Marlborough Civil Defence Emergency Management Plan

2018-2023

Seddon

Marlborough Civil Defence Emergency Management Group

Improving the resilience of the District to all foreseeable emergency events through the active engagement of communities and the effective integration of support agencies.

Contents

Glossary of Terms

Commonly used terms and abbreviations used throughout the Plan include:

4Rs	Four areas of emergency management: Reduction, Readiness, Response and Recovery.
Act	The Civil Defence Emergency Management Act 2002
AF8	Alpine Fault project. A joint project between all South island CDEM Groups and the science fraternity to develop a high level response plan in the event of a M8 earthquake on the Alpine Fault.
CAP	Corrective Action Plan.
CDEM	Civil Defence Emergency Management.
CDEM Group	The collective of Marlborough District Council, lifeline utilities, emergency services and welfare organisations that comprise the collective Marlborough CDEM Group.
CEG	Coordinating Executive Group established under Section 20 of the Act whose functions include providing advice to the CDEM Group and any sub-groups of the CDEM Group; coordinating and overseeing as appropriate the implementation of decisions of the Group by the Group CDEM Office or by individual members; and overseeing the implementation, development, maintenance, monitoring and evaluation of this Plan.
CEO	Chief Executive Officer.
CIMS	Coordinated Incident Management System is a framework to assist in effective, efficient and consistent response to an incident/emergency management.
Controller	The person in charge of an emergency, or an aspect of it. The level of their control is given by the name – National Controller is usually based at the NCMC while the Group Controller is based at the EOC.
Declaration	A Declaration allows the Controller access to statutory powers with the purpose to grant people the necessary authority to protect life and property in an extraordinary emergency. The rationale for declaring a state of emergency is: ❖ An emergency has occurred or may occur; ❖ The safety of the public or property is endangered; ❖ Loss of life, injury, illness or distress may be caused or; ❖ Usual services are inadequate to deal with the emergency.
Emergency	As defined under the Act: 1. 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; and 2. Causes or may cause loss of life or injury or illness or distress or in any way endangers the safety of the public or property in New Zealand or any part of New Zealand and 3. Cannot be dealt with by emergency services, or otherwise requires a significant and coordinated response under the Act.
Emergency services	The New Zealand Police, St John Ambulance, Fire and Emergency New Zealand and hospital and health and disability services. Emergency services have duties under section 63 of the CDEM Act 2002.
EOC	Emergency Operations Centre. The Marlborough District Council facility from where the response to an emergency will be coordinated.
FENZ	Fire and Emergency New Zealand.

FTE	Full Time Equivalent
ICP	Incident Control Point**.** A facility where site response to an incident is managed and controlled.
Lead agency	The agency that manages the response to or recovery from a particular emergency. Some agencies are required by law to lead particular types of emergencies; other types of emergencies will have the lead agency determined by expertise.
Lifelines utility	An entity named in or described in section 1 of the Act such as power, communication, water and transportation infrastructure providers.
LWC	Local Welfare Committee
MBIE	Ministry of Business, Innovation and Employment.
MCDEM	Ministry of Civil Defence and Emergency Management. MCDEM provides the leadership, strategic guidance, national coordination and the facilitation for activities across the CDEM sector and across all 4Rs.
MDC	Marlborough District Council**.**
MERT	Marlborough Emergency Response Team.
MPI	Ministry for Primary Industries.
MSD	Ministry of Social Development.
NCC	National Coordination Centre based in Wellington and staffed by members of MCDEM who generally work from the NCMC. Other agencies will have their own NCC's staffed by their own staff.
NCMC	National Crisis Management Centre. A secure, all-of-government coordination centre used by agencies to monitor, support or manage a response at the national level.
NMH	Nelson Marlborough Health
NZDF	New Zealand Defence Force**.**
NZIPAP	New Zealand Influenza Pandemic Action Plan.
NZTA	New Zealand Transport Agency
PIM	Public Information Manager.
PRFO	Principal Rural Fire Officer.
Readiness	Involves developing operational systems and capabilities before an emergency happens, including making arrangements with emergency services, lifeline utilities and other agencies and developing self-help and response programmes for the general public.

Recovery	Involves the coordinated efforts and processes used to bring about the short, medium and long-term holistic regeneration and enhancement of a community after an emergency.
Reduction	Involves identifying and analysing risks to life and property from hazards, taking steps to eliminate those risks if practicable, and if not, reducing the magnitude of their impact and the likelihood of their occurrence to an acceptable level. In the welfare context reduction involves activities that contribute to reduced individual and community vulnerability to the consequences of hazards, and subsequently, reduced consequences and loss in communities.
Response	Involves actions taken immediately before, during or directly after an emergency to save lives and property and to help communities begin to recover.
RIMT	Regional Incident Management Team
Seiching	A periodic oscillation of the surface of an enclosed or semi-enclosed body of water (lake, inland sea, bay, etc) caused by such phenomena as atmospheric pressure changes, winds, tidal currents, and earthquakes.
SPCA	Society for the Prevention of Cruelty to Animals
Support agency	Any agency that assists the lead agency by providing services, resources, information, or otherwise contributing to the response and recovery.
UPS	Uninterrupted Power Supply.
WCG	**The** Welfare Coordination Group is a collective of welfare services agencies that provides a mechanism for collaboration and coordination between agencies to plan for and establish arrangements for the effective delivery of welfare services, and develops work programmes.

1. Introduction

1.1 Setting the Scene

The Civil Defence Emergency Management Act (CDEM) 2002 requires the establishment of CDEM Groups. There are 16 CDEM Groups throughout New Zealand. A CDEM Group is usually made up of a consortium of local authorities that share a common geography and gain a synergy from combining their CDEM function. The boundaries of the Marlborough CDEM Group are the same as the boundaries of the Marlborough District Council, a unitary authority that performs both district and regional council functions. The Marlborough CDEM Group area is shown in Figure 1. Marlborough's strength as a Group is its strong member agency relationships.

The Ministry of Civil Defence & Emergency Management (MCDEM) carried out a Marlborough Group Capability Assessment in 2014 and assessed it as being in the mature category with a score of 80.2 out of 100. This was a significant improvement on the 62.2 in 2009 however there were still some notable opportunities for improvement. These were particularly in the welfare, recovery and lifelines areas and a Corrective Action Plan (CAP) has been completed which looks to address these issues. The Plan looks to support the CAP and ensure that all the opportunities are taken advantage of and embedded into the Groups operations by the end of the lifetime of this Plan through regular monitoring by the CEG.

1.1.1 Who this Plan is for

Target audiences are individuals and agencies with roles and responsibilities in addressing hazards and risks in the Marlborough District under the CDEM Act, being:

- Emergency services and community support agencies – in support of their readiness, response and recovery planning and delivery.
- Lifeline utilities (including local authority services) – to link with their strategic risk reduction and operational planning for emergency readiness, response and recovery of services.
- Government departments – to integrate national planning and service delivery in support of local CDEM management.
- Welfare services agencies – given the new arrangements in the National CDEM Plan 2015 this plan outlines the roles and expectations of agencies involved in this new environment.
- Members of the public will gain an overview of how the above agencies are planning to manage hazards and risks in their region. The strategy of self-reliance initially relies on the individual and they must be aware of the hazards and risks and the level of support they can expect. Specific information on local hazard management, emergency procedures and self-preparedness are available on the Marlborough District Council website and within relevant public policies and plans of local councils, government departments and local community organisations.

⇨ **APPENDIX A LISTS THE MARLBOROUGH CDEM PRIMARY AND STRATEGIC STAKEHOLDERS.**

1.1.2 Plan Purpose

The process of formulating the Group Plan ensures there is a common agreement amongst the Group members of the hazards to be addressed and a binding commitment to shared future objectives. The mechanisms needed to reach the goals are agreed and documented. The Marlborough CDEM Group Plan therefore strengthens the relationship between agencies involved in CDEM and fosters greater cooperation between them.

The Group Plan is both a statement of intent and a working document by which progress can be measured. Intermediate steps are identified and are to be used to chart progress towards the wider targets. Although the Plan is current for five years it addresses the short, medium and long term aspirations of the community both for the duration of the Plan and beyond. The Group Plan includes a specific chapter on monitoring and evaluation to ensure it remains current and is up to date throughout its life.

The Marlborough Group Civil Defence and Emergency Management Plan 2017-22 will meet the requirements of Sections 48 and 49(2) of the Civil Defence and Emergency Management Act 2002. In so doing it forms a link between the national strategy for New Zealand and the citizens of Marlborough.

A Group Plan is aimed at a wide range of individuals and groups. It addresses a variety of threats and hazards and considers how these may be dealt with before, during and after they occur. Its basic principle remains simple – to encapsulate a vision of improved emergency management for the Marlborough District and map the route to achieving it.

1.1.3 Plan Status and Change

This is the third Marlborough CDEM Group Plan. The Draft Plan was publicly notified in July 2016 and submissions were considered together with the Minister's comment before the final revised Plan was approved by the Marlborough CDEM Group in February 2017 and took effect from that time. Minor amendments have been made to the plan in 2018 and a strategic recovery section has been added to comply with changes to the CDEM Act that came into effect on 1 June 2018.

This Plan will remain in effect for five years from the date of approval until reviewed by the Group and either amended, revoked, replaced or left unchanged. The CDEM Act 2002 (s56, s57) sets out a public process by which amendments can be made to the Plan and, other than those deemed to be "minor", any amendments to the Plan are required to be publicly notified to allow affected parties to lodge submissions.

1.2 The Marlborough Context

1.2.1 The District

The area covered by the CDEM Group and this Plan is shown in Figure 1.

Marlborough covers around 3.9% of the country's total land area. Of note is that its land area of 1.05 million has is almost matched by its marine area of 725,000 has which adds a level of complexity to Council's responsibilities. As a result the District has an extensive coastline for its land area which extends for over 1,750 kms most of which makes up the Marlborough Sounds.

The total population was 43,416 in the 2013 Census and is increasing. The growing number of visitors and itinerant workers means this fluctuates significantly during the summer and viticulture seasons.

Table 1: Marlborough Land Cover

Land Cover	Area in has	Percentage covered
Indigenous vegetation	164,909	16%
Indigenous forest	362,035	34%
Pasture/grassland	311,258	30%
Gravel, rock, alpine areas and river beds	79,144	7.5%
Horticulture/viticulture	32,891	3%
Exotic forest	10,791	1%
Lake/estuary	3,585	0.3%
Urban, roads and artificial surfaces	3,090	0.3%

Because much of the Marlborough region is sheltered by high country to the west, south and in some areas to the east, it is one of New Zealand's sunniest regions. Warm, dry and settled weather predominates during summer. Winter days often start with a frost, but are usually mild overall. Typical summer daytime maximum air temperatures range from 20°C to 26°C, but occasionally rise above 30°C. Late winter and early spring is normally the most unsettled time of the year. Typical winter daytime

maximum air temperatures range from 10°C to 15°C. Annual hours of sunshine average at least 2,400 hours and in 2015 2,815 hours were recorded.

Table 2: Marlborough Climate Summary

Mean daily maximum in summer	23.8ºC
Mean daily minimum in summer	12.5ºC
Mean daily maximum in winter	12.8ºC
Mean daily minimum in winter	2.1ºC
Mean annual rainfall	1,249 mm
Wet days (>1 mm)	76 days

Figure 1: Marlborough District

1.2.2 The Marlborough CDEM Group Structure

Marlborough District Council has established a Civil Defence Emergency Management Group for the purposes of the CDEM Act 2002 as a joint standing committee under clause 30(1)(b) of Schedule 7 of the Local Government Act 2002. The Group is made up of the Council's Assets and Services Committee who are elected representatives of the Marlborough District Council. The functions of the Group are detailed in Section 17 of the CDEM Act (2002). One of these functions is to develop, approve, implement and monitor a CDEM Plan.

Supporting the CDEM Group is the Coordinating Executive Group whose membership is outlined in section 9.2.2. The CEG monitors the work plans and ensures that decisions are implemented while maintaining a platform that ensures responses are coordinated between all the member agencies. Under the CEG are a number of Committees which focus the work programmes onto the 4Rs. These Committees and their membership are:

- **Reduction**: Council's Regulatory Department Manager is on the CEG and his team foster research programmes which guide Council's planning and development processes. Some examples include the liquefaction studies and Wairau fault location project.

- **Readiness and Response Committee:** This committee is chaired by the Group Controller and is made up of the following organisations – FENZ, Public Health, Council 3 waters staff, Marlborough Roads (Transit agent), Nelson Marlborough Health, NZ Coast Guard, Police, Harbour Master, St John, NZ Red Cross, Top of the South Rural Trust, Te Puni Kōkiri, Rural Women NZ, Department of Corrections, Ministry of Education, Salvation Army, Department of Conservation, Marlborough Lines, CDEM Group Manager and MCDEM.

- **Recovery Planning Team:** This committee is chaired by the Group's Recovery Manager. Membership includes MSD, Top of the South Rural Support Trust, Engineering Lifelines Chairperson, the CDEM Group Manager and MCDEM. During an emergency the Recovery Manager gathers together relevant agencies to assist in coordinating the recovery phase.

- **Welfare Coordination Group:** This group is chaired by the Group Welfare Manager. Membership includes Nelson Marlborough Health, MSD, Police, NZ Red Cross, MBIE, Oranga Tamariki, MPI, Group Recovery Manager, an Iwi representative, MCDEM and CDEM Group Manager.

- **Marlborough Engineering Lifelines Group:** This group is chaired by the Councils Asset Management Engineer. Membership currently includes Chorus, KiwiRail, Marlborough Airport, MDC Waters, Marlborough Lines, Marlborough Roads, Mt Campbell Communications (radio network), Port Marlborough, CDEM Group Manager and MCDEM.

The Group, through the Council, employs three staff, a full time Group Manager, a full time Emergency Services Officer and a permanent part time Welfare Manager. Council provides the full budget and facilities as well as administration, GIS, PIM's and social media support. In response the Group relies heavily upon the 17 Volunteer Rural Fire Forces (approximately 240 volunteers) and FENZ crews stationed throughout the District. The Group has the Marlborough Emergency Response Team (MERT) that is a dedicated CDEM response team specialising in response, welfare and recovery operations.

1.2.3 Key Appointments

CEG Chairman:	Mark Wheeler, CEO Marlborough District Council.
Group Controller:	Richard MacNamara, Regional Manager Rural, Region 4, Fire and Emergency New Zealand.
Alternate Controllers:	Mark Wheeler, CEO of Marlborough District Council. Brian Paton, Group Manager, Marlborough CDEM.
Group Recovery Manager:	Dean Heiford, Manager Support Services, Marlborough District Council.
Alternate Group Recovery Manager:	Robin Mortimer, Ministry of Social Development.
Group Lifeline Coordinator:	Asset Management Engineer, Marlborough District Council
Group Welfare Manager:	Catherine Coates, Marlborough CDEM.

1.3 National Context

This Plan is a statutory requirement of the CDEM Act 2002 (s48). Figure 2 shows the CDEM framework and the relationship between national and local plans. The National CDEM Plan identifies the principles and responsibilities for delivery of CDEM in New Zealand. This Plan aims to identify how the Marlborough CDEM Group will deliver its role. The National CDEM Strategy (2007) defines five national CDEM principles which guide the activity of the Marlborough CDEM Group. These principles are as follows:

- **Individual and community responsibility and self-reliance.** The CDEM arrangements support and encourage local ownership of individual and community safety and livelihood security.

- **A transparent and systematic approach to managing the risks from hazards.** A logical and consistent process needs to be followed when identifying and assessing risks, consulting and communicating with communities and implementing any agreed mitigation measures.

- **Addressing the consequences of hazards.** Focusing on consequences (built, social, environmental and economic) enables more effective planning and action through improved prioritisation and resource allocation.

- **Making best use of information, expertise and structures**. Reliable information and the availability of expert advice are crucial. The Marlborough CDEM sector (professional and voluntary) will ensure the development of appropriate skills and knowledge, along with the use of best practice in risk management and operational activity.

- **Comprehensive and integrated hazard risk management.** Integrated activity promotes the coordinated involvement of all agencies with a role in managing risks. Comprehensive risk management means dealing with the risks associated with all hazards through the '4 Rs' of risk reduction, readiness, response and recovery.

Figure 2: The NZ CDEM Framework

1.4 Marlborough CDEM Vision and Goals

CDEM Groups are the mechanism by which the Crown can achieve its own vision, goals and objectives. The Group's direction, as described in this section, supports these national goals.

The **Vision** of the Marlborough CDEM Group reflects the importance of an integrated effort; one of partnership and cooperation with agencies working together for the benefit of the community:

Improve the resilience of the District to all foreseeable emergency events through the active engagement of communities and the effective integration of support agencies.

The **Goals** set out the broad criteria against which the CDEM Group Plan will be measured and monitored. The goals of the CDEM Group are directly aligned to the National CDEM Goals and are:

Goal 1: ***To coordinate efforts to reduce the risks posed by hazards that threaten the life, wellbeing, infrastructure, economic fabric and ecological systems that support the lifestyle of Marlborough.***

Goal 2: ***To promote an awareness of the remaining risks faced by residents and visitors to Marlborough in order to be better prepared for the risks of known hazards.***

Goal 3: ***To enhance the efficiency and effectiveness of all agencies and the community in their response to an emergency through integrated and coordinated effort.***

Goal 4: ***To improve the process of recovery after an event in order to return to normal life as quickly as possible with a minimum of loss and disruption.***

Goal 5: ***To establish relationships and best practice that ensure welfare services are delivered to all the members of the effected communities in a coordinated and effective manner.***

2. Marlborough's Risk Profile

2.1 Introduction

Knowledge of the region's vulnerability to hazards is fundamental to guiding the level of activity and effort applied across the '4Rs' and developing comprehensive and integrated risk reduction, readiness, response and recovery programmes. The characterisation of the risk environment in this section provides a basis for sound prioritisation of resources and effort in CDEM planning. It also provides a snapshot in time of the risk profile, as a baseline for ongoing monitoring and evaluation of risk reduction programmes.

Two workshops were hosted by Marlborough CDEM to review the hazards associated with the District. Since the development of the last Plan there has been some significant new information come to hand particularly around such hazards as liquefaction, local source tsunami and the likelihood of the Alpine Fault rupturing. The workshops were also an opportunity for some of the key primary industry sectors to have input into the process. Farming, aquaculture, forestry and viticulture representatives were invited to participate in the workshop and a better understanding of the hazards faced by these sectors was also forth coming. All the key lifelines organisations and Council hazard experts were also involved in developing the risk profile. As a result the risk analysis in this Plan is as up to date as it can possibly be.

The significant changes from the 2010 Plan are that local source tsunami, animal epidemic and liquefaction now appear near the top of the profile. The marine accidents rating has raised significantly principally due to the increase in numbers and size of cruise ships coming into Picton. Terrorism and fuel availability risks have been assessed for the first time. Hazard ratings which have dropped include flooding, rural and urban fire and major road accidents. All four have received significant effort and funding to reduce the consequences of an emergency and this is taken into account in the new matrix.

Uncontrolled Burn-off in Marlborough

2.2 Detailed Risk Analysis

2.2.1 Analysing the level of hazard risk

The combination of all hazards within the CDEM Group is commonly referred to as the hazardscape. The Marlborough District is subject to a wide range of significant natural, human-made and biological hazards, including:

Natural Hazards: flooding, tsunami, earthquake, fire, liquefaction, human pandemic, drought and various botanical and zoological pests, diseases and epidemics.

Technological Hazards: Marine and transport accidents, utility failures, and terrorism.

⇨ **THE TOP 15 HAZARDS ARE DETAILED FURTHER IN APPENDIX B.**

The risk posed by each hazard was evaluated using the risk management process outlined in 2.2.2 below. The evaluation was carried out through a combination of facilitated workshops with Lifeline Utilities, primary industry representatives including Wine Marlborough, emergency services agencies, Nelson-Marlborough Health and Council staff including planners, hazards experts and 3 waters engineers. Available scientific hazard and historical data was used to initially populate the risk analysis and evaluation columns prior to the workshops to initiate a discussion.

2.2.2 The Risk Prioritisation Model

The National CDEM Group Planning Director's guideline (DGL 09/15) recommends the use of the 'SMG' model for prioritising risks for CDEM Group action. The model takes into account:

- The seriousness of the hazard consequence.
- The manageability difficulty in relation to the hazard.
- The likelihood that there will be growth in either the frequency of the hazard or the community exposure to the hazard.

Hazard Seriousness

A 1-5 consequence rating is evaluated for impact on each of the social, built, economic and natural environments (as detailed in Table 1). In calculating the overall seriousness score, a higher weighting is given to the social area (50%), with 25% weighting to the built environment impact, 15% to economic and 10% to natural environment impact. This reflects the higher priority given by CDEM to human life and safety and community resilience. The weighted score is multiplied by 2 to give a total score out of 10.

Hazard Manageability

The manageability of the hazard is rated for each of the '4Rs' area. The manageability is a combination of how difficult it is to manage the hazard and the current level of effort applied (each category is scored as Low, Medium or High). The highest score of 5 is given to those hazards that are most difficult to manage and have the least effort applied, and vice versa for the lowest score of 1.

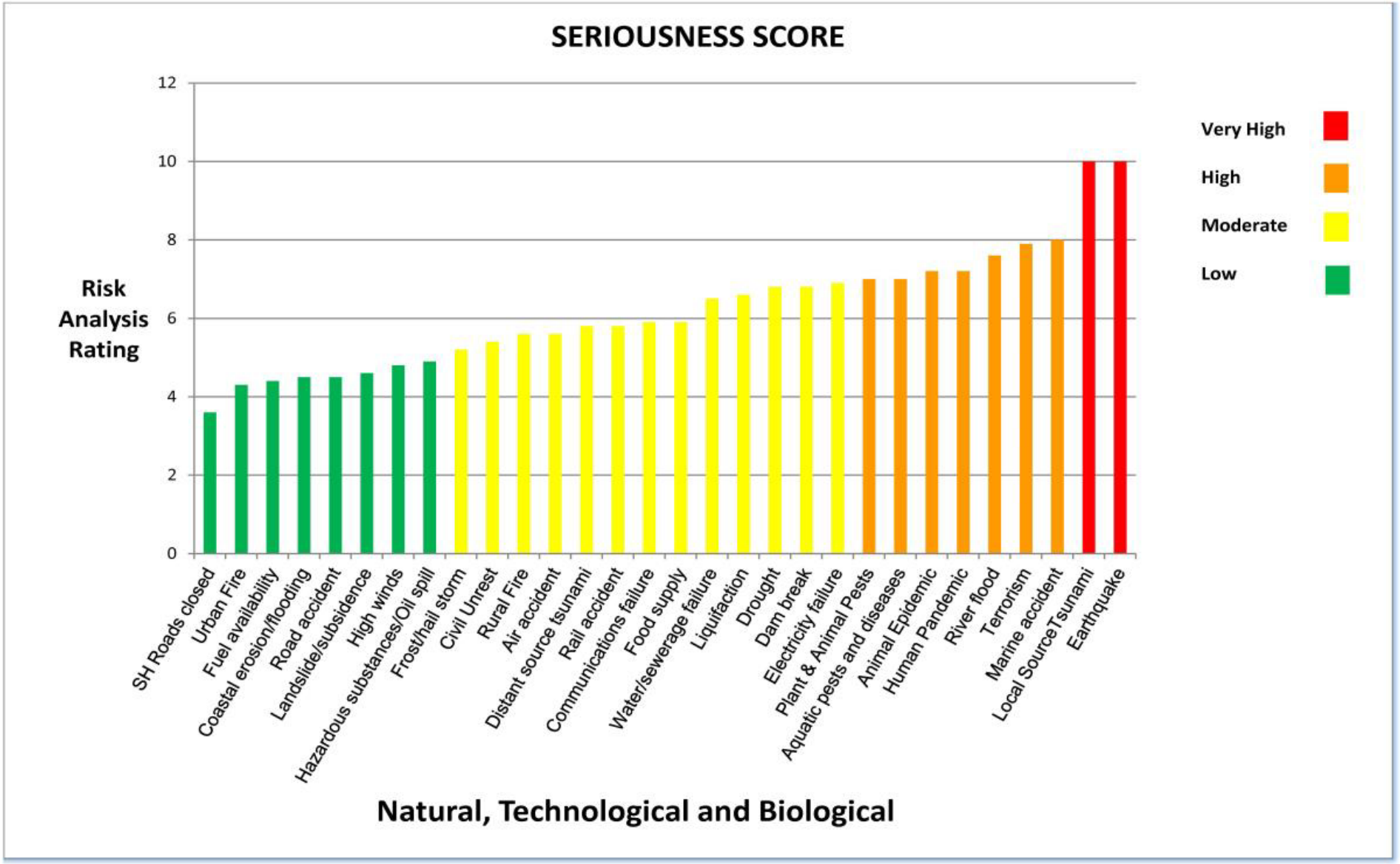
Hazard Growth

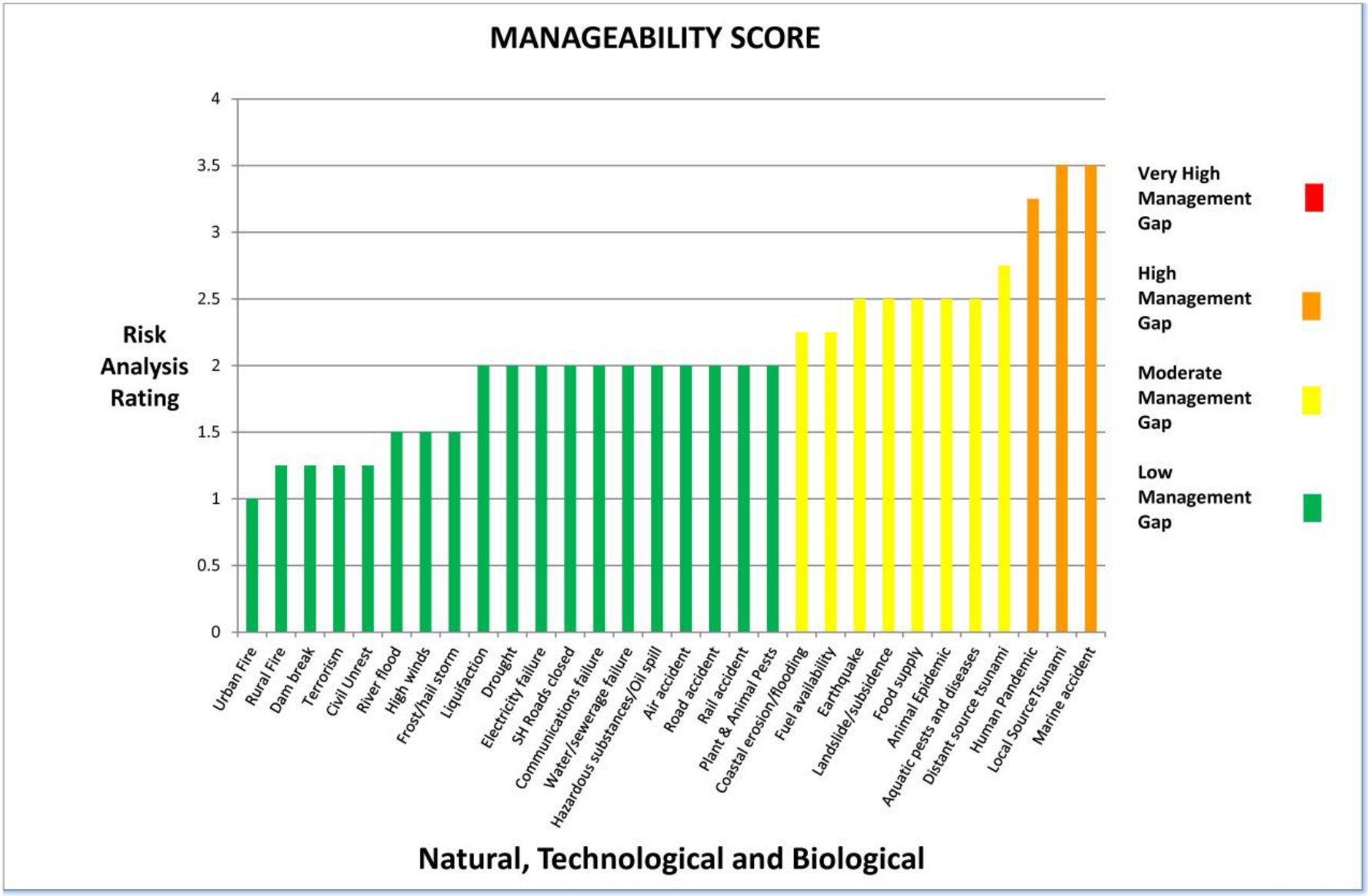
The 'growth' rating is a combination of the likelihood that the frequency of the hazard will increase and the likelihood that the community exposure to that hazard will increase. Hazards that impact on wider communities and the economy are considered to have a moderate probability of increasing community exposure (because of the growing population increasing the number of people that will be potentially affected by hazards). Community exposure to infrastructure failure will increase even more significantly as society becomes increasingly dependent on technology. Climate change is also expected to increase the frequency and/or intensity of some hazards, such as storms and drought. Man-made risks (such as rural fire and marine accidents) may increase in frequency because of higher population.

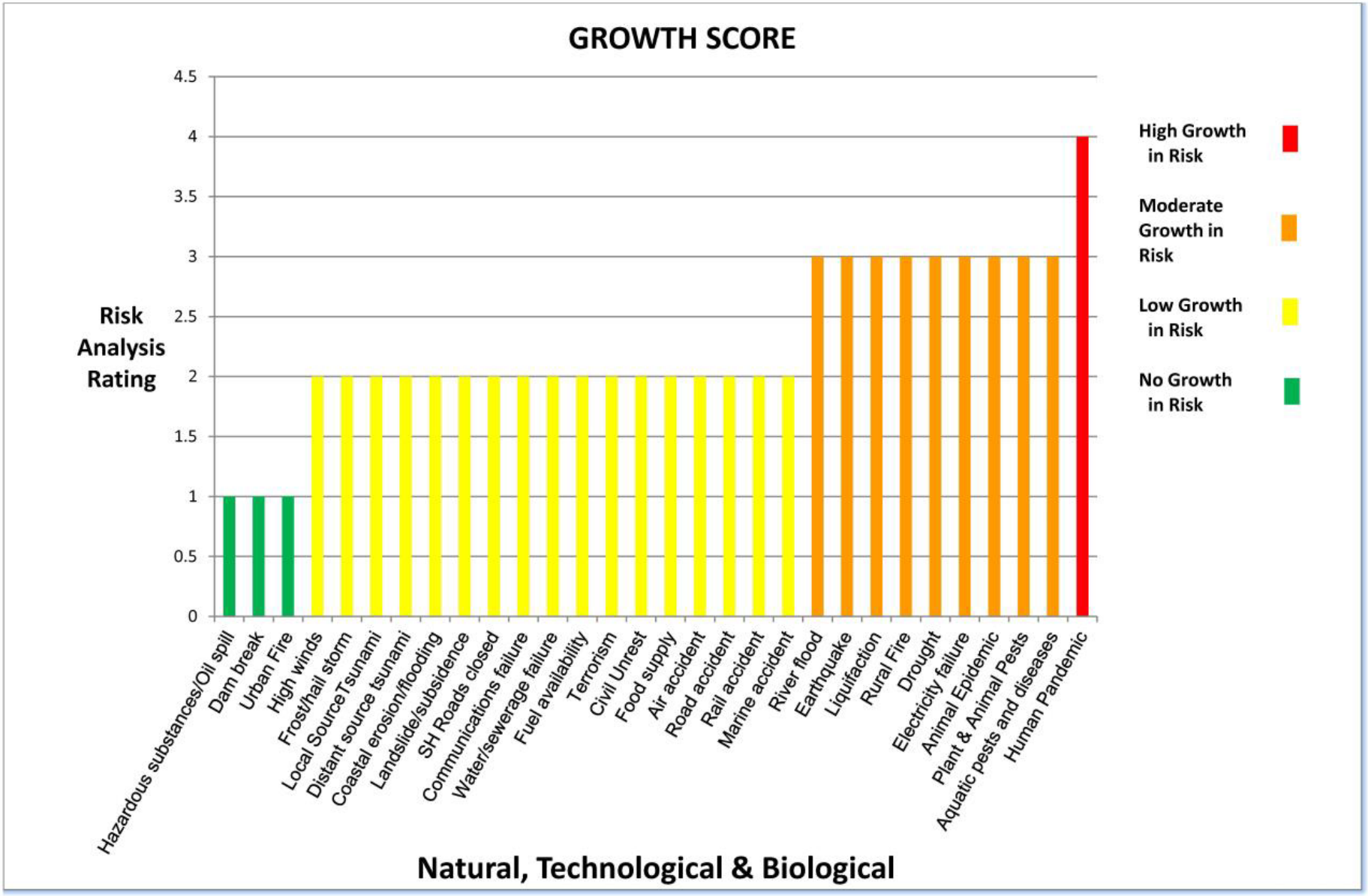
Table 3: Marlborough's Hazard Risks

Hazard	Risk Analysis			Risk Evaluation											
	Likelihood	Consequence	Rating	Seriousness					Manageability					Growth	Total
				Social	Built	Economic	Natural	Sub-total	Reduction	Readiness	Response	Recovery	Sub-total	Sub-total	
Local source tsunami	Rare	Catastrophic	High	5	5	5	5	**10**	4	4	3	3	**3.5**	**2**	**15.5**
Earthquake	Almost certain	Catastrophic	Extreme	5	5	5	5	**10**	2	2	2	4	**2.5**	**3**	**15.5**
Human pandemic	Possible	Catastrophic	Very high	5	1	5	1	**7.2**	3	3	3	4	**3.25**	**4**	**14.5**
Marine accident	Possible	Catastrophic	Very high	5	2	4	4	**8**	4	3	3	4	**3.5**	**2**	**13.5**
Animal epidemic	Unlikely	Catastrophic	Very high	5	1	5	1	**7.2**	3	2	2	3	**2.5**	**3**	**12.7**
Marine pests & diseases	Likely	Major	Very high	4	1	5	5	**7**	3	2	3	2	**2.5**	**3**	**12.5**
River flood	Almost certain	Major	Extreme	3	5	5	3	**7.6**	1	1	1	3	**1.5**	**3**	**12.1**
Plant & animal pests	Likely	Major	Very high	4	1	5	5	**7**	2	2	2	2	**2**	**3**	**12.0**
Electricity failure	Unlikely	Major	High	4	3	4	1	**6.9**	2	2	2	2	**2**	**3**	**11.9**
Drought	Almost certain	Major	Extreme	4	2	4	3	**6.8**	2	2	1	3	**2**	**3**	**11.8**
Liquefaction	Almost certain	Moderate	Very high	3	4	4	2	**6.6**	2	2	2	2	**2**	**3**	**11.6**
Terrorism	Rare	Catastrophic	High	5	3	4	1	**7.9**	1	1	1	2	**1.25**	**2**	**11.2**
Distance source tsunami	Possible	Minor	Moderate	3	3	3	2	**5.8**	4	2	2	3	**2.75**	**2**	**10.6**
Water/sewerage failure	Possible	Moderate	Moderate	4	2	3	3	**6.5**	2	2	2	2	**2**	**2**	**10.5**
Food supply	Unlikely	Moderate	Moderate	4	1	4	1	**5.9**	4	2	2	2	**2.5**	**2**	**10.4**
Communications failure	Likely	Moderate	High	4	1	4	1	**5.9**	2	2	2	2	**2**	**2**	**9.9**
Rural fire	Almost certain	Moderate	Very high	3	2	4	2	**5.6**	1	1	1	2	**1.25**	**3**	**9.9**
Rail accident	Possible	Catastrophic	Very high	4	1	3	2	**5.8**	2	2	2	2	**2**	**2**	**9.8**
Air accident	Possible	Catastrophic	Very high	4	1	3	1	**5.6**	2	2	2	2	**2**	**2**	**9.6**
Landslide /subsidence	Almost certain	Moderate	Very high	2	3	3	1	**4.6**	3	3	2	2	**2.5**	**2**	**9.1**
Dam break	Rare	Catastrophic	High	4	3	3	2	**6.8**	1	1	1	2	**1.25**	**1**	**9.1**
Coastal erosion/flooding	Almost certain	Minor	High	2	3	2	2	**4.5**	4	2	2	1	**2.25**	**2**	**8.8**
Frost/hail storm	Almost certain	Moderate	Very high	3	1	5	1	**5.2**	2	1	1	2	**1.5**	**2**	**8.7**

Hazard	Risk Analysis			Risk Evaluation											
	Likelihood	Consequence	Rating	Seriousness					Manageability					Growth	Total
				Social	Built	Economic	Natural	Sub-total	Reduction	Readiness	Response	Recovery	Sub-total	Sub-total	
Fuel availability	Likely	Major	Very high	2	2	4	1	**4.4**	3	2	2	2	**2.25**	**2**	**8.7**
Civil unrest	Rare	Major	Moderate	2	4	4	1	**5.4**	1	1	1	2	**1.25**	**2**	**8.7**
Road accident	Possible	Catastrophic	Very high	3	1	2	2	**4.5**	2	2	2	2	**2**	**2**	**8.5**
High winds	Likely	Moderate	High	2	2	4	3	**4.8**	2	1	1	2	**1.5**	**2**	**8.3**
Hazardous substances & oil spills	Likely	Major	Very high	2	2	3	5	**4.9**	2	2	2	2	**2**	**1**	**7.9**
S.H. roads closed.	rare	Minor	Very low	2	1	3	1	**3.6**	2	2	2	2	**2**	**2**	**7.6**
Urban fire	Unlikely	Major	High	2	3	2	1	**4.3**	1	1	1	1	**1**	**1**	**6.3**


SERIOUSNESS SCORE
Risk Analysis Rating
12
10
8
6
4
2
0
Very High
High
Moderate
Low
SH Roads closed
Urban Fire
Fuel availability
Coastal erosion/flooding
Road accident
Landslide/subsidence
High winds
Hazardous substances/Oil spill
Frost/hail storm
Civil Unrest
Rural Fire
Air accident
Distant source tsunami
Rail accident
Communications failure
Food supply
Water/sewerage failure
Liquifaction
Drought
Dam break
Electricity failure
Plant & Animal Pests
Aquatic pests and diseases
Animal Epidemic
Human Pandemic
River flood
Terrorism
Marine accident
Local SourceTsunami
Earthquake
Natural, Technological and Biological


MANAGEABILITY SCORE
Risk Analysis Rating
4
3.5
3
2.5
2
1.5
1
0.5
0
Urban Fire
Rural Fire
Dam break
Terrorism
Civil Unrest
River flood
High winds
Frost/hail storm
Liquifaction
Drought
Electricity failure
SH Roads closed
Communications failure
Water/sewerage failure
Hazardous substances/Oil spill
Air accident
Road accident
Rail accident
Plant & Animal Pests
Coastal erosion/flooding
Fuel availability
Earthquake
Landslide/subsidence
Food supply
Animal Epidemic
Aquatic pests and diseases
Distant source tsunami
Human Pandemic
Local SourceTsunami
Marine accident
Very High Management Gap
High Management Gap
Moderate Management Gap
Low Management Gap
Natural, Technological and Biological


GROWTH SCORE
Risk Analysis Rating
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
Hazardous substances/Oil spill
Dam break
Urban Fire
High winds
Frost/hail storm
Local SourceTsunami
Distant source tsunami
Coastal erosion/flooding
Landslide/subsidence
SH Roads closed
Communications failure
Water/sewerage failure
Fuel availability
Terrorism
Civil Unrest
Food supply
Air accident
Road accident
Rail accident
Marine accident
River flood
Earthquake
Liquifaction
Rural Fire
Drought
Electricity failure
Animal Epidemic
Plant & Animal Pests
Aquatic pests and diseases
Human Pandemic
High Growth in Risk
Moderate Growth in Risk
Low Growth in Risk
No Growth in Risk
Natural, Technological & Biological

2.3 Marlborough CDEM Group Environment

2.3.1 Social Environment

General Population

The resident population of Marlborough was 43,416 people of whom 4,776 were Māori in the 2013 census. This is an increase of 858 people, or 2%, since the 2006 Census. Blenheim is the main centre with 22,176 residents while Picton's population is 2,928 and Renwick's is 1,872. Marlborough has only 1% of New Zealand's population and is ranked 15th out of the 16 regions in New Zealand and therefore the rating base is quite low.

16% of people in Marlborough Region were born overseas, compared with 25% percent for New Zealand as a whole. For people born overseas who are now living in Marlborough, the most common birthplace was England.

After English, the next most common language spoken in Marlborough Region is te reo Māori, which is spoken by 2.2% of people which is 1.5% less than statistics nationally. New Zealand Sign Language is used by less than one percent of people in Marlborough, which is the same as for all of New Zealand. 90% of people in Marlborough speak only one language, compared with 80% of people for all of New Zealand.

Marlborough's population is boosted with domestic and international visitors every year. In the 12 months to June 2014 the 106 accommodation providers in Marlborough hosted over 705,000 domestic guest nights and over 337,000 international guest nights. Cruise ships are an increasing feature of Picton's summer with 44 scheduled to visit during the summer of 2016-17. 25 of the visiting ships are over 200m long and some bring as many as 4,900 visitors (and 1,300 crew) to the District for the day.

Ethnic Groups in Marlborough

The European ethnic group make up 89% of the Marlborough population compared to 74% for New Zealand as a whole. Māori make up 11.5% of the Marlborough population compared to 15% nationally. Eight iwi who make up Te Tau Ihu and each have a marae, some of which are used as Civil Defence Centres (see section 4.2.4 for more detail). It is worth noting that significant numbers of overseas labourers (principally from Vanuatu and Thailand) work in the vineyards throughout the year. The resident ethnic groups are shown in Table 4.

Table 4: Ethnic Groups in Marlborough

Ethnic Groups In Marlborough and New Zealand 2013 Census		
Ethnic Group	**% Marl.**	**% NZ**
European	89.2	74
Māori	11.5	14.9
Pacific peoples	2.3	7.4
Asian	2.8	11.8
Middle Eastern/Latin American/African	0.6	1.2
New Zealander	2.5	1.6
Other ethnicity	2.5	1.7

Vulnerable Groups

Those in the population who are particularly vulnerable during a CDEM emergency include:

- People with disabilities or other health conditions.
- Older people who are isolated or in poor health.
- Children in schools or child care.
- People with English as a second language, including RSE staff and their employers.
- Domestic and international visitors.
- People in isolated communities, especially in coastal areas.
- People living in low-income households or who are homeless
- Business owners.

Marlborough is a preferred location for people to retire and has the highest proportion of people aged over 65 years in New Zealand. This age group makes up over 20% of the total population of Marlborough while the Auckland Region is at the other end of the scale with over 65s being only 11.5%. National statistics indicate that about 38% of those over 65 years also live on their own.

As previously noted there are significant numbers of international visitors and workers in Marlborough throughout the year. An example of their vulnerability was during the Seddon earthquakes when the Ni-Vanuatu vineyard workers understood earthquakes resulted in tsunami and acted accordingly although no threat existed. Cruise ships coming into Picton with overseas tourists can double or treble the local population and this can result in both them and the residents being exposed to potential hazards through natural events as well as biosecurity issues.

There are a number of small isolated communities throughout the Marlborough Sounds and inland valleys. These communities generally have a resilient nature however they are vulnerable to natural hazards.

2.3.2 Built Environment

Land Use

The 2013 census showed that Marlborough had 21,158 dwellings of which a high proportion were unoccupied at 3,960 or 22%. Of these 2,313 are in the Sounds which will mostly be baches and holiday homes. Marlborough has a higher home ownership rate than the rest of New Zealand with 71% compared to 65% with the remainder as rental properties. There were 6,783 business locations (geographic units) in Marlborough, which is an increase of less than 1% since 2006, employing 20,680 paid employees.

Woodbourne

RNZAF Base Woodbourne is located 8km west of Blenheim and is the Air Force's training support base. Units at Woodbourne are responsible for the training of recruits, initial officer training, trade training and command training. The Ground Training Wing was created in 1995 from existing units at Woodbourne and those relocated from Wigram and Hobsonville. Also at Woodbourne is the Air Force's only heavy maintenance facility for the repair of aircraft airframes, engines and avionics systems. This unit was commercialised in 1998 and is now managed by Safe Air Ltd. With a typical student population, Woodbourne has personnel strength of around 1,250 and is an important training area for the RNZAF.

Telecommunications

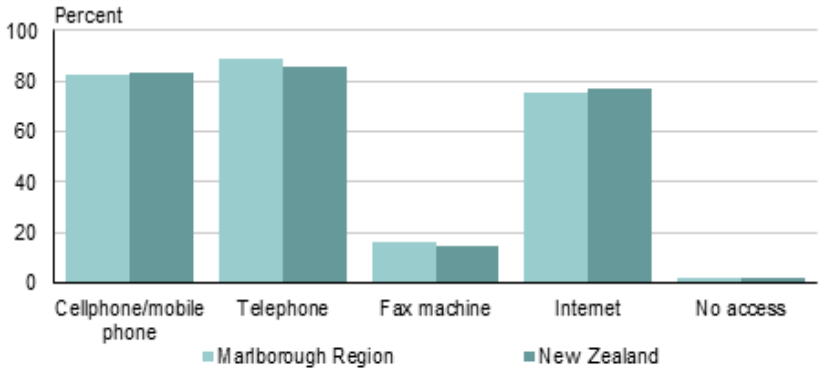
In Marlborough 82% of households have access to a cell phone and 75% have access to the Internet.

The proportion of people in households with Internet access decreases with age. In 2013, of people aged 65+ who lived in households, 64.7 percent lived in households with access to the Internet. This is compared with 85.1 percent of people aged 15–64 years. The proportion of people in households in private dwellings with access to the Internet decreases with age.

Of people aged:

- 65–74 years, 75.3 percent lived in households with access to the Internet.
- 75–84 years, 54.2 percent lived in households with access to the Internet.
- 85+ years, 33.0 percent lived in households with access to the Internet.

Figure 3: Household Access to Phones, Internet and Fax Machines in Marlborough, 2013 Census



Note: Households can access more than one type of telecommunication device. Therefore percentages do not add up to 100.
Source: Statistics New Zealand

Many businesses such as transport operators, forestry companies and utility maintenance companies have mobile radio systems with base sets in their offices and mobile sets in their vehicles. The organisations with the most extensive networks include Marlborough Lines, Department of Conservation, Nelson Forests Ltd, Marlborough District Council and KiwiRail. Many of these organisations have agreements to share frequencies and repeater sites. The radio repeater network in Marlborough gives better coverage than the cellular networks and the majority have uninterrupted power supply systems or operate on solar power so are not effected by power cuts during an emergency. There are a number of amateur radio enthusiasts in Marlborough who have dedicated channels for their use. Large vineyards also have simplex communications systems which operate on line of sight. Marlborough also has good coverage of the Police, FENZ, Marine and Civil Defence emergency services band radio frequencies.

Transport

The most common means of travel to work for people in Marlborough is driving a private car, truck or van (62% of people who travelled to work used this form of transport). This was followed by driving a company car, truck or van (16%) and walking or jogging (8%).

Blenheim Airport is located on land adjacent to the Woodbourne Airforce Base. The arrival and departure building has recently been extended to handle increasing passenger numbers and larger planes. In 2015 there were over 8,000 landings bringing about 250,000 passengers into Marlborough. Although the landings are expected to reduce passenger numbers are expected to increase. Marlborough has two other airfields. Omaka is a grass field with a number of club and vintage aircraft based there as well as top dressing and helicopter companies. Sounds Air operate a passenger service out of Picton Airport (5kms south of the township) and this strip is being developed for private aircraft as well as commercial providers.

The port at Shakespeare Bay exports logs and although the industry can be a fickle one during the 2010-11 financial year 35 log ships took over 624,000 tons of logs to offshore markets. The Marlborough Port

Company is hoping to regularly export between 500,000 and 600,000 tons annually. Large cruise ships also berth at the Shakespeare wharf because of the deeper water in the bay and 44 are expected during the 2016/17 summer season. The three Interislander ferries do approximately 4,000 crossings of Cook Strait per annum carrying upwards of 800,000 passengers, 220,000 passenger vehicles plus 3-4 million tons of freight, 2/3 of which is carried by trucks and 1/3 carried by rail. Bluebridge also run a ferry service across Cook Strait and its two vessels do approximately 2,600 sailings per annum. Their vessels can carry 400 and 526 passengers each however they mostly focus on road freight, particularly stock trucks.

Kiwirail run a daily passenger express train from Christchurch to Picton return called the Coastal Pacific. This service runs between September and April and does 416 services during this time. Freight on the rail network is working at its full capacity with approximately 20 freight trains travelling between Christchurch and Blenheim daily. Some of these are carrying significant amounts of dangerous goods. The main trunk line is particularly vulnerable to slips and washouts on the east coast and follows the State Highway 1 corridor for the majority of its length.

Main Trunk Railway Line near Ward after 2013 6.5M Seddon Earthquake

The District is highly dependent on its roading network. The Marlborough transport network comprises 1,527km of local Council roads (886km sealed and 641 unsealed) with 360 bridges and 259km of State Highways being 1, 6 and 63. Nelson, Tasman and Marlborough Councils in partnership with the NZ Transport Agency have collaborated to develop a joint Regional Land Transport Plan that aims to provide our community with an efficient, safe and resilient road network. The RLTP's aspirations align with the national outcomes that are outlined in the Government's Policy Statement on land transport. There are approximately 900 trucks per day travelling on State Highway 1 through Spring Creek in Marlborough. All logs delivered to Shakespeare Bay are also transported by trucks.

2015 Truck Fire on State Highway 1

Electricity

Most electricity users are highly dependent on the reliable supply with most businesses and households having no alternative for heating, lighting, cooking or financial transactions. Most fuel stations and supermarkets do not have generator backup in the event of a loss of electricity. Tree falls, animals and human actions regularly result in power line failures causing vegetation fires. The Marlborough Lines network is very resilient and has multiple feeds which are linked and can be rapidly switched to ensure power remains available.

Gas

LPG is trucked into Marlborough and is delivered to homes and businesses from Nelson. LPG gas has numerous applications in agriculture including heating for poultry, livestock, greenhouses, producing hot water for sanitation and also as a forklift fuel. BOC Gas based in Blenheim has large storage tanks and also stocks a wide range of other gases such as oxygen, hydrogen, acetylene, ammonia and carbon dioxide.

Fuel

The majority of fuel supplied to Marlborough is landed in the Nelson Port from Refining NZ at Marsden Point and is stored in large tanks on site. From there it is transported the 120 kms by truck on State Highway 6 over the Whangamoa and Rai Saddles to Blenheim. There are no bulk storage facilities in Blenheim so fuel is stored on site at petrol stations, transport companies and the rail yards in Picton. Most of this fuel is not able to be dispensed if electricity supply is compromised, particularly if it is stored underground.

Water Supply

Blenheim, Picton, Havelock, Renwick, Awatere (including Seddon), Wairau Valley and Riverlands all rely on public supply with many other outlying communities being on local community supplies not operated by Council for example at Rarangi, Tirimoana and Momorangi Bay.

Council supplies have varying storage capability and water treatment requirements. Water usage is very seasonal with summer extremely high due to garden irrigation demand.

For emergency purposes winter night demand is assumed to be a minimum requirement. It is also assumed that reservoirs will be 60% full at the advent of an emergency.

Blenheim

- Estimated winter night storage 19 hours.
- UV and pH correction treatment.

Picton

- Estimated winter night storage 23 hours.
- Essons Valley – filtration, chlorination and UV treated.
- Speeds Road – chlorination and pH correction.
- Treatment is required for health protection. Essons Valley has summer algae problems requiring aeration.

Havelock

- Estimated winter night storage 12 hours.
- Takorika – open catchment – could be used in an emergency.
- Boiling or treating water essential.

Renwick

- Estimated winter night storage 8 hours.
- Chlorinated.
- Treatment is required for health protection.

Awatere

- No system storage at present but future plans are for a reservoir to service Seddon.
- Many properties have on site tank storage.
- No system treatment – boil water notice in place.
- Treatment is essential for health protection.

Wairau Valley

- No storage.
- Chlorination which is essential for health protection.

Riverlands/Cloudy Bay Business Park

- 24 hours storage (winter night).
- No treatment.
- Secure supply so treatment not required unless an event makes supply insecure.

Wastewater

Council operates urban sewage collection, treatment and disposal system to protect both the health of the community and the physical environment. The network is over 305 kms in length.

The flow in the wastewater reticulation relies largely on gravity through a continuous progression of pipes. There is very little opportunity to interconnect branches of the network. A breakage or blockage in the system will therefore affect all pipes upstream. Mobile pumps can be deployed to 'over-pump' across a blockage but there are only limited numbers of pumps of sufficient capacity available in the region.

The Canterbury earthquakes of September 2010 has shown that all types of spigot and socket jointed pipes can be dislocated during severe ground shaking.

Pipes, wet wells and manholes are all susceptible to 'floating' in areas of liquefaction. Relative ground movements during an earthquake can also disturb the gradient required for gravity flow.

Other hazard events such as power outage have also been taken into consideration. The main sewage pump stations at Blenheim MOPS, Dublin Street Picton and Waikawa pump stations all have backup

generators available and/or on-site. The other stations have external plugs and an emergency plan to be serviced with portable pumps in the event of a prolonged power outage.

The 2013 and 2016 earthquakes resulted in damage to Blenheim's earthenware sewer pipes and repairs and replacement are ongoing.

2.3.3 Economic Environment

Key Sectors

There are 7059 business units operating in Marlborough (1.3% of the national total). In 2017 economic growth was 3% and employment growth was 1.1%, driven by growth in the agriculture (predominantly viticulture), forestry and fishing sectors. The vast majority of the beverage product manufacture in the table below is the production of wine and the fruit growing is also mostly vineyards. Marlborough is by far the largest wine growing region in New Zealand and from 2007 to 2012 the area planted in grapes has increased from just over 17,000 ha to more than 23,769 ha. The visitor economy in Marlborough is worth over $1M daily and contributes just under 5% of the region's GDP (source: Destination Marketing Review Marlborough, May 2017).

Table 5: Marlborough Industry Profile (source: Infometrics, 2017 data)

Industry	GDP Level for 2015 $M	Share of total %
Beverage product manufacture (eg; wineries)	365.5	15.6
Rental, hiring and real estate services	161.9	6.9
Health care and social assistance	114..7	4.9
Central Government and Defence	82.5	3.5
Agricultural support services and hunting	74.1	3.2
Professional, scientific and technical services	74.8	3.2
Electricity and gas supply	$66.1M	3.0%
Horticulture and fruit growing (eg; vineyards)	64.9	2.8
Construction services	56.2	2.4
Education and training	53.9	2.3
Other store and non-store retailing	56.8	2.4
Wholesale trade	48.6	2.1
Accommodation and food services	48.5	2.1
Seafood processing	51.3	2.2
Sheep, beef cattle and grain farming	36.8	1.6
Forestry and logging	27.7	1.2

2.3.4 Natural Environment

Marlborough can be separated into two distinct areas, each with its own climate, topography and vegetation types. The Marlborough Sounds north of the Wairau River receive up to 2,500mm of rainfall per annum which can fall in heavy bursts causing rapidly rising river levels in the steep catchments that make up the area. The Te Hoiere/Pelorus catchment has a history of severe flooding and continues to overtop its banks on a regular basis. Much of the land has been farmed at some stage but most of the hill slopes are now covered in manuka dominated scrub, native beech/podocarp forest or production pine forest. The broader valley floors of the Rai, Te Hoiere/Pelorus and Linkwater are predominantly converted to dairy farms. The Department of Conservation manages large areas of the Marlborough Sounds including the majority of the foreshore reserves and the Kokomohu Marine Reserve in the Queen Charlotte Sound/Tōtaranui. Most islands in the Sounds are also managed by the Department and many have been successfully eradicated of mammalian pests. Maud and Takapourewa (Stephen's) Islands are of international significance to conservation and d'Urville Island is important as a possum free habitat.

Awatere Valley

The Wairau River experiences the typical, dryer east coast climate and rainfall drops off to an average of only 750mm per annum. Drought is a common theme and Blenheim is regularly the sunniest township in New Zealand. Apart from the braided Wairau and Awatere River plains the majority of the land is rolling hills running into steeper country as altitude increases. Many of the upper catchments have permanent snow through the winter months and Mt Tapuaenuku in the upper Awatere is the highest mountain outside of the Southern Alps. The predominant vegetation types are tussock grasslands and grey scrub with an enormous amount of biological endemism which has adapted to the harsh dry colder areas of inland Marlborough.

2.3.5 Human Modification

Although much of the Marlborough Sounds was farmed up until the 1960s, most of them have reverted back to native scrub and forest or been planted in pinus radiata. Transportation costs (barging) meant sheep and cattle farming became uneconomic however at the same time the sheltered waters of the Sounds were identified as ideal for aquaculture and since that time 575 green-lipped mussel farms have been established, mostly in the Pelorus Sound/Te Hoiere. Salmon farms have also been established in

both Sounds and produces 55% of the world's farmed King Salmon. Both industries are coming under increased scrutiny for their impacts on the natural environment and in some cases the future locations of these activities are uncertain. Beyond Havelock and Picton townships over 5,000 dwellings have been built throughout the Sounds, mostly on the foreshore.

Vineyards and Water Storage Dam

The Wairau and Awatere plains have been hugely modified and are now mostly planted in vineyards. Associated with the vineyards are many storage dams for supplying water throughout the summer growing season. Lifestyle blocks are also a feature closer to Blenheim. The lower Wairau River has extensive flood protection works and the Diversion which was completed in 1963 has allowed the flooded river to access the sea far easier. The Taylor Dam was built in 1965 and also protected Blenheim from flooding from the Taylor River which flows through the middle of the township. Most of the hill and high country of south Marlborough remains as extensive pastoral farming and burning of these areas has reduced in the last 30 years.

2.3.6 Implications for the Marlborough CDEM Group Environment

The implications of Marlborough's profile for civil defence emergency management are identified below. These issues have been considered in developing the CDEM work plan and priorities.

- Marlborough District Council is one of the smaller unitary authorities and as such relies heavily on partnerships with other emergency response agencies and volunteers.

- Parts of Marlborough can experience weather extremes ranging from droughts to flood events. Farmers are used to managing the consequences of drought but extremes as a result of climate change will make it increasingly difficult. The extensive flood control measures on the Wairau River could reinforce a public expectation that flooding is not an issue for Wairau Plains residents.

- Cook Strait and the outer Marlborough Sounds are regularly buffeted by severe storm events.

- Three significant fault lines pass through the Marlborough district. These are the Wairau, Awatere and Clarence faults which are all off shoots of the Alpine Fault. GNS Science has calculated predictions of a rupture of the Alpine Fault in the next 50 years being as high as 50%.

- Recent studies have indicated a risk of liquefaction occurring east of Blenheim in the event of a significant earthquake.

- Local source tsunami have occurred within recorded history and predictions show a serious level of potential inundation from possible future occurrences.

- Numerous rural communities, particularly in the Sounds, have the potential to become isolated during an emergency because of the single points of entry, topography and remoteness. Self-reliance and preparedness become of even more importance and this needs to be fostered.

- Marlborough is well serviced by radio telephone communication coverage and multiple agencies are able to communicate with one another. There are many locations where no cellular coverage exists.

- Picton and the east coast corridor is the link for the majority of the South Island's freight needs and a key entry point for tourists.

- Marae and schools are key facilities for providing welfare services in their local communities as they are often the only publicly accessible facilities in the smaller Marlborough communities.

- State Highway 1 and the east coast rail corridor are vulnerable to severe weather events and to earthquakes, as evidenced by the 2016 Kaikoura earthquake.

- Significant lifelines are carried on the State Highway bridges and berms.

- The Marlborough economy is based on monoculture crops such as pinus radiata, green-lipped mussels and grape vines, and other primary industries. These industries are particularly vulnerable to plant and animal incursions and diseases from outside the country. Cruise ships and log carrying ships are an obvious source for possible incursions.

- The sheer volume of shipping traffic in and out of the Sounds increases the likelihood of a maritime accident. The last major accident was the cruise ship Mikhail Lermontov in 1986 but there have been a number of near misses since then.

- The high numbers of domestic and international visitors could result in a large proportion of people having very little knowledge about what to do in an emergency. The high number of unoccupied dwellings in the Sounds would also suggest that many will have few emergency provisions.

- The percentage of older people residents means that communication tools need to be carefully targeted and the communities need to consider their neighbours pre and post an emergency. Given a third of older people live on their own and many lack a modern form of communication they are particularly vulnerable.

- At various times of the year Marlborough has large numbers of visitors and workers from overseas who will have little knowledge of what to do in an emergency and who may be isolated for periods of time.

- Nelson Port and State Highway 6 are the single points of entry for fuel and gas supplies into Marlborough.

- Almost all basic foodstuffs are sourced from outside the District and there is limited stock available (<3 days) in the supermarkets.

- Transpower transmission lines from the southern lakes to the North Island pass through Marlborough and are vulnerable to hazards such as rural fire, tsunami and earthquakes.

- Woodbourne Airforce Base is a potential response resource which is currently underutilised.

3. Reducing Marlborough's Hazard Risks

3.1 Overview

Risk reduction is the process of *"Identifying and analysing long-term risks to human life and property from hazards; taking steps to eliminate these risks if practicable, and, if not, reducing the magnitude of their impact and the likelihood of their occurring" (National CDEM Strategy 2007).*

The purpose of CDEM is to manage hazard risks (as far as practicable) within acceptable levels, balancing the costs and benefits achieved with consideration of the communities' priorities for reducing risk.

3.1.1 Principles

The Marlborough CDEM Group risk reduction principles are:

- Integrated planning and risk management is accepted as the basis for comprehensive risk reduction.
- Successful comprehensive risk reduction requires a collaborative, multi-agency and all of government approach.
- A range of policy, regulatory, service delivery and self-help arrangements supported by agencies at local, regional and national level contributing to risk reduction initiatives.
- A focus on effects or outcomes of activities that may result in undue risk rather than the regulation of the hazard or activity per se.

3.1.2 Issues and Priorities

The CDEM Group Plan has identified the following issues relating to risk reduction:

- Tsunami evacuation plans for coastal communities at risk need to be developed.
- The consequence of a large tsunami on lifelines utilities is not clearly understood.
- The Lifelines Group need to complete an Infrastructure Vulnerability Plan for the District.
- Support nationally-driven educational programmes and local initiatives for local issues.
- Complete hazard assessments of possible areas for residential zoning around Blenheim.
- The Group needs to undertake more exercises that test reduction and recovery measures are needed.
- Organisational resilience and business continuity planning and the wider community are lacking.
- There is a need to place greater emphasis on fast moving consumer goods due to the vulnerability of road and rail links.
- Water storage facilities for primary producers need to be built.
- Remedial work required to earthquake prone buildings in Marlborough not completed.
- Evaluating the building stock in Marlborough as required under the Building Amendment Act 2016 needs to be planned and completed.
- CDEM staff developing closer working relationships with the Council regulatory section.
- Hazard reduction policies in the Marlborough Environment Plan need progressing.

3.1.3 Objectives

In response to the issues identified above, Marlborough CDEM has set the following objectives:

- Identify all hazard reduction stakeholders so as to promote collaborative risk reduction.
- Promote hazard research to all stakeholders and disseminate the information.
- Reduce risks from hazards through collaboration and coordination.
- Continue to make hazard data widely available to the public in a way that is easily understood and fosters action to minimise their potential impact.

3.2 Current Arrangements

3.2.1 Regulation

The position of Marlborough as a single Council Group has advantages for the co-ordination of reduction activities. Much of the policy framework and statutory instruments are council functions and their co-ordination within Marlborough District Council is readily achieved. Departments within MDC work closely together in the formulation and implementation of environmental, economic and community strategic planning. The Regulatory Department is responsible for environmental policy, environmental science and monitoring, resource consent administration, building control, compliance and hazard management. Statutory requirements from central Government are readily incorporated into the planning process.

The main instrument available to MDC to reduce the effects of natural hazards on its communities is the Resource Management Act 1991. Other legislation that is enacted largely through the Council includes:

- The Building Act 2004.
- Local Government Act 2002.
- CDEM Act 2002.
- Land Drainage Act 1908 and the Soil Conservation and River Control Act 1941.
- Biosecurity Act 1993.

As a consequence of the single Council status there is no Reduction Committee in Marlborough as this role is carried out in-house. The Readiness and Response Committee, the Recovery Planning Committee and Engineering Lifelines Group provide a forum for the main stakeholders and reduction activities are incorporated into their processes. Reduction is also a topic on every CEG meeting agenda and is coordinated at that level.

3.2.2 Hazard Information

MDC has made available a wide range of hazard data through the Council's website: www.marlborough.govt.nz/ Through the Smart Maps site the public have access to the fire season status (ie; open, restricted or prohibited), location of biosecurity threats, Environmental Plan zoning, tsunami inundation models and Resource Management Plan data. Council also manages a number of weather stations and river monitoring equipment which show real time river flows (in cumecs), river levels (height) and rainfall. These are all available on one mapping site known as Floodwatch which has pre-determined alert levels which change colour depending on the size of the flood (eg; exceeds 10 years orange, exceeds 50 years red). Research reports on hazards such as liquefaction and active (earthquake) fault traces are also available. Groundwater levels in each particular aquifer are also monitored on tables which show previous year and variation trends since monitoring began. This information has proved particularly useful to engage with communities that are on limited supply during the drier months and has resulted in self-regulation of use.

The public also have other options to access hazard data. The Metservice regularly release weather watches and warnings for predicted extreme weather such as heavy rainfall, strong winds, tornados and lightning strikes. Marlborough CDEM staff automatically receive these watches and warnings from the Metservice and assess their possible impact on local areas. Other sources of natural hazard data are through the NZ Red Cross Hazard app which includes epidemics and biosecurity information and the Geonet app which focusses on earthquakes. Both can have alerts set for a pre-determined type of emergency, its size and location.

Trout Hotel and Wakamarina River in Flood 2010

3.2.3 Building and Infrastructure Upgrades

Council has an active programme which focus' on buildings of two or more stories and built pre 1977. Those deemed to be earthquake prone ("EQP") have been identified and number 24 properties. Owners have been issued verification notices to strengthen or demolish the buildings however in April 2016 18 buildings are still to complete remedial work within the notice period.

3.3 Reducing Hazards Action Plan

Objectives	Actions	Lead Agency
1. Identify all hazard reduction stakeholders so as to promote collaborative risk reduction.	a) Identify and assist in risk reduction initiatives in small communities.	CDEM
	b) Encourage and facilitate organisational resilience and business continuity planning in the wider community.	CDEM
	c) Ensure policies, by-laws and local legislation support hazard risk reduction.	MDC
	d) Incorporate risk reduction into infrastructure asset and management plan processes.	CDEM
2. Promote hazard research.	e) Support work that involves research organisations working alongside CDEM practitioners.	CEG
	f) Identify and where possible coordinate research funding streams to maximize benefits for all stakeholders.	CEG
3. Reduce risks from hazards through collaboration and coordination.	g) Incorporate comprehensive risk reduction into Marlborough urban growth strategies.	MDC
	h) Work with research organisations and South Island Groups on the Alpine Fault (AF8) project.	CDEM
	i) Work with neighbouring Groups on mitigating shared hazards and risks.	CDEM
	j) Complete a Lifelines Vulnerability Plan.	
4. Continue to make hazard data widely available.	k) Further develop and disseminate GIS mapping to improve spatial awareness of risks to communities and organisations.	MDC
5. Contribute to the success of the AF8 Project	l) Provide input into the development of a response plan as part of the AF8 project.	CDEM

4. Community Readiness

4.1 Overview

Community readiness focuses on the ability of communities, families and individuals to be able to meet their own needs during and after an emergency. CDEM engages with a number of community organisations to foster a resilient mind set which will lead to action on the ground.

4.1.1 Principles

- Individuals and communities must be able to care for themselves and each other, as much as possible, when the normal functions of daily life are disrupted.
- CDEM arrangements support and encourage local ownership of this self-care responsibility.

4.1.2 Issues and Priorities

Marlborough CDEM has identified the following issues in relation to community readiness:

- Marlborough has a very high percentage of older people who are particularly vulnerable.
- High numbers of overseas workers and tourists are particularly unprepared for any emergency situations.
- Residents in the main metropolitan areas are generally unprepared for significant emergencies involving food supplies, water and power alternatives.
- The annual Clued Up Kids programme has proven to be effective in educating school children about what to do in an emergency.
- Existing Community Response Plans are out of date and many communities do not have one.
- Social media has an increasingly significant role to play.
- MCDEM have developed a number of public education programmes, including *Never Happens? Happens*.
- The CDEM section of Council's website has been updated to increase the focus on personal and community readiness..
- Continue to work alongside stakeholders and volunteer organisations to educate remote communities about their vulnerabilities inherent in living in the rural areas of Marlborough.
- A series of business continuity workshops have been delivered to non-government organisations (NGOs), school principals and others.

4.1.3 Objectives

In response to the issues identified above, the Marlborough CDEM has set the following objectives:

1. Develop educational material for the more vulnerable members of the Marlborough community.
2. Increase the community's preparedness levels to existing and emerging hazards.
3. Promote MCDEM educational initiatives on being prepared and ensure they are targeted at the Marlborough communities most at risk.
4. Use social media wisely so as to engage with the widest audience across the District.

4.2 Current Arrangements

4.2.1 Community Response Plans

In response to the severe floods in December 2010 two Community Response Plans were written for the Wakamarina/Canvastown and the Kenepuru, Central Pelorus Sound/Te Hoiere communities which were severely impacted and completely isolated during the emergency. Both are now out of date and need to be reviewed. There are a number of small isolated settlements and distinct communities scattered throughout the District, most of which are in the Marlborough Sounds. Some communities (eg; Ngakuta Bay, Duncan Bay) have produced their own 1-2 page information sheets, and the CDEM Group works with individual communities to facilitate consistent messaging for what to do in an emergency.

2010 Canvastown Floodwaters over State Highway 6

4.2.2 Public Education and Consultation

MDC manages a Marlborough Emergency Twitter site https://twitter.com/MarlEmergency which is used to provide messages, updates and educational material to the audience. This can be updated during an emergency by the Council's social media staff. Some of Council's employees also fill the role of public information managers when needed and the media liaison person employed by Council is also involved in public alerting and information sharing.

CDEM has a page on the Council website which is strongly focused on education. It includes links to the operative Emergency Group Plan and Community Response Plans as well as the locations of Civil Defence Centres in the District. Particular information material also includes the following topics; *Are you prepared? Drop Cover Hold*, and *Get Ready Get Thru* messages. The Engineering Lifelines Groups' four principles of emergency planning and planned future projects are also outlined on the site.

Marlborough CDEM staff put significant effort into maintaining relationships with 65 Neighbourhood Support Coordinators as well as rural support groups and Civil Defence Centre volunteers. Radio

advertising is carried out each year on locally broadcast stations which involve many short educational messages, as well as personal interviews with staff when recent issues can be discussed.

4.2.3 Public Alerting

The Council's website provides an alerting tool known as Floodwatch which most residents in flood prone areas in the District use to monitor river levels and rainfall in their local catchments. It can provide sufficient warning to move stock or make further preparations as necessary. The public are also able to use various apps such as NZ Red Cross Hazards and Geonet and can find weather alerts on the Metservice website. Weather warnings are emailed and texted to all key stakeholders.

Marlborough CDEM staff are proactive once alerts have been received from MCDEM or the Metservice and will contact key members of communities alerting them to the probability of an event escalating to a point where active management will be required. These contacts are generally members of the Volunteer Rural Fire Forces scattered throughout the District, Rural Support Trust members, residents' association members, neighbourhood support coordinators or owners and managers of significant assets at risk such as campgrounds near rivers or the coast. Once alerted the community contacts then advise key members of the community and initiate an appropriate response. In some cases this is formalized through the Community Response Plans.

Radio NZ and public radio broadcasters are channels which are used to get messaging out to communities but their coverage of the district is patchy at best. A privately owned radio station, Brian FM, has established a network of repeaters in Marlborough which give coverage of a significant proportion of the Marlborough population. The station owner has funded the installation of a repeater in the Emergency Operation Centre which allows CDEM staff to break into live transmissions and broadcast emergency information over the entire network.

In late 2017 MCDEM implemented its emergency mobile alert system. This system enables messages sent by authorised emergency agencies to capable mobile phones. The alerts can be targeted to areas affected by serious hazards and will only be sent when there is a serious threat to life, health, or property and in some cases for test purposes.

4.2.4 Māori Engagement

Māori make up 11% of the population of Marlborough. Three of the eight tangata whenua tribes in Te Tau Ihu (Rangitane, Ngati Kuia and Ngati Apa) are of Kurahaupo waka origins; three (Ngati Toa, Ngati Koata and Ngati Rarua) descend from the Tainui waka; and two are from northern Taranaki (Ngati Tama of Tokomaru waka origins and Te Atiawa of Aotea or Kurahaupo descent).

In April 2014 the Te Tau Ihu Treaty Settlement legislation was passed giving effect to the final deeds of settlement for historical Treaty claims in the South Island. Iwi are now in a position to restore their mana whenua and they already run many community projects, including marae restoration and health centres. In the 2013 census, more than 8,800 people claimed affiliation with the Te Tau Ihu tribes.

Te Atiawa and Ngati Kuia have made their marae in Waikawa and Canvastown respectively available in the event of emergency accommodation being needed. They have also installed radio communication equipment so are able to contact the EOC during an emergency.

Iwi have been invited to be on the various operational and governance committees. As a result they are now represented on the Welfare Coordination Group, the Readiness and Response Committee and the Coordinating Executive Group.

4.3 Community Readiness Action Plan

Objectives	Actions	Lead Agency
1. Develop educational material for vulnerable members of the community.	a) Produce bilingual and culturally sensitive educational material for tourists and seasonal workers.	CDEM
2. Increase the community's preparedness levels to existing and emerging hazards.	b) Develop strategies that consider the high proportion of older people in the District.	CDEM
	c) Build on existing messaging to engender action towards preparedness.	CDEM
	d) Review existing, and develop further, Community Response Plans.	CDEM
	e) Work alongside other key agencies to deliver key messages to remote communities.	CDEM
3. Build upon existing campaigns to ensure they are relevant and impact the communities at risk.	f) Support national awareness programmes.	CDEM
	g) Continue to support Clued Up Kids.	CDEM
	h) Take up options to educate key sectors (eg; schools) as they arise.	CDEM
4. Use social media to engage with the widest audience.	i) Review the CDEM pages on the MDC website.	CDEM
	j) Build audiences on existing social media channels and assess new options.	CDEM

Note that hazard development and dissemination actions in the risk reduction section also contribute to the achievement of the above objectives.

5 CDEM Sector Readiness

5.1 Overview

This Section focuses on the readiness of emergency response organisations, emergency services, lifeline utilities and other CDEM stakeholders. In addition to the duties listed with the CDEM Act, the National Civil Defence Emergency Management Plan states several requirements for agencies (including lifeline utilities). The readiness requirements are as follows:

- Develop, review, and improve their emergency plans.
- Maintain arrangements to respond to warnings.
- Incorporate risk management principles to form part of normal business operations.
- Incorporate emergency response and recovery planning into their business continuity arrangements.
- Plan, train, exercise, and equip themselves in coordination with interdependent agencies.

5.1.1 Principles

The CDEM Group and key CDEM agencies with a role in CDEM (note in Appendix A) will:

- Maintain and regularly review plans, arrangements and systems for response and recovery.
- Maintain and regularly review their capability and capacity to respond and recover from CDEM emergencies.

5.1.2 Issues

Marlborough CDEM has identified the following issues in relation to CDEM sector readiness:

- Retaining and recruiting volunteers is becoming increasingly challenging.
- Volunteers are generally limited to training that can be provided outside usual work hours and without personal cost.
- There are currently no succession plans for key roles such as Controller and Recovery Manager.
- Incident management personnel are crucial for managing an emergency, but do not always have ready access to training.

5.1.3 Objectives

In response to the issues identified above, Marlborough CDEM has set the following objectives:

1. Maintain a strong Readiness and Response Committee membership focused on working in a collaborative manner.
2. Develop strong working relationships with key volunteer organisations such as NZ Red Cross, LandSAR and Coastguard.
3. Continue to support the development of Community Response Plans.
4. Continue to carry out multi-agency exercises which focus on local stakeholder hazards.
5. Maintain the Marlborough Emergency Response Team as an effective and highly trained unit which meets Marlborough's needs in initial response.

6. Establish robust processes which ensure succession planning for key roles is in place.

7. Readiness also reflects the importance of relationships that support recovery. Community-led recovery relies on existing and new community connections and relationships, built prior to response and recovery.

5.2 Current Arrangements

5.2.1 Capability Development

To reduce the pressures of both agencies to recruit volunteers CDEM and Rural Fire have combined their Incident Management Teams to form one Regional Incident Management Team for Marlborough. Team members come from many different backgrounds including Council staff but all volunteer their time to train. The team has the ability to respond to a wide range of emergencies and trains monthly in the Emergency Operations Centre sometimes as individual functions (eg; operations, planning) and at others as an entire team on a scenario.

The Marlborough Emergency Response Team is based at the EOC and in 2016 included 17 members who are fully kitted and trained to respond to various types of emergency. The team is not a registered RT team. They train fortnightly and are well equipped to carry out their initial response function as well as providing logistical support during large rural fire events. The team often trains with other initial response agencies such as NZ Red Cross, St John, Coastguard and the NZDF (mostly Airforce personnel from Woodbourne Airbase.

Marlborough Emergency Response Team Members

MDC Customer Service Officers and some other staff carry out regular training in the use of EMIS so that they can transition into the EOC when required. Emergency Operations Centre and CIMS 2 and 4 courses continue to be held as demand warrants. These courses give volunteers and stakeholders' staff (often those in a liaison role) a good working knowledge of how an emergency is managed.

5.2.2 Operational Planning Groups

Readiness and Response Committee

The Readiness and Response Committee is made up of members from every agency which could be involved in responding to a civil emergency. Current membership includes:

Kiwirail	Marlborough Lines
Marlborough Roads	Nelson Marlborough Health
Public Health	Marlborough District Council (3 waters and Environmental Health)
Department of Conservation	St John
NZ Red Cross	NZ Police
MCDEM representative	Coastguard NZ
Wine NZ Biosecurity	Port Marlborough
NZ Defence Force	Top of the South Rural Support Trust
Harbour Master	Marlborough CDEM

Fire and Emergency New Zealand

This Committee is chaired by the Controller and debriefs past emergencies and reviews operational plans. Members also share their work programmes, issues and concerns and plan joint opportunities to train and exercise and be involved in educational opportunities. New hazards and/or mitigation measures are also raised at these meetings.

Welfare Coordination Group

The WCG was established in 2016 and its purpose is to coordinate and support the delivery of welfare services by local authorities and agencies prior to, and during an emergency. The mandate for the establishment of a WCG is set out in the National CDEM Plan 2015 (section 65).

The WCG, which is chaired by the CDEM Group Welfare Manager, ensures that welfare service delivery is planned, organised, integrated, coordinated and supported. Membership in the WCG enables welfare agencies to understand their roles and responsibilities across the 4Rs under the National CDEM Plan 2015, the CDEM Group Plan, and the Group Welfare Plan. For membership of the WCG note section 7.2.2.

Top of the South Rural Support Trust

The Trust is part of a nationwide network of Rural Support Trusts that can assist farming and rural families and their communities. It has access to networks, services, and government funding following an adverse event to help people in rural communities get back on their feet.

The Trust employs a coordinator who supports CDEM during emergencies. It is independent of Government (both local and national), commercial interests, primary industries and party politics and is freely available to all in the rural community.

Its objectives are:

- To create, implement and operate services to assist rural people with rehabilitation, debt facilitating and compromising with creditors.
- Provide service and support to assist rural people in difficult financial situations whether caused by adverse climate conditions or otherwise.

- ❖ Identify and liaise with other support group resources for the achievement of these objectives.

- ❖ From time to time contribute and operate specific programmes to assist particular groups in the rural community on such terms and conditions as are consistent with the charitable objectives of the Trust.

Recovery Planning Committee

This Team performs a governance role ensuring that processes and plans are in place to guide recovery operations during an emergency. When an emergency occurs a Recovery Team can be established by the Recovery Manager to coordinate the recovery processes. Business as usual membership includes:

Recovery Manager	Lifelines Coordinator
Ministry of Social Development	Group Welfare Manager
Group Manager	Top of the South Rural Support Trust
A representative from MCDEM	

During an emergency the following agencies and roles may be involved in the recovery:

Building Control Office	Medical Officer of Health
Insurance Industry Rep.	Marlborough Lines and/or Transpower
Structural Engineer	MDC Assets and Services Manager
MDC Environmental Health Office	Ministry of Business, Innovation and Employment
Marlborough Chamber of Commerce	Nelson/Marlborough Health

And other co-opted members as appropriate such as Federated Farmers, Wine Growers, Marine Farmers, etc.

5.2.3 CDEM Plans and Procedures

The Ministry carried out a Capability Assessment of the Marlborough CDEM Group in 2014. In its report the Ministry identified Marlborough as a Group which had lifted its performance from a 'developing' score of 62.2/100 to a 'mature' score of 80.2/100. There were areas identified within which the Group could still raise its performance and these have been included in a Corrective Action Plan. The deliverables identified in the CAP are to be delivered by June 2017.

The workplan for the Marlborough CDEM Group is developed on the basis of this Plan and from that develops a three year Work Plan which is revised annually and approved by the CEG. All CDEM committees have input into the process. Other plans include a draft Tsunami Contingency Plan, and the Fuel Storage in Marlborough Plan (currently under development). Plans need to be regularly reviewed and in some cases rewritten, to reflect situation, scientific and legislative changes. .

Because of the small size of the Group use is often made of plans developed by members such as the Marlborough Kaikoura Rural Fire District Plan, Police's Maritime Mass Rescue Plan, Council's Rivers and Drainage Flood Response Manual and the Top of the South Rural Support Trust's Response and Recovery Plan.

5.2.4 CDEM Warning Systems

MCDEM is responsible for issuing National warnings to CDEM Groups and other key response agencies for emergencies of national significance. The Marlborough CDEM Group is required to be capable of receiving, acknowledging and responding to National warning messages at all times within 30 minutes and have procedures in place to facilitate an effective response. The National System is tested by MCDEM quarterly.

5.3 Readiness Action Plan

Objectives	Actions		Lead Agency
1. Maintain a strong Readiness and Response Committee membership focused on working in a collaborative manner.	a)	R&R Committee to meet at least 3 times per annum.	CDEM
	b)	Involve members in at least one joint exercise per annum.	CDEM
	c)	Continue to debrief emergencies and ensure learnings are embedded in new operating procedures.	R&R Chair/CDEM
	d)	Review Committee's Terms of Reference.	CDEM
	e)	Develop a sound working relationship with FENZ.	CDEM
	f)	Continue investing in the District's RIMT through training and exercising together.	CDEM/FENZ
2. Develop strong working relationships with key volunteer organisations such as NZ Red Cross, LandSAR and Coastguard.	g)	Develop MOU with key responding agencies.	CDEM
	h)	Involve volunteer organisations in training and annual exercises.	CDEM
3. Continue to develop Community Emergency Planning Guides.	i)	Encourage remote communities to engage in the plan development process.	CDEM
	j)	Review existing plans.	CDEM
4. Continue to carry out multi-agency exercises which focus on local stakeholder hazards.	k)	Plan credible annual exercises which involve as many agencies as possible.	CDEM
	l)	Involve agencies in the exercise planning.	CDEM
5. Maintain the Marlborough Emergency Response Team as an effective and highly trained unit which meets Marlborough's needs in initial response.	m)	Continue fortnightly training.	CDEM
	n)	Recruit new members as required.	CDEM
	o)	.	CDEM
6. Establish robust processes which ensure succession planning for key roles is in place	p)	Complete succession plans for Recovery Manager, Lifelines Coordinator and Group Controller roles.	CDEM
7. Retain and continue to invest in the training of Volunteer Rural Fire	q)	As per 5 above.	FENZ

Objectives		Actions		Lead Agency
	Forces.			
8.	**Complete separate plans for Welfare and Recovery.**	r)	Write a Welfare Plan.	CDEM
		s)	Include a strategic recovery component in the Group Plan..	CDEM

6 Response

6.1 Overview

Response describes the actions taken immediately before, during or directly after a civil defence emergency to save lives, protect property and support communities to recover. Recovery starts in response and is integrally linked to the actions undertaken during response.

6.1.1 Principles

The underlying principles that guide the response effort is for each agency to concentrate on their own area of expertise but recognising there are significant inter-dependencies that must be coordinated to achieve an effective and efficient response.

The principles on which emergency response is based are that:

1. Agencies should respond to an emergency by activating their own plans and coordinating with the lead agency.

2. Within the constraints that the emergency creates, each agency, operating within its jurisdiction, must cooperate with inter-dependent agencies to:

    - ❖ Assess the impact of an emergency on their staff, assets and services; and
    - ❖ Activate its own continuity and emergency arrangements; and
    - ❖ Maintain or restore the services it provides; and
    - ❖ Communicate with lead agencies, other responders and the public; and
    - ❖ Align response activities with other agencies to avoid gaps and duplication.

    In addition, the emergency services are expected to:

    - ❖ Assess the effect of an emergency on the community; and
    - ❖ Co-ordinate the local efforts of their agency; and
    - ❖ Communicate assessments and actions with the appropriate lead agency.

3. When an emergency occurs the principles that guide the response phase have been established and prioritised. The order of priority is important as it will be used by the Incident Controller to focus the response effort and as the basis for major decision making.

    - ❖ Preservation of life.
    - ❖ Prevention of escalation of the emergency.
    - ❖ Maintenance of law and order.
    - ❖ Care of sick, injured, dependent and displaced persons.
    - ❖ Provision of essential services (lifeline utilities, food, shelter, public information and media).
    - ❖ Preservation of governance.
    - ❖ Asset protection (structures, buildings, landscapes, heritage sites and wahi tapu).

- ❖ Protection of natural and physical environments.
- ❖ Preservation of economic activity.

6.1.2 Issues and Priorities

Marlborough CDEM has identified the following issues in relation to response planning:

- ❖ The response must be carried out by all relevant agencies in a timely manner with appropriate resources and in a safe and coordinated fashion.
- ❖ Retain strong working relationships between responding agencies, both voluntary and professional.
- ❖ Provide support for neighbouring CDEM Groups without unduly compromising Marlborough's ability to respond to an emergency.
- ❖ Retention of a pool of volunteers who are appropriately trained, well equipped and operate in a safe and effective way.
- ❖ Retain radio communication interoperability between responding agencies.
- ❖ Retain the ability to call on neighbouring Groups for assistance.
- ❖ Continue to build on the skill level of the Regional Incident Management Team so as to respond to all emergencies.
- ❖ Continue to develop an understanding of Lifelines inter-dependencies and hazard vulnerabilities.
- ❖ Management of spontaneous volunteers.
- ❖ Embed recovery early into the response phase.

6.1.3 Objectives

Objectives in relation to response are:

1. Maintain a strong Readiness and Response Committee membership focused on working in a collaborative manner.
2. Achieve an effective and coordinated response to emergencies.
3. Encourage isolated communities to take ownership of their local risks and hazards through developing their own Community Response Plans.
4. Provide coordinated public information broadcasting during a response phase.
5. Retain volunteers to ensure an effective initial response capability.
6. Provide support for out of District emergencies whilst maintaining sufficient resources for possible local events.
7. Integrate support agencies such as LandSAR, NZ Red Cross and Coastguard into response structures.
8. Develop a process for managing spontaneous volunteers and addressing the inherent health and safety issues.

6.2 Current Arrangements

6.2.1 Modes of Operation

Response roles, activities and EOC operations change as an emergency escalates.

Table 6: Response Levels

Response Level	Description
Level 4 **National**	Includes agency coordination centres and headquarters, national level sector coordinating entities, and all-of-government coordination across national agencies. Coordinated from the MCDEM's National Coordination Centre (NCC) in Wellington.
Level 3 **Regional/Local**	Includes CDEM Groups, district health boards, FENZ, and regional agency offices. Coordinated from Emergency Operation Centre (EOC)*.
Level 2 **Incident**	The first official level of agency response. It includes first responders. Coordinated from Incident Control Points (ICP).
Level 1 **Community**	The general public including individuals, families/whānau, community groups and businesses.

* Note: 1. Marlborough is a unitary authority so regional (ECC) and local (EOC) are combined and operate under the name EOC.
2. The Marlborough EOC communicates with neighbouring Group's ECCs and EOCs.

6.2.2 CDEM Emergency Operations Centre

In August 2003 Marlborough District Council opened a purpose built Emergency Operations Centre from which all major emergencies are coordinated from. The EOC is made available to FENZ particularly to use and to any other agency managing an emergency response in Marlborough. This may include Police, Fire and Emergency New Zealand, MPI or other non-CDEM event managers such as Scout Jamboree organisers.

The Centre is fully self-reliant with its own sewerage system, water supply, generator, UPSs and also houses the Council's backup server. It is designed to the highest earthquake standards (IL4 rated) and houses the CDEM staff and FENZ Officers.

6.2.3 Emergency Communication Systems

The ability to effectively communicate in the lead up to, during and after an emergency is a critical component of Marlborough's operational capability. It is the Group's expectation of all responding agencies that they can effectively communicate with each other at all times. CDEM has developed a channel plan which includes all the available frequencies used in Marlborough.

Marlborough has a number of radio networks which give a very good coverage of the District. There is a high degree of willingness to share channels between agencies. Those sharing private or agency owned networks include forestry companies (although their change to digital may affect interoperability), Marlborough Lines, MDC, CDEM, NZDF and the Department of Conservation. The MDC channels are monitored by Council during working hours. The Council's after hours call centre monitors calls outside working hours and in weekends.

The Emergency Services channels are the main operating channels of choice for responding agencies. Police also have 10 LandSAR channels and the Marine channels are essential for responses within the Marlborough Sounds and in Cook Strait. Marlborough Marine Radio and Coastguard monitor the marine channels 24/7.

FENZ, Department of Conservation and CDEM have access to portable repeaters which can be transported to provide coverage to a specific location if required. These can be powered by a portable generator, solar panel or batteries depending on the expected use.

Training exercise in the Marlborough EOC

6.2.4 EOC Staff Roles and Responsibilities

Marlborough CDEM has developed an Operational Guidelines Manual for the EOC which covers the facilities, activation and stand down procedures, staffing and role descriptions and a number of other topics relevant to the operating of the Centre.

6.2.5 Other Response Functions and Processes

Coordinated Response Roles in an Emergency

The levels of emergency and the local implications are shown in Table 7. Levels 1-3 are managed by the lead agency. A Level 3 emergency will normally involve a number of agencies working under the direction of the lead agency.

It is recommended the lead agency advise the Emergency Management Office of an incident as it reaches Level 2 but essential they are advised once the incident escalates from Level 2 to 3.

Levels 4 are emergencies that have escalated to a state of local or national emergency. The Group Controller will be managing the emergency locally and ensuring actions are coordinated with the National Controller.

Lead Agency, Support Agency and Unified Control

A **lead agency** is the agency with a mandate to manage the response to an incident through legislation, under protocols, by agreement, or because it has the expertise and experience. The lead agency is responsible for ensuring arrangements and plans are in place prior to incidents where they will have the lead however relevant support agencies should be involved in the development of these. The lead agency establishes control to coordinate the response of all agencies involved.

The lead agency may change between risk reduction, readiness, response, and recovery. It may also change as the incident progresses, if the required authority or expertise changes. If a state of emergency is declared CDEM may continue to act in a supporting role and the lead agency may remain in control. This would be done through mutual agreement between the two agencies.

When the lead agency cannot be readily identified, response agencies may adopt a joint 'Unified Control' structure (see below). The general assignment of lead agency status is as shown in Table 8.

A **support agency** is an agency that provides support to the lead agency in a response. The lead agency tasks and coordinates support agencies' resources and actions. The type of incident determines which support agencies are involved, and these agencies may change as the response progresses.

Support agencies often have statutory responsibilities and specific objectives of their own, which the lead agency needs to accommodate. Integration of support agencies into the response is a fundamental responsibility of lead agencies.

Unified control is when the control of an incident is shared between two or more agencies by agreement through a combined decision-making body. The command appointments for each agency establish an agreed concept of operations and a single Action Plan. Unified control is usually applied when:

- more than one agency has a mandate to manage a particular incident
- it is unclear if any agency is the lead, or
- the lead agency determines that a joint approach will be more effective.

Agencies applying unified control establish a joint coordination centre (CC), with key appointments filled by the most appropriate personnel from any agency. Agency command appointments do not have to be present at all times, but need to come together to agree on key decisions.

Other than a combined control function, the joint CC follows usual CIMS practices.

CDEM Volunteers

Retaining volunteers has become one of the significant challenges facing emergency response organisations. Marlborough CDEM is heavily reliant on using the FENZ Volunteer Rural Fire Forces, who number approximately 260 individuals, as the bulk of its initial response capability. Each member has an Individual Employment Contract with Fire and Emergency New Zealand which sets out their conditions and expectations of their role. The reason for this level of formality is that they can be paid for fighting wild fires under certain conditions. Rural Fire Fighters are also expected to have been assessed as competent in a number of different skill sets depending on their role at a fire. At times they are also expected to have completed a rigorous fitness test. VRFF members are not paid to respond to CDEM emergencies.

The CDEM volunteers (Civil Defence Centre and Marlborough Emergency Response Team members) are unpaid and there are currently no requirements to hold unit standards in emergency management tasks. They are given training which is specific to their roles including working around helicopters and four-wheel driving.

Numbers of volunteers in these services has increased in Marlborough and it can be put down to a few key things. These are:

- Challenging training and exercising that is relevant and similar to the real events.

- Training that is done at times that suit volunteers eg; evenings and weekends.
- Training that focuses on safety.
- Training with other organisations such as NZDF (eg; helicopter training), NZ Red Cross and Coastguard.
- Provision of good quality personal protective equipment.
- Provision of new (or near new) equipment
- Recognition and appreciation in the form of social gatherings and awards.

Spontaneous volunteers have a lot to offer during a significant emergency. CDEM will provide supervision to ensure that volunteers are working safely and are carrying out roles of worth in a coordinated manner. Every attempt will be made to develop positive relationships with the groups and look for opportunities to add value to their work.

Local multi-agency training exercise 2016

Spontaneous Volunteers

Spontaneous volunteers are community members who offer their services on the spur of the moment as individuals or groups in response to an emergency. They bring local knowledge, enthusiasm and energy but will not generally be trained in particular CDEM skills. CDEM is not responsible for the actions of spontaneous volunteers who self-activate during an emergency. If however CDEM chooses to task them the provisions of compensation and protection from liability (sections 107-110 under the CDEM Act 2002) apply to those volunteers. Tasked volunteers are also expected to receive the same protection under the Health and Safety at Work Act 2015 as workers. Marlborough CDEM currently does not have plans and policies in place to manage spontaneous volunteers however this is addressed in the response action plan.

Table 7: Coordinated Response Roles in an Emergency

Event Type	Event Status/Procedures	EOC Role	Controller's Roles
Level 1 (Community) Can be dealt with by one emergency service provider, local authority or utility service provider with assistance of support agencies as required.	Single agency	Nil	Nil
Level 2 (Incident) Escalates from Level 1 to an incident that will involve a number of agencies or specialists.	The incident will be managed by lead agency with assistance from other emergency service and utility providers. CIMS structures maybe adopted.	Nil. EOC must be alerted to monitor the situation/response and may prepare to activate or assist lead agency if necessary.	Must be advised. Incident under control of lead agency.
Level 3 (Regional/Local) A multi-agency emergency requiring co-ordination beyond the means of the emergency services or; A major emergency affecting large parts of the region or population centres.	A declaration of state of local emergency in the Marlborough region is being considered or has been deemed necessary. An adjacent CDEM Group requires assistance. A declaration of state of national emergency is being considered, or has been deemed necessary.	EOC activated to the extent necessary to monitor the situation and be ready to respond if the situation deteriorates. May provide some co-ordination assistance at the request of the lead agency.	Lead agency seeks substantial advice and assistance from Group Controller and may elect to hand over control or the Group Controller takes control from lead agency. Group Controller sets Group-wide priorities and decisions and provides strategic direction and advice/ command to response agencies.
Level 4 (National Emergency)	A state of National Emergency has been declared.	EOC fully activated to co-ordinate the response of emergency agencies.	Group Controller ensures national strategic objectives are implemented as defined by the National Controller.

Table 8: Lead Agency

Hazard	Lead agency at national level	Lead agency at local/regional level	Legislative powers used to manage response
Geological (earthquakes, volcanic hazards, landslides, tsunamis)	MCDEM	CDEM Group	Civil Defence Emergency Management Act 2002
Meteorological (coastal hazards, coastal erosion, storm surges, large swells, floods, severe winds, snow)	MCDEM	CDEM Group	Civil Defence Emergency Management Act 2002
Infrastructure failure	MCDEM	CDEM Group	Civil Defence Emergency Management Act 2002
Drought (affecting rural sector)	Ministry for Primary Industries	Ministry for Primary Industries	Government policy
Animal and plant pests and diseases (biosecurity)	Ministry for Primary Industries	Ministry for Primary Industries	Biosecurity Act 1993
Food safety	Ministry for Primary Industries	Ministry for Primary Industries	Food safety
Infectious human disease (pandemic)	Ministry of Health	District health board	Epidemic Preparedness Act 2006
Wild fire	Fire and Emergency New Zealand	Fire and Emergency New Zealand	FENZ Act 2017
Urban fire	Fire and Emergency New Zealand	Fire and Emergency New Zealand	FENZ Act 2017
Hazardous substance incidents	Fire and Emergency New Zealand	Fire and Emergency New Zealand	FENZ Act 2017, Hazardous Substances and New Organisms Act 1996
Terrorism	New Zealand Police	New Zealand Police	Crimes Act 1961
Major transport accident	New Zealand Police	New Zealand Police	Land Transport Act 1988, Crimes Act 1961
Marine oil spill	Maritime New Zealand	MDC	Maritime Transport Act 1994, Hazardous Substances and New Organisms Act 1966

Hazard	Lead agency at national level	Lead agency at local/regional level	Legislative powers used to manage response
Radiation incident	Ministry of Health	Fire and Emergency New Zealand	Radiation Safety Act 2016

Lifelines' Coordination

Council employs its Asset Management Engineer to carry out the role of Lifelines Coordinator on a part time basis. Some of the members of the Engineering Lifelines Group are Council controlled organisations (eg; Port and Airport) so are easy to bring into the fold. The Group meets 3 times per annum and discusses topics such as implications of new hazard data (eg; new tsunami inundation maps), how to improve the resilience of its organisations and others, choke points where critical infrastructure meets (eg; bridges) and other duties expected of Lifelines within the CDEM Act and the National Plan. The Group operates under a Terms of Reference which spells out its vision, function and operating rules. Current membership is:

Port Marlborough	Marlborough District Council (water/sewerage/storm water)
Mt Campbell Communications	Marlborough Roads
Marlborough Lines	Marlborough Airport
Kiwirail	Chorus
MCDEM representative	

Note that the following are not yet members:

Radio New Zealand	Television New Zealand
Vodafone	Gas suppliers
Fuel suppliers	

Each Lifelines Utility impacted by an emergency will endeavour to provide a liaison in the EOC to ensure the response and allocation of resources is carried out in a coordinated and collaborative fashion.

Building Impact Assessment

Impact assessments and the concurrent activity of information management are an important part of the response and will be coordinated through the EOC. The Planning and Intelligence sections in the EOC will be responsible for collating the information and ensuring it is shared amongst the key stakeholders. Council and contract engineers will carry out the impact assessments. If Earthquake Commission staff and insurance assessors are deployed then all efforts will be made to ensure a minimum of visits are made to properties ie; assessments are done cooperatively and in a coordinated way.

If appropriate placards will be placed on buildings during the assessment phase which will clearly state whether a building has restricted access or if entry is prohibited. Buildings that have been inundated by flooding will be assessed by teams that include a health sector inspector.

With regard to the Guide to the National CDEM Plan 2015 (section 15 – Building Management), MBIE will issue guidance to MDC on planning for emergency management of buildings including rapid building assessments. MBIE and Heritage New Zealand Pouhere Taonga may also assist CDEM Groups and territorial authorities in identifying and managing risks to heritage buildings and sites from hazards that may arise during an emergency and provide advice and support to the Group Controller and MDC on matters relating to heritage during response and recovery operations.

Public Information Management

Marlborough District Council employs a communications advisor who maintains working relationships with the media in the District. Council has social media and website editors on staff and has three staff trained as Public Information Managers (PIMs). When an emergency begins to develop, these staff work together to ensure that the media is provided with regular information, the public are informed and empowered to make safe decisions and the Council website and social media sites (Twitter and Facebook) are as up to date as possible. As capacity allows the social media staff will also look for information being posted by the public on the emergency, respond if required and pass the information onto Intelligence as soon as possible.

CDEM has access to live broadcasting on Brian FM and this provides another channel with widespread coverage that can be used for live and up-to-date information sharing.

Monitoring and Debrief

During a state of emergency, the Group Controller will ensure that the functions and powers of the CDEM Group are exercised in a responsible and considered manner and that the level of response is appropriate to the situation. Debriefs will be held at the end of any EOC activation to identify learnings and agree any corrective actions. A copy of the findings will be communicated to all relevant agencies involved in the emergency with the expectation that procedures will be modified accordingly.

Costs

A record of who authorises any costs will be kept at all times. When the emergency response finishes the expenditure records for that phase will be closed off and a new record commenced for the recovery phase.

Transition from Response to Recovery

Recovery starts at the time of impact and the Recovery Manager will work in partnership with the response team until such time that the risk to life and/or property has reduced to a level that the powers bestowed under the CDEM Act are no longer necessary or there is no longer any need for a significantly coordinated response.

During transition there is a shift in priorities. Priorities during response are different to those during recovery. This change must be managed well and communicated to all stakeholders. Rehabilitation and restoration priorities should be based on a comprehensive knowledge of the community's expectations and available resources and may change over time. Rather than establish recovery priorities prior to an event, the Group will work with communities to help them identify their priorities prior to, and following an emergency, based on the values below (see also section 8, Recovery).

Table: 9: Response and Recovery Priorities

Response Priorities	Values for recovery
Preservation of life.	Iwi tangata – iwi tangata and Maataa Waka are integral to Marlborough communities.
Maintenance of law and order	Diverse communities: recovery from an emergency must reflect the priorities and experiences of all people within our region and be accessible to all.
Care of sick and injured and welfare provision	Local identity: the identity of local communities must be retained throughout recovery/ Revitalise the economic environment
Property protection	Environment: Marlborough's environment needs to be protected and our physical and natural resources need to be managed well.
Re-establish essential services	Econonm: Marlborough needs to continue to attract and retain businesses, workers and visitors to the region.

6.3 Response Action Plan

Objectives	Actions	Lead Agency
1. Achieve a coordinated response to all emergencies.	a) CIMS will be used during every response to an emergency.	Lead Agency
	b) Involve all responding agencies in debriefs and share learnings with the wider sector.	Lead Agency
	c) Ensure all responding agencies have radio communication interoperability.	CEG
	d) Appropriate agencies have input into planning objectives and processes.	CEG
	e) Annual work plans are approved by the CEG.	CEG
2. Encourage isolated communities to take ownership of their local risks and hazards.	f) Communicate local hazards to communities at risk in conjunction with other agencies (eg; Marlborough Lines, FENZ).	CDEM
	g) Support the development of Community Response Plans and update existing Plans.	CDEM
3. Provide coordinated public information broadcasting during an emergency.	h) Develop a communication plan as a guide to PIMS working in the EOC.	MDC/CDEM
	i) Review and update the CDEM site on the MDC website.	MDC/CDEM
4. Retain volunteers to ensure an effective initial response capability.	j) Continue to provide quality training opportunities to CDEM volunteers.	CDEM CDEM
5. Provide support for neighbouring Groups.	k) Provide support to neighbouring CDEM Groups as and when required taking into account the local circumstances at the time.	CDEM Groups
6. Integrate volunteer agencies into response structures.	l) Train alongside volunteer agencies such as NZ Red Cross, Coastguard and LandSAR.	CDEM
7. Develop a process for managing spontaneous volunteers and addressing the inherent health and safety issues	m) Develop guidance for managing spontaneous volunteers	CDEM
8. Learn from each event and implement continued	n) Conduct debriefs after events and develop action plans to implement lessons learnt	CDEM

Objectives	Actions	Lead Agency
improvement	from the debrief	
9. Develop systems and processes that enable effective, coordinated data collection and analysis	o) Investigate improved use of GIS data with MDC p) Integrate registration and needs assessment into Survey 123 q) Maintain consistency in data collection with national standard operating picture.	CDEM

7 Welfare

7.1 Overview

Communities can be affected by emergencies in different ways, and may need different types of welfare services, including (but not limited to):

- Shelter or accommodation;
- Food, water, or clothing;
- Assistance with contacting family/whānau or significant others;
- Psychosocial support;
- Financial assistance;
- Medication, medical assistance, and assistance with other health or disability needs; or
- Veterinary assistance, food, and/or shelter for their pets.

Note the welfare services sub-functions are defined in 7.2.2 and the agencies responsible are listed Table 10.

Welfare services may be accessed by or delivered to the public in a number of ways. A flexible approach is required and may be achieved by mobile facilities, community based organisations, at Civil Defence Centres, online, via existing agency offices or by telephone. The mode of delivery will depend on a variety of influencing factors, including the size of the emergency, its location (eg; rural or urban communities, easily accessible or isolated places), and the timeframes (ie; from immediate needs, to needs that occur later on or are ongoing).

One of the aims of welfare services is to support people in the safest location possible. This may be in their home, workplace, holiday accommodation, emergency shelter, or emergency or temporary accommodation.

7.1.1 Principles

The principles applying to welfare services are to:

- Recognise the diverse and dynamic nature of communities.
- Strengthen self-reliance as the foundation for individual, family, whānau and community resilience.
- Ensure that emergency welfare services address the specific welfare needs of individuals, families, whānau and communities.
- Ensure flexibility in the services provided and how they are best delivered.
- Integrate and align with local arrangements and existing welfare networks.

7.1.2 Issues and Priorities

- Group planning must be comprehensive and coordinated.
- Ensure the gaps as identified in the 2014 Capability Assessment Report are completed through the Group Corrective Action Plan.
- Some welfare services agencies (responsible and support) are not based in Marlborough so additional effort is required to keep them engaged and to ensure their support and availability in an emergency.

7.1.3 Objectives

1. Welfare management in Marlborough complies with the Welfare Services in an Emergency Director's Guideline.

2. Future Capability Assessments find no significant gaps in welfare management.

3. Carry out activities across the 4Rs to provide for the needs of people affected by an emergency and to minimise the consequences of the emergency for individuals, families and whānau, and communities.

4. Establish processes to ensure that welfare services seamlessly transition from response to recovery.

7.2 Current Arrangements

7.2.1 Welfare Manager

Marlborough CDEM employs a 0.75 FTE Welfare Manager based at the EOC.

During reduction and readiness the Group Welfare Manager is to:

- Co-ordinate the CDEM Group welfare services function during reduction and readiness; and
- Chair the CDEM Group's Welfare Co-ordination Group, whose members are the agencies responsible for each of the welfare services sub-functions in the CDEM Group area; and
- Oversee the establishment and maintenance of arrangements and plans; and
- Delivery of welfare services at the local level during response and recovery; and
- Co-ordination across welfare services sub-functions during response and recovery; and
- Communicate and report on the progress of the readiness activities for the welfare services function to the Co-ordinating Executive Group, Welfare Co-ordination Group members, and the National Welfare Manager.

During response and recovery the CDEM Group Welfare Manager is to:

- Be responsible to the Group Controller in response or the CDEM Group Recovery Manager during recovery for co-ordination of the delivery of services; and
- Co-ordinate the agencies responsible for welfare services sub-functions during response and recovery to ensure that the delivery of services and information are integrated and aligned to meet community needs; and
- Co-ordinate with local welfare managers (where these arrangements exist) at local EOCs during response or the local recovery office during recovery; and
- Co-ordinate and integrate their CDEM Group welfare activities with other ECC functions and activities in support of the Group Controller; and
- Communicate and report on the provision of welfare services and provide advice to the Group Controller; and
- Co-ordinate with the National Welfare Manager and other CDEM Group Welfare Managers to ensure consistent and co-ordinated delivery of welfare services and information to affected communities; and

- ❖ Be capable of assisting in welfare services co-ordination at any ECC or, if requested, the NCMC.

7.2.2 Welfare Coordination Group

The Marlborough Welfare Coordination Group is made up of the following agencies:

NZ Red Cross	Nelson Marlborough Health
Ministry of Social Development	Police
Marlborough District Council	Ministry of Business, Innovation and Employment
Ministry for Primary Industries	
Top of the South Rural Support Trust	
Salvation Army	
Oranga Tamariki – Ministry for Children	
MCDEM	Marlborough CDEM

The Welfare Coordination Group is chaired by the Group Welfare Manager and is made up of members who represent the responsible agencies for welfare services (under the National CDEM Plan 2015) in an emergency. NZ Red Cross is included as they are a key support agency with a number of support roles in various sub-functions. In readiness the WCG provides planning input and coordination at the CDEM Group level and supports the development of welfare arrangements at the local level. In response and recovery the WCG oversees the delivery of welfare services to affected local communities and individuals. It also enables coordination across the various welfare services.

7.2.3 Welfare Sub-Functions

There are nine welfare services sub-functions each with an assigned responsible agency. Most sub-functions have a number of support agencies assisting with the coordination and delivery of welfare services at a local level. The sub-functions are:

- ❖ **Registration** – the collation of affected people's details and identification of immediate needs.
- ❖ **Needs assessment** – the detailed collation of affected people's short term or ongoing needs.
- ❖ **Inquiry** – a cross-agency process of reconnecting people who are out of contact with family or significant others (beyond usual means of contact).
- ❖ **Care and protection services to children and young people** – providing statutory care and protection services to children and young people separated from their parent, legal guardian, or usual caregiver during an emergency.
- ❖ **Psychosocial support** – providing psychological and social interventions that support community recovery.
- ❖ **Household goods and services** – providing essential goods and services when access to these has been disrupted.
- ❖ **Shelter and accommodation** – providing:
    - Emergency shelter (generally lasting for hours to only a few days),
    - Emergency accommodation (generally lasting for a few days and not more than about two weeks), or

- Temporary accommodation (for people who cannot return to their homes for a prolonged period ie; from several weeks to possibly years).

❖ **Financial assistance** – providing essential immediate or longer term financial assistance (including tax relief and ACC payments) from the government, and emergency grants from government and non-government agencies and organisations.

❖ **Animal welfare** – providing assistance to all animals affected by an emergency, including the temporary shelter and care of companion animals and their reunification with owners.

Table 10: Agencies Responsible for Welfare Services

Welfare Services	Agency – National Level	Agency – Regional Level
Registration	MCDEM	CDEM Group
Needs assessment	MCDEM	CDEM Group
Inquiry	New Zealand Police	Tasman Police District
Care and protection services for children and young people	Oranga Tamariki – Ministry for Children	Oranga Tamatiki – Ministry for Children
Psychosocial support	Ministry of Health	District Health Board
Household goods and services	MCDEM	CDEM Group
Shelter and accommodation	MCDEM: **shelter** and **emergency** accommodation MBIE: **temporary** accommodation	CDEM Group: **shelter** and **emergency** accommodation MBIE: **temporary** accommodation
Financial assistance	Ministry of Social Development	Ministry of Social Development
Animal welfare	Ministry for Primary Industries	Ministry for Primary Industries SPCA

7.2.4 Civil Defence Centres

The Blenheim urban area does not have designated Civil Defence Centres (CDCs however this area will be administered from the EOC which will task the Marlborough Emergency Response Team to activate appropriate facilities which are still safe to use. The EOC will then notify the public via multi-media releases of the locations of these centres.

In the outlying communities 16 facilities have been identified as appropriate CDCs. A CDC can be activated by trained volunteers, and is equipped with a VHF radio and a field administration box. Regular radio checks are carried out with each facility using volunteers in the EOC. The CDCs are based at:

Rai Valley School

Canvastown Te Hora Marae

Okaramio Community Hall

Okiwi Bay Community Hall and Fire Station

Havelock School

Renwick Community Hall

Wairau School and Community Hall	Linkwater Community Hall and Fire Station
Waikawa Marae in Picton	Holy Trinity Church in Picton
Riverlands School	Rarangi Community Hall and Fire Station
Tuamarina School	Queen Charlotte College
Seddon School	Ward School

7.3 Welfare Action Plan

Objectives	Actions	Lead Agency
1) Welfare management in Marlborough complies with the Welfare Services in an Emergency Director's Guideline.	a) Welfare Manager's role established and an alternate appointed.	CEG/MDC
	b) Welfare Coordination Group TOR and annual work plans developed.	CDEM
2) Effective Welfare Coordination Group	c) The WCG meets at least 3 times per annum.	CDEM
	d) Meetings are well attended and chaired.	CDEM
3) Capability Assessments find no significant gaps in welfare management.	e) Marlborough CDEM Welfare Plan approved and reviewed (in line with CDEM Group Plan timeframe).	CDEM
	f) Welfare plans are coordinated and comprehensive.	CDEM
	g) Strategically engage sub-function responsible agencies to ensure a comprehensive approach to welfare management in Marlborough.	CDEM
4) Establish processes to ensure that welfare services seamlessly transition from response to recovery.	h) Develop a procedure in the Recovery Plan which includes welfare services in the hand over from the Controller to the Recovery Manager.	CDEM

8. Recovery

8.1 Introduction

Recovery is defined in the CDEM Act 2002 as: '*the coordinated efforts and processes used to bring about the immediate, medium-term and long-term holistic regeneration and enhancement of a community following an emergency*'. It is the process of re-establishing the quality of life of an affected community after an emergency, while taking opportunities to meet future community needs and reduce future exposure to hazards and risks.

Local authorities have legislative obligations to safeguard community well-being before, during and after an emergency. In a large-scale emergency where central government is funding the recovery (or part of the recovery) central government may establish a National Recovery Office.

Recovery is guided by the CDEM Act 2002 and by guidance issued by the Ministry of Civil Defence and Emergency Management (MCDEM). In particular, section 19(2) of the CDEM Amendment Act 2016 requires that the CDEM Group Plan must state and provide for 'the strategic planning for recovery from the hazards and risks referred to in section 49(2)(b)'. The hazards and risks for Marlborough are referred to on pages x and x of this plan.

Recovery starts at the beginning of an emergency and can continue for up to 10 years, depending on the nature and scale of the event. Recovery addresses the economic, social, natural and built environment effects of an emergency. Strategic planning for recovery offers the opportunity for Marlborough communities to identify, at a strategic level, the priorities that need to be incorporated into recovery from a range of events.

Because emergencies differ in their nature and impact the Marlborough CDEM Group has taken a strategic approach, setting the basis to work with communities when emergency events occur. Strategic recovery planning recognises that the response to an individual emergency will reflect the nature and impact of that event. Marlborough communities can contribute to recovery planning by increasing understanding of their priorities and values, before an emergency occurs.

This updated section of the Marlborough CDEM Group Plan sets out guiding principles for recovery and outlines the processes through which the Group will work with Marlborough communities to increase our understanding of their priorities for recovery from an emergency.

8.2 Strategic recovery planning

Strategic planning aims to ensure that the efforts of all parties engaged in recovery are coordinated in the most effective and efficient way possible, to meet the priorities of affected communities. The aims of strategic recovery planning are to:

- Encourage and support effective planning for recovery.
- Identify recovery priorities for Marlborough.
- Encourage communities to increase resilience by planning for recovery from identified hazards
- Define agencies' roles and responsibilities and their relationship to the CEG and other governance mechanisms in recovery.
- Maintain transparency and accountability in recovery

This section of the Marlborough CDEM Group Plan does not replace the need for recovery planning for individual events.

8.3 Recovery principles and aims

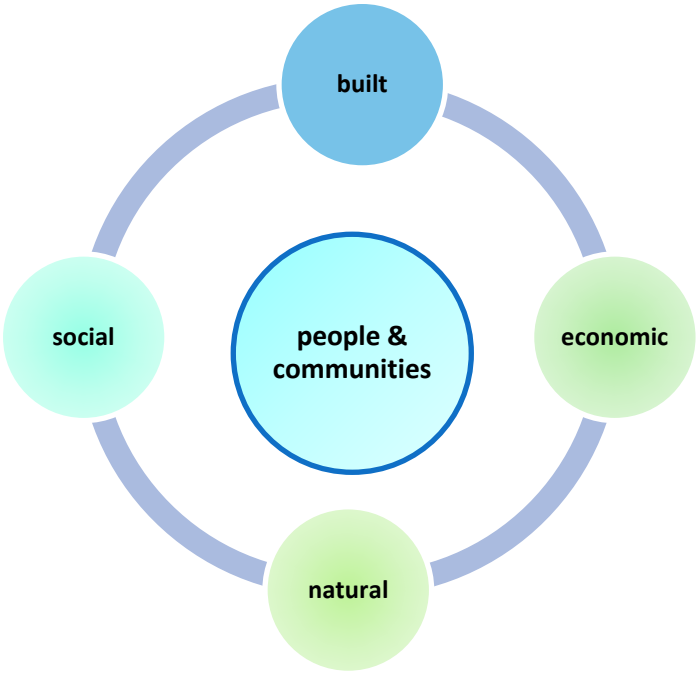
Recovery can be guided by the following principles (adapted from Australia's National Principles for Disaster Recovery[1]).

Context	**Successful recovery……..**	…is based on an understanding of the community context. The interests of iwi tangata and Maataa Waka are integral to the Marlborough community.
Complexity		….acknowledges the complex and dynamic nature of emergencies and communities.
Community-led approaches		...is responsive and flexible, engaging communities and empowering them to move forward.
Coordination		…requires a planned, co-ordinated and adaptive approach based on continuing assessment of impacts and needs.
Communication		…is built on effective communication with affected communities and other stakeholders
Capacity		…recognises, supports and builds on community, individual and organisational capacity

Recovery vision

Marlborough CDEM Group's vision for recovery from emergency recognises that people and their communities are central to recovery. This plan recognises that the need for a holistic approach to recovery, reflecting the social, built, economic and natural environments.

[1] www.dfc.sa.gov.au



The role of people and their communities is reflected in the recovery vision:

Affected communities re-establish their quality of life, take opportunities to meet future community needs and reduce future exposure to hazards and risks.

Marlborough CDEM Group and recovery support agencies will support communities to achieve this vision.

8.4 The values of Marlborough communities.

Marlborough CDEM Group's understanding of the values of local communities arises from MDC's engagement throughout the region. This includes the engagement process on MDC's draft 2018-2028 Long Term Plan. The Long-Term Plan addresses three key priorities: looking after the environment, building and maintaining our infrastructure and investing in economic development.

Public feedback on the draft Long Term Plan suggests that the values of Marlborough communities strongly reflect the themes of 'people' and 'place':

People and place	**Iwi tangata:** Iwi tangata and maata waka are integral to Marlborough communities. The importance of Te Pokohiwi (Wairau Bar) as the first site of settlement in New Zealand is a key feature of our local and national heritage. **Diverse communities**: Marlborough is becoming an increasingly culturally and ethnically diverse region. Recovery from an emergency must reflect the priorities and experiences of all people within our region, and be accessible to all. **Local identity:** communities throughout Marlborough have a strong sense of local identity and need to retain that identity throughout recovery. This has been evidenced in the recovery from the 2013 and 2016 earthquakes that impacted on South Marlborough. **Environment:** the Marlborough Sounds, inland Marlborough (including Molesworth Station) and the East Coast seaboard are valued for their environmental status. Consultation on the draft Long Term Plan and the Marlborough Environment Plan, indicate that Marlborough communities seek greater emphasis on protecting biodiversity and managing Marlborough's natural and physical resources well. **Economy**: Marlborough has a strong local economy. We need to continue to attract and retain businesses, workers and visitors to the region.

As part of building a strategic approach to recovery, Marlborough CDEM Group will continue to engage with communities before an emergency and in the course of developing recovery plans for specific events.

8.5 Determining strategic and community priorities for recovery

Recovery priorities should be responsive, adaptive and ongoing and reflect the values of all Marlborough communities.

In the early stages of recovery, priorities are likely to be focused on the immediate physical and psychosocial welfare of affected people. As time progresses, recovery will become more focused on moving towards a 'new normal'. Planning for recovery can provide opportunities to enhance the built, social, natural and economic environments. Enhancements may include rebuilding ('build back better') of community facilities, new business opportunities, increased resilience and community cohesion and restoration of the natural environment.

The process of determining strategic priorities for recovery needs to:

- reflect the collective values of Marlborough communities
- support communities to consider their own priorities following an emergency
- avoid creating expectations that are unlikely to be met
- encourage communities to build strengths that will support recovery
- maintain and enhance the safety and wellbeing of people recovering from the event (including people working in recovery)

8.6 Determining recovery outcomes

As well as determining the priorities for recovery, communities need to think about the outcomes they want to see from recovery. Recovery outcomes for an emergency will reflect the nature of affected communities, the communities' priorities and visions for the future and the steps that need to be taken to fulfil that vision.

Outcomes are defined as: *"a condition or state of society, the economy or the environment, and include changes to that condition or state. In effect, outcomes are the end result we [want] to achieve for*

New Zealanders. Outcomes describe 'why' we are delivering certain interventions on behalf of New Zealanders[2]".

In the period immediately following the event, desired outcomes will reflect the immediate needs of communities. These might include food, water, the restoration of critical infrastructure and lifelines and access to information. In the process of transition from response to recovery, the medium to long term outcomes that are desired by communities will start to emerge. This process forms the basis of an event-specific recovery plan.

8.7 Monitoring and evaluating recovery

There are a number of methods that can be used to monitor and evaluate the process and outcomes of recovery, and to enable lessons to be learnt for future events. Monitoring and evaluation may include:

- An **outcomes framework** can assist in assessing the extent to which the recovery outcomes for a particular event have been achieved. The use of an outcomes framework is a means by which recovery agencies can provide assurance that recovery activities are fit for purpose and will lead to positive recovery outcomes. It also enables lessons to be incorporated into future readiness and reduction activities and forward planning for recovery.

- An **action review** may be used throughout recovery to identify matters that can be addressed during the recovery process and to ensure recovery remains 'on track'.

- Individual agencies, including Marlborough CDEM Group may choose to commission an **evaluation** of the aspects of recovery for which they are responsible, subject to need and resources.

The effectiveness of monitoring and evaluation is largely reliant on access to timely and accurate information. Marlborough CDEM Group will ensure that systems are in place to enable timely and accurate information for monitoring purposes.

8.8 Recovery structure

Key recovery functions

The Marlborough CDEM Group coordinates recovery functions by:

- Assessing damage and needs
- Supporting the Group Recovery Manager
- Engaging with key stakeholders throughout recovery, to identify issues and support improvements where necessary.
- Providing public information and communications
- Reporting on recovery efforts and progress
- Working with Marlborough District Council and other key providers to re-establish critical infrastructure
- Facilitating Government assistance
- Developing an exit strategy to manage the end of the recovery process

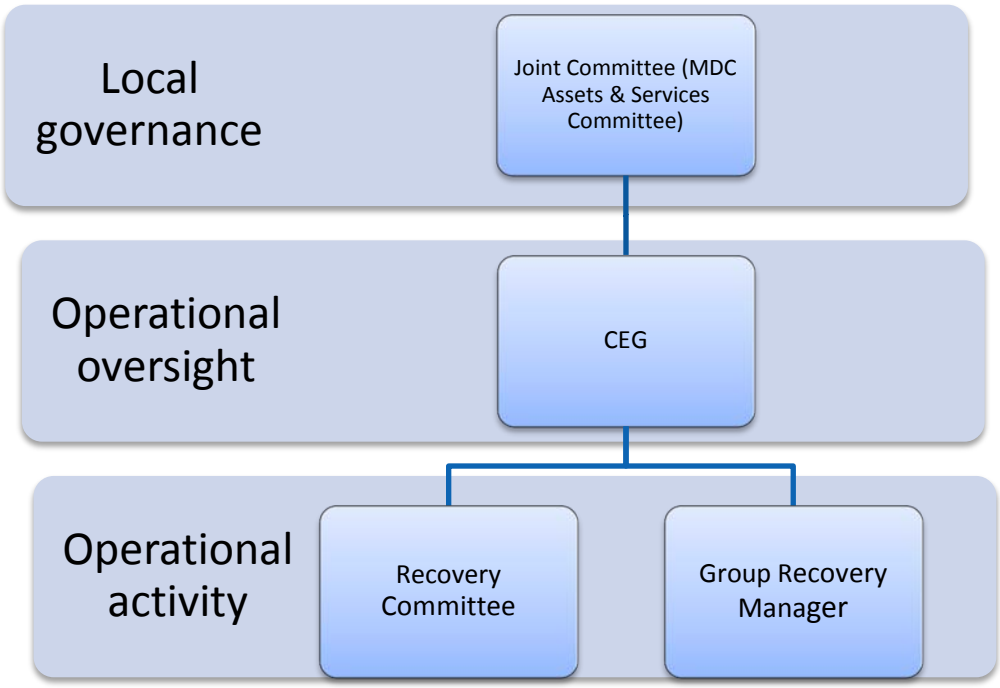
Governance

Effective and responsive governance is vital to achieving effective management of the recovery process. The Joint Committee (MDC Assets and Services Committee) will provide the governance structure for

[2] The Treasury: https://psi.govt.nz/iai/default.aspx

recovery at the time of the emergency, in consideration of the nature and scope of the event and the needs of affected communities.

The CEG will retain overall operational responsibility for implementing decisions made by the Joint Committee.



Recovery structure

The recovery structure in the Marlborough CDEM can adapt to meet the needs arising from individual emergencies. During business as usual the Recovery Group is an agile, decision-making body that represents potential recovery partners, and has a focus across the 4Rs.

In an emergency the Recovery Group can expand to include representatives from welfare organisations, built infrastructure, economic and business interests and rural and environmental agencies. These agencies are listed below and may form the basis of individual working groups designed to focus on particular aspects of recovery.

Social	➢ MSD – Work and income ➢ Oranga Tamariki ➢ Nelson Marlborough Health ➢ Salvation Army ➢ New Zealand Red Cross ➢ Iwi tangata and Maataa Waka ➢ Housing New Zealand ➢ Top of the South Rural Support Trust ➢ Victim Support ➢ Inland Revenue ➢ Support agencies for people with disabilities ➢ Residents' and ratepayers' associations ➢ Group Welfare Manager

Built	➢ Housing New Zealand ➢ EQC ➢ MDC building inspectors ➢ Structural engineers ➢ Lifelines utilities ➢ Ministry of Business Innovation and Employment (MBIE)
Economic	➢ MSD ➢ Inland Revenue ➢ Banking sector ➢ Insurance sector ➢ Ministry for Primary Industries ➢ Primary industry organisations, including Top of the South Rural Support Trust ➢ Marlborough Chamber of Commerce ➢ Viticulture Business Association ➢ Aquaculture Business Association ➢ Forestry companies ➢ Destination Marlborough
Environment	➢ Department of Conservation ➢ Top of the South Rural Support Trust ➢ Marlborough District Council ➢ Industry organisations (viticulture, aquaculture, forestry)

8.8.1 Group Recovery Manager

Sections 29-30A of the CDEM Act set out the requirements relating to the appointment of group recovery managers. In summary, each CDEM Group must appoint a group recovery manager for its area, and another suitably qualified and experienced person to act for the group recovery manager in his or her absence. The CDEM Group can also appoint one or more local recovery managers. In Marlborough, there is a Group Recovery Manager and a deputy who can act on behalf of that person if required.

8.8.2 Functions of the Group Recovery Manager

Section 30A of the CDEM Act states that the Group Recovery Manager must 'direct and co-ordinate the use of the personnel, material, information, services, and other resources made available by departments, Civil Defence Emergency Management Groups, and other persons for the purpose of carrying out recovery activities'. To achieve this, the Group Recovery Manager coordinates the recovery activity across Marlborough, in liaison with local recovery agencies. If a National Recovery Manager is appointed, the Group Recovery Manager will also liaise with that person as necessary.

The Group Recovery Manager ensures that:

- Planning, prioritising and management functions are undertaken by the right agencies at the right time.
- Appropriate and timely reporting mechanisms are in place.
- Government and MDC are informed of significant issues.

- Recovery resources are identified and obtained as and when required.

- Affected communities, recovery partners and other stakeholders are informed about the impact of the event and progress of recover.

- Affected communities and recovery partners are supported to identify emerging issues and develop collaborative solutions.

8.8.3 Moving from Response to Recovery

The process of recovery starts on the first day of response and the transition from response to recovery requires careful management.

The Group Recovery Manager must be engaged throughout response to ensure that recovery is seamless and effective. During this time, the Controller continues to exercise the statutory power to direct and coordinate the response. The Group Recovery Manager's main focus during response is on preparing for recovery, including establishing a recovery structure, engaging staff and working with external agencies to lead the recovery work streams.

The transition from response to recovery involves:

- Preparation of a transition report by the Controller, immediately prior to the termination of the response phase.

- Acknowledgement by the Controller of the transfer of control and accountability to the Group Recovery Manager.

- Development by the MDC of terms of reference for the Group Recovery Manager including funding, expenditure authority and reporting requirements.

- A transition briefing from the Controller to the Group Recovery Manager and to the Minister and/or the Mayor as required.

- Development of a Recovery Action Plan, including matters arising from response that need to be continued in recovery.

- A Notice of Transition Period may be required, but may not be necessary for all emergencies.

Notice of a local transition period

The CDEM Act provides for a notice of a local transition period to be given to assist the recovery. A notice can be given following a declaration of a local state of emergency, or if no local state of emergency has been declared, notice can be given with the approval of the Minister. Less commonly, a notice can be given for a district or ward not affected by an emergency if the resources of that area could assist an area affected by an emergency.

The CDEM Act provides for certain people to be authorised to give notice of a local transition period. In deciding whether a notice of local transition period is necessary, the person who is authorised to give notice must be satisfied that a local transition period is required and that invoking the powers to manage, co-ordinate or direct recovery action is in the public interest and is necessary or desirable to ensure a timely and effective recovery (s94B(4) CDEM Act 2002).

The CDEM Act also requires that the public are notified of the transition period, through newspapers and on the internet (the Marlborough District Council website).

A local transition period comes into force on termination or expiry of the state of emergency, or, if no state of emergency is in place, on the time and date given in the notice. A local transition period ends after 28 days unless it is terminated or extended earlier.

A notice of a local transition period cannot be given if a national transitional period is in force if a national state of emergency is in force.

The CDEM Act provides powers during the transition period and if those powers are exercised, the Recovery Manager must report in writing to the Director of Civil Defence and Emergency Management.

Authorisations and delegations

In accordance with section 25(1)(b) of the Act, the CDEM Group must appoint at least one person as a person authorised to give notice of a local transition period for its area.

The Marlborough CDEM Group appoints the Recovery Manager as that person. In their absence, the Chair of the Joint Committee (the MDC Assets and Services Committee) or any other available member of the Marlborough CDEM Group can give notice of a local transition period.

Other persons authorised to give notice of a local transition period are identified as per section 25 of the Act as being:

- The Mayor of the Marlborough District Council.
- Or an elected member of the Marlborough District Council designated to act on behalf of the Mayor.

Any person authorised to declare a notice of local transition may also extend or terminate a transition period in accordance with Part 5A, ss 94D-94E of the Act.

Recovery exit strategy

Although the duration of each recovery period cannot be determined prior to an event, recovery nevertheless needs to be a finite process. A recovery exit strategy sets out the plan for withdrawing formal recovery assistance to the level of business as usual.

An exit strategy will identify work that needs to be completed to and the steps that need to be taken to do so. It will ensure that affected people and communities continue to receive services that support business as usual, that lessons learned from the event are recorded and actions taken to reduce hazards that contributed to the impact of the emergency.

There are certain key principles that need to be taken into consideration when developing a recovery exit strategy, including:

- The extent to which progress on social, built, economic and environmental recovery is complete
- The ability of affected communities to manage outstanding aspects of recovery
- The extent to which recovery has been started and can be sustained over time (eg; environmental recovery may not be complete, but the majority of the work required to ensure it happens has been done).
- Any need for ongoing resourcing or services that are not part of recovery agencies' business as usual.
- The extent to which communities regard themselves as having adapted to a changed reality.

It should be noted that psychosocial recovery generally lasts longer than other aspects of recovery[3]. While acknowledging this, it may be detrimental to the psychosocial wellbeing of a community if recovery is allowed to continue indefinitely.

8.8.4 Financial Arrangements

Part 10, sections 162-163 of the National CDEM Plan 2015 defines the principles for central government financial support both for the response and recovery phases. Its general principles are that local authorities should be responsible for dealing with the impacts of emergencies within their regions. The aim of government assistance is to provide the minimum support necessary to restore community capability to a condition of functional self-help and provide the most appropriate long-term solutions. Section 33 of the Guide to the National CDEM Plan 2015 provides more specific principles for the provision of recovery assistance.

The Group Manager is responsible for emergency management budget and overseeing costs throughout an emergency. In recovery, the Recovery Manager has a dedicated budget and is responsible for its management. Costs incurred during an emergency are normally charged to a dedicated emergency account within the council accounting system and re-apportioned after the event if the external funding thresholds have been exceeded. Each agency has a requirement to manage their own risks including the provision of adequate financial resources for emergency contingencies. The council meets their obligations through a combination of budget provision, financial reserves, insurance and support from national agencies such as NZTA.

[3] *Framework for Psychosocial Support in Emergencies*, Ministry of Health Wellington, 2016, page x.

8.9 Recovery Action Plan

Objectives	Actions	Lead Agency
1. Implement effective recovery planning activities across all agencies and the wider community.	a) Identify business continuity and recovery plans already in place among CDEM partner organisations, business and industry groups and communities.	CDEM
	b) Engage key stakeholders in identifying priorities for recovery across Marlborough communities.	CDEM
	c) Build community capability for recovery through education and continued engagement with communities.	CDEM
2. **Promote coordinated and cooperative recovery activities amongst partner agencies.**	d) Retain effective relationships with agencies that will be part of a Recovery Group in an emergency..	CDEM
	e) Develop a project plan to enhance community preparedness to recover from an event.	CDEM
	f) Establish a working process between the Recovery Group and the Welfare Coordination Group.	CDEM
3. Reduce the community's future exposure to hazards and their associated risks.	g) Ensure that hazard reduction planning and recovery planning are aligned and understood by the relevant parties.	MDC and CDEM
	h) Increase community understanding of hazards and support hazard reduction planning at community level.	CDEM
4. Structures, roles and responsibilities for recovery are pre-determined and documented.	i) Systems and structures that support recovery are well-documented.	CDEM
	j) Develop systems to collect information for monitoring and evaluation (subject to privacy considerations).	CDEM
5. Establish a robust structure to support the Group Recovery Manager and Alternate Manager.	k) Increase recovery management capability through professional development and training.	CDEM
	l) Develop a terms of reference for the Group Recovery Manager.	MDC / CDEM
	m) Develop a Group Recovery Manager and Alternate Manager Succession Plan	MDC / CDEM

Objectives	Actions	Lead Agency
6. Implement effective recovery planning activities across all agencies and the wider community.	n) Gain an understanding of recovery plans and SOPs which agencies already have in place.	CDEM
	o) Develop a Marlborough CDEM recovery plan and involve all key stakeholders in its development.	CDEM
	p) Develop an exit strategy and a transition from response to recovery process as key parts of the recovery plan.	CDEM
	q) Test the recovery plan through table top exercises and stakeholder engagements.	CDEM
7. **Promote coordinated and cooperative recovery activities amongst partner agencies.**	r) Retain an effective Recovery Planning Team.	CDEM
	s) Develop a TOR.	CDEM
	t) Develop annual work plans.	CDEM
	u) Establish a working process between the Recovery Planning Team and the Welfare Coordination Group.	CDEM
8. Reduce the community's future exposure to hazards and their associated risks.	v) Ensure that hazard reduction planning and recovery planning are aligned and understood by both parties.	MDC and CDEM
	w) Increase community awareness and capability for recovery through education and development.	CDEM
	x) Increase community capability for recovery through developing linkages with and between agencies and community groups.	CDEM
9. Structures, roles and responsibilities for recovery are pre-determined and documented.	y) Recovery issues identified in the 2014 Capability Assessment are addressed.	CDEM
10. Develop a Recovery Manager and Alternate Manager Succession Plan.	z) Increase recovery management capability through professional development and training.	CDEM

8.9.1 Financial Arrangements

Part 10, sections 162-163 of the National Civil Defence and Emergency Management Plan 2015 defines the principles for central Government financial support both for the response and recovery phases. Its general principles are that local authorities should be responsible for dealing with the impacts of

emergencies within their areas. The aim of government assistance is to provide the minimum support necessary to restore community capability to a condition of functional self-help and provide the most appropriate long-term solutions. Section 33 of the Guide to the National CDEM Plan 2015 provides more specific principles for the provision of recovery assistance.

The Group Manager is responsible for emergency management budget and overseeing costs throughout an emergency. Costs incurred during an emergency are normally charged to a dedicated emergency account within the council accounting system and re-apportioned after the event if the external funding thresholds have been exceeded. Each agency has a requirement to manage their own risks including the provision of adequate financial resources for emergency contingencies. The council meets their obligations through a combination of budget provision, financial reserves, insurance and support from national agencies such as NZTA. Cash donations are the preferred source of aid and mayoral relief Funds will be set up to collect and distribute this aid as required.

9. Management and Governance

9.1 Overview

The Marlborough CDEM Group was established in May 2003 in accordance with Section 12 of the CDEM Act 2002. Whilst the Group is a committee of the Marlborough District Council it has autonomous decision making responsibilities and powers.

The CDEM Group is responsible for the political policy making and the over-arching framework in which CDEM works. In November 2010 the Group Standing Committee function was delegated to the Assets and Services Committee of the Marlborough District Council.

9.1.1 Principles

- The CDEM Group Standing Committee owns the CDEM Group Plan and holds accountability for CDEM in the Marlborough district.
- The Coordinating Executive Group oversees the implementation of the CDEM Group Plan.
- The Marlborough CDEM Group Manager is accountable to the CEG and maintains the Group work programme which delivers on the Group Plan through the annual CDEM Work Plan.

9.1.2 Issues and Priorities

- The Assets and Services Committee members need to be inducted into their role as the Group Joint Committee.
- 2014 Capability Assessment made a series of recommendations regarding improvements to governance and management arrangements.

9.1.3 Objectives

1. The Assets and Services Committee members understand their role as a Group under section 17 of the Act.
2. Trained and competent Controller and Alternate Controllers are appointed.
3. Performance monitoring is evidential and systemic to ensure the Group and CEG are focusing on the right things.
4. The CEG is fully functional and adds value to the CDEM Group.

9.2 Current Arrangements

9.2.1 CDEM Group

The Marlborough CDEM Group has been assigned the following responsibilities described in Section 17(1) and (2) of the CDEM Act 2002.

(a) (i) Identify, assess, and manage hazards and risks.

(ii) Consult and communicate about risks.

(ii) Identify and implement cost-effective risk reduction.

(b) Take all steps necessary on an ongoing basis to maintain and provide, or to arrange the provision of, or to otherwise make available suitably trained and competent personnel, (including volunteers,) and an appropriate organisational structure for those personnel, for effective civil defence emergency management in its area.

(c) Take all steps necessary on an ongoing basis to maintain and provide, or to arrange the provision of, or otherwise to make available material, services, information, and any other resources for effective civil defence emergency management in its area.

(d) Respond to and manage the adverse effects of emergencies in its area.

(e) Carry out recovery activities.

(f) When requested, assist other Groups in the implementation of Civil Defence Emergency Management in their areas (having regard to the competing Civil Defence Emergency Management demands within the Group's own area) and any other requests for assistance from other Groups.

(g) Within its area, promote and raise public awareness of, and compliance with, this Act and legislative provisions relevant to the purpose of this Act.

(h) Monitor and report on compliance within its area with this Act and legislative provisions relevant to the purpose of this Act.

(i) Develop, approve, implement, and monitor a Civil Defence Emergency Management Group Plan and regularly review the Plan.

(j) Participate in the development of the National Civil Defence Emergency Management Strategy and the National Civil Defence Emergency Management Plan.

(k) Promote Civil Defence Emergency Management in its area that is consistent with the purpose of this Act.

The Group is also responsible for appointing the Co-ordinating Executive Group.

9.2.2 Coordinating Executive Group (CEG)

The membership of the Coordinating Executive Group is prescribed in the CDEM Act and consists of:

- Chairman Mark Wheeler, CEO of Marlborough District Council.
- Simon Feltham, Inspector New Zealand Police.
- Graeme Daikee, Area Manager Fire and Emergency New Zealand.
- Pete Kara, Nelson Marlborough Health.
- Hans Versteegh, Reduction Manager Marlborough District Council.
- Dean Heiford, Recovery Manager Marlborough District Council.
- Richard MacNamara, Controller, Fire and Emergency New Zealand.
- Catherine Coates, Welfare Manager Marlborough CDEM.
- Barney Thomas, Department of Conservation, representing Iwi.

Ex-officio members (without voting rights) include:

- Robin Mortimer, Service Centre Manager Ministry of Social Development.
- Mark Nelson, Lifelines Coordinator Marlborough District Council.
- Senior Regional Emergency Management Advisor, Ministry of Civil Defence and Emergency Management.

- Brian Paton, Group Manager Marlborough CDEM.

The role and the responsibilities of the CEG are also outlined in the CDEM Act as follows:

- The CEG shall be responsible for providing advice to the CDEM Group.
- Implementing the decisions of the CDEM Group.
- Overseeing the implementation, development, maintenance, monitoring and evaluation of the CDEM Group Plan.

The CEG's primary focus is to undertake the senior management role embedded in its title.

- Coordinating – ensure all contributory agencies are organised and acting together in an integrated manner towards a common purpose.
- Executive – decision making, management and leadership of the contributing agencies. Oversight of the aims and objectives and wider environment in which they were set.

The CEG meets a minimum of three times per year. Meetings are scheduled to precede meetings of the CDEM Group that are undertaken in conjunction with of the Assets and Services Committee meetings of the Marlborough District Council. The adoption of the 2018/2023 Group Plan will assist the CEG to focus on desired outcomes and monitor progress towards the objectives.

9.2.3 Administrating authority

The Marlborough District Council is the administering authority for the Marlborough CDEM Group (CDEM Act (2002) (s23)) and CEG.

The administrative and related services the Marlborough District Council provides include:

- Secretariat for the CDEM Group and CEG (eg; convening meetings, providing venues, organising agendas, providing minutes and catering).
- Accountant for CDEM Group finances and budgets.
- Publishing the CDEM Group's work programme, budget and performance (once adopted).
- Entering into contracts with service providers on behalf of the Group.

The costs of undertaking these services are met by the Marlborough District Council.

9.2.4 CDEM Group Emergency Management Office

The Emergency Operations Centre was built in 2003 to an IL4 standard and provides the facility from which emergency management services for Marlborough District Council are carried out. An Emergency Services Manager/Group Manager, a Welfare Manager and an Emergency Services Officer are employed by Council to manage the CDEM function. The EOC serves as offices for FENZ staff and as the Group EOC facility. Funding of the office is entirely through the Council as part of the Assets and Services Department.

The role of the emergency management office is:

- Administrative and advisory support to the CEG and CDEM Group.
- Liaison between the Group and the Ministry of CDEM.
- Project and financial management, including development and implementation of the CDEM Group Plan.

- Co-ordination of CDEM Group policy development and implementation.
- External liaison, support and assistance to and from other CDEM groups.
- The provision of public education, awareness and advice on CDEM matters to the Marlborough District.
- Monitoring and evaluation of potential emergency situations.
- Ensuring the Marlborough EOC is ready to respond to any emergency.
- Maintaining a communication system that links communities, services and organisations with the EOC.
- Maintaining a close liaison with relevant services, organisations and support staff.
- Participation in CDEM planning teams.
- Providing for the co-ordination of non-declared emergency when required by the Lead Agency.

9.2.5 Delegated authorities, functions and powers

Key Appointments:

Although the CDEM Group retains the responsibility for CDEM in the District there are a number of authorities, functions and powers that need to be delegated (CDEM Act (2002) (s18, 25-27)) to persons and/or positions as key appointments. Key appointments with delegated powers include:

- Group Controller
- Alternate Group Controllers

Declarations

While the Lead Agency for a specific function may not change as the result of a declaration, overall coordination becomes the responsibility of the CDEM Group. Declaring a state of emergency gives the Controller and others access to statutory powers under the CDEM Act to protect life and property in an extraordinary emergency.

In accordance with section 25(1) of the Act the CDEM Group must appoint at least one person as a person authorised to declare a state of local emergency for its area. If there is potentially a need to declare a state of local emergency, the Group Controller will contact the first available CDEM Group representative in the following order: the Mayor, the Deputy Mayor the Chairperson of the A&S Committee or, if necessary, any other elected member of that Committee.

Controllers

In accordance with sections 26(1), 26(2) and 27(1) of the Act (2002), the CDEM Group has appointed personnel to the positions of Group Controller and Alternative Group Controller.

The following details the powers of the Group Controller by the CDEM Group under the CDEM Act (2002).

- ***General powers:*** The Group Controller is delegated the authority to coordinate the activities (as are required to perform his/her duties) detailed in s.18 (2), under the direction of the CEG.
- ***Power to require information:*** The Group Controller is delegated the authority to require information to be provided under s.76.
- ***Information to obtain a warrant:*** The Group Controller is delegated the authority to provide the necessary information under oath for a warrant to be issued under s.78.

- ***Receipt of information:*** The Group Controller is delegated the authority to receive information seized under s.81.

- ***Emergency Powers:*** The Group Controller is delegated the authority to exercise all the emergency powers conferred on the Group by s.85 and shall make reports on the actions undertaken at such intervals as are directed by the Chairperson of the Group. For the avoidance of doubt, the Group Controller has the specific emergency powers conferred on Controllers in ss.86-92 and s.94.

9.2.6 Financial Arrangements

The activities of the CDEM Group incur costs as part of:

Programmed Activities**:** Administrative and related services under s.24 of the CDEM Act, 2002 and the annual work programme.

Emergency Expenditure**:** Expenditure incurred by the Group in the lead up to, during and immediately after a declared state of emergency (eg; reimbursement for cost of specialist advice).

Programmed Activities

The Marlborough Group is responsible for funding the:

- Administrative and related services under s.24 of the CDEM Act, 2002.

- Agreed annual work programme.

- Reduction, readiness, response and recovery arrangements required in the District.

- Preparation and implementation of CDEM Plans.

Unless agreed otherwise, the costs of completing any specific agency actions as outlined in the annual work plan will be met by the MDC or agency concerned.

Expenditure in a Civil Defence Emergency

In the lead up to a declared emergency (Level 3)

The Group is responsible for funding:

- All costs associated with the resourcing, activation and operation of the EOC.

- All reasonable direct expenses incurred by the Group Controller.

- All reasonable direct expenses (such as travel, meals and accommodation) incurred by recognised technical advisors when they are requested to attend meetings to provide specialist technical advice.

MDC is responsible for meeting all costs associated with its own CDEM personnel, facilities and resources.

During a declared emergency (Level 3)

The Group is responsible for funding as per above.

MDC takes full first line responsibility for dealing with the impact of an emergency on the District. This includes the prior provision of the necessary physical and financial resources needed for response and recovery. MDC is also responsible for meeting all emergency expenditure incurred in its District, and arising out of the use of its resources and services under the control of the Group Controller.

A clear record of who authorises any expenditure is required to be kept and the Group Controller will ensure all costs are properly accounted for.

Recovering Costs in a Civil Defence Emergency

At the termination of any emergency, the Group Controller will recommend to the CDEM Group which costs could reasonably be met by the Group. Any reimbursement of CDEM Group expenditure by central Government will be distributed back to MDC.

Volunteers suffering personal injury or damage to or loss of property while carrying out emergency work under the control or authority of a Group Controller are entitled to reimbursement and may submit claims to the CDEM Group (refer to sections 108 and 109 CDEM Act 2002).

Emergency Recovery Finances

At the termination of an emergency, the expenditure management regime established for the response phase must be closed off and re-commenced for the recovery phase under the control of the Recovery Manager.

A clear record of who authorises any expenditure (including the purpose for which it was spent) is required to be kept to support claims for Government subsidies and repayments. The Recovery Manager will ensure all costs are properly accounted for.

The Recovery Manager will recommend to the CDEM Group which recovery costs could reasonably be met by the Group, and which costs could be recovered from the Government. Claims for Government assistance are to be made by the organisation incurring the expenditure or in the case where there are agreed Group costs, by the CDEM Group. Any central Government involvement will be contingent upon the principles and conditions set out in Part 10, National CDEM Plan Order 2015.

If it becomes apparent that there will be a significant number of people suffering financial hardship and more immediate relief is required, Mayoral Relief Funds may be established (*refer Section 6, section 6.6.7*).

9.2.7 Cooperation with other CDEM Groups

In accordance with section 17(1)(f) of the CDEM Act the Marlborough Group will support other Groups in New Zealand. The basis of this support is outlined below and is built upon MOU's which are in place with neighbouring Groups. The specific nature of support that the Group can provide during the response and recovery phases of an emergency will depend on the circumstances at the time and to what extent an emergency has affected the Marlborough District. The support outlined below will be conditional on a best endeavours basis having regard for all of the circumstances and may include:

- Incident management team personnel and other specialists.
- Equipment eg; stock on hand of particular items or supplies or support with purchasing.
- Logistics management eg; management of air, rail and other supply points outside of the other CDEM Group area that are being used for logistics transfer operations.
- Displaced people ie; coordinating the provision of welfare services to displaced people arriving from the affected area including registration, needs assessment and meeting immediate needs such as food, clothing, shelter and accommodation.

The Marlborough Group agrees to consult on priorities for resources, which includes without limitation, equipment, material, services and personnel. Competing demands for resources are always likely to be evident, particularly where the emergency affects both parties and active consultation to resolve competing demands and achieve optimum resource allocation will have precedence over all other mutual support.

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

9.2.8 Collaborative Planning

The CDEM Group will maintain contact with other Groups, share plans, data and arrangements to facilitate a common approach and provide access to training and exercises by staff from other Groups.

9.3 Management and Governance Action Plan

Objectives	Actions	Lead Agency
1. The Assets and Services Committee members understand their role as a Group under section 17 of the Act.	a) Ensure the Committee members are briefed on their CDEM responsibilities.	CDEM
	b) The Group formally adopts the Annual Work Plan.	CDEM
	c) Involve the Committee in Group decisions and keep them informed of progress against the Annual Work Plan.	CDEM
	d) Review the Group Standing Committee's Terms of Reference	
2. Trained and competent Controller and Alternate Controller are appointed.	e) Develop a succession plan which ensures competent Controllers are always available to the Group.	CDEM
	f) Support training and development of Alternate Controllers.	CDEM
	g) Retain working relationship with the existing Controller and his employer (FENZ)	
3. Performance monitoring is evidential and systemic to ensure the Group and CEG are focusing on the right things.	h) Annual work plans include milestones which are specific, measureable, achievable and time bound.	CDEM
	i) Performance reports are submitted to the Group and CEG at least 3 times per annum.	CDEM
4. The CEG is fully functional and adds value to the CDEM Group.	j) The CEG meets at least 3 times per annum.	CEG
	k) Address the opportunities for improvement identified in the 2014 Capability Assessment Report.	CEG
	l) Look for opportunities to engage in more strategic issues.	CDEM
	m) Expand the CEG's focus from readiness and response into reduction and recovery planning.	CDEM
	n)	
	o) Continue to educate the CEG on emerging hazards, risks and consequences.	CDEM

10. Organisational Resilience

10.1 Overview

In the 2014 Capability Assessment the Group was rated in the 'mature category' in the areas of leadership, culture, relationships and capability development. The report commented that the "response and leadership structures are nimble, adaptive and have proven to support effective crisis management. Coupled with the culture of debriefing, lessons are captured and learned."

10.1.1 Principles

CDEM member and partner organisations:

- ❖ Are responsible for the business continuity and risk arrangements of their own organisations.
- ❖ Foster adaptive capacity through leadership and capability development.

10.1.2 Issues and Priorities

- ❖ The 2014 Capability Assessment identified a need for more work to be done around formal business continuity strategies within the group.

10.1.3 Objectives

1. Organisational resilience in the CDEM sector is developed through risk management and planned strategies which focus on key industries, lifelines organisations and CDEM members.

10.2 Current Arrangements

MDC has an overarching business continuity plan that is owned by the management team alongside business plans that are routinely tested. Having a separate EOC facility from the Council offices, which also houses the backup server, provides for an alternative location, should this be required. Council has recently installed a backup generator which now has the capacity to run all the electrical equipment in the building. The EOC is an IL4 structure which has an alternative power supply (with UPS on each computer) and alternative sewerage and water supply systems.

10.3 Organisational Resilience Action Plan

Objectives	Actions	Lead Agency
1. Organisational resilience in the CDEM sector is developed through risk management and planned strategies.	a) Encourage all CDEM partner agencies to undertake a resilience assessment to identify the gaps in the sector and implement any corrective actions.	CDEM

11. Monitoring and Evaluation

11.1 Overview

Monitoring and evaluation allows comparisons between actual and desired states and ongoing analysis and improvement of processes and outcomes. Monitoring involves tracking progress against a plan or performance against standards, generally using quantitative data. Evaluation is about measuring effectiveness; it compares what is happening against what was intended by the plan (the goals, objectives and targets) and identifies the reasons for any differences.

The legislative requirements of CDEM Groups for monitoring and evaluation are:

- Section 17(1)(h) – Monitor and report compliance within its area with this Act and legislative provisions relevant to the purpose of this Act.

- Section 37(1) – A CDEM Group must ensure that its actions in exercising or performing its functions, duties and powers under this Act are not inconsistent with any national CDEM strategy that is for the time being in force.

11.1.1 Principles

- The CDEM Group's member activities are planned, monitored and effective in achieving its objectives.

- The CDEM Group adopts a continuous improvement approach and encourages reviews, debriefs and completes corrective action plans.

- There is regular monitoring and reporting of compliance with the CDEM Act 2002.

11.1.2 Issues and Priorities

- Monitoring compliance of the CDEM Group against any relevant legislative requirements is carried out.

- The Group's aim is always to work towards the Vision and Goals as set out in this plan.

- The Group's Emergency Management Plan and Annual Work Plan are carried out to an agreed standard and time.

11.1.3 Objectives

1. Annual Work Plans will be aligned with this CDEM Plan and regularly monitored and reviewed.

2. CDEM performance outcomes will be established, monitored and reported.

11.2 Current Arrangements

11.2.1 CDEM Plan Monitoring

An annual Group Work Plan will be developed to support the objectives of this Plan. The work programme is developed in consultation with CEG and is approved by the CDEM Group at the first meeting of the calendar year.

Thirdly reports to CEG and the Group will be provided on progress against the Annual Work Plan. This provides executive oversight for CEG members and ensures public accountability through the elected representatives.

CDEM Plan Targets

An annual report will be provided to CEG and the Group on progress of the actions set out in this plan. Specific work programmes may need to be adapted where outcomes are not being achieved or improvements have been identified.

11.2.2 External Monitoring/Evaluation Processes

Under section 8 of the CDEM Act, the Director of Civil Defence Emergency Management has a function to "monitor the performance of CDEM Groups and persons who have responsibilities under this legislation". This will be undertaken primarily via the MCDEM Capability Assessment Tool. This Tool aims to create a standard assessment of emergency management capability in New Zealand. It consists of a set of key performance indicators and performance measures against which Groups can assess themselves or be externally assessed.

As well as providing an understanding of the organisational strengths, weaknesses and gaps, it also enables MCDEM to provide a nationwide picture of the implementation of requirements under the CDEM Act and progress towards CDEM's high-level goals and objectives

The Marlborough CDEM Group has been externally assessed by the Ministry in 2014 as part of the three yearly cycle of external assessment. Outcomes identified through the assessment process have been incorporated into this Plan. The CDEM Group may undertake the assessment before three years have ended to provide a measure of self-improvement.

11.3 Monitoring and Evaluation Action Plan

Objectives	Actions	Lead Agency
1. Annual Work Plans will be aligned with this CDEM Plan and regularly monitored and reviewed.	Group Annual Work Plans are approved by the CEG each year.	CDEM Group
2. CDEM performance outcomes will be established, monitored and reported.	Review and establish appropriate outcome based performance measures for the CDEM Group and report to CEG and Group annually.	CDEM Group
3. The CDEM Group understands levels of community preparedness and resilience.	Use MDC community satisfaction survey to identify and prioritise engagement with communities across Marlborough Work with community groups to support resilience and identify areas where additional support is likely to be required in an emergency.	CDEM Group

Appendix A – Organisations with a Key CDEM Role

This Plan has primarily been developed for the CDEM sector and key stakeholders as defined below.

- Local authority – to coordinate and integrate all aspects of its hazards and emergency management functions and activities under this Act and other legislation.
- Emergency services and community support agencies – in support of their readiness, response and recovery planning and delivery.
- Lifeline utilities (including local authority services) – to link with their strategic risk reduction and operational planning for emergency readiness, response and recovery of services.
- Government departments – to integrate national planning and service delivery in support of local CDEM management.
- Welfare agencies – to ensure the efforts of all contributing agencies respond in a collaborative way to the needs of the communities at risk.

Local Authority

Marlborough District Council

Emergency Services and Community Support Agencies

NZ Police	Ministry of Business, Innovation and Employment
Fire and Emergency New Zealand	Rural Women NZ
Oranga Tamariki	
NZ Defence Force	
St John Ambulance	NZ Red Cross
Nelson Marlborough Health	The Salvation Army
Public Health	Top of the South Rural Support Trust
Department of Conservation	Marlborough SPCA
Ministry of Social Development	Victim Support
Coastguard New Zealand	Neighbourhood Support NZ
Ministry for Primary Industries	Surf Life Saving NZ

Lifeline Utilities

The CDEM Act 2002 places specific duties on lifeline utilities to ensure they are 'able to function to the fullest possible extent' and participate in (and make information available for) CDEM planning. The Act describes those entities and classes of entities, which for the purposes of the CDEM Act 2002 constitute a lifeline utility. The Marlborough Engineering Lifelines Group plays a key role in coordinating the risk and emergency management activities of lifeline utilities across the region.

For the purposes of the Act, the following provides a list of these entities that apply to the Marlborough District and for whom the term 'lifeline' or 'lifeline utility' in this Plan applies.

Schedule 1 Part A

A1. Radio New Zealand

A1. Television New Zealand Ltd

A5. Blenheim Airport Ltd

A6. Port Marlborough Ltd

Schedule 1 Part B
B1. An entity that produces supplies or distributes gas in bottles of more than 20 kg.

BOC Gases NZ Ltd

Elgas Nelson Ltd

B2. *An entity that generates electricity for distribution through a network or distributes electricity through a network.*

Transpower

Marlborough Lines

Trustpower

B3. *An entity that supplies or distributes water to the inhabitants of a city, district or other place.*

Marlborough District Council

B4. *An entity that provides a waste water or sewerage network or that disposes of sewerage or storm water.*

Marlborough District council

B5. *An entity that provides a telecommunications network.*

Telecom NZ Ltd	Vodafone NZ Ltd
Kordia	Mt Campbell Communications Ltd

B6. *An entity that provides a road network including State Highways.*

NZ Transport Agency

Marlborough Roads

B7. *An entity that produces, processes or distributes to retail outlets and bulk customers any petroleum products used as an energy source or an essential lubricant or additive for motors or machinery.*

NZ Refining Company Ltd	BP Oil Ltd
Mobil Oil NZ Ltd	Z Energy Ltd
Nelson Petroleum Distribution (NPD) Ltd	Allied Petroleum Ltd

B8. *An entity that provides a rail network or service.*

KiwiRail

Government Departments

Ministry of Civil Defence & Emergency Management	Oranga Tamariki
Housing NZ Corporation	Ministry of Social Development
Ministry of Education	Department of Corrections
Ministry for Primary Industries (MPI)	Maritime New Zealand (MNZ)
Civil Aviation Authority (CAA)	Land Transport Safety Authority (LTSA)
Ministry of Business, Innovation and Employment (MBIE)	Inland Revenue Department

Ministry of Civil Defence & Emergency Management	Land Information NZ (LINZ)
Child Youth and Family	Quotable Value New Zealand
Te Puni Kōkiri (Ministry of Māori Development)	Ministry of Health
Office of the Auditor-General	Ministry of Transport
Accident Compensation Corporation (ACC)	

Other Stakeholders

Media Agencies
Newspapers

Marlborough Express	Picton Seaport News
The Blenheim Sun	Marlborough Midweek

Radio stations

More FM (Blenheim and Picton)	Brian FM (Blenheim, Havelock, Picton and Seddon)
The Breeze (Blenheim)	The Hits (Picton)

Insurance Sector
Earthquake Commission

Insurance Council

Neighbouring Groups

Nelson/Tasman Group	Canterbury Group
West Coast Group	Wellington Group

Business Sector

Chamber of Commerce	Marlborough Smart and Connected

Picton Regional Forum

Scientific/Technical Associations

GNS Science	National Institute of Water and Atmospheric Science (NIWA)
Met Service	NZ Association of Earthquake Engineering

Hazardous Substances Technical Liaison Committee

Food Retail Sector
Progressive Enterprises: Countdown and Fresh Choice

Foodstuffs: PAK'nSAVE, New World and Four Square

Tangata Whenua

Rangitane	Te Ati Awa
Ngati Ape	Ngati Koata
Ngati Kuia	Ngati Rarua
Ngati Toa	Ngai Tahu

Residents Associations

Awatere Community Trust	Bay of Many Coves Residents
Blenheim Ratepayers	Canvastown Settlers

Cissy Bay Residents
D'Urville Island Settlers
Duncan Bay Residents
Elaine Bay Residents
Fairhall/Omaka Settlers
Flaxbourne Settlers
French Pass Residents
Greater Whatamango Bay Residents
Grovetown Residents
Havelock Community
Linkwater Settlers Committee
Kenepuru & Central Sounds Residents
Little Ngakuta Residents
Marlborough Sounds Combined Residents
Moenui Ratepayers
Ngakuta Bay Community
Northbank Settlers
Nydia Bay Residents
Ohingaroa Residents
Okaramio Residents
Okiwi Bay Ratepayers
Onauku Bay Residents
Port Underwood Residents
Penzance/Tune Bay Property Owners
Picton Ratepayers and Residents
Pines Residents (Endeavour Inlet)
Queen Charlotte Sounds Residents
Rai Valley Settlers
Rarangi District Residents
Renwick Residents
Riverlands Settlers
Spring Creek Residents and Ratepayers
Tirimoana/Anakiwa Residents
Tuamarina/Waikakaho Residents
Willow Bay Residents
Waikawa Bay Residents and Ratepayers
Wakaretu Bay Residents
Wairau Valley Residents and Ratepayers

Appendix B – Hazard Summaries

Local Source Tsunami

Overview	Tsunami are high crested waves generated by sudden fractures of the sea floor caused by earthquakes of magnitude greater than 6.5 (Richter Scale) or by submarine volcanic eruptions or landslides. In the Marlborough District tsunami have been reported in 1848 and in 1855 but little damage was reported as the area was sparsely populated. However this record does not provide a realistic picture of past tsunami inundation in Marlborough due to the short period of time able to be considered by a historical record, and it only records those events which happened where people were at the time. At least nine tsunami have inundated the Marlborough Coast in the last 5,000 years according to the available historic and palaeo tsunami records. Current palaeodata has provided new evidence to suggest that at least 5 locally generated catastrophic salt water inundations with wave heights greater than 5 metres, and probably greater than 10 metres have impacted the Cook Strait region in the last 5,000 years. The most likely source of these near source tsunami is the Hikurangi trench. Marlborough District could be affected by either locally generated or distant tsunami generated along the South American coast on the eastern side of the Pacific Plate. A tsunami that crosses the Pacific is generally associated with wave heights up to 5 metres across a broad front. Locally generated tsunamis are associated with waves of the order of 10 metres in height along a narrower front, perhaps as little as 20 kms.
Hazard Likelihood (E)	A study by GNS Sciences (William Power 2013) indicates that the District could be affected by tsunami from both near and distant sources and return periods were calculated for different scenarios. Waves potentially up to 12 metres were classified as a 1:2,500 years tsunami event (an internationally adopted standard) with an 84% confidence level. Waves between 3-4 metres were classified as a 1:500 years event. Smaller waves (mostly from distant sources) are a regular occurrence in NZ and most are 1-3 metres in height.
Hazard Consequence (5)	Social: • In a worst case scenario with little time for warnings to be communicated and a large number of residents living in remote areas it is highly likely that such a tsunami would result in multiple fatalities. • Public health issues with water contamination and a lack of essential services such as power. • Psychosocial issues would expect to be dramatically increased. • Many people from outside the District will be trapped in Marlborough. Built: • Picton and Havelock ports and large areas of the townships could be seriously damaged. • Blenheim sewerage ponds could be inundated. • Electricity supply could be seriously compromised including some Transpower

	pylons and the Cook Strait cable. • SH 1, the Kiwirail network, and possibly the Wairau and Ure/Waima Bridges, could be damaged and impassable in places along the east coast. • Ships and vessels in port or marinas could be swept inland. • Huge rafts of debris are likely to occur in the Sounds and in Te Koko-o-Kupe/Cloudy Bay. Economic: • The impact of demolishing the Picton ferry terminal would be felt throughout the South Island and to a lesser extent the North Island. • Insurance companies would struggle to cope with the impact. • The rebuild would take many years and be hugely expensive. Natural: • Slips caused by the waves in the Sounds are likely to cause further seiching. • All coastal wetland will be inundated. • Salt water is likely to contaminate some of the lower fresh water aquifers.
How do we manage the risk?	• GNS Sciences have mapped the likely inundation of tsunami along the entire length (1,750km) of the Marlborough coastline. • The inundation maps have been placed on the Council website. • Coastal community open days have been held to raise awareness of the hazard and engage the public in developing response plans for individual communities. • Clear messaging has been communicated about the need to evacuate in the event of an (*Long or Strong, Get Gone)* • A three part National Exercise (Tangaroa) has been held with all responding, recovery and welfare agencies to test a response to a significant tsunami and lessons will be learnt from that. • CDEM staff and communities receive warnings from the Ministry in the event of regional and distant source tsunami risk to NZ, including through EMA
What more should we be doing?	• Completing evacuation plans for the communities most at risk such as Rarangi, Okiwi Bay, Havelock and Picton. • Placing signage at high use sites and camp grounds (eg; Marfells Beach) showing the possible inundation zones and with key messaging. • Have a CDEM response plan for near source tsunami (less than an hour).

What is the future risk?

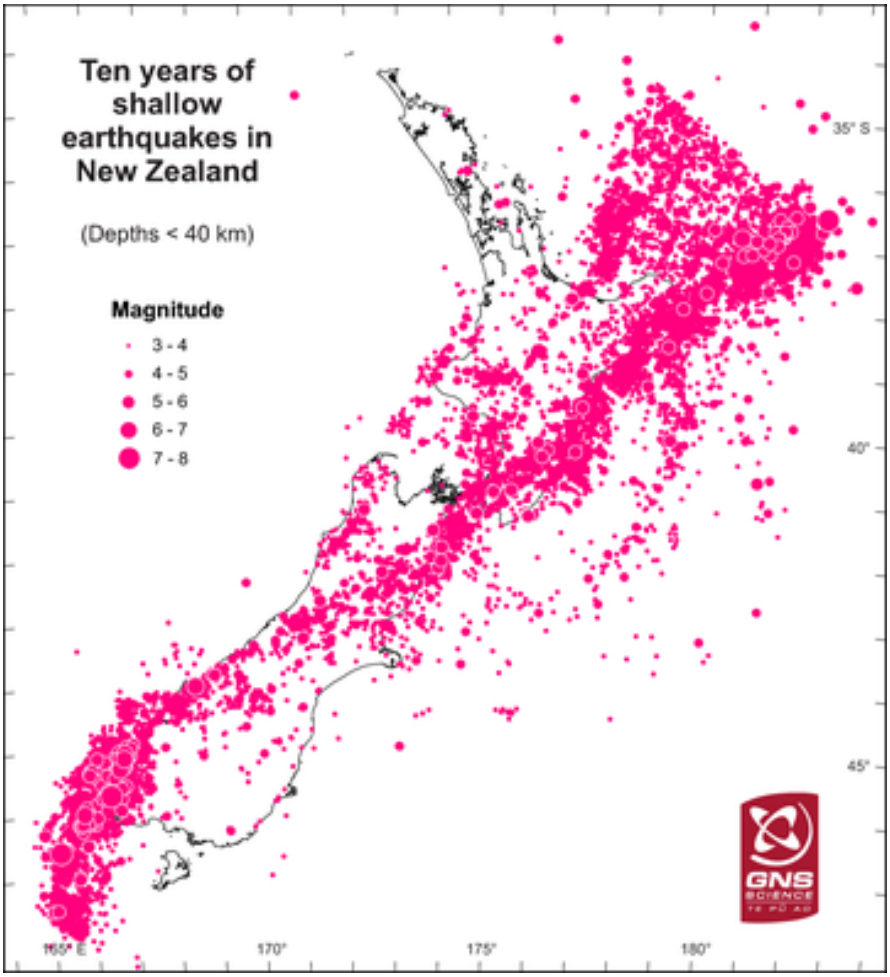
- Because of the very long return period getting people to act according to key messaging will always be hard – ie; many members of the public will not respond well to an actual tsunami.
- The risk of a tsunami occurring will remain the same regardless of any human action.
- There continues to be a desire to build and live on the Coast and this trend shows no sign of diminishing.

Earthquake

Overview

In the South Island, the Marlborough Fault System is a series of major parallel faults which pass close to Blenheim; the Wairau Fault 1.6km to the north, Vernon Fault 8kms to the south and the Awatere Fault 14 kms to the south. These have characteristic magnitudes of 7.1 to 7.6. The parallel faults join together further south to form the Alpine Fault which carries most of the total plate boundary strain. This is a very distinct feature along most of its length because of the Southern Alps that have been uplifted along its eastern side, making it clearly visible from space. It is considered to be at high risk of producing a major earthquake in the next 50 years. Other principal active faults in the District include the Clarence, Kekerengu, Elliot, Jordon and Hope faults. All of these faults are capable of producing large magnitude earthquakes and collectively these faults have an average return period of between 28 and 51 years (Robertson and Smith 2004).

Figure 5: Ten Years of Shallow Earthquakes in New Zealand



	The most recent events in Marlborough were in 2013 and 106, The 2013 Lake Grassmere/Kapara Te Hau earthquake which was a magnitude 6.6 earthquake that occurred at 2:31pm on Friday 16 August 2013. The epicentre was located about 10 km south-east of Seddon, under Lake Grassmere/Kapara Te Hau, with a focal depth of 8 km. The earthquake caused significant land damage in the local area, with landslips blocking roads, including the main highway between Blenheim and Christchurch. Eight houses were evacuated by the Marlborough District Council and another 11 allowed only restricted access. There were only minor injuries sustained however the earthquake was widely felt in both the North and South Islands of New Zealand. The 2106 Kaikoura earthquake was a magnitude 7.8 (M_w) earthquake that occurred two minutes after midnight on 14 November 2016 NZDT (11:02 on 13 November Ruptures occurred on multiple faults and the earthquake has been described as the "most complex earthquake ever studied". The earthquake started at about 15 kilometres north-east of Culverden and 60 kilometres south-west of the tourist town of Kaikoura and at a depth of approximately 15 kilometres. The complex sequence of ruptures lasted for about two minutes. The cumulative magnitude of the ruptures was 7.8, with the largest amount of that energy released far to the north of the epicentre. South Marlborough communities and the East Coast road and rail infrastructure were particularly hard hit, including in Seddon, where people were still dealing with earthquakes in 2013. There is a continuous history of very large quakes in New Zealand with the following 6 recognised as the most significant: 1100 Alpine Fault estimated to be between 7.6 and 8.3, 1460 Wellington estimated to be an 8.0, 1610 Alpine Fault estimated to be between 7.6 and 8.3, 1717 Alpine Fault estimated to be a magnitude 8.1, 1826 Fiordland 8.0 and 1855 Wairarapa at 8.2. The Wairarapa earthquake impacted the Marlborough District with one feature, Waikārapi (Vernon) Lagoon, being created by the resulting land subsidence and the resultant tsunami also caused damage on the coastline.
Hazard Likelihood (A)	In the last 10 years New Zealand has experienced 25 earthquakes of magnitude 6.0 or more and 7 over 7.0 (Raoul 2006 7.5 and 7.1, Raoul 2007 7.8, Dusky 2009 7.8, Darfield 2010 7.1, Raoul 2011 7.6 and 7.3). GNS Science has done a lot of work recently in studying the Alpine Fault and has determined that it fractures approximately every 300 years. There is clear evidence that there have been 26 large earthquakes on the fault in the last 8,000 years. Given the last major movement was in 1717 GNS estimates suggest that there is a 50% chance that the fault will release the pressure build up (currently 8m of movement) in the next 50 years. This could cause a magnitude 8.0 quake at the epicentre and result in considerable damage across the South Island (including Marlborough) and the lower North Island. A large earthquake in the Wellington region or on the Hikurangi subduction zone are also likely have significant impacts for Marlborough.
Hazard Consequence (5)	Social: • Given the fatalities in Christchurch it is reasonable to assume multiple fatalities and possibly three times as many injured. • Many people from outside the District will be trapped in Marlborough. Built • Marlborough may be isolated with the three state highways possibly closed.

	• Transpower pylons may be down impacting on the power supply to the North Island. • It is possible that Woodbourne Airport and Omaka Aerodrome will still be useable. • Huge structural damage to residences and businesses – the Seddon earthquakes suggest that wineries are particularly vulnerable with their storage tanks. Economic: • Given the Canterbury economy (as GDP) took two years to recover and many industries have not or took much longer (eg; tourism) a similar situation would occur in Marlborough. Environmental: • In an Alpine Fault rupture slips and slumping are expected to be a major problem. • Liquefaction is expected east of Blenheim. • Landslides could be widespread and rivers may be dammed. • A large earthquake offshore may trigger a tsunami.
How do we manage this risk?	The risk and hazard are now better understood than ever before; however there is a lack of understanding of what the aftermath of a large Alpine Fault rupture would look like. A joint venture called Project AF8 has been funded by MCDEM over two years from 2016 to 2018. The project brings science and emergency management together to identify the consequences of a large Alpine Fault earthquake for all CDEM Groups in the South island and identify coordinated initial response actions for CDEM Groups. Earthquake monitoring in New Zealand is undertaken by GNS Science's GeoNet Project which provides a broad-based, around-the-clock monitoring system and a modern data management centre. The monitoring is carried out to provide warnings of any future seismic activity so that appropriate steps can be taken to reduce the risk to lives and property. Council has identified zones at risk of liquefaction caused by earthquakes and is managing development within those areas. Council also has an active programme which focus' on buildings of two or more stories and pre-1977. Those deemed earthquake prone ("EQP") have been identified and number 24 properties. Owners have been issued verification notices to strengthen or demolish the buildings however in April 2016 18 buildings are still to complete the notice period.
What more should we be doing?	• The Lifelines Group could carry out a comprehensive Vulnerability Assessment of the significant assets within Marlborough. • Critical lifelines infrastructure needs to be resilient enough to cope or quickly recover from such severe events. • A comprehensive evaluation of building stock is to be implemented consequent to the Building (earthquake prone buildings) Amendment Act 2016. An implementation statutory start date of 2018 has been set. • The Seddon earthquakes indicated that older residential buildings in particular could benefit from relatively minor strengthening.

What is the future risk?	• As the length of time increases since the last large Alpine Fault movement the continuous pressure build-up will result in a larger earthquake occurring.

Human Pandemic

Overview	Marlborough like the rest of NZ faces the same risk of a human pandemic arriving on our doorstep from overseas. A human pandemic would cause widespread disruption to all areas of society if initial preventative measures are unsuccessful. While other strategies are deployed there could be widespread illness in the community.
Hazard Likelihood **(C)**	**Hazard likelihood is very high** • As international travel increases along with visitor numbers to NZ increasing the risk of a pandemic increases. • Emergence of infectious disease profiles such as SARS and MERS no longer limited to outside of NZ with Travel times being reduced. • Recent pandemic 2009 highlighted the risk with NZ based travellers.
Hazard Consequence (5)	Social: • Very High – Will have impact across the whole sector through illness and workplace Built: • Low- will not affect built environment, may have related effect to delayed maintenance from illness Economic: • High – Very High – Could affect local and regional economies through increased illness and downturn in production/workplace from reduced workforce. Downturn in tourism to area would be noticeable. Risk to seasonal workers would affect vineyards (economic impact) Natural: • Low- No effect on natural environment other than short term neglect to managed areas from reduced workforce capacity
How do we manage this risk?	• The New Zealand Ministry of Health has a NZ Influenza Pandemic Action Plan (NZIPAP) that was tested and updated from the 2009 pandemic. • Ministry of Health and DHB Public Health teams work together on pandemic planning and use Emergency Management Information System (EMIS) to manage information and communication . • Nelson Marlborough Health has a Pandemic plan based on NZIPAP • Nelson Marlborough Health has a an early warning influenza action group
What more should we be doing?	• Continue awareness through Readiness and Response group and CEG
What is the future	• As with any disease profile it is impossible to fully mitigate the risk of another pandemic occurring in NZ. However with the NZIPAP and its strategies along with

risk?	review of current information Nelson Marlborough Health remain in a constant state of readiness for dealing with a pandemic to reduce the overall impact and spread of the disease. The World Health Organisation through the Ministry of Health regularly provides updates on the likelihood of an emerging pandemic

Marine Accident

Overview

A marine accident involving a ship may result in significant loss of life and/or catastrophic environmental damage from spilled oil. Marine accidents take many forms but the most serious generally involve one or more of the following aspects;

- collision
- grounding
- fire
- foundering

A single marine accident can involve all of these aspects with each requiring a specific response strategy.

Marlborough is frequented by bulk carriers, cruise vessels and passenger ferries. Each type of vessel carries its own unique set of risks but broadly speaking bulk carriers bring the largest risk regarding pollution, whereas the most significant risks associated with ferries and cruise ships relate to the high numbers of passengers on board.

Hazard Likelihood (C)

The risk of a significant marine accident can be described as high consequence low probability risk.

In traditional risk assessment, the low probability of a catastrophic maritime accident has resulted in such an emergency being placed low on any ranked hazard list. Consequently, the risk has often been inadequately managed.

However, contemporary risk management thinking suggests that despite the low probability, the consequences of such an event are so high that such risk must always be appropriately managed.

Table 11: Notable marine accidents in the Asia Pacific region in recent times include.

Year	Location	Ship Type	Name	Accident	Damage
2009	Tonga	Ferry	Princess Ashika	Foundering	73 deaths
2011	Tauranga	Container	Rena	Grounding	Oil spill ($350m^3$)
2014	South Korea	Ferry	Sewol	Grounding	304 deaths

Table 12: Near misses in the Marlborough Region in recent times

Year	Location	Ship Type	Name	Accident	Damage
2011	Tory Channel/Kura Te Au	Ferry	Monte Stella	Grounding	Minor damage to vessel
2016	Tory Channel/Kura Te Au	Cruise ship	Azamara Quest	Grounding	Minor damage to vessel

Hazard Consequence (5)	Social • Short term social distress resulting from rescue operation and survivor welfare demands. • Long term social distress through pollution damage destroying amenity values, recreational areas, working area, food sources, and places of historical or cultural significance. • Loss of income/jobs from economic impacts. • Cultural impact from presence of wreck. Built Economic • Possible damage to port infrastructure/marine farms. Economic • Catastrophic loss to marine farming and fisheries businesses. • Fall in value of property affected by oil spill. • Reputational damage to Port and region. • Loss of tourism revenue. • Closure of national transportation route. Environmental: • Environmental damage to areas of national and international significance. • Wildlife impact on marine mammals, birds, shellfish and fish stocks.
How do we manage this risk?	• Highly regulated shipping industry at international, national and regional level. • Maintenance of a safe and navigable waterway (Harbour Master). • Provision of pilotage services (Port Marlborough and Maritime NZ). • Response plans in place for various scenarios including oil spill and mass rescue.

What more should we be doing?	• Oil spill response is well funded and resourced with regular training sessions however more can be done to better align oil spill response with emergency response networks. • Consideration should be given to a regular regional exercise for mass rescue (5 yearly) with a focus on developing a coordinated local response that aligns with the national plan. • Consideration of capabilities in regard to responding to a large ship-board fire occurring in Picton or the Sounds. Specific concerns exist around this issue in relation to the significant quantities of dangerous goods carried by ferries.
What is the future risk?	• Cruise ship numbers are likely to increase as is the size of cruise vessels. Similarly ferries are expected to increase in size and passenger capacity. The size of bulk carries is trending up and it is likely that the region will eventually attract a wider range of vessels including container ships. This growth in shipping movements and vessel carrying capacity equals growing risk. • The probability of an accident is likely to remain low. Ship numbers are increasing but methods of mitigating risk are also improving.

Animal Epidemic

Overview	Marlborough's economy and society is driven by primary industries such as viticulture, farming, fishing and forestry. With respect to farming in particular, an animal epidemic such as foot-and-mouth disease that affects cloven-hoofed animals would have a significant impact on Marlborough and the country as a whole.
Hazard Likelihood (D)	• As trade dynamics change and trade volumes increase there is increased pressure on the biosecurity system to mitigate risk • Forecasted growth in passenger arrivals and changing dynamics have significant implications for biosecurity • Stringent border Import Health Standards enforced by the Ministry for Primary Industries (MPI) with respect to animal products reduces the likelihood of diseases entering on animal products.
Hazard Consequence (5)	Social: • An animal epidemic in livestock, particularly cattle, would have a significant impact on society. The potential loss of native avifauna would also significantly affect social and cultural values. Economic: • An animal epidemic would have extremely significant impacts on primary sector production and in some cases could result in 100% production loss. There could also be losses with respect to tourism if avian in origin. Built • Most biosecurity threats will not impact on the built environment Natural Environment: • Depending on the disease, impacts on native fauna would vary. If livestock-related, impacts would be nil given the lack of NZ native cloven-hooved animals. If

	avian in origin, the impacts on native avifauna could be significant.
How do we manage this risk?	The biosecurity system consists of a number of central Government interventions pre border, at the border and post border. Regional Government interventions assist with pest management at the post border stage in the vent of incursion. Industry and public awareness contribute to readiness
What more should we be doing?	Potential for more coordination between central, regional government, industry and society. Increased education on the likelihood and potential consequence of biosecurity risks and what community members can do to be "part of the solution".
What is the future risk?	It is impossible for the biosecurity system to mitigate 100% of potential biosecurity threats while enabling trade and travel. It is a question of when not if. A biosecurity risk will impact Marlborough's economy and society at some time in the future. The likelihood of this threat increases each year.

Marine Pests and Diseases

Overview	Marlborough's economy and society is driven by primary industries such as viticulture, farming, fishing, aquaculture and forestry. The introduction of a pest or disease organism that could affect key cultured species in the marine environment such as greenshell mussel or salmon, would have a significant impact on Marlborough.
Hazard Likelihood (B)	As trade dynamics change and trade volumes increase there is increased pressure on the biosecurity system to mitigate risk. Domestically, there are threats in parts of New Zealand and not others. This increases the likelihood of those organisms reaching Marlborough. A border Import Health Standard for ballast water is currently in place, and Craft Risk Management Standards are in place for biofouling (below water) and above water biosecurity have been introduced by the Ministry for Primary Industries. These border mechanisms reduce the likelihood of a new to NZ organism arriving.
Hazard Consequence (4)	Social: • A marine pest or disease epidemic that has major impacts in cultured aquaculture species would have an impact upon society. Economic: • A marine pest or disease epidemic would have significant impacts on primary sector aquaculture production. Built: • Most biosecurity threats will not impact on the built environment Natural Environment: • Depending on the pest or disease, impacts on marine environments would vary. If the pest is an invasive fouling organism, there would be impact on natural marine environments due to competition and changes to seabed structures. If a disease, and one that can cross from farmed species to those in the natural environment,

	again there would be a significant impact.
How do we manage this risk?	The biosecurity system consists of a number of central government interventions pre border, at the border and post border. These include an Import Health Standard for ballast water that is currently in place and by 2018; a Craft Risk Management Standard for vessel biofouling will be also enforced. Regional Government interventions assist with pest management at the post border stage in the event of incursion. In addition, there are marine pests and diseases that may be present in other parts of New Zealand which could triggers the impacts highlighted above. In that case, Regional Government plays a role in managing that risk as best it can from within its own region. Industry and public awareness contribute to readiness
What more should we be doing?	Putting in place further measures to reduce the risk of domestic transfer of pests and diseases. Potential for more coordination between central, regional government, industry and society.
What is the future risk?	It is impossible for the biosecurity system to mitigate 100% of potential biosecurity threats while enabling trade and travel. It is a question of when not if. A biosecurity risk will impact Marlborough's economy and society at some time in the future. The likelihood of this threat increases each year.

River Flood

Overview	Floods are probably the most commonly occurring natural hazard in Marlborough. They occur across the entire region and have caused the most damage among the hazards identified in recent times.
Hazard Likelihood (A)	Floods have been responsible for numerous Civil Defence Emergencies in recent history particularly the July 1983, Wairau River flood. It is possible that the protection works will be stressed at some future stage due to super-design flood discharges or landslide or dam failure incidents. It could also arise as a result of a multiple emergency situation ie; earthquake, landslide, blockage and flash floods outside the immediate area.
Hazard Consequence (4)	Social: • Loss of life and injury is a distinct possibility (numerous cases of both have been recorded in New Zealand). Mass evacuation of residents is also an issue in Marlborough because much of the population is situated in isolated areas which can lead to stranding as transport links are cut. • Public health is at risk from water/sewage contamination in the major settlements and the dispersal of human and farm effluent in rural areas. Many of the region's closed landfills are also located in flood prone areas. • General social disruption can occur as schools and workplaces are closed and people are dislocated from homes – sometimes for long periods ie; Wairau Flood 1983, Tuamarina Township, 2010. Economic • Severe structural and economic damage has occurred to the major urban settlement of Blenheim, Renwick, Picton, Spring Creek and Tuamarina, Rai Valley

	and Koromiko on numerous occasions with many smaller coastal settlements and rural areas being equally affected. • Millions of dollars of damage can occur during a single event ie; Wairau River Flood July 1983. In severe cases businesses may not be able to recover financially. Built • Major storms can cause simultaneous flooding across the entire region and thus the impact can be widespread. Some floods may also take many months to completely rectify any damage. Potentially, the most threatening flood issue facing the region at present is a large flood (ie; >1:100 years) occurring in the Wairau River catchment. This would impact severely on the multitude of vineyards grown on the flood plain. Natural: • Alterations to river channels including bank erosion, channel scour or build-up and channel diversion. Sediment-debris deposition, and dispersal of chemicals, effluents (dairy farm ponds, septic tank discharge sites, water entering town sewage networks) and rubbish (from tips) across floodplains. • Damage from the 2016 Kaikoura earthquake has also impacted river levels and floodbanks, changing the profile of flood risk until repairs were undertaken. It is likely that future earthquakes will have similar impacts.
How do we manage this risk?	• Most of the major rivers have flood protection works. The most substantial works in the region protect the Wairau Plains, Lower Wairau Diversion, Renwick and Blenheim townships and consists of three networks. 1. Wairau River Protection Works: 1:100 year stopbank protection designed for 5,500 m^3s-1 flood – allowing for 900 mm freeboard. 2. Ōpaoa/Taylor River: Protection works consist of an engineered dam and a 1:100 year stopbank network through the Blenheim Township. Designed flow 170 m^3s-1 with 400 500 mm freeboard. 3. Omaka/Fairhall/Upper Ōpaoa/Roses Overflow: Protection works consist of 1:100 year stopbank protection to Hawkesbury Bridge (Omaka) and New Renwick Road (Fairhall). • Telemetered river level recorders and high altitude rain gauges operate in most of the major catchments, providing an early flood warning system. The maximum warning time offered is around 3½ hours, depending on the catchment. Most of the focus has been on the Wairau River, because of the population base and value of the land.
What more should we be doing?	• Impact assessments of a flood greater than 1:100 years.
What is the future risk?	• With climate change expected to bring more extreme weather patterns it is likely that the frequency of severe rain storms will increase.

Plant and Animal Pests

Overview	• Marlborough's economy and society is driven by primary industries such as viticulture, farming, fishing and forestry. A plant of animal biosecurity threat is increasingly likely to disrupt one or more of these industries and have a significant impact on Marlborough and its population.
Overview	• Marlborough's economy and society is driven by primary industries such as viticulture, farming, fishing and forestry. A plant of animal biosecurity threat is increasingly likely to disrupt one or more of these industries and have a significant impact on.
Hazard Likelihood (B)	• As trade dynamics change and trade volumes increase there is increased pressure on the biosecurity system to mitigate risk. • Forecasted growth in passenger arrivals and changing dynamics have significant implications for biosecurity. • New Zealand primary production sectors are highly reliant on a relatively small number of monocultures eg; (greenshell mussel, pinus radiata, sauvignon blanc grapes). There is increased biosecurity risk associated with low genetic diversity.
Hazard Consequence (4)	Social: • Many biosecurity threats will have a significant impact on society. Economic: • Some biosecurity threats could have extremely significant impacts on primary sector production and in some cases could result in 100% production loss. Built: • Most biosecurity threats will not impact on the built environment. Natural Environment: • Some biosecurity threats could have extremely significant impacts on Marlborough's natural environment and native biota.
How do we manage this risk?	The biosecurity system consists of a number of central government interventions pre border, at the border and post border. Regional Government interventions assist with pest management. Industry and public awareness contribute to readiness.
What more should we be doing?	Potential for more coordination between central, regional government, industry and society. Increased education on the likelihood and potential consequence of biosecurity risks and what community members can do to be "part of the solution".

What is the future risk?	It is impossible for the biosecurity system to mitigate 100% of potential biosecurity threats while enabling trade and travel. It is a question of when not if. A biosecurity risk will impact Marlborough's economy and society at some time in the future. The likelihood of this threat increases each year.

Electricity Failure

Overview	Electricity is distributed throughout most of Marlborough mainly by overhead lines but with underground cabling in central urban areas.
Hazard Likelihood (D)	Hazards to electricity distributions are both environmental and consequences of human causes such as mechanical equipment and vehicles.
Hazard Consequence (4)	The most significant consequence arises from electricity, fuel and telecommunications failure as these will have a knock-on effect on most other lifeline utility services. Social: • Most electricity users are dependent on the ongoing reliable supply with most users not having alternative for heating, lighting or cooking. • Worst-case scenario is a winter outage which may see a public health impact both in terms of lack of heating and lack of water supplies. Economic: • Severe disruption to all types of businesses that do not have standby generation. • Many businesses will cease trading without electricity due to reasons such as a lack of security and a loss of communications. Built: • Loss of electricity is likely to impact construction, processing and service industries with impacts on transport and tourism. • A prolonged outage would see severe disruption to water supply, fuel and telecommunications services. Natural Environment: • Damage to electricity lines and cables could result in hazards such as fallen lines, fire risks and human contact.
How do we manage this risk?	• Electricity networks are the subject of extensive asset management plans, public safety systems, tree clearance regulations and electricity safety regulations.
What more should we be doing?	• Checking the condition of an electricity network is ongoing with nts likely requirement increase in the future.
What is the future risk?	• Risks in the future are likely to be similar to those impacting electricity networks now although climate change may bring changes from rainfall, wind and dry environment impacts which could result in more vegetation wild fires. • More intense property development may also change the risk to the electricity network.

Drought

Overview

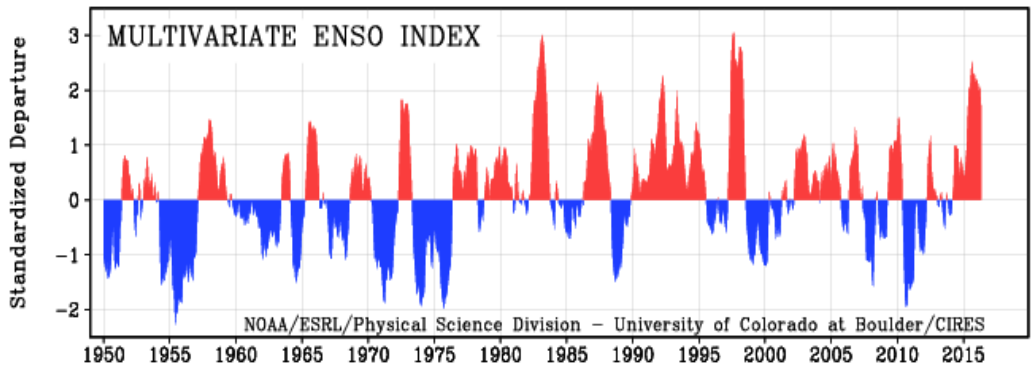
Marlborough is sheltered from the moist westerly rains and has a climate which is regularly dry with a mean rainfall of 1,249mm. This is exacerbated during El Nino conditions and these generally result in much drier summers than normal when total rainfall can be less than 400mm per annum. These result in significant soil moisture deficits of up to 700mm over a twelve month period. The most significant droughts have been in 1969, 1973, 1998, 2001 and 2015 which was the driest on record.

Extreme drought conditions can also create a high risk environment for fire, even though the fire itself may not arise through natural causes. An example of this occurred in 2000 when Marlborough recorded the highest ever national fire index level. During extreme drought conditions Marlborough has experienced some of New Zealand's largest grass fires (eg; 6,100 ha Boxing Day fire of 2000) and pine forest fire (1,200 ha Parson's Road of 2016). These caused huge economic losses which both had downstream impacts on other related industries.

Hazard Likelihood (A)

El Niños occur irregularly approximately every two to seven years. Warm water generally appears off the coast of South America close to Christmas, and reaches its peak warmth in the eastern Pacific during the late fall of the following year. In the table below the red peaks indicate when El Nino events have occurred since 1950.

Table 13: La Nina and El Nino Events Since 1950.



Hazard Consequence (4)

Social:

- Droughts cause enormous amounts of stress within farming communities and can end in tragic circumstances.

Economic:

- Losses through reduced productivity can be significant especially given the District's huge reliance on primary industries for its GDP.

Natural Environment:

- The indigenous environment is adapted to survive during the climatic extremes in Marlborough.
- Some indigenous vegetation types however will not recover if they are burnt or destroyed suggesting there is currently a fine natural balance.

How do we manage this risk?	Water use in the region is allocated under the Council-managed system of water consents. Consent holders have been informed that because of the long term statistics for rainfall and river flows that Class A consent holders are likely to be shut off 1 week in every 5 years and that Class B consent holders should have 30 to 60 days of water storage. Council issued resource consents for 1 dam in 2013, 3 dams in 2014 and 8 consents for dams (totalling 411 million litres of storage capacity) in 2015. The District also has a significant irrigation scheme known as the Southern Valleys Irrigation Scheme which draws water from the Wairau River and allows 4,500 has (mostly vineyards) to irrigate the equivalent of 1.8mm of rainfall per day. During extreme droughts this scheme may be shut down if the river levels drop below a pre-determined level. Council is also progressing work on the proposed Flaxbourne Community Irrigation Scheme which has been a work in progress since 2008. It will draw water from the Awatere River and providing irrigation for 2,200 ha. Water restrictions are often put in place for townships particularly in Renwick. Residents are kept informed and respond well to messages to save water.
What more should we be doing?	• Supporting those on the land who are struggling with the pressures associated with drought.
What is the future risk?	• The results of climate change can be summarised as the wet areas get wetter and the dry areas get drier. • Climate change will therefore have serious consequences for Marlborough in that future rainfall is expected to fall.

Liquefaction

Overview	Liquefaction will occur when submerged loose to medium dense granular materials and silt are subjected to ground shaking. Soil deformation induced by liquefaction can cause sand boils, subsidence, lateral spreading and flow slides. Damage from such deformation can include floatation of buried structures, fissuring of the ground, subsidence of large areas, differential subsidence and foundation failure caused by loss of support as the liquefied soil loses its shear strength. Damage from liquefaction would be greatest where there is potential for lateral spreading of the ground towards water courses or other free surface.
Hazard Likelihood (A)	A geo-technical report on land to the east of Blenheim that was earmarked for possible future residential expansion has shown that it would be susceptible to liquefaction in the event of a significant earthquake.
Hazard Consequence (3)	Social: • Homes and properties become uninhabitable causing significant disruption to people's lives. Economic: • Land that is affected becomes worthless as do all the assets that are on the land. • Businesses and residents are forced to move to another location.

	Built: • Building affected become unusable and if not destroyed are usually beyond repair. Natural Environment: It is a natural process and the result is that the land needs to be recolonised from bare silt and mud.
How do we manage this risk?	The northern and eastern town perimeter sites were identified in Marlborough's South Urban Growth Strategy, a town planning project designed to find suitable land which could be re-zoned to meet the needs of long-term population growth. This work was done prior to the Canterbury earthquakes and since than Council has taken a precautionary approach and engaged scientists to evaluate the risk of liquefaction in these areas. The resulting geo-technical report suggests the high cost of treating the land and of constructing appropriate foundations, coupled with the costs and risks to water and sewerage services and roads, makes these areas now unsuitable for rezoning. The future of a site to the north side of Old Renwick Road – 35 ha. on the edge of Springlands – is not so clear. Initial testing suggests the ground conditions vary across this area and further investigation has been recommended before re-zoning decisions are made. Land-owners have received letters advising them of the contents of the report. Council staff have begun the process of examining other potential areas which may be suitable for housing expansion on the perimeter of the current urban area.
What more should we be doing?	• Council is already taking a precautionary approach to rezoning land for residential subdivision. • The likelihood of liquefaction occurring within the existing built environment of Blenheim are less understood and research may be beneficial.
What is the future risk?	• Population projections suggest another 2500 houses will be needed in Blenheim over the next 20 years so pressure will come on Council to free up land for subdivision. • Given the likelihood of a significant earthquake occurring the odds of an event that will cause liquefaction grow smaller every year.

Terrorism

Overview	Terrorism is an ever increasing threat in the world we live in. At this stage there has not been an event in New Zealand however it seems plausible that a terror attack will be carried out during the life of this plan. Where attacks have occurred emergency services are often overwhelmed and the community remains traumatised afterwards.
Hazard Likelihood (E)	Rare
Hazard Consequence (5)	Social: • Apart from initial deaths an attack would change society's values and import a fear currently unknown in the communities. Economic: • NZ is seen as one of the safest places in the world to visit and an attack would impact hugely on the country's tourist industry.

	Built: • Structures are often targeted or at least collateral damage during an attack. Natural: Anti 1080/Department of Conservation protestors could carry out an attack on a significant toanga.
How do we manage this risk?	This is not a focus of CDEM. Police will have plans in place and the Emergency Operations Centre will be available for a response if required.
What more should we be doing?	• No further action recommended.
What is the future risk?	• Recent history would suggest that NZ will become a target at some stage.

Water/Sewerage System Failure

Overview	MDC operates five sewerage systems in Blenheim, Picton, Havelock, Seddon and Spring Creek/Grovetown. The flow in the wastewater reticulation relies largely on gravity through a continuous progression of pipes. There is very little opportunity to interconnect branches in the network. A breakage or blockage in the system will therefore affect all pipes upstream. The Canterbury earthquakes showed that all types of spigot and socket jointed pipe can be dislocated during severe ground shaking. Pipes, wet wells and manholes are all susceptible to 'floating' in areas of liquefaction. Ground movement can also disturb the gradient required for gravity flow. Blenheim, Picton, Havelock, Renwick, Awatere (including Seddon), Wairau Valley and Riverlands all rely on public water supply with many other outlying communities being on local community supplies not operated by Council, for example Rarangi, Tirimoana and Momorangi Bay.
Hazard Likelihood (C)	Electricity failure, loss of water supply, software failure, mechanical breakdown, earthquake, heavy rain flooding and tsunami all have the ability to adversely affect sewerage infrastructure to different degrees. The likelihood of contamination of the water supply from an emergency is considered to be low although treatment is routinely required for many supplies. Extreme flooding or earthquakes can disrupt supplies either at source or through the reticulation network. Electricity supply failure has also been identified as a potential risk to water supplies. The 2017 Havelock North water contamination event has provided agencies with responsibility for drinking water treatment, with lessons that could be applied locally.
Hazard Consequence (3)	Social: • Failure can lead to human disease and death risk and disruption to business and social activities. Economic: • Physical damage to network infrastructure can take considerable time to repair leading to loss of productivity particularly from 'wet' processing industry that are unable to make trade waste discharges.

	• Considerable costs from the repair and clean-up of sewerage effluent. • There are significant costs in transporting water and the additional disinfection and testing. • There may be an impact on the aquaculture and leisure industry of wastewater pollutants entering the environment. • Fire-fighting capability could be greatly reduced. Built: • The potential exists for local contamination of property. Natural Environment: Waterways and coastal areas which can affect local ecosystems for a certain period of time.
How do we manage this risk?	Power loss is one of the most likely causes of disruption. The main sewerage pump stations in Blenheim and in Dublin Street Picton and Waikawa all have backup generators available and/or on site. The other stations have external plugs and an emergency plan to be serviced with portable pumps in the event of prolonged power outage. Mobile pumps can also be deployed to 'over pump' across a blockage but there are only a limited number of pumps with sufficient capacity available in the District. Blenheim and Picton have more than one source of water, treatment plants and a limited number of 'critical' mains. This provides some protection to complete failure. The other areas are more vulnerable but there is an active risk management programme and contingency arrangements.
What more should we be doing?	Council is planning to upgrade the water supplies into Havelock and Seddon. Recent liquefaction research around Blenheim suggests that there may be issues similar to those experienced in Christchurch, with their underground assets being disturbed during an earthquake. Damage arising from the Kaikoura 2016 earthquake has also indicated the vulnerability of sewerage systems and hence, the potential for drinking water contamination..
What is the future risk?	As the networks become more resilient the likelihood of failures will reduce over time.

Food Supply

Overview	The transportation links which provide fast moving consumer goods are vulnerable to storms and earthquakes causing road closures through flooding, landslides and structure damage. The vast majority of these goods are transported from Christchurch warehouses on a daily basis via State Highway 1. This link has been closed by major slips and flooding in the past and the alternative route over the Lewis Pass is equally vulnerable, particularly in winter. Goods from Nelson have to pass over two saddles which can be closed during severe events. Because of the nature of these goods and the daily delivery Marlborough could very quickly run out of key supplies of foodstuffs and most supermarkets hold a minimum level of stock in-store. The majority of the population also do not carry large quantities of food in case of an emergency.

Hazard Likelihood (D)	The occurrence seems unlikely during normal conditions however if a significant earthquake or storm were to happen it remains a distinct possibility.
Hazard Consequence (3)	Social: • In its worst form food shortages can lead to civil unrest and offences such as burglary (looting). . • Vulnerable sectors of the community, who tend to be poorly prepared, will be much worse off. Economic: • Food shortages could lead to significant price increases. Built: • Supermarkets and other food outlets would need to be protected from possible looters.
How do we manage this risk?	Currently the risk is left to the two major food distribution companies to manage through their suppliers and transport contractors.
What more should we be doing?	Members of the community need to better understand the 'get ready, get through' message and carry supplies of bulk food. CDEM needs to work with Progressive Enterprises and Foodstuffs to understand how the risk can be managed to an acceptable level and what the contingency plans are in the event of a major emergency.
What is the future risk?	Similar to the current state.