Canterbury SDI: lessons learned from post-earthquake recovery

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• 4 Sept 2010 – 7.1
• **22 Feb 2011 – 6.1**
• 11 June 2011 – 6.4
• 23 Dec 2011 – 5.9 & 6.0
• > 10,000 recorded events
• 185 fatalities
• $20 bn damage / 9.5% GDP
• 3.2% of the nations capital stock lost
• New Zealand’s 2\textsuperscript{nd} largest natural disaster
Rebuild partners
8 SDI focused projects to support recovery
Property Data Management Framework: high-level problems identified

- **Preparedness**
  - a lack of preparation that inhibited data sharing and integration

- **Property Data Management**
  - the lack of a central, authoritative, reliable and maintained property data framework address register

- **Risk Management**
  - decisions made about data management and technology did not follow appropriate risk management procedures

- **Location Data**
  - there were significant gaps in the availability and capture of certain types of location data
Preparedness

“a lack of preparation that inhibited data sharing and integration”

• The lack of data sharing agreements in place;
• No data sharing channels (such as web services), or standardisation of formats and data models
• No catalogue or registry of available data sources
• A lack of training or practice on how to pull together data sources
Property data management

“the lack of a central, authoritative, reliable and maintained property data framework address register”

- The use of unstructured address strings as identifiers, making it hard to consistently and reliably match datasets using address
- A lack of overarching, standardised, shared information models for property related datasets
- A market driven approach, with a disincentive for coordination or standardisation among market players
- Lack of mechanisms for feed-back or data updates
- A general lack of reliable data sources for buildings or rating units
Risk management

“decisions made about data management and technology did not follow appropriate risk management procedures”

- A lack of planning and training around data management and technology
- Risk management was left to individuals on an ad-hoc basis
- Risk management only accounted for worst-case scenarios, and missed more ‘mundane’ scenarios such as lack of data integration
- Existing risk management plans did not account for the data needs of an event of such scale
Location data

“a lack of preparation that inhibited data sharing and integration”

• Reliance on paper forms, rather than location-enabled applications, for in-field data capture
• Business location data was unavailable or out of date
• Building tenancy data was not available
• There was no data available depicting aggregated areas such as blocks or the CBD cordon
Conclusions

- Lack of a unified Property Data Management Framework severely hampered the response to, and recovery from, the Canterbury earthquakes.
- This resulted in significantly reduced decision making, service to citizens and a large cost.
- These problems are national, not unique to Canterbury
- The problems extend beyond the domain of disaster management
Conceptual framework for property data management
Outcomes & next steps

- Design a comprehensive Property Data Framework Model: an integrated, overarching, information model for property data that brings together addresses, parcel, titles, buildings and rating units.
- Create a test and demonstration environment for the Framework Model.
- Create a stakeholder engagement plan to ensure a wide adoption of the PDMF by users, industry and government.
Other emerging lessons

- Need to consider transition to “business as usual” operations
  - “Technical debt” left once funded programmes end
  - Limited capability and capacity amongst recipients

- Technology moves fast – be prepared to be agile and adapt plans or stop activities

- Organisations change - be prepared to be agile and adapt plans or stop activities

- Don’t forget the “good stuff” or the big picture
Questions?