



# Christchurch Earthquake Response

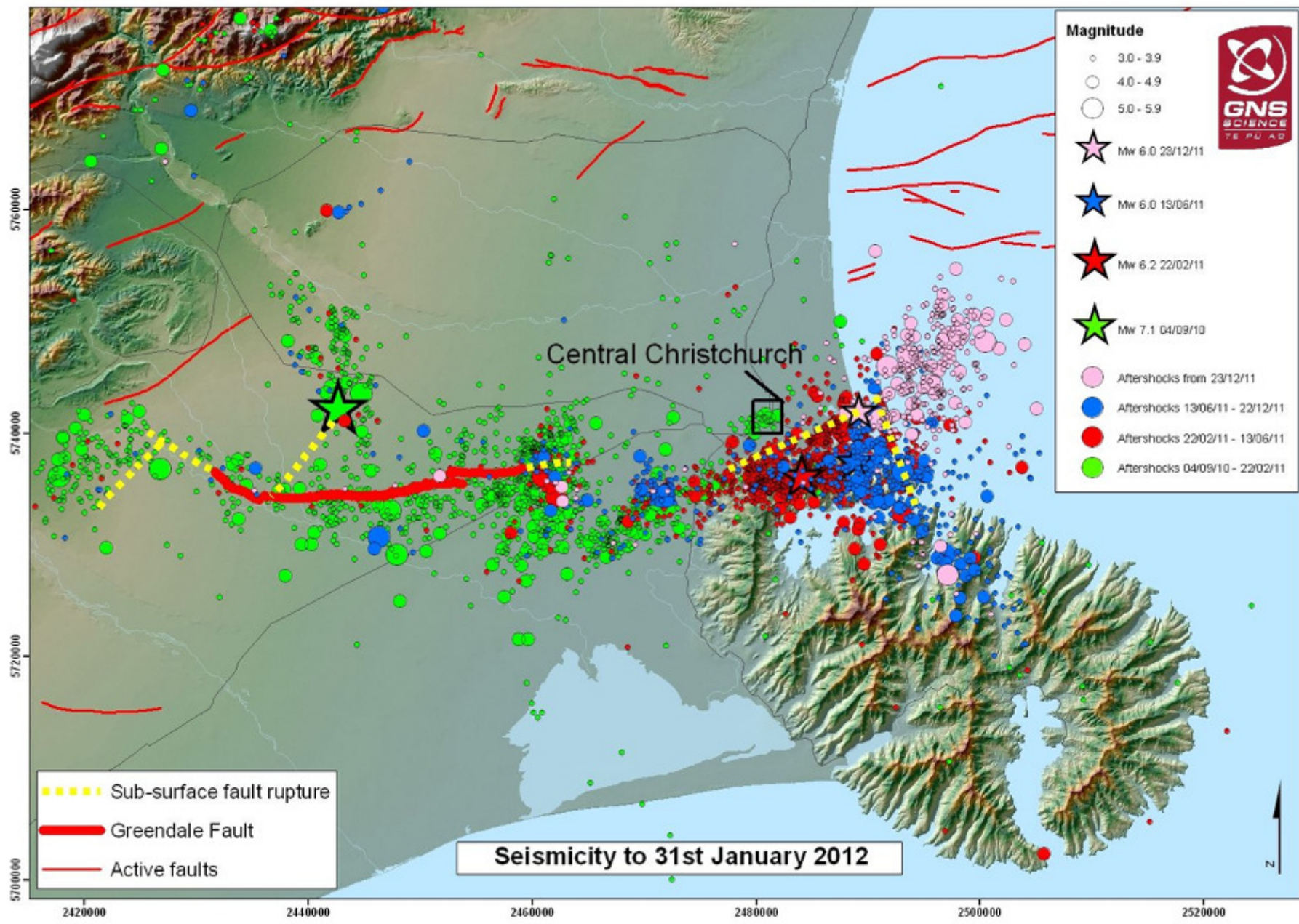
22 Feb – 30 April 2011



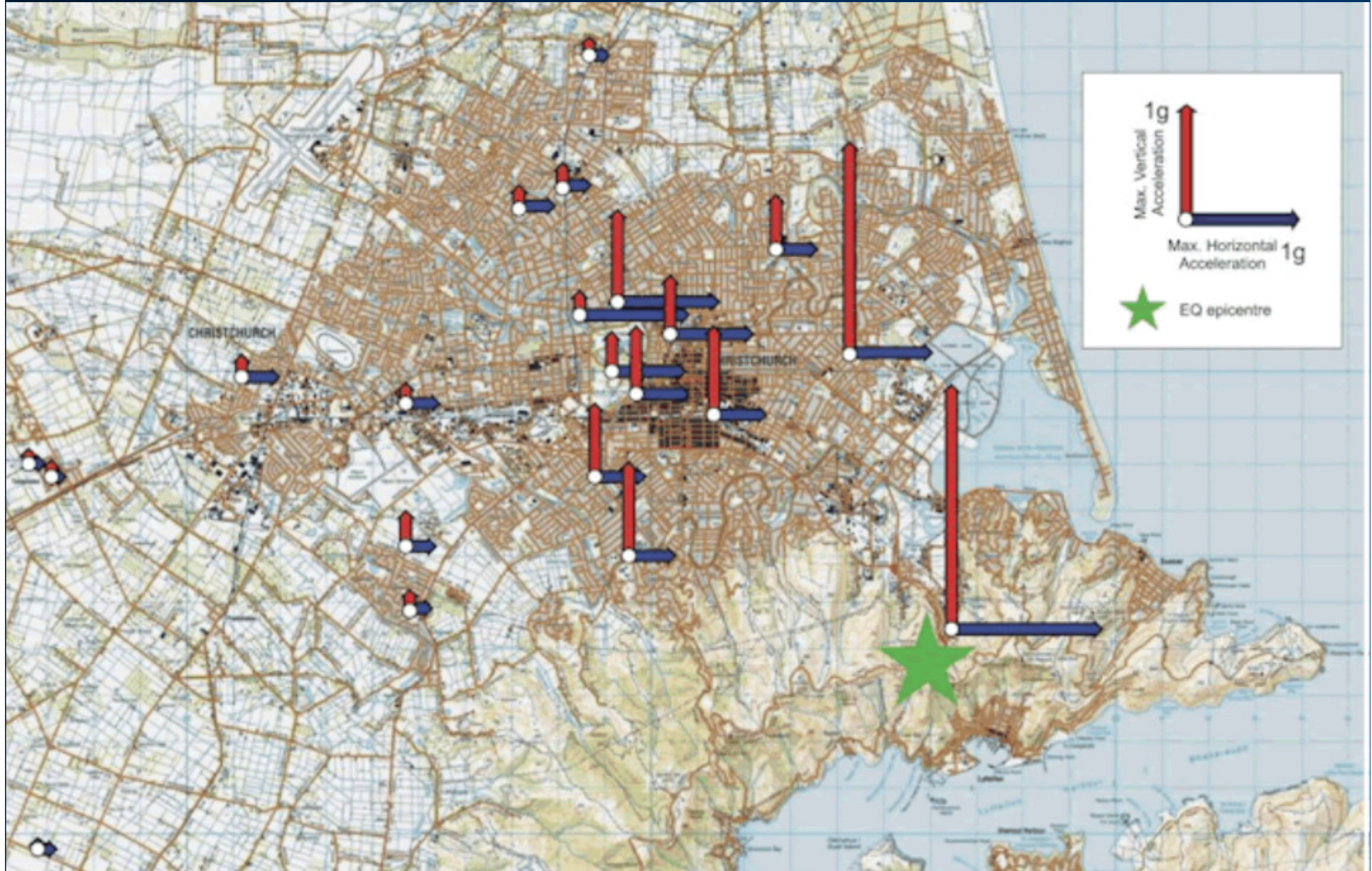
Ministry of Civil Defence  
& Emergency Management

Te Rākau Whakamarumarū

# Earthquake Sequence since September 2010



# Vertical vs horizontal acceleration

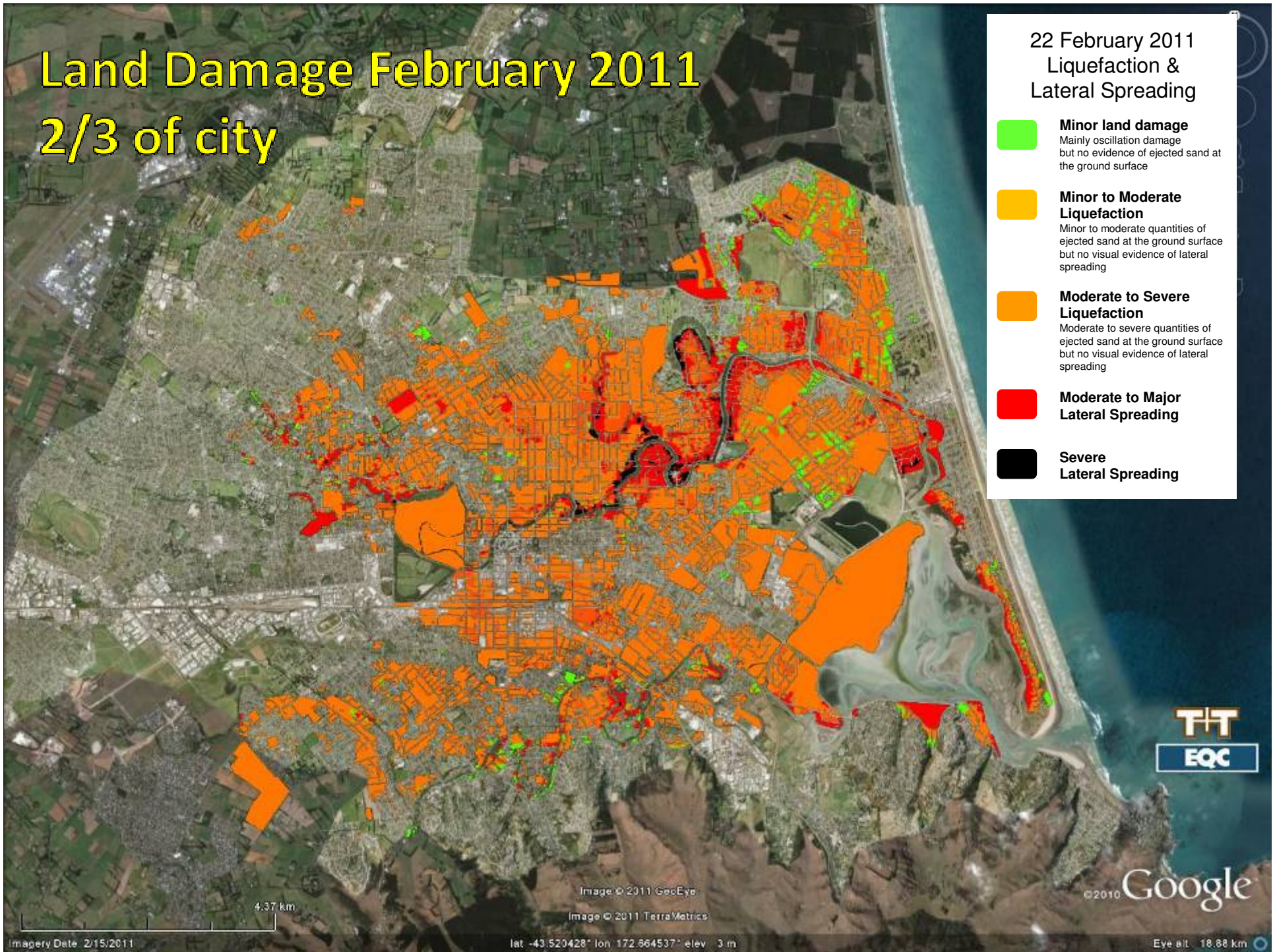


# Land Damage February 2011

## 2/3 of city

22 February 2011  
Liquefaction &  
Lateral Spreading

-  **Minor land damage**  
Mainly oscillation damage but no evidence of ejected sand at the ground surface
-  **Minor to Moderate Liquefaction**  
Minor to moderate quantities of ejected sand at the ground surface but no visual evidence of lateral spreading
-  **Moderate to Severe Liquefaction**  
Moderate to severe quantities of ejected sand at the ground surface but no visual evidence of lateral spreading
-  **Moderate to Major Lateral Spreading**
-  **Severe Lateral Spreading**



Imagery Date: 2/15/2011

lat -43.520428° lon 172.864537° elev 3 m

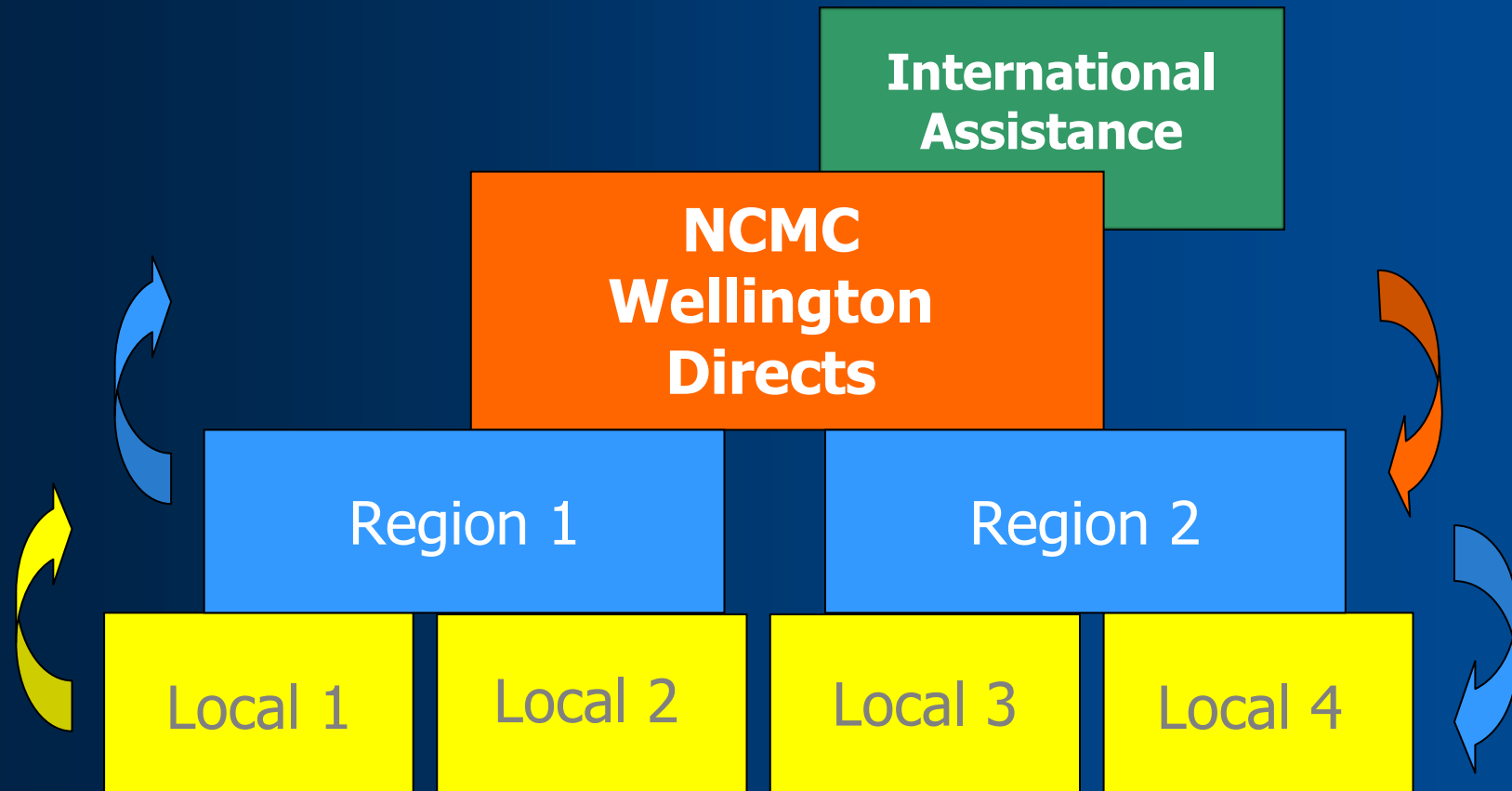
Eye alt: 18.88 km

# Liquefaction & slumping



# 1'st State of National Emergency!

- Exercises vs Reality! Established model:



# Response Model: Christchurch Earthquake



# Christchurch Response Centre (CRC) @ Art Gallery





# Personnel @ peak

• CRC:	1500
• NCMC:	165
• Police:	3366
• Australian Police:	353
• Fire Service:	1812
• USAR NZ:	150
• USAR International:	439
• NZDF:	1792
• Singapore Armed Forces:	116
• DVI:	324
	<hr/>
	10,017

# Operational priorities & phases

## **Phase 1:**

Rescue,  
Casualties,  
Safety,  
Shelter  
Food  
Water  
Utilities

## **Phase 2:**

Recovery of  
deceased,  
Detailed  
assessment,  
Welfare of  
residents,  
Public  
assurance

## **Phase 3:**

Community  
wellbeing,  
Economic  
recovery,  
Recovery  
planning

# Phase 1 Challenges

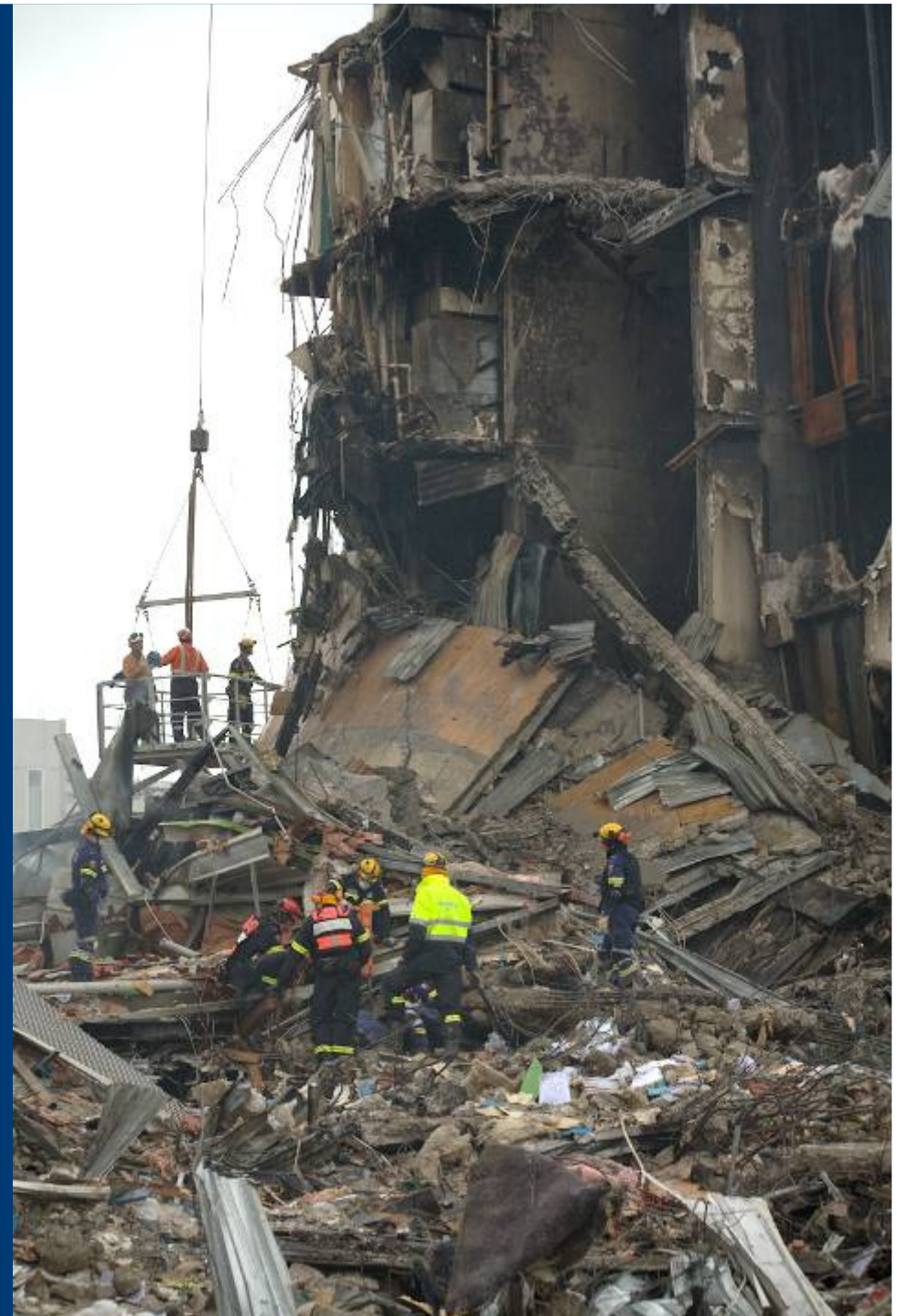


**Initial Rescue:  
95% rescues on day 1**



# Complex rescue- Building collapse & fire

CTV Building –  
120 fatalities





## International USAR from day 2 (7 countries)

NZ	150
International	<u>439</u>
	589

# Treatment of the Injured

A photograph showing several emergency responders in high-visibility yellow and orange gear, including hard hats and safety vests, attending to an injured person lying on a stretcher. One responder in a blue vest is focused on the patient's head, while others look on. The scene is outdoors, possibly at a construction or industrial site.

4 Triage centres  
across city -  
Ambo & NZDF  
support

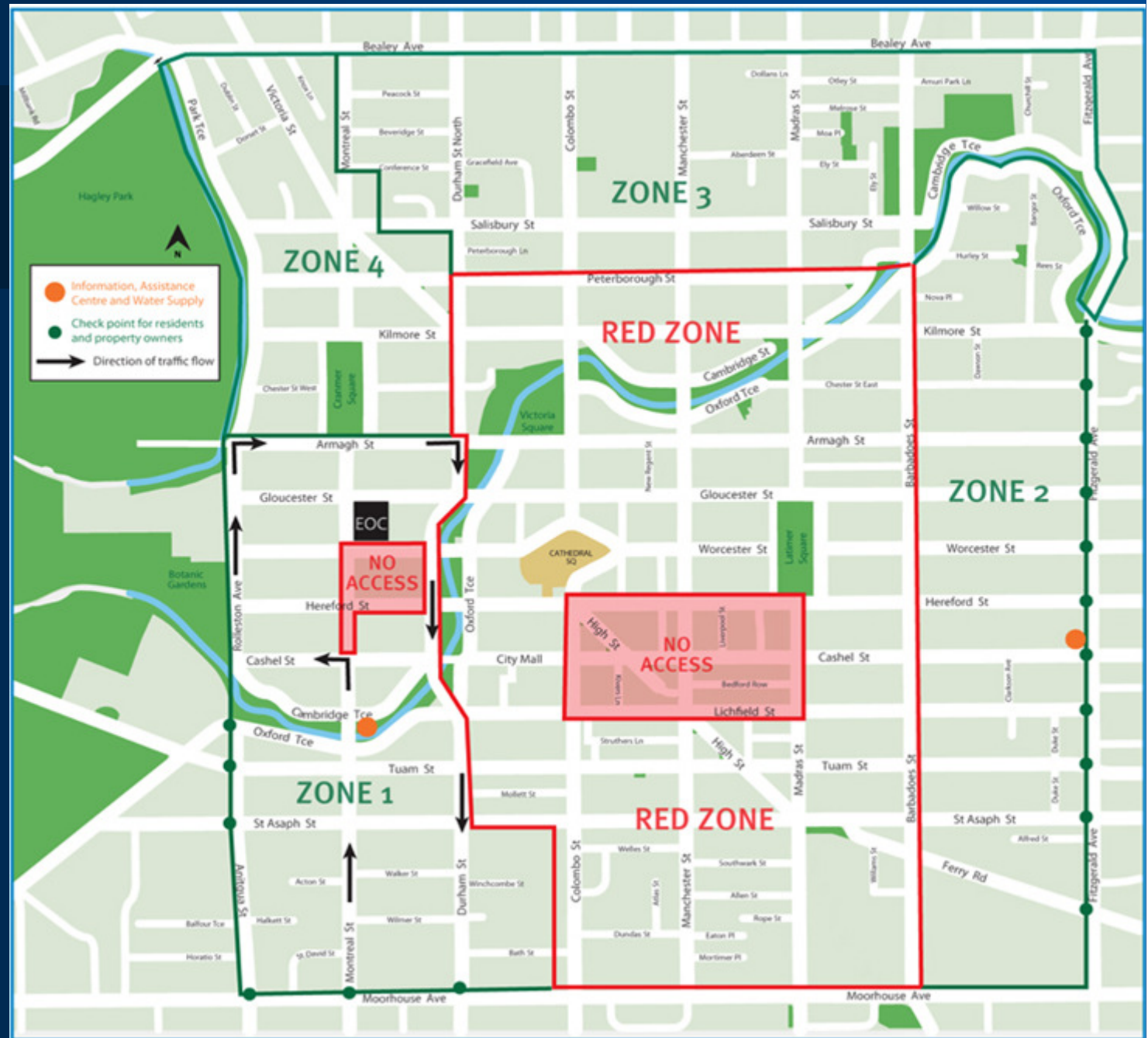
Hospitals ok

# Safety: Building Facades – CBD





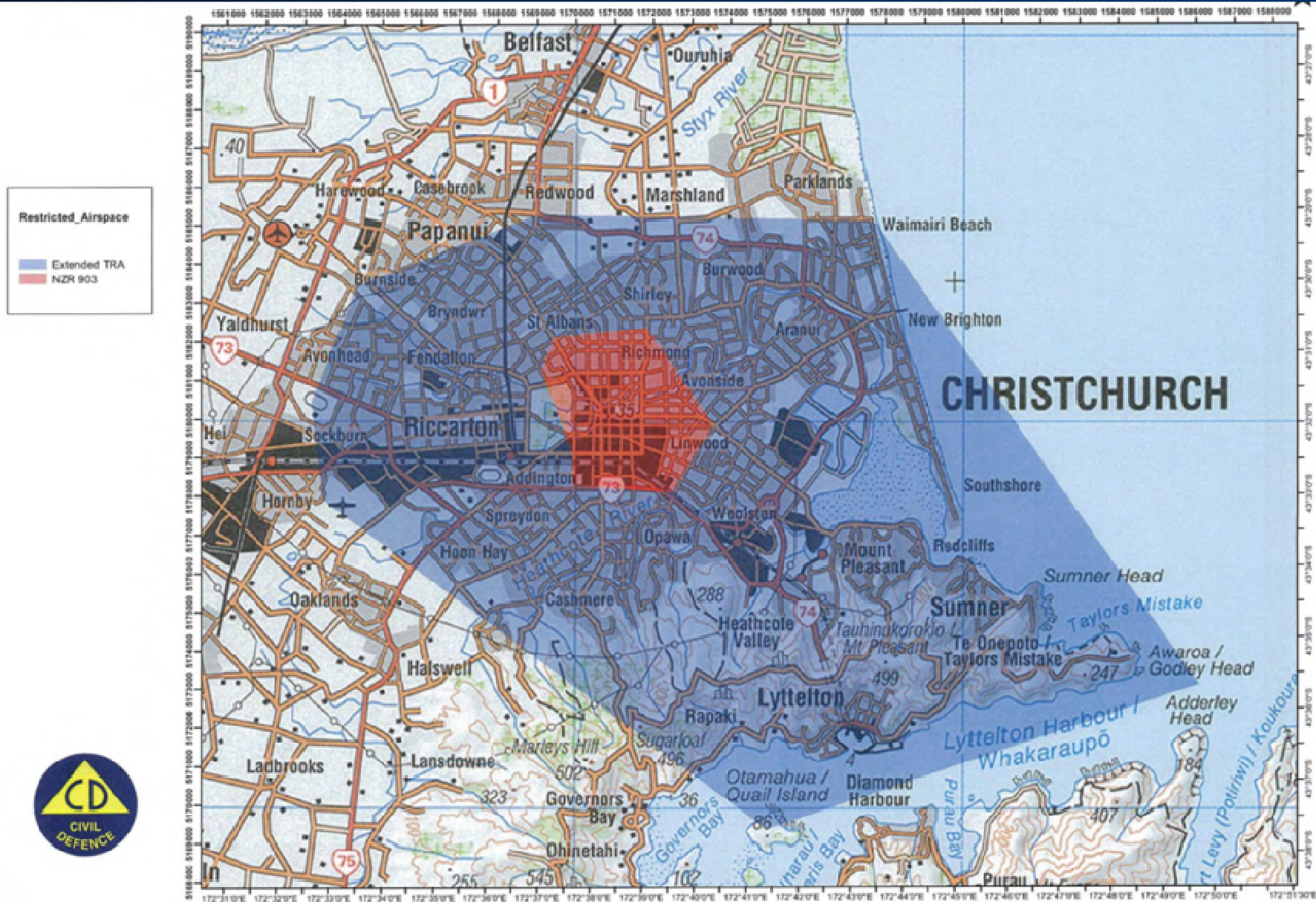
# Cordon CBD





**Cordon  
management**

# Restricted Airspace



# Air Bridge → Wellington, Auckland



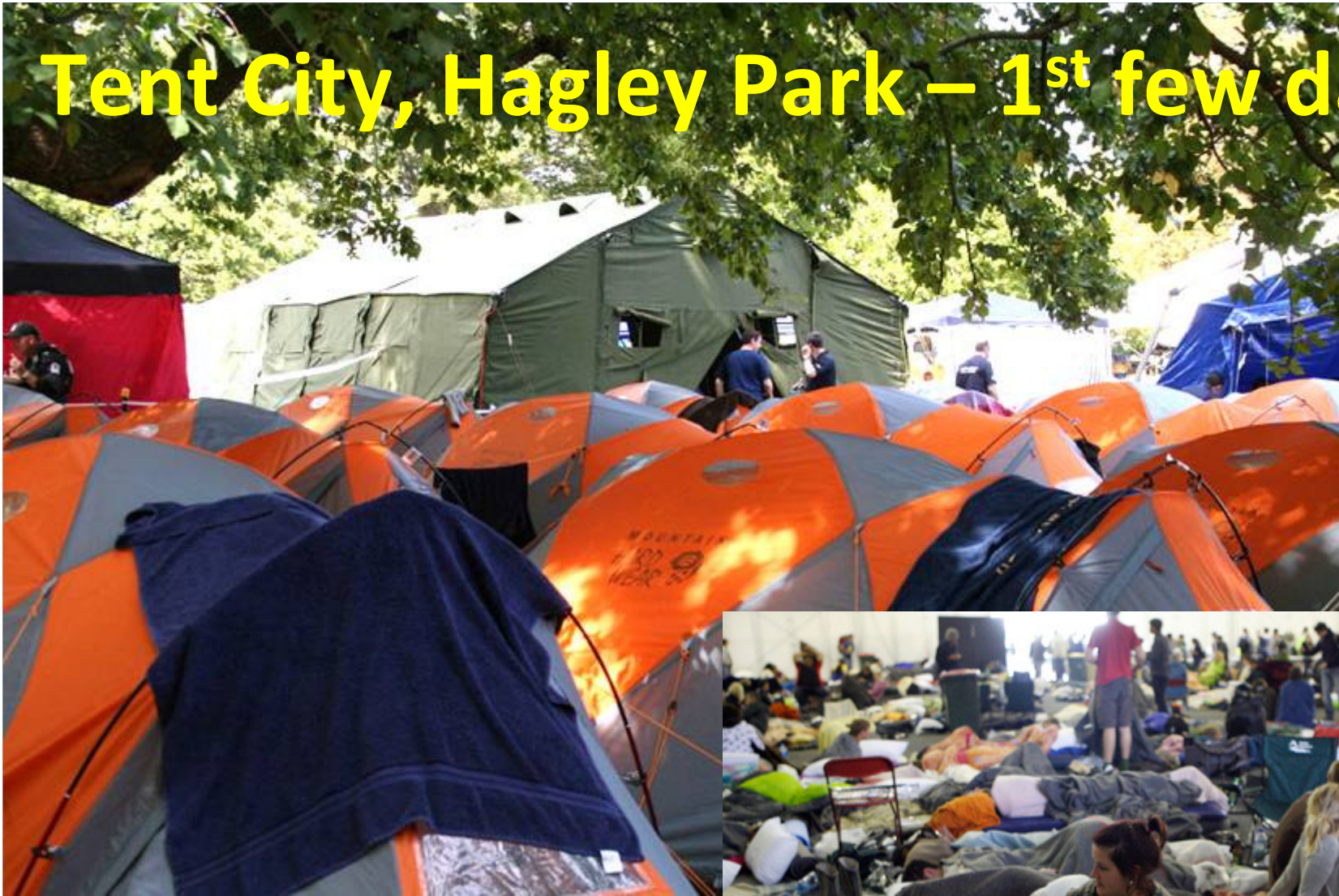
8,632 households  
(24,892 people)  
relocated in the 6  
weeks after the  
earthquake



# Welfare: Residents



# Tent City, Hagley Park – 1<sup>st</sup> few days





Media  
Management -  
1,269 accredited  
journalists

# Public Information

- 400+ media advisories
- Tweeted 1,800 times
- Held 183 media conferences
- Call centre re-established on N. Island, took 167,291 calls (normal = 45,000/month)
- 177 public information staff





PONJE

**Christchurch**  
EARTHQUAKE RESPONSE

**Media Tours Today**  
14:30 hours

**Visiting:** CTV building  
PGC building  
Cathedral Square

Christchurch Emergency Response Unit (CERU) 179 917  
Christchurch Communications (CCC) 080 400 0000

**Christchurch**  
EARTHQUAKE RESPONSE

**Media Briefings**  
Everyday 10:30 and 17:30 hours

**in Auditorium**

**Christchurch**  
EARTHQUAKE RESPONSE

**What's on Today**  
Media Schedule: Monday 28 Feb

08:00	Pre-briefing with Media Briefing Coordinator	Media 10
08:30	Media Briefing	TV: 3, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100
09:30	Media Day Two (TBC)	TV: 3, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100
12:30	Media Day Three	TV: 3, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100
17:30	Media Briefing	Media 10

LATEST MEDIA ADVISORY

**Christchurch**  
EARTHQUAKE RESPONSE

**Latest Media Advisory**

Media 10

**Christchurch**  
EARTHQUAKE RESPONSE

**Where to find help**

Media 10

**Christchurch**  
EARTHQUAKE RESPONSE

**Where to find help**

Media 10

**Christchurch**  
EARTHQUAKE RESPONSE

**Where to find help**

Media 10

Christchurch Earthquake  
Emergency Coordination Centre  
Operations Section  
Daily Schedule

0800 Action Plan (Planning)  
0900 National Controller Briefing  
0930 Operations Section Management Team Briefing  
1030 Planning Section Management Team Briefing  
1400 Operations and Planning Joint Management Team Briefing  
1500 Situation Report (Planning)  
1530 National Controller Briefing  
1600 - 0700 To be developed

Public Information Centre  
Our email address is:  
**CDpublicinfo@ccc.govt.nz**

Our phone numbers  
Public Information Manager:  
**0278 247 876**  
Public Information Manager 2IC:  
**0278 123 882**  
Media enquiries phone:  
**0272 410 244**  
International media enquiries:  
**0278 123 874**  
Access to EOC through cordon:  
**0274 919 775**

# Initial assessment

- Quick assessment capability is crucial
  - Plan for it, include aerial reconnaissance
  - Use it to prioritise & task
  - Communicate it
- **Detailed** assessment to follow (phase 2)

# Phase 2 Challenges

- Start Detailed assessment:
  - Operation Suburb
  - Operation Shop
  - Operation ‘Sweep’



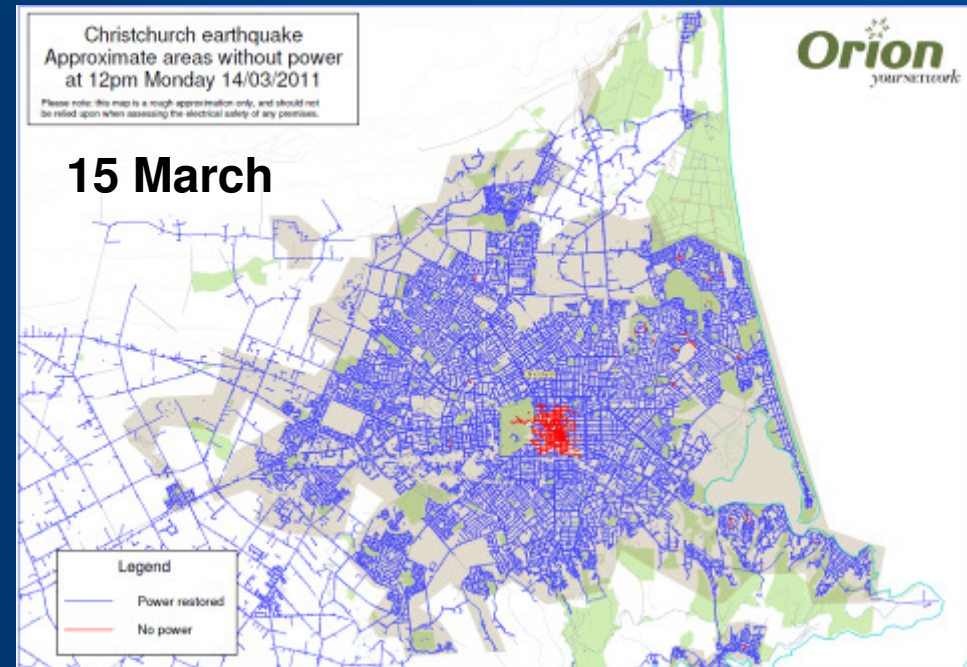
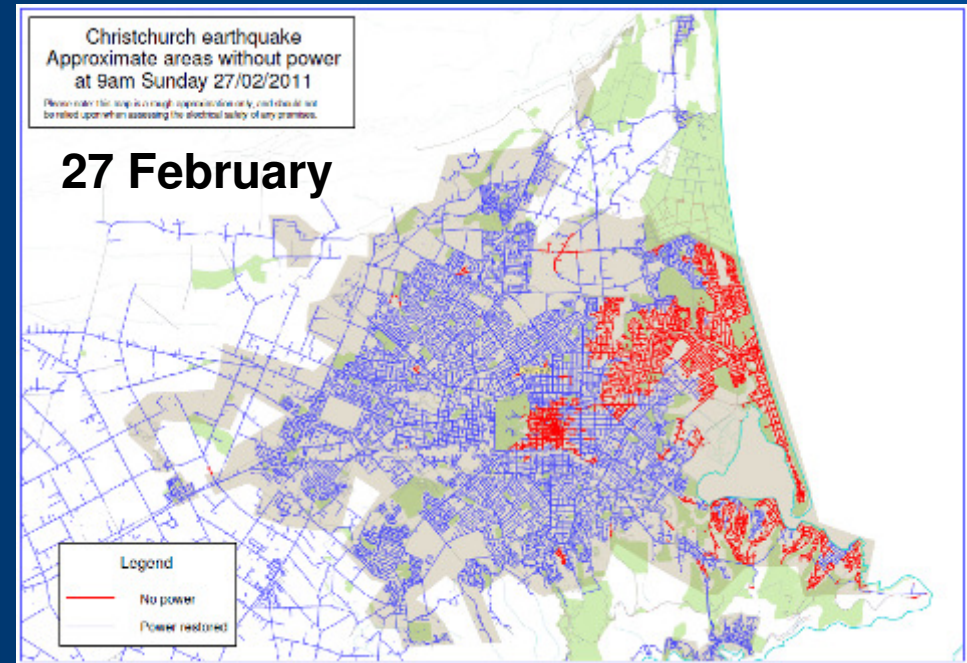
# Challenges- detailed assessment

- Plan for it – multi discipline (safety, structural, needs, infrastructure, land, insurance)
- Data collection & collation (manual, duplication)
- Use it for operational planning
- Use it for strategy planning (2-4 weeks on)



# Power

75% out  
50% restored in  
1'st 24 hrs  
90% restored in  
10 days



# Water: 50% out



# Mobile shower units



Christchurch  
EARTHQUAKE RESPONSE

Community  
Shower

OPEN

7am to 7pm

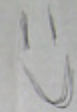


# Sewage: 50% out





PORTAL LOOS  
DEPT.



We know that 80,000  
people need loos

We have 900 - 1800  
available or coming.

WE DON'T NEED TO BE  
TOLD PEOPLE NEED LOOS

THANK YOU

WE'RE N.O.1 WITH YOUR NUMBER TWO'S

OCCUPIED

TOILET  
CANT

# Wastewater system: 40% out



# Volunteer management



‘Student Army’

# DVI @ Burnham Military Camp



324 personnel +  
Coronial staff  
8 countries assisting  
Foreign embassy staff –  
22 nationalities

# Information management

Limited IT in CRC  
at start-up

National EM  
Information System  
not ready:

- Data duplication
- Manual collection
- Isolation of info
- COP limitations
- Manual filing



# Needs assessment

- Needs assessment - top-down approach
  - Response Teams
  - Survey Teams
  - Community meetings
- Complement with bottom-up approach
  - Keep call centres alive & info into system
  - Community coordination points
  - Social media
  - MP's/Elected members?

# Logistics!

- 2,500 port-a-loos
- 40,000 chemical toilets
- 35km security fencing
- 20+ portable shower units
- 40+ sucker trucks
- 40+ water tanks
- Generators (heaps)
- 1 Desalination plant
- Building inspectors (1000>)
- Staff + Travel

**Financial delegations!**

**Procurement process!**

**Contracts!**

**Financial tracking system!**

# Challenges Phase 3

## Access, Demolitions





# Cultural, heritage- Decisions!



# Community meetings

- Get local stories, names
- Speak to that community
- Detailed

**Christchurch**  
EARTHQUAKE RESPONSE

## **COMMUNITY BRIEFING**

**Burwood Park**

(Between Cresswell Avenue  
and New Brighton Road)

**Saturday 16 April  
2.30pm**

See [canterburyearthquake.org.nz/](http://canterburyearthquake.org.nz/)  
for more information

# Recovery model

- Normal arrangements insufficient
- Establishment of Canterbury Earthquake Recovery Authority (CERA)
  - Legislation
  - Appointment of Minister for Canterbury Earthquake Recovery
  - Tensions
  - Expectations

# Situation at end of state of emergency (30 April)

- Fatalities: 183 (final total: 185)
- Power: 100% restored outside CBD 'red zone'
- Water: 100% have mains supply outside red zone
- Waste water: 97% of city with working toilets
- Schools: All open (11 sharing facilities)
- Health: All services within capacity

## Some current stats

- 450,000 properties assessed, 26,000 condemned (2% unsafe, rest due to land instability). 9 months to vacate - Govt buys property against CV less insurance payments already made, or buys land against CV and owner deals with insurance for house.
- 3,250 students did not return (12,000 left in Feb)
- 77,000 CD payments
- 7,000 Accident Compensation claims
- Est. Economic Impact NZ\$ 29 Billion (c. 10% of NZ's GDP)

## Looking forward

- Response arrangements appropriate, but can be refined
- CDEM profile strengthened - capitalise
- Community resilience, building performance good
- Lifeline utilities resilience good
- Focus on small business BCP
- Independent review; Royal Commission into structural performance issues will inform - prep
- Recovery mechanism (large scale) to be formalised

# Thank You





Ministry of Civil Defence  
& Emergency Management  
Te Rākau Whakamarumarū

**David Coetzee**

Manager Operations,  
National Controller

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