World Bank Group Report Launch: Financial Protection of Critical Infrastructure Services

Risk Financing Programs for Critical Infrastructure Services – New Zealand’s perspective

Roger Fairclough,
Chair of New Zealand Lifelines Council

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Example of Providing Financial Support to Critical Infrastructure Services – Canterbury Earthquake Sequence 2010 - ongoing

- Event; September 4, 2010
  Magnitude 7.1 earthquake, epicenter 45km west of Christchurch central – considerable damage
- Event; February 22, 2011
  Magnitude 6.2, epicenter Christchurch – most damaging
- > 10,000 recorded earthquakes
Canterbury Earthquakes 2010 +

2010 Epicentre

2011 Epicentre
Christchurch City Damage

- **Residential**
  - 100,000 homes damaged
  - 7,860 homes in red zone

- **Central City**
  - 70% commercial buildings
  - 3000 businesses displaced
  - Cordon – 387ha

- **Infrastructure**
  - 52% road network (1000km)
  - 31% sewer network (528km)

- **Social**
  - 185 casualties from 20 countries
  - 6,800 treated for injuries
31% of sewer network damaged (528km)

Owner of sewer network; Christchurch City Council (CCC)

CCC carried insurance through a mutual funding arrangement across multiple local councils distributed throughout New Zealand – accumulated capital by annual contributions and supplemented by international reinsurance arrangements.

September 2010 event exhausted all funds available through the mutual insurance scheme.

By February 2011 event the extent of sewer damage had not been fully assessed.

Following February 2011, due to extent of damage across road and water services, as well as common corridors, Government led establishment of a government/council/construction industry consortium “Stronger Christchurch Infrastructure Rebuild Team” or “SCIRT” to:

- Coordinate effort
- Gain efficiencies, ensure quality
- Minimize costs to taxpayer and others
- Ensure councils continued to financially contribute within their capacity to do so
Example of Providing Financial Support to Critical Infrastructure Services – Sewer Network

- **Learnings:**
  - Decision making in higher uncertainty (earthquake intensities expected to decline over time)
  - Levels of insurance; book value (financial), replacement cost, replacement cost + (gross under-insurance)
  - Multiple events; cascade or coincidental
  - Duration of effects
  - Damaged sewer system led to groundwater contamination led to contamination of potable water bores distributed throughout city
  - Government financial mechanisms and capacity to apply funding (contingent liability)
  - Insurance models (uninsured, self insured, partially insured, inability to secure insurance, multiple parties (mutual), national)
  - Business impacts (MERIT – Measuring the Economics of Resilient Infrastructure Tool)
  - Extent of funded recovery; less than, same as or better than pre-event? Funding “additionality” relative to BAU?
  - Community impacts – ongoing disruptions
  - Alternate means of delivering service
New Zealand continues to learn and improve
  - Has further strengthened emergency management to establish National Emergency Management Agency (NEMA).

Recommend national risk assessments across all hazards
  - Have greater focus on consequences rather than probability (e.g. New Zealand had exercised and prepared for pandemics, also biohazard incursion and many others).

Assess consequences against a community wellbeing framework
  - As greatest impacts may not be physical damage e.g. pandemic.

Reduction in demand is often overlooked
  - e.g. treatment plants, refineries, gravity sewer flows

Ensure economic first, second and third order impacts are considered.

Ensure financial capacity, capability and policy mechanisms to manage adverse events.

New Zealand’s experiences have been included in this new report on "Financial Protection of Critical Infrastructure Services".

Highly recommend report and adoption