



New Zealand  
**Lifelines**

**2015  
National Lifelines Forum  
Christchurch**

## 2015 National Lifelines Forum

### Forum in Overview: Day One

- **Understanding and responding to future challenges – preparing communities for the uncertain**
- **The Thirty Year New Zealand Infrastructure Plan**
- **Key infrastructure learnings from the Canterbury Earthquakes**
- **Field Trip**

## 2015 National Lifelines Forum

### Forum in Overview: Day Two

- **Lifelines Groups:**
  - Breakfast meeting for Project Managers and Chairs
  - Nationally consistent vulnerability assessment projects
- **Lifelines and CDEM**
- **Research for Lifelines**
- **Towards a Local Government Risk Agency**
- **Tsunami impacts on Lifelines**
- **Snapshots and Hot Topics**

# 2015 National Lifelines Forum



**The financial support of EQC for the National Lifelines Forum is gratefully acknowledged**



**New Zealand  
Lifelines  
Committee**



**Ministry of Civil Defence  
& Emergency Management**  
Te Rākau Whakamarumarū



**EARTHQUAKE COMMISSION**



**TRANSPOWER**

*Keeping the energy flowing*

**water**  
NEW ZEALAND  
The New Zealand Water & Wastes Association Waiora Aotearoa

**NZ TRANSPORT  
AGENCY**  
WAKA KOTAHI



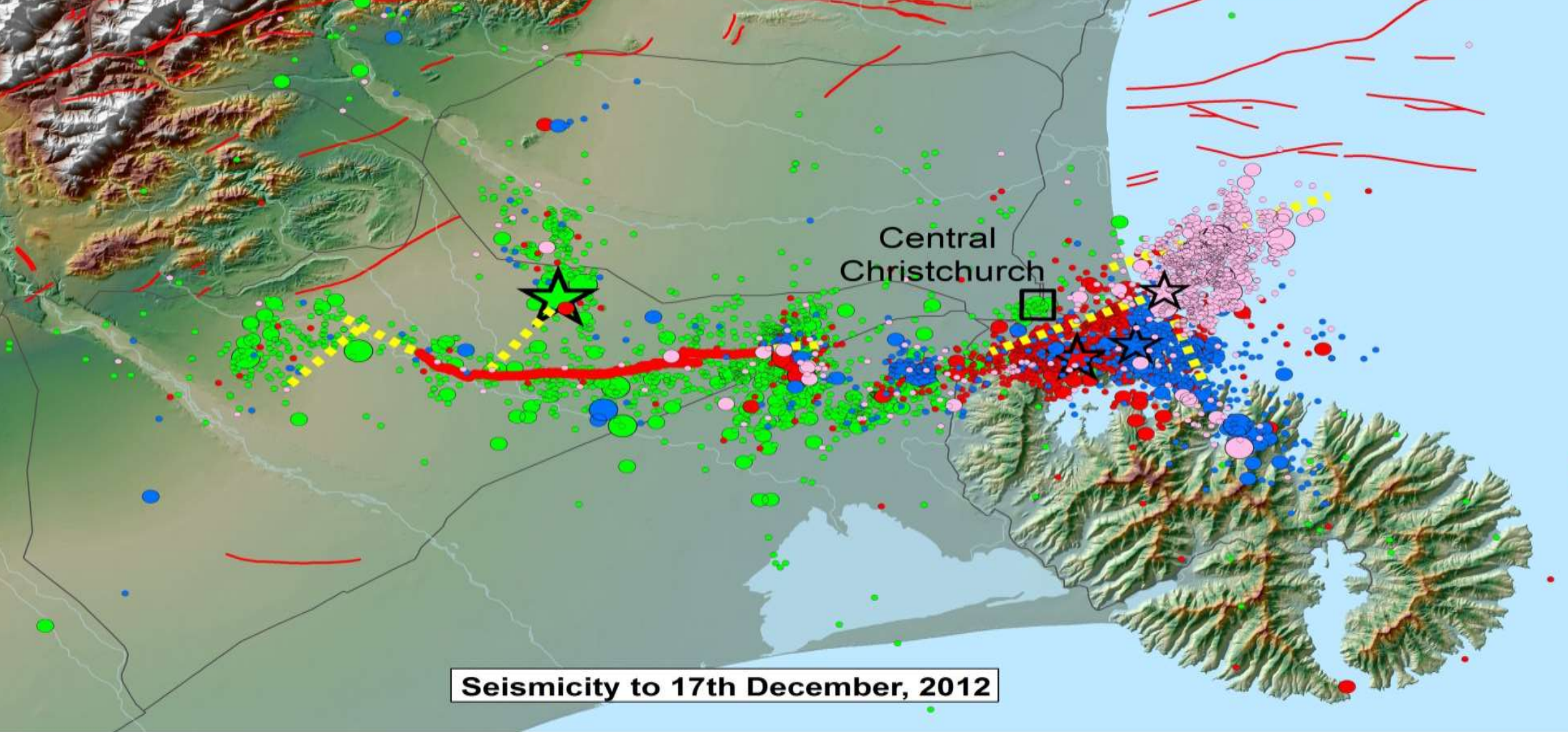
**Spark  
New Zealand**



**MINISTRY OF BUSINESS,  
INNOVATION & EMPLOYMENT**  
HĪKINA WHAKATUTUKI







**Magnitude**

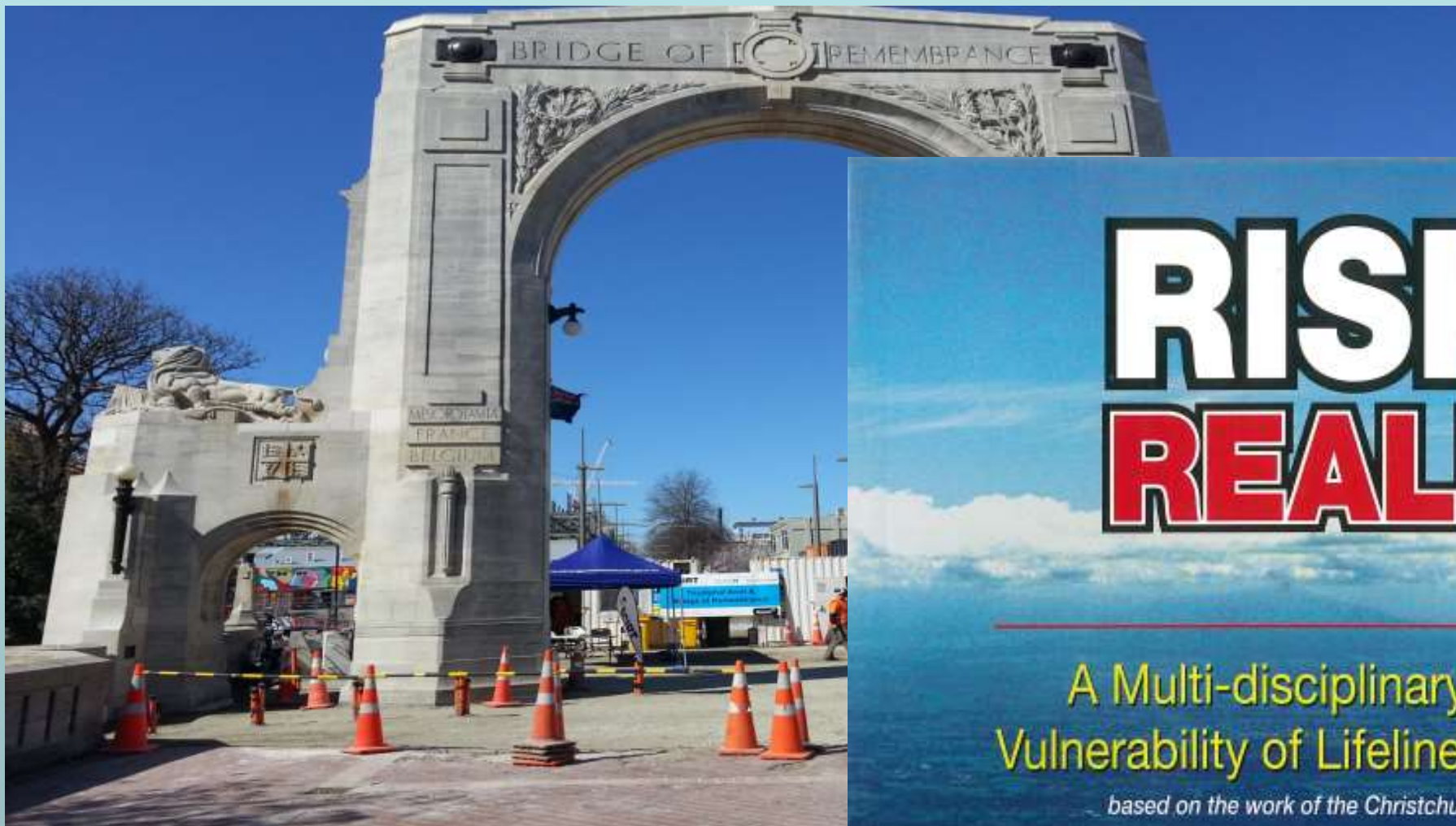
- |             |                     |                     |                                   |                                   |
|-------------|---------------------|---------------------|-----------------------------------|-----------------------------------|
| ○ 3.0 - 3.9 | ★ Mw 5.9 23/12/2011 | ★ Mw 6.2 22/02/2011 | ○ Aftershocks from 23/12/2011     | ● Aftershocks 22/02/11 - 13/06/11 |
| ○ 4.0 - 4.9 | ★ Mw 6.0 13/06/2011 | ★ Mw 7.1 04/09/2010 | ● Aftershocks 13/06/11 - 22/12/11 | ● Aftershocks 04/09/10 - 22/02/11 |
| ○ 5.0 - 5.9 |                     |                     |                                   |                                   |

■ ■ ■ ■ ■ Sub-surface fault rupture  
 — Greendale Fault  
 — Active faults









# RISKS & REALITIES

A Multi-disciplinary Approach to the  
Vulnerability of Lifelines to Natural Hazards

*based on the work of the Christchurch Engineering Lifelines Group*



**2015 National Lifelines Forum**

**Keynote Presentation**

**Greater Christchurch Resilience**

**Mike Gillooly**

**Chief Resilience Officer, Christchurch City Council**

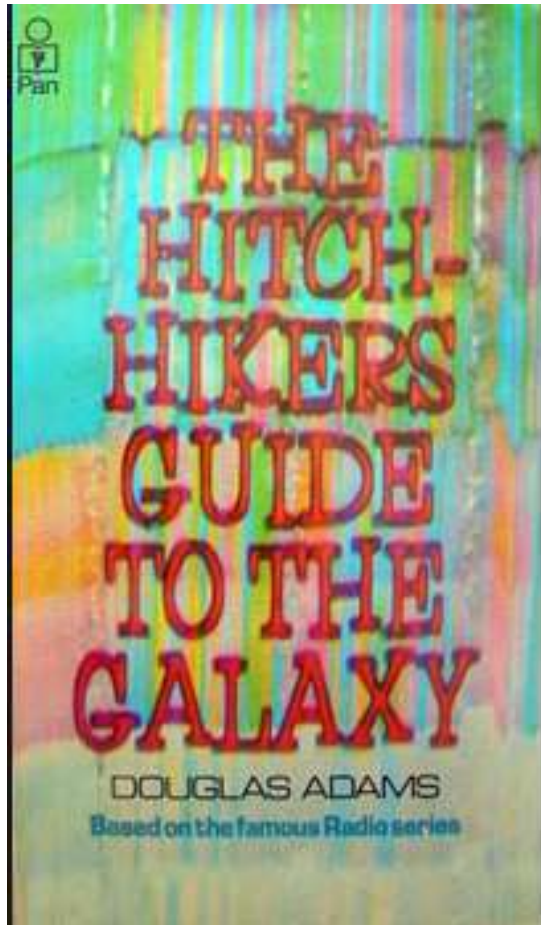
# Greater Christchurch Resilience

Infrastructure Lifelines Forum

21 October 2015







“A common mistake that people make when trying to design something completely foolproof is to underestimate the ingenuity of complete fools.”

- Douglas Adams

# Too Big To Fail?





# RISKS & REALITIES

A Multi-disciplinary Approach to the  
Vulnerability of Lifelines to Natural Hazards

*based on the work of the Christchurch Engineering Lifelines Group*



Judith Rodin  
*the Resilience Dividend*

***“There is no ultimate or end state of resilience. But, by working together to build resilience to the greatest degree possible, we can reduce our reliance on crisis as a driver of change and, instead, deliberately take the future into our own hands – for the well-being of our families, our communities, our cities, and indeed, the planet we all share.”***



# Greater Christchurch Urban Development Strategy

## UDS Guiding Principles and Strategic Directions.

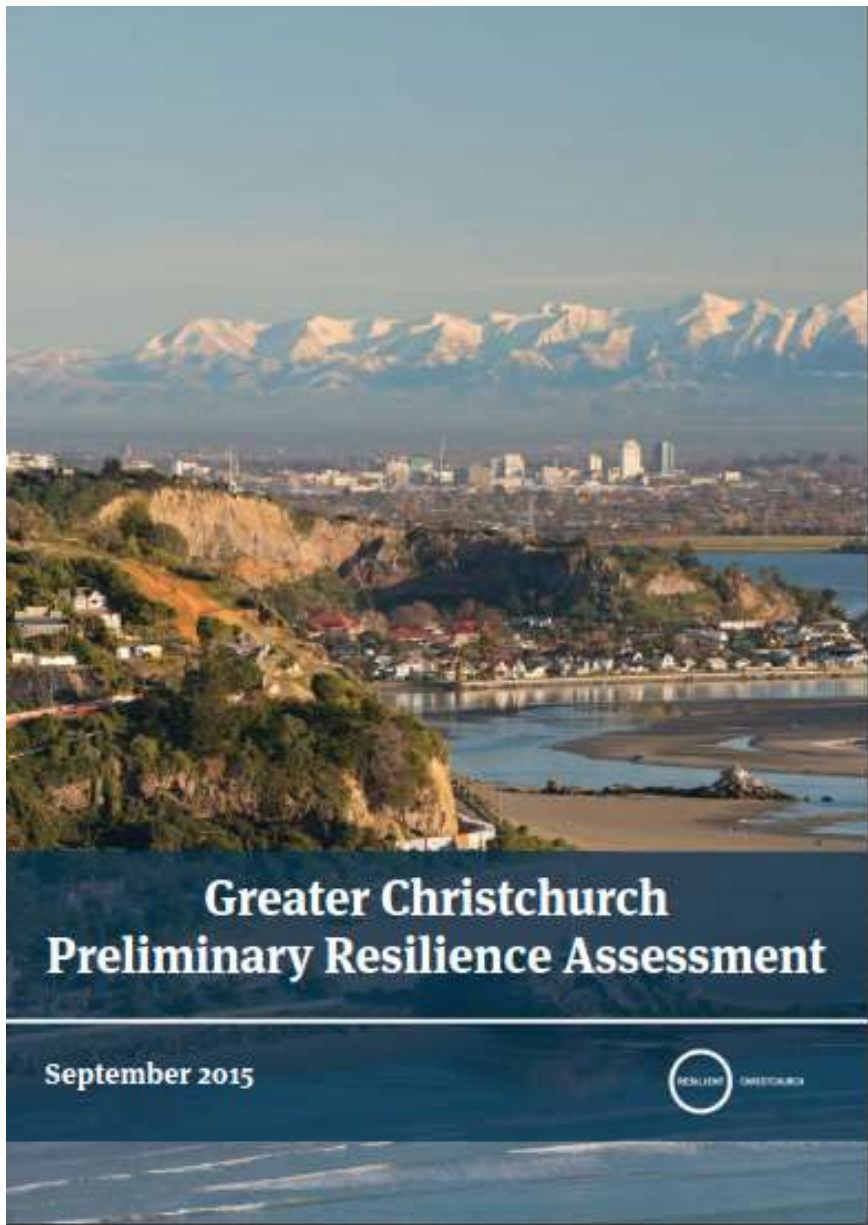
.....Sustainable prosperity will be achieved through....

<b>Leadership</b>	Providing good governance
<b>Partnership</b>	Working in a collaborative and coordinated manner
<b>Responsibility</b>	Communities as a great place to live
<b>Resilience</b>	Managing risk and uncertainty
<b>Adaptability</b>	Taking into account the past and anticipating the future
<b>Innovation</b>	Finding creative, pragmatic, cultural and resourceful approaches to solutions
<b>Integration</b>	Integrating environmental, land-use, infrastructure, social, cultural, economic and governance goals in all decision making
<b>Restoration</b>	Ensuring natural systems are valued and protected through restoring and enhancing biodiversity and ecological integrity



**Resilient systems exhibit certain qualities**  
that enable them to withstand, respond, and adapt  
more readily to shocks and stresses

Ability to learn	<b>Reflective</b>
.... and act	<b>Resourceful</b>
...conceiving systems & assets that can withstand shocks & stresses as well as using alternative strategies to facilitate rapid recovery	<b>Robust</b>
	<b>Redundant</b>
	<b>Flexible</b>
...planned to take account of city-wide needs and promote coordinated actions	<b>Inclusive</b>
	<b>Integrated</b>



# Focus Areas

- 1. Participative leadership and governance**  
a city that participates in decisions that affect them.
- 2. Securing a prosperous future**  
that is open, innovative and attracts people.
- 3. Understanding and responding to future challenges**  
becoming better prepared for the uncertain.
- 4. Connected neighborhoods and communities**  
a city that is healthy, affordable, and safe.



# Resilience Theme - Housing Affordability

## Issues

- Severe housing deprivation
- Prices increased
- Average rents up (35.5%)

## • Key Questions

- extent
- distribution
- opportunities
- integration
- Lessons learned



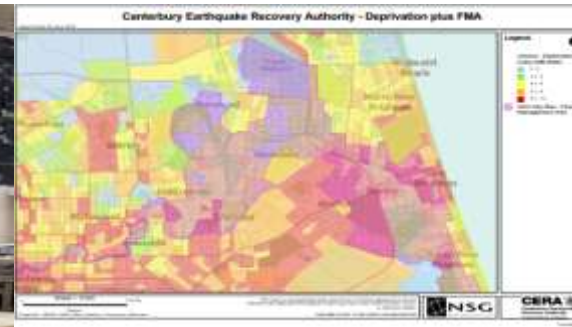
# Resilience Theme - Securing Our Future in the Eastern Parts of the City

## Issues

- Low lying
- Severely affected by earthquakes
- Goes beyond housing

## • Key Questions

- Land Use Planning
- What more do we need to know.
- Social Cohesion
- integration
- Lessons learned



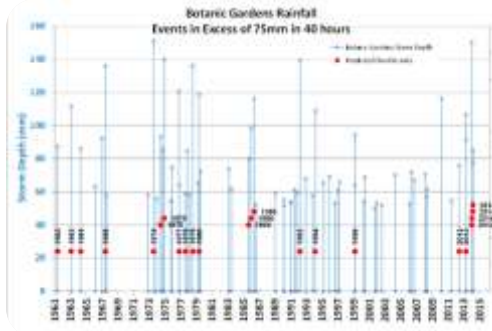
# Resilience Theme - Understanding Risk and Tools for Mitigation

## Issues

- Ongoing seismic activity.
- Focus is on risk
- How to plan, assess and mitigate

## • Key Questions

- What are the levers
- How to work with stakeholders
- Integrate efforts
- Risk sharing models
- Lessons learned





# Resilience Theme - Community and Social Cohesion

## Issues

- Most frequently used word
- Importance of networks and support systems.
- Positive diversity and the migrant workforce

## • Key Questions

- Embrace increasing diversity
- Ageing population
- Draw together current work.



# Resilience Theme - Community Leadership

## Issues

- Post quake community responses
- Led by community and Iwi.
- Emergence of new leaders
- Enabling environment

## • Key Questions

- Give agency
- Maintain enabling environment
- Learn from others
- Culture of possibility



# Resilience Theme - Building trust between the community and decision makers

## Issues

- More trusting relationships
- Transformational engagement
- Transition is an opportunity

## • Key Questions

- Learn from existing approaches
- Certainty in transition phase
- Shared vision





# Resilience Theme - The Role of Innovation

## Issues

- New and sustainable growth
- Interrogate existing problems
- Innovation through creativity and creative enterprise.
- Innovation and technology

## • Key Questions

- Role in our economic future.
- Empower and encourage more people.
- Entrepreneurial culture
- Role of private funding.



# Resilience Theme - Urban Form

## Issues

- CBD and suburbs affected by the quakes.
- Build back better
- Population, economic growth, housing needs

## • Key Questions

- extent
- distribution
- opportunities
- integration
- Lessons learned



# The Christchurch Resilience Challenge

## We are looking to build:

“The capacity of individuals, communities, institutions, businesses and systems within a city to survive, adapt, and grow no matter what kinds of chronic stresses and acute shocks they experience”

(100 Resilient Cities).