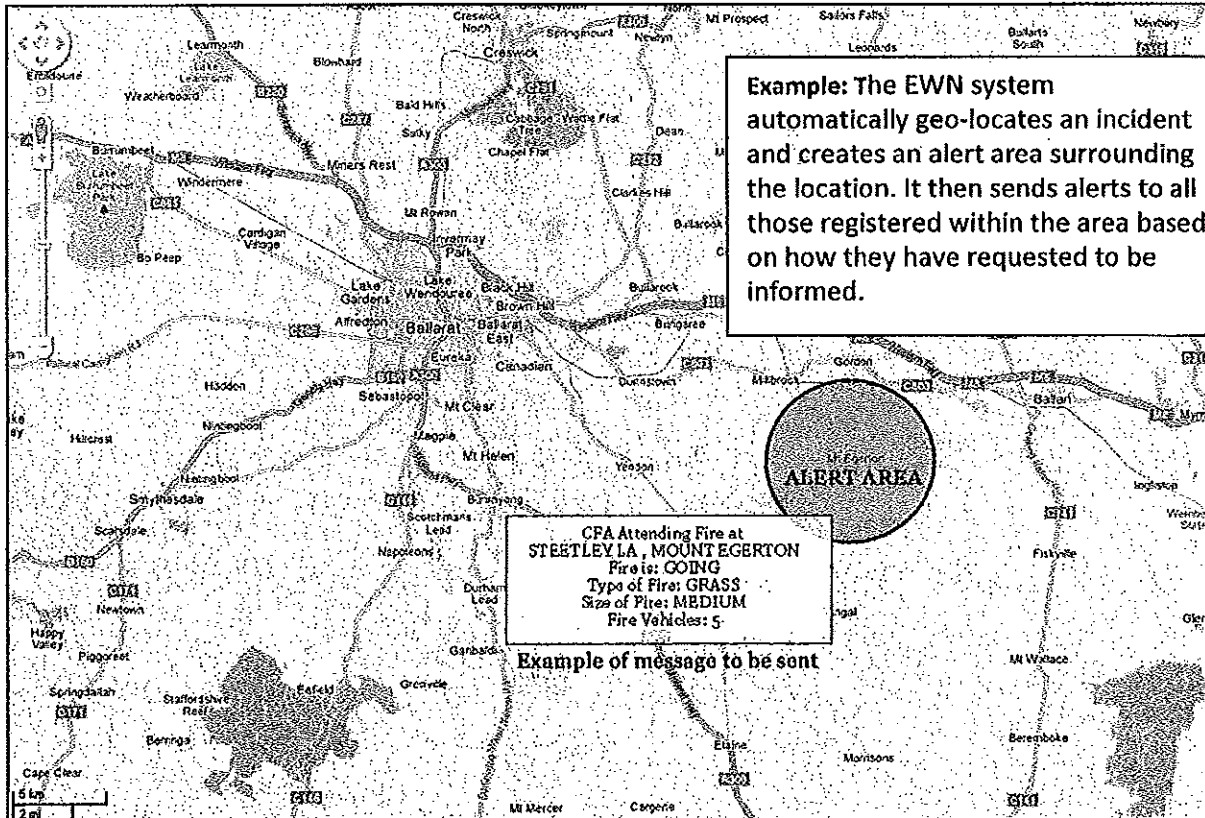
Brisbane City Council  
EARLY WARNING SYSTEM

29/04/11

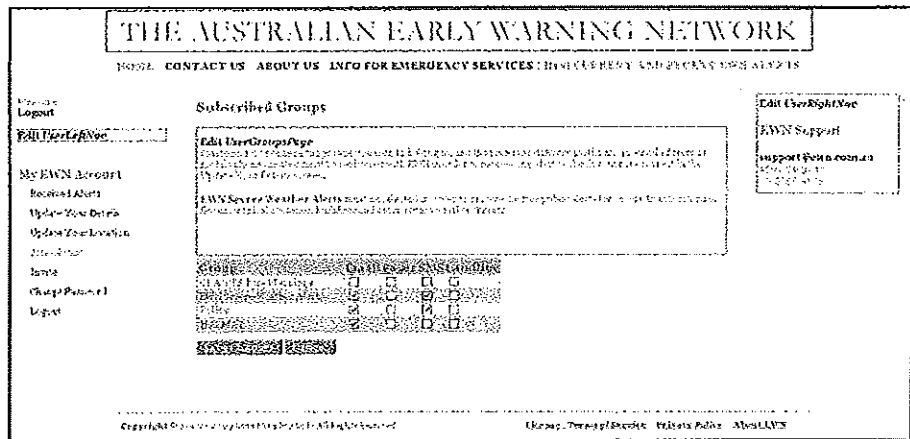
# THE EARLY WARNING NETWORK

ATTACHMENT C  
AUTO ALERTS

## Automated CFA/RFS and Police Alerts - How it Works



In addition to EWN's severe weather alerts, EWN has developed a series of automated alert systems for fire and other emergencies. Anyone registered for EWN severe weather alerts can also select to receive these as well. Members simply login, click on 'Join Group' and then select which alerts they wish to receive and how. Members can go back at any time and change these settings.



The system is designed to automatically send alerts to those who live close to where any fire starts. The system geo-locates the incident or fire and sends an SMS and email notification to all those registered to the system within 3km. Anyone who lives or is located near an incident would know about a fire before it becomes a catastrophic event. People will know the moment a fire started and can monitor it, preparing well in advance. Likewise if people see smoke on the horizon or nearby they won't want be hassling emergency numbers or operators. The alerts are created in real time as the CFA, RFS or selected authority issues them.

[Redacted]

29/04/11

# THE EARLY WARNING NETWORK

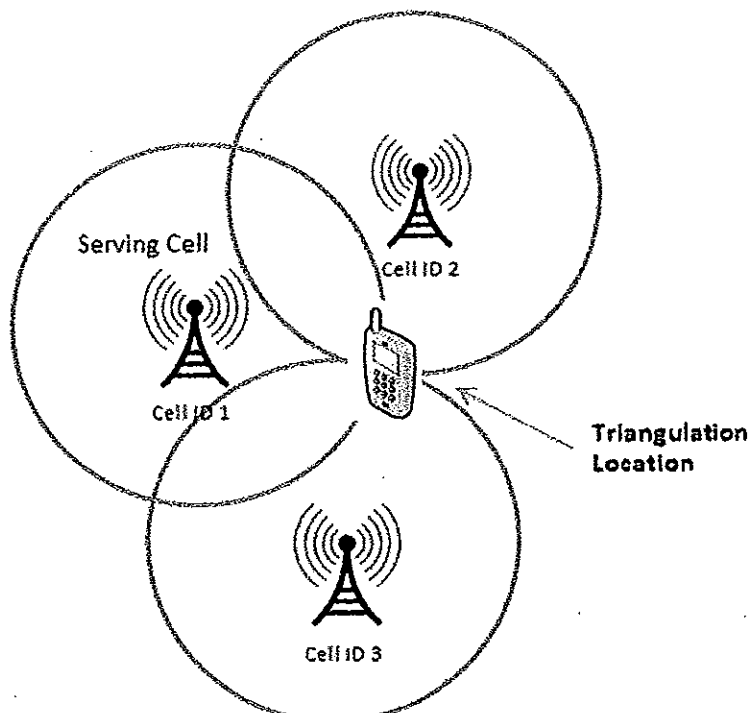
ATTACHMENT D  
LOCATION BASED  
WARNINGS

## Mobile Location Based Alerts (LBA)

Alerts need to be delivered to just those that need it when they need it, this often means to people on the move heading in harms way. Several methods are available to accurately locate and deliver severe weather alerts and information to mobile phones based on their physical location at the time. . The EWN Geographic Notification and Information System (GNIS) supports these capabilities. The GNIS uses a digital map to enable the sending of alerts to ALL mobile phones within a selected area. The map used to select these areas is called the 'Alert Map'. The Alert Map is used to accurately select or draw an area, to input the alert content and to send the alert.

There are two types of LBA alerts. The first is a fixed lat/long (such as your home or place of work) and the other is dynamic or mobile. The latter requires the GNIS to continually update the location of a phone in what we call mobile location fields. In other words as a phone or device moves it sends and updates the EWN server with a lat/long co-ordinate. When an alert is sent this field is checked. If a person wanders into the warning area when the alert is still current, they will also be notified. At the moment the simplest method for obtaining a location is from a smart phone with GPS. Because this is such an important subject the following pages explain the other options.

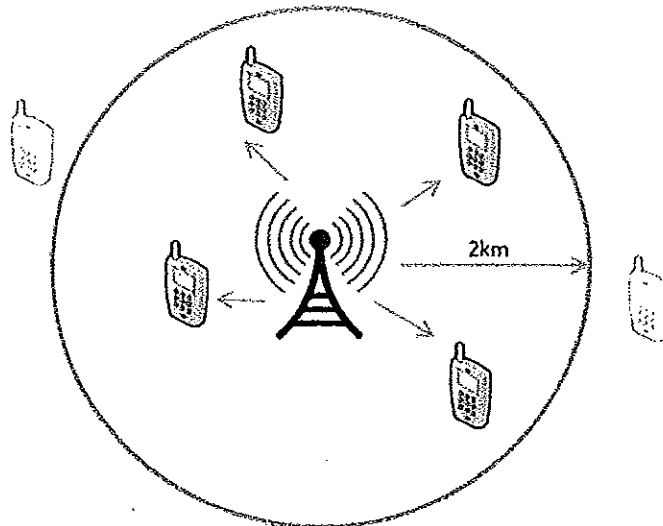
**1. Network based.** Your service provider knows at any time where your mobile is, assuming it is within range of one of their cell towers. This method uses one or more towers to 'triangulate' your position. The more towers in range the greater the accuracy. For many reasons telecommunication service providers are not keen on sharing this information. If they were, these locations and numbers could be sent to a central server that operates in the fashion of the EWN system. This would mean ALL mobiles could be warned with the same accuracy as EWN does today.



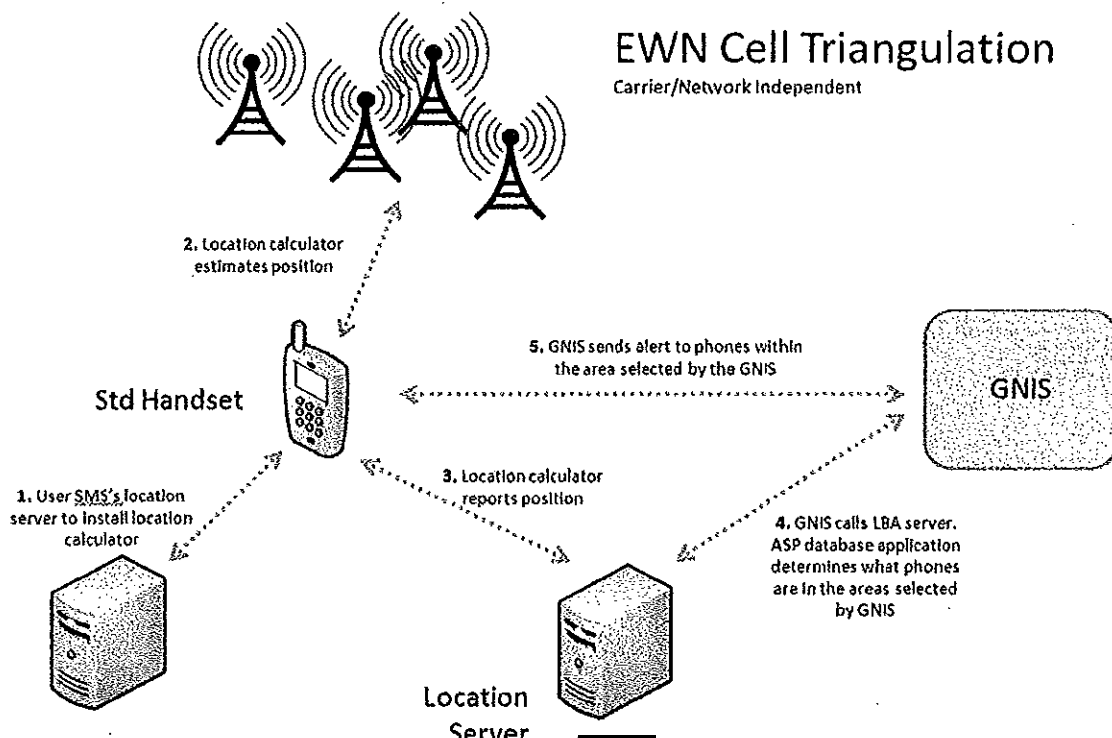
29/04/11

# THE EARLY WARNING NETWORK

**2. Cell Tower Broadcasting** – this is what they are trying to do with the Emergency Alert System now. Messages are sent to ALL mobiles of customers within a specified radius of a carrier’s cell tower.



**3. Cell Triangulation.** This is similar to the Network based way of locating a phone, except in this case the handset figures out where it is using the cell towers. This improves the accuracy of alerts to within metres and works for over 90% of all handsets

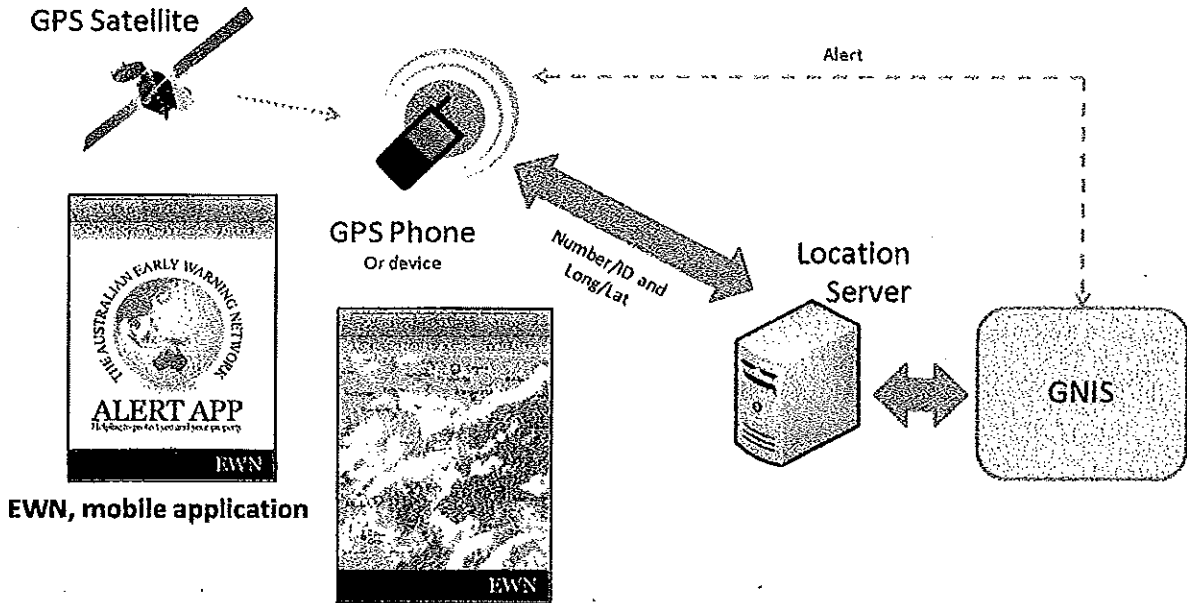


29/04/11

# THE EARLY WARNING NETWORK

## Smart Phones

EWN can alert smart phones based on their physical location via the EWN mobile application.



29/04/11