The Response to the Christchurch Earthquake

Submitted by: New Zealand
THE RESPONSE TO THE CHRISTCHURCH EARTHQUAKE
Civil Defence Emergency Management Objective

Risk reduction, Readiness, Response and Recovery

Earthquake Sequence since September 2010

[Map showing earthquake sequence with magnitudes and locations]
Comparing Shaking Intensity

M7.1 September 4, 2010
22,000 people experienced MM8 or greater

M6.3 February 22, 2011
320,000 people experienced MM8 or greater
Land Damage September 2010

4 September 2010
Liquefaction & Lateral Spreading

- Minor land damage
- Mainly oscillation damage
don't see evidence
of ground movement

Minor to Moderate
Liquefaction

Minor to moderate quantities of
exposed sand at ground surface
but no visual evidence of lateral
spreading

Moderate to Severe
Lateral Spreading

Moderate to severe quantities of
exposed sand at ground surface
but no visual evidence of lateral
spreading

Moderate to Major
Lateral Spreading

22 February 2011
Liquefaction & Lateral Spreading

- Minor land damage
- Mainly oscillation damage
don't see evidence
of ground movement

Minor to Moderate
Liquefaction

Minor to moderate quantities of
exposed sand at ground surface
but no visual evidence of lateral
spreading

Moderate to Severe
Lateral Spreading

Moderate to severe quantities of
exposed sand at ground surface
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Moderate to Major
Lateral Spreading
Operational Priorities

Phase 1: Rescue
Casualties
Shelter water food utilities

Phase 2: Recovery of deceased
Welfare of residents

Phase 3: Community Wellbeing
Economic recovery
Recovery Planning

Initial Rescues
Temporary Sewerage ‘System’

Status of Electricity Network

27 February

15 March
Community Response

Professionals and volunteers together
Friends and neighbours
Large numbers of emergent community groups
Outbound calling by social agencies
Local welfare information hubs

Situation at end of State of Emergency

- Fatalities: 181 confirmed
- 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
- Buildings: About 20% commercial unsafe
- Homes: About 26000 vacant houses. 2% unsafe
- Insurance: Over 350 000 claims (Sept-Feb)

Est. Economic Impact NZ$15-20 billion (c. 9% of NZ’s GDP)
Dust over Central Christchurch
Minutes after February 22 earthquake

Building Collapse
SOME EARLY OBSERVATIONS FROM CHRISTCHURCH

Resilience and the fours Rs are appropriate
Arrangements for CDEM in NZ worked well
Research pays dividends in readiness, response and recovery and in building codes.
Role of media
Community resilience should be backed by preparedness
Can do more in business continuity including leadership
Need to continue to put effort into preparedness