

Getting the Message Across - Sharing Warnings

- **Smart Applications For Emergencies (SAFE)**
- **Management of Information Structures with Crisis Information Management Systems (CIMS)**
 - **Extreme Events**
- **Goal: “Delivery the right information to the right people at the right place in the right format”**
- **Across different:**
 - **Agencies, Groups, Teams, Systems...**
 - **Interoperability**

Current Work

- **Information**
 - **Tsunami & Cyclone Warnings**
 - **Situational Reports**
- **Information Infrastructure**
 - **CAP**
 - **EDXL - Distribution**
 - **EDXL - Resource Messaging**
 - **People Task Tracking**

Right Format

Right Info

Right People

Right Place

EOC Info Sharing

Dept Emergency Services



Premier&Cabinet



Emergency Mgt Aust



BOM

EOC Info Sharing

Dept Emergency Services



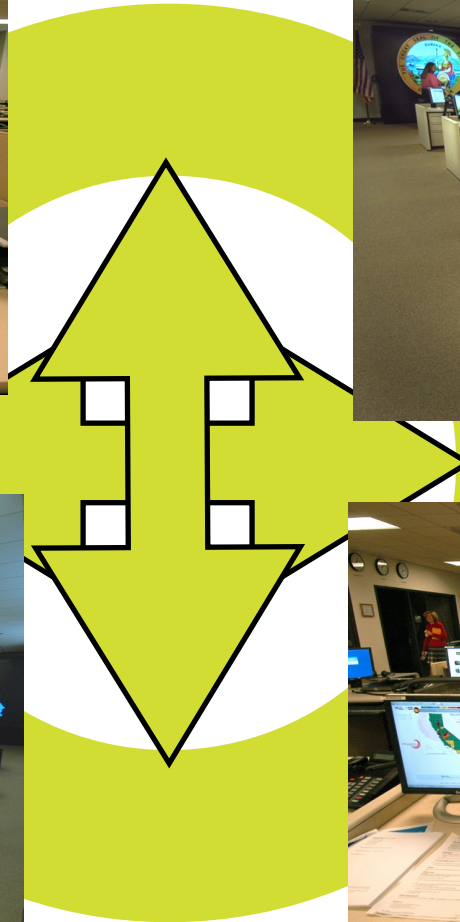
Premier&Cabinet



Emergency Mgt Aust



BOM



Environmental Protection Agency

Sender ID: emergency@epa.gov.au

Distribution Status: Exercise

Distribution Type: Report

Combined Confidentiality: EOC Only

Recipients

EOC Manager SES Manager Public Media

Keyword: Storm surge

Target Area: AUJOL

Content

Status: Exercise

Incident description:

Consumers

EOC Manager SES Manager Public Media

Description: CAP message about the Storm Surge

Instruction: Stand by

Area: Suburbs along the Nerang river

OK Cancel

BOM National Warnings



Australian Government
Bureau of Meteorology

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SEARCH



Global | Australia | NSW | Vic. | Qld | WA | SA | Tas. | ACT | NT | Ant. |

Learn About Meteorology | Weather & Warnings | Climate | Hydrology | Numerical Prediction | About Services | Registered User Services |



National Warnings Summary

This page last updated at:-

Tuesday August 29 2006 01:34 UTC (GMT) -- August 29 2006 11:34 EST -- August 29 2006 11:04 CST -- August 29 2006 09:34 WST

NSW and ACT

Warnings current:

- [Coastal Wind Warning 1](#).

Northern Territory

Warnings current:

- [Coastal Waters Wind Warning](#),
- [Notice of Fire Ban](#),
- [Fire Weather Warning](#).

Other Information

- [About Warning Services](#)
- [National Media Releases](#)
- [Significant Events](#)
- [Forecasting the Weather: How to do it](#)
- [Storm Spotters](#)

Related Services

- [Weather By Fax Directories](#)
- [Telephone Weather Services Directory](#)
- [About Marine Weather Services](#)



See [Glossary](#) to find out what the weather terms mean.

IDD20380

Australian Government Bureau of Meteorology
Northern Territory
Darwin Regional Forecasting Centre

Notice of Fire Ban
issued 10:55 am CST Tuesday 29 August 2006

FIRE BAN

The Chief Fire Control Officer, Bushfires NT, and the Director, NT Fire and Rescue Service have declared a FIRE BAN DAY for 24 hours commencing 5 am today, Tuesday 29/08/2006.

No person shall light a fire or cause a fire to be lit in the open in the area within the Vernon, Arafura, Arnhem, and Katherine Fire Control Regions.

DARWIN Regional Forecasting Centre.

CAP Feeds



NWS West Coast/Alaska Tsunami Center Products (Experimental F

NWS West Coast/Alaska Tsunami Warning Center Message Yesterday, 03:52 PM

Tsunami Information Statement for U.S. Atlantic and Gulf of Mexico states, and the Eastern Canadian Provinces [Read more...](#)

NWS West Coast/Alaska Tsunami Warning Center Message Friday, 11:06 PM

Tsunami Information Statement for U.S. West Coast states, British Columbia, and Alaska [Read more...](#)

NWS West Coast/Alaska Tsunami Warning Center Message Sep 19, 08:05 PM

Tsunami Information Statement for U.S. West Coast states, British Columbia, and Alaska [Read more...](#)

NWS West Coast/Alaska Tsunami Warning Center Message Sep 18, 01:52 PM

Tsunami Information Statement for U.S. West Coast states, British Columbia, and Alaska [Read more...](#)

NWS West Coast/Alaska Tsunami Warning Center Message Sep 13, 12:01 PM

Tsunami Information Statement for U.S. West Coast states, British Columbia, and Alaska [Read more...](#)

To: Tsunami warning system participants in the U.S. West Coast States, Alaska, and British Columbia
From: [NOAA/NWS/West Coast-Alaska Tsunami Warning Center](#) (Experimental Web Product)
Subject: [Tsunami Information Statement #2](#) issued 09/28/2006 at 0:24AM PDT

A strong earthquake has occurred, but a tsunami **IS NOT** expected along the California, Oregon, Washington, British Columbia, and Alaska coasts. No tsunami warning or watch is in effect for these areas.

A tsunami has been observed at the following sites:

Pago Pago 15cm/0.5ft (peak to peak)

Sea level observations indicate a tsunami was generated which may have been destructive along coasts in the source region along the California, Oregon, Washington, British Columbia, and Alaska coasts although some of these areas may be protected.

At 11:22 PM Pacific Daylight Time on September 27, an [earthquake](#) with Revised magnitude 7.0 [occurred in the South Pacific](#).

The [Pacific Tsunami Warning Center](#) will issue [messages](#) for Hawaii and other areas of the Pacific outside California, Oregon, Washington, British Columbia, and Alaska.

This will be the final statement issued for this event by the West Coast and Alaska Tsunami Warning Center unless a new tsunami is generated. For more information, see [NOAA/NWS/West Coast-Alaska Tsunami Warning Center](#) for basic [tsunami information](#), [safety rules](#), and a [tsunami travel time map](#) and [table](#). (**NOTE:** Travel time maps and tables are based on the assumption that a tsunami wave was generated.)

[Link to Standard Information Product](#)

[Link to Public Information Product](#)

[Link to XML/CAP Product](#)

CAP Representation



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<cap:sent>2006-09-28T07:24:00Z</cap:sent>
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<cap:msgType>Update</cap:msgType>
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<cap:severity>Minor</cap:severity>
<cap:certainty>Unlikely</cap:certainty>
<cap:effective>2006-09-28T07:24:00Z</cap:effective>
<cap:expires>2006-09-28T08:54:00Z</cap:expires>
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<cap:description>
WEPA43 PAAQ 280724
TIBWCA
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**TO - TSUNAMI WARNING SYSTEM PARTICIPANTS IN
ALASKA/BRITISH COLUMBIA/WASHINGTON/OREGON/CALIFORNIA
FROM - WEST COAST AND ALASKA TSUNAMI WARNING CENTER/NOAA/NWS
SUBJECT - TSUNAMI INFORMATION
BULLETIN NUMBER 2
ISSUED 09/28/2006 AT 0724 UTC**

**...THIS TSUNAMI INFORMATION STATEMENT IS FOR ALASKA/ BRITISH
COLUMBIA/ WASHINGTON/ OREGON AND CALIFORNIA ONLY...**

**NO - REPEAT NO - WATCH OR WARNING IS IN EFFECT FOR THE STATES
AND PROVINCES LISTED ABOVE.**

**A TSUNAMI HAS BEEN OBSERVED AT THE FOLLOWING SITES
PAGO PAGO 15CM/0.5FT (PEAK TO PEAK)**

EVALUATION

**SEA LEVEL READINGS INDICATE A TSUNAMI WAS GENERATED WHICH MAY HAVE
BEEN DESTRUCTIVE ALONG COASTS NEAR THE EARTHQUAKE EPICENTER.
A DAMAGING TSUNAMI IS NOT EXPECTED ALONG THE CALIFORNIA/ OREGON/
WASHINGTON/ BRITISH COLUMBIA AND ALASKA COASTS ALTHOUGH
SOME OF THESE AREAS MAY EXPERIENCE SMALL SEA LEVEL CHANGES.**

PRELIMINARY EARTHQUAKE PARAMETERS

**REVISED MAGNITUDE - 7.0
TIME - 2222 ADT SEP 27 2006
0722 PDT SEP 27 2006**

CAP Representation



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<cap:note>C
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WEPA43 PA
TIBWCA

TO - TSUNAMI
ALASKA
FROM - WASHINGTON
SUBJECT - TIBWCA
BULLETIN
ISSUED 09/28/06
...THIS TSUNAMI
COLUMBIA

<cap:category>Geo</cap:category>

<cap:event>Tsunami</cap:event>

<cap:urgency>Immediate</cap:urgency>

<cap:severity>Minor</cap:severity>

<cap:certainty>Unlikely</cap:certainty>

<cap:effective>2006-09-28T07:24:00Z</cap:effective>

<cap:expires>2006-09-28T08:54:00Z</cap:expires>

<cap:headline>Tsunami Info Statement</cap:headline>

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PRELIMINARY EARTHQUAKE PARAMETERS

**REVISED MAGNITUDE - 7.0
TIME - 2222 ADT SEP 27 2006**

0700 PDT SEP 27 2006

CAP Representation



...THIS TSUNAMI INFORMATION STATEMENT IS FOR ALASKA/ BRITISH COLUMBIA/ WASHINGTON/ OREGON AND CALIFORNIA ONLY...

<cap:a
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<cap:s
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<cap:u
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<cap:d
WEPA
TIBW

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SEA LEVEL READINGS INDICATE A TSUNAMI WAS GENERATED WHICH MAY HAVE BEEN DESTRUCTIVE ALONG COASTS NEAR THE EARTHQUAKE EPICENTER.

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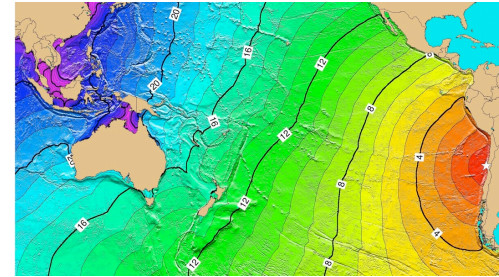
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PRELIMINARY EARTHQUAKE PARAMETERS

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REVISED MAGNITUDE - 7.0
TIME - 2222 ADT SEP 27 2006
2322 PDT SEP 27 2006
0622 UTC SEP 28 2006
LOCATION - 16.6 SOUTH 172.1 WEST
- SAMOA ISLANDS REGION
DEPTH - 19 MILES

- **Tsunami Warning Markup Language**
 - less ambiguity as elements have well-defined semantics
 - facilitate development of a tsunami-focused data sharing framework
 - improved opportunities for machine processing of bulletins
- **Coming next**
 - **Cyclone Warning Markup Language (CWML)**





Cyclone Larry

Information issues

Respondents identified two major issues in relation to the information available to them and how it was being delivered: (1) conflicting information from the Bureau of Meteorology (BoM) and the media and; (2) outdated media information. Many people reported conflicting information between the Bureau of Meteorology (BoM) www internet site and that released by the media.

Respondents stated – *“don’t stuff around. Be clear and precise”, “the messages were conflicting”, “felt that messages were misleading and contradictory”, “different sources said different things”, “TV, radio and www all giving different advice”, “Austar said Larry would hit by 6 am, and it did [in Mourilyan]” and “the radio said about 10 am – it was all over by 9.30.”* Others call for consistency and accuracy of the information provided.

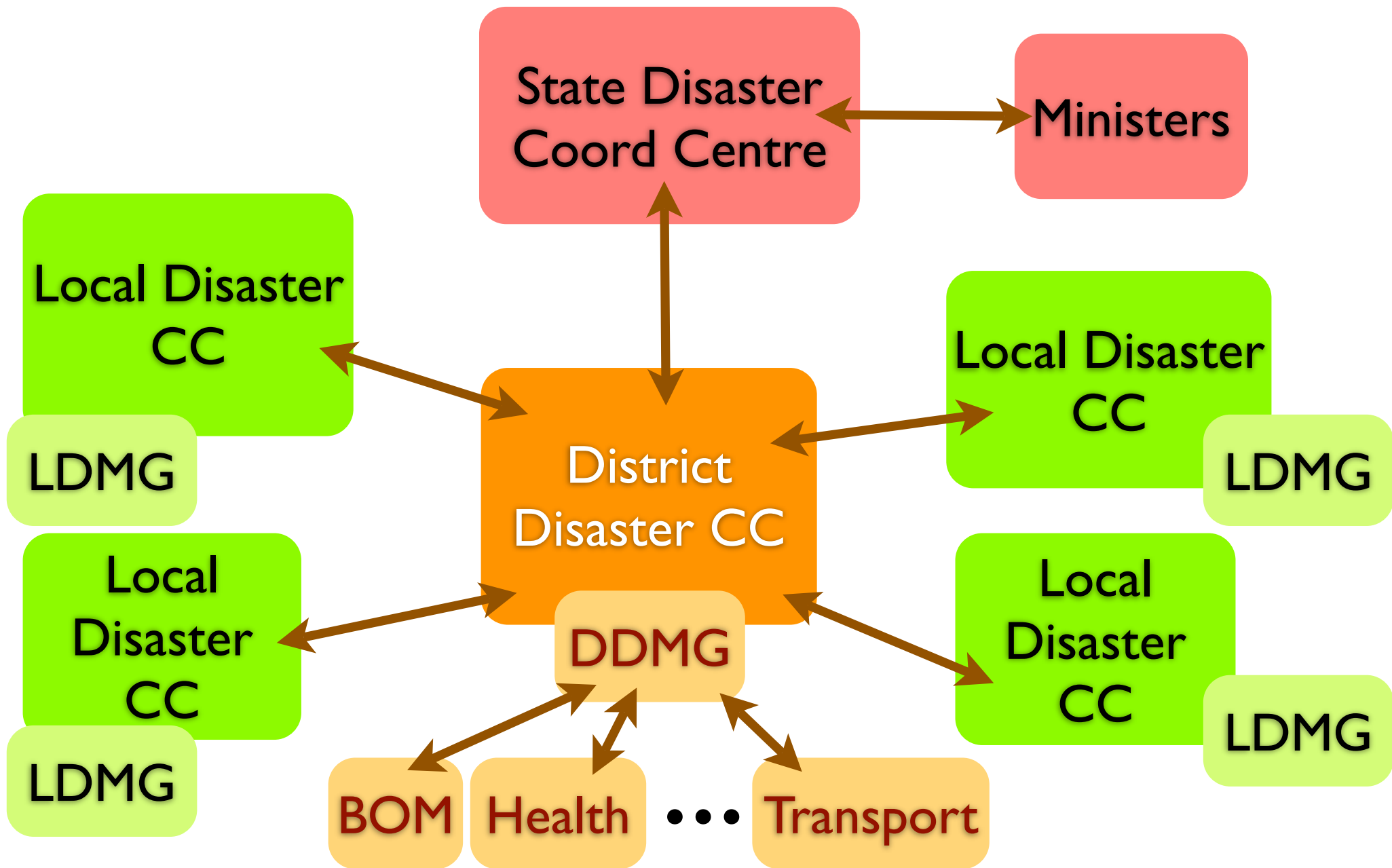
Cyclone Larry

From the information provided by respondents, it is clear that the prediction of 'time of impact' needs to be clarified. For instance, people fearing for their lives, were concerned because the ABC was saying "*the eye was coming at 8 am, when it had already passed*". Indeed, a 50 year old from Babinda asked to "*make clear in broadcasts if they are talking about the eye of the cyclone, or which quadrant*". This feedback of requests to enlarge the scale as actual landfall approached and occurred, include people asking for "*_ hourly warnings, more frequent TV updates*", and "*a list of the exact locations which may be heavily impacted*". A significant issue is that, even though the BoM describes Larry as a 'midget' cyclone, impact time spread from about 6 am in the south to about 8 am in the north. A clearly shaken family in South Johnstone reported cowering in their house as a main roof beam snapped and a panel of louvers blew in, only to hear on the radio that landfall would be in about an hour.

Exercise Reef Breaker



Townsville 12-15 Sep



SITUATION 0930 hrs 12/9/06 Advice No 9

Tropical Cyclone IMOGEN (Cat 3) 960 hpa ~~540~~ kms North East Townsville

Travelling South West 20 kms/hr

Destructive winds to 180 km/hr

Heavy rain to continue

(Destructive winds to 70 kms from Gt
Very Destructive winds to 30 kms from Gt)

Potential Impact Area - Cardwell - Bowen

12 MD UPDATE - EXPECTED X COAST

STORM TIDES TO EXCEED HIGHEST ASTRONOMICAL TIDE
& PRODUCE DANGEROUS STORM TIDE

STORM TIDE WARNING TO BE ISS. AT 1500 TUES.

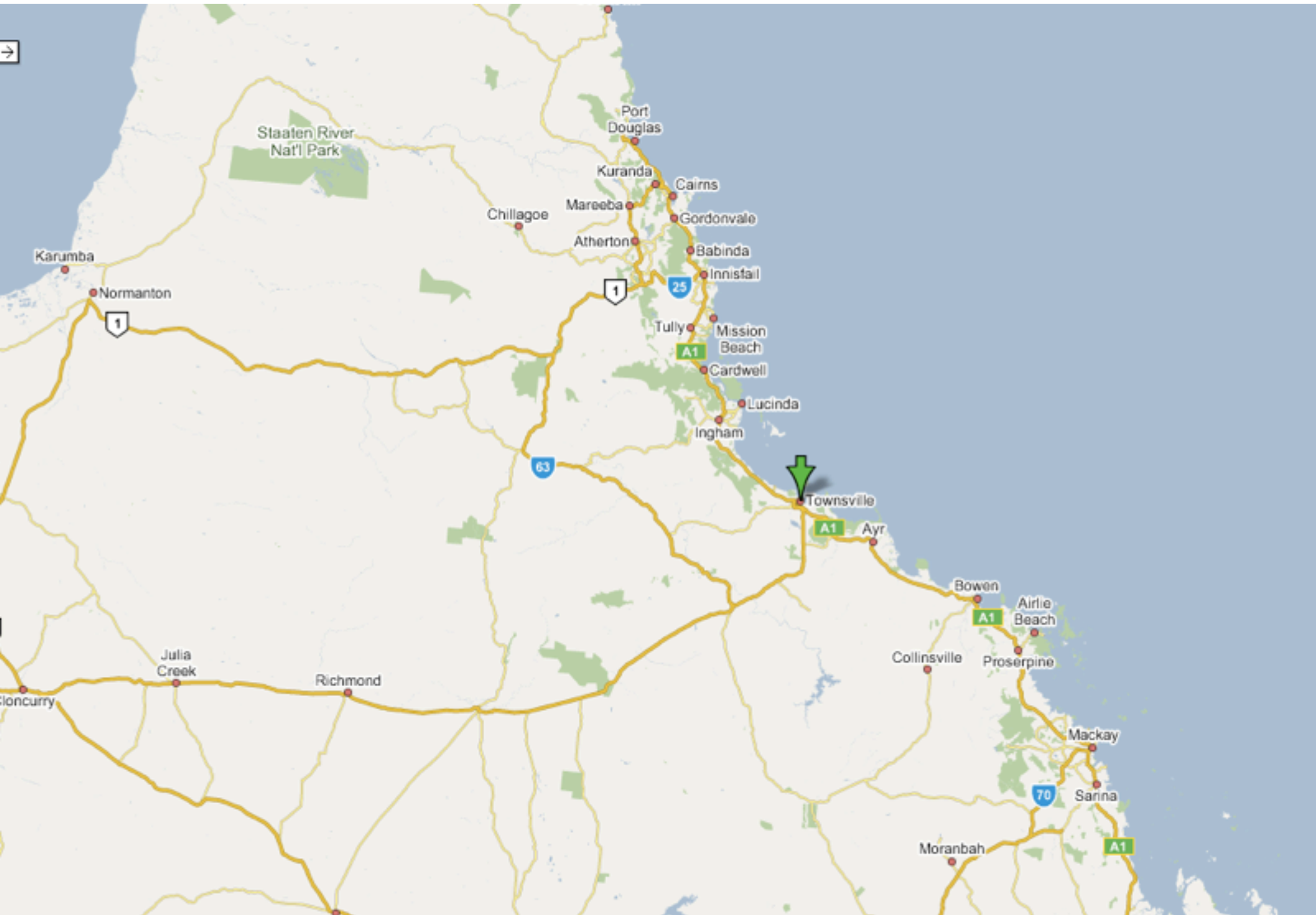
STORM TIDE LEVEL
4.5 M AHD
WIND GUSTS \rightarrow 100 KPHR
AM 13/9/06.

1430 hrs 12/9/06.

TIDES in m		
12/9	13/9	14/9
0630 <u>1.01m</u>	0016 <u>2.06</u>	0358 <u>1.81</u>
1250 <u>2.6m</u>	0809 <u>1.17</u>	0959 <u>1.12</u>
1956 <u>1.67m</u>	1520 <u>2.6</u>	1709 <u>2.86</u>
	2254 <u>1.54</u>	

- **Extract the data you need:**
 - speed, pressure...
 - impact areas
 - tide levels
- **Improve Situation Awareness**
 - Data can be “visualised” to meet the specific needs of the local, district, state, and federal level decision makers

Cyclone Over Google Maps



→ TC Imogen 12/OCT/06 13:30



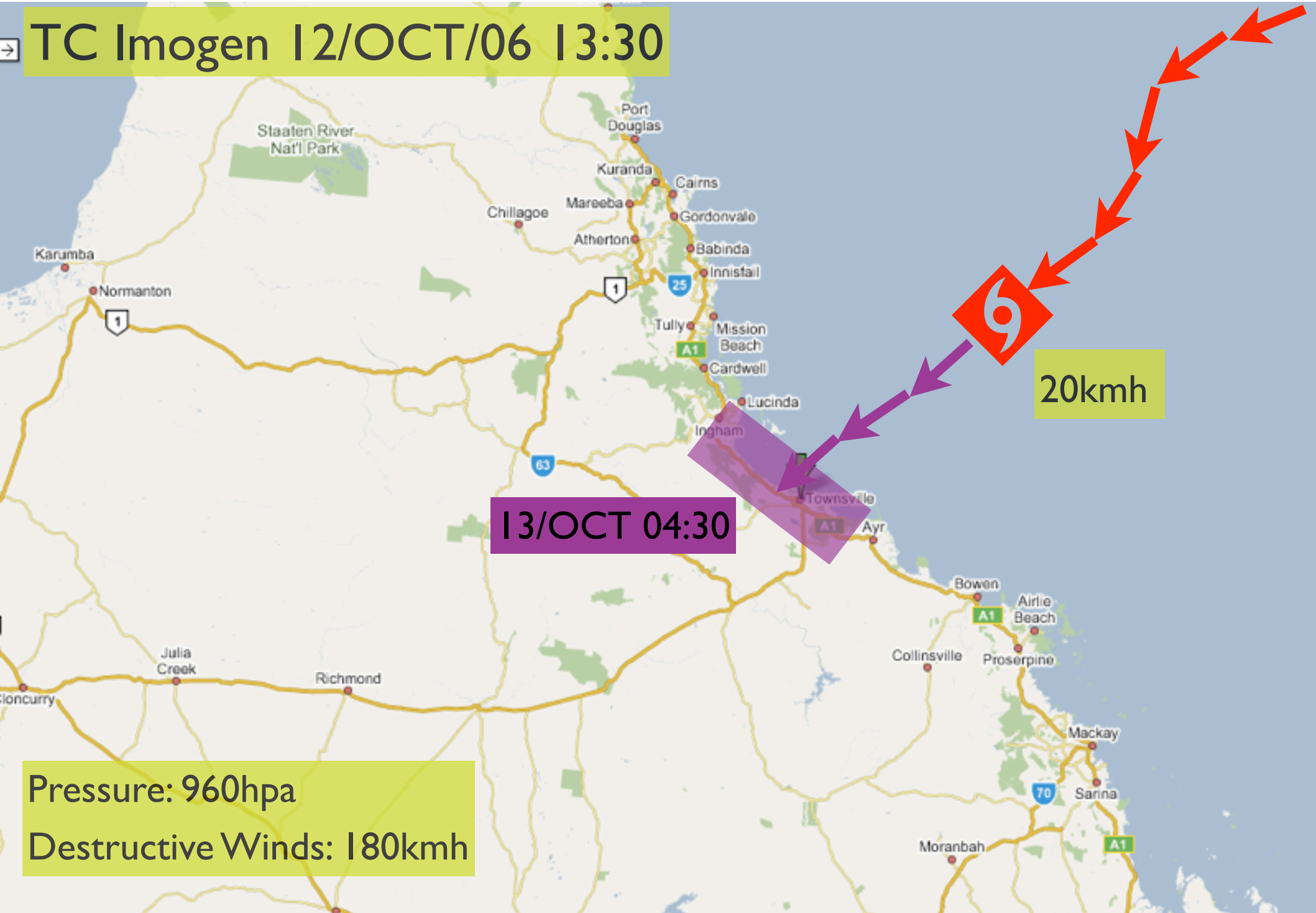
20kmh

Pressure: 960hpa

Destructive Winds: 180kmh

Cyclone Over Google Maps

→ TC Imogen 12/OCT/06 13:30



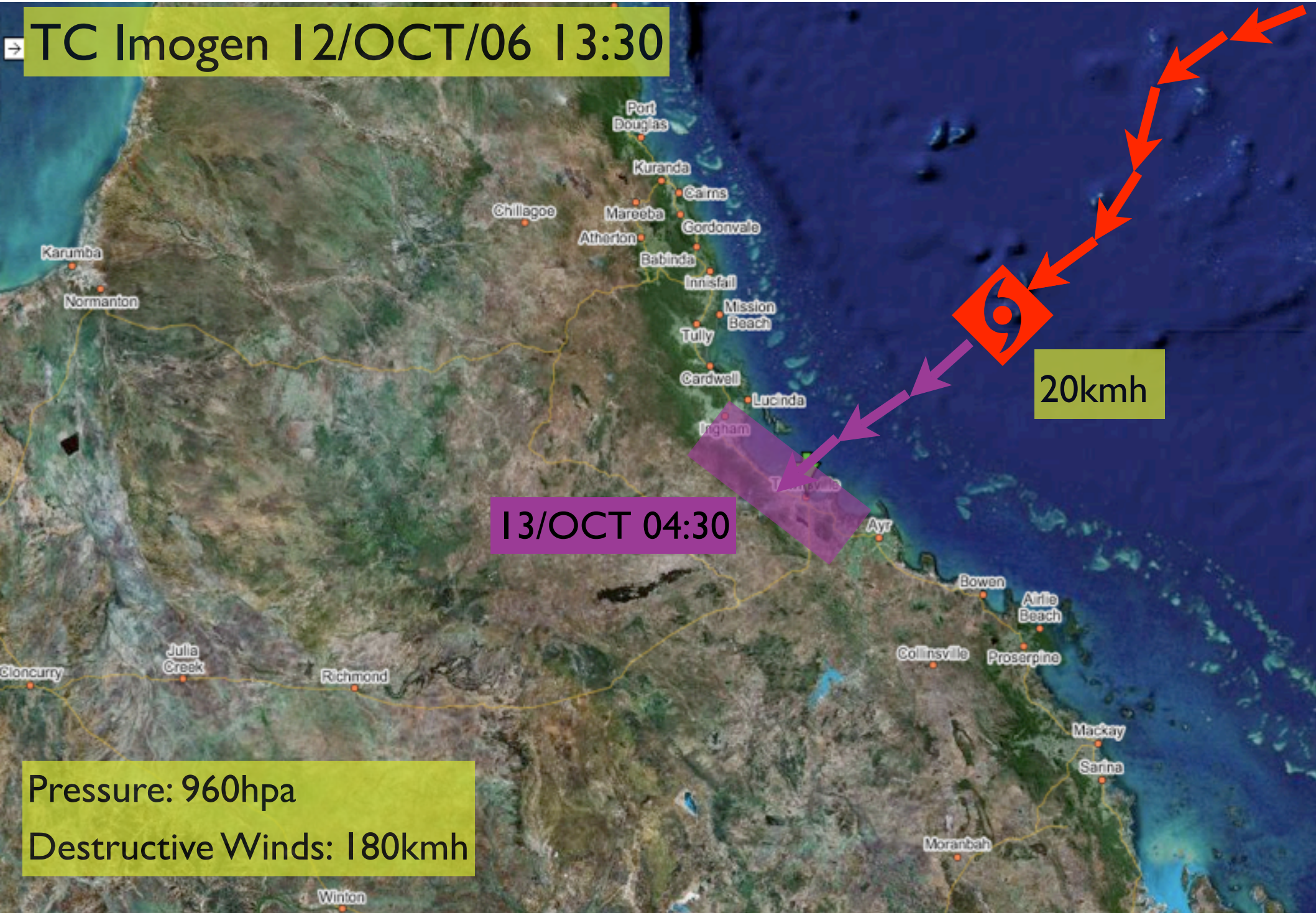
20kmh

13/OCT 04:30

Pressure: 960hpa
Destructive Winds: 180kmh

Cyclone Over Google Maps/Earth

→ TC Imogen 12/OCT/06 13:30



20kmh

13/OCT 04:30

Pressure: 960hpa
Destructive Winds: 180kmh

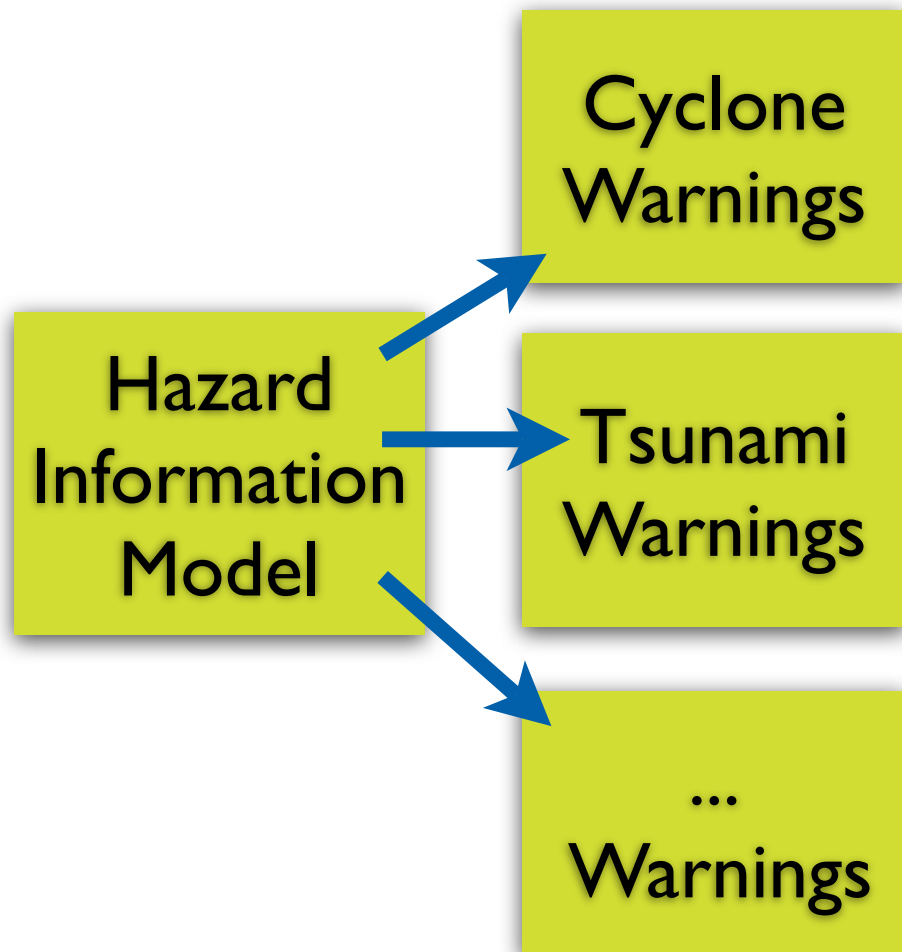
Winton

All Hazards Framework

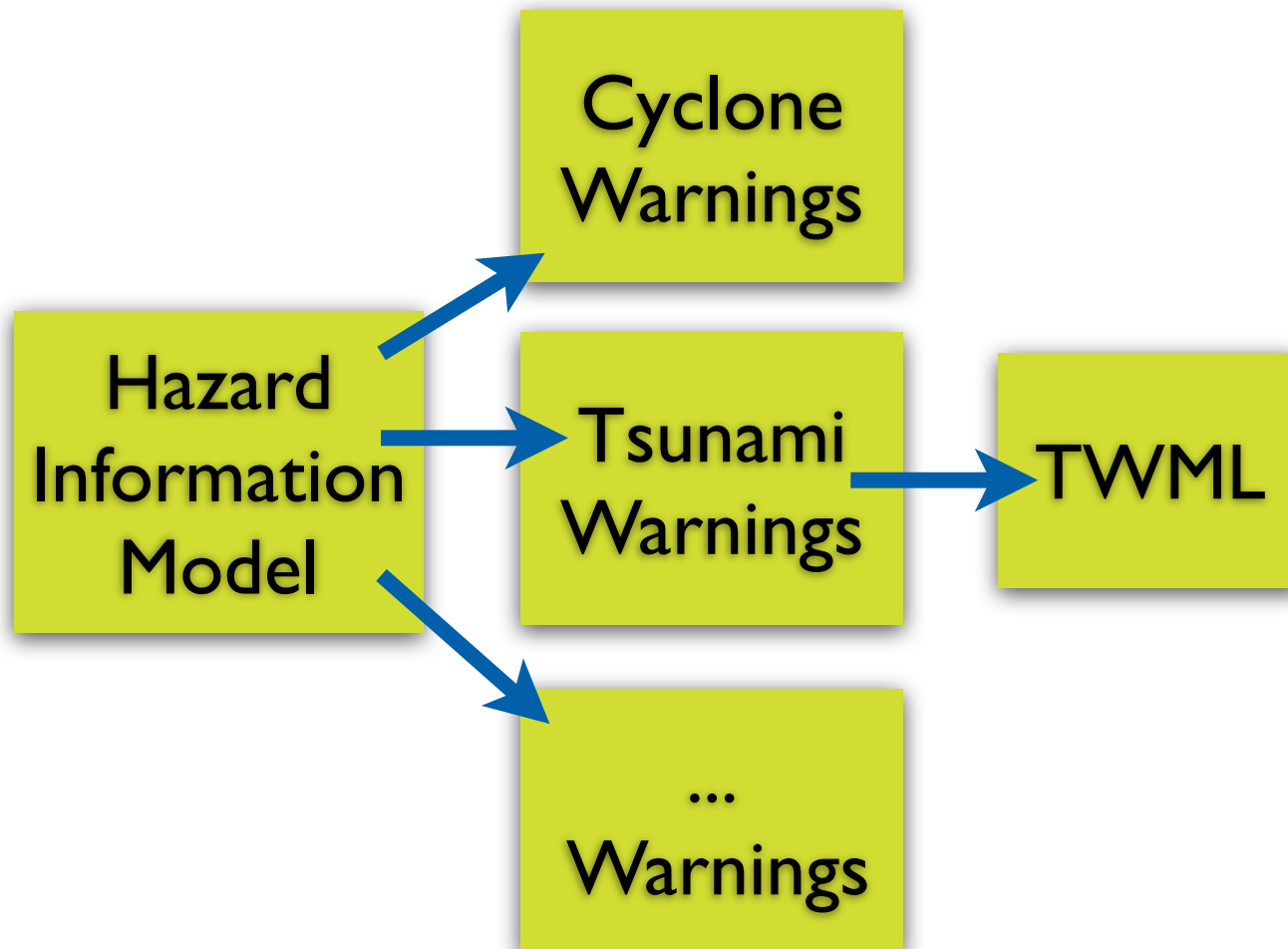


Hazard
Information
Model

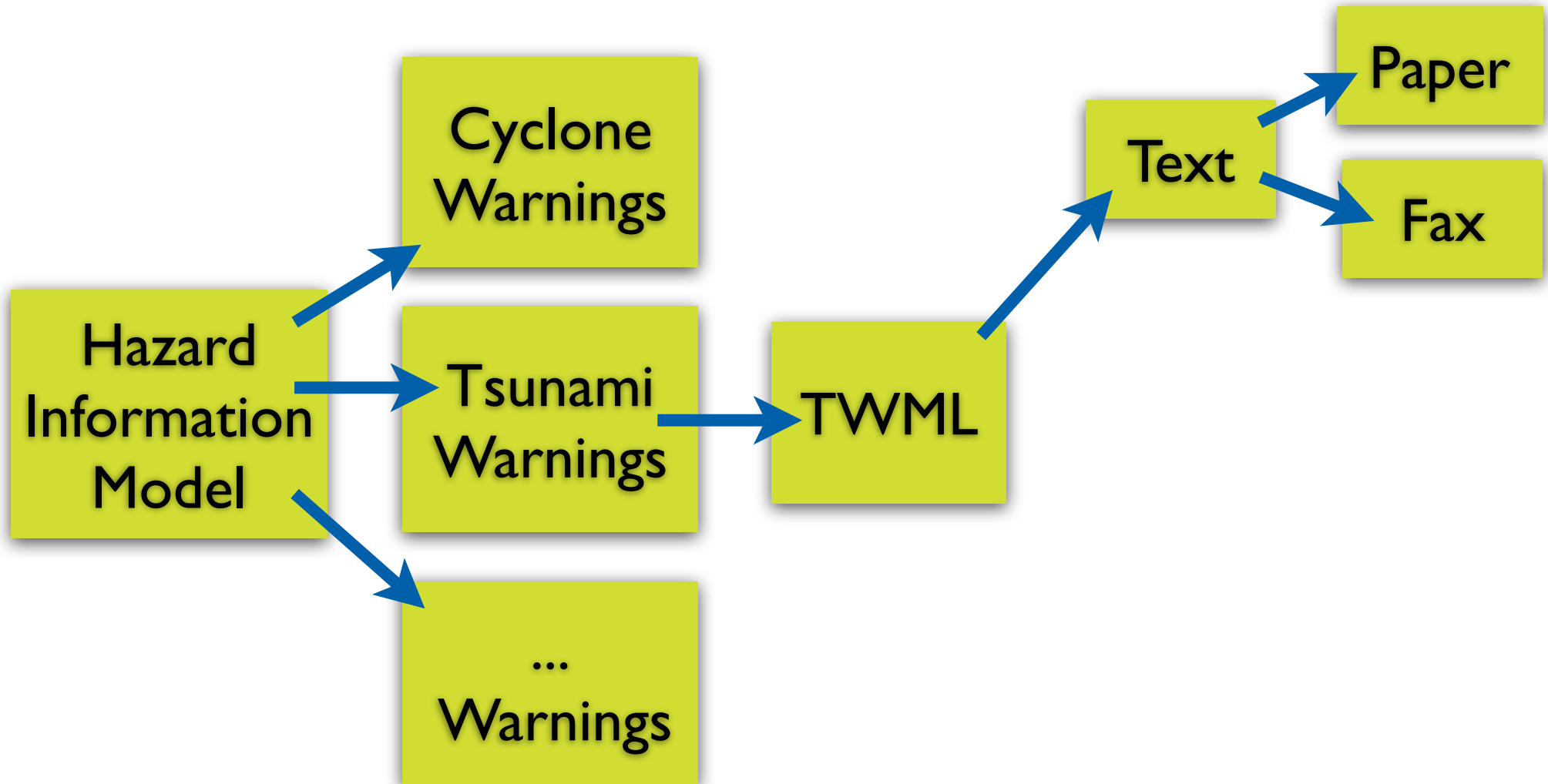
All Hazards Framework



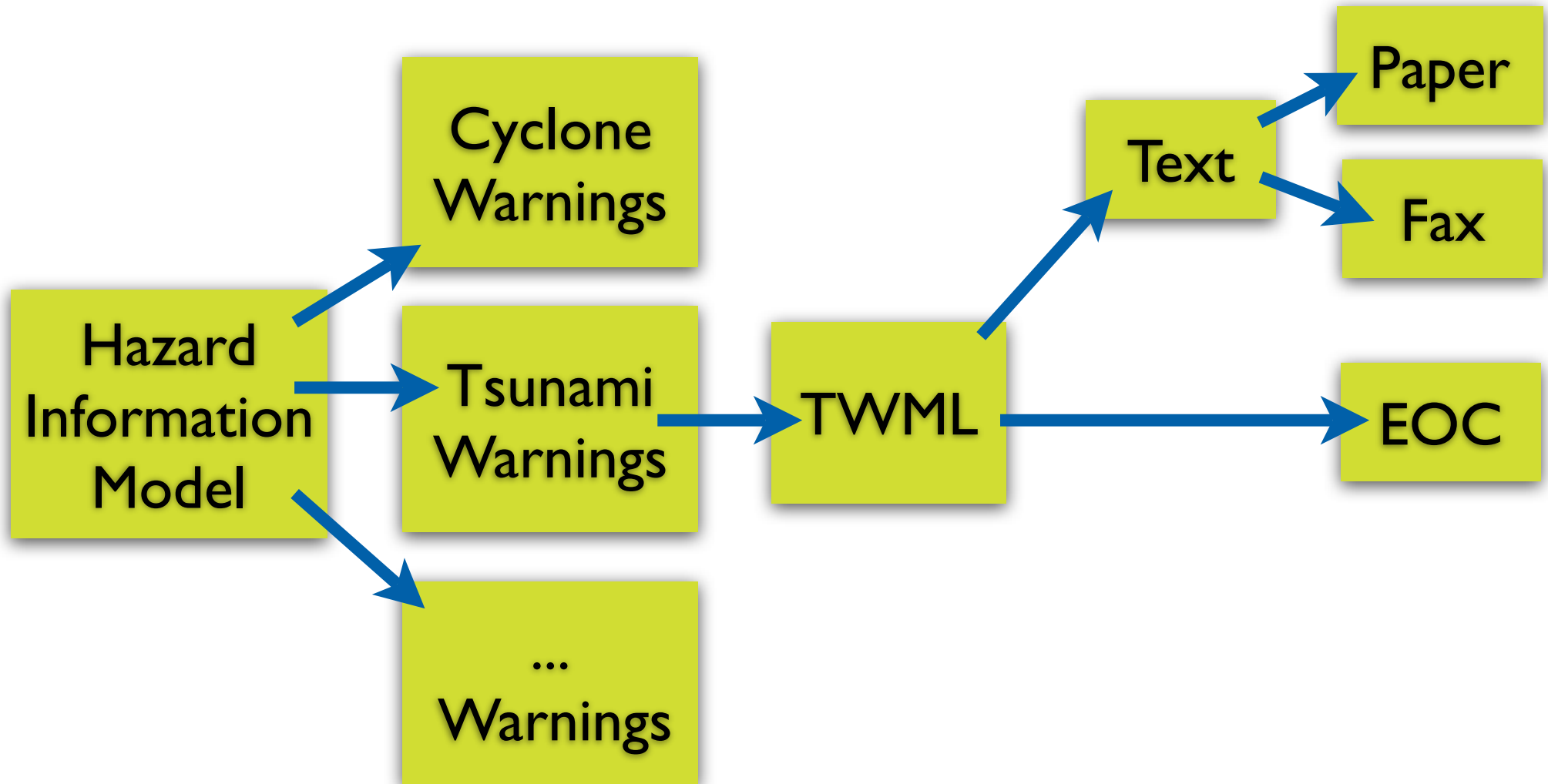
All Hazards Framework



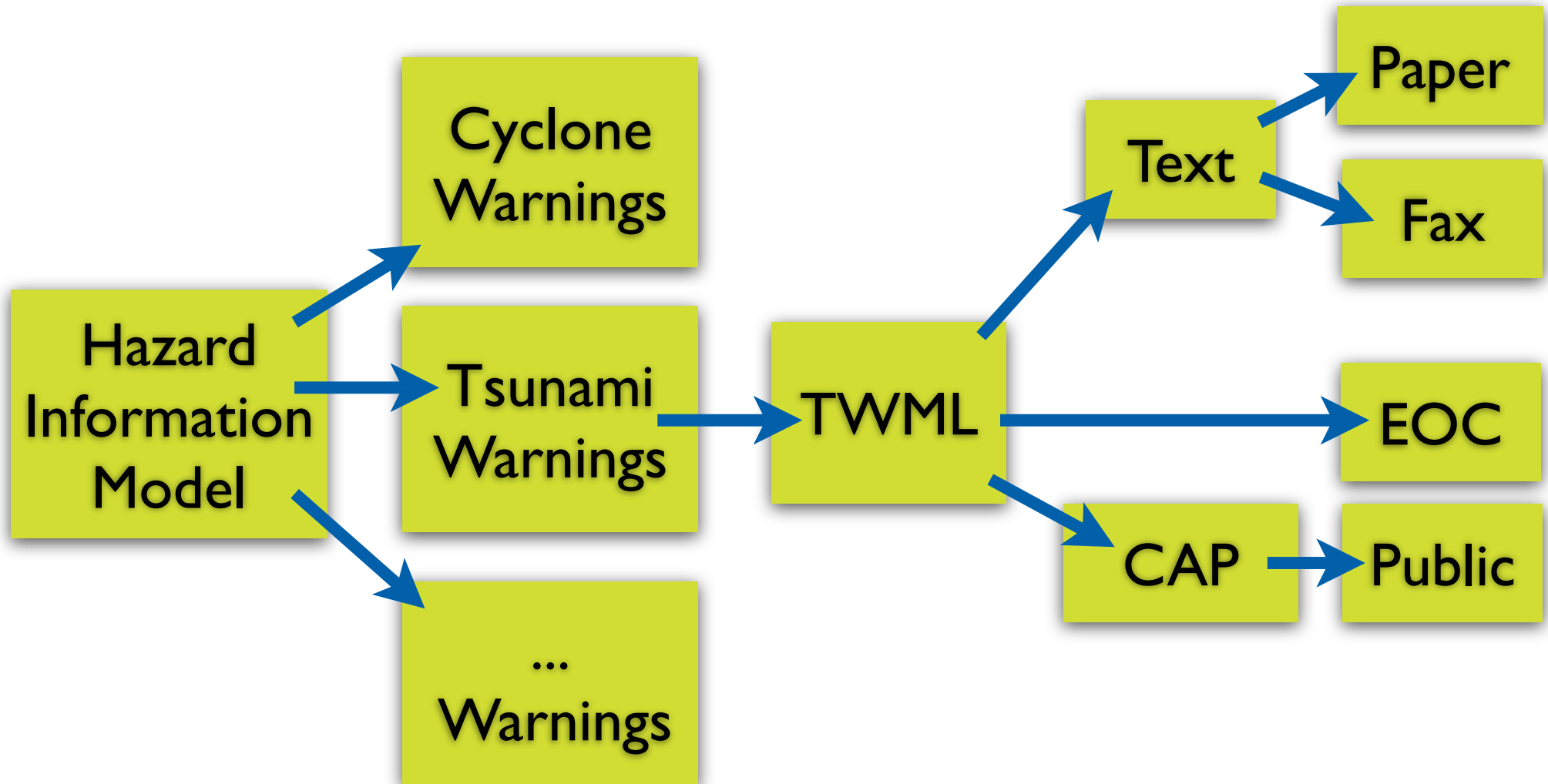
All Hazards Framework



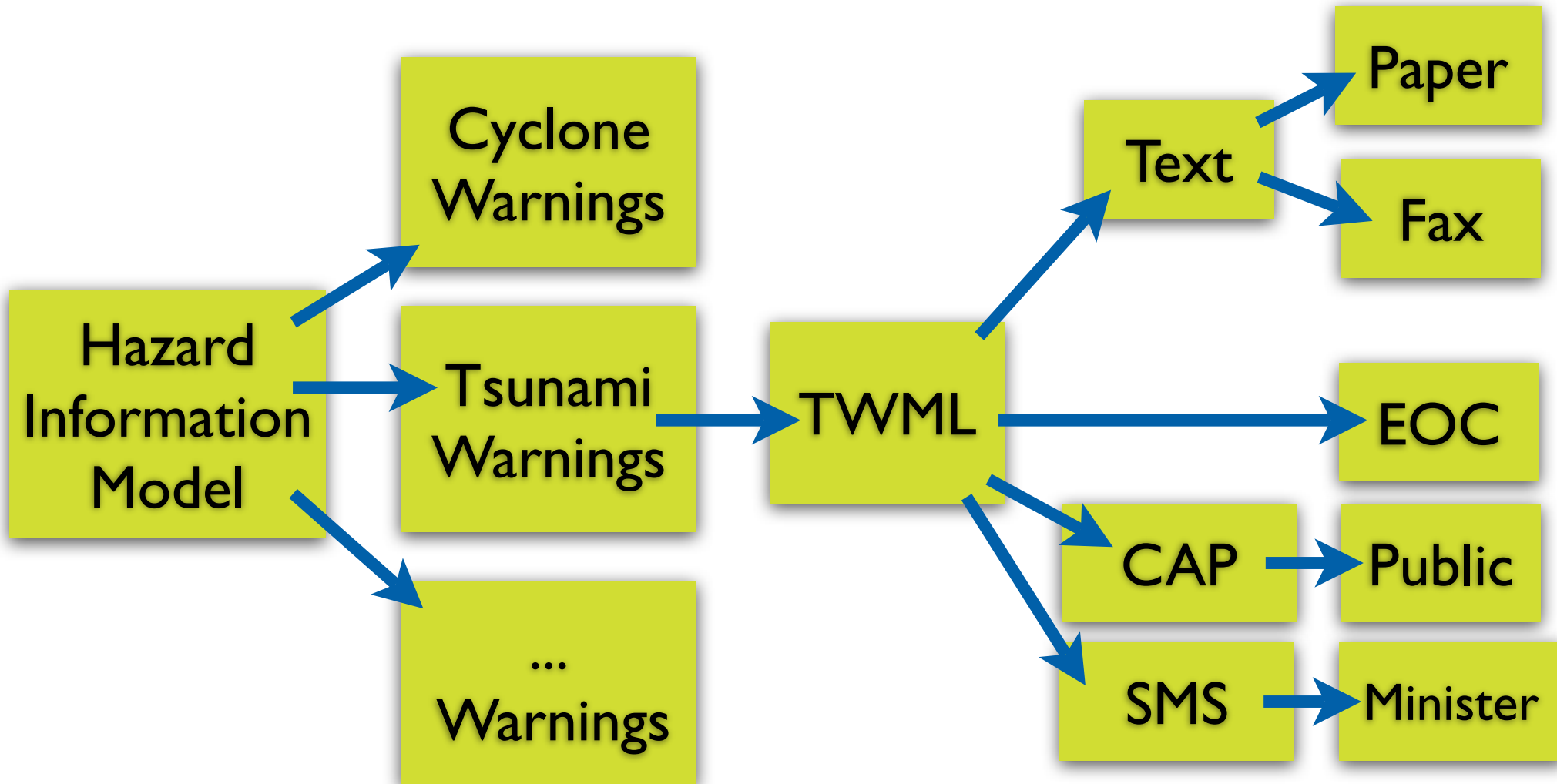
All Hazards Framework



All Hazards Framework



All Hazards Framework



Conclusion

- **New Standards are moving the sector forward**
 - **EDXL → Distribution Infrastructure**
 - **CAP, TWML (etc) - Semantic Payloads**
- **Improved opportunities for machine processing of warnings to support**
 - **validation, dissemination and aggregation**
 - **mapped to visual (or other) presentations**
 - **better suitable for decision makers**
 - **crucial information to reach the affected public faster**