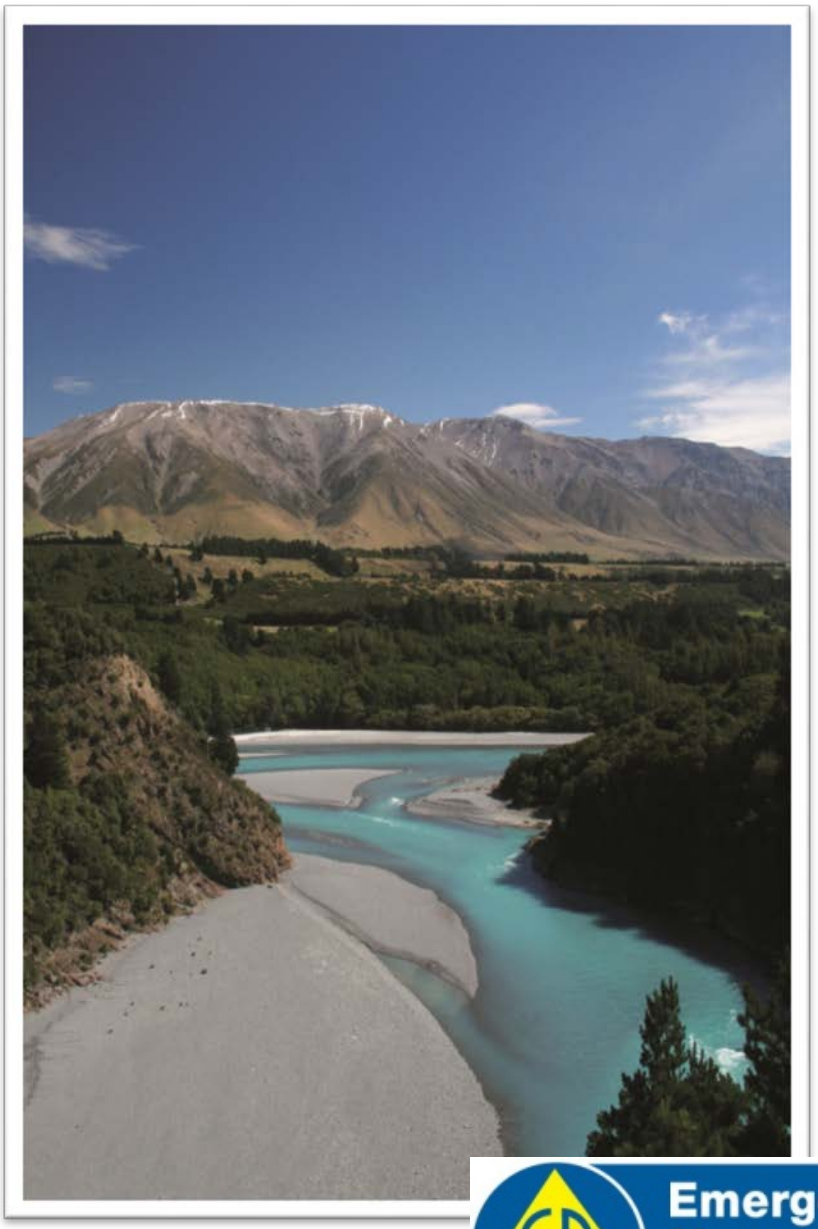
Canterbury Civil Defence Emergency Management Group Plan – Adopted June 2014

Amended June 2018 to incorporate Strategic Planning for Recovery

A Resilient Canterbury – Waitaha tūkaha



Emergency Management Canterbury

ISBN 978-1-927274-88-0

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Glossary

4 Rs means:

- reduction (identifying and analysing long-term risks to human life and property from natural or non-natural hazards; taking steps to eliminate these risks if practicable, and, if not, reducing the magnitude of their impact and the likelihood of their occurring)
- readiness (developing operational systems and capabilities before a civil defence emergency happens, including self-help and response programmes for the general public, and specific programmes for emergency services, lifeline utilities and other agencies)
- response (actions taken immediately before, during, or directly after a civil defence emergency to save lives and property, and to help communities recover), and
- recovery (the coordinated efforts and processes used to bring about the immediate, medium-term and long-term holistic regeneration of a community following a civil defence emergency).

Administering authority means, in relation to a CDEM group, the administering authority appointed under section 23 of the CDEM Act 2002.

Agencies means:

- government agencies, including public service departments, non-public service departments, Crown entities and Offices of Parliament
- non-governmental organisations, and
- lifeline utilities.

Canterbury CDEM sector means agencies with responsibilities under the CDEM Act (ie local authorities, government departments, emergency services, non-governmental organisations).

CDEM Act means the Civil Defence Emergency Management Act 2002.

CDEM Group Emergency Management Office is the regional office where CDEM functions are carried out on behalf of the CDEM Group Joint Committee, Coordinating Executive Group and CDEM Group members.

CDEM Group members means organisations that are represented on either the CDEM Group Joint Committee or Coordinating Executive Group.

CDEM Joint Committee means the joint committee of elected representatives of local authorities within the region, formed under the Local Government Act 2002 pursuant to section 12 of the CDEM Act.

Civil defence centre means a place where people can go to get help, information or support during an emergency. This includes, but is not limited to, welfare centres, sector posts, civil defence emergency centres and emergency centres.

Civil defence emergency management (CDEM) has the same meaning as in section 4 of the CDEM Act, where the term:

- means the application of knowledge, measures and practices that:
  - are necessary or desirable for the safety of the public or property, and
  - are designed to guard against, prevent, reduce or overcome any hazard or harm or loss that may be associated with any emergency, and

- includes, without limitation, the planning, organisation, coordination and implementation of those measures, knowledge and practices.

Civil Defence Emergency Management Group Plan means a plan prepared and approved under section 48 of the CDEM Act.

Community means a group of people living in the same place or sharing common characteristics or interests. Community in this Plan includes both community of place and community of interest.

Community leader means a prominent or respected member of a neighbourhood or interest group who is able to take action on behalf of the group or act as a liaison with authorities. A community leader may be formally elected or appointed to that position or work in an informal capacity.

Community-based planning means the planning that people do in their communities (of place or interest) to prepare for an emergency. This planning can be done with or without guidance from civil defence emergency management.

Coordinated incident management system (CIMS) means the national mandated procedures and processes for agencies to work together in a multi-agency response.

Coordinating Executive Group (CEG) is defined in section 20 of the CDEM Act. It comprises chief executive officers or senior managers of local authorities, emergency services and other agencies as appointed by the CDEM Group. The CEG provides strategic leadership to the CDEM Group.

District has the same meaning as in section 5(1) of the Local Government Act.

District health board (DHB) means the provider of publicly funded services for the population of a specific geographical area in New Zealand.

Emergency has the same meaning as defined in section 4 of the CDEM Act:

- It is the result of any happening, whether natural or otherwise, including, without limitation, any explosion, earthquake, eruption, tsunami, land movement, flood, storm tornado, cyclone, serious fire, leakage or spillage of any dangerous gas or substance, technological failure, infestation, plague, epidemic, failure of or disruption to an emergency service or a lifeline utility, or actual or imminent attack or warlike act.
- It causes or may cause loss of life, injury, illness or distress or may endanger the safety of the public or property in New Zealand.
- It otherwise requires a significant and coordinated response under the CDEM Act.

Emergency Coordination Centre (ECC) is a facility that operates at the CDEM Group level to provide overall direction, control, inter-agency coordination and resource management to one or more activated Emergency Operations Centres.

Emergency Operations Centre (EOC) is a facility that operates at the local level where direction, control, inter-agency coordination and resource management can occur in support of an emergency. An agency may also operate an EOC, in which case it will be referred to as an agency EOC.

Emergency response centre is a generic description for EOCs, ECCs and other coordination and support facilities activated during an emergency.

Emergency services has the same meaning as in section 4 of the CDEM Act, where the term means the New Zealand Police, Fire and Emergency New Zealand ~~Fire Service, National Rural Fire Authority, rural fire authorities~~, and hospital and health services.

Fire Service includes the fire service units maintained by the Fire and Emergency New Zealand ~~Fire Service~~.

Group Controller means a person appointed as a Group Controller under section 26 of the CDEM Act.

Guide to the National CDEM Plan is *The Guide to National Civil Defence Emergency Management Plan 2006* (revised 2009).

Hazard has the same meaning as in section 4 of the CDEM Act, where it means something that may cause, or contribute substantially to the cause of, an emergency.

Iwi Authority means Te Rūnunga o Ngāi Tahu as recognised in the Te Rūnunga o Ngāi Tahu Act 1996 and the Ngāi Tahu Claims Settlement Act 1998.

Lead agency means the organisation with legislative responsibility for managing an emergency.

Lifeline utility has the same meaning as in section 4 of the CDEM Act, where it means an entity named or described in Part A of Schedule 1, or an entity that carries on a business described in Part B of Schedule 1.

Local authority means a regional council or territorial authority.

National CDEM Plan is the National Civil Defence Emergency Management Plan Order 2005 (SR 2005/295).

National CDEM Strategy is *National Civil Defence Emergency Management Strategy* (Department of Internal Affairs, 2008).

National Controller means the person who is the National Controller in accordance with section 10 of the CDEM Act.

National Crisis Management Centre (NCMC) is a secure all-of-government facility maintained in a state of readiness to manage the national response to emergencies.

National significance has the same meaning as in section 4 of the CDEM Act, where the term includes, without limitation, any case where the Minister of Civil Defence or the Director of Civil Defence and Emergency Management considers that:

- there is widespread public concern or interest
- there is likely to be significant use of resources
- it is likely that the area of more than one CDEM group will be affected
- it affects or is likely to affect or is relevant to New Zealand's international obligations
- it involves or is likely to involve technology, processes or methods that are new to New Zealand, or
- it results or is likely to result in or contribute to significant or irreversible changes to the environment (including the global environment).

Pandemic means an epidemic (a sudden outbreak) that becomes very widespread and affects a whole region, a continent or the world.

Recovery activities means an activity~~ies~~ carried out under the CDEM Act or any civil defence emergency management plan to deal with the consequences of an emergency, including, without limitation;

a) the assessment and ongoing monitoring of the needs of a community affected by the emergency; and
b) the coordination and integration of planning, decisions, actions, and resources; and
c) measures to support –
   i) the regeneration, restoration, and enhancement of communities across the 4 environments (built, natural, social, and economic); and
   ii) the cultural and physical well-being of individuals and their communities; and
   iii) government and non-government organisations and entities working together; and
d) measures to enable community participation in recovery planning; and
e) new measures –
   i) to reduce risks from hazards; and
   to build resilience
   ~~i) CDEM plan after an emergency occurs including, without limitation:~~
   ~~(a) the assessment and ongoing monitoring of the needs of a community affected by the emergency; and~~
   ~~the coordination and integration of planning, decisions, actions, and resources; andof resources made available to the community~~
   ~~measures to support –~~
   ~~(i) the regeneration, restoration, and enhancement of communities across the 4 environments (built, natural, social, and economic); and~~
   ~~(ii) the cultural and physical well-being of individuals and their communities; and~~
   ~~(iii) government and non-government organisations and entities working together; and~~
   ~~measures to enable community participation in recovery planning; and~~
   ~~new measures –~~
   ~~to reduce risks from hazards; and~~
   ii) ~~to build resilience~~actions relating to community rehabilitation and restoration, and ~~new measures to reduce hazards and risks.~~

~~**Recovery Coordinator** means a Recovery Coordinator appointed under section 29 of the CDEM Act.~~
Recovery Manager means the National Recovery Manager, a Group Recovery Manager, or a Local Recovery Manager, and includes any person acting under the authority of the National Recovery manager, a Group Recovery Manager, or a Local Recovery Manager

Region has the same meaning as in section 5(1) of the Local Government Act.

Regional council means a regional council named in Part 1 of Schedule 2 of the Local Government Act.

Resilience is an ”adaptive capacity” — that is, society’s capability to draw on its individual, collective and institutional resources and competencies to cope with, adapt to and develop from the demands, challenges and changes encountered before, during and after a disaster.

Risk has the same meaning as in section 4 of the CDEM Act, where it means the likelihood and consequences of a hazard.

State of emergency means a state of national emergency or a state of local emergency.

State of local emergency means a state of local emergency declared under section 68 or section 69 of the CDEM Act.

State of national emergency means a state of national emergency declared under section 66 of the CDEM Act.

Support agency means any agency that assists the lead agency during an emergency.

Supporting documentation includes detailed explanations, standard operating procedures, the Director's Guidelines, codes and technical standards.

Territorial authority means a city council or a district council named in Part 2 of Schedule 2 of the Local Government Act.

Standard operating procedure refers to a document describing a formally established set of operational procedures that are the commonly accepted method for performing certain emergency management tasks.

Volunteer refers to two broad groups:

a) **CDEM-trained volunteers** — community members who are trained by a CDEM organisation and who may perform CDEM tasks during readiness, response and recovery.
b) **Spontaneous volunteers** — community members who perform or offer to perform CDEM-related tasks during response and recovery.

Executive Summary

This is the Civil Defence Emergency Management (CDEM) Group Plan for the Canterbury region. This plan is a strategic document that provides direction on how comprehensive, risk-based emergency management will be implemented in the Canterbury region. In implementing this plan, the Canterbury CDEM Group will work towards its vision of "A Resilient Canterbury — Waitaha tūkaha".

The Canterbury CDEM Group Plan was adopted in June 2014 by the CDEM Group and will be reviewed within four years of its adoption.

The Canterbury CDEM Group is governed by a joint committee of elected representatives. The Group Joint Committee comprises the mayor or chairperson (or delegated councillor) from Kaikoura District, Hurunui District, Waimakariri District, Selwyn District, Christchurch City, Ashburton District, Timaru District, Mackenzie District, Waimate District and Environment Canterbury.

Implementation of the Canterbury CDEM Group Plan is the responsibility of the Coordinating Executive Group (CEG). A number of sub-committees of the CEG have been established to assist with this, including the Canterbury Lifeline Utilities Group, the Welfare Coordination Group, ~~and~~ the Canterbury Response Planning Group and the Canterbury Recovery Co-ordination Group. Like the CEG, these groups are made up of representatives from the aforementioned territorial authorities and from relevant government and non-government agencies with emergency management responsibilities.

The administrative arrangements for the Canterbury CDEM Group include Environment Canterbury establishing and maintaining the Group Emergency Management Office and accounting for finances and budgets for the Group through Environment Canterbury's long-term plan and annual plan.

The Canterbury CDEM Group Joint Committee is responsible for appointing Local and Group Controllers and alternates and ~~. The~~Local and Group ~~Group~~ Recovery Managers and alternates for the Canterbury region. ~~for Canterbury is also appointed by the Joint Committee.~~

To manage risk effectively it is essential to understand the risk management context within Canterbury. The risk profile provides the basis for this in the Plan by portraying a picture of the social, natural, built and economic environments in Canterbury. It also outlines how hazards are likely to impact on the community. Using the risk profile, the Canterbury CDEM Group has identified earthquakes, tsunami, human disease pandemic and flooding as its top priorities for hazards in the region. In analysing Canterbury's risk, the Canterbury CDEM Group gains a greater understanding of where to prioritise and allocate resources and sets a sound foundation for comprehensive emergency management.

The Canterbury CDEM Group Plan is structured around the 4 Rs — the model used for comprehensive risk management in New Zealand. In each chapter of the Plan, the mechanisms for achieving risk reduction, readiness, response and recovery are outlined. These are supported by key principles identified at the beginning of each chapter.

Risk reduction

The Canterbury CDEM Group Plan proposes to use statutory and non-statutory mechanisms to manage risk in Canterbury. These mechanisms include legislation, policy and plans that provide for

the integrated management of hazards and their effects. The Canterbury Regional Policy Statement prepared by Environment Canterbury is a crucial document. Other key actions the Group will take in reducing risk relate to future hazard research and maintaining an up-to-date risk assessment, supported by a risk reduction strategy and strategies for communicating risk to the community and partner agencies.

Readiness

The Canterbury CDEM Group recognises two distinct but related aspects of readiness — community readiness and organisational readiness. Both aspects are highly interdependent in creating a resilient Canterbury.

The Group has identified two priorities for community readiness:

- engaging communities to increase their understanding of hazards and their consequences, and
- developing community response planning.

In addition to having plans and procedures for local authorities, organisational readiness includes ensuring that well trained personnel are identified to perform roles in an emergency and that roles and responsibilities are well defined and understood. This is achieved through utilising the sub-committees of the CEG. The chapter on readiness also discusses the warning systems for potential hazards and emergency events to enable effective response planning.

Response

Enhancing the ability of organisations to prepare for and manage civil defence emergencies is the priority for the CDEM Group. The chapter on response outlines the emergency management structure for Canterbury, including emergency operations centres and civil defence centres. It also summarises staff roles and responsibilities for lifelines, welfare, public information and rescue teams. A table outlining specific response issues and agency responsibilities is also included.

Recovery

The Canterbury CDEM Group will coordinate efforts and processes to bring about the immediate, medium and long-term holistic regeneration and enhancement of a community following an emergency ~~during recovery~~.

This will mean dedicated efforts across the 4R~~'~~s to ensure strategic planning for recovery, enabling communities in Canterbury to be well placed to recover from any emergencies caused by the hazards and risks identified in this plan.~~Recovery is a complex social process which requires a coordinated effort to regenerate the community in the short, medium and long term. The 4 Rs framework is used to identify the key tasks needed to prepare for recovery.~~

~~In readiness, the focus is on developing government and management capability for recovery through identifying and training Recovery Managers for the local authorities. In response, the focus is on setting up the recovery framework to enable a smooth transition to recovery.~~

Monitoring and evaluation

The Canterbury CDEM Group has outlined a programme for monitoring the progression of the Group Plan which includes regular reports to the CEG and use of the Ministry of Civil Defence & Emergency Management CDEM capability assessment tool.

1. INTRODUCTION

This Plan is the Civil Defence Emergency Management (CDEM) Group Plan for the Canterbury CDEM Group as required by section 48 of the CDEM Act 2002. The Canterbury CDEM Group is made up of elected representatives of local authorities within the region and was formed under the Local Government Act 2002 pursuant to section 12 of the CDEM Act 2002. This Plan was developed in partnership with local authorities, emergency services and other organisations tasked with providing effective and comprehensive emergency management within Canterbury.

The Canterbury CDEM Group Plan identifies principles and objectives of emergency management in Canterbury. It provides guidance for organisations involved in emergency management and for the general public about what is expected of Canterbury CDEM Group members in relation to risk reduction, readiness, response and recovery. The Group Plan is not an operational document. Members of the Group have their own arrangements as to how they will deliver on the Group Plan in their own areas.

1.1 Purpose

The Canterbury CDEM Group Plan is a strategic document. Its purpose is to enable the community, local authorities and emergency response organisations to manage hazard and risk through:

- strengthening relationships between agencies involved in emergency management
- encouraging cooperative planning and action between all emergency management agencies and the community, and
- seeking commitment to deliver more effective emergency management through risk reduction, readiness, response and recovery.

The Plan documents:

- hazards and risks in the Canterbury region (see **Figure 1.1**)
- strategic objectives for the Canterbury CDEM Group
- principles and concepts of operations for agencies involved in CDEM, and
- agreed reduction, readiness, response and recovery structures, relationships and actions.

1.2 The Canterbury Civil Defence Emergency Management Group

The area covered by the Canterbury CDEM Group and this Group Plan is shown in **Figure 1.1**.

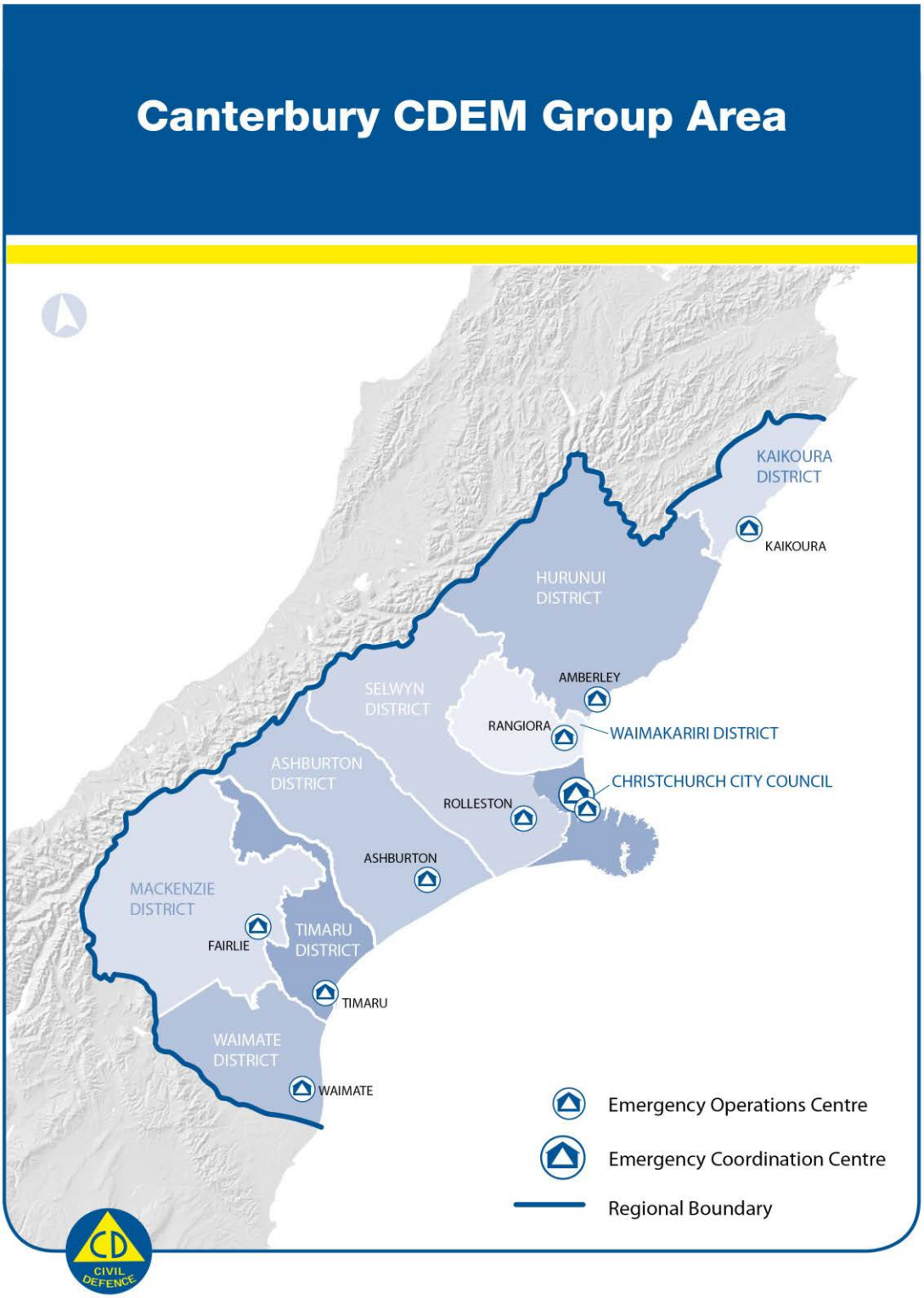

Figure 1.1 Canterbury CDEM Group area

1.2.1 Canterbury CDEM Group Members and Partner Agencies

The local authority members of the Canterbury CDEM Group are:

- Kaikoura District Council
- Hurunui District Council
- Waimakariri District Council
- Christchurch City Council
- Environment Canterbury
- Selwyn District Council
- Ashburton District Council
- Timaru District Council
- Mackenzie District Council, and
- Waimate District Council.

The partner agencies in the Canterbury CDEM Group are:

- New Zealand Police
- Fire and Emergency New Zealand~~New Zealand Fire Service~~
- Canterbury District Health Board
- South Canterbury District Health Board
- St John
- ~~Northern South Island Regional Rural Fire Committee~~
- Ministry of Primary Industries
- Ministry of Social Development
- Canterbury Employers' Chamber of Commerce~~.~~

1.3 Vision

A resilient Canterbury — Waitaha tūkaha

A resilient Canterbury will exist when communities have reduced their risks, increased their readiness, and are ready to respond to and recover from any emergency.

1.4 Principles of Emergency Management

The Canterbury CDEM Group has adopted the internationally accepted principles of emergency management outlined by the International Association of Emergency Managers (IAEM)[1]. According to these principles, emergency management must be:

- **Comprehensive** — Consider and take into account all hazards, all phases, all stakeholders and all impacts relevant to disasters.
- **Proactive** — Anticipate future disasters and take preventive and preparatory measures to build disaster-resistant and disaster-resilient communities.
- **Risk-driven** — Use sound risk management principles (hazard identification, risk analysis and impact analysis) in assigning priorities and resources.

[1] Adapted from the IAEM Principles of Emergency Management (www.iaem.com/documents/Principles-of-Emergency-Management-Flyer.pdf).

- **Integrated** — Ensure unity of effort among all levels of government and all elements of a community.
- **Collaborative** — Create and sustain broad and sincere relationships among individuals and organisations to encourage trust, advocate a team atmosphere, build consensus and facilitate communication.
- **Coordinated** — Synchronise the activities of all relevant stakeholders to achieve a common purpose.
- **Flexible** — Use creative and innovative approaches in solving emergency management challenges.
- **Professional** — Value a science- and knowledge-based approach based on education, training, experience, ethical practice, public stewardship and continuous improvement.

1.5 Goals

The Canterbury CDEM Group has identified goals involving collaboration and community to support its vision of a resilient Canterbury.

Collaboration

- Community leaders demonstrate their commitment to collaboratively build and maintain resilience.
- Everybody accepts their responsibility for reducing risks to acceptable levels.
- Decisions about how best to manage risks are made in a way that contributes to the overall sustainable development of communities.
- Emergency management planning is integrated into everyday decision making.
- Responses to emergencies are timely, well coordinated and effective.
- Recovery planning and management is ~~Emergency recovery capabilities are~~ well developed, resourced and delivered.

Community

- Communities recognise the need to invest time and resources in building and maintaining resilience.
- There is a strong community spirit, where communities work together to ensure their safety and resilience.
- The risks we face are well understood within all communities and organisations.
- Businesses have well rehearsed business continuity capabilities that safeguard their people, the services they provide, and their business income
- Residents and visitors know how to help each other in the event of an emergency.
- The critical role that emergency management plays in ensuring community safety and prosperity is recognised
- Communities are actively involved in recovery planning and management.

1.6 Structure of the Canterbury CDEM Group Plan

The Canterbury CDEM Group Plan has the following structure:

- **Governance and management** — Outlines the governance, management and administrative arrangements relating to the provision of CDEM within the Canterbury CDEM Group region.
- **Risk profile** — Examines the hazards within Canterbury and what effect they may have on the region.

- **Risk reduction** — Outlines the arrangements and activities the Canterbury CDEM Group has made to reduce hazards within Canterbury.
- **Readiness** — Explains how the Canterbury CDEM Group will increase community awareness, understanding, preparedness and participation in emergency management within Canterbury.
- **Response** — outlines the Canterbury CDEM Group arrangements to respond to any emergency.
- **Recovery** — Sets out the principles for recovery and the key tasks that need to be undertaken to plan for and manage~~in planning for~~ recovery.
- **Monitoring and evaluation** — Considers the legislative requirements of the Canterbury CDEM Group Plan and the processes put in place for reviewing it.

1.7 Relationship with National CDEM Strategy and National Plan

The National CDEM Strategy sets out the Crown's emergency management goals, policy objectives and measurable targets. The National CDEM Plan sets out the CDEM arrangements to manage nationally significant hazards and risks. It also outlines national-level coordination of CDEM during an emergency and provides the basis for local planning for national emergency response organisations.

Local authorities, in partnership with their communities and local emergency response organisations, develop emergency management arrangements and procedures. These procedures will be consistent with the Canterbury CDEM Group Plan. **Table 1.1** shows the relationship between the national goals and the Canterbury CDEM Group's current objectives.

National Strategy		
National Goals	**National Objectives**	**Group Plan Objectives**
Goal 1: Increasing community awareness, understanding, preparedness and participation in CDEM	**1A**: Increasing the level of community awareness and understanding of the risks from hazards	**4.5.4** Communicate all issues relating to risks effectively to the community and partners
	1B: Improving individual, community and business preparedness	**5.4.1** Increase community and business awareness of the risk from hazards and their consequences
	1C: Improving community participation in CDEM	
	1D: Encouraging and enabling wider community participation in hazard risk management decisions	**5.4.1** Improve community and business preparedness through community-based planning
Goal 2: Reducing risks from hazards to New Zealand	**2A**: Improving the coordination, promotion and accessibility of CDEM research	**4.5.1** Provide collaborative leadership in hazard research initiation, delivery and application
	2B: Developing comprehensive understanding of New Zealand's hazardscape	**4.5.2** Proactively identify, understand and manage the risks that Canterbury's communities face
	2C: Encouraging all CDEM stakeholders to reduce the risks from hazards to acceptable levels	**4.5.3** Ensure that planning and management of risk are based on relevant risk assessments
	2D: Improving the coordination of government policy relevant to CDEM	N/A

Goal 3: Enhancing New Zealand's capability to manage civil defence emergencies	**3A**: Promoting continuing and coordinated professional development in CDEM	**5.4.3** Enhance professional development of all personnel involved in CDEM
	3B: Enhancing the ability of CDEM groups to prepare for and manage civil defence emergencies	**5.4.2** Ensure that local authorities have robust and tested business continuity plans so they can continue to function in an emergency
		5.4.3 Ensure that political and executive levels of CDEM group members show strong leadership and a commitment to CDEM
		5.4.3 Ensure that exercises are an integral part of the Canterbury CDEM Group work programme
		5.4.5 Strengthen the coordination and cooperation among all relevant CDEM response agencies in planning for and responding to an emergency
		6.6.1 Enhance the ability of Canterbury CDEM Group to prepare for and manage civil defence emergencies
	3C: Enhancing the ability of emergency services to prepare for and manage civil defence emergencies	**6.6.2** Enhance the ability of emergency services to prepare for and manage civil defence emergencies
	3D: Enhancing the ability of lifeline utilities to prepare for and manage civil defence emergencies	**6.6.3** Enhance the ability of lifeline utilities to prepare for and manage civil defence emergencies
	3E: Enhancing the ability of government agencies to prepare for and manage civil defence emergencies	N/A
	3F: Improving the ability of government to manage an event of national significance	N/A
Goal 4: Enhancing New Zealand's capability to recover from civil defence emergencies	**4A**: Implementing effective recovery planning and activities in communities and across the social, economic, natural and built environments **4B**: Enhancing the ability of agencies to manage the recovery process	**7.6.1** Engage our community to understand their likely recovery needs and priorities ~~**7.5.1** Establish and maintain comprehensive emergency recovery (governance and management) capabilities and processes~~
		7.6.2 Enhance the ability of the Canterbury CDEM Group to prepare for and manage recovery ~~**7.5.2** Enable Canterbury's communities to sustainably rebuild and regenerate after emergencies~~
		7.6.3 Better understand the likely consequences from identified hazards and risks in the Canterbury CDEM Group area

		7.6.4 Monitor and evaluate the effectiveness of the Canterbury CDEM Group recovery work programme

Table1.1 Relationship between national goals and objectives and Canterbury CDEM Group objectives

1.8 Relationship with Local Communities

A key component of successful emergency management is strong relationships between local councils and their communities. CDEM managers and other staff from local councils work with people in their communities to build a more resilient Canterbury. This is done through planning in partnership with community-based groups such as community boards, residents' associations, neighbourhood support, marae, ethnic communities and interest groups to plan how they as communities and individuals will support each other, and how the Canterbury CDEM Group will support them during reduction, readiness, response and recovery. A key result of this process is community plans (sometimes called community resilience plans or community response plans) which can be written for a specific area or group.

A key partner in creating a resilient Canterbury is Ngai Tāhu. As tangata whenua they have a special relationship with the land and work closely with Environment Canterbury and the territorial authorities on matters of risk reduction. The marae are also a key component of Canterbury's community resilience and many are identified civil defence centres in an emergency.

1.9 Canterbury CDEM Group Work Programme

The Canterbury CDEM Group's goals and objectives will be implemented through a three-year work programme. Group and local work programmes and key performance indicators should align with each other to deliver the Canterbury CDEM Group's goals and objectives as shown in each chapter of this Plan and reflected in councils' long-term plans.

1.10 Duration of Plan and Review

This Plan will have a life span of five years from the date it is adopted and will be reviewed again at the end of the five-year period. The Plan will remain in force while the review process takes place. The Canterbury CDEM Group can make changes to the plan within the operational period. If the intent of the Plan is changed, public notification is required. Public notification is not required for changes that do not affect the intent of the Plan.

1.11 Supporting Documents

This Plan covers the key provisions and arrangements to enable the delivery of an integrated and coordinated emergency response within the Canterbury CDEM Group's region. The Plan refers to the following plans and documents to provide supporting information and additional detail:

- Canterbury CDEM Group Three Year Work Programme
- Canterbury Regional EMO Service Level Agreement
- Canterbury CDEM Group CEG Sub-Committees Terms of Reference
- Canterbury CDEM Group Welfare Plan
- Canterbury CDEM Group Recovery Plan
- Canterbury CDEM Group Risk Reduction Strategy (to be developed)

- Canterbury CDEM Group Public Education Strategy (to be developed)
- Canterbury CDEM Group Community Resilience Strategy (to be developed), and
- Canterbury CDEM Group Professional Development Strategy (to be developed).

This Group Plan does not include standard operating procedures developed by national, regional and local organisations.

2. GOVERNANCE AND MANAGEMENT

2.1 Introduction

This chapter describes the governance and management arrangements for the provision of civil defence emergency management (CDEM) in Canterbury, including roles and responsibilities, key appointments, funding arrangements and other administrative functions.

2.2 Canterbury CDEM Group Joint Committee

The Canterbury CDEM Group, a joint committee which comprises elected representatives of local authorities within the region, was formed under the Local Government Act 2002 pursuant to section 12 of the CDEM Act 2002.

Members of the Group Joint Committee are the mayor or chairperson (or delegated councillor) from Kaikoura District, Hurunui District, Waimakariri District, Selwyn District, Christchurch City, Ashburton District, Timaru District, Mackenzie District, Waimate District and Environment Canterbury. Although Waitaki District falls within the boundaries of both Canterbury and Otago Regional Councils, the Waitaki District Council has elected under section 14(2) of the CDEM Act to be a member of the Otago CDEM Group. The Canterbury CDEM Group may invite observers to attend its meetings. The CDEM Group exercises governance and determines CDEM policy for member authorities in relation to risk analysis, reduction, readiness, response and recovery from emergencies.

The powers and obligations of members of the Canterbury CDEM Group are set out in section 16 of the CDEM Act.

The functions of the CDEM Group and its members, as detailed in section 17 of the CDEM Act, are to:

- identify, manage and reduce relevant risks and hazards
- ensure suitably trained and competent personnel for all CDEM Group roles are available
- organise resources, services and information for the Canterbury CDEM Group
- respond to and manage the effects of emergencies
- carry out recovery activities
- when requested, assist other CDEM groups if practicable
- promote and educate the public on CDEM and its purpose
- monitor and report on compliance with the CDEM Act
- develop, implement, monitor and regularly review the Canterbury CDEM Group Plan
- participate in the development of the National CDEM Strategy and the National CDEM Plan, and
- promote all aspects of CDEM in the Canterbury region.

The Group will:

- provide strategic direction through the Canterbury CDEM Group Plan
- approve the Canterbury CDEM Group budget
- approve and monitor the Canterbury CDEM Group annual work programmes
- appoint Controllers and delegate powers as required, and
- appoint ~~a~~ Recovery Managers and delegate powers as required~~Recovery Coordinator~~.

The CDEM Group should meet each quarter or as required. Procedure for the conduct of meetings will be in accordance with the Local Government Act. Meetings are held in public. A quorum will consist of five members. A chair and deputy chair will be elected, usually following local body elections. Should the chair or deputy chair resign or otherwise no longer be available, a replacement will be elected at the next Canterbury CDEM Group meeting. The Group will not be discharged by a local body election (section 12 of the CDEM Act). Following a local body election, any previous delegations made by a local authority under section 13(4) of the CDEM Act must be renewed or rescinded. In accordance with local government procedures, decisions made by the Canterbury CDEM Group are binding on all members.

In accordance with section 18(1) of the CDEM Act, the Canterbury CDEM Group may delegate any of its functions to members of the Group, the Group Controller or other person. These delegations are made by a resolution at a CDEM Group meeting.

2.3 CDEM Group Coordinating Executive Group

The Group Coordinating Executive Group (CEG) is a committee established and maintained under section 20 of the CDEM Act. The CEG will elect a chair and deputy chair as and when required. A quorum will consist of ten members.

The CEG comprises the following statutory appointments:

- the chief executive officer of each member local authority or a person acting on the chief executive officer's behalf
- a senior member of the New Zealand Police who is assigned for the purpose by the Commissioner of Police
- a senior member of the Fire and Emergency New Zealand ~~Fire Service~~ who is assigned for the purpose by the National Commander, and
- the chief executive officers of the Canterbury District Health Board and South Canterbury District Health Board or people acting on their behalf.

The Canterbury CDEM Group CEG has the following additional representatives as co-opted under section 20 of the CDEM Act:

- the Regional Commissioner of the Ministry of Social Development
- a senior Canterbury representative of the Ministry of Primary Industries
- a senior representative of the Canterbury business community as determined by the CEG (the current representative is the Canterbury Employers' Chamber of Commerce)
- a South Island officer of the Ministry of Civil Defence & Emergency Management
- a senior Canterbury representative of St John
- the chair of the Canterbury Lifeline Utilities Group
- the Canterbury CDEM Group Controller
- the Canterbury CDEM Group Recovery Manager, and
- ~~-~~ the Canterbury CDEM Group Welfare Manager.

The functions of the CEG are set out in section 20(2) of the CDEM Act. They can be summarised as:

- to provide advice to the Canterbury CDEM Group and any subgroups or committees
- to implement, as appropriate, the decisions of the CDEM Group, and

- to oversee the implementation, development, maintenance, monitoring and evaluation of the Canterbury CDEM Group Plan.

Other CEG roles include:

- to provide advice on the strategic direction of emergency management in the Canterbury region
- to ensure that all emergency management functions, including the CDEM Group Plan, are reviewed and monitored
- to provide executive-level coordination in the event of significant emergencies
- to recommend the draft service level agreement, work programme and annual budget to the Canterbury CDEM Group for approval
- to recommend to the CDEM Group the appointment of key CDEM personnel including the Group and Local Controllers, and Group- and Local Recovery Managers. ~~Coordinator~~
- to liaise with other CEGs, particularly those of adjoining CDEM groups
- to provide input into central government processes (either policy positions or amendments to legislation)
- to coordinate input into the annual planning process of each local authority with respect to emergency management, and
- to ensure the provision of professional development and training programmes across the CDEM sector.

Individual CEG member responsibilities include:

- where applicable, to ensure effective liaison and communication on CDEM matters with their respective Group Joint Committee member and Emergency Management Officer, and
- to facilitate the implementation of the CDEM Group Plan within their respective organisations.

2.3.1 CEG Sub-Committees

The CEG may establish sub-committees to assist it. In Canterbury the CEG has established four~~three~~ sub-committees.

Consideration may be given to forming other CEG sub-committees, such as a public information forum, rescue committee, risk reduction group and community resilience group.

Canterbury Lifeline Utilities Group

The Canterbury Lifeline Utilities Group is a non-statutory organisation comprising territorial authorities and commercial utilities operating in the Canterbury region, research organisations and emergency services. The purpose of the Lifeline Utilities Group is to assist the Canterbury region in reducing its infrastructure vulnerability, improving resilience and encouraging utilities to participate in Canterbury CDEM Group activities.

Canterbury Welfare Coordination Group

The Canterbury Welfare Coordination Group comprises agencies with a focus on welfare

during an emergency. Its purpose is to provide strategic advice and assistance to the CEG, and to establish procedures for the effective delivery of welfare services during an emergency.

Canterbury Response Planning Group

The Canterbury Response Planning Group comprises agencies with a response role in an emergency. Its purpose is to provide advice to the CEG on maintaining an effective multi-agency response capability in the Canterbury region.

Canterbury Recovery Coordination Group

The Canterbury Recovery Coordination Group comprises agencies with a recovery role in an emergency. Its purpose is to provide strategic advice and guidance to the CEG on maintaining an effective multi-agency recovery capability in the Canterbury region.

~~Consideration may be given to forming other CEG sub-committees, such as a recovery advisory group, public information forum, rescue committee, risk reduction group and community resilience group.~~

2.4 Administrative Arrangements

2.4.1 Administering Authority

Environment Canterbury is the administering authority for the Canterbury CDEM Group, pursuant to section 23(1) of the CDEM Act. The administrative and related services provided by Environment Canterbury include the following:

- secretariat for the Canterbury CDEM Group Joint Committee and CEG meetings (eg convening meetings, organising agendas, providing minutes of meetings and catering services)
- accounting for the Canterbury CDEM Group finances and budgets, including the purchase and management of capital assets. on behalf of the Group
- funding of the Canterbury CDEM Group budget as a targeted regional rate
- publishing the CDEM Group's budget, programme and performance in the Environment Canterbury long-term plan and Environment Canterbury annual plan, and
- such other services as agreed in the annual service level agreement between the Canterbury CDEM Group and Environment Canterbury.

2.4.2 Canterbury Group Emergency Management Office

The Group Emergency Management Office is provided by Environment Canterbury under a service level agreement with the Canterbury CDEM Group. The office coordinates and facilitates the day-to-day work of the Canterbury CDEM Group and is responsible to the CEG through the CDEM Group Manager.

Functions

The Group Emergency Management Office is responsible for:

- providing advice and technical support to the Canterbury CDEM Group and CEG
- project coordination and management, including the ongoing development, implementation, monitoring and review of the Canterbury CDEM Group Plan
- coordinating Canterbury CDEM Group policy and its implementation
- managing contracts entered into on behalf of the CDEM Group
- developing agreements or consultation mechanisms for key agencies such as other CDEM groups, government departments and agencies, emergency services, lifeline utilities, key infrastructure agencies, volunteer groups and other interest groups
- supporting territorial authority emergency management staff as appropriate
- managing and administering Group Emergency Management Office staff
- collating and disseminating hazard-monitoring data
- providing operational leadership and support during emergencies and in recovery
- coordinating CDEM training
- coordinating emergency management exercises, including recovery
- preparing the composite annual report on the Canterbury CDEM Group's activities, expenditure and performance, in consultation with the CEG, and
- such other services as agreed in the triennial service level agreement between the Canterbury CDEM Group and Environment Canterbury.

Using the resources of the Group Emergency Management Office, the Canterbury CDEM Group Controller is responsible for:

- leading, directing and coordinating all the resources necessary to respond effectively to the impact of all declared or otherwise significant local emergencies in the Group's region and elsewhere
- where requested, assisting the responsible lead agency and/or affected territorial authorities in their coordination and management of responses to an undeclared emergency, and
- planning and implementing Canterbury CDEM Group activities which will assist the community to deal with the effects of hazards and enable it to respond and recover from any emergency.

The roles of the CDEM Group Manager and Group Controller may be combined.

Using the resources of the Group Emergency Management Office, the Canterbury CDEM Group Recovery Manager is responsible for:

- leading, directing and coordinating planning to build capacity and capability to recover from the impact of all significant emergencies in the Group's region and elsewhere
- assist affected territorial authorities in their coordination and management of recovery to any emergency
- assist affected territorial authorities in facilitating national agency support
- assist responsible lead and support agencies in their coordination and management of recovery to any emergency
- planning and implementing Canterbury CDEM Group activities which will assist the community to deal with the effects of hazards and enable it to recover from any emergency

The costs of undertaking these services are met by the Canterbury CDEM Group.

2.5 Key Appointments, Delegated Authorities, Functions and Powers

Under the CDEM Act, the Canterbury CDEM Group has responsibility for all CDEM functions and activities in the Group's region. There are a number of authorisations, functions and powers that the Group may delegate to persons and/or key CDEM appointments/roles.

The Canterbury CDEM Group appoints the Group and Local Controllers, and the Group and Local Recovery Managers and alternates. These are permanent appointments, and the names of those appointed are recorded in the minutes of CDEM Group meetings.

2.5.1 Declaration Authority

In accordance with section 25(1)–(4) of the CDEM Act, the Canterbury CDEM Group appoints the CDEM Group's chair as the person authorised to declare a state of local emergency for the Group's region. In the absence of the chair, the deputy chair or any other available member of the Group is authorised to declare a state of local emergency. Where a declaration is across territorial authority boundaries or the emergency affects more than one territorial authority, the declaration should be made by the chair of the Canterbury CDEM Group in consultation with mayors of the affected territorial authorities.

Additional to the above, and in accordance with section 25(5) of the CDEM Act, the mayor of a territorial authority, or an elected member of the territorial authority designated to act on behalf of the mayor if the mayor is absent, may declare a state of local emergency that covers the district or part of the district of the territorial authority.

In accordance with sections 71 and 72 of the CDEM Act, any person authorised to declare a state of local emergency may also make a declaration to extend or terminate a state of local emergency.

Declaration forms can be found in Annex A.

2.5.2 Controllers

In accordance with sections 26 and 27 of the CDEM Act, the Canterbury CDEM Group has appointed personnel to the positions of Group Controller, Alternative Controller and Local Controller.

In accordance with section 18 of the CDEM Act, the CDEM Group has delegated its authority for the appointment of Local Controllers to each member authority. Territorial authorities must consult with the Group Controller when appointing Local Controllers. In accordance with section 27(2) of the CDEM Act, a Local Controller must follow any directions given by the Group Controller during an emergency.

Group Controller

The Group Controller has, by virtue of appointment, the authority to exercise the powers under sections 78, 86–92 and 94 of the CDEM Act and the functions under section 28 if a state of local emergency is in force or an imminent threat of an emergency exists.

While a state of local emergency is in force, the Canterbury CDEM Group has delegated to the Group Controller its authority to exercise the emergency powers under section 85 of the CDEM Act.

The Group Controller's powers during a declared emergency are summarised in the CDEM Act as follows:

- Section 78 — Entry to obtain information in urgent cases
- Section 85 — Emergency powers
- Section 86 — Evacuation of premises and places
- Section 87 — Entry on premises
- Section 88 — Closing roads and public places
- Section 89 — Removal of aircraft, vessels, vehicles, etc, impeding CDEM
- Section 90 — Requisitioning land, buildings, equipment, materials, supplies
- Section 91 — Giving directions
- Section 92 — Carrying out inspections of any property, animal or other thing, and
- Section 94 — Entering into contracts in urgent cases.

The Group Controller should ensure that Local Controllers and the Canterbury CDEM Group are regularly informed of developments leading up to a potential or actual state of emergency. During a state of emergency the Group Controller will ensure that requests for assistance from Local Controllers are responded to in a timely and effective manner.

Local Controllers

The Canterbury CDEM Group has delegated the functions and powers of the Group Controller to Local Controllers for their districts or part of their districts during a state of local emergency. A Local Controller may exercise all of the Group Controller's powers and functions for that district or part of that district during a state of local emergency.

Under section 27(2) of the CDEM Act, the Local Controller must follow any directions given by the Group Controller during an emergency. Local Controllers should ensure that the Group Controller is informed in a timely manner of developments that might lead to a possible emergency.

2.5.3 Recovery Managers

The amendments to the Civil Defence Emergency Management Act 2002 ~~provides~~:

- creates Group Recovery Managers as ~~a~~ statutory roles
- r~~R~~equires a Civil Defence Emergency Management (CDEM) Group to formally appoint a 'suitably qualified and experienced person' to be a Group Recovery Manager (s29)
- allows Groups ~~may~~to ~~also~~ appoint one or more Local Recovery Managers (s30)
- p~~P~~rovides for Recovery Managers and constables to use powers during transition periods (Part 5B).
- makes Recovery Managers ~~are~~ responsible for directing and- coordinating the use of personnel, material, information services and other resources during a local transition period (s30(1)).

Under the Act the Group Recovery Manager – NOT the CDEM Group – has access to the powers contained in Part 5B. The CDEM Group retains overarching responsibility for the conduct of the Group Recovery Manager through their appointment.

Powers can only be used if they meet three legal tests. The action must, in the Recovery Managers opinion be

- ~~i~~In the public interest
- n~~N~~ecessary or desirable to ensure a timely and effective recovery, and
- p~~P~~roportionate in the circumstances (s94G(3))

Group Recovery ~~Coordinator/~~Manager

~~The Canterbury CDEM Group will appoint a Group Recovery Coordinator/Manager.~~
The CDEM Act 2002 provides the CDEM Group Recovery Manager with access to specified emergency powers during a defined period of time in order to support recovery. These powers are only available by giving notice of a transition period A transition notice can apply to one or more districts within the CDEM Group area. A local transition notice, if required, would normally follow a state of local emergency, however it can also be put in place (with the approval of the Minister of Civil Defence) if no declaration has been made.
~~The role of the Recovery Coordinator/Manager is to help local authorities prepare to conduct recovery following an emergency. During recovery, the Group Recovery Coordinator/Manager may be required to assist in the coordination of recovery, particularly when the emergency affects more than one territorial authority.~~

The Group Recovery Manager's powers during a transition period are summarised in the CDEM Act as follows:

- Section 94H – General transition period powers
- Section 94I – Power to require information
- Section 94K – Evacuation of premises and places
- Section 94L- Entry on premises and places
- Section 94M - Closing roads and public places
- Section 94N(1) – Giving direction to any person
- Section 94N(2) to (8) – Power to direct assessment
- Section 96NA – Notice for directing assessment of structure

Section 94P sets out specific reporting requirements if power is used during transition periods. Reporting requirements include:

- a written report from the Recovery Manager to the Director of CDEM and a copy to the Canterbury CDEM Group within seven days of the transition period ending
- detail on the powers used, by who and the reasons for use
- making the report public – as the CDEM Group must put it on its website

It is recommended that Recovery Managers keep an updated record of powers that have been exercised, the reasons for exercising the powers and how the statutory tests in 94G(3) were considered.

Local Recovery Managers

CDEM Groups may appoint one or more Local Recovery Managers and delegate the functions, duties and powers of the Group Recovery Manager to the Local Recovery Managers to exercise in the area for which the Group Recovery Manager is appointed (s30(1)).

If during a transition period a Group Recovery Manager needs to direct a Local Recovery Manager then that direction must be followed (s30(2)).

~~Each local authority should identify a Recovery Manager. Local Recovery Managers should be prepared to manage the recovery in their respective local authority area in accordance with local authority arrangements. Local Recovery Managers should attend meetings scheduled by the Group Recovery Manager.~~

~~**Appointments**~~

~~The Canterbury CDEM Group appoints the Group Controller, the Group Recovery Coordinator/Manager and alternates for both roles. The names of those appointed are recorded in the minutes of CDEM Group meetings.~~

2.6 Cooperation with other CDEM Groups

The Canterbury CDEM Group should meet with neighbouring CDEM groups to discuss and agree on support and assistance that could be provided to other CDEM groups when requested, as per section 17(c) of the CDEM Act. This support and assistance will include, but is not limited to:

- assistance during an emergency
- sharing of hazards and planning information, and
- coordination of training.

Section 113 of the CDEM Act provides for the recovery of actual and reasonable costs associated with the provision of assistance to other CDEM groups.

2.7 Financial Arrangements

The activities of the Canterbury CDEM Group incur costs that can be broken into three generic areas:

- **Programmed activities** — Administrative and related services under section 24 of the CDEM Act, including CDEM Group services such as the annual work programme and Group appointments.
- **Emergency expenditure** — Expenditure incurred by CDEM Group members in responding to an emergency This may involve costs during the lead up to, during and after a declared state of emergency.
- **Recovery expenditure** – ~~Any regional based~~The Canterbury CDEM Group R~~r~~ecovery O~~o~~ffice w~~ould~~ill be ~~supported~~funded by the CDEM Group. ~~All l~~Local ~~r~~Recovery Offices and recovery expenditure is ~~incurred~~the responsibility of ~~by~~ Local Authorities. Central Government assistance for recovery may be available.

2.7.1 Programmed Activities

The process for agreeing an annual budget and CDEM Group work programme is outlined in the service level agreement between the Canterbury CDEM Group and Environment Canterbury. This agreed budget is signed off by the Group. Environment Canterbury will assess a targeted CDEM Group rate, based on capital value, to fund the services detailed in the approved CDEM Group budget.

Any surplus (or deficit) remaining in the Canterbury CDEM Group account at 30 June annually will be paid (or charged) interest at a rate set by Environment Canterbury. The rate will be based on the average interest rate Environment Canterbury receives on its investments in the financial year

relating to the respective surplus or deficit.

Any surplus or deficit in the account will be carried to the next financial year, along with maintaining a regional emergency management response reserve of a minimum $250,000. Surpluses will only be used to fund operational expenses.

The Canterbury CDEM Group is responsible for funding:

- Group appointments, including Group Controller, Group Recovery ~~Coordinator/~~Manager, Group Welfare Coordinator and Canterbury Lifeline Utilities Coordinator, and
- Group Emergency Management Office operational costs.

Apart from any direct contribution to its share of Canterbury CDEM Group costs that may be agreed from time to time, each member of the Group will be responsible for meeting the costs of its representation on the Group and the CEG and, unless agreed otherwise, the costs of completing any specific actions as outlined in the Group work programme.

CDEM Group members can apply to the Ministry of Civil Defence & Emergency Management Resilience Fund for funding for both programmed and unprogrammed activities.

2.7.2 Emergency Expenditure

During an emergency, local authorities are responsible for meeting all the costs associated with their own CDEM personnel, facilities and resources.

Emergency services and other agencies, including government agencies, are responsible for meeting the costs of their personnel, facilities and specialist advice when carrying out their CDEM functions, except where there is agreement in advance that costs may be reimbursed.

In the interim, costs will lie where they fall or, where a territorial authority requests a resource, the cost will lie with the relevant territorial authority. Where the Group Controller directs a resource, the cost will be apportioned by agreement. The Canterbury CDEM Group is responsible for funding:

- all reasonable direct costs incurred by the Group Controller
- all costs associated with the use of resources, activation and operation of the Emergency Coordination Centre, and
- all reasonable costs associated with the provision of specialist advice, resources and services.

2.7.3 Recovery Expenditure

Should a ~~regional based~~Canterbury CDEM Group ~~r~~Recovery ~~o~~Office be established (supporting more than one Local Authority in recovery)- ~~be established~~ this would be ~~supported~~funded by- the CDEM Group.

All local recovery expenditure is incurred by Local Authorities, including the establishment of a local Recovery team.

Government recovery assistance will normally be provided to local authorities only if—
a) ~~(a)~~ recovery procedures cannot be carried out without government assistance; or
b) ~~(b)~~ a statutory requirement for action exists or a need to invoke a statute to achieve the ends

desired from the recovery process exists; or

c) ~~(c)~~ government assistance will aid the co-ordination of the recovery process to a significant extent; or

d) ~~(d)~~ the advantages of economies of scale are apparent.

Specific principles for recovery assistance are that—

a) ~~(a)~~ the Government has a role in the recovery process after an emergency with significant consequences; and

b) ~~(b)~~ initial and primary responsibility for the co-ordination of recovery efforts rests with local authorities; and

c) ~~(c)~~ any government recovery programme should be designed to restore community capacity for self-help and be consistent with any government policies regarding mitigation and alleviation measures.

2.7.4 Reimbursement

Section 26 of *The Guide to National Civil Defence Emergency Management Plan 2006* (revised 2009) outlines the principles for government financial support that may be provided for an emergency. These provisions apply whether or not there is a declared state of emergency.

On the termination of an emergency, the Canterbury CDEM Group will determine which costs might reasonably be met by the CDEM Group. There may be circumstances where alternative shared CDEM Group funding may be appropriate.

Claims for government financial assistance should be prepared by the organisation incurring the expenditure. To facilitate reimbursement, it is important that Group and/or Local Controllers maintain a record of authorised expenditure.

Various mechanisms are available to meet the additional costs incurred by the CDEM Group members in an emergency. These include insurance, loans, access to reserves and the targeted rate.

The Canterbury CDEM Group will decide whether to use the CDEM Group emergency reserve, loans, changes to the targeted rate, or a combination of these, to meet any unprogrammed costs. The CDEM Group has sufficient financial provisions in place to meet its obligations under the CDEM Act.

3. RISK PROFILE

3.1 Introduction

This chapter sets the context within which the Canterbury Civil Defence Emergency Management (CDEM) Group operates. In order to manage risk effectively it is essential to understand the risk management context within Canterbury. The risk profile provides a broad picture of the social, natural, built and economic environments in Canterbury and outlines how hazards are likely to impact on the community. In analysing Canterbury's risk, the Canterbury CDEM Group gains a greater understanding of where to prioritise and allocate resources and sets a sound foundation for comprehensive emergency management.

3.2 Changes in the Risk Profile

The risk profile for Canterbury was put together after a series of workshops for different parts of the region. The workshops involved discussion between CDEM staff, hazards experts (geological, flood and tsunami experts), staff of the New Zealand Police, Fire and Emergency New Zealand ~~Fire Service~~, St John, ~~and~~ rural fire services, infrastructure companies, local and regional councils and Canterbury and South Canterbury District Health Boards. The Environment Canterbury harbourmaster and Maritime New Zealand were also consulted. Discussion centred on the size of event that Canterbury is likely to experience over the lifetime of this Group Plan, and included all effects that follow from such an event (human, built/infrastructure, economic, social and environmental effects). The region's current state of readiness and the way that the profile is likely to change over the lifetime of the Plan were also considered.

While the process for defining the risk profile was thorough, comparison of events of very different natures is not straightforward, and the results will always be somewhat subjective. We are confident that the resulting profile accurately reflects the risk that Canterbury carries. The final profile for Canterbury is an amalgamation of the profiles for the individual territorial authorities. The individual risk profiles are available in Annex B.

Risk assessment involves consideration of two main factors — the nature of the hazard itself (scale and likelihood) and the opportunity the hazard has to impact on people, and to what degree. Risk is often represented by the equation:

Risk = Likelihood X Consequence

The risk profile for Canterbury is different from that documented in the previous Group Plan (2006–2010) because the Canterbury earthquakes have significantly changed the nature and level of risk in Canterbury. Changes in the actual physical hazards faced include enhanced seismicity in the region and increased chance of rockfall in the Port Hills. Internal migration, changes in land use and a higher standard of building have also had an impact.

Another significant factor in the changing risk profile is the changing perception of risk by Canterbury communities. The experiences of the Canterbury earthquakes have increased people's awareness of how serious hazard events can be. When assessing risk, there is always an element of subjectivity and for this reason a wide range of people have been involved in producing this risk profile. The risk profile measures the current perception of risk and should therefore be revisited and updated periodically.

The detailed risk profiles for Canterbury are located in Annex B.

3.3 Risk Context

3.3.1 Natural Environment

The Canterbury CDEM Group area is 4,093,783 hectares or 40,937 square kilometres, approximately 30% of the South Island. Canterbury is a geographically diverse area, comprising four distinct landscape types:

- the Southern Alps
- rolling foothills, which in places extend to the coast
- the relict volcanic complexes of Banks Peninsula, and
- the alluvial fans of the Canterbury Plains.

The Canterbury region sits across the boundary of the Pacific Plate and the Australian Plate. A series of major faults across North Canterbury mark the plate boundary, and consequently the earthquake hazard in North Canterbury is high. As the 2010 and 2011 earthquakes have demonstrated, all of Canterbury can be affected by large earthquakes. District-level earthquake hazard assessments have been completed for Kaikoura, Hurunui, Waimakariri, Selwyn, Ashburton, Timaru, Mackenzie and Waimate. Research into the 2010 and 2011 earthquakes in the greater Christchurch area has also resulted in a better understanding of the earthquake risk in central Canterbury. Experts believe that the Canterbury region is likely to experience a magnitude 6.0–7.0 earthquake on a smaller fault about every 50 years, and there is a 10% chance of a magnitude 7.0–8.0 earthquake in the next 50 years.

The Alpine Fault runs down the length of the South Island near the Central Divide. Experts believe there is roughly a 30% to 65% chance that there could be a magnitude 8.0 earthquake on this fault in the next 50 years. This would result in very strong shaking in the west of the region, and shaking of a similar strength to the 2010 Darfield earthquake in the east of the region.

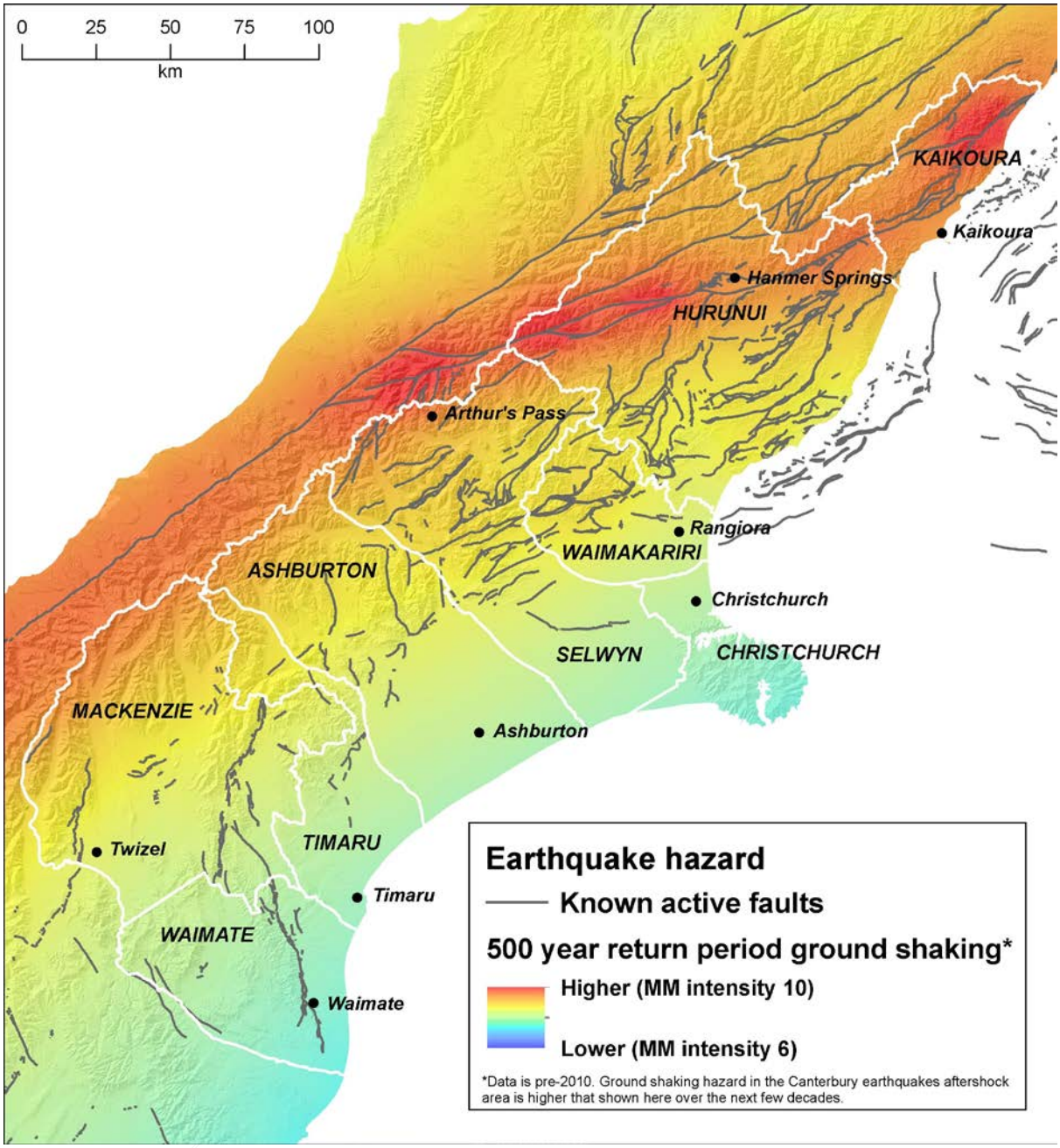

Figure 3.1 Known active faults in Canterbury that break the ground surface
Note that the faults in Pegasus Bay are believed to be too small to cause local tsunami.

Apart from the September 2010 Darfield earthquake/Greendale fault, the earthquakes of the Canterbury sequence have been centred on faults that are completely buried (blind) and do not break the ground surface. Therefore blind faults cannot be accurately shown on a map. Many active and inactive faults in Canterbury remain unmapped because they do not break the earth's surface. Known active faults in Canterbury and nearby are depicted in Figure 3.1.

Aftershocks will continue to affect a zone extending from Hororata in the west to large parts of Banks Peninsula, and from Kaiapoi in the north to Lincoln in the south. These earthquakes will tend to become smaller and happen less often as time goes on. As this happens the level of seismicity will drop back to the level shown in **Figure 3.1**. GeoNet figures indicate that there is a 65% chance of a magnitude 5.0–5.9 earthquake occurring in this zone in 2014/2015, an 8% chance of a magnitude 6.0–6.9 quake, and a 1% chance of an earthquake of magnitude 7.0 or greater.

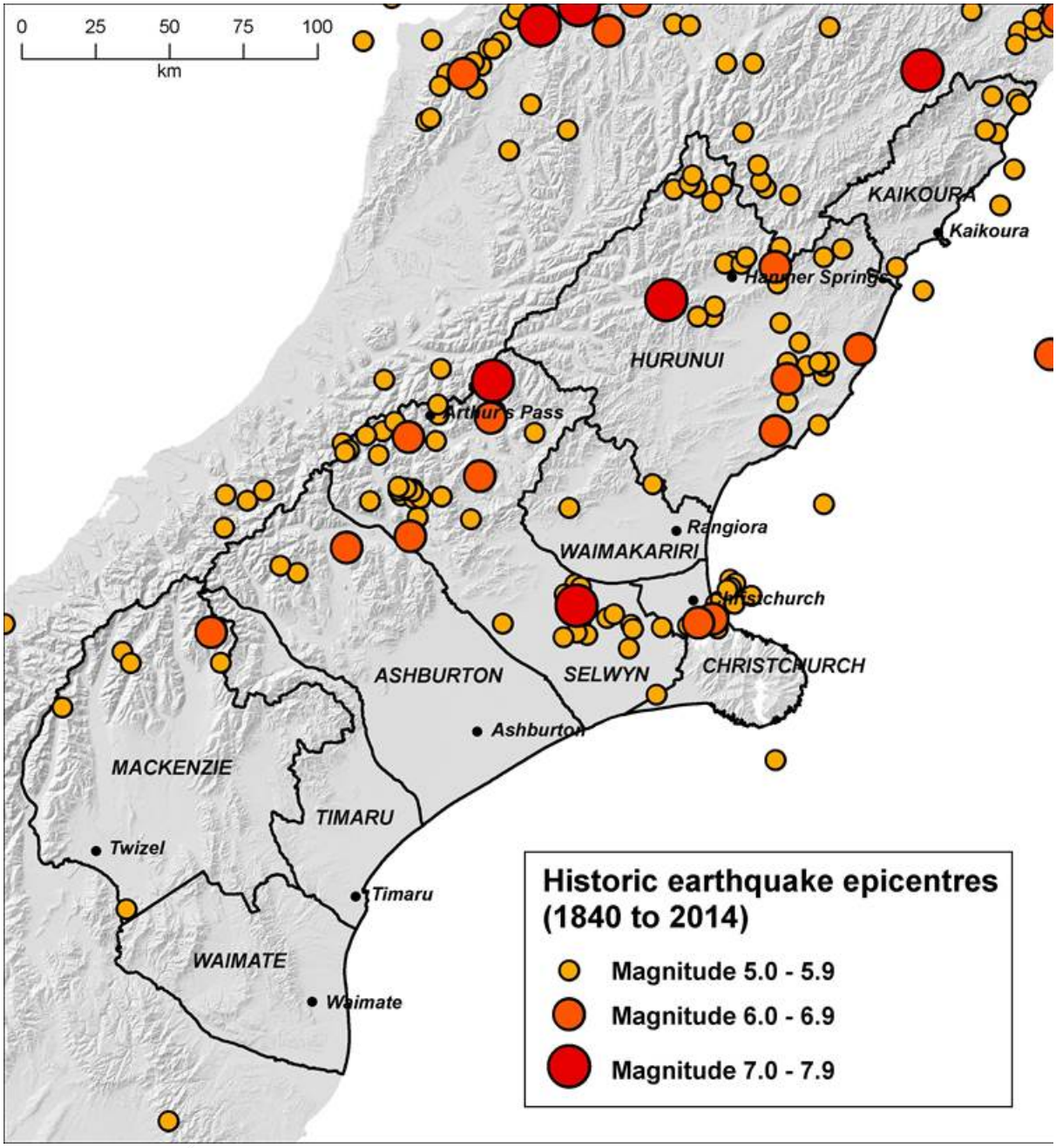

Figure 3.2 Epicentres of larger historic earthquakes recorded in the Canterbury region

Some active faults have been recognised in the rocks under the sea floor off Pegasus Bay, but they are thought to cause relatively small vertical movements of the sea floor and so are unlikely to cause a big tsunami threat.

The most likely tsunami threat to most of the Canterbury coast is a distant-source tsunami from South America. Although experts believe that waves of up to ten metres are possible, this is very unlikely. Over the next 50 years tsunami wave heights at the coast are likely to be about two metres in Kaikoura and Timaru and three metres in Christchurch. The amount of land that could be inundated by such a tsunami depends on the time of tide that the tsunami wave arrives. Such a tsunami is unlikely to be very destructive and there would be about 16 hours of warning in which necessary evacuations could take place.

At Kaikoura a deep submarine canyon comes very close to the shore. Experts think it is possible for a

local tsunami to be set off by a submarine landslide into the canyon. In the past they have modelled wave heights of up to 12 metres. These waves would come ashore within minutes. It is not known how often such events happen. A study is being undertaken by the National Institute of Water and Atmospheric Research (NIWA), the University of Canterbury and the University of Bremen in conjunction with Environment Canterbury to investigate the details of the hazard. This should be complete at the end of 2016.

Canterbury's distinctive topography causes extremes of temperature and rainfall. Hot moist winds are forced over the ranges of the Main Divide, where they drop their moisture (orographic rainfall) and then sweep across the Canterbury Plains. As a result of this weather pattern, coastal Canterbury is considered dry with an average rainfall of 650–700mm per year. Inland areas such as the Mackenzie Basin receive lower rainfall and greater temperature extremes. In contrast, the Canterbury foothills receive over 1,000mm of rainfall and the high mountains experience from 2,000–4,000mm per year.

Flood is the most likely hazard event to happen in Canterbury. Small areas are flooded each year in one part of the region or another. Larger floods happen less often. High and low flood-hazard areas have been identified for the populated parts of most districts to help work out the effects of flooding that is likely to happen every 50, 200 and 500 years. These maps are available from Environment Canterbury or the individual district councils.

Higher parts of the region may also suffer significant snow events. Damaging wind storms have occasionally affected the region, as have significant rural fires.

The northwest winds are Canterbury's most significant climatic feature, especially in summer. The winds cause temperatures to rise and, as a result, the ground dries out and considerable soil loss is caused by wind erosion.

3.3.2 Social Environment

The population of Canterbury is 539,433 according to the 2013 census. Christchurch is the largest urban area with a population of 341,469, a 2% decline since the 2006 census.

Other significant urban centres in the region include Timaru (25,938), Rangiora (15,021) and Ashburton (18,471). Canterbury also has many small communities of fewer than 10,000 people, and a strong rural sector.

Canterbury is experiencing significant population growth, with five of the ten fastest growing districts in New Zealand located in Canterbury. The earthquakes have resulted in considerable movement of people in central Canterbury. The eastern suburbs of Christchurch have seen rapid depopulation because of the red zoning of land. As a consequence, population has grown rapidly in other parts of Christchurch City and Selwyn and Waimakariri Districts over the past two years. Selwyn District is the fastest growing district in the country with 44,595 more people, an increase of one third since the 2006 census. Waimakariri District’s population has increased by 16.7% since the 2006 census. Elsewhere in Canterbury where communities are smaller and more rural, population numbers remain steady.

Canterbury is also an increasingly diverse region with greater numbers of people from different ethnic backgrounds. Canterbury’s largest ethnic group is European, with 86.9% of the population identifying themselves in the 2013 census with this group. Another 2.5% of the population identify themselves as Pacific Island and 6.9% of the population as Asian. Maori represent 8.1% of the

population in Canterbury. The tangata whenua is Ngai Tahu.

Ethnic Group – Canterbury 2013 Census

Canterbury Region		
European	393,219	448,650
Maori	36,669	41,907
Pacific peoples	10,926	12,723
Asian	29,172	35,847
Middle Eastern/Latin American/African	3,363	4,377
Other ethnicity		
New Zealander	70,119	10,050
Other ethnicity	138	189
Total people, other ethnicity	70,254	10,236
Total people stated	508,185	516,360
Not elsewhere included	13,647	23,073
Total people, Canterbury region	521,832	539,433

In recent years Canterbury has experienced high levels of immigration, particularly to fill skills shortages in the construction, dairying and care-giving industries. Many of these workers are socially isolated, sometimes because they do not speak English as a first language or because their families remain in their home country.

Vulnerability

All people are vulnerable to a certain extent but some are more vulnerable than others. In Canterbury there are many communities which could become geographically isolated during an emergency. Kaikoura, Mt Cook, Hanmer Springs and Hakataramea are examples of communities that might become isolated by earthquakes, landslips, avalanches and floods.

Social isolation is also a key indicator of vulnerability. The following groups have been identified by the Canterbury CDEM Group as likely to be more vulnerable in an emergency and therefore requiring more consideration in CDEM planning:

- disabled people
- culturally and ethnically diverse communities
- tourists
- young people
- older people, and
- low-income households.

3.3.3 Built Environment

Infrastructure

Infrastructures have a high level of interdependency. Most networks depend on electricity supply, and emergency recovery is heavily dependent on the communications network and transport routes.

The Canterbury earthquakes have highlighted the critical role that infrastructure plays in people's day-to-day lives. In the hours and days following the earthquakes, power, water and communication

services as well as air, road and rail travel were critical in ensuring that the basic needs of residents in the quake zone were met.

Roads, rail, sea ports, airports, electricity, gas and telecommunications networks have proven to be reasonably resilient in Canterbury. It has been demonstrated that these infrastructure types can be reinstated to a reasonable level within a week or two, although this is highly dependent on their susceptibility to various hazards.

Buildings

Buildings are exposed to most natural hazards and there is a correspondingly comprehensive regulatory framework. Residential, commercial and industrial buildings are designed to resist forces from wind, snow, ice and earthquakes. Their ability to withstand natural hazards was demonstrated in Canterbury where light timber-framed houses generally performed well. Conversely, during the recent earthquakes unreinforced block-work and double-brick buildings generally performed poorly.

All territorial authorities are required to have a register of commercial and industrial earthquake-prone buildings. The register is used as a mechanism to help reduce the danger posed by these buildings to the population of Canterbury.

Economic Environment

Canterbury vies with the Wellington region for the position of New Zealand's second largest economy. However, Canterbury's economic activity is more evenly distributed between the agriculture, manufacturing and services sectors.

Christchurch City comprises about 70% of the region's economy. As well as providing services to the rest of the region, Christchurch has national strengths in transport, machinery, and food and beverage manufacturing. It has a high proportion of medium- to high-tech manufacturing businesses, which are linked to a regional innovation system that includes several tertiary education providers and Crown Research Institutes.

The region's agriculture sector is focused on dairy, sheep, beef and grain farming. There has been a rapid conversion of land to dairy farming in the region over the past decade and Canterbury now has the highest average dairy herd size in New Zealand and correspondingly high productivity levels.

Sixty-eight per cent of New Zealand's fresh water is located in Canterbury. However, increased irrigation and management of nutrient runoff will be required to support further growth in dairy farming.

The impact of the 2010/2011 earthquakes resulted in net out-migration from the region and particularly affected the tourism and education sectors, which were previously comparative advantages for Christchurch. Despite this, the region's overall economic performance has dipped only slightly since the earthquakes — a positive sign that the region has been resilient and that earthquake-affected areas are recovering. The integral relationship between Canterbury's rural and urban economies also contributes to this resilience.

The Canterbury earthquakes and rebuild, which is estimated to cost $30 billion, will continue to have a national and regional economic impact.

3.4 Quantitative Risk Analysis

Analysis of risk is dependent on the specific scenario that is considered, and the varied nature of the Canterbury region means that certain hazards threaten some districts significantly more than others. Preparedness of emergency management staff and communities also varies greatly from district to district.

The following assumptions have been made in the Canterbury CDEM Group's quantitative risk analysis:

- Cascading effects are taken into the reckoning with the initial, triggering event.
- As a benchmark, emergencies that require a multi-agency response have been considered.
- Likelihoods refer to emergencies occurring over the next 20–50 years.

3.4.1 Risk Matrix

The risk matrix considers the likelihood of a hazard event and its consequences, to identify low-, medium- and high-impact events for the Canterbury region. The risk matrix uses the measures of consequence and likelihood outlined in **Table 3.1** and **Table 3.2**.

Level	Descriptor	Detail description
1	Insignificant	No injuries, little or no damage, low financial loss
2	Minor	First aid treatment, minor building damage, medium financial loss
3	Moderate	Medical treatment required, moderate building and infrastructure damage, high financial loss
4	Major	Extensive injuries, high level of building and infrastructure damage, major financial loss
5	Catastrophic	Deaths, most buildings extensively damaged and major infrastructure failure, huge financial loss

Table 3.1 Measure of consequence of impact

Level	Descriptor	Detail description
A	Almost certain	Is expected to occur in most circumstances
B	Likely	Will probably occur in most circumstances
C	Possible	Might occur at some time
D	Unlikely	Could occur at some time
E	Rare	May occur only in exceptional circumstances

Table 3.2 Measure of likelihood

The risk matrix for Canterbury on the following page covers events whose likelihoods are defined in terms of the next 25–50 years and whose consequences are great enough to require a significant inter-agency response.

Likeli-hood	Consequences				
	1	2	3	4	5
	Insignificant	**Minor**	**Moderate**	**Major**	**Catastrophic**
A **Almost certain**	**Moderate** Electrical storms	**Moderate** Heavy rainfall Coastal erosion/inundation	**Very High** None identified	**Extreme** None identified	**Extreme** None identified
B **Likely**	**Low** None identified	**Moderate** Wildfire Fire at rural/urban interface Major snow/ice Major road accident	**High** Flooding of eastern foothill rivers	**Very High** Pandemic	**Extreme** None identified
C **Possible**	**Low** Hail storm	**Moderate** Distant-source tsunami Water supply failure (urban) Port incident Major rail accident High winds	**Moderate** Flooding of alpine rivers Drought Marine accident at sea Animal disease epidemic	**High** Local earthquake	**Very High** Alpine Fault earthquake Regional tsunami Kaikoura local tsunami
D **Unlikely**	**Very Low** Land instability Tornado	**Low** Multi-agency urban fire Wastewater supply Hazardous substances affecting water	**Moderate** Fuel supply failure Electricity (major supply point) failure Telecoms failure Biological pests/new organisms	**High** None identified	**Very High** None identified
E **Rare**	**Very Low** Space debris Civil unrest/terrorism	**Very Low** None identified	**Low** Major air accident	**Moderate** None identified	**High** None identified

Table 3.3 Risk matrix

3.4.2 High-, Medium- and Low-Risk Hazards

Table 3.4 identifies the priority hazards for the Canterbury region which will be taken into consideration when developing plans and structures for an emergency response.

High-Priority Hazards			
	Likelihood	**Consequence**	**Level**
Earthquake	Possible	Major/Catastrophic	High/Very High
Tsunami (local or regional source)	Possible	Catastrophic	Very High
Human disease pandemic	Likely	Major	Very High
Flooding (including dam failure)	Likely	Moderate	High
Electricity failure	Unlikely	Moderate	Moderate
Disruption to fuel supply	Unlikely	Moderate	Moderate
Telecommunications failure	Unlikely	Moderate	Moderate
Offshore marine/port incident	Possible	Moderate	Moderate
Drought	Possible	Moderate	Moderate
Medium-Priority Hazards			
Animal disease epidemic	Possible	Moderate	Moderate
Biological pests and new organisms	Unlikely	Moderate	Moderate
Fire at the rural/urban interface	Likely	Minor	Moderate
Water supply failure	Possible	Minor	Moderate
Wastewater failure	Unlikely	Minor	Low
Large urban fire	Unlikely	Minor	Low
Heavy snow and ice	Likely	Minor	Moderate
High winds	Possible	Minor	Moderate
Electrical storms	Almost certain	Insignificant	Moderate
Land instability	Unlikely	Insignificant	Very Low
Hail	Possible	Insignificant	Low
Volcanic eruption ash fall or disruption to air travel	Rare	Insignificant	Very Low
Low-Priority Hazards			
Hazardous substance	Unlikely	Minor	Low
Major road accident	Likely	Minor	Moderate
Major rail accident	Possible	Minor	Moderate

Table 3.4 Hazard priority table

Major hazard investigation projects in the Canterbury region include:

- active fault mapping
- reassessing liquefaction potential in areas within Selwyn and Waimakariri Districts and Christchurch City
- reviewing liquefaction mapping for Geraldine and Washdyke
- tsunami investigations for Pegasus Bay and Kaikoura, including local, regional and distant sources
- tsunami/seiche investigations for the Mackenzie Basin lakes
- landslide/debris flow investigations for alpine villages
- reassessment of flood risk from the Waimakariri River for the Pines–Kairaki area, and
- rockfall, cliff collapse and mass land movement in the Port Hills.

Identified areas for future hazard research include:

- road failure caused by Alpine Fault earthquake
- marine incidents
- landslides in lakes causing tsunami, and
- off-shore faults south of Banks Peninsula.

4 RISK REDUCTION

4.1 Introduction

This chapter outlines the principles and mechanisms of risk reduction. Risk reduction is identifying and analysing long-term risk to human life and property from hazards, taking steps to eliminate (avoid) if practicable and if not reduce (mitigate) the magnitude of their impact and the likelihood that they will occur.

4.2 Principles for Risk Reduction

The key principles for risk reduction adopted by the Canterbury Civil Defence Emergency Management (CDEM) Group are:

- Organisations and agencies will implement risk-based management of both natural and man-made hazards.
- Organisations and agencies will work together and, where possible, integrate risk-management practices.
- Organisations and agencies recognise that risk reduction is an essential component of emergency management.

4.3 Mechanisms for Risk Reduction

Risk reduction is achieved in part through using statutory and non-statutory mechanisms, including legislation, policy and plans which provide for the integrated management of natural hazards.

The Canterbury Regional Policy Statement (RPS) is of particular importance because it describes how natural hazards are to be managed in the region and places responsibility for natural hazard risk management on local authorities. Local authority plans must give effect to the RPS. The RPS prefers to reduce risk through avoidance of the risk rather than strategies to mitigate the hazard.

Other statutory and non-statutory mechanisms for risk reduction include:

- Resource Management Act 1991
- city and district plans
- Local Government Act 2002
- local authority long-term plans
- Building Act 2004 and associated territorial authority building policies
- CDEM Act 2002
- Canterbury CDEM Group Plan
- Biosecurity Act 1993
- Fire and Emergency New Zealand Act 2017~~Fire Service Act 1975~~
- ~~Forest and Rural Fires Act 1977~~
- Hazardous Substances and New Organisms Act 1996
- Health Act 1956
- New Zealand Public Health and Disability Act 2000
- Health and Safety in Employment Act 1992
- Maritime Transport Act 1994, and
- Soil Conservation and Rivers Control Act 1941.

Figure 4.1 shows how the key mechanisms for disaster risk reduction work together to provide for an integrated hazard management framework.

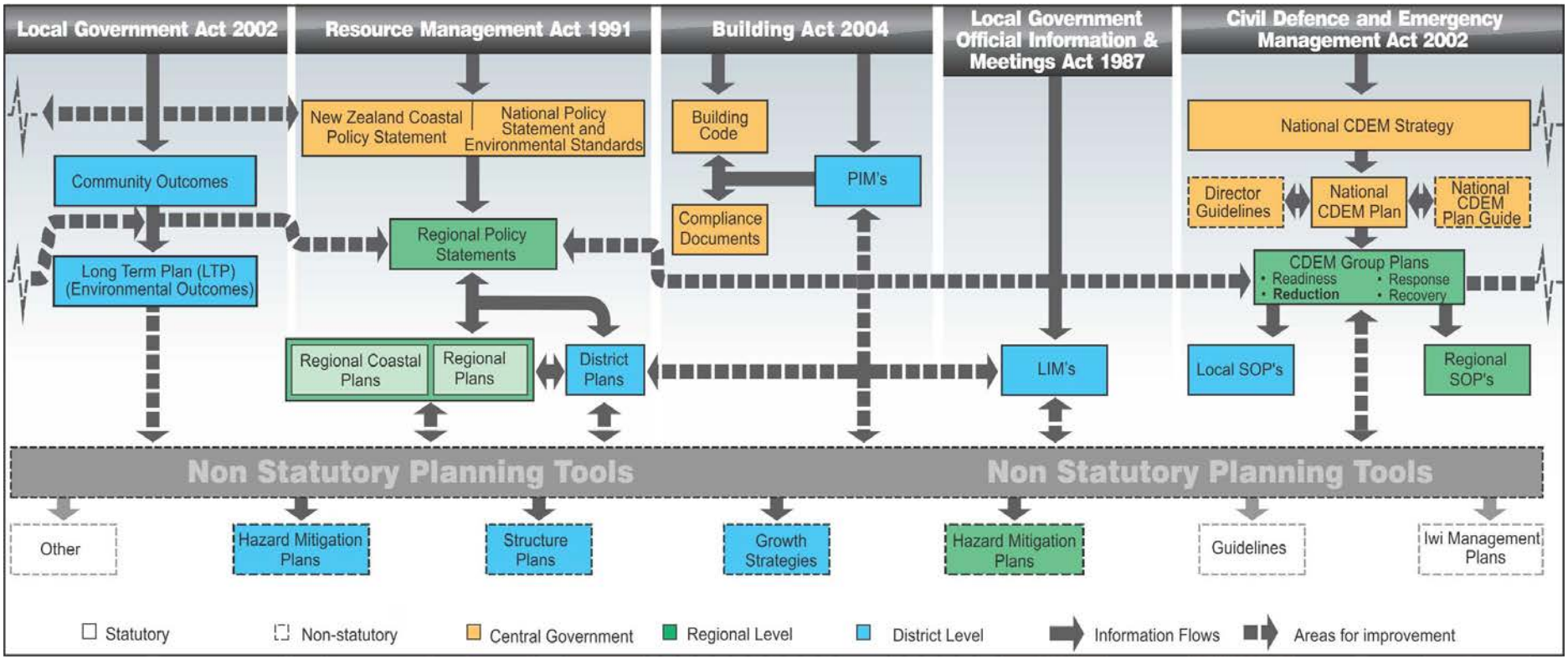

Figure 4.1 Legislative roles and responsibilities for hazard management in New Zealand
Source: WSA Saunders, JG Beban and M Kilvington *Risk-based land use planning for natural hazard risk reduction* (GNS Science Miscellaneous Series 67, September 2013)

4.4 Issues and Objectives

4.4.1 Issues

- Risk reduction should be given more emphasis by the CDEM sector.
- Risk management planning should be integrated and coordinated across the CDEM sector.
- Risk needs to be better understood and more effectively communicated by the CDEM sector.

4.4.2 Objectives

In support of the National CDEM Strategy Goal Two (reducing the risks from hazards), the Canterbury CDEM Group has established the following risk reduction objectives:

- Provide collaborative leadership in hazard research initiation, delivery and application.
- Proactively identify, understand and manage the risks that Canterbury's communities face.
- Ensure that planning and management of risk are based on relevant risk assessments.
- Communicate all issues relating to risks effectively to the community and partners.

4.5 Proposed Risk Reduction Actions

The Canterbury CDEM Group has agreed to the following risk reduction objectives and actions which will guide the CDEM Group work programme.

4.5.1 Hazard Research

It is important that our understanding of risk and hazard is informed by scientific research to enable the CDEM sector and agencies with a risk reduction role to plan for realistic consequences of hazards.

The Canterbury CDEM Group is connected to and works with the Natural Hazards Research Platform through the hazard analysis section of Environment Canterbury. This ensures that the Group's research requirements are acknowledged and that learning from research is communicated to the Group.

Objective:
Provide collaborative leadership in hazard research initiation, delivery and application
Proposed Actions
▪ Use risk assessment analysis to identify areas for future research. ▪ Ensure that research outcomes are applied across the integrated hazard management framework.

Table 4.1 Hazard research

4.5.2 Risk Identification

Identifying risk forms the basis of all CDEM work because accurate risk identification enables realistic planning. A robust risk assessment process requires collaborative input from many perspectives within Canterbury.

Objective:
Proactively identify, understand and manage the risks that Canterbury's communities face
Proposed Actions
▪ Ensure that an accurate risk assessment for the Canterbury region is completed and is regularly updated and communicated to the communities of Canterbury. ▪ Develop the risk reduction strategy collaboratively with Canterbury CDEM Group members and partner agencies.

Table 4.2 Risk identification

4.5.3 Risk Management

Managing risk is a function of many different organisations utilising the statutory and non-statutory mechanisms as listed in 4.3. The CDEM sector has a role in ensuring that a risk reduction perspective informs work in these areas.

Objective:
Ensure that planning and management of risk are based on relevant risk assessments
Proposed Actions
▪ Establish a Canterbury risk reduction forum to act as a forum for collaborative work on risk reduction. ▪ Assist with ensuring that hazards and risks are taken into account in land-use planning practices.

Table 4.3 Risk management

4.5.4 Risk Communication

A greater understanding of risk will lead to better risk reduction outcomes for society. However, risk information can be a complex concept to communicate. The CDEM sector needs to act as an advocate for risk reduction, and communicating risk information effectively is a key component of success in this area.

Objective:
Communicate all issues relating to risks effectively to the community and partners
Proposed Actions

- Develop a stakeholder analysis that identifies key communities and partner agencies with which to communicate.
- Articulate how risk reduction information will be communicated in the Canterbury CDEM Group's public education and community resilience strategies.
- Initiate, coordinate and promote activities that assist communities to build resilience to the effects of hazards.

Table 4.4 Risk communication

5 READINESS

5.1 Introduction

This chapter outlines how the Canterbury Civil Defence Emergency Management (CDEM) Group will collaborate with partner agencies and the community to ensure that Canterbury is aware and prepared for an emergency. The Canterbury CDEM Group recognises two distinct but related aspects of readiness:

- **Community readiness** — Individuals, families, businesses and communities are prepared to meet their own needs during and after an emergency. Enhancing community readiness is primarily about public education, effective public warning systems and supporting community-level response planning.
- **Organisational readiness** — The CDEM sector, including emergency response agencies, government and non-government organisations, has a clear understanding of its role in response and recovery in an emergency and has planned for it. Enhancing organisational readiness is about ensuring that Canterbury CDEM Group members and partner organisations have arrangements and processes for responding to any emergency and that their emergency management staff have the capability to enact these arrangements

The community and organisational readiness components are highly interdependent. Communities rely on the Canterbury CDEM Group to provide leadership and coordination during emergencies and in recovery. Equally, the Canterbury CDEM Group relies on local communities for hazard awareness and warnings, local knowledge, relationships with community members and provision of response resources.

Readiness activities are the foundation of both response and recovery activation. Capability and capacity during response and recovery are highly dependent on readiness activities undertaken before emergencies occur.

5.2 Principles for Readiness

The key principles for readiness in the Canterbury CDEM sector are:

- Achieve clarity on the responsibility and management of all readiness activities, especially the standards required and integration between management at the organisational, local and regional levels.
- Collaborate regionally on readiness priorities with the flexibility to allow local implementation.
- Link readiness activities to building capability and capacity at the community and organisational levels.
- Ensure that all Canterbury CDEM Group members commit to training and ongoing professional development and that staff in agencies are released for CDEM training activities.

5.3 Issues and Objectives

5.3.1 Issues

- Community and business awareness of the full range of hazards in the Canterbury region and their potential consequences varies.
- Information on CDEM needs to be more comprehensive and accessible to the public.
- Insufficient numbers of organisations and communities have planned for their response during an emergency.
- Some communities need significant support from the CDEM sector to organise their own response
- Links between the community and the CDEM sector need to be strengthened to ensure good two-way communication.
- The effectiveness of the CDEM Group's work in the community needs to be monitored for its impact.
- Full commitment of politicians and senior managers in local authorities and partner agencies is required for effective CDEM work.
- Professional development of individuals by CDEM Group members is currently approached in an ad hoc manner.

5.3.2 Objectives

In support of the National CDEM Strategy Goal One (increasing community awareness, understanding, preparedness and participation in CDEM), the Canterbury CDEM Group has established the following community readiness objectives:

- Increase community and business awareness of the risks from hazards and their consequences.
- Improve community and business preparedness through community-based planning.

In support of the National CDEM Strategy Goal Three (enhancing New Zealand's capability to manage civil defence emergencies), the CDEM Group has established the following organisational readiness objectives:

- Ensure that local authorities have robust and tested business continuity plans so they can continue to function in an emergency.
- Ensure that strong leadership and a commitment to CDEM is demonstrated through the Canterbury CDEM Group.
- Enhance professional development of all personnel involved in CDEM.
- Ensure that exercises are an integral part of the Canterbury CDEM Group work programme.
- Strengthen the coordination and cooperation among all relevant CDEM response agencies in planning for and responding to an emergency.

5.4 Proposed Readiness Actions

5.4.1 Community Readiness

The level of preparedness of individuals, households, businesses and communities has a direct bearing on the resilience of a community and is a key focus of emergency management. A ready Canterbury is achieved through encouraging, influencing and facilitating planning with all sectors of the community.

The Canterbury CDEM Group has identified two key readiness objectives — developing people's understanding of hazards and their consequences, and developing emergency plans in partnership with the community.

Further detail on the plans and strategies in this section will be developed in the CDEM Group's community resilience strategy.

Community Awareness

Objective:
Increase community and business awareness of the risks from hazards and their consequences
Proposed Actions
▪ Establish a community resilience forum. ▪ Develop and implement a Canterbury CDEM Group public education strategy. ▪ Review the use of Canterbury CDEM-related websites and other social media. ▪ Develop and implement a system for measuring and reporting on community readiness and resilience.

Table 5.1 Community awareness

Community Participation

The level of preparedness of individuals, households, businesses and communities has a direct bearing on the resilience of a community. This is a key focus of CDEM and is achieved through encouraging all sectors of the community to participate in planning for an emergency.

Objective:
Improve community and business preparedness through community-based planning
Proposed Actions
▪ Support and advocate community response planning. ▪ Support and advocate the initiatives of community-based groups that are related to CDEM. ▪ Support and encourage trained volunteer involvement in CDEM. ▪ Establish a community resilience strategy. ▪ Identify vulnerable communities and work with them to develop their ability to plan for an emergency. ▪ Support and advocate business continuity planning.

Table 5.2 Community participation

5.4.2 Local Authority Readiness

Section 64(2) of the CDEM Act 2002 requires all local authorities to function to the fullest possible extent during and after an emergency, even though this may be at a reduced level.

Objective:

Ensure that local authorities have robust and tested business continuity plans so they can continue to function in an emergency and in recovery
Proposed Actions
▪ Ensure that local authorities have identified their risks and hazards. ▪ Ensure that local authorities have developed business continuity plans and test them regularly. ▪ Ensure that local authorities have identified and trained staff to ensure business continuity is maintained.

Table 5.3 Council preparedness

5.4.3 Organisational Readiness

Leadership

It is essential for the Canterbury CDEM Group to have strong leadership and governance provided by elected officials and chief executives of both local authorities and partner agencies.

Objective:
Ensure that strong leadership and a commitment to CDEM is demonstrated through the Canterbury CDEM Group
Proposed Actions
▪ Provide an annual briefing on CDEM work programmes including recovery to senior management teams at each local authority and other key CDEM partner agencies. ▪ Encourage political and executive attendance at meetings and annual forums. ▪ Provide professional development opportunities, such as training, at a level appropriate for senior executives and elected members.

Table 5.4 Leadership

Professional Development

Emergency Management Officers (this includes the equivalent staff from partner agencies) manage CDEM professional development for their staff and CDEM volunteers. In so doing they are expected to monitor the level of training and experience of staff in their key Emergency Operations Centre (EOC) or Emergency Coordination Centre (ECC) and CDEM volunteers.

EOC and ECC staff and CDEM volunteers should receive further or refresher training to maintain competency. Member agencies should ensure that 80% of all key appointees in their EOC and ECC are trained to the Group's agreed standards at any given time to ensure a credible EOC/ECC response. Such standards are to be incorporated into the CDEM Group Training Strategy.

The Canterbury CDEM Group Training Coordinator coordinates CDEM training at a regional level. Where necessary this includes EOC/ECC training. The Training Coordinator is also responsible for implementing the Group training plan and assisting member agencies with the preparation and maintenance of professional development plans and emergency management training registers where necessary.

Objective:

Enhance professional development of all personnel involved in CDEM
Proposed Actions
▪ Complete an emergency management professional development needs analysis. ▪ Develop and implement a Canterbury CDEM Group professional development strategy. ▪ Develop the CDEM Group training plan with the objective of accelerating the ongoing enhancement of emergency management training in Canterbury. ▪ Review the role of the Emergency Management Training Centre. ▪ Develop a long-term Canterbury CDEM Group exercise programme. ▪ Develop a recruitment and appointment guideline to assist with the appointment of key emergency management personnel[2]. ▪ Pursue opportunities for Canterbury emergency management personnel to gain professional development experience by attending conferences, workshops and training. ▪ Support emergency responses in the Canterbury CDEM Group area, New Zealand or internationally. ▪ Pursue operational experience, training or other professional development opportunities that may arise at the local, national or international level.

Table 5.5 Professional development

Exercises

Exercises are a crucial professional and organisational development mechanism that have been, and will continue to be, undertaken on a regular basis in Canterbury.

Objective:
Ensure that exercises are an integral part of the Canterbury CDEM Group work programme
Proposed Actions
▪ Develop a regional exercise programme as an information sharing tool and to offer opportunities for joint or shared training events and ideas. ▪ Incorporate lessons learnt from training, exercises and real emergencies into reviews of the Canterbury CDEM Group Plan and other operational arrangements in an open, timely and systematic manner.

Table 5.6 Exercises

5.4.4 Appointment of EOC or ECC Staff

It is recommended that Emergency Management Officers in conjunction with their Controller appoint staff for the primary EOC or ECC positions and that a minimum of two people should be appointed to each such position. Key positions for an EOC or ECC are based on the coordinated incident management system (CIMS) functions:

- Controller[3]

[2] Controllers, recovery managers, welfare managers, emergency management officers/managers, EOC and ECC function managers.

[3] The process of appointment of both Group and Local Controllers is described in the "Governance and Management" chapter at 2.5.2.

- Operations Manager
- EOC Manager
- Planning Intelligence Manager
- Logistics Manager
- Public Information Manager
- Welfare Manager
- Recovery Manager.

In a large emergency, consideration should be given to the appointment of a chief of staff. This person would ensure decisions made by the Controller are undertaken.

When potential candidates for these positions are identified it is strongly recommended that alongside councils' own requirements, the Ministry of Civil Defence & Emergency Management (MCDEM) role maps[4] are used and relevant operational experience is taken into account.

Appointed staff should follow the professional development requirements as described in the Canterbury CDEM Group professional development strategy and training plan.

When agencies appoint a staff member to act as their representative or liaison officer in another agency ECC or EOC they should consider whether that person:

- has the authority to make decisions and commit resources on behalf of their parent agency
- has sufficient experience and knowledge of their parent organisation to be able to provide well informed advice to the ECC or EOC they are working in, and
- has sufficient credibility to be well accepted and constructively used by the receiving agency.

5.4.5 Organisational Planning and Operational Readiness

The sustainable management of hazards is achieved through integrated planning. The Coordinating Executive Group (CEG) and its various sub-committees and forums provide the basis for coordination and liaison at a CDEM Group level. The function and membership of the CEG are detailed in the "Governance and Management" chapter of this Plan.

The multi-agency structure and objectives of the CIMS can only be achieved if the same multi-agency approach is applied to pre-emergency coordination and cooperation. The sub-committees of the CEG provide a mechanism for multi-agency planning, communication, awareness and relationship building between emergency response and recovery organisations. This includes the cooperative development of Canterbury CDEM Group and local CDEM arrangements and subsidiary functional plans.

Objective:
Strengthen the coordination and cooperation among all relevant CDEM response agencies in planning for and responding to an emergency
Proposed Actions

[4] Development of role maps for planning/intelligence, operations and logistics managers is a work in progress within the MCDEM role maps project.

▪ Use the approach to operational coordination suggested in CIMS as the basis for operational planning in response to potential or actual emergencies in Canterbury. ▪ Work with the sub-committees of the CEG to achieve cooperative development of Canterbury CDEM Group-wide risk-based plans, local CDEM plans and functional procedures. ▪ Maintain and develop documents and plans that describe key activities, functional responses, standard operating procedures and protocols in support of the Canterbury CDEM Group Plan.

Table 5.7 Organisational planning

Organisational Emergency Management Plans

All response agencies, such as local authorities, emergency services, government departments and lifelines, have a responsibility to develop business continuity plans and emergency management plans in accordance with their statutory requirements. This includes organisation-specific plans detailing their CDEM arrangements. Collaboration at the local and regional level is required to ensure alignment of plans where multi-agency responses are required. In the Canterbury CDEM Group, the sub-committees of the CEG, such as the Response Planning Group, Rescue Committee and Welfare Coordination Group, provide the forum for this collaboration.

CDEM-related emergency management plans for individual organisations need to address the following:

- risk analysis of hazards for which the agency has a lead or supporting role
- emergency management-related statutory roles and responsibilities
- outline of involvement in regional and local risk analysis and reduction initiatives
- outline of operating procedures to achieve and maintain coordination with respective CDEM Group and Local Controllers and Recovery Managers
- inclusion of an appendix listing regional and local representatives for emergency management-related committees and response facilities (ECCs and EOCs) and recovery management processes (this should be updated regularly), and
- outline of in-house business continuity arrangements.

Local and agency plans may include but are not limited to:

- local variations of hazards and their consequences, including local vulnerabilities within their communities
- business continuity plans
- professional development and key appointment process plans
- plans for engagement with the community and business
- standard operating procedures for emergency centres including EOCs and welfare centres, and
- recovery plans.

5.5 Warning Systems

Early and effective warning and alerts to potential hazards and emergency events enable effective response planning and timely mobilisation of resources. They also provide the community with the

opportunity to make appropriate arrangements to reduce the likelihood or consequences of the event on themselves, their property, the local economy and the environment.

A number of agencies, including local authorities and local emergency services, are involved in surveillance, monitoring and assessment of hazards at local, regional and national levels. These agencies are responsible for alerting the public, partner emergency response organisations and local authorities to precursor indicators of a potential or actual emergency event. Some of these agencies are also responsible for issuing warnings under the National CDEM Plan.

When local hazards threaten local communities, the responsibility to generate and disseminate warning will rest with the respective local organisation.

Hazard Alerts/Warnings	Monitoring/Surveillance Agency
Tsunami	Group Controller in consultation with Local Controllers
River flood	Environment Canterbury, local councils, supported by the Group Emergency Management Office
Rural fire	~~Local rural fire service~~Fire and Emergency New Zealand
Hazardous substances	Fire and Emergency New Zealand ~~Fire Service~~ (and Community and Public Health)
Marine hazards (oil spill, storm surge, coastal erosion)	Environment Canterbury
Landslide	Local authorities
Infectious disease/public health hazards	Community and Public Health
Armed offenders, social unrest, terrorism	NZ Police
Road hazard	Respective road controlling authority (NZTA, territorial authority, NZ Police)
Bio-security hazard	Ministry of Primary Industries
Electricity outage	Respective electricity supply and lines companies
Water supply contamination/disruption	Local authorities and Community and Public Health
Building structural hazard	Territorial authority
Dam hazard	Dam operator (and Environment Canterbury)
Extreme weather	MetService (interpretation and promulgation within Canterbury by the CDEM Group Controller/Regional EMO)

Table 5.8 Warning and monitoring agencies

5.5.1 Events Requiring Significant Coordinated Response

Responsibility for the coordination of warnings for threats that are likely to result in a need for a significant coordinated response rests with the Canterbury CDEM Group Controller.

Examples of emergencies that will require coordination of warnings and ongoing public information management by the CDEM Group Controller include:

- tsunami

- larger-scale flood
- damaging earthquake
- widespread rural fire, and
- widespread serious snow or other extreme weather event.

5.5.2 National Warning System

The national warning system is detailed in section 19 of the Guide to the National CDEM Plan. The Ministry of Civil Defence & Emergency Management (MCDEM) and other organisations are responsible for issuing warnings (and where possible alerts for early notification of threats) of national significance. National warnings will be issued to the Group Emergency Management Office, and local authority CDEM and emergency response organisations.

5.5.3 CDEM Group Warning System

Canterbury CDEM Group members and partner agencies maintain a 24/7 capability to generate, receive and disseminate warnings to the community and partner organisations.

The Canterbury CDEM Group emergency notification system enables timely information about a hazard to be communicated within the Group. The warning levels have been developed to assist in identifying the level of response required for an actual or potential hazard. These levels have been designed for internal communication purposes only. The public will continue to be notified of an impending threat via the media and locally identified methods.

Canterbury CDEM Group Warning Levels

There are three levels of warning about actual or potential hazards:

- **Advisory** — No response required, information received from monitoring and surveillance agencies (eg Geological and Nuclear Sciences, MetService). The Group Emergency Management Office will coordinate the distribution of advisory warnings to relevant local authorities and response agencies.
- **Watch** — A preparatory phase recognising that although the warning is based on limited information there are indicators that an emergency is impending. Liaison with emergency services is initiated. Notification of this status is promulgated from the Group Emergency Management Office to:
  - Group and Local Controllers
  - territorial authority Emergency Management Officers
  - Canterbury emergency response agencies, and
  - MCDEM.
- **Warning** — Threat is imminent and key personnel are put on standby. Liaison with emergency services and response agencies is increased. Public information procedures are activated. Standby warnings will be issued to agencies with a potential involvement in the response and/or recovery.

6. RESPONSE

6.1 Introduction

This chapter of the Canterbury Civil Defence Emergency Management (CDEM) Group Plan outlines the arrangements to ensure that resources are managed as effectively as possibly in response to an emergency in Canterbury. Response is defined in the National CDEM Plan as the actions taken immediately before, during or directly after an emergency to save lives and property and to help communities recover.

The Canterbury CDEM Group members and partner agencies have a solid foundation of effective response, based on responding regularly to significant emergencies, and a history of sound cooperation between all agencies across the region. There is always opportunity to learn from responses here and elsewhere, and room for improvement in structures, processes and capabilities.

This Canterbury CDEM Group Plan uses the term Emergency Coordination Centre (ECC) for Group-level emergency coordination functions. This title helps to avoid confusion with local Emergency Operations Centres (EOCs) and provides a close fit with the coordinated incident management system (CIMS) response coordination function. Unless otherwise stated, these centres collectively are called emergency response centres.

6.2 Principles of Response

The key principles for response in the Canterbury CDEM Group are:

- Coordinated emergency management is locally delivered and centrally coordinated.
- The principles and processes of the CIMS are used to:
  - control and command emergencies, and
  - escalate the emergency response to the required level to manage it.
- Emergency response will be in accordance with national principles of response and modified response objectives (see **Figure 6.1)**.
- Robust decision making informs a timely response.

6.2.1 National Principles of Response

These principles of response are reproduced from the National CDEM Plan.

Part 8
Response

59 Principles

(1) Agencies should respond to an emergency by activating their own plans and co-ordinating with the lead agency.

(2) Within the constraints that the emergency creates, each agency, operating within its own jurisdiction, must co-ordinate with interdependent agencies to—

- (a) assess the impact of an event on its own staff, assets, and services; and
- (b) activate its own continuity and emergency arrangements; and
- (c) maintain or restore the services it provides; and
- (d) communicate with lead agencies, other responders, and the public; and
- (e) align response activities with other agencies to avoid gaps and duplications.

(3) In addition, the emergency services are expected to—

- (a) assess the effect of an event on the community; and
- (b) co-ordinate the local efforts of their agency; and
- (c) communicate assessments and actions with the appropriate lead agency.

(4) Emergency response objectives include—

- (a) preservation of life; and
- (b) prevention of escalation of the emergency; and
- (c) maintenance of law and order; and
- (d) care of sick, injured, and dependent people (first aid, medical, and evacuation facilities, and welfare); and
- (e) provision of essential services (lifeline utilities, food, shelter, public information, and media); and
- (f) preservation of governance (continuity of the machinery of government); and
- (g) asset protection, including buildings and historic heritage assets (including structures, areas, landscapes, archaeological sites, and waahi tapu); and
- (h) protection of natural and physical resources (to the extent reasonably possible in the circumstances); and
- (i) preservation of economic activity.

Figure 6.1 National principles of response

6.3 Health and Safety

During response the safety and health of people working in the field and in any emergency response facility must be considered. Council and agency health and safety policies should note health and safety requirements during response to emergencies. At all levels of response the CIMS requires a risk and/or safety function to be established and the importance of this is recognised.

6.4 Canterbury CDEM Group Response Priorities

The following response priorities for the Canterbury CDEM sector are underpinned by the need to provide for the health and safety of responders and to provide information to the community. The Group's response priorities are to:

- save lives
- prevent escalation of the emergency
- maintain law and order
- reduce suffering
- protect public health
- protect critical infrastructure
- protect property
- protect the environment, and
- reduce economic and social losses.

These priorities have been adapted from the national emergency response objectives for the Canterbury CDEM Group.

6.5 Issues and Objectives

6.5.1 Issues

- Human and physical resources need to be shared between local authorities and agencies.
- Agencies need to have confidence in all CDEM Controllers.
- CDEM needs to be responsive to the needs of the community during an event.
- Local coordination and liaison with emergency services and other stakeholders could be enhanced.
- There needs to be clarity over who from the emergency services should be represented in the Group ECC and the Christchurch EOC.
- There needs to be a collective understanding of the vulnerabilities of lifeline utilities within each local authority.

6.5.2 Objectives

In support of the National CDEM Strategy Goal Three (enhancing New Zealand's capability to manage civil defence emergencies), the Canterbury CDEM Group has established the following response objectives:

- Enhance the ability of the Canterbury CDEM Group to prepare for and manage civil defence emergencies.

- Enhance the ability of emergency services to prepare for and manage civil defence emergencies.
- Enhance the ability of lifeline utilities to prepare for and manage civil defence emergencies.

6.6 Proposed Response Actions

6.6.1 CDEM Group Response

The Canterbury CDEM Group has a responsibility to manage and coordinate the response to emergencies. This requires planning to ensure that organisations know their roles and responsibilities prior to and during the response.

Objective:
Enhance the ability of the Canterbury CDEM Group to prepare for and manage civil defence emergencies
Proposed Actions
▪ Enhance and further develop the emergency support team concept. ▪ Establish robust procedures for the appointment and training of Controllers and upkeep of their professional development. ▪ Structure the welfare response to identify and respond quickly to the needs of the community. ▪ Ensure public information in an emergency meets the community's needs.

Table 6.1 CDEM Group response

6.6.2 Emergency Services Response

The emergency services are key partner agencies in responding to emergencies. Working with the Canterbury CDEM Group, they prepare for the roles that they are nationally required to perform, taking into account regional and local needs.

Objective:
Enhance the ability of emergency services to prepare for and manage civil defence emergencies
Proposed Actions
▪ Establish the response planning group and local emergency services coordinating committees as a mechanism for local liaison. ▪ Review arrangements and procedures for multi-agency coordination of emergencies across the region.

Table 6.2 Emergency services response

6.6.3 Lifeline Response

Lifeline utilities provide essential services and infrastructure to all communities. In an emergency it is important to try to maintain these services to the best ability possible.

Objective:
Enhance the ability of lifeline utilities to prepare for and manage civil defence emergencies
Proposed Actions
▪ Develop a Canterbury CDEM Group overview of the vulnerabilities of lifelines.

Table 6.3 Lifeline response

6.7 Levels of Response

The Canterbury CDEM Group will follow the five levels of response as described in the Guide to the National CDEM Plan 2005. These levels are described below in **Table 6.4** and show the escalation of an incident into a local or national declared emergency.

Event Type	Event Status/Procedures	CDEM EOC/ECC Role	CDEM Controller's Role
Level 1 Single-agency incident with on-site coordination	No declaration The incident is dealt with using CIMS structures and processes. Nature of the incident will usually determine the lead agency.	Lead agency EOC or local EOCs may be alerted or be partially activated to support the lead agency.	Local Controller(s) and Group EMO notified if local EOC is likely to be involved.

Level 2 Multi-agency incident with on-site, local coordination at an incident control point (ICP). These are managed by the incident controller reporting to the relevant lead agency.	No declaration The incident is dealt with using CIMS and joint coordination through lead agency ICP or EOC. Nature of the incident will dictate the lead agency. CDEM welfare needs are the likely driver for CDEM involvement. Territorial authority may become a key support agency in terms of coordinating support/management functions designated on the day.	Lead agency EOC/communications centre/commanders communicate event and response information to local EOC if activated. Local EOC may be partially or fully activated in support of joint response and lead agency. Local EOC collects and analyses emergency and response information to assist with coordinating support and potential escalation to Level 3. Possibility of activating ECC in monitoring role.	Local Controller (or delegated staff (EMO)): ▪ coordinates local authority functions ▪ coordinates/delivers designated functions ▪ notifies and informs Group Controller ▪ informs MCDEM.
Level 3 A multi-agency emergency led by the CDEM Group, or a state of local emergency at district or ward level. At this level CDEM Group support and coordination may be required and the incident may be monitored by the National Controller.	Declaration of a state of local emergency is being considered, or has been deemed necessary involving a single territorial authority. Declaration can be for an entire district or one or more wards. Plan and manage transition from lead agency EOC coordination to local EOC coordination.	Local EOC fully activated and is coordinating response and management of the emergency. ECC and adjacent EOCs alerted or partially activated to monitor the situation and prepare to respond if the situation deteriorates. ECC collects and analyses emergency and response information to assist with joint coordination and potential escalation to Level 4.	Local Controller: ▪ coordinates local response ▪ notifies and informs Group Controller. Group Controller: ▪ supports local response ▪ informs MCDEM ▪ considers escalation ▪ notifies adjacent CDEM Groups.
Level 4 A multi-agency emergency with more significant consequences than in Level 3. Coordination may be required between agencies or areas or both. CDEM Group ECC-level support and coordination is required.	Declaration of a state of local emergency in the Canterbury region is being considered, or has been deemed necessary, that involves the entire Canterbury region, or one or more districts require external assistance, or adjacent or partner CDEM Groups require assistance.	ECC and affected local EOCs fully activated. National Crisis Management Centre (NCMC) and adjacent Group ECCs may be alerted or partially activated to monitor the situation and be ready to respond if the situation deteriorates.	Local Controller: ▪ coordinates local response ▪ responds to priorities set by Group Controller. Group Controller: ▪ sets Group priorities ▪ coordinates Canterbury CDEM Group response ▪ supports local responses. National Controller:

			▪ supports Group response ▪ considers escalation.
Level 5 A state of national emergency exists or the local emergency is of national significance. At this level, coordination by the National Controller will be required.	Declaration of state of national emergency is being considered, or has been deemed necessary.	NCMC, ECCs and affected local EOCs fully activated.	Local Controller: ▪ coordinates local response ▪ responds to priorities set by National and Group Controllers. Group Controller: ▪ coordinates Group-level response ▪ responds to priorities set by National Controller. National Controller: ▪ coordinates national-level response ▪ supports CDEM Group response.

Table 6.4 Event types and status

The important features of **Table 6.4** are:

- the relationship of the emergency services and other response agencies with Local, Group and National Controllers
- the levels of activity within local EOCs and the ECC for the different levels of an incident and emergency, and
- an overview of how an escalating incident would be handled, including the various steps and considerations involved in preparing to declare a state of emergency.

Many events that Canterbury communities are likely to face will be able to be adequately managed without the declaration of a state of emergency. These events will be handled locally under the management of the appropriate lead agencies.

6.7.1 Notification and Activation

Group members and partner agencies receive notification of emergencies through the national warning system which is maintained by the MCDEM. Within Canterbury, notification will be in accordance with the CDEM Group emergency notification system operating procedures. See the "Readiness" chapter for more detail.

Each emergency response centre will maintain its own method for notifying staff and partner agencies of emergencies and the process for activating the centre.

6.7.2 Declaration

Local state of emergency declarations can be made by any territorial authority in the Canterbury CDEM Group or by the CDEM Group itself. Territorial authorities can declare for their territorial area

down to a ward. A local territorial authority declaration is made by the mayor or other designated elected officials of that territorial authority.

A Canterbury CDEM Group declaration can be made for the entire region down to a ward within a territorial authority. A declaration for the CDEM Group is made by the chair or other elected members of the CDEM Group.

Where a declaration is across territorial authority boundaries or the emergency affects more than one territorial authority, the declaration should be made by the Canterbury CDEM Group.

National declarations can be made for all of the country or part of it and are made by the Minister of Civil Defence.

Once a declaration has been made, the Local Controller manages the emergency in the territorial authority area. A Local Controller must follow any direction given by the Group Controller.

More information on declarations can be found in the MCDEM publication *Declaration: Director's Guidelines for CDEM Sector* (DGL 05/06).

6.8 CDEM Emergency Response Structure

6.8.1 Structure and Roles

The ECC, local EOCs and agency EOCs provide facilities to manage and support the overall response to an emergency. The distinction between the ECC and local EOCs is that the ECC provides a regional level of response coordination, with a focus on prioritising and coordinating the use of scarce response resources and managing those gaps that cannot be filled by the local EOCs. One step removed from the actual management of local responses, the ECC will be able to take a broader and longer-term approach to response and recovery planning, with particular responsibility for setting response and initial recovery priorities.

The National Crisis Management Centre (NCMC) coordinates emergencies of national significance and supports CDEM groups in their response. The NCMC is operated by the MCDEM and ensures government departments are kept informed on emergency issues.

Incident control points are established to manage specific incidents within an emergency. Incident control points will generally report to agency EOCs or, if providing a local government function, to the local EOC.

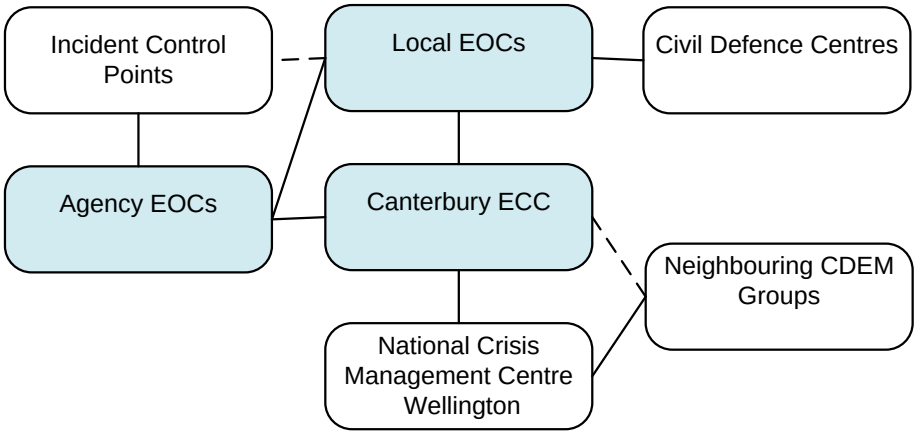

Figure 6.2 Canterbury emergency response structure
Solid lines represent formal reporting relationships between emergency response centres; dotted lines represent information sharing relationships with no formal line of reporting.

The generic roles of emergency response centres are to:

- arrange, coordinate and systematically manage logistics
- systematically monitor emergencies and escalate or de-escalate the response as required
- ensure local emergency response agencies are involved in the local response and emergency response agency representatives are available to, and supported by, the EOC and ECC
- ensure communications are in place with key response agencies
- arrange for community welfare and support facilities and services
- receive, assess and disseminate information for emergency response agencies
- coordinate, with partner organisations, the provision of information about the emergency and the response to the public and media
- communicate and coordinate with other emergency response centres and partner organisations
- coordinate the initiation of emergency recovery arrangements and maintain close communication with the Recovery Office once established, and
- coordinate the systematic planning, collection, analysis and communication of local impact assessment information.

6.8.2 CDEM Emergency Operations Centre

Each Canterbury territorial authority will maintain a primary EOC from which local emergency events will be coordinated and directed. Each territorial authority will also have arrangements in place to be able to relocate its EOC to an alternative site, either within the territorial authority area or nearby. These alternative sites may be "tiered" with regard to their size, resources and communication modes. EOCs shall be available to other agencies during emergencies covered by legislation other than the CDEM Act. Examples of such emergencies are oil spills and agricultural emergencies.

The EOC shall have sufficient suitably trained and experienced personnel to provide 24/7 coverage. Staff of the respective territorial authorities, augmented by members of partner organisations and

CDEM volunteers, shall provide the core of these personnel.

In addition to the generic emergency response centre roles above, each EOC is to:

- coordinate the response of local emergency response agencies within the area the EOC covers
- communicate regularly with the Group Controller and ECC, and
- develop and share with the ECC and partner agencies:
    - consolidated action plans outlining the entire response within the area being managed or supported by the EOC, and
    - status and situation reports.

A model EOC structure is provided in **Figure 6.3**. The model is intended to represent key relationships and functions, rather than the definitive structure of local EOCs because these may differ from **Figure 6.3** to meet local organisational and response needs.

Standard operating procedures (SOPs) will be developed or updated and maintained for all EOCs, in close consultation with local emergency response partners. This will provide for the integration of senior staff and the effective and timely sharing of information between organisations.

Local EOC SOPs are to be consistent with agreed Canterbury CDEM Group operating procedures.

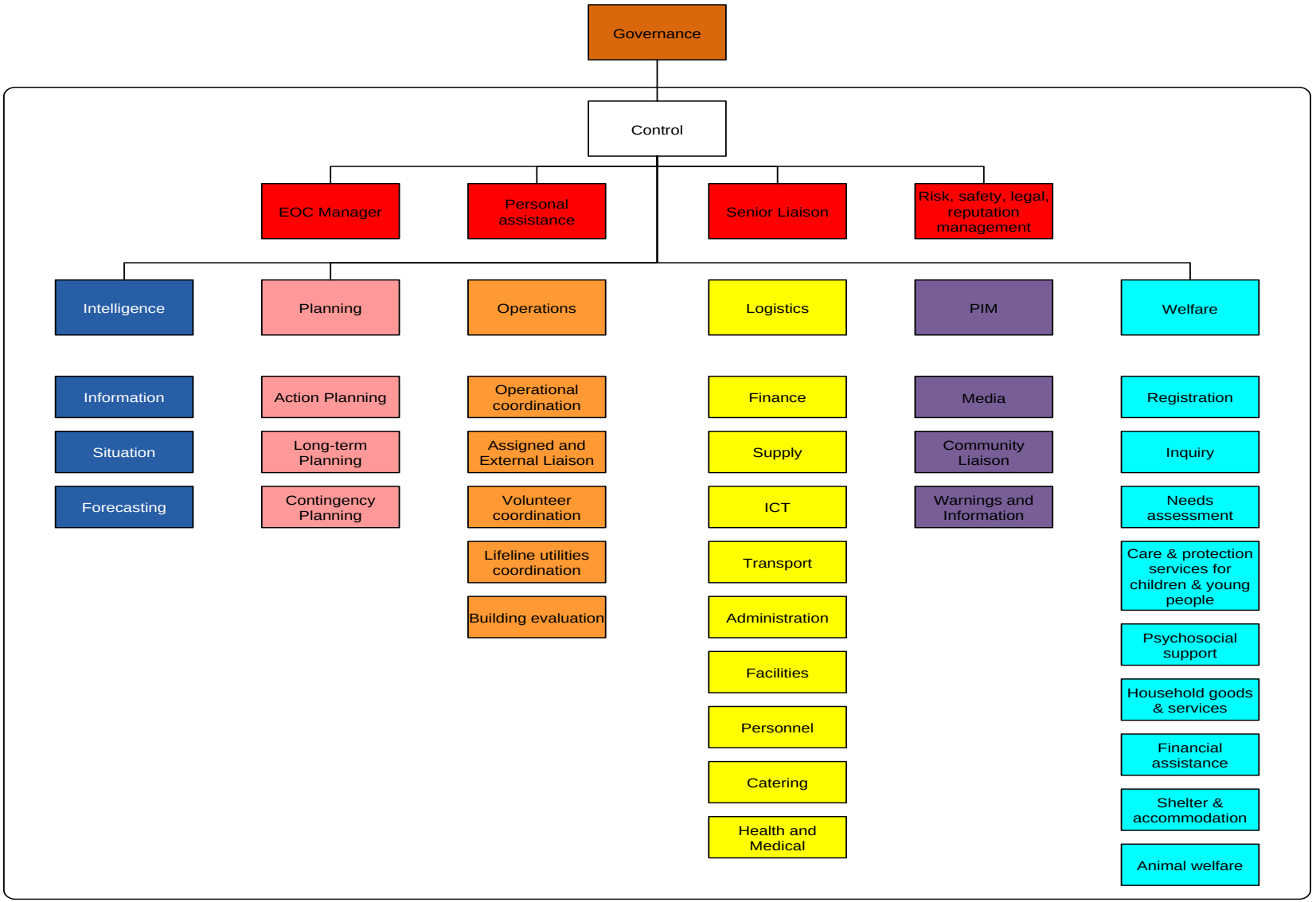

Figure 6.3 Local Emergency Operations Centre structure

6.8.3 CDEM Emergency Coordination Centre

The current primary Canterbury CDEM ECC location is provided to the Canterbury CDEM Group by Environment Canterbury.

The role of the ECC is to:

- coordinate and/or support activated local EOCs
- provide, where possible, logistical support when requested by a local EOC or agencies responding at a regional level
- ensure major emergency response agencies are involved in the Canterbury CDEM Group response, that the major support agencies have representatives or liaison officers available in the ECC and that regional-level decision makers are involved and integrated into response planning and delivery
- receive, assess and disseminate information about lifeline utility services through a Lifeline Coordinator within the ECC
- report to and act as a conduit for information to and from central government and the National Controller via the NCMC
- coordinate and manage international assistance assigned to the region during an emergency, and
- develop and share with the NCMC, partner agencies and local EOCs:
    - consolidated action plans outlining the entire response within the area being managed or supported by the ECC, and
    - status and situation reports.

Although the ECC does not generally include direct operational command elements, it does require the involvement of and regular communication with regional-level managers of organisations involved in or supporting emergency responses. This will also require emergency response organisations to identify the regional and local management personnel and elements that will be involved in the ECC and local EOCs, respectively.

The Canterbury CDEM Group Emergency Management Office will maintain a self-sufficient, mobile capability to activate an alternative ECC at a suitable location in the Christchurch area. This may be in conjunction with Environment Canterbury, Christchurch City Council or partner agencies. An ECC may be activated elsewhere in the region in support of local responses as and when the Group Controller determines such a need exists.

Emergency Coordination Centre SOPs are developed and maintained for the ECC in close consultation with Canterbury CDEM emergency response partners. This provides for the integration of senior staff and the effective and timely sharing of information between organisations. These SOPs will form part of the Canterbury CDEM Group arrangements.

The ECC shall have sufficient suitably trained and experienced personnel to provide for 24/7 coverage. Environment Canterbury staff, augmented by members of partner organisations and CDEM volunteers, shall provide the core of these personnel.

The ECC shall be available to other agencies during emergencies covered by legislation other than the CDEM Act. Examples of such emergencies are oil spills, major rural fire events and agricultural

emergencies.

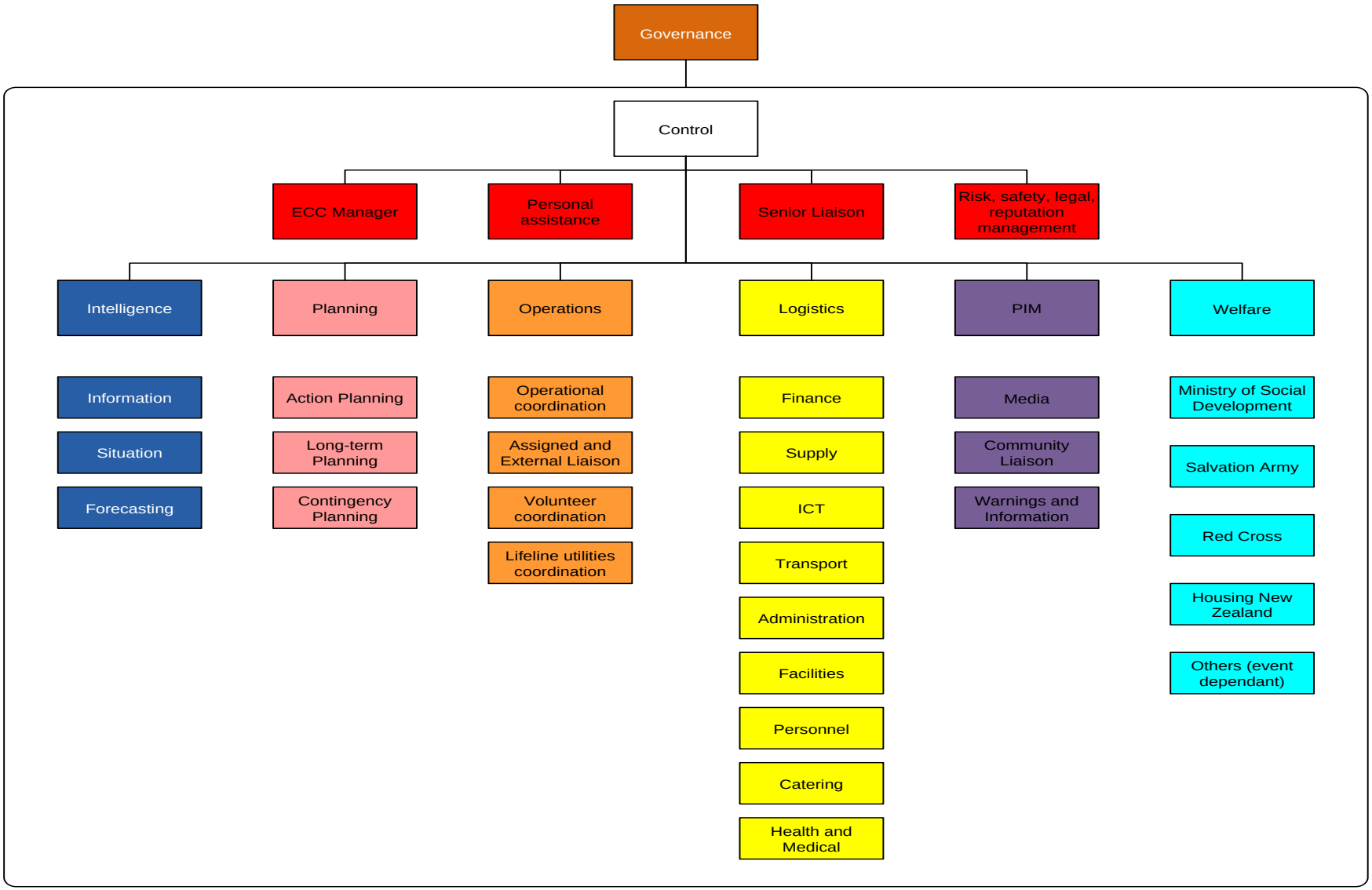

Figure 6.4 Emergency Coordination Centre structure

6.8.4 Agency Emergency Operations Centres

Emergency services and partner agencies will have their own locations from which to manage their response to emergencies. These will meet the needs of the agency but in general will follow the CIMS model for their structure and have similar features to an ECC or EOC as described above.

6.9 Features of Emergency Response Centres

All emergency response centres need to be able to operate when impacted by the range of major hazards (particularly earthquake and flooding) relevant to the community in which they are located. This means that the building needs to be resilient to the hazards[5], be able to support emergency response centre functional activities and provide facilities for the personnel working in the centre.

Emergency Communication Systems

Landline, mobile phone and internet will be the primary means of communication in an emergency in the Canterbury CDEM region. Group members also maintain a VHF radio network and have a BGAN (broadband global area network) satellite communication system. There are various other satellite phone systems used by some Canterbury CDEM Group members and partner agencies.

Canterbury CDEM Group members and partner agencies will maintain current contact lists to aid in communication with each other during an emergency.

6.10 ECC/EOC Staff Roles and Responsibilities

6.10.1 Controllers

CDEM Group Controller

During a state of emergency the Group Controller must direct and coordinate resources for the whole or part of the Canterbury CDEM Group region.

Other key functions of the Group Controller include:

- leading the Canterbury CDEM Group response and transition to recovery
- acting as an advisor to Local Controllers during emergencies and, in accordance with section 27(2) of the CDEM Act, providing direction to Local Controllers when necessary
- acting as a mentor for Local Controllers
- developing and maintaining effective relationships with Canterbury CDEM Group partner organisations, and
- participating in the development, delivery and maintenance of effective CDEM response structures and systems.

[5] Purpose-built emergency response centres should, in the future, be built to Importance Level Four (IL4) as described in AS/NZS 1170 0 2002: Structural design action, Part O: General Principles.

The Group Controller shall ensure that Local Controllers are regularly informed of developments leading up to a potential or actual state of emergency. During a state of emergency the Group Controller shall ensure that requests for assistance from Local Controllers are responded to in a timely and effective manner.

Local Controllers

During a state of emergency Local Controllers must direct and coordinate resources for the area they are appointed to. The Local Controller must follow any directions given by the Group Controller during an emergency (CDEM Act, section 27).

Other Local Controller functions include:

- leading the local CDEM response and transition to recovery
- acting on behalf of and as an advisor to the Group Controller, and
- participating in the development, delivery and maintenance of effective CDEM response structures and systems.

Local Controllers shall ensure that the Group Controller is informed of developments in a timely manner leading up to a potential or actual emergency and during an emergency.

6.10.2 Welfare Management

This section outlines the welfare response in an emergency. The Canterbury CDEM Group Welfare Plan explains how welfare will be provided and managed during an emergency. The Welfare Plan will be updated during the term of this Canterbury CDEM Group Plan.

Emergency Welfare Functions

During an emergency a range of welfare services may be required. Such services include the provision of food, shelter, essential items (eg clothing and toiletries), psychosocial and financial support. Care of companion animals is considered a part of the welfare response.

Further details on these services, including who is responsible for their delivery, are included in the Canterbury CDEM Group Welfare Plan and local welfare plans.

Delivery of Welfare Services

There are a number of ways welfare can be delivered to the community. The most appropriate mechanism will be determined by the community's needs and the context of the emergency, including whether or not evacuations are necessary.

Delivery methods can include the provision of services in one place, such as a welfare centre, where all relevant agencies co-locate, or through linking in with spontaneously set up community centres. Welfare services can also be delivered to people sheltering in place or in a business-as-usual manner through call centres or offices.

Civil Defence Centres

Civil defence centres are identified in local welfare plans and are assessed for suitability (structural and health and safety) before being designated in the plan. After an emergency, council engineers and public health services help facilitate the opening of a welfare centre to ensure the building is safe for people to occupy.

Local Welfare Managers

Each territorial authority will have an appointed Local Welfare Manager. Local Welfare Managers are responsible for managing the welfare section in the EOC and coordinating the delivery of welfare services to the community. This may include managing CDEM volunteers working in welfare centres.

Group Welfare Coordinator

The Canterbury CDEM Group will appoint a Group Welfare Coordinator. During an emergency the Group Welfare Coordinator is responsible for managing the welfare section of the ECC, coordinating with the Welfare Coordination Group and supporting Local Welfare Managers to deliver welfare to affected people.

Local Welfare Management Committee

The Local Welfare Management Committee is convened by the Local Welfare Manager in an emergency to facilitate information sharing between the agencies that deliver welfare to an affected community. The Local Welfare Management Committee acts under the direction of the Local Controller.

Welfare Coordination Group

The Canterbury Welfare Coordination Group (WCG) during an emergency provides regional-level overview and direction for the welfare response. Its role is to identify and address potential welfare impacts for affected areas in the region.

The role of the WCG chair and deputy chair is described in the Canterbury CDEM Group Welfare Plan.

6.10.3 Public Information Management

Public information management (PIM) provides the public with timely and accurate information about the emergency and how to respond to it through various forms of media.

In coordination with the welfare function, PIM may have a role in emergency community engagement.

Public Information Manager

The Canterbury CDEM Group and each local authority shall appoint a CDEM Public Information Manager and other people who can perform this role in the absence of the appointee. Public Information Managers are responsible for developing and managing the PIM function within their ECC or EOC.

Public Information in an Emergency

Public information in an emergency should focus on public safety, public health and other relevant information. It should include clear guidance on the actions individuals and communities should take to ensure this. When public information is provided, the special needs of vulnerable communities must be given due consideration.

Due to the nature of an emergency it will be necessary to use multiple forms of communication. These include, but are not limited to:

- television
- radio
- websites
- social media
- print media
- community briefings
- community notice boards, and
- community newsletters, brochures and posters.

A critical role of PIM is to monitor these various communication channels for accuracy, rumour control and as a source of intelligence. This needs to be linked to the planning/intelligence function in the emergency response centre.

Further information on the individual roles within the PIM function and guidance on working with the media in an emergency can be found in the ECC and EOC operating procedures.

6.10.4 Volunteer Management

There are two forms of volunteering in an emergency:

- CDEM-trained volunteers — those who are affiliated with an organisation and identified by the Canterbury CDEM Group before an emergency, and
- spontaneous volunteers — those who come from the general public or community groups offering to help.

CDEM-trained volunteers will be managed through standing operational arrangements with the organisation with which the volunteers are affiliated. Each emergency response centre (EOC and ECC) needs to address how it will manage spontaneous volunteers. This will be documented in the emergency response centre operating procedures.

The health and safety of volunteers needs to comply with legislation and organisational requirements.

The MCDEM *Volunteer Coordination in CDEM: Director's Guideline for Civil Defence Emergency Management Groups* (DGL15/13) provides further information on volunteers.

6.10.5 Lifeline Utilities

Lifeline utilities are organisations that provide essential infrastructure services to the community (eg water, wastewater, transport, energy and telecommunications). Lifeline utilities are required by section 60 of the CDEM Act to continue to provide their services to the fullest possible extent during and following emergency events. In order to contribute towards this goal, lifeline utilities develop and maintain response arrangements. Nominated lifeline utilities are described in Annex C.

Emergency Lifeline Utilities Coordination

The role of the Regional Lifeline Coordinator will be activated in the ECC when disruption to lifeline utilities occurs:

- in multiple territorial authorities
- across multiple lifeline utilities, or
- when significant community impacts are expected.

A declared state of emergency is not required for activation of lifeline utilities coordination.

The Regional Lifeline Coordinator is a member of the operations section of the ECC and reports to the Operations Manager, Group Controller and National Lifeline Coordinator as appropriate.

The role of the Lifeline Coordinator is to:

- collate disruption information from each lifeline utility and assess impacts on other utilities and the community

- report the above information upwards to the ECC and the National Lifeline Coordinator in a regional lifelines situation report
- provide a single point of contact at regional level for lifeline matters for advice regarding response issues and regional prioritisation
- communicate the regional lifeline situation to all lifeline utilities in the region to allow them to manage effects locally, particularly those relating to the escalating effects of cascade failures (eg impacts of power failure on the supply of fuel across the region), and
- coordinate requests for resources from lifeline utilities to the ECC and provide assistance with inter-organisation requests as required.

Other emergency response centres may also need to consider appointing a Lifeline Coordinator who would perform a role similar to the Regional Lifeline Coordinator but at the local level.

6.10.6 Building Management

Territorial authorities are required to prepare for and manage effectively a process of structural safety evaluations of damaged buildings. The evaluations focus on the rapid assessment of buildings to be carried out during the period of a declared state of emergency following a major earthquake or other disaster which affects a significant number of building structures.

Territorial authorities have the responsibility of coordinating building inspections to provide for public safety. A range of professional groups are needed to assist in this operation, including structural and civil engineers, building control officials, architects and building contractors.

Heritage New Zealand Pouhere Taonga (formerly the New Zealand Historic Places Trust) and other similar organisations can provide assistance during post-disaster building inspection processes to help identify buildings of historical significance. These organisations will be able to provide lists of registered historical buildings.

6.10.7 Rescue

In a major emergency affecting the Canterbury CDEM Group region, it can be expected that a large number of buildings will be damaged, resulting in people being injured or trapped. There may be other circumstances where rescue capability is required. The emergency services will provide this capability and will be supported by other organisations including volunteer response teams.

Role and Aim of the Rescue Function

The aim of the rescue function is to save the greatest number of lives in the shortest possible time, and to minimise further injury and distress to people and damage to property.

The role of the rescue function is to coordinate and conduct lifesaving and removal-from-harm activities. A key rescue role is responding to a structural collapse where the Fire and Emergency New Zealand ~~Fire Service~~ (~~NZFS~~FENZ), including Urban Search and Rescue (USAR), will provide the primary response.

Other rescue activities that occur in Canterbury include, but are not limited to, response to land, sea, air and flood incidents.

Organisation

The ECC coordinates and supports rescue activities within its operations section. Each local EOC needs to manage rescue activities in its territorial authority area in conjunction with the various rescue agencies. The EOC may appoint a rescue manager in its operations section.

In most circumstances rescue activities in the field will be managed by one of the emergency services. **Table 6.6** gives guidance to lead and supporting rescue agencies. However, in the initial stages of an emergency, individual agencies with rescue resources may immediately react to rescue needs while rescue command and control is established.

Rescue Agencies and Teams

There are three primary emergency rescue agencies in Canterbury and others that support or provide a niche rescue capability:

- Fire and Emergency New Zealand ~~Fire Service~~ (including USAR)
- New Zealand Police, and
- New Zealand Registered Response Teams (NZRTs).

Fire and Emergency New Zealand ~~Fire Service~~ and Urban Search and Rescue

The FENZ~~FS~~ will provide an immediate response to rescue tasks and will often be the lead agency for rescue activities. The rescue capability of operational FENZ~~FS~~ resources varies, based on hazards across the region, but generally includes basic ropes and stretcher rescue techniques and reconnaissance.

Urban Search and Rescue has a national heavy-rescue capability consisting of technicians, medics, engineers and search dogs. There is one national USAR task force, with teams based in Auckland (Northern), Palmerston North (Central) and Christchurch (Southern).

It can be expected that the southern team will provide the initial response to the Canterbury region, with support from the other teams when required.

New Zealand Police

The New Zealand Police are responsible for the day-to-day coordination of search and rescue activities. These operations are generally for a limited number of known missing people in a range of environments and normally fall outside the scope of CDEM.

During a CDEM emergency, the Police will be involved in responding to rescue situations, often working with the FENZ~~FS~~ and other agencies. In all situations the Police have responsibility where people have died.

New Zealand Registered Response Teams

The NZRTs are for the most part volunteer teams consisting of up to 30 members. These teams are trained to a minimum national standard and have minimum levels of equipment to meet the requirements of the MCDEM *Guidance for Establishing and Operating New Zealand Response Teams (NZ-RTs): Director's Guidelines for the CDEM Sector* (DGL12/12). The teams are locally based but registered by the Canterbury CDEM Group. The NZRTs will generally be used for reconnaissance, primary search and removal of surface casualties, in support of other agencies, mainly the FENZ~~FS~~. Some NZRTs have undertaken specialist training for specific rescue environments.

There are currently five registered NZRTs in Canterbury with a further team intending to be registered.

RT	Owner
NZ RT 1	Canterbury CDEM Group
NZ RT 10	Christchurch City Council
NZ RT 11	Christchurch City Council
NZ RT 14	Christchurch City Council
NZ RT 12	Waimakariri District Council
In formation	Timaru District Council

Table 6.5 New Zealand Registered Response Teams (NZRTs)

Other teams and organisations that can support rescue or provide a niche rescue capability include, but are not limited to, the following:

- New Zealand Red Cross Response Team
- Coastguard New Zealand
- Surf Life Saving New Zealand
- New Zealand Defence Force
- Christchurch International Airport Crash Fire Team
- Maritime Safety Authority
- New Zealand Land Search and Rescue (LandSAR)
- Alpine Cliff Rescue Teams, and
- Business rescue/response teams (eg Fonterra).

6.10.8 Control of Emergency Resources (Logistics)

In most emergencies (declared or otherwise), requests for resources or assistance will probably exceed those that are available in the local authority and/or the CDEM Group region. Accordingly ECC and EOC staff will need to carefully allocate and monitor resources against requests received.

The most effective way of coordinating resources (human and materials) and assistance is to centralise all resourcing requirements that are not able to be met immediately by any of the responding agencies. This includes centralised procurement that will track costs and then allocate these to the appropriate agency.

Where an agency or organisation requires resources or assistance that they do not immediately have, they will approach their local EOC to procure the resource for them. If that EOC is unable to provide the resource locally, it will escalate the resource procurement to the ECC (and the ECC to the NCMC as required). Note that international resources will be coordinated through the NCMC.

Critical resources are resources that are in short supply and/or deemed critical to the response. Examples of critical resources could include fuel and helicopters. The Group Controller, working with Local Controllers, can declare resources as critical. Once a particular resource is declared critical its allocation is the prerogative of the Group Controller.

6.11 Agency Roles

The CDEM responsibilities of emergency services, government departments and other response organisations are outlined in the CDEM Act, the Guide to the National CDEM Plan and their own governing legislation.

All emergency services and a number of government departments and response organisations are represented on the Canterbury CDEM Coordinating Executive Group (CEG) and virtually all are represented in one or several of the coordinating sub-committees of the CEG.

Within the Canterbury context this requires identified organisations to work within the coordination of the CDEM Group to ensure they are able to:

- contribute to comprehensive emergency management in Canterbury
- continue to provide their services as best as reasonably possible during emergencies
- respond in a coordinated manner at site, local and regional levels, as the needs of the event demand, during all emergencies, whether or not a declared state of emergency exists, and
- act within the coordination and direction of respective Group and Local Controllers during a declared state of emergency.

When a state of emergency is declared, the Group and Local Controllers have the responsibility of tasking agencies to complete key emergency response functions. Implementing the task is often a collaborative effort. However, for some specific response functions, principle response agencies have been identified to lead the implementation of the task. **Table 6.6** shows the principal and support agencies for specific response functions.

The lead agency for different parts of the response may change, either by existing mandate or by the direction of the Controller. For this reason **Table 6.6** is indicative only. Additional supporting agencies, not listed in **Table 6.6**, may be assigned to the lead agency to meet the needs of the specific emergency.

Response Issues/Function	Principal Response Agency	Primary Support Agencies
Medical Treatment	District health boards (DHBs)	Local GPs, primary health organisations, St John
Public Health	Community and Public Health	DHBs
Rescue		
Sea rescue	Police or Rescue Coordination Centre depending on location and assets required	Environment Canterbury, Harbourmaster, Maritime Safety Authority, Coastguard NZ, Fire and Emergency New Zealand ~~Fire Service~~, Police, Health
Flood/water rescue	Police	Fire and Emergency New Zealand ~~Fire Service~~, response teams, Land Search and Rescue (LandSAR)
Land rescue	Police	Volunteer groups (eg LandSAR)
Structural collapse rescue	Fire and Emergency New Zealand ~~Fire Service~~	USAR task force, local response teams, Police, territorial authority engineers
Evacuation		
People	CDEM Group (declared)	Police (declared)
Animal welfare	Territorial authority (companion animals), Ministry of Primary Industries (farmed/commercial animals)	SPCA
Community Welfare	CDEM sector has welfare coordinating responsibility in an emergency	
Registration of people	Local authorities	Red Cross, Health, Ministry of Social Development (MSD)
Inquiry	Police	Red Cross, local authorities
Temporary shelter	Territorial authority	Volunteer organisations, Housing New Zealand, Community and Public Health
Psychosocial support	DHBs	MSD, Red Cross, Victim Support
Emergency food	Local authority	Community and Public Health, volunteer organisations
Emergency clothing	Red Cross (charter in National CDEM Plan)	Work and Income, volunteer organisations
Financial support	Work and Income	Other financial services
Information Management *Including inter-agency communications, public information management*	CDEM sector has information management coordinating responsibility in an emergency (Level 3 and above)	
Lifeline Coordination	CDEM sector has information management coordinating responsibility in an emergency (Level 3 and above).	
Utility services	Lifeline Coordinator/local authority	Utility operators
Transportation/access	Police	Road-controlling authorities (territorial authority and NZTA)
Lifeline Infrastructure Provision		
Transport networks	Network authorities (including territorial authority)	Contractors, consultants
Utility services	Utility operators (including territorial authority)	Contractors, consultants, territorial authorities
Buildings and Structure		

Re-occupancy	Territorial authority	Community and Public Health, relevant consultants, Department of Labour
Building safety evaluations	Territorial authority	Relevant consultants, Department of Labour
Evaluation of Historic Buildings	Territorial authority	Heritage New Zealand Pouhere Taonga
Natural Environment	Environment Canterbury	Community and Public Health, local councils
Mass Fatalities		
Disaster victim identification	Police	DHBs
Personal effects reconciliation	Police	–
Mortuary services	Coroner	DHBs
Notification of dead	Police	–
Immediate counselling and support	Victim Support	Child Youth and Family, volunteer groups, commercial agencies
Reconciliation (of people)	Police	Red Cross
Animal Disease	Ministry of Primary Industries	SPCA, vet practices

Table 6.6 Specific response issues and functions

6.12 Transition from Response to Recovery

The transition from response to recovery is a complex process requiring careful management. It is essential that the Recovery Manager become involved early in the response phase as this allows the Recovery Manager to become familiar with the situation, work closely with the Controller, and make the necessary preparations to execute a seamless transfer from the response to the recovery phase of the emergency. The Recovery Manager will need to establish the recovery structure, engage staff and external agencies to lead the recovery work streams.

During this time, the Controller continues to exercise the statutory power to direct and co-ordinate the response. The Recovery Manager, which is also a statutory appointment, can make significant preparation for recovery including preparation for a "Transition Notice", if one is required.

The transition from response to recovery is effected by the cessation of the response phase, either through the declaration of emergency being terminated or with the approval of the Minister if no declaration has been made.

The Controller and the Recovery Manager will execute a formal acknowledgement of the transfer of control and accountability by:

- The Controller preparing a response transition report for the Recovery Manager
- The Controller arranging a transition briefing for the Recovery Office
- The Controller will inform the Canterbury CDEM Group of the transfer of control and accountability to the Recovery Manager
- The Canterbury CDEM Group, through its designated person, giving notice of a local transition period for the recovery phase (if one is required)
- The Canterbury CDEM Group, through its designated person, formally terminating the state of emergency (if one has been declared)
- A transition period should, as soon as practicable, be notified to the public by publishing the notice in 1 or more newspapers in the areas, districts or wards, and on an internet site to which the public has free access
- The transition notice must be published in the Gazette as soon as practicable

6.12.1 Response Transition Report

Prior to the termination of the civil defence emergency (or the end of the response if a CDEM declaration has not been made), the Controller will prepare a response transition report for the Recovery Manager, outlining:

- a summary of the type and extent of damage in the affected area at the time of transition, noting specifically any areas or situations with the potential for a re-escalation to a declared state of emergency, and
- a summary of the significant actions, commitments and issues and identifying who should be responsible (e.g. back to BAU, Recovery Manager) under the following headings:
    - social environment
    - economic environment
    - natural environment, and
    - built environment
- key relationships and contacts
- summary of incurred and planned response expenditure

6.12.2 Transition Briefing

A briefing should be planned to discuss the response transition report to ensure continuity for the Recovery Office. The briefing will be chaired by the Controller; and key managers will report on their CIMS functions.

At the end of the briefing, the Controller formally transfers coordination and accountability for recovery-related activities to the Recovery Manager.

The response transition report, along with information gained from the transition briefing should form the basis of the initial recovery plan.

6.12.3 Monitoring and Debrief

There should be an organisational and agency debrief at the conclusion of any event for which there has been an activation of the ECC or EOC. Debriefs allow for those participating in or liaising with the ECC or EOC to evaluate the response and provide opportunities for improvement which can be incorporated into future planning. A copy of the debrief findings should be communicated to all relevant parties.

An important part of the debriefing process is ensuring the welfare of staff, particularly for a large or ongoing event. It is essential this is completed soon after the event and at intervals throughout the recovery. The MCDEM guidelines on organisational debriefing (*Organisational Debriefing: Information for the CDEM Sector* (IS6/06)) provide guidance on this subject.

7. RECOVERY

7.1 Introduction

This chapter outlines the principles and mechanisms for strategic recovery planning. The Canterbury CDEM Group Recovery Plan contains more detailed arrangements for Canterbury.

Recovery means the coordinated efforts and processes used to bring about the immediate, medium and long-term holistic regeneration and enhancement of a community following an emergency (CDEM Act 2002).

Recovery extends beyond restoring physical assets or providing welfare services; it is a complex social process which requires local leadership and a coordinated effort to regenerate and enhance the community in the short, medium and long term.

Community involvement is an important aspect of recovery. Community involvement provides a framework for re-establishing the economic, social, emotional and physical well-being of the affected population.

Recovery should:

- support the cultural, emotional and physical well-being of individuals and communities
- minimise the escalation of the consequences of the emergency
- take opportunities to regenerate and enhance communities in ways that will meet future needs (across the social, economic, natural and built environments)
- reduce future exposure to hazards and their associated risks

Local authorities have legislative obligations to safeguard community well-being before, during and after an emergency.

For a large-scale emergency where central government is funding the recovery, or a part of the recovery effort, central government may establish a National Recovery office.

7.2 Strategic Planning for Recovery

The CDEM Amendment Act 2016 strengthened the need to plan for recovery to ensure that measures are in place to minimise the consequences of emergencies on communities and help communities' recover more efficiently and effectively from emergencies.

Strategic planning for recovery aims to ensure:

- A comprehensive understanding of the consequences for communities from specific hazards and risks, and opportunities to reduce risk and strengthen resilience
- Communities are engaged and prepared to adapt, and decision-makers understand what is important to communities
- Local authorities engage business, iwi and community leaders to allow a two-way exchange of information about the risks, and encourage leaders to actively demonstrate leadership in the management of risk and community preparedness
- Recovery outcomes, and a community recovery vision, are defined for the immediate, medium and long-term
- Risks are managed through reduction, readiness, response and recovery measures
- Local, regional and national capability to prepare for and manage recovery is readily available, with a clear understanding of roles and responsibilities

- Collaborative relationships and processes are established, managed and maintained at local, regional and national levels
- Performance frameworks are developed to monitor and evaluate the progress and effectiveness of recovery preparedness and the management of recovery, and the implementation of prompt improvement action plan

7.3 Recovery Principles

The key principles for recovery for the Canterbury CDEM Group are:

- Recovery requires effective and ongoing communication and engagement with communities, which recognises their diverse needs
- Pre-event strategic planning for recovery is a critical component of a successful recovery operation
- Response and recovery activities must be integrated and aligned
- Recovery planning for emergencies needs to start as soon as possible after the response is underway and continues until the recovery objectives have been met
- Effective recovery recognises, supports and builds on individual, community, and organisational knowledge, understanding, capacity and capability
- Recovery involves collaboration with local Iwi to build resilience and ensure the protection for waahi tapu (sacred area), nga taonga tuku iho (treasures of the ancestors) and kaitiakitanga (guardianship) of the environment in the recovery phase
- Recovery is a collective effort and requires joint collaborative planning between the community, local and central government, the commercial and not-for-profit sectors
-
- Opportunities to reduce the risks and consequences of future events should be taken following an emergency.

These principles apply to all of the recovery environments — social, economic, built and natural.

7.4 Recovery Priorities

Priorities in the recovery phase are:

- **Safety and well-being of individuals** - people's psychological, emotional and physical health and well-being in the months and years after the event
- **Social environment recovery** — Restoration and enhancement of the community's material and social needs, including housing and education, together with social and cultural capital, community space, community well-being and resilience.
- **Economic environment recovery** — Macro- and micro-economic policies to support economic viability as well as providing guidance and support to business owners and their staff.
- **Natural environment recovery** — Restoration and enhancement of the natural environment, including strategies to remove or reduce the risk of future damage.
- **Built environment recovery** — Repair of critical infrastructure, buildings (including historic buildings), road access and lifeline utilities.
- **Recovery of people working in the recovery** — Responding agencies should put in place mechanisms to ensure that the mental health of their response/recovery staff is looked after.

- **Linking recovery to risk reduction** Recovery must be based on long-term strategies adopting mitigation measures that prevent or reduce the likelihood and consequences of future emergencies.

7.5 Issues and Objectives

7.5.1 Issues

- We do not have sufficient understanding of the community values, priorities and desired outcomes for recovery across the Canterbury region
- Our engagement with our community is primarily response focused, and is insufficient regarding recovery
- Canterbury communities do not fully understand the likely consequences from specific hazards and risks
- We have gaps in capability and capacity to prepare for recovery and support the community after an emergency
- We need stronger relationships and agreed recovery protocols with iwi, cross-council teams, the private sector and key community leaders
- We do not have a current recovery plan to support effective community recovery
- We have a region wide issue with sustainable pre-event recovery resourcing
- There are gaps in understanding recovery roles and responsibilities at the local, regional and national level

7.5.2 Objectives

In support of the National CDEM Strategy Goal Four (enhancing New Zealand's capability to recover from civil defence emergencies), the Canterbury CDEM Group has established the following recovery objectives:

- Engage our community to understand their likely recovery needs and priorities
- Enhance the ability of the Canterbury CDEM Group to prepare for and manage recovery
- Better understand the likely consequences from identified hazards and risks in the Canterbury CDEM Group area
- Monitor and evaluate the effectiveness of the Canterbury CDEM Group recovery work programme

7.6 Proposed Recovery Actions

To ensure these objectives are achieved, the Canterbury CDEM Group has prioritised the following actions to be completed by the end of 2019 at which time the Canterbury CDEM Group Plan will be updated and recovery actions and priorities will be reviewed and updated.

7.6.1 Group Plan Objective – Community engagement
Objective: Engage our community to understand their likely recovery needs and priorities

Proposed Actions:

- Territorial Authorities will work collaboratively to build and maintain an understanding of the needs and priorities of Canterbury communities to inform preparedness for recovery
- Territorial Authorities will identify and engage leaders across local government, the private sector, iwi and within communities in recovery discussions to strengthen preparedness for recovery

7.6.2 Group Plan Objective – Recovery management
Objective: Enhance the ability of the Canterbury CDEM Group to prepare for and manage recovery

Proposed Actions:

- Collate lessons learned from recent emergencies across the Canterbury CDEM Group area and implement improvements to strengthen recovery preparedness
- Establish a Recovery Co-ordination Group to lead recovery preparedness and planning in the Canterbury CDEM Group area
- Develop relationships and recovery protocols with key recovery stakeholders
- Update the Canterbury CDEM Group recovery plan and work programme to provide direction to the Canterbury CDEM Group
- Appoint and train Recovery Managers and alternates to ensure there is effective leadership at the regional and local levels
- Identify a sustainable model for preparing for and delivering recovery in the region
- Hold a recovery forum annually to build capability for recovery

7.6.3 Group Plan Objective – Recovery and risk
Objective: Better understand the likely consequences from identified hazards and risks in the Canterbury CDEM Group area

Proposed Actions:

- Align strategic recovery planning to the Canterbury regional approach to risk programme (see objective 4.5.3 – Risk Management)
- Work with the Canterbury Lifelines Group to obtain a better indication of the various lifelines impacts and recovery implications for Canterbury
- Work with the Welfare Coordination Group to obtain a better indication of the various social impacts and the recovery implications for Canterbury
- Expand the risk profile section of the Canterbury CDEM Group Plan to better understand consequences of our hazards and risks

All councils in Canterbury have established a joint approach to risk reduction called the "Canterbury Approach to Natural Hazards Management". This operates on four key areas:

1. Roles and responsibilities in natural hazard risk reduction
2. Collaboration around planning for managing natural hazards
3. Communication with the public and each other on natural hazards management
4. Coordinating research and making it accessible to the public and each other

7.6.4 Group Plan Objective – Measuring recovery effectiveness
Objective: Monitor and evaluate the effectiveness of the Canterbury CDEM Group recovery work programme

Actions:

- Develop a recovery outcomes framework to monitor the Group's recovery plan and work programme to track progress towards recovery objectives

7.7 Canterbury CDEM Group Recovery Plan

The Canterbury CDEM Group recovery plan will address Canterbury's recovery arrangements in further detail. The CDEM Group recovery plan sets the direction for recovery for the region. From this plan, a work plan for recovery should be developed and incorporate the Group's understanding and knowledge of recovery.

7.8 Local or National Transition Periods

The CDEM Amendment Act 2016 has introduced the option to give notice of a local transition period to assist the recovery phase following an emergency event.

This mechanism provides the Recovery Manager with access to specified emergency powers during a defined period of time in order to support recovery. A transition notice can apply to one or more districts within the CDEM Group area or the whole CDEM Group area. A local transition notice, if required, would normally follow a state of local emergency, however it can also be put in place (with approval of the Minister of Civil Defence) if no declaration has been made.

A local transition period for a district is to be done by a Mayor or other elected representative. The Canterbury CDEM Group has appointed the following to this role in the following order of precedence:

- Mayor of the respective district most affected
- Deputy Mayor of the respective district most affected
- Any elected local authority representative

The powers made available by a local transition period sit with the Recovery Manager. The CDEM Group has overall responsibility for governance and oversight of the recovery.

Powers available during a transition period

During a transition period, a Recovery Manager may use powers available to them if using the powers:

- Is in respect of those areas, districts, or wards for which the Recovery Manager is responsible; and
- Is, in the opinion of the Recovery Manager, -
  - in the public interest; and
  - necessary or desirable to ensure a timely and effective recovery; and
  - proportionate in the circumstances.

Powers that are available during transition period include (for example):

- Providing for the conservation and supply of food, fuel and other essential supplies;
- Disseminating information and advice to the public;

- Carrying out the following: works, clearing roads and other public places, examining and marking any property, animal or any other thing; removing or disposing of, or securing or otherwise making safe, dangerous structures and material wherever they may be.

Recovery Managers must report on use of these powers to the Director of MCDEM and the CDEM Group within 7 days of the end of the transition period.

7.9 Local, Regional and National Recovery responsibilities

"The role of the CDEM Group is to plan for, and carry out recovery activities including coordination of, and collaboration with, partners and stakeholders for effectiveness."

Local authorities have legislative obligations to plan for and deliver recovery in their community. This means before an emergency a local authority has plans and structures in place, informed by community discussions about recovery priorities as well as adequately skilled and trained staff, and relationships with key agencies to foster co-ordination and collaboration prior to and during a recovery.

During a recovery local authorities are the lead agency at the local level. Resourcing for recovery should be considered in statutory planning arrangements such as council's long term plans.

The Canterbury CDEM Group's role is to:

- Support, advise and mentor local authorities and agencies with responsibilities in recovery to understand their role and how it connects to the wider recovery structure.
- Ensure that local authorities and agencies have adequately planned for their roles and that they have adequately trained and skilled staff to lead and work in recovery
- Support Local Recovery Managers and recovery teams by the provision of advice on the legislation, recovery management approach, and liaison with central government
- Advise those authorities to give notice of a transition period or the need to give notice, including reporting requirements
- Ensure Group and Local Recovery Manager's apply any transition powers in accordance with the CEM Act 2002 and report the use of powers as necessary to the Director Civil Defence and Emergency Management
- Co-ordinate resources and information across affected districts and report to the Coordinating Executive Group and CDEM Joint Committee on recovery progress
- Monitor risks and issues, and take any necessary action needed to support or address the issues
- Liaise with government agencies as necessary to enable access to any support available

If the scale of recovery is beyond the capacity and capability of the local authorities within the Canterbury CDEM Group, additional resources and support can be sought from other CDEM Groups.

Some central government agencies have responsibilities to lead and coordinate recovery activities in conjunction with the local efforts. This may include provision of services and/or funding to support locally-led recovery plans. National recovery guidelines outlines areas of responsibility. Where needed, central government agencies may also establish a recovery team to support and compliment the local recovery efforts.

7.10 Recovery Governance

Local Authorities' existing governance arrangements should guide their local recovery programme. They may choose to establish a new committee in their structure to guide and determine recovery outcomes.

CDEM Joint Committee and the Coordinating Executive Group should receive regular reports on recovery progress and issues, and if necessary, lobby for national-level support to enable local recovery.

7.11 Recovery Managers

7.11.1 Group Recovery Manager

The Canterbury CDEM Group must appoint a suitably qualified and experienced person to the role of Group Recovery Manager as well as an alternate Group Recovery Manager to provide cover in the absence or vacancy of the Group Recovery Manager.

During business as usual their responsibilities are to strategically plan for recovery, build recovery capacity and capability, develop guidelines and plans, develop and maintain relationships with key stakeholders and partners and to lead the Recovery Co-ordination Group.

Following an emergency Recovery Managers are responsible for directing, coordinating the use of personnel, material, information, services and other resources during a local transition period and report the use of powers as necessary to the Director of Civil Defence and Emergency Management.

Throughout the recovery they should support and mentor local authorities and responsible agencies and liaise with government departments as necessary.

The Group Recovery Manger must also ensure that regular reporting to the Coordinating Executive Group, and CDEM Joint Committee on recovery is completed.

In addition the Recovery Manager must ensure that recovery plans are up to date, statutory requirements of local authorities for recovery are met, and staff and agencies are aware of their roles and responsibilities and have been appropriately trained.

Recovery Managers need to ensure that effective working relationships are maintained between all agencies involved in recovery across all task groups of the four environments.

7.11.2 Local Recovery Manager

Each local authority must appoint a Local Recovery Manager and alternates.

Their role is to ensure that the recovery plans are developed and up to date, and that statutory requirements are being met and relationships are in place with key partner agencies.

They should also participate in regional and or national opportunities for recovery capacity and capability development.

7.11.3 National Recovery Manager

Section 11a and 11b of the CDEM Act provides for a National Recovery Manager to be appointed by the Director of Civil Defence Emergency Management.

The National Recovery Manager is responsible to the Director of the Ministry of Civil Defence & Emergency Management for undertaking recovery efforts in the area for which they have been appointed.

7.12 Recovery Structure

The recovery structure is determined by the community's needs. Traditionally four environments have been identified: - social, economic, natural and built to promote co-ordination between the various agencies that are involved in recovery.

The recovery structure is intended to be flexible. Actual elements will depend on the scale and nature of the event e.g.

- Type of event e.g. earthquake, tsunami, flood, pandemic, animal pest or disease
- Severity of the emergency
- Community affected
- The geographical area affected
- Multiple or cascading emergencies

It may be appropriate to include other environments in the recovery structure to allow for identified needs to be met, for example, an environment focused on rural recovery. These environments are all underpinned by the community and each is interdependent with the others.

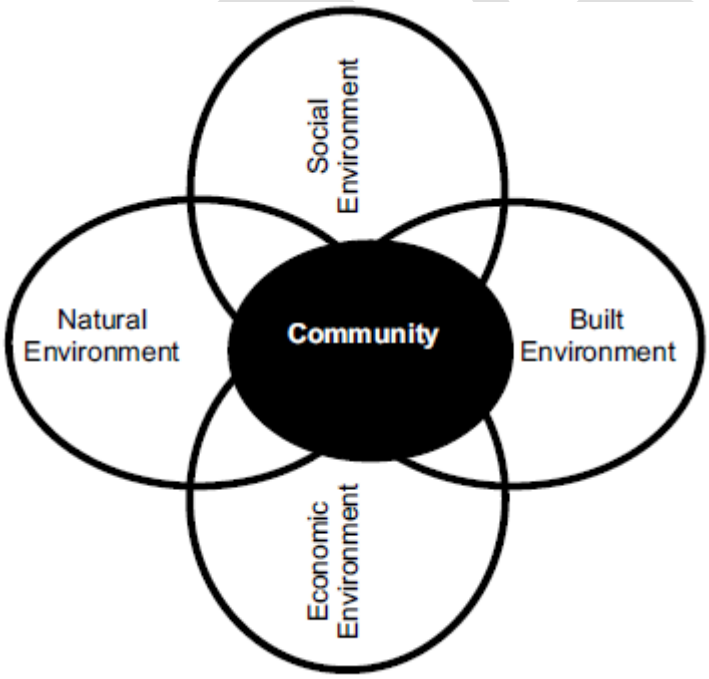

Figure 7.1 The four environments of recovery

As soon as practicable during an emergency, a meeting of selected personnel forming the Recovery Coordination Group (RCG)is to be convened at local and/or Group level to review the situation. As a

minimum the RCG will comprise the Recovery Manager plus representatives of the four environments — social, economic, built and natural.

The Canterbury CDEM Group Recovery Manager will provide coordination across the districts for recovery while the Local Recovery Manager leads and directs activities within a district.

The task group structure is a mechanism for collaborative planning and coordination among the many agencies involved in recovery. These agencies may include local and central government, Iwi, not-for-profit and commercial sectors as appropriate.

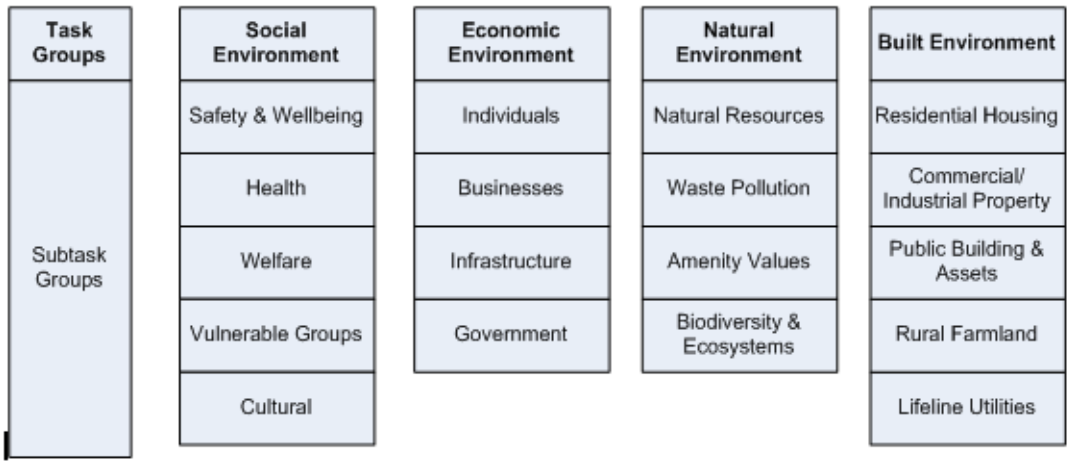

Figure 7.2 Task groups of the four environments

The initial role of the environment task groups is to establish priorities and key tasks for recovery and to develop the recovery action plan which will guide the recovery effort.

7.13 Recovery Exit Plan

The recovery phase must have an end. Organisational arrangements must be wound down and responsibility for completion of outstanding tasks and actions must be assigned and acknowledged. The withdrawal of formal recovery structures from the impacted community must be planned and staged in consultation with that community.

An exit plan is the systematic plan of withdrawal of formal recovery assistance to a business as usual activity. It will identify what outstanding work is left to complete and include planning for the ongoing support of stakeholders, such as local authorities and business.

Typically the plan will handover the formal responsibilities from the Recovery Manager including the, recovery office and its systems, and environment tasks groups, back to business as usual agencies and processes.

The exit plan needs to ensure:

- that affected individuals and communities, responders and customers continue to be cared for,
- that information is retained, protected and made accessible to the agencies that need it,

- that actions to review and learn from the emergency event are put in place, and
- that actions to mitigate, remove or tolerate the risks identified in the response and recovery have been signed off by appropriate authorities.

8. MONITORING AND EVALUATION

8.1 Introduction

This chapter outlines the mechanisms for monitoring and evaluation. Ongoing monitoring and evaluation will provide assurance to the Canterbury Civil Defence Emergency Management (CDEM) Group and Canterbury communities that the Group is complying with its legislative obligations, achieving its objectives and making progress towards its goals and those of the National CDEM Strategy.

Monitoring and evaluation is a continuous process that informs planning and delivery and is considered a matter of priority within CDEM work programmes.

8.2 Contextual Framework

Monitoring and evaluation is a requirement of the Canterbury CDEM Group under sections 17(1)(h) and 37(1) of the CDEM Act 2002. Relevant benchmarking documents include:

- CDEM Act
- National CDEM Strategy, Plan and Guide
- Director's Guideline on CDEM Group Plan Reviews
- Canterbury CDEM Group goals and objectives from this Plan
- Canterbury CDEM Group and local work programmes
- public surveys and analysis
- long-term plans, and
- CDEM capability assessment tool.

8.3 Monitoring and Reporting Plan Progress

This Canterbury CDEM Group Plan will be monitored in the following ways:

- The Coordinating Executive Group (CEG) will regularly scrutinise CDEM Group and local CDEM activity across the Canterbury CDEM Group.
- The Canterbury CDEM Group will conduct an annual check to ensure that the Group Plan is still accurate and legislatively compliant.
- Quarterly reports provided to the CEG will determine progress against the Canterbury CDEM Group's and territorial authorities' annual work programmes.
- Group and local work programme progress, outputs and outcomes will be reported annually to the Canterbury CDEM Group and quarterly to the CEG.
- The CEG will provide an annual report against the CDEM Group and local work programmes and the broad five-year work programme to the Canterbury CDEM Group.
- The Canterbury Group Emergency Management Office and local Emergency Management Officers will monitor compliance between the Group Plan (or Local Plan) and the CDEM Act and with other relevant legislation and amendments.

8.4 Regular Evaluation

The CDEM capability assessment tool will be used to evaluate progress across the Canterbury CDEM Group at least every five years. It is anticipated that this evaluation will be led by Ministry of Civil Defence & Emergency Management staff with support from the Group Emergency Management Office and local emergency management staff.

8.5 Review of Capability and Resources

A key focus in the first year of this Plan is to review resources and capabilities at a local and Group level to deliver on the Plan's objectives.

Annex A — Declaration Forms

Checklist for consideration of a state of emergency

Checklist for commencing, extending or terminating a state of emergency					
Considerations (This is not a declaration form)				Yes	No
Is the situation within the definition of an emergency as stated in the CDEM Act 2002?		Result of happening defined under emergency in section 4 of CDEM Act 2002.			
		Causes or may cause loss of life, injury, illness or distress or in any way endanger the safety of the public and property.			
		Cannot be dealt with by emergency services.			
		Requires a significant and coordinated response.			
Is there a need to evacuate?		No of people:	Duration:		
Information only	Are lifeline utilities having or likely to have difficulties functioning?		Energy		
			Transport		
			Fuel		
			Water and sewerage		
			Telecommunications		
	Are the social utilities having or likely to have difficulties in functioning?*		Food retailers		
			Medical services		
			Schools		
			Refuse disposal		
Are the emergency powers provided by the CDEM Act 2002 required or likely to be required (sections 85–94)?					
Have the emergency services been consulted?			Police		
			Fire sService		
			Health/Ambulance		
Have the Controller and Emergency Management Officer been consulted?					
Have local authority utility managers been consulted?					
Has the MCDEM Emergency Management Advisor been consulted?					
Will a state of emergency add value to the response?					

Declaration for: (please circle)	**Commencement**	**Extension**	**Termination**
State area covered	Ward:	District:	Group:
Signed by:	Controller:	CDEMO:	
	Date:	Time:	

*Especially pandemic emergencies

Declaration of state of local emergency

Section 68*, Civil Defence Emergency Management Act 2002*

I, _____
[full name]

declare that a state of local emergency exists in _____
[specify names of Civil Defence Emergency Management Group area, districts or wards]

owing to _____.
[describe emergency]

The state of local emergency comes into force immediately on the making of this declaration, and expires 7 days after the time and date on which it comes into force (unless extended or terminated at an earlier time).

Declared by: _____
[signature]

Designation: [Select the applicable designation]

- ☐ Person appointed and authorised by the Civil Defence Emergency Management Group to declare a state of local emergency for its area.
- ☐ Representative of a member of the Civil Defence Emergency Management Group *[select this designation where no appointed person is or is likely to be able to exercise the power to declare a state of local emergency].*
- ☐ Mayor of the district for which the state of local emergency is declared.
- ☐ Elected member of the district for which the state of local emergency is declared (designated to act on behalf of the mayor when the mayor is absent).

Time and date of declaration: _____

Notes

1. Calculating "7 days after the time and date on which the state of emergency comes into force": If a state of local emergency came into force at 9.35am on 1 January, it would expire at 9.35am on 8 January. If a state of local emergency came into force at 9.35am on a Friday, it would expire at 9.35am on the following Friday.
2. This declaration must be—
    a. notified to the public immediately by any means of communication that are reasonably practicable in the circumstances; and
    b. published in the *Gazette* as soon as practicable. It is recommended that publication in the *Gazette* occur within 20 working days after the state of emergency is terminated.

Declaration extending state of local emergency
Section 71, *Civil Defence Emergency Management Act 2002*

I, _____
[full name]

extend the state of local emergency declared at _____
[specify time and date, and include times and dates when any extensions took effect]

for _____
[specify names of Civil Defence Emergency Management Group area, districts or wards]

owing to _____.
[describe emergency]

The state of local emergency is extended for 7 days. It will take effect immediately from the time the initial declaration of the state of emergency (or the last extension) was to expire.

Declared by: _____
[signature]

Designation: [Select the applicable designation]

- ☐ Person appointed and authorised by the Civil Defence Emergency Management Group to declare a state of local emergency for its area.
- ☐ Representative of a member of the Civil Defence Emergency Management Group *[select this designation where no appointed person is or is likely to be able to exercise the power to declare a state of local emergency].*
- ☐ Mayor of the district for which the state of local emergency is declared.
- ☐ Elected member of the district for which the state of local emergency is declared (designated to act on behalf of the mayor when the mayor is absent).

Time and date of declaration: _____

Notes

1. Calculating the extension of "7 days" for a declaration extending the state of emergency: If the extension came into force at 9.35am on 1 January, it would expire at 9.35am on 8 January. If the extension came into force at 9.35am on a Friday, it would expire at 9.35am on the following Friday.

2. If this is a second or subsequent extension of a state of emergency, specify the time and date when each previous extension took effect, as well as the time and date when the state of emergency was first declared.

3. This declaration must be—
    a. notified to the public immediately by any means of communication that are reasonably practicable in the circumstances; and
    b. published in the *Gazette* as soon as practicable. It is recommended that publication in the *Gazette* occur within 20 working days after the state of emergency is terminated.

Declaration terminating state of local emergency
Section 72, *Civil Defence Emergency Management Act 2002*

I, _____
[full name]

terminate the state of local emergency declared at _____
[specify time and date, and include times and dates when any extensions took effect]

for _____
[specify names of Civil Defence Emergency Management Group area, districts or wards]

owing to _____.
[describe emergency]

The termination of the state of local emergency takes effect immediately on the making of this declaration.

Declared by: _____
[signature]

Designation: [Select the applicable designation]

- ☐ Person appointed and authorised by the Civil Defence Emergency Management Group to declare a state of local emergency for its area.
- ☐ Representative of a member of the Civil Defence Emergency Management Group *[select this designation where no appointed person is or is likely to be able to exercise the power to declare a state of local emergency].*
- ☐ Mayor of the district for which the state of local emergency is declared.
- ☐ Elected member of the district for which the state of local emergency is declared (designated to act on behalf of the mayor when the mayor is absent).

Time and date of declaration: _____

Notes

4. If any extension of the state of emergency was made, specify the time and date when each extension took effect, as well as the time and date when the state of emergency was first declared.

5. This declaration must be—
    a. notified to the public immediately by any means of communication that are reasonably practicable in the circumstances; and
    b. published in the *Gazette* as soon as practicable. It is recommended that publication in the *Gazette* occur within 20 working days after the state of emergency is terminated.

Annex B — Canterbury Risk Profile

Analysis of risk is dependent on the specific scenario that is considered and the varied nature of the Canterbury region means that certain hazards threaten some districts significantly more than others. Preparedness of emergency management staff and communities also varies greatly from district to district. The following assumptions have been made in the quantitative risk analysis:

- Cascading effects are taken into the reckoning with the initial, triggering event.
- As a benchmark, emergencies that require a multi-agency response have been considered.
- Likelihoods refer to emergencies occurring over the next 20–50 years.

Risk Matrix

The risk matrix contrasts the likelihood of a hazard event and its consequences to identify low-, medium- and high-impact events for the Canterbury region. The hazard risk matrix uses the measures of consequence and likelihood outlined below.

Measure of consequence of impact

Level	Descriptor	Detail description
1	Insignificant	No injuries, little or no damage, low financial loss
2	Minor	First aid treatment, minor building damage, medium financial loss
3	Moderate	Medical treatment required, moderate building and infrastructure damage, high financial loss
4	Major	Extensive injuries, high level of building and infrastructure damage, major financial loss
5	Catastrophic	Deaths, most buildings extensively damaged and major infrastructure failure, huge financial loss

Measure of likelihood

Level	Descriptor	Detail description
A	Almost certain	Is expected to occur in most circumstances
B	Likely	Will probably occur in most circumstances
C	Possible	Might occur at some time
D	Unlikely	Could occur at some time
E	Rare	May occur only in exceptional circumstances

Annex B – Canterbury Risk Profile

Natural Hazard	ISO 31000			Impact					Manageability												Growth	Total
	Likelihood	Consequence / Impact	Level	Social	Infrastructure	Economic	Natural / Environmental	weighted mean	Readiness			Response			Recovery			Reduction			Total 4Rs Manageability		
									D	E		D	E		D	E		D	E				
Earthquake Alpine fault	C	catastrophic	VH	5	4	5	3	9.1	h	m	4	h	m	4.0	h	l	5.0	h	l	5.0	18	1-	27.1
Earthquake /local/ near population	C	major	H	4	3	4	2	7.1	h	m	4	h	m	4.0	h	l	5.0	h	lm	4.0	17	1-	24.1
Tsunami local-Kaikoura	C	catastrophic	VH	5	5	5	3	9.6	h	m	4	h	m	4.0	h	l	5.0	h	h	3.0	16	1	26.6
Tsunami regional/Hikurangi	C	catastrophic	VH	5	5	5	2	9.4	m	m	3	h	m	2.0	m	l	4.0	h	l	5.0	14	0	23.4
Tsunami distant	C	minor	M	1	2	2	1	2.8	m	h	2	h	m	2.0	m	l	4.0	h	l	5.0	13	0	15.8
								0													0		0.0
Flooding - Eastern/foothill rivers	B	moderate	VH	3	2	3	1	5.1	m	m	3	m	m	3.0	m	m	3.0	m	m	3.0	12	1	18.1
Flooding/Alpine Rivers	C	minor-moderate	M	2	4	2	1	4.8	m	m	3	m	m	3.0	m	m	3	m	h/	2	11	1.0	16.8
Heavy rainfall	A	minor	H	1	3	2	1	3.3	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	1	8.3
Urban fire (multi agency)	D	minor	L	3	1	2	0	4.1	m	h	2	m	h	2.0	m	m	3.0	m	h	2.0	9	0	13.1
Rural/Urban fire interface(multi agency)	B	minor	M	3	1	3	1	4.6	m	l	4	m	h	2.0	m	l	4.0	m	l	4.0	14	1	19.6
Wildfire/ruralfire (multi agency)	B	minor	M	2	1	2	1	3.3	m	m	3	m	h	2.0	l	l	3.0	m	m	3.0	11	1	15.3
Land instability	D	insignificant	VL	1	2	1	1	2.5	l	h	1	l	h	1.0	l	m	2.0	m	m	3.0	7	1	10.5
High winds (multi agency)	C	minor	M	1	2	2	0	2.6	l	h	1	l	h	1.0	l	h	1.0	l	m	2.0	5	1	8.6
Snow (Ice)	B/C	minor	M	2	2	2	0	3.6	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	1	8.6
Hail	C	insignificant	L	1	0	2	0	1.6	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	1	6.6
Tornado	D	insignificant	VL	1	1	1	0	1.8	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	1	6.8
Electrical storms	A	insignificant	M	1	3	1	0	2.8	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	1	7.8
Drought	C	moderate	M	3	2	3	2	5.3	m	h	2	m	h	2.0	h	m	4.0	h	m	4.0	12	1	18.3
Storm surge	D	insignificant	VL	1	1	1	1	2	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	1	7.0
Coastal erosion/inundation	A	minor	H	2	2	2	2	4	l	l	3	l	l	3.0	l	h	1.0	l	l	3.0	10	1	15.0
Volcanic eruption - air travel disruption	E	insignificant	VL	1	1	1	0	1.8	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4		5.8
Human disease pandemic	B	major	H	5	3	4	0	7.7	h	m	4	h	m	4.0	m	m	3.0	h	h	3.0	14	1	22.7
Animal disease epidemic	D	moderate	M	3	1	4	1	4.9	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	0	8.9
Biological pests and new organisms	D	moderate	M	3	0	4	3	4.8	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	1	9.8

Annex B – Canterbury Risk Profile continued

Technical Hazard	ISO 31000			Impact					Manageability															
	Likelihood	Consequence / Impact	Level	Social	Infrastructure	Economic	Natural / Environmental	weighted mean	Readiness			Response			Recovery			Reduction			Total 4Rs Manageability	Growth	Total
									D	E		D	E		D	E		D	E				
Hazardous Substances (affecting water)	D	minor	L	2	1	2	3	3.7	l	m	2	m	m	3.0	m	l	4.0	l	h	1.0	10	0	13.7
Air Accident	E	moderate	L	4	2	1	0	5.3	h	l	5	h	l	5.0	h	l	5.0	h	l	5.0	20	0	25.3
Rail Accident	C	minor	M	2	2	2	2	4	m	h	2	m	h	2.0	l	h	1.0	h	l	5.0	10	0	14.0
Major Road Accident	B	minor	M	3	1	1	0	3.8	m	h	2	m	h	2.0	l	h	1.0	m	h	2.0	7	1	11.8
Marine Accident (at sea)	C	moderate	M	3	1	3	3	5	h	h	3	h	h	3.0	h	h	3.0	m	h	2.0	11	0	16.0
Port incident	C	minor	M	2	1	3	2	3.8	h	m	3	h	m	4.0	h	ml	4.0	h	h	4.0	15	1	19.8
Water Supply Failure/Rural	C	insignificant	L	1	1	2	0	2.1	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	-1	5.1
Water Supply Failure/urban	C	minor	M	2	1	2	0	3.1	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	-1	6.1
Waste Water Failure	D	minor	L	2	1	2	3	3.7	m	m	3	m	m	3.0	m	m	3.0	m	l	4.0	13	-1	15.7
Disruption of Fuel Supply	D	moderate	M	3	2	4	0	5.2	h	l	5	h	l	5.0	m	m	3.0	h	l	5.0	18	0	23.2
Electricity Failure (major supply point fault)	D	moderate	M	3	3	4	1	5.9	h	l	5	m	m	3.0	h	l	5.0	h	l	5.0	18	-1	22.9
Telecommunications failure	D	moderate	M	3	3	3	0	5.4	m	h	2	h	h	3.0	m	h	2.0	m	h	2.0	9	-1	13.4
Computer/Information System Failure	D	minor	L	2	1	2	1	3.3	m	h	2	h	h	3.0	l	m	2.0	h	h	3.0	10	1	4.3
Civil Unrest/ Terrorism	E	minor	VL	2	1	1	0	2.8	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	1	7.8
Space Debris	E	insignificant	VL	1	1	1	1	2	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	0	6.0
Meteorite	E	minor	VL	1	2	2	1	2.8	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	0	6.8

Annex B — Ashburton Risk Profile

Hazard	ISO 31000			Impact					Manageability													Growth	Total
	Likelihood	Consequence / Impact	Level	Social	Infrastructure	Economic	Natural/ environmental	weighted mean	Readiness			Response			Recovery			Reduction			Total 4Rs Manageability		
									D	E		D	E		D	E		D	E				
Earthquake Alpine fault	C	major	H	4	4	4	1	7.4	h	m	4	h	m	4.00	h	l	5.00	m	l	4.00	17.0	1	25
Earthquake /local	C	major	H	4	4	3	1	7.1	h	m	4	h	m	4.00	h	l	5.00	m	l	4.00	17.00	1	25.1
Tsunami	C	insignificant	L	1	2	1	0	2.3	l	m	2	l	h	1.0	l	h	1.0	l	h	1.0	5	2	9.3
Flooding - Eastern/foothill rivers	A	moderate	VH	3	2	3	1	5.1	h	m	4	m	m	3.0	h	l	5.0	m	l	4.0	16	1	22.1
Flooding - Alpine rivers	A	insignificant	M	1	1	2	1	2.3	l	l	3	l	h	1.0	l	h	1.0	l	l	3.0	8	2	12.3
Heavy rainfall	A	moderate	VH	3	2	2	1	4.8	l	m	2	l	m	2.0	l	l	3.0	l	l	3.0	10	1	15.8
Urban fire	C	minor	M	3	1	2	0	4.1	l	l	3	l	h	1.0	l	h	1.0	l	l	3.0	8		12.1
Wildfire/ruralfire	B	minor	M	2	1	2	0	3.1	l	h	1	m	h	2.0	l	h	1.0	l	h	1.0	5	1	9.1
Land instability	D	insignificant	VL	1	1	1	1	2	l	l	3	l	h	1.0	l	h	1.0	l	l	3.0	8	1	11.0
High winds	A	minor	H	2	2	2	0	3.6	l	l	3	l	l	3.0	l	l	3.0	l	m	2.0	11	1	15.6
Snow (Ice)	B	minor	M	2	3	2	0	4.1	m	m	3	m	h	2.0	m	h	2.0	m	l	4.0	11	1	16.1
Hail	C	insignificant	L	1	0	2	0	1.6	l	l	3	l	h	1.0	l	h	1.0	l	l	3.0	8	1	10.6
Tornado	C	insignificant	L	1	0	2	0	1.6	l	l	3	l	h	1.0	l	h	1.0	l	m	2.0	7	0	8.6
Electrical storms	A	minor	H	1	3	1	0	2.8	l	l	3	l	h	1.0	l	h	1.0	l	l	3.0	8	0	10.8
Drought	C	minor	M	2	1	3	2	3.8	l	l	3	l	l	3.0	l	h	1.0	l	l	3.0	10	2	15.8
Coastal erosion/inundation	A	insignificant	M	0	2	2	2	2	l	l	3	l	l	3.0	l	h	1.0	l	l	3.0	10	1	13.0
Volcanic eruption - ash fall	E	insignificant	VL	1	1	1	0	1.8	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	0	5.8
Human disease pandemic	B	major	VH	5	1	4	0	6.7	l	l	3	h	m	4.0	l	m	2.0	l	m	2.0	11	1	18.7
Animal disease epidemic	D	moderate	M	4	1	5	0	6	l	l	3	l	l	3.0	l	h	1.0	l	l	3.0	10		16.0
Biological pests and new organisms	D	moderate	M	4	0	5	3	6.1	l	l	3	l	l	3.0	l	h	1.0	l	l	3.0	10		16.1

Annex B — Ashburton Risk Profile continued

Hazard	ISO 31000				Impact						Manageability															
	Likelihood	Consequence / Impact	Level		Social	Infrastructure	Economic	Natural/ environmental	weighted mean		Readiness			Response			Recovery			Reduction			Total 4Rs Manageability	Growth	Total
											D	E		D	E		D	E		D	E				
Hazardous Substances	C	minor	M		2	1	1	1	3		l	l	3	l	h	1.0	l	h	1.0	l	m	2.0	7	1	
Air Accident	E	minor	VL		3	1	1	0	3.8		l	l	3	l	h	1.0	l	h	1.0	l	m	2.0	7	1	11.8
Rail Accident	C	minor	M		2	2	2	0	3.6		l	l	3	l	h	1.0	l	h	1.0	l	m	2.0	7	1	11.6
Major Road Accident	B	minor	M		3	1	1	0	3.8		l	l	3	l	h	1.0	l	h	1.0	l	m	2.0	7	1	11.8
Dam failure	E	major	M		4	4	4	3	7.8		l	l	3	m	l	4.0	l	l	3.0	l	l	3.0	13	1	21.8
Port Incident									0																
Marine Accident (at sea)	C	moderate	M		3	1	3	3	5		l	l	3	l	l	3.0	l	h	1.0	l	l	3.0	10		15.0
Water Supply Failure/Rural	C	insignificant	L		1	1	2	0	2.1		l	l	3	l	l	3.0	l	m	2.0	l	m	2.0	10		12.1
Water Supply Failure/urban	C	minor	M		2	1	2	0	3.1		m	l	4	m	l	4.0	m	l	4.0	l	m	2.0	14		17.1
Waste Water Failure	D	minor	L		2	1	2	3	3.7		m	l	4	m	l	4.0	m	l	4.0	l	m	2.0	14		17.7
Disruption of Fuel Supply	D	moderate	M		3	2	4	0	5.2		l	l	3	m	m	3.0	l	l	3.0	l	l	3.0	12		17.2
Electricity Failure	B	major	VH		4	5	4	0	7.7		l	l	3	m	h	2.0	l	m	2.0	l	l	3.0	10		17.7
Telecommunications failure	D	moderate	M		3	3	2	0	5.1		l	l	3	m	h	2.0	l	m	2.0	l	l	3.0	10		15.1
Extreme Temperature (hot/cold)	D	minor	L		2	2	2	0	3.6		l	l	3	l	m	2.0	l	h	1.0	l	l	3.0	9		12.6
Computer/Information System Failure	D	minor	L		2	1	2	1	3.3		m	h	2	h	h	3.0	l	m	2.0	h	h	3.0	10	1	4.3
Civil Unrest/ Terrorism	E	insignificant	VL		1	1	1	0	1.8		l	l	3	l	m	2.0	l	m	2.0	l	l	3.0	10		11.8
Space Debris	E	insignificant	VL		1	1	1	1	2		l	l	3	l	l	3.0	l	h	1.0	l	l	3.0	10		12.0
Meteorite	E	insignificant	VL		1	1	1	1	2		l	l	3	l	l	3.0	l	h	1.0	l	l	3.0	10		12.0

Annex B — Christchurch City Risk Profile

Hazard	ISO 31000			Impact					Manageability												Growth	Total
	Likelihood	Consequence/ Impact	Level	Social	Infrastructure	Economic	Natural	weighted mean	Readiness			Response			Recovery			Reduction			Total 4Rs Manageability	
									D	E		D	E		D	E		D	E			
Earthquake Alpine fault	B	moderate	H	3	2	3	1	5.1	h	m	4	h	l	5.0	h	l	5.0	h	m	4.0	18	1	24.1
Earthquake /local Feb22 2011	C	major	H	4	4	4	3	7.8	m	h	2	h	h	3.00	h	l	5.00	m	m	3.00	13.0	1	22
Earthquake/local Dec 23 2011	B	moderate	H	3	2	2	1	4.8	l	h	1	l	h	1.0	m	h	2.0	m	m	3.0	7	0	11.8
Tsunami (local source)	E	minor	VL	2	1	1	1	3	m	m	3	l	h	1.0	l	h	1.0	m	m	3.0	8	0	11.0
Tsunami (regional source)	E	moderate	L	3	3	2	2	5.5	m	m	3	h	m	4.0	h	l	5.0	m	m	3.0	15	2	22.5
Tsunami (distant source)	C	moderate	M	3	3	2	2	5.5	m	h	2	h	h	3.0	h	l	5.0	m	m	3.0	13	0	18.5
Flooding - local rivers (1in 200yr)	C	minor	M	3	1	2	1	4.3	m	m	3	m	m	3.0	m	m	3.0	h	l	5.0	14	1	19.3
Flooding Banks Peninsula	C	insignificant	L	1	1	1	1	2	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	1	
Flooding-tidal	C	minor	M	2	2	2	1	3.8	l	m	2	l	h	1.0	l	h	1.0	l	h	1.0	5	0	8.8
Flooding - Waimakariri(1in 10,000yr)	E	major	M	4	3	4	3	7.3	h	l	5	h	l	5.0	h	l	5.0	h	l	5.0	20	2	29.3
Heavy rainfall (including landslippage)	C	insignificant	L	1	2	1	1	2.5	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	1	7.5
Wildfire/ruralfire	B	minor	M	2	1	1	2	3.2	l	h	1	l	h	1.00	h	m	4.00	m	h	2.00	8.0	1	9
Urban fire (whole block)	E	moderate	L	4	1	3	1	5.6	m	m	3	l	h	1.00	h	m	4.00	l	h	1.00	9.0	0	15
Land instability rock fall (multipedwelli	C	minor	M	2	1	1	2	3.2	l	l	4	l	l	4.0	l	l	4.0	l	l	4.0	16	0	19.2
Land instability cliff collapse	C	moderate	M	3	2	1	2	4.7	l	l	4	l	l	4.0	l	l	4.0	l	l	4.0	16	0	20.7
Land instability land slippage	B	minor	M	2	2	1	2	3.7	l	l	4	l	l	4.0	l	l	4.0	l	l	4.0	16	1	20.7
High winds	C	minor	M	2	1	2	0	3.1	h	l	5	h	h	3.0	l	h	1.0	m	h	2.0	11	1	15.1
Snow (Ice)	C	moderate	M	2	2	2	1	3.8	l	l	4	m	l	4.0	m	l	4.0	m	l	4.0	16	1	20.8
Hail	C	insignificant	L	1	1	1	1	2	l	l	4	l	l	4.0	l	l	4.0	l	l	4.0	16	1	19.0
Tornado	E	minor	VL	2	1	2	1	3.3	l	h	1	l	h	1.00	l	h	1.00	l	h	1.00	4.0	0	7
Drought	C	minor	M	2	0	3	2	3.3	l	m	2	l	m	2.00	l	m	2.00	l	m	2.00	8.0	2	13
Coastal erosion/inundation	C	insignificant	L	1	1	1	1	2	l	m	2	l	m	2.00	l	l	4.00	l	m	2.00	10.0	1	13
Electrical storms	B	insignificant	L	1	1	1	1	2	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	0	6.0
Volcanic eruption - ash fall	E	minor	VL	2	1	2	1	3.3	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	0	7.3

Annex B — Christchurch City Risk Profile continued

Hazard	ISO 31000				Impact						Manageability														
	Likelihood	Consequence/ Im	Level		Social	Infrastructure	Economic	Natural	weighted mean		Readiness			Response			Recovery			Reduction			Total 4Rs Manag	Growth	Total
											D	E		D	E		D	E		D	E				
Human disease epidemic	D	major	H		5	1	3	1	6.6		l	m	2	m	m	3.0	m	l	4.0	l	l	4.0	13	1	20.6
Animal disease epidemic	D	moderate	M		3	1	4	1	4.9		l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	0	8.9
Biological pests and new organisms	D	moderate	M		3	0	4	3	4.8		l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	1	9.8
Hazardous Substances	C	minor	M		2	1	2	0	3.1		m	l	4	m	l	4.0	m	l	4.0	m	l	4.0	16	1	20.1
Major Air Accident	E	moderate	L		3	1	1	0	3.8		m	l	4	m	l	4.0	m	l	4.0	m	l	4.0	16	1	20.8
Rail Accident	D	moderate	M		3	1	1	0	3.8		m	l	4	m	l	4.0	m	l	4.0	m	l	4.0	16	1	20.8
Major Road Accident	C	moderate	M		3	1	1	0	3.8		m	l	4	m	l	4.0	m	l	4.0	m	l	4.0	16	1	20.8
Port Incident	C	minor	M		2	1	3	1	3.6		h	m	3	h	m	4.0	h	ml	4.0	h	h	4.0	15	1	19.6
Marine Accident (at sea)	C	insignificant	L		1	1	3	3	3		h	h	3	h	h	3.0	h	h	3.0	m	h	2.0	11	0	14.0
Water Supply Failure/Rural	C	minor	M		2	1	1	1	3		l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	-1	6.0
Water Supply Failure/urban	D	minor	L		3	1	2	1	4.3		l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	-1	7.3
Waste Water Failure	D	minor	L		2	1	2	3	3.7		m	m	3	m	m	3.0	m	m	3.0	m	l	4.0	13	-1	15.7
Disruption of Fuel Supply	D	minor	L		2	2	3	1	4.1		m	h	2	m	h	2.0	l	h	1.0	m	h	2.0	7	0	11.1
Electricity failure (transpower)(regiona	E	moderate	L		2	3	3	1	4.6		l	h	1	l	h	1.0	l	h	1.0	h	h	3.0	6	0	10.6
Electricity Failure (locallisedsubstn)	D	minor	L		1	2	2	1	2.8		l	h	1	l	h	1.0	l	h	1.0	h	h	3.0	6	0	8.8
Telecommunications failure	D	insignificant	VL		1	1	2	1	2.3		l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	0	6.3
Telecommunications failure Major	E	moderate	L		3	4	2	1	5.8		h	l	5	h	l	5.0	h	l	5.0	h	h	3.0	18	0	23.8
Computer/Information System Failure	D	minor	L		2	1	2	1	3.3		m	h	2	h	h	3.0	l	m	2.0	h	h	3.0	10	1	14.3
Terrorism/Sabotage	D	moderate	M		2	3	3	2	4.8		l	h	1	l	m	2.0	l	m	2.0	l	m	2.0	7	0	11.8
Civil Unrest	C	minor	M		2	1	2	1	3.3		l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	0	7.3
Space Debris	E	minor	VL		2	1	1	1	3		l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	0	4.0
Meteorite (Arizona size)	E	major	M		5	2	3	3	7.5		l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	0	4.0

Annex B — Hurunui/Waimakariri Risk Profile

Hazard	ISO 31000				Impact						Manageability													Growth	Total
	Likelihood	Consequenc	Level		Social	Infrastructure	Economic	Natural/Envir	weighted me		Readiness			Response			Recovery			Reduction			Total 4Rs Ma		
											D	E		D	E		D	E		D	E				
Earthquake Alpine fault	C	catastrophic	VH		5	4	5	3	9.1		h	l	5	h	m	4.0	h	l	5.0	h	m	4.0	18	1	28.1
Earthquake /local/ near population	C	major	H		4	4	4	3	7.8		h	m	4	h	h	3.0	h	l	5.0	h	m	4.0	16	1	24.8
Tsunami (local/regional source)	C	major	H		4	4	4	2	7.6		m	m	3	h	m	4.0	h	m	4.0	h	l	5.0	16	0	23.6
Tsunami (distant source)	C	insignificant	L		1	2	1	0	2.3		m	h	2	l	h	1.0	h	m	4.0	m	m	3.0	10	2	14.3
Flooding - (1:50yr)	B	minor	M		2	2	2	1	3.8		m	h	2	m	m	3.0	l	l	4.0	m	m	3.0	12	1	16.8
Flooding - (1:200yrs)	C	minor-moderate	M		2	4	2	1	4.8		h	l	5	h	m	4.0	h	l	5.0	h	l	5.0	19	2	25.8
Heavy rainfall	A	insignificant	M		1	2	2	1	2.8		l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	1	7.8
Urban fire (multi agency)	D	insignificant	VL		2	0	1	0	2.3		h	h	3	h	h	3.0	l	m	2.0	l	m	2.0	10	0	12.3
Rural/Urban fire (multi agency)	B	minor	M		3	1	2	1	4.3		m	m	3	m	h	2.0	m	l	4.0	m	m	3.0	12	0	16.3
Wildfire/ruralfire (multi agency)	B	insignificant	L		2	1	1	1	3		m	m	3	m	h	2.0	l	l	4.0	m	m	3.0	12	1	16.0
Land instability	D	insignificant	VL		1	1	1	1	2		l	h	1	l	h	1.0	m	h	2.0	m	m	3.0	7	1	10.0
High winds (multi agency)	C	insignificant	L		1	2	2	0	2.6		l	h	1	l	h	1.0	l	h	1.0	h	m	4.0	7	1	10.6
Snow (Ice)	B	minor	M		2	3	2	0	4.1		l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	1	9.1
Hail	B	insignificant	L		1	0	2	0	1.6		l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	1	6.6
Tornado	D	insignificant	VL		0	1	1	0	0.8		l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	0	4.8
Electrical storms	A	insignificant	M		1	3	1	0	2.8		l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	0	6.8
Extreme Temperature (hot/cold)	D	insignificant	VL		2	1	1	0	2.8		l	m	2	l	m	2.0	l	m	2.0	l	m	2.0	8	0	10.8
Drought	C	minor	M		2	2	3	2	4.3		m	h	2	m	h	2.0	h	m	4.0	h	m	4.0	12	2	18.3
Storm surge	B	insignificant	L		1	1	1	1	2		m	l	4	m	m	3.0	m	l	4.0	h	l	5.0	16	1	19.0
Volcanic eruption - ash fall	E	insignificant	VL		1	1	1	0	1.8		l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	0	5.8
Human disease pandemic	B	major	VH		5	4	4	0	8.2		m	h	2	m	h	2.0	m	m	3.0	h	h	3.0	10	1	19.2
Animal disease epidemic	C	moderate	M		4	1	5	0	6		l	h	1	l	h	1	l	h	1	l	h	1.0	4	0	10.0
Biological pests and new organisms	C	moderate	M		4	0	5	3	6.1		l	h	1	l	h	1	l	h	1	l	h	1.0	4	1	11.1

Annex B — Hurunui/Waimakariri Risk Profile continued

Hazard	ISO 31000				Impact						Manageability														
	Likelihood	Consequence/ Impact	Level		Social	Infrastructure	Economic	Natural/Environmental	weighted mean		Readiness			Response			Recovery			Reduction			Total 4Rs Manageability	Growth	Total
											D	E		D	E		D	E		D	E				
Hazardous Substances	C	minor	M		2	1	2	2	3.5		h	h	3	m	h	2.0	m	l	4.0	l	m	2.0	11	1	15.5
Air Accident	E	minor	VL		4	1	1	0	4.8		m	l	4	l	h	1.0	l	h	1.0	l	h	1.0	7	1	12.8
Rail Accident (coastal pacific)	C	minor	M		2	2	2	1	3.8		m	h	2	h	h	3.0	l	h	1.0	h	h	3.0	9	1	13.8
Major Road Accident	B	minor	M		4	1	1	0	4.8		m	h	2	m	h	2.0	l	h	1.0	m	h	2.0	7	1	12.8
Port Incident									0																
Marine Accident (at sea)	C	moderate	M		3	1	3	3	5		h	h	3	h	h	3	h	h	3	m	h	2.0	11	0	16.0
Water Supply Failure/Rural	C	insignificant	L		1	1	2	0	2.1		l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	0	6.1
Water Supply Failure/urban	C	minor	M		2	2	2	0	3.6		m	m	3	m	m	3.0	m	m	3.0	l	h	1.0	10	0	13.6
Waste Water Failure	D	minor	L		2	1	2	3	3.7		h	m	4	h	m	4.0	h	m	4.0	m	l	4.0	16	0	19.7
Disruption of Fuel Supply	D	moderate	M		3	3	4	0	5.7		h	l	5	h	l	5.0	m	m	3.0	h	l	5.0	18	0	23.7
Electricity Failure (major supply point	D	minor	L		2	2	3	1	4.1		h	l	5	m	m	3.0	h	l	5.0	h	l	5.0	18	0	44.0
Telecommunications failure	D	moderate	M		3	3	2	0	5.1		h	h	3	h	h	3.0	m	h	2.0	m	h	2.0	10	0	15.1
Computer/Information System Failure	D	minor	L		2	1	2	1	3.3		m	h	2	h	h	3.0	l	m	2.0	h	h	3.0	10	0	13.3
Civil Unrest/ Terrorism	E	insignificant	VL		1	1	1	0	1.8		l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	0	5.8
Space Debris	E	insignificant	VL		1	1	1	1	2		l	h	1	l	h	1	l	h	1	l	h	1.0	4	0	6.0
Meteorite	E	insignificant	VL		1	1	1	1	2		l	h	1	l	h	1	l	h	1	l	h	1.0	4	0	6.0
Solar Flare	E	moderate	L		3	4	3	0	5.9		l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	0	9.9

Annex B — Kaikoura Risk Profile

Hazard	ISO 3110				Impact						Manageability												Growth	Total
	Likelihood	Consequence/ Impact	Level		Social	Infrastructure	Economic	Natural/Environmental	weighted mean		Readiness			Response			Recovery			Reduction			Total 4Rs Manageability		
											D	E		D	E		D	E		D	E				
Earthquake Alpine fault	C	catastrophic	VH		5	5	5	2	9.4		h	l	5	h	m	4.0	h	l	5.0	m	m	3	17	1	27.4
Earthquake /local/ near population	B	catastrophic	E		5	5	5	4	9.8		h	l	5	h	m	4.0	h	m	4.0	m	m	3	16	1	26.8
									0														0		0.0
Tsunami (local source)	C	catastrophic	VH		5	5	5	3	9.6		h	l	5	m	l	4.0	m	l	4.0	m	l	4	17	1	27.6
Tsunami (regional source)	C	catastrophic	VH		5	5	5	2	9.4		h	l	5	m	l	4.0	m	l	4.0	m	l	4	17	1	27.4
Tsunami (distant source)	C	minor	M		1	2	2	1	2.8		m	h	2	l	h	1.0	h	m	4.0	m	m	3.0	10		12.8
Flooding - (1:50yr)	A	minor	H		2	3	2	1	4.3		m	l	4	m	l	4.0	m	l	4.0	m	m	3	15	1	20.3
Flooding - (cyclonic event)	C	moderate	M		3	4	3	1	6.1		m	l	4	m	l	4.0	m	l	4.0	m	m	3	15	1	22.1
Heavy Rainfall	C	moderate	M		2	2	2	2			m	l	4	m	l	4.0	m	l	4.0	m	m	3	15		15.0
Urban fire (multi agency)	D	minor	L		2	0	1	0	2.3		m	m	3	h	m	4.00	m	l	4.00	m	m	3	14	1	17.3
Rural fire (multi agency)	B	moderate	H		3	1	3	3	5		m	l	4	m	m	3	m	l	4	l	l	3	14	2	21.0
Land instability	B	minor	M		1	2	1	1	2.5		l	h	1	l	h	1.0	m	h	2.0	m	m	3	7	1	10.5
High winds (multi agency)	C	minor	M		1	2	2	0	2.6		m	l	4	m	l	4.0	m	l	4.0	m	l	4	16	1	19.6
Snow (Ice)	D	minor	L		2	1	1	0	2.8		m	l	4	m	l	4.0	m	l	4.0	m	m	3	15	1	18.8
Hail	B	insignificant	L		1	0	2	0	1.6		m	l	4	m	l	4.0	m	l	4.0	m	l	4	16	1	18.6
Tornado	D	insignificant	VL		0	1	1	0	0.8		m	l	4	m	l	4.0	m	l	4.0	m	l	4	16	1	17.8
Electrical storms	A	minor	H		1	3	1	0	2.8		m	l	4	m	l	4.0	m	l	4.0	m	m	3	15	1	18.8
Drought	C	minor	M		2	2	3	2	4.3		m	l	4	m	l	4.0	m	l	4.0	m	l	4	16	1	21.3
Extreme Temperature (hot/cold)	D	minor	L		2	1	1	0	2.8		h	l	5	m	l	4.0	m	l	4.0	m	l	4	17	1	20.8
Storm surge/coastal erosion	B	minor	M		1	2	1	1	2.5		h	m	4	m	l	4.0	m	l	4.0	h	l	3	15	1	18.5
Volcanic eruption - ash fall	E	insignificant	VL		1	1	1	0	1.8		h	l	5	m	l	4.0	m	m	3.0	m	l	4	16	1	18.8
Worldwide Human disease pandemic	B	major	VH		5	4	4	0	8.2		m	l	4	h	l	5.0	h	l	5.0	m	m	3	17	2	27.2
Animal disease epidemic	D	minor	L		3	1	3	0	4.4		m	l	4	m	l	4.0	m	l	4.0	m	m	3	15	2	21.4
Biological pests and new organisms	D	moderate	M		3	0	3	3	4.5		m	l	4	h	m	4.0	m	l	4.0	h	h	3	15	3	22.5

Annex B — Kaikoura Risk Profile continued

Hazard	ISO 3110				Impact						Manageability															
	Likelihood	Consequence/ Impact	Level		Social	Infrastructure	Economic	Natural/Environmental	weighted mean		Readiness			Response			Recovery			Reduction			Total 4Rs Manageability	Growth	Total
											D	E		D	E		D	E		D	E				
Hazardous Substances (transport)	C	minor	M		2	2	2	3	4.2		m	m	3	m	l	4.0	m	l	4.0	m	m	3	14	1	19.2
Air Accident	E	minor	VL		2	1	1	0	2.8		l	m	2	h	l	5.0	l	m	2.0	l	h	1	10	2	14.8
Rail Accident (coastal pacific)	C	minor	M		2	2	1	1	3.5		l	m	2	m	m	3.0	l	l	3.0	l	m	2	10	2	15.5
Major Road Accident (30+ patients)	E	minor	VL		3	1	1	0	3.8		l	h	1	m	m	3.0	l	l	3.0	l	m	2	9	1	13.8
Marine Accident	C	moderate	M		3	1	4	4	5.5		h	l	5	m	l	4.0	m	l	4.0	l	m	2	15	1	21.5
																							0		0.0
Water Supply Failure/Rural	C	insignificant	L		1	1	2	0	2.1		h	l	5	m	l	4.0	m	l	4.0	m	l	4	17	2	45.0
Water Supply Failure/urban	C	minor	M		2	2	2	0	3.6		h	l	5	m	l	4.0	m	l	4.0	m	m	3	16	2	21.6
Waste Water Failure	D	minor	L		2	1	2	3	3.7		h	l	5	m	l	4.0	m	l	4.0	m	m	3	16	2	21.7
Disruption of Fuel Supply	D	moderate	M		3	3	4	0	5.7		h	l	5	m	l	4.0	m	l	4.0	m	l	4	17	2	24.7
Electricity Failure (major supply point	D	minor	L		2	2	3	1	4.1		h	l	5	m	l	4.0	m	m	3.0	m	m	3	15	2	21.1
Telecommunications failure	D	moderate	M		3	3	2	0	5.1		m	l	4	m	l	4.0	m	m	3.0	m	m	3	14	2	21.1
Computer/Information System Failure	D	insignificant	VL		2	1	2	1	3.3		m	l	4	m	l	4.0	m	l	4.0	m	m	3	15	2	20.3
Civil Unrest/ Terrorism	E	insignificant	VL		1	1	1	0	1.8		m	l	4	m	m	3.0	m	l	4.0	m	m	3	14	2	17.8
Space Debris	E	insignificant	VL		1	1	1	1	2		h	l	5	m	l	4.0	m	m	3.0	m	l	4	16	0	18.0
Meteorite	E	insignificant	VL		1	1	1	1	2		h	l	5	m	l	4.0	m	m	3.0	m	l	4	16	0	18.0

Annex B — MacKenzie Risk Profile

Hazard	ISO 31000			Impact					Manageability													Growth	Total
	Likelihood	Consequence / Impact	Level	Social	Infrastructure	Economic	Natural/ environ	weighted mean	Readiness			Response			Recovery			Reduction			Total 4Rs Manageability		
									D	E		D	E		D	E		D	E				
Earthquake Alpine fault	C	catastrophic	VH	5	4	4	2	8.6	h	m	4	h	m	4.00	h	l	5.00	m	l	4.00	17.0	1	27
Earthquake /local	C	catastrophic	VH	5	4	4	2	8.6	h	m	4	h	m	4.00	h	l	5.00	m	l	4.00	17.00	1	26.6
Tsunami	E	0	VL	0	0	0	0	0													0	1	
Flooding - Eastern/foothill rivers	A	moderate	VH	3	2	3	1	5.1	m	h	2	m	h	2.0	l	m	2.0	l	m	2.0	8	2	15.1
Flooding - Alpine rivers	D	insignificant	VL	1	1	1	1	2	l	m	2	l	h	1.0	l	h	1.0	l	m	2.0	6	2	10.0
Heavy rainfall	A	moderate	VH	3	4	3	1	6.1	l	h	1	l	h	1.0	l	h	1.0	l	l	3.0	6	2	14.1
Urban fire	B	minor	M	3	1	2	0	4.1	l	h	1	l	h	1.0	l	h	1.0	m	h	2.0	5		9.1
Wildfire/ruralfire	A	insignificant	M	0	2	2	1	1.8	l	m	2	h	h	3.0	l	h	1.0	l	h	12.0	18	2	21.8
Land instability	D	insignificant	VL	1	1	1	1	2	l	l	3	l	m	2.0	l	h	1.0	l	h	1.0	7	1	10.0
High winds	A	minor	H	1	2	2	0	2.6	l	m	2	l	l	3.0	l	h	1.0	l	m	2.0	8	1	11.6
Snow (Ice)	A	minor	H	2	3	3	0	4.4	l	h	1	m	m	3.0	l	h	1.0	l	m	2.0	7	2	13.4
Hail	C	insignificant	L	1	0	2	0	1.6	l	l	3	l	h	1.0	l	h	1.0	l	l	3.0	8	1	10.6
Tornado	D	insignificant	VL	0	2	2	0	1.6	l	l	3	l	h	1.0	l	l	3.0	l	m	2.0	9	2	12.6
Electrical storms	A	minor	H	1	3	1	0	2.8	l	l	3	l	h	1.0	l	m	2.0	l	h	1.0	7		9.8
Extreme Temperature (hot/cold)	B	insignificant	L	1	2	1	0	2.3	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4		6.3
Drought	B	moderate	H	3	1	4	2	5.1	l	m	2	m	m	3.0	l	l	3.0	l	m	2.0	10		15.1
Coastal erosion/inundation	A	insignificant	M	0	0	0	0	0	l	l	3	l	l	3.0	0	0	4.0	l	0	3.0	13	2	15.0
Volcanic eruption - ash fall	E	insignificant	VL	1	1	1	0	1.8	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	0	1.8
Human disease pandemic	C	major	H	5	1	4	0	6.7	l	l	3	h	l	5.0	m	m	3.0	m	h	2.0	13	1	20.7
Animal disease epidemic	D	moderate	M	4	1	5	0	6	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	0	10.0
Biological pests and new organisms	C	moderate	M	4	0	5	3	6.1	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	1	11.1

Annex B — MacKenzie Risk Profile continued

Hazard	ISO 31000				Impact						Manageability															
	Likelihood	Consequence / Impact	Level		Social	Infrastructure	Economic	Natural/ environmental	weighted mean		Readiness			Response			Recovery			Reduction			Total 4Rs Manageability	Growth	Total
											D	E		D	E		D	E		D	E				
Hazardous Substances	C	minor	M		2	1	1	1	3		l	m	2	l	h	1.0	l	h	1.0	l	m	2.0	6	1	
Air Accident	D	minor	L		3	1	1	0	3.8		l	h	1	l	h	1.0	l	h	1.0	l	m	2.0	5	1	9.8
Rail Accident	E	0	VL		0	0	0	0	0														0	1	1.0
Major Road Accident	B	minor	M		3	1	1	0	3.8		l	h	1	l	h	1.0	l	h	1.0	l	m	2.0	5	1	9.8
Dam failure	E	catastrophic	H		5	4	4	3	8.8		l	l	3	h	l	5.0	h	l	5.0	l	h	1.0	14	2	24.8
Port Incident									0														0		0.0
Marine Accident (at sea)	E								0														0		0.0
Water Supply Failure/Rural	C	minor	M		1	4	3	0	3.9		l	m	2	l	h	1.0	l	h	1.0	l	m	2.0	6		9.9
Water Supply Failure/urban	C	moderate	M		2	4	3	0	4.9		l	m	2	l	h	1.0	l	h	1.0	l	m	2.0	6		10.9
Waste Water Failure	C	moderate	M		2	4	2	0	4.6		l	m	2	l	h	1.0	l	h	1.0	l	m	2.0	6		10.6
Disruption of Fuel Supply	B	moderate	H		3	3	3	0	5.4		l	l	3	m	l	4.0	l	m	2.0	l	m	2.0	11		16.4
Electricity Failure	B	major	VH		4	5	4	0	7.7		l	l	3	h	h	3.0	l	h	1.0	m	h	2.0	9		16.7
Telecommunications failure	B	moderate	H		3	3	2	0	5.1		l	l	3	h	h	3.0	l	h	1.0	m	h	2.0	9		14.1
Computer/Information System Failure	D	minor	L		2	1	2	1	3.3		m	h	2	h	h	3.0	l	m	2.0	h	h	3.0	10	1	4.3
Civil Unrest/ Terrorism	E	insignificant	VL		1	1	1	0	1.8		l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4		5.8
Space Debris	E	insignificant	VL		1	1	1	1	2		l	l	3	h	l	5.0	l	l	3.0	l	h	1.0	12		14.0
Meteorite	E	insignificant	VL		1	1	1	1	2		l	l	3	h	l	5.0	l	l	3.0	l	h	1.0	12		14.0

Annex B — Selwyn Risk Profile

Hazard	ISO 31000			Impact					Manageability														Growth	Total
	Likelihood	Consequence/ Impact	Level	Social	Infrastructure	Economic	Natural/Environmental	weighted mean	Readiness			Response			Recovery			Reduction			Total 4Rs Manageability		
									D	E		D	E		D	E		D	E				
Earthquake Alpine fault	C	catastrophic	VH	5	4	5	3	9.1	h	m	4	h	h	3.0	h	h	3.0	h	m	4.0	14	1-	23.1
Earthquake /local/ near population	B	minor	M	3	3	3	2	5.8	h	m	4	h	h	3.0	h	h	3.0	h	m	4.0	14	1-	19.8
Tsunami (local/regional source)	D	insignificant	VL	1	1	1	1	2	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4		6.0
Tsunami (distant source)	C	insignificant	L	1	1	1	0	1.8	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	0	5.8
Flooding - (1:50yr)	B	minor	M	2	2	2	1	3.8	l	h	1	l	h	1.0	l	h	1.0	m	h	2.0	5	1	9.8
Flooding - (1:200yrs)	C	minor	M	2	3	2	1	4.3	l	h	1	l	h	1.0	l	h	1.0	m	h	2.0	5	2	11.3
Heavy rainfall	A	insignificant	M	1	2	2	1	2.8	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	1	7.8
Urban fire (multi agency)	D	minor	L	2	1	2	0	3.1	h	h	3	h	h	3.0	l	m	2.0	l	m	2.0	10		13.1
Rural/Urban fire interface(multi agency	B	minor	M	3	1	3	1	4.6	m	m	3	m	h	2.0	m	l	4.0	m	m	3.0	12	1	17.6
Wildfire/ruralfire (multi agency)	B	minor	M	2	1	2	1	3.3	m	m	3	m	h	2.0	l	l	4.0	m	m	3.0	12	1	16.3
Land instability	D	insignificant	VL	1	2	1	1	2.5	l	h	1	l	h	1.0	l	h	1.0	m	m	3.0	6	1	9.5
High winds (multi agency)	C	minor	M	1	3	3	0	3.4	l	h	1	l	h	1.0	l	h	1.0	l	m	2.0	5	1	9.4
Snow (Ice)	B	minor	M	2	3	2	0	4.1	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0		1	5.1
Hail	B	insignificant	L	1	0	2	0	1.6	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	1	6.6
Tornado	D	insignificant	VL	1	1	1	0	1.8	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	1	6.8
Electrical storms	A	insignificant	M	1	3	1	0	2.8	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	1	7.8
Extreme Temperature (hot/cold)	D	minor	L	2	1	1	0	2.8	l	m	2	l	m	2.0	l	m	2.0	l	m	2.0	8	1	11.8
Drought	C	minor	M	2	2	3	2	4.3	m	h	2	m	h	2.0	h	m	4.0	h	m	2.0	10	2	16.3
Storm surge	D	insignificant	VL	1	1	1	1	2	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	1	7.0
Volcanic eruption - ash fall	E	insignificant	VL	1	1	1	0	1.8	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4		5.8
Human disease pandemic	B	moderate	H	4	1	3	0	5.4	h	h	3	h	h	3.0	m	h	2.0	h	h	3.0	11	1	17.4
Animal disease epidemic	D	moderate	M	4	1	4	0	5.7	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	0	9.7
Biological pests and new organisms	D	moderate	VL	4	1	4	3	6.3	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	0	10.3

Annex B — Selwyn Risk Profile continued

Hazard	ISO 31000			Impact					Manageability													Growth	Total
	Likelihood	Consequence/ Impact	Level	Social	Infrastructure	Economic	Natural/Environmental	weighted mean	Readiness			Response			Recovery			Reduction			Total 4Rs Manageability		
									D	E		D	E		D	E		D	E				
Hazardous Substances (affecting wate	D	minor	L	2	1	2	3	3.7	l	h	1	l	h	1.0	m	l	4.0	l	h	1.0	7	1	11.7
Air Accident (Rolleston)	E	moderate	L	4	2	2	0	5.6	h	l	5	h	l	5.0	h	l	5.0	h	l	5.0	20	1-	25.6
Rail Accident	C	moderate	M	3	2	3	2	5.3	m	h	2	m	h	2.0	l	h	1.0	h	l	5.0	10	0	15.3
Major Road Accident	B	minor	M	2	1	1	0	2.8	m	h	2	m	h	2.0	l	h	1.0	m	h	2.0	7	1	10.8
Marine Accident (at sea)	C	moderate	M	3	1	3	3	5	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4		9.0
								0															
Water Supply Failure/Rural	C	insignificant	L	1	1	1	0	1.8	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	0	5.8
Water Supply Failure/urban	C	insignificant	L	2	1	1	0	2.8	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	0	6.8
Waste Water Failure	D	minor	M	2	1	2	2	3.5	m	m	3	m	m	3.0	m	m	3.0	m	l	4.0	13	0	16.5
Disruption of Fuel Supply	C	minor	L	2	2	4	0	4.2	h	l	5	h	l	5.0	m	m	3.0	h	l	5.0	18	0	22.2
Electricity Failure (major supply point	D	minor	M	2	2	3	1	4.1	h	l	5	m	m	3.0	h	l	5.0	h	l	5.0	18	0	22.1
Telecommunications failure	D	moderate	M	3	3	3	0	5.4	m	h	2	h	h	3.0	m	h	2.0	m	h	2.0	9	0	14.4
Computer/Information System Failure	D	minor	L	2	1	2	1	3.3	m	h	2	h	h	3.0	l	m	2.0	h	h	3.0	10	1	14.3
Civil Unrest/ Terrorism	E	insignificant	VL	1	1	1	0	1.8	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	0	5.8
								0															
Space Debris	E	insignificant	VL	1	1	1	1	2	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	0	6.0
Meteorite	E	minor	VL	1	1	1	1	2	l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	0	6.0

Annex B — Timaru Risk Profile

Hazard	ISO 31000				Impact						Manageability															
	Likelihood	Consequence / Impact	Level		Social	Infrastructure	Economic	Natural/ environmental	weighted mean		Readiness			Response			Recovery			Reduction			Total 4Rs Manageability	Growth	Total
											D	E		D	E		D	E		D	E				
Earthquake Alpine fault	C	major	H		4	4	4	1	7.4		m	m	3	m	m	3.00	h	l	5.00	m	m	3.00	14.0	1	22
Earthquake /local	C	major	H		4	4	3	1	7.1		l	m	2	m	m	3.00	h	l	5.00	m	m	3.00	13.00	1	21.1
Tsunami	C	insignificant	L		1	2	1	0	2.3		l	m	2	l	m	2.0	h	l	5.0	l	h	1.0	10	1	13.3
Flooding - Eastern/foothill rivers	A	moderate	VH		3	2	3	1	5.1		m	m	3	m	m	3.0	m	l	4.0	m	h	2.0	12	2	19.1
Flooding - Alpine rivers	A	insignificant	M		1	1	2	1	2.3		l	l	3	l	m	2.0	m	l	4.0	l	h	1.0	10	2	14.3
Heavy rainfall	A	moderate	VH		3	2	2	1	4.8		m	m	3	m	m	3.0	m	m	3.0	m	m	3.0	12	2	18.8
Urban fire	C	minor	M		3	1	2	0	4.1		m	h	2	m	h	2.0	m	m	3.0	m	h	2.0	9	0	13.1
Wildfire/ruralfire	B	minor	M		2	1	2	0	3.1		l	h	1	m	h	2.0	l	m	2.0	l	h	1.0	6	2	11.1
Land instability	D	insignificant	VL		1	1	1	1	2		l	l	3	l	h	1.0	l	h	1.0	l	m	2.0	7	1	10.0
High winds	A	minor	H		2	2	2	0	3.6		m	l	4	m	m	3.0	m	m	3.0	m	m	3.0	13	1	17.6
Snow (Ice)	B	minor	M		2	3	2	0	4.1		l	m	2	m	m	3.0	m	m	3.0	m	m	3.0	11	2	17.1
Hail	C	insignificant	L		1	0	2	0	1.6		l	l	3	l	h	1.0	l	h	1.0	l	m	2.0	7	1	9.6
Tornado	C	insignificant	L		1	0	2	0	1.6		l	l	3	l	m	2.0	l	m	2.0	l	l	3.0	10	2	13.6
Electrical storms	A	minor	H		1	3	1	0	2.8		l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	1	7.8
Drought	C	minor	M		2	1	3	2	3.8		m	h	2	m	h	2.0	h	m	4.0	h	m	4.0	12	1	16.8
Coastal erosion/inundation	A	insignificant	M		0	2	2	2	2		l	l	3	l	m	2.0	l	m	2.0	l	m	2.0	9	2	13.0
Volcanic eruption - ash fall	E	insignificant	VL		1	1	1	0	1.8		l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4		5.8
Human disease pandemic	B	major	VH		5	1	4	0	6.7		l	l	3	m	m	3.0	m	m	3.0	l	m	2.0	11	1	18.7
Animal disease epidemic	D	moderate	M		4	1	5	0	6		l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	0	10.0
Biological pests and new organisms	D	moderate	M		4	0	5	3	6.1		l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	1	11.1

Annex B — Timaru Risk Profile continued

Hazard	ISO 31000				Impact						Manageability															
	Likelihood	Consequence / Impact	Level		Social	Infrastructure	Economic	Natural/ environmental	weighted mean		Readiness			Response			Recovery			Reduction			Total 4Rs Manageability	Growth	Total
											D	E		D	E		D	E		D	E				
Hazardous Substances	C	minor	M		2	1	1	1	3		m	l	4	m	m	3.0	m	m	3.0	m	h	2.0	12	1	16.0
Air Accident	E	minor	VL		3	1	1	0	3.8		m	l	4	m	m	3.0	m	m	3.0	m	m	3.0	13	1	17.8
Rail Accident	C	minor	M		2	2	2	0	3.6		m	l	4	m	m	3.0	m	m	3.0	m	m	3.0	13	1	17.6
Major Road Accident	B	minor	M		3	1	1	0	3.8		m	l	4	m	m	3.0	m	m	3.0	m	h	2.0	12	1	16.8
Marine Accident (at sea)	C	moderate	M		3	1	3	3	5		h	h	3	h	h	3.0	h	h	3.0	m	h	2.0	11	0	16.0
Port Incident	C	minor	M		2	1	3	2	3.8		h	m	3	h	m	4.0	h	ml	4.0	h	h	4.0	15	1	19.8
Dam failure	E	major	M		4	4	4	3	7.8		m	l	4	m	m	3.0	m	l	4.0	l	l	3.0	14	2	23.8
Water Supply Failure/Rural	C	insignificant	L		1	1	2	0	2.1		l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	-1	5.1
Water Supply Failure/urban	C	minor	M		2	1	2	0	3.1		l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	-1	6.1
Waste Water Failure	D	minor	L		2	1	2	3	3.7		m	m	3	m	m	3.0	m	m	3.0	m	l	4.0	13	-1	15.7
Disruption of Fuel Supply	D	moderate	M		3	2	4	0	5.2		h	l	5	h	l	5.0	m	m	3.0	h	l	5.0	18	0	23.2
Electricity Failure	B	major	VH		4	5	4	0	7.7		h	l	5	m	m	3.0	h	l	5.0	h	l	5.0	18	-1	24.7
Telecommunications failure	D	moderate	M		3	3	2	0	5.1		m	h	2	h	h	3.0	m	h	2.0	m	h	2.0	9	-1	13.1
Extreme Temperature (hot/cold)	D	minor	L		2	2	2	0	3.6			l											0		3.6
Computer/Information System Failure	D	minor	L		2	1	2	1	3.3		m	h	2	h	h	3.0	l	m	2.0	h	h	3.0	10	1	4.3
Civil Unrest/ Terrorism	E	insignificant	VL		1	1	1	0	1.8		l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	1	6.8
Space Debris	E	insignificant	VL		1	1	1	1	2		l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	0	6.0
Meteorite	E	insignificant	VL		1	1	1	1	2		l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	0	6.0

Annex B — Waimate Risk Profile

Hazard	ISO 31000				Impact						Manageability														
	Likelihood	Consequence / Impact	Level		Social	Infrastructure	Economic	Natural/ environmental	weighted mean		Readiness			Response			Recovery			Reduction			Total 4Rs Manageability	Growth	Total
											D	E		D	E		D	E		D	E				
Earthquake Alpine fault	C	major	H		4	4	4	1	7.4		h	m	4	h	m	4.00	h	m	4.00	m	m	3.00	15.0	1	23
Earthquake /local	C	major	H		4	4	3	1	7.1		h	m	4	h	m	4.00	h	m	4.00	m	m	3.00	15.00	1	23.1
																									0
Tsunami	C	insignificant	L		1	2	1	0	2.3		l	l	3	l	h	1.0	l	h	1.0	l	h	1.0	6	2	10.3
Flooding - Eastern/foothill rivers	A	moderate	VH		3	2	3	1	5.1		m	h	2	m	h	2.0	l	h	1.0	l	m	2.0	7	1	13.1
Flooding - Alpine rivers	A	insignificant	M		1	1	2	1	2.3		l	m	2	l	h	1.0	l	h	1.0	l	m	2.0	6	2	10.3
Heavy rainfall	A	moderate	VH		3	2	2	1	4.8		l	h	1	m	h	2.0	l	h	1.0	l	m	2.0	6	1	11.8
Urban fire	C	minor	M		3	1	2	0	4.1		l	h	1	l	h	1.0	l	h	1.0	m	h	2.0	5		9.1
Wildfire/ruralfire	B	minor	M		2	1	2	0	3.1		l	m	2	h	h	3.0	l	h	1.0	l	m	2.0	8	1	12.1
Land instability	D	insignificant	VL		1	1	1	1	2		l	l	3	l	m	2.0	l	h	1.0	l	h	1.0	7	1	10.0
High winds	A	minor	H		2	2	2	0	3.6		l	m	2	l	l	3.0	l	h	1.0	l	m	2.0	8	1	12.6
Snow (Ice)	B	minor	M		2	3	2	0	4.1		l	m	2	m	m	3.0	l	h	1.0	l	m	2.0	8	1	13.1
Hail	C	insignificant	L		1	0	2	0	1.6		l	l	3	l	h	1.0	l	h	1.0	l	l	3.0	8	1	10.6
Tornado	C	insignificant	L		1	0	2	0	1.6		l	m	2	l	h	1.0	l	m	2.0	l	m	2.0	7	0	8.6
Electrical storms	A	minor	H		1	3	1	0	2.8		l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	0	6.8
Drought	C	minor	M		2	1	3	2	3.8		l	l	3	l	l	3.0	l	l	3.0	l	l	3.0	12	2	17.8
Extreme Temperature (hot/cold)	D	minor	L		2	2	2	0	3.6		l	m	2	l	h	1.0	l	h	1.0	l	l	3.0	7	0	10.6
Coastal erosion/inundation	A	insignificant	M		0	2	2	2	2		l	l	3	l	h	1.0	l	l	3.0	m	m	3.0	10	1	13.0
Volcanic eruption - ash fall	E	insignificant	VL		1	1	1	0	1.8		l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	0	5.8
Human disease pandemic	B	major	VH		5	1	4	0	6.7		l	l	3	h	l	5.0	m	m	3.0	m	h	2.0	13	1	20.7
Animal disease epidemic	D	moderate	M		4	1	5	0	6		l	l	3	l	l	3.0	m	l	4.0	l	l	3.0	13	0	19.0
Biological pests and new organisms	D	moderate	m		4	0	5	3	6.1		l	l	3	l	l	3.0	m	l	4.0	l	l	3.0	13	0	19.1

Annex B — Waimate Risk Profile continued

Hazard	ISO 31000				Impact						Manageability															
	Likelihood	Consequence / Impact	Level		Social	Infrastructure	Economic	Natural/ environmental	weighted mean		Readiness			Response			Recovery			Reduction			Total 4Rs Manageability	Growth	Total
											D	E		D	E		D	E		D	E				
Hazardous Substances	C	minor	M		2	1	1	1	3		l	m	2	l	h	1.0	l	h	1.0	l	m	2.0	6	1	
Air Accident	E	minor	VL		3	1	1	0	3.8		l	l	3	l	h	1.0	l	h	1.0	l	m	2.0	7	1	11.8
Rail Accident	C	minor	M		2	2	2	0	3.6		l	l	3	l	h	1.0	l	h	1.0	l	m	2.0	7	1	11.6
Major Road Accident	B	minor	M		3	1	1	0	3.8		l	l	3	l	h	1.0	l	h	1.0	l	m	2.0	7	1	11.8
Dam failure	E	major	M		4	4	4	3	7.8		l	l	3	h	l	5.0	h	h	3.0	l	h	1.0	12	1	20.8
Marine Accident (at sea)	C	moderate	M		3	1	3	3	5		l	m	2	l	l	3.0	m	l	4.0	l	m	2.0	11	0	16.0
Port Incident									0														0		0.0
Water Supply Failure/Rural	C	insignificant	L		1	1	2	0	2.1		l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	0	6.1
Water Supply Failure/urban	C	minor	M		2	1	2	0	3.1		l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	0	7.1
Waste Water Failure	D	minor	L		2	1	2	3	3.7		l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	0	7.7
Disruption of Fuel Supply	D	moderate	M		3	2	4	0	5.2		l	m	2	l	l	3.0	l	m	2.0	l	l	3.0	10	0	15.2
Electricity Failure	B	major	VH		4	5	4	0	7.7		h	h	3	h	h	3.0	l	h	1.0	m	h	2.0	9	0	16.7
Telecommunications failure	D	moderate	M		3	3	2	0	5.1		h	h	3	h	h	3.0	l	h	1.0	m	h	2.0	9	0	14.1
Computer/Information System Failure	D	minor	L		2	1	2	1	3.3		m	h	2	h	h	3.0	l	m	2.0	h	h	3.0	10	1	4.3
Civil Unrest/ Terrorism	E	insignificant	VL		1	1	1	0	1.8		l	m	2	l	h	1.0	l	m	2.0	l	h	1.0	6	0	7.8
Space Debris	E	insignificant	VL		1	1	1	1	2		l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	0	6.0
Meteorite	E	insignificant	VL		1	1	1	1	2		l	h	1	l	h	1.0	l	h	1.0	l	h	1.0	4	0	6.0

Annex C — Designated Lifeline Utilities

Lifeline utilities are defined in Parts A and B of Schedule 1 of the CDEM Act 2002. The definition of lifeline utilities in Canterbury has been broadened to include other essential services such as fast-moving consumer goods and solid waste. Utilities defined as lifelines by the CDEM Act are marked with an asterisk (*).

- All Canterbury local authorities (excluding Waitaki District) and the following reticulated services:
  - potable water supply*
  - wastewater (sewerage)*
  - stormwater or drainage*
  - roading*
  - solid waste6
- Department of Conservation — reticulated water and wastewater services in Mt Cook Village*
- Environment Canterbury — flood protection
- Transport:
  - New Zealand Transport Agency (NZTA)*
  - Christchurch International Airport Ltd*
  - Lyttelton Port Company*
  - Primeport Timaru*
  - KiwiRail*
  - Bus operators
- Power generators*:
  - Meridian Energy Ltd — Waitaki, Ohau and Coleridge hydro stations
  - Genesis Energy — Tekapo hydro station
- Power distributors*:
  - Transpower NZ — bulk distribution
  - Marlborough Lines — supplies the northern tip of the Kaikoura District
  - MainPower NZ — Waimakariri, Hurunui and Kaikoura Districts
  - Orion New Zealand — Christchurch and Selwyn Districts
  - Electricity Ashburton — Ashburton District
  - Alpine Energy Ltd — Timaru, Mackenzie and Waimate Districts
- Petroleum*:
  - Allied Petroleum Ltd
  - BP
  - Chevron (Caltex NZ Ltd and Challenge Petroleum Ltd)
  - Mobil
  - Z Energy
  - NZ Oil Services Ltd, a joint venture between BP and Z Energy, which operates the Lyttelton Tank Farm
  - Bio Diesel NZ
  - other companies critical to the fuel supply chain, including those operating tanker fleets
- LPG[7]*:
  - Liquigas Ltd

[6] There is national support for solid waste to become a formally adopted lifeline utility, but this is yet to occur.
[7] Distributors of LPG in bottles over 20kg are defined as entities on certain businesses in Part B of Schedule 1 of the CDEM Act.

  - Contact Energy — Rockgas (reticulated gas and LPG bottle delivery)
  - On Gas Ltd (LPG bottle delivery)
  - Elgas New Zealand (LPG bottle delivery)
  - Nova Energy (LPG bottle delivery)
- Telecommunications*:
  - Telecom NZ Ltd
  - Chorus Ltd
  - Vodafone New Zealand Ltd
  - 2 Degrees Mobile
  - TelstraClear Ltd
  - Enable Networks — broadband
  - Amuri.net — North Canterbury wireless internet
- Broadcasting:
  - Kordia
  - Radio New Zealand Ltd*
  - Television NZ Ltd*
- Print media
- Solid waste:
  - Transwaste Canterbury — operator of Kate Valley landfill
  - Kaikoura landfill
  - Redruth landfill Timaru
  - Transpacific Waste Management
  - Living Earth Ltd — operates the organics processing plant in Christchurch
  - A range of kerbside collection and other contractors operating the solid waste activity for council
- Fast-moving consumer goods[8]:
  - Progressive Enterprises
  - Food Stuffs New Zealand
- Banking — the banking sector is being encouraged to participate in emergency management and lifelines activities

Note: All the organisations listed above are invited to be involved in the Canterbury Lifeline Utilities Group and its activities. Because membership is voluntary not all listed organisations are currently active in this group. Other organisations, including contractors, consultants and emergency services, involved or interested in lifelines resilience and response are encouraged to participate in the Lifeline Utilities Group.

[8] Not formally adopted as a lifeline utility but widely accepted that there is benefit in their involvement.