

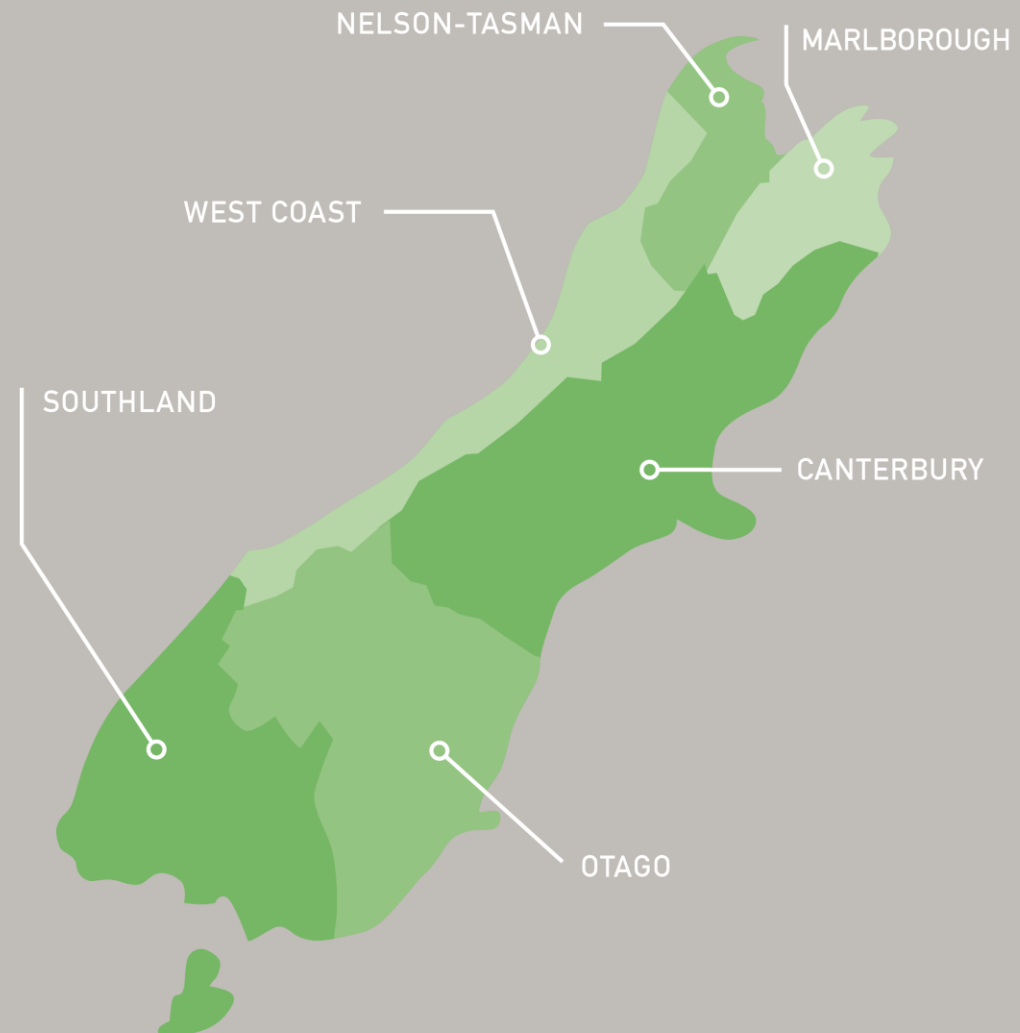
BUILDING OUR COLLECTIVE RESILIENCE FOR A FUTURE EVENT

**ANGUS MCKAY // EMERGENCY MANAGEMENT SOUTHLAND
CHAIR PROJECT AF8**

WHAT IS PROJECT AF8?



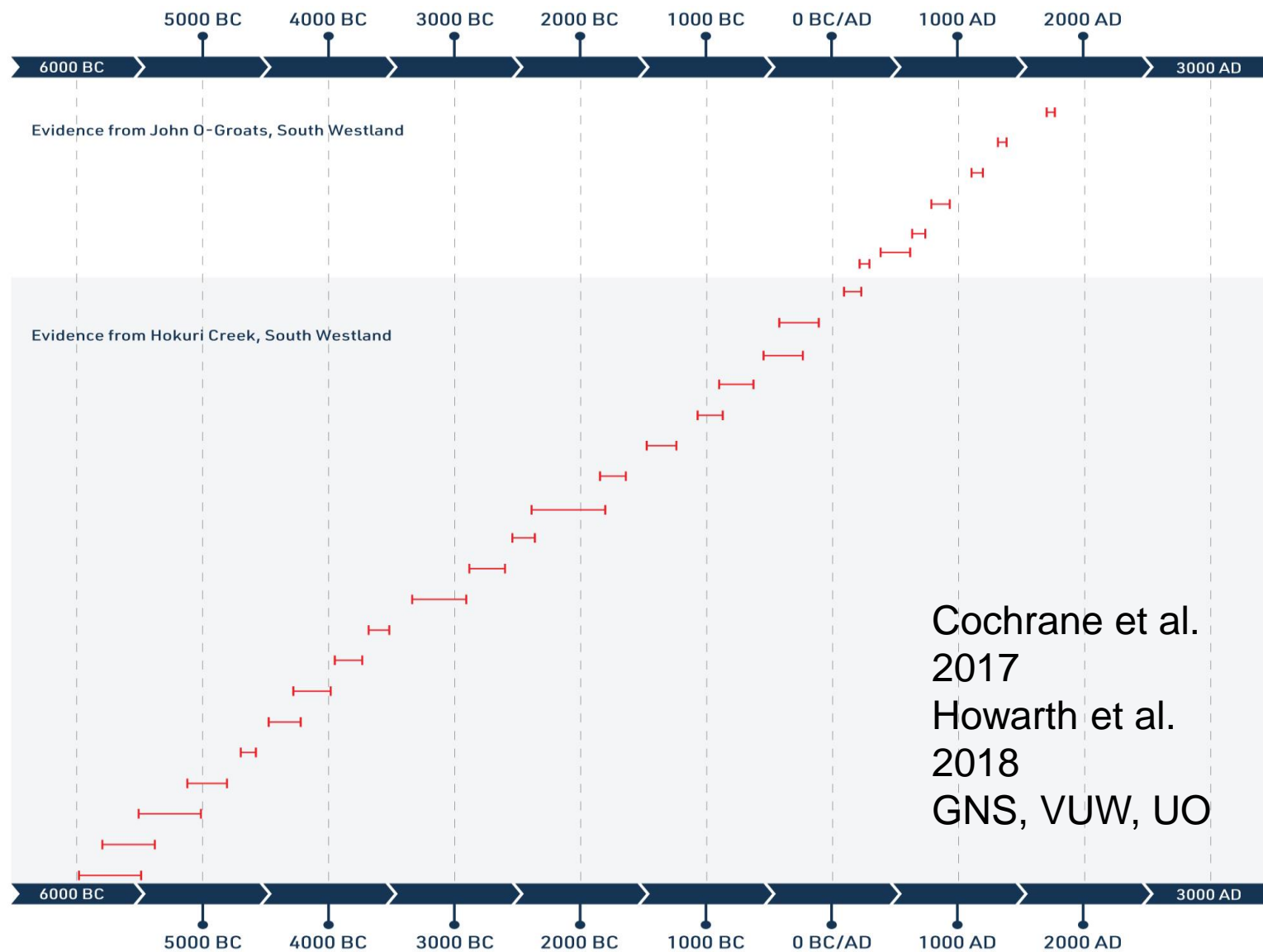
- ▶ **Raising awareness** with a series of regional workshops, AF8 website and social media
- ▶ **Producing a maximum credible scenario**
- ▶ **Bringing stakeholders together to produce a response plan**



SCIENCE-BASED SCENARIO DEVELOPMENT



WHATS THE HAZARD?





Rupture time 0:04

3. Large hazard footprint



Ground motion simulation of Alpine Fault Rupture

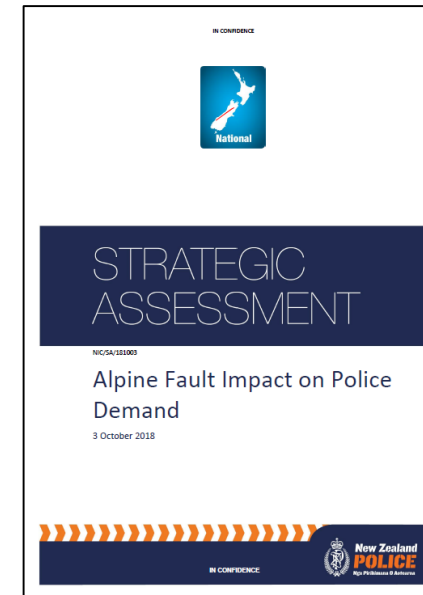
Brendon Bradley et al.



CO-CREATION PROCESS



1. Actionable model outputs...*useful, useable & used?*
 - Hazard assessment is key foundation to build from
 - Impact assessment is essential...*but was least developed*
 - Modular and adaptable scenario development framework...would have been useful
2. Requested metrics...*ask what is needed*
 - Usual 3-D's: Death, damage, disruption
 - **Community impacts: especially casualty estimation, Transient population, Habitability**
3. Level of complexity and detail useful to decision-makers...*when well supported*
 - On-going need to service requirements



SAFER FRAMEWORK

Available for
download from the
AF8 website:

www.projectaf8.co.nz



SAFER

SOUTH ISLAND/TE WAIPOUNAMU
ALPINE FAULT EARTHQUAKE RESPONSE

FRAMEWORK



MANA TANGATA: POWER OF LEADERSHIP THROUGH THE PEOPLE



This document has been published by:
Emergency Management Southland
August 2018
www.projectaf8.co.nz

SHARED
SITUATIONAL
AWARENESS AND
OPERATIONAL
COORDINATION
IN THE EVENT
OF A MAJOR
ALPINE FAULT
EARTHQUAKE.

Cover image:
NASA Earth Observatory via Wikimedia Commons, the free media
repository.

Internal images:
GNS Science Visual Media Library; Dr. Caroline Orchiston; Unsplash:
Tyler Lastovich, Jeff Finley and Adam Edgerton; and, Wikimedia
Commons, the free media repository.

► INTRODUCTION



CONSISTENCY ACROSS
ALL CDEM GROUPS WILL
BE BENEFICIAL TO AN
EFFECTIVE RESPONSE.

INTRODUCTION

MANA TANGATA: POWER OF
LEADERSHIP THROUGH THE PEOPLE

1.1

PURPOSE AND SCOPE

The purpose of the SAFER Framework is to provide a concept of shared situational awareness and operational coordination and cooperation across all South Island CDEM Groups and partner agencies in the event of a major Alpine Fault earthquake, or any earthquake that causes widespread damage in the South Island.

The scope of the SAFER Framework includes the key concepts, principles, and actions that would underpin a proactive, effective, coordinated response across the South Island to a major Alpine Fault earthquake.

Emphasis in the Framework is on issues where consistency across all CDEM Groups will be beneficial to an effective response, particularly on cross-CDEM Group boundary issues.

The SAFER Framework sits between and connects CDEM Group and partner organisation plans at the regional level with the National CDEM Plan and Guide and national level partner organisations plans.

While this Framework does not detail the national response approach to an Alpine Fault event, it recognises that an event of this nature would likely lead to a declaration of a state of national emergency. The Framework therefore reflects that the National Crisis Management Centre (NCMC), would be activated to direct the response.

1.2

OUT OF SCOPE

This Framework does not contain detailed action planning for CDEM Groups, MCDEM, or partner agencies at local, regional and national levels. It is therefore essential that

these organisations have their own plans and procedures how they will respond to a major Alpine Fault earthquake and other emergencies of similar scale and complexity.

1.3

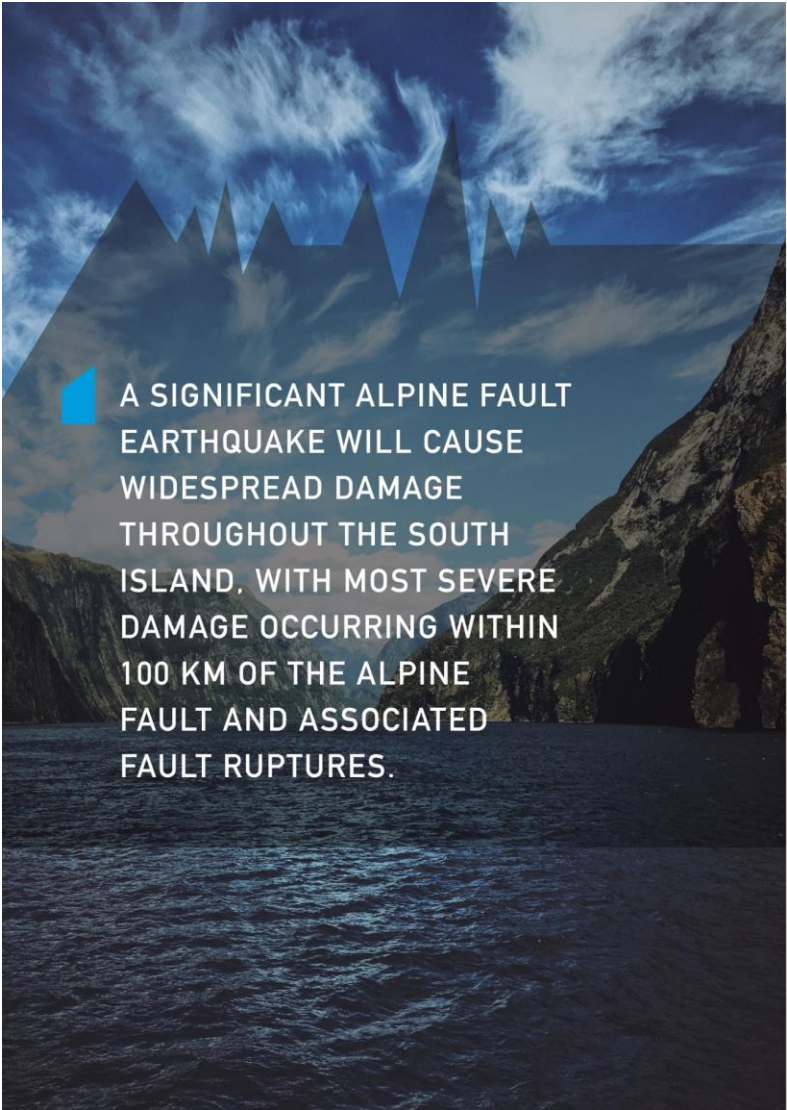
AUDIENCE

This Framework is intended for the following users:

- South Island CDEM Groups, their member local authorities (as shown in Figure 1) and their local and regional partner organisations
- All other CDEM Groups and partner organisations
- South Island Te Waipounamu iwi
- MCDEM and the National Crisis Management Centre (NCMC)
- Central Government agencies (including all emergency services, the New Zealand Defence Force (NZDF), health and disability services, welfare service agencies, and transport, energy and telecommunications regulating agencies involved in the response in the South Island)
- Crown owned entities
- Lifeline utilities: road, rail, ports/airports, air transport providers, electricity, fuel, telecommunications, water, waste water, (particularly national service providers serving more than one CDEM Group area) and the FMCG sector
- Private sector organisations involved in response and recovery
- Non-government organisations involved in the response and recovery
- All science research entities (including Crown Research Institutes (CRIs) and universities with interests and intention to be involved in, support or study community and managed responses to significant South Island earthquakes)
- South Island and national media organisations.

► INTRODUCTION

► SCENARIO



SCENARIO

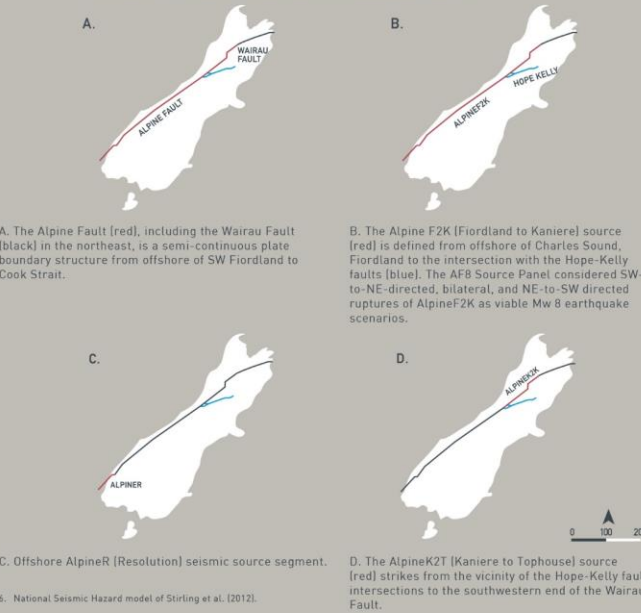
MANA TANGATA: POWER OF LEADERSHIP THROUGH THE PEOPLE

2.1 OVERVIEW

The scenario on which this Framework is based could be the result of a range of Alpine Fault rupture scenarios, or other potential earthquake sources. The four most likely rupture scenarios for the Alpine Fault are depicted in Figure 3 below.

Although the SAFER Framework has been written to consider any and all potential Alpine Fault earthquake scenarios, the scenario used in the SAFER planning workshops was a South to North rupture of the 400km section of the Alpine Fault depicted in Figure 3.b.

FIGURE 3. THE ALPINE FAULT IN THE SOUTH ISLAND OF NEW ZEALAND, HIGHLIGHTING EARTHQUAKE SOURCE SEGMENTS⁶



► INTRODUCTION

► SCENARIO

► CONSOLIDATED RESPONSE FRAMEWORK



PLANS DEVELOPED AND
ACTIONS TAKEN IN THE
FIRST SEVEN DAYS OF
RESPONSE WILL INFORM
ONGOING PLANNING.

CONSOLIDATED RESPONSE FRAMEWORK

MANA TANGATA: POWER OF
LEADERSHIP THROUGH THE PEOPLE

3.1

MISSION STATEMENT

The mission of the SAFER Framework is to:

Immediately mobilise a coordinated, mutually supportive, sustainable South Island-wide response to a major Alpine Fault earthquake, to minimise loss of life and the health risks to communities and individuals, mitigate risks and retain public confidence, and to provide for the immediate to short term needs of affected communities.

3.2

INITIAL RESPONSE OBJECTIVES

The immediate mission focus will be on supporting and coordinating search and rescue operations and delivery of services for trapped, injured and dependent individuals and groups, whilst gaining a rapid appreciation of ongoing and potential future needs – predominantly in relation to inter-CDEM Group multi-agency cooperation.

Plans developed and actions taken in the first seven days of response will inform ongoing planning, much of which will influence or continue into subsequent operational periods.

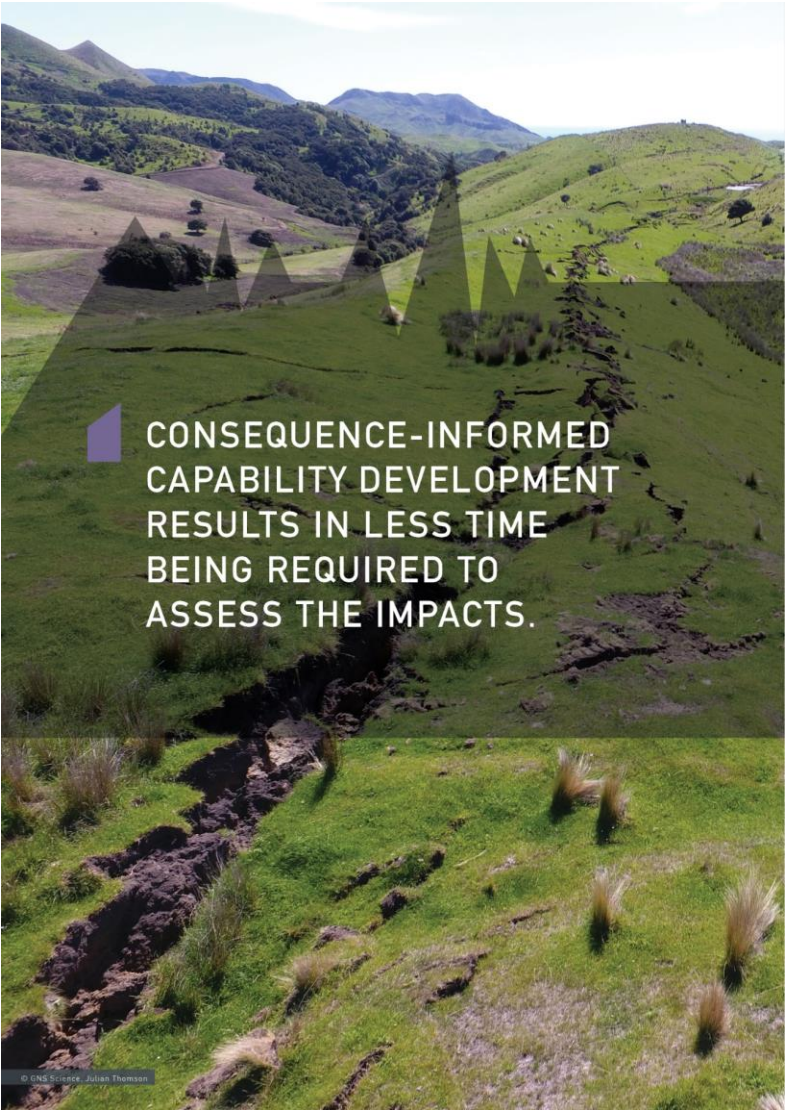
The initial response objectives¹⁰ for the first seven days of response are to:

1. Preserve life, rescue entrapped, mitigate risks, and care for injured, isolated and dependent people
2. Initiate prioritised reconnaissance, impact assessment and shared situational awareness
3. Control movement into affected areas to reduce exposure to hazards and impact on response
4. Immediately identify and secure local water, food, fuel and emergency accommodation
5. Proactively establish and maintain shared situational awareness throughout the response

6. Coordinate immediate and ongoing inter-CDEM Group responses to areas of most need
7. Establish telecommunication with all affected communities within 72 hours of the initial quake
8. Coordinate multi-agency responses across the South Island throughout the response
9. Provide response access to and egress from affected areas within 72 hours of initial earthquake
10. Ensure communities are provided with essentials: shelter, water, food, clothing, security, healthcare
11. Maintain law and order throughout the response
12. Minimise further casualties from all significant hazards throughout the response
13. Provide public information services to communities and the media, using all means available
14. Support the reinstatement of critical infrastructure and provision of temporary alternatives
15. Initiate recovery planning within 72 hours for later transition to recovery management

¹⁰ The SAFER Framework response objectives have been informed by the response objectives in the National CDEM Plan and Guide.

- ▶ INTRODUCTION
- ▶ SCENARIO
- ▶ CONSOLIDATED RESPONSE FRAMEWORK
- ▶ APPENDICES: ROLES AND RESPONSIBILITIES



APPENDICES

MANA TANGATA: POWER OF LEADERSHIP
THROUGH THE PEOPLE

A	Appendix A Project AF8 Transition	50
	A.1 Expectation	50
	A.2 Goal 1: Transition the AF8 Project into an ongoing AF8 programme	50
	A.3 Goal 2: Regional readiness is fully integrated within CDEM, MCDEM, and national and regional response organisations through agreements and pre-planning.	51
	A.4 Goal 3: Maintain and further enhance close working relationships between AF8 science and practice partners.	51
	A.5 Goal 4: Impact assessments and vulnerabilities on lifelines are understood post event.	52
	A.6 Goal 5: Improved awareness and understanding of the impact and consequences of the Alpine Fault hazard on social, cultural, environmental and economic wellbeing.	52
	A.7 Goal 6: CDEM and stakeholder recovery planning for an AF8 event is in place.	52
B	Appendix B Detailed Impact Estimates	53
	B.1 Isosismic representation of Alpine F2K quake shaking intensity	54
	B.2 Estimated distribution of co-seismic landslides	55
	B.3 Estimated damage to roads	56
	B.4 Estimated damage to electricity infrastructure	57
	B.5 Estimated damage to telecommunication lines networks	58
	B.6 Estimated post-quake airports status	59
C	Appendix C Timeline of Response Activities	61
D	Appendix D Roles and Responsibilities by Agency	63
	D.1 Lead agency: Civil Defence Emergency Management [CDEM]	63
	D.2 New Zealand Police [NZP]	66
	D.3 Fire and Emergency New Zealand [FENZ]	67
	D.4 Health sector	68
	D.5 Welfare services	70
	D.6 Iwi	70
	D.7 Te Puni Kōkiri	71
	D.8 New Zealand Defence Force [NZDF]	71
	D.9 New Zealand Transport Agency [NZTA]	72
	D.10 Ministry for Primary Industries [MPI]	72
	D.11 Department of Conservation [DoC]	73
	D.12 Department of Corrections	73
	D.13 Lifeline utilities	73
	D.14 Fast Moving Consumer Goods [FMCg]	74
	D.15 Regional Tourism Organisations [RTOs]	74
	D.16 Ministry of Education [MoE]	75
	D.17 Tertiary Education Providers [universities and polytechnics]	75
	D.18 Geological and Nuclear Science [GNS Science]	76
	D.19 Ministry of Building, Innovation and Employment [MBIE]	76
	D.20 Economic Development Agencies / Chambers of Commerce	76
	D.21 Ministry of Justice	77

Sharing the Science Beneath Our Feet

► COMMUNITY
ENGAGEMENT

► SCHOOL
PROGRAMME

► SCIENCE
OUTREACH



AT THE SCIENCE TALKS

YEARS 7-13

4.5 x THE LENGTH OF
THE ALPINE FAULT

6 CDEM Groups

7 Emergency Management Officers

1

RESPONSE

- National Exercise Planning
- SAFER Planning
- Multi-agency planning

2

ENGAGEMENT

- Science outreach
- Public Education
- 'science beneath our feet' roadshow and forums

3

RISK COMMUNICATION

- Digital media
- Coordinated communication across national projects

4

RECOVERY

- Tourism
- Economic
- Hazard Science
- Cultural / Community

COORDINATED COMMUNICATIONS?



EAST COAST LAB

LIFE AT THE BOUNDARY

DEVORA





WWW.PROJECTAF8.CO.NZ

THANK YOU!