

Hazard Risk Reduction Arrangements

Part Two

Hazard Risk Reduction Arrangements

2.1 Overview

The Hazard Liaison Group (HLG) identified in Part Four of this Plan carried out a risk management process on the hazards identified that would impact on the Chatham Islands to identify options to mitigate their effects.

AS/NZS 4630:1999 Risk Management was used as a basis for the process to identify hazards, analyse risk, evaluate risk, identify treatment options and develop goals, objectives, actions and targets. To assist this process, hazard summary sheets were developed which contained a summary of all the known information, return times, their effects and how they are managed. Copies of these can be found in annex c.

The following hazards were identified as a threat to the Chatham Islands. They were ranked using a method called SMUG (Seriousness, Manageability, Urgency and Growth). This process has enabled identification of gaps in planning and knowledge about them, which in turn has led to the development of projects to remedy this.

A description of the SMUG process and full results including hazard scores are contained in annex B.

Note that the table overleaf (2.1.1) is incomplete as the Human and Social dimensions have yet to be assessed by the Hazards Liaison Group as part of the plan's Hazard Study targets under Objective 2 (refer p23). Hazards have however been prioritised under the limited SMUG assessment at Annex B Page 73.

2.1.1 Identified Hazards

Hazard	4360		Seriousness					Manageability							Urgency	Total												
	Likelihood	Impact	Level	Human	Economic	Social	Infrastructure	Geographic	Total	Average	Reduction		Difficulty - Effort				Readiness		Difficulty - Effort		Response	Difficulty - Effort	Recovery	Total 4Rs	Growth			
											D	E	D	E			D	E	D	E						D	E	D
Flooding	A	1	H			2	3	2	7	1.4	4	3	1.0	3	2	1.0	3	2	1.0	3	2	1.0	2	1	1.0	4.0	3	17.0
Wind Storm	C	2	M			2	3	2	7	1.4	4	2	2.0	4	2	2.0	3	2	1.0	3	2	1.0	1	1	0.0	5.0	2	17.0
Earthquake	E	2	L			1	2	2	5	1.0	4	2	2.0	3	2	1.0	3	2	1.0	3	2	1.0	2	1	1.0	5.0	1	13.0
Tsunami-local	C	4	E			4	4	4	12	2.4	4	2	2.0	3	2	1.0	3	0	3.0	2	1	1.0	2	1	1.0	7.0	3	24.0
Tsunami-Distant	C	3	H			4	4	4	12	2.4	4	3	1.0	4	2	2.0	2	2	0.0	2	1	1.0	2	1	1.0	4.0	3	21.0
Storm Surge	C	2	M			2	2	3	7	1.4	4	3	1.0	4	2	2.0	2	2	0.0	2	2	0.0	2	2	0.0	3.0	2	14.0
Erosion	C	2	M			1	2	3	6	1.2	4	3	1.0	3	2	1.0	3	1	2.0	2	1	1.0	2	1	1.0	5.0	2	15.0
Utility failure-Power	B	1	M			3	3	1	7	1.4	4	3	1.0	3	2	1.0	3	2	1.0	2	1	1.0	2	1	1.0	4.0	3	17.0
Utility Failure-Water	C	1	M			3	3	2	8	1.6	4	4	0.0	3	3	0.0	3	3	0.0	2	1	1.0	2	1	1.0	1.0	2	13.0
Utility failure-com's	A	2	H			3	3	2	8	1.6	4	2	2.0	4	2	2.0	2	1	1.0	2	1	1.0	2	1	1.0	6.0	3	20.0
Hazards substances	C	1	L			1	2	5	8	1.6	4	2	2.0	4	2	2.0	2	2	0.0	2	2	0.0	2	2	0.0	4.0	2	16.0
Transportation-Air	C	5	E			5	4	3	12	2.4	4	2	2.0	4	2	2.0	3	2	1.0	1	1	0.0	1	1	0.0	5.0	3	23.0
Transportation-Port	C	2	M			1	1	3	5	1.0	4	2	2.0	4	2	2.0	3	2	1.0	1	1	0.0	1	1	0.0	5.0	2	14.0
Transportation-Road	B	1	M			2	3	3	8	1.6	4	4	0.0	4	3	1.0	2	2	0.0	2	2	0.0	2	2	0.0	1.0	2	14.0
Fire-Urban	C	3	H			1	3	4	8	1.6	4	4	0.0	4	4	0.0	3	2	1.0	1	1	0.0	1	1	0.0	1.0	1	12.0
Fire-Rural	C	1	L			1	2	4	7	1.4	4	1	3.0	3	1	2.0	3	1	2.0	2	1	1.0	2	1	1.0	8.0	2	19.0
Bio-security	B	3	H			2	1	5	8	1.6	4	2	2.0	4	2	2.0	2	2	0.0	2	4	-2.0	2	4	-2.0	2.0	3	15.0
Public Health	C	3	H			2	1	2	5	1.0	4	3	1.0	4	2	2.0	2	1	1.0	2	1	1.0	2	1	1.0	5.0	2	14.0
Criminal damage	E	2	L			2	2	2	6	1.2	4	3	1.0	4	3	1.0	3	2	1.0	1	1	0.0	1	1	0.0	3.0	1	11.0
Civil Unrest	E	1	L			2	2	2	6	1.2	4	2	2.0	3	2	1.0	2	2	0.0	1	1	0.0	1	1	0.0	3.0	1	11.0
										0.0			0.0			0.0			0.0			0.0			0.0	0.0		0.0
										0.0			0.0			0.0			0.0			0.0			0.0	0.0		0.0
										0.0			0.0			0.0			0.0			0.0			0.0	0.0		0.0

2.2 Goals & Objectives

As part of describing and ranking the risk (summarised in the above table & detail at annex B), the HLG also identified the Key Issues that face the CDEM Group partners in addressing the risks across the 4Rs – i.e. our real problem areas. These Key Issues have been grouped together under the Goals and Objectives, a work program of actions and targets to address the shared problems.

Goals Of Chatham Islands CDEM Group

1. A Community where the potential effects of All Hazards have been minimised.
2. A Community providing for their own safety and well-being.
3. A CDEM that enables the community to respond to and recover from emergency events in a timely and integrated manner.

Objective 1

Self-reliant communities that have reduced vulnerabilities to emergency events and have the ability to respond and recover.

Issues

- Emergency management is not currently an intergral part of core decision-making processes for where and how communities develop and function day to day.
- There is generally a complacent attitude in the community, “it will never happen to me”.
- There is a lack of recognition by strategic decision makers of the appropriate level of response and recovery planning required.

Develop appropriate mechanisms, information, and processes to enable both initial and ongoing education program, about “all hazards” and 4R’s principles in relation to their functions and the emergency management environment.

To establish internal processes to ensure that any matters impacting on or impacted by natural or technological hazards have regard to the overall emergency management strategy.

To establish a forum for regular information sharing within Organisations and between partners.

Target

Develop and deliver an education awareness programme based on the 4 R’s and CDEM for the Chatham Islands.

Action

Research and collate material already in use within Canterbury for CDEM educational purposes, develop a programme to meet the need of the islands residents. Distribute and promote the information across the islands including schools, mare, businesses, and organisations.

Responsibility

Environment Canterbury working in close co-operation with the Chatham Islands Emergency Management Office

Completion date

By July 2006

Target

Develop a maritime safety plan for the Chatham Islands.

Action

Liaise with Environment Canterbury to determine scope and extent of plan. Determine requirements and develop use and distribution.

Responsibility

Environment Canterbury in consultation with Chatham Islands Emergency Management Office.

Completion date

By July 2006

Target

Develop an exercise plan covering a 5 year cycle.

Action

Link exercise plan to training requirements and maximise opportunities during alerts, training and meetings to exercise and test arrangements.

Responsibility

Chatham Islands Emergency Management Office supported by MCDEM and Environment Canterbury

Completion date

Develop by December 2005 with implementation July 2006

Target

Develop a warning system and SOP's to implement.

Action

Review existing system and develop a system which will ensure timely warnings and information is passed to all residents on the islands. Produce documentation to clearly define responsibilities and how the system operates. Liaise with all agencies that have a responsibility.

Responsibility

Chatham Islands Emergency Management Office working across relevant agencies and supported by MCDEM.

Completion date

By October 2005

Target

Review communications systems and facilities on the Chatham Islands and develop an operational SOP.

Action

Review existing systems and develop an operational SOP which shows how various networks will be utilised across all levels of emergency response. Liaise with agencies that have a responsibility.

Responsibility

Chatham Islands Emergency Management Office working across relevant agencies and supported by MCDEM.

Completion date

By December 2005

Objective 2

Sustainable communities planned according to a long-term strategy that is consistent with known hazards and vulnerabilities.

ISSUES

A sustainable long-term strategic approach to emergency management is compromised by:

- Gaps in information about some of the hazards.
- The short-term nature of the political process.
- Communities pressure to implement short-term mitigation measure because of the unacceptable impact on a present life style.
- The short term financial implications of adopting a long-term strategy can be significant for parts of the community our increasing dependency on technology and the risks associated with it failing.

Develop a recovery plan that recognises recovery is not just a matter of restoring what was there before but has procedures that require the need to explore the range from nil restoration or relocation to something better.

Develop plans that details procedures for non-declared events, both response and recovery.

Target

Develop a Recovery Plan.

Action

Using templates and guidance from MCDEM, develop a Recovery Plan and structure to meet the needs of the island

Responsibility

Chatham Islands Emergency Management Office assisted by MCDEM.

Completion date

Target

Compile all information relating to natural and non-natural hazards on the Chatham Islands including information on consequences.

Action

Research records and documents, discuss with long term residents, and collate information into a report. Liaise with relevant agencies and organisations

Responsibility

Chatham Islands Emergency Management Office

Completion date

By December 2005

Target

Reviewing hazard mitigation provisions in existing statutory plans or other planning documents

Action

Research existing Chatham Island plans and documents

Responsibility

Chatham Islands Emergency Management Office

Completion date

By July 2005

Target

Develop linkages and plans for bio-security and health issues on the Chatham Islands.

Action

Develop a scoping paper which defines issues, responsibilities, and links with other agencies, response mechanisms, and linkages to CDEM. Develop a Plan to address issues identified.

Responsibility

Environment Canterbury working closely with Chatham Islands Emergency Management Office

Completion date

By July 2007

OBJECTIVE 3

Appropriate co-operation and co-ordination within and across organisations involved in emergency management.

ISSUES

The ability to achieve appropriate co-ordination and co-operation is compromised because:

- Emergency management is presently based around inaccurate assumptions about the capability of partners to participate. This is largely due to inadequate communication between partners.
- There is a lack of recognition and acceptance within organisations about the need to improve the emergency management process.
- There are insufficient resources, i.e. staff, time and funds to address the issues.

Conduct review of operations centre and available resources to carry out existing and new emergency management functions.

Develop a structure adequately resourced to implement the emergency management strategy of the CDEM Group Plan.

Confirm that the partners involved in response activities have taken into account the principles of the NZ Co-ordinated Incident Management System in developing their response plans.

Target

Establish and train a multi agency response team to support and assist across all agencies including the Emergency Services.

Action

Arrange meeting with the Emergency Services and DOC to determine requirements for a team, the number of person required and the skills and equipment or resources necessary. Promote concept across the islands and form a team. Develop a structure, define responsibilities and reporting systems. Implement a training programme.

Responsibility

Chatham Islands Emergency Management Office working in close co-operation with Emergency Services. Supported by MCDEM.

Completion date

Establish team by June July 2006 with training to commence from that date.

Target

Develop and deliver an annual training plan.

Action

Determine skills and competences required for CDEM, working with the people involved develop a matrix of training requirements and delivery. Make maximum use of material from MCDEM, ECan and Project RAPID

Responsibility

Chatham Islands Emergency Management Office supported by Environment Canterbury.

Completion date

Develop by December 2005 with implementation July 2006

OBJECTIVE 4

Risk management is used as a key tool to ensure that social, economic and environmental issues are incorporated into planning processes where human activities interact with natural and technological hazards.

ISSUES

- It is not practical for the CDEMG to assess whether EM is being considered in core decision-making processes when the extent to which risk management is practiced by CDEMG partners is largely unknown.

Undertake a review of the existing procedures and planning where there is an activity relationship with the sustainable management of hazards for each partner. Evaluate this against best practice and the AS/NZS 4360:1999 standard for risk management. This will allow the identification of gaps and enable encouragement to fix the problem.

Establish a database of current use and perceptions of risk management.

Ensure general agreement is reached on the use of risk management.

Target

Develop and deliver a programme to increase understanding on the islands about hazards, how to manage them and the mitigation options available.

Action

Liaise with Environment Canterbury and Canterbury CDEM staff. Gather information already in existence and modify to suit island environment. Develop programme to deliver to residents

Responsibility

Chatham Islands Emergency Management Office assisted by Environment Canterbury.

Completion date

By December 2006

OBJECTIVE 5

Lifelines Utilities are able to operate to the fullest extent possible during an emergency.

ISSUES

Lifelines Utilities are unlikely to operate to the fullest extent possible during an emergency because they:

- Are reliant on services of other utilities about whose operation there is limited knowledge.
- Have not developed robust intergrated links with other CDEMG partners.
- Have a need to protect commercially and operationally sensitive information.

CDEM to complete lifelines study.

Each utility owner to develop policy guideline.

Identify gaps and work towards solution by consultation, where appropriate develop contingency plans.

Target

Prepare a project brief to initiate a Lifelines study for the Chatham Islands.

Action

Liaise with Territorial Authorities who are involved with Lifelines Project to get information and resources. Supported by MCDEM develop brief to involve the key organisations on the islands

Responsibility

Chatham Islands Emergency Management Office supported by MCDEM.

Completion date

By July 2006

OBJECTIVE 6

A community that has appropriate financial protection and economic sustainablility to enable recovery from emergency events.

ISSUES

- Generally most of the issues impact on this objective.
- The likelihood that some lifelines damaged in extreme events may not be replaced because they are presently un-profitable or they will be too expensive to repair.

Ensure financial implications are transparent in the action plans to resolve each issue.

Education re financial risk.

Central Governments policy on non-reinstatement of key lifelines needs to be obtained and the result recognised in the recovery plan.

Tsunami

- The likelihood of a Tsunami generated any where in the South Pacific is high. Tsunami of about 1m is more frequent, occurring in NZ about once every 10 years, but if they coincide with a high spring tide or local storm they can cause significant damage. An additional effect of a Tsunami is erosion. As the Chatham's is an Island and settlements are close to the sea, this could potentially have a high level of devastation for the Chatham's.

Actions	Target	Project
<p>A public education program to ensure that the level of awareness of the hazard is more widely understood.</p> <p>Research more information of Tsunami and its impact.</p> <p>Identify and review current health response capabilities and develop major event plan.</p>	<p>Review current capabilities, identify gaps and develop contingency plan.</p>	<p>Education Projects Public Tsunami research Major health event plan</p>

Wind Storms

- As a lack of technical information the impact of a large event will be difficult to manage.
- And as events have been isolated and rare to date we have assumed that our vulnerability is low.

Actions	Target	Project
<p>There is a need to review reduction and readiness activities as they relate to extreme wind events in this area.</p>	<p>Develop Plan</p>	<p>Wind Hazard impacts on the Chatham's</p>

Bio-Security

- Despite our geographical isolation, Chatham Islands will always be exposed to a certain level of bio-security risk, causing serious adverse and unintended effects in relation to the territory's economic well-being, the viability of rare and endangered species or organisms, indigenous plant or animal life, the biological diversity, soil resources, water quality, human health and the relationship of indigenous peoples. Any infestation has the potential to cause large economic loss and loss of biodiversity.

Actions	Target	Project
<p>Updated information on the likely organisms to affect the district. Look at what the likely effect of the climate change and identify potential economic loss. MAF response to the current risks of a bio-security emergency. MAF review of its response strategies in a forum involving the district key response agencies.</p>	<p>MAF present plan to CDEMG</p>	<p>Report on response strategies.</p>

Flooding

- Abnormally high tides, storm waves or Tsunamis may cause inundation of low-lying land, in and around river mouths.
- Flood hazard planning, education and a high level of readiness are all critical issues. The frequency and absence of serious outcomes is compromising the purpose of the process.

Actions	Target	Project
<p>There needs to be an extensive review of flood reduction and readiness activities to ensure what is being done is appropriate and sustainable, and that there are emergency management procedures in place to cope with events up to and beyond the design of the flood protection works.</p>	<p>Educate the public as to the level of self-reliance and recovery they will need to plan for post any event. Any education program must also include information about the hazard, reduction activities, risk awareness and acceptance.</p>	<p>Flood 4R's review. Education Projects. A report on the hazards.</p>

Public Health Emergency		
<ul style="list-style-type: none"> The number/variety of disease out breaks are projected to increase with climate change of which there is insufficient information about implications impacts and consequences. 		
Actions	Target	Project
Identify and review current health response capabilities and develop major event plan.	Review current capabilities, identify gaps and develop contingency plan.	Major health event plan.
A report on the likely diseases to affect the district be undertaken and the report also look at what is the likely affect of the climate change and identify potential casualty rates.	Appoint project co-ordinator.	Climate change diseases.

Utility Failure		
<ul style="list-style-type: none"> Communications systems are integral parts of the community's response to an emergency. The ability of the existing systems to cope with the demands of an emergency is severely limited by a lack of capacity and potential system failures. 		
Actions	Target	Project
To better understand the issues involved communications will be involved in the lifelines study.	Part of lifelines study.	Lifelines Study
All key players will review communications plans and dependencies and links with other agencies.	Part of lifelines study	
Public education programs will prompt readiness activities that involve not having lifelines available for several days.	Appoint project co-ordinator	Education Projects, Public.

Criminal Acts		
<ul style="list-style-type: none"> The CDEMG partners have little accurate information about the ability of the Group to reduce the risks of and respond to incidents of criminal damage, which prevents comprehensive and integrated planning for emergency events. 		
Actions	Target	Project
Police to develop a report which will outline the potential threat to the Island which should include damage to key lifeline assets outside the district.		
A number of realistic scenarios should be developed that will allow appropriate response planning.	Define project Complete project	Criminal Acts

Issues Common to more than 1 Hazard		
<ul style="list-style-type: none"> The current level of medical resource is not sufficient to plan or cope with any event that would cause significant casualties. There is a fairly good knowledge of the Islands hazards and their impacts. But there remains the possibility of an unexpected or unplanned impact from an unknown or not recognised hazard. 		
Actions	Target	Project
Identify and review current health response capabilities and develop major event plan.	Review current capabilities, identify gaps and develop contingency plan.	Major health event plan.

2.3 Summary of Reduction Arrangements

This part of the Plan summarises what is expected to be achieved in its 5-year life in terms of reduction activities and their integration.

Key expectations are that it will enable:

- Better understanding of hazards that may impact in the CDEM Group area.
- Recognition of areas of significant vulnerability, both at present and in the foreseeable future.
- Development of recommendations for future initiatives that is consistent with the purposes, principles, and requirements of the legislation.

- Development of recommendations for the regional policy statement/plans.
- Development of recommendations for any strategies, plans, policies etc under other legislation.
- Development of recommendations for any other strategies plans policies etc that will assist the purposes, principles and requirements of the legislation.

The Group has identified a number of reduction issues and gaps in knowledge through the risk management process of the identified hazards that impact on its ability to meet the Goals and Objectives of the Group Plan. There is an amount of overlap and linkage between some of the projects, the more important being the relationship between the necessary hazard research and the lifelines study. The latter cannot be effectively achieved unless the hazard studies are completed.