

Table 5.4. Issues for which the Nelson Tasman CDEM Group may require support/resources from beyond the area

Response Issues/ Functions	Potential issue/s requiring support from outside area	Existing National / Inter-regional Support
Human, Social & Economic Consequences		
Mass Casualty		
<i>Acute Medical treatment</i>	Medical support from District Health Boards (DHBs) to treat large numbers of injuries including burns, orthopaedic resources, head & thoracic injuries etc.	Ministry of Health
<i>Minor medical treatment</i>	Medical support from DHBs to treat patients with bone fractures, lacerations, soft tissue injuries and respiratory conditions.	Ministry of Health
<i>Transfer of normal in-patient load</i>	Accommodation support from DHBs to increase local capacity to deal with mass casualty injuries.	Ministry of Health
Fatalities		
<i>Disaster Victim Identification</i>	Resources to assist in disaster victim identification (<i>note: national resource for Police</i>)	NZ Police
<i>Mortuary services</i>	Trained personnel, pathologists to support mortuary services.	NZ Police - personnel may have to be sourced internationally
<i>Reconciliation</i>	Reconciliation resources.	MCDEM / Police
Population Health		
<i>Contaminated water supply</i>	Potable water resources for supply should local supply become contaminated.	By MoU with neighbouring Groups
<i>Infectious Disease</i>	Likely to require extra infection control supplies and prophylaxis/ antidote, if available.	Ministry of Health
<i>Contaminated Food</i>	May require additional support to manage health effects.	Ministry of Health
<i>Disrupted water supply</i>	Engineering & / or equipment support to help restoration of water supply. May be required for many months, depending upon the duration of the event.	By MoU with neighbouring Groups
<i>Sewage and sanitation</i>	Engineering & / or equipment support to help restoration of networks. May be required for many months, depending upon the duration of the event.	By MoU with neighbouring Groups
Evacuation		
<i>Evacuation of People</i>	Additional Police resources may be required to assist with evacuation.	NZ Police (may need assistance from other agencies, eg NZDF, DoC)
Rescue		
<i>Structural collapse</i>	Search and rescue resources from other regions to assist.	USAR Taskforce (Fire Service/ NCMC)
Community welfare		
<i>Accommodation</i>	Accommodation support for evacuees. Potential in both short (temporary) and long term. Considered that temporary arrangements could probably be provided within the area.	By MoU with neighbouring Groups
<i>Welfare</i>	Co-ordination of welfare from MCDEM.	NWCG

Response Issues/ Functions	Potential issue/s requiring support from outside area	Existing National / Inter-regional Support
<i>Emergency food</i>	Emergency food supplies from other locations (restricted electricity supply may result in perishing food).	NCMC
<i>Financial</i>	Financial support to enable full recovery of the region (e.g. if large numbers of buildings destroyed; indirect economic impacts due to business & industry closure).	NCMC
<i>Personal effects reconciliation</i>	Additional resources to assist in management and operation of personal effects reconciliation.	NZ Police
<i>Immediate counselling & support</i>	Additional counselling resources, should mass casualties result.	MSD
<i>Registration of people</i>	Additional support for registration of people and estimating number of missing persons.	NZ Police
<i>Emergency clothing</i>	Emergency clothing supplies from other locations.	Red Cross
Information Management		
<i>Public</i>	National co-ordination of public information, particularly if impacts wide-spread.	NCMC
<i>Media</i>	Management of the media, due to the significant impacts on NZ tourism industry & economy.	NCMC
Geographic / Environmental Consequences		
Environment		
<i>Water</i>	Engineering & / or equipment support to establish harbour navigation should it be disrupted.	Maritime Safety Authority (MSA)
	Decontamination and clean-up, monitoring water quality.	MCDEM or neighbouring CDEM Groups
<i>Coastal</i>	Engineering & / or equipment support to assess and mitigate eroded and damaged shoreline and coastal structures.	MCDEM or neighbouring CDEM Groups
	Decontamination and clean-up, monitoring water quality.	MCDEM or neighbouring CDEM Groups
<i>Land</i>	Engineering & / or resources to stabilise land prone to instability that threatens roads and/or property.	MCDEM or neighbouring CDEM Groups
	Decontamination and clean-up.	MCDEM or neighbouring CDEM Groups
Infrastructure Consequences		
Lifelines Co-ordination		
<i>Transportation/ Access</i>	Port operations to support receipt and discharge of goods if port damaged.	MCDEM
	Airport operations should airport be damaged.	Defence (Woodbourne)
Buildings and Structures		
<i>Housing</i>	Cleaning and re-establishment of properties damaged to re-house impacted population.	MCDEM
<i>Building Safety</i>	Engineering support to assist in assessment of structural integrity of damaged buildings.	IPENZ? MCDEM
<i>Re-occupancy</i>	Assessment of health risks for re-occupancy if evacuation / quarantine required.	Ministry of Health

6 RECOVERY

PURPOSE OF THE RECOVERY SECTION

To provide guidance for the CDEM Group on the planning arrangements, including roles and responsibilities, structures, and processes that may be implemented to assist the community to recover from an emergency.

6.1 Introduction

Recovery is defined as coordinated efforts and processes to effect the short, medium and long term holistic regeneration of a community following an emergency.

It involves the coordinated process of supporting disaster-affected communities in the restoration of social, emotional, economic and physical well being. Unlike response activities, it operates without discrete legislative powers and relies in large part on the active collaboration of partners and stakeholders for its effectiveness.

The general objective of recovery activity is to efficiently apply the resources available to the task of restoring the community to the point where social and economic activity may resume. The key activities conducted during the recovery phase are:

- The assessment of the needs of the community affected by the emergency,
- The assessment of resource needs and the co-ordination of their delivery to the community,
- The implementation of actions directed at achieving rehabilitation and restoration in the community,
- The introduction of new measures to reduce hazards and risks in the community.

Depending on the nature and extent of the disaster, the recovery phase may range from days to months, with some physical restoration activities possibly continuing for years.

It should also be noted that elements of Reduction and Readiness, e.g. planning, exercising, hazard mitigation, public education, etc., are pre-event recovery activities. Collectively they reinforce the integrated approach to emergency management and contribute to community resilience.

This chapter provides a general introduction to the key issues relating to recovery issues in the CDEM Group's area. Further details are contained in the CDEM Group Plan Recovery Plan, which is held by the CDEM Group Office.

6.2 Recovery Principles

- Successful recovery recognises, supports and builds on community, individual and organisation capacity.
- Successful recovery acknowledges the complex and dynamic nature of emergencies and communities.
- Options for safer development are analysed and considered.
- Recovery is built on effective communication with affected communities and other stakeholders.
- Recovery recognises the diverse needs of groups within the community.
- Response and Recovery activities are aligned.

6.3 Recovery Priorities

During the response phase priorities for action cover such areas as the preservation of life and property, and the restoration of services. As the emergency moves into recovery, the focus shifts. The objective for recovery includes:

- To restore as quickly as possible the quality of life of those affected so that they are able to continue functioning as part of the wider community.

The recovery effort seeks to restore the environment (including people and the community, infrastructure, lifeline utilities, the economy and the natural environment). It is not assumed that the “normality” existing before the event can be restored, since the effect of the event may prevent that. The recovery process is however an opportunity to improve the environment and a key component of this is the opportunity to identify and reduce future risk.

6.4 Recovery Management Structure and Arrangements

The recovery management structure of the Nelson Tasman CDEM Group shown in Figure 6.1. is based on a structure of:

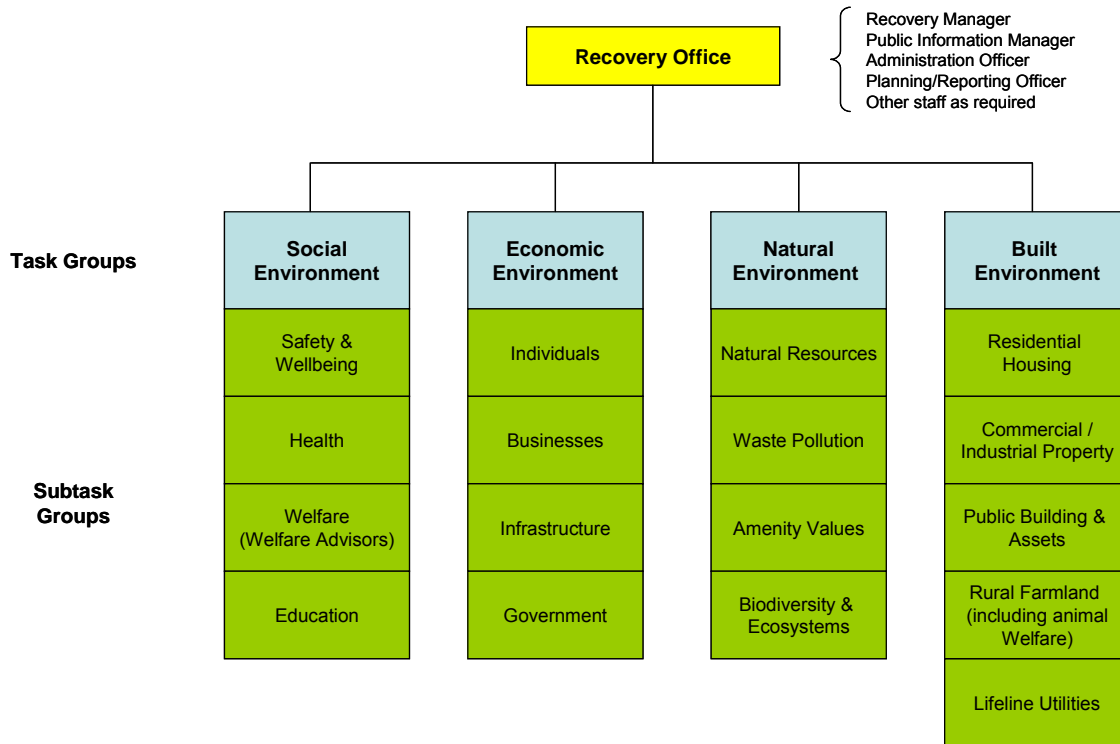
- recovery offices - a core group of staff advising the Recovery Manager;
- recovery task groups and subtask groups – will advise on and implement recovery planning.

This structure is parallel at the local, CDEM Group and national levels to ensure that recovery activities are co-ordinated.

The Group has appointed a Recovery Manager who will lead the recovery phase.

Further details on the structure and arrangements are available within the Group Recovery Plan, held by the CDEM Group Office.

Figure 6.1. Recovery Management Structure



Note: the above structure is intended to be flexible. Actual elements will depend on the scale and nature of the event.

6.4.1 Recovery Manager

The CDEM Group has designated a Recovery Manager and an alternate. In the event that the alternate is also unavailable, the position will be appointed by the CDEM Group as soon as possible after a declaration has been made.

Specific Terms of Reference identifying priorities and specific tasks for the Recovery Manager appropriate to a particular event will be developed by the CDEM Group in conjunction with the Recovery Manager. The process for this and a proforma Terms of Reference can be found in Group Recovery Plan.

Once the GEOC has been activated for a Level 4 event or higher, the Recovery Manager will be at the GEOC, participating in briefings and working on developing the Recovery Terms of Reference. The Terms of Reference will take effect from the termination of the state of local emergency.

The Recovery Manager may, at the CDEM Group’s sole discretion, commence some recovery activities, whether or not an emergency has been declared.

Note however, that the designated Recovery Manager is officially appointed to manage the recovery of a specific event when a declaration is terminated and specific Terms of Reference adopted. (Refer CDEM Group

Recovery Plan.)

The Group is responsible for considering the level of management the recovery will require to determine whether the Recovery Manager should be re-assigned from their normal day to day business activities.

Recovery Co-ordinator

A Recovery Co-ordinator may be appointed by the Minister of Civil Defence Emergency Management under s.29 of the CDEM Act if the Minister deems that a CDEM Group (or a specified area within it) is, or is likely to be, unable to ensure the effective carrying out of recovery activities in its area.

In the unlikely event a Recovery Co-ordinator is appointed by the Minister, a Recovery Manager would still be appointed by the CDEM Group to act as the first point of liaison with the Recovery Co-ordinator.

6.4.2 Recovery Office

The key responsibilities of the Recovery Office include:

- determining and prioritising major areas of recovery and ensuring the coordination of recovery effort between agencies;
- formulating policies, strategies, timeframes and monitoring mechanisms for recovery activities;
- controlling expenditure and maintaining accountability;
- providing media liaison;
- planning and reporting. Recovery Update reports and Recovery Action Plans.

6.4.3 Recovery Task Groups

As the Recovery Manager has no specific powers, it is important that they work with agencies and community stakeholders with the authority to initiate, fund and implement recovery priorities.

The four environments become the organising headings for Task Groups during the recovery phase. Subtask Groups may also be established depending on the scale of the emergency. The four environments are:

1. **Social environment:** welfare of people and communities;
2. **Built environment:** establish priorities for and implement reconstruction and recovery of residential, commercial, lifelines and services;
3. **Economic environment:** support economic recovery for individuals and businesses;
4. **Natural environment:** minimise impacts on the natural environment that could have consequences for the other four environments.

The Task Groups will be comprised of advisors and liaison personnel from lifeline utilities, government departments, community groups, the insurance industry, health agencies and any other appropriate organisations to assist the Recovery Manager and provide multi-agency input into management decisions.

Further details on the Recovery Taskforce is available within the Group Recovery Plan.

6.4.4 Community Assistance Recovery Centre

Rehabilitation and restoration activities with the community will be co-ordinated by the Recovery Office. An important part of the delivery of assistance to individuals will be effected through the Recovery centre and a One Stop Shop concept.

Representatives of all the agencies involved in providing or facilitating assistance to individuals will be available to answer queries and process any applications. This concept achieves two purposes:

- It limits the amount of travel for individuals to various agencies that themselves may have been displaced from their regular premises.
- It ensures an individual's needs are addressed in a co-ordinated and coherent manner without bureaucratic repetition.

The Location of the Recovery Centre will be published in accordance with the Group Public Information procedures.

6.4.5 Recovery Governance Issues

Early in the Recovery phase at least, arrangements for responsive governance will be crucial to the achievement of effective day-to-day management by the Recovery Manager.

The CDEM Group will recommend the nature of governance it wishes to adopt at the time of the emergency. Governance options that will be considered include:

- the full CDEM Group retaining oversight;
- an existing Committee assuming the role; or
- a special-purpose Committee being formed.

The CDEM Group may have to give consideration to specific actions, including but not limited to:

- Urgent works under the provisions of the Resource management Act.
- Seeking special legislation to vary the processes under which building consents are granted via the Building Act to aid speedy recovery activity.
- Making a recommendation to amend or ignore Annual Plans as appropriate and create new plans the following year.
- Consider any implications for Long Term Plans and the funding and financial policies of individual local authorities.
- Seeking special legislation varying or suspending the public consultation requirements of the Land Transport Management Act 2002 if the national roading programmes are compromised.
- Reviewing the priority of all service delivery activities, including ceasing or suspending discretionary outputs, based on the

recommendations of the Recovery Manager.

- Consider any consequences for other statutory obligations, including those arising from:
 - Hazardous Substances & New Organisms Act 1996,
 - Forest & Rural Fires Act 1977.

Whatever governance structure is adopted, the responsible committee will establish the criteria for the Recovery Manager to make regular and on-exception reports. The CDEM Group and the Recovery Manager will also be required to respond to requests for briefings and reports to central government.

6.5 Recovery Methods and Actions

The Group Recovery Plan provides full details of how the following methods and actions will be implemented both pre-event and during recovery activation:

- Impact assessment and needs analysis
- Expenditure management
- Financial arrangements
- Information management and reporting
- Public Information and communication
- Volunteer management
- Managed withdrawal
- Organisational debriefing

Details regarding financial arrangements during the recovery phase are covered in Section 8.5.

6.6 Recovery Exit Strategy

The eventual cessation of formal recovery management activities will need to be planned into every task and action undertaken as part of the recovery process. It will need to be assessed as to when the activity can be managed as a business-as-usual activity, including the handover of outstanding activities to the agency which would normally have the lead responsibility. The early divestment and delegation of activity encourages the community to regain control as soon as feasible, supporting the community's emotional and psychosocial recovery.

7 MONITORING AND EVALUATION

PURPOSE OF THE MONITORING AND EVALUATION SECTION

To provide a basis for monitoring and evaluation of the CDEM Group Plan and CDEM Group activities, and to meet requirements in the CDEM Act.

7.1 Introduction

The Nelson Tasman CDEM Group Plan seeks to meet the purpose of the CDEM Act 2002(s3) as well as the Plan's Vision – A resilient Nelson Tasman community.

Monitoring and measuring progress of the CDEM Group is important to ensure the goals and objectives of the Plan and ultimately its Vision are being achieved.

Monitoring and reviewing this Plan will occur at four levels. These are:

- CDEM Group Plan monitoring and evaluation,
- CDEM Group Plan review,
- legislative compliance, and
- external monitoring of the Plan (and the CDEM Group).

The first three 'levels' will be undertaken by the CDEM Group itself, while the Director, Ministry of Civil Defence and Emergency Management (MCDEM) will undertake the fourth (s8(f), CDEM Act (2002)).

7.2 CDEM Group Plan Monitoring and Evaluation

A Group work programme will be developed to accompany this CDEM Group Plan. (The Group work programme replaces the "Targets Actions" established in the previous CDEM Group Plan.) The work programme will be developed to make progress towards achieving the Goals and Vision of the CDEM Group. It is not expected that by the end of this Plan's life (five years) that the Vision will have been realised or that all of the objectives set out in the work programme will have been achieved. It is intended that the Group work programme will allow realistic steps to be taken towards achieving the Goals and Vision.

The CDEM Group work programme will be prepared by the CDEM Group Office for approval by the Coordinating Executive Group (CEG). Progress with respect to the work programme will be reported on annually to the CEG by the CDEM Group Office as part of its annual report to CEG.

The CDEM Group's operational readiness will also be measured by its performance in response to events and exercises. As discussed above, debriefs from these activities will be held and reported to the CEG via the Readiness and Response Committee.

7.3 CDEM Group Plan Review

CDEM Group Plans have a life of five years but can be reviewed (in full or part) earlier if necessary (s56-57, CDEM Act (2002)).

The Plan will be subject to regular reviews to:

- determine its **accuracy** with supporting documents, references to organisations and the structure of the CDEM Group
- ensure its **practicality** of the CDEM Group, its local authority members, and partner organisations are capable of carrying out the functions described in the plan and they have access to the resources to carry out these functions
- assess the **coverage** by considering the hazards described in the plan, management mechanisms, adequacy of existing linkages and ensuring an integrated monitoring and review process

7.4 Legislative Compliance Monitoring

The CDEM Act (2002) is not the sole source of legislative guidance for civil defence and emergency management outcomes. Other Acts, such as those listed below, are also relevant.

- Biosecurity Act 1993
- Building Act 2004
- Fire Service Act 1975
- Forest and Rural Fires Act 1977
- Hazardous Substances and New Organisms Act 1996
- Health Act 1956
- Health and Safety in Employment Act 1992
- Local Government Act 2002,
- Maritime Transport Act 1994
- Resource Management Act 1991, and
- Any enactments in substitution for any of these Acts.

Monitoring, review and understanding of other relevant legislation will be necessary on an ongoing basis. Changes and reviews to other Acts may impact on the CDEM Group Plan's work programme. Accordingly, in addition to specific monitoring of the Plan an awareness of other legislation and amendments to them will be necessary.

7.5 External Monitoring of the Plan (and of the CDEM Group)

The Director, Ministry of Civil Defence Emergency Management (MCDEM) has a function to “monitor the performance of CDEM Groups and persons who have responsibilities under this legislation” (s8(f) CDEM Act (2002)). This is undertaken primarily via the CDEM Capability Assessment Tool. The CDEM Capability Assessment Tool consists of a set of key performance indicators and performance measures in which the Nelson Tasman CDEM Group has been assessed. Indicators span the 4Rs and are organised in a framework based on the National CDEM Strategy.

The CDEM Group was reviewed by the Ministry of Civil Defence and Emergency Management as part of this national framework in May 2010. The MCDEM Capability Assessment Report concluded as follows:

The assessment revealed a Group which is very capable in most areas of CDEM, with the commitment of stakeholders at all levels, and comprehensive planning having been undertaken across the 4Rs. Governance and organisational structures are strengths for the Group, providing leadership and a strong regional focus. The Group also has some very competent and committed individuals in key roles who are doing some excellent work in preparing their organisations and communities for emergencies. (Capability Assessment Report, MCDEM, May 2010, p. 35.)

The Capability Assessment Report recommended a number of follow up actions to embed CDEM arrangements in the CDEM Group and its partner organisations, and to ensure there is „real’ capability and capacity behind the plans and procedures that have been developed to date. These priority actions are being incorporated into the work programme of the CDEM Group and will be reported on as part of CDEM Group monitoring and evaluation regime.

8 MANAGEMENT AND GOVERNANCE

PURPOSE OF THE MANAGEMENT AND GOVERNANCE SECTION

To clearly state the management and governance arrangements for the CDEM Group.

8.1 Introduction

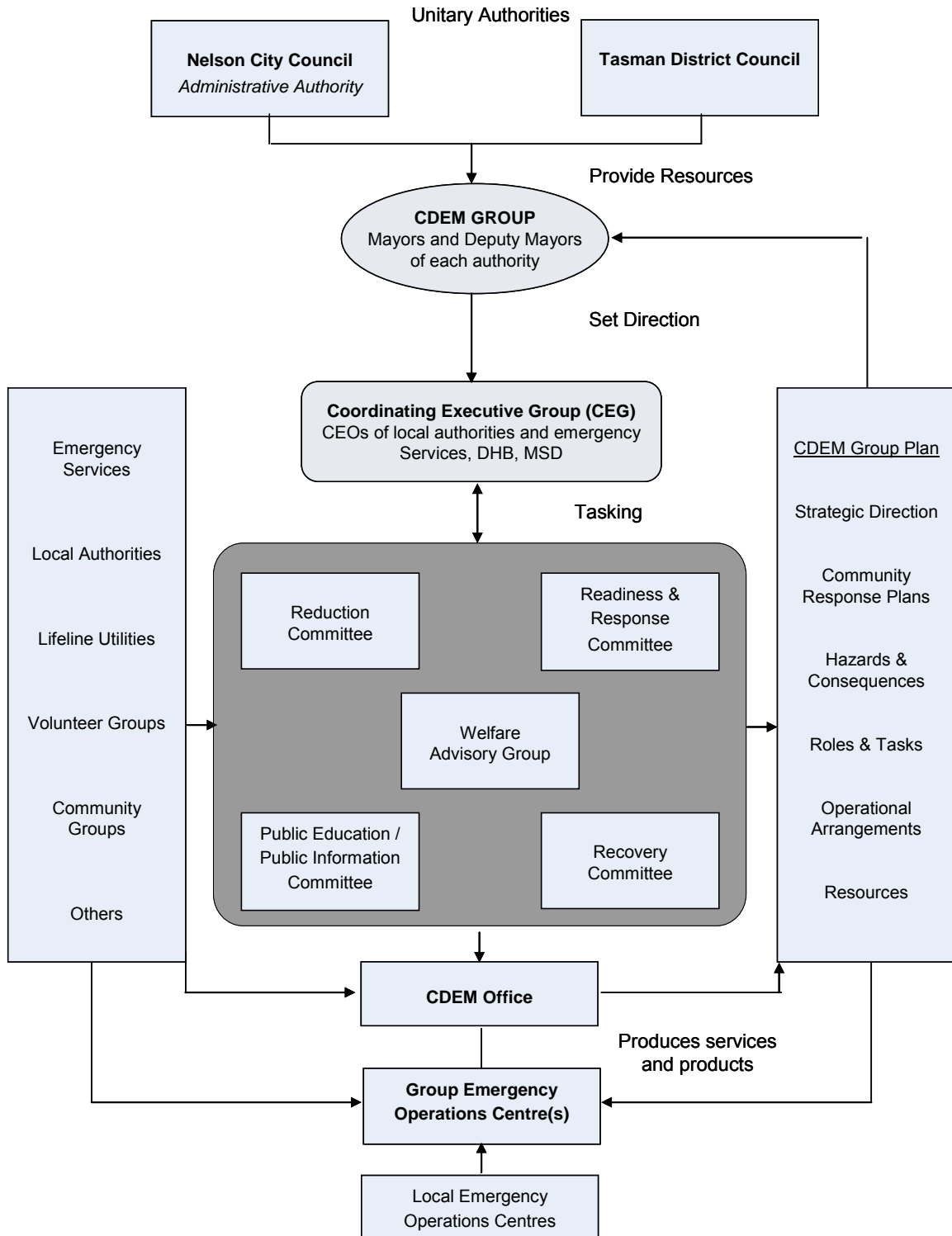
The purpose of this chapter is to set out the administrative arrangements relating to the provision of civil defence and emergency management (CDEM) within the Nelson Tasman area. This includes the governance structure of CDEM within the area (i.e. how CDEM will be delivered in the area), the roles and responsibilities of each part of the structure and the funding arrangements. A range of other administrative functions is also recorded in this section.

8.2 Nelson Tasman CDEM Group Structure and Role

The Nelson Tasman CDEM Group is a joint standing committee of the Nelson City Council and Tasman District Council, being two unitary authorities with a common boundary working in partnership with emergency services and other organisations to ensure the effective delivery of emergency management within the area.

The CDEM Act (2002) outlines the core structural elements of a CDEM Group. With respect to the Nelson Tasman Area, these elements and their roles as described in Figure 8.1 illustrates the broad structure of the CDEM Group.

Figure 8.1. Nelson Tasman CDEM Group Structure



8.2.1 Powers, Obligations and Functions of the CDEM Group

The powers and obligations of members of the Group are described in s.16 of the Act. These powers and obligations have not been delegated and remain the powers and obligations of each member.

16 Powers and obligations of members of Civil Defence Emergency Management Groups

Each member of a Civil Defence Emergency Management Groups

- a. *may acquire, hold, and dispose of real or personal property for the use of the Group; and*
- b. *may remunerate its representative for the cost of that person's participation in the Group; and*
- c. *must provide to the Group the information or reports that may be required by the Group; and*
- d. *must pay the costs of administrative and related services in accordance with section 24; and*
- e. *must pay the costs, or a share of the costs, of any civil defence emergency management activity that the member has agreed to pay; and*
- f. *may carry out any other functions or duties conferred on a member of a Group under this Act.*

Civil Defence Emergency Management the Act 2002

Joint Standing Committee Governance

The CDEM Group is a mandatory joint standing committee under the CDEM Act 2002 (s12) and is made up of two elected representatives of each of the two local authorities. The committee is the decision making body that has overall responsibility for the provision of civil defence and emergency management within the area.

13 Membership of Civil Defence Emergency Management Groups

1. *Every local authority must be a member of a Civil Defence Emergency Management Group.*
2. *No Group may have more than 1 regional council as a member unless a merger has been approved under section 21.*
3. *Despite subsection (2), unitary authorities that border one another may be members of the same Group.*
4. *Each local authority that is a member of a Group with other local authorities must be represented on the Group by 1, and only 1, person, being the mayor or chairperson of that local authority or an elected person from that local authority who has delegated authority to act for the mayor or chairperson.*

the Act 2002

Functions

The functions of the Group are detailed in s17 of the CDEM Act 2002, and are summarised as follows:

Risk Management:

- Identify, assess and manage relevant hazards and risks.
- Consult and communicate about risks, and identify and implement cost-effective risk reduction.

Planning for CDEM:

- Developing, implementing, monitoring and reviewing the CDEM Group Plan.
- Participating in the development of the National Strategy and Plan.

Delivering CDEM:

Maintaining and providing:

- Material, services, information and other resources for effective CDEM.
- Suitably trained and competent personnel, including volunteers.
- Response and recovery activities.
- Assistance to other CDEM Groups.

Promoting and Monitoring CDEM:

- Promoting and raising public awareness of the Act and monitoring compliance with it.
- Monitor and report on compliance with the Act.

Membership

Each of the following organisations is a member of the Nelson Tasman CDEM Group:

<p style="text-align: center;">CDEM Group Nelson City Council Tasman District Council</p>
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The Joint Committee is chaired by either the Mayor of Tasman District Council or Nelson City Council on an alternating annual basis.

Delegations

The CDEM Group is able pursuant to section 18(1) of the CDEM Act (2002) to delegate any of its functions to members of the Group, the Group Controller, or other persons.

These delegations are made by a resolution passed at a CDEM Group meeting.

8.2.2 Coordinating Executive Group (CEG)

Functions

The Coordinating Executive Group (CEG) is chaired by either the CEO of Tasman District Council or Nelson City Council on an alternating annual basis.

CEG members are senior representatives of their organisations to ensure a strategic overview and in order to be able to commit the resources of their wider organisations to agreed projects and tasks.

The CEG is a statutory group under the CDEM Act (2002) (s20) with the following prescribed functions:

- providing advice to the CDEM Group and any subgroups or subcommittees,
- implementing, as appropriate, the decisions of the CDEM Group, and
- overseeing the implementation, development, maintenance, monitoring, and evaluation of the CDEM Group Plan.

Other CEG roles include:

- providing advice on the strategic direction of emergency management in the area
- ensuring that all emergency management functions, including the Plan, are continually reviewed and monitored.
- recommending the draft work programme and annual budget to the CDEM Group for approval;
- recommending to the CDEM Group the appointment of any CDEM personnel including the Group and local Controllers, and persons who may declare a state of emergency;
- liaising with other CEG groups, particularly those of adjoining CDEM Groups;
- input into Central Government processes, either policy positions or amendments to the legislation;
- coordinating input into the annual planning process of each local authority with respect to the CDEM function;
- ensuring the provision of professional development and training programmes across the CDEM sector.

Individual CEG members responsibilities include:

- ensuring effective liaison and communication on CDEM matters with their respective CDEM Group Member;
- facilitating the implementation of the CDEM Group Plan within their respective organisations.

Note the CEG has no prescribed operational role.

In addition to those organisations statutorily required to participate on the CEG, other organisations and persons can be represented. The CEG will

make a recommendation to the CDEM Group regarding wider membership after consultation with the persons and organisation(s) affected. The CDEM Group must approve the co-opting of additional members (CDEM Act 2002, s20(1)(e)).

Membership

Each of the following organisations or persons is a member of the CEG:

Coordinating Executive Group
Full members (voting rights)
Nelson City Council (CEO)
Tasman District Council (CEO)
Nelson Marlborough District Health Board
NZ Police
NZ Fire Service
St John Ambulance
Ministry of Social Development
Observers (speaking but no voting rights)
Canterbury, Marlborough and West Coast CDEM Groups
Ministry of Civil Defence and Emergency Management
Committee Chairs
Group Controller and Alternates
Group CDEM Office

8.2.3 Committees

The CEG may establish committees in order to progress key areas of work, or as a liaison mechanism with *Strategic Stakeholders* (refer Section 9.3 for a list of *Strategic Stakeholders*). Committees currently established are:

- Reduction
- Readiness and Response
- Recovery
- Public Education and Public Information (PEPI)
- Welfare Advisory Group (WAG)

Committees may be delegated specific or general decision making powers by the CEG.

Reduction Committee

The role of the Reduction Committee (Figure 8.1) is to improve the integration of hazard and risk information between members of the Group and facilitate the more effective use of tools (e.g. Building Act (1991), Resource Management Act (1991); Local Government Act (2002) etc).

Currently the Reduction Committee has representatives from the following agencies.

Reduction Committee

Nelson City Council
Tasman District Council
Lifelines Coordinator
Group CDEM Office
Ministry of Civil Defence and Emergency Management
Group Controller (Ex Officio)

The Reduction Committee is responsible for supervising the work of the Nelson Tasman Engineering Lifelines (NTEL) group

Readiness and Response Committee

The role of the Readiness and Response Committee (Figure 8.1) is to ensure that readiness and response planning across the Group is co-ordinated, and consistent with the CDEM Group Plan.

Currently the Readiness and Response Committee has representatives from the following agencies.

Readiness and Response Committee

Group Controller (Chair)
Nelson City Council
Tasman District Council
NZ Police
NZ Fire Service
Rural Fire
St John Ambulance
Nelson Marlborough District Health Board
Department of Conservation
Group CDEM Office
Ministry of Civil Defence and Emergency Management

Recovery Committee

The role of the Recovery Committee (Figure 8.1) is to ensure that recovery planning across the Group is co-ordinated, and consistent with the CDEM Group Plan.

Currently the Recovery Committee has representatives from the following agencies.

Recovery Committee

Group Recovery Manager (Chair)
Nelson City Council
Tasman District Council
Group CDEM Office
Ministry of Civil Defence and Emergency Management
Group Controller (Ex Officio)

Public Education Public Information Committee

The role of the Public Education Public Information (PEPI) Committee (Figure 8.1) is to coordinate the public education activities of the Group, including the development and implementation of the Group's Public Education and Public Information Strategy.

Currently the PEPI has representatives from the following agencies.

<p>Public Education/ Public Information Committee</p> <p>Group Public Information Manager (Chair) Tasman District Council Nelson City Council NZ Police NZ Fire Rural Fire St John Nelson Marlborough District Health Board Group CDEM Office Ministry of Civil Defence and Emergency Management Group Controller (Ex Officio)</p>

Welfare Advisory Group (WAG)

The role of the Welfare Advisory Group (WAG) (Figure 8.1) is to provide coordinated planning and delivery of CDEM welfare services for the Nelson Tasman region consistent with the CDEM Group Plan and national guidance.

Currently the WAG has representatives from the following agencies.

<p>Welfare Advisory Group</p> <p>Ministry of Social Development (Chair) Nelson City Council Tasman District Council Nelson Marlborough District Health Board Red Cross Group CDEM Office Ministry of Civil Defence and Emergency Management Group Controller (Ex Officio)</p>
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The WAG is supported by the Welfare Operational Team, which is a committee consisting of agencies providing welfare services during an emergency.

8.2.1 Committee Arrangements

The following are the administrative arrangements for each of the CEG committees:

- The committees report to the CEG via the Chairperson of the committee.
- Terms of Reference for each committee, as approved by the CEG, are available from the CDEM Group Office.
- Other organisations may be invited to join committees as required.
- The administrative costs of the committees will be met by the Group.
- The costs of individual local authority, or other organisation, participation in the committees are met by each respective local authority or organisation.
- The costs of any specific project work undertaken by the committee will generally be met by one or more of the participating local authorities. Except where agreed, the activities of the committees are not met out of the Group budget.

8.2.2 Administering Authority

The Nelson City Council is the administering authority for the Nelson Tasman CDEM Group (CDEM Act (2002) (s23)).

The administrative and related services the Nelson City Council provide include:

- Secretariat for the CDEM Group, CEG and its committees (eg convening meetings, forums, organising agendas, providing minutes and catering services).
- Venue for CDEM Group meetings.
- Accountant for CDEM Group finances and budgets.
- Publishing the CDEM Group's work programme, budget and performance in both Councils' Annual Plans.

The costs of undertaking these services are to be met by the Group (Section 8.5).

8.2.3 Group Civil Defence Emergency Management Office (CDEM Office)

The Group CDEM Office (also known as the Nelson Tasman Emergency Management Office) coordinates and facilitates the „day-to-day' planning and project work on behalf of the CDEM Group and CEG, and is responsible to CEG.

The functions of the CDEM Office include:

- Advice and technical support to the CEG and the CDEM Group.
- Operational duties including receipt of warnings, monitoring, initial response to emergency events, assistance to the Controller during the response phase, and assistance to the Recovery Manager during the recovery phase.

- Advocate and contribute to promotion of the Group's objectives across the 4Rs including risk reduction and recovery.
- Preparation of the CDEM Group work programme and annual report of the Group's activities and budget for adoption by the CEG and Group.
- Project coordination and management, including the ongoing development, implementation, monitoring and review of the CDEM Group Plan.
- Coordination of regional CDEM policy and its implementation.
- Management of contracts entered into on behalf of the CDEM Group or CEG.
- Management and administering of CDEM Group staff on behalf of the CDEM Group.
- External liaison with the CDEM sector.
- Coordination of monitoring and evaluation activities.

The costs of undertaking these services are to be met by the Group (Section 8.5).

8.2.4 Group Emergency Operations Centre (GEOC)

The Group Emergency Operations Centre (GEOC) is the main facility from which the response to a Group emergency will be co-ordinated. The location, functions and capabilities of the GEOC are described in Section 4.4.

The extra capabilities associated with the GEOC to provide a Group response capability are owned and funded by the Group (Section 8.5).

8.2.5 Local Emergency Operations Centres (LEOCs)

For the purposes of local operational planning and local emergency coordination, the Nelson Tasman area has three local emergency operation centres. More information on the LEOCs is outlined in Section 4.4.

Any administrative and operational support required in support of each LEOC (such as communications equipment etc) is a Group responsibility.

8.3 Key Appointments

There are a number of key appointments that the CDEM Group must, or may make (CDEM Act (2002) (s25-26)). These are outlined below.

Persons authorised to declare a state of local emergency	The persons authorised to declare a state of local emergency are identified in Section 5: Response
Group Controller	<p>The functions of a Group Controller are outlined in Section 5.6</p> <p>The costs relating to decisions made by the Group Controller during a state of emergency are funded as outlined in Section 8.5</p> <p>Any training and professional development costs for the Group Controller and alternates will be met by the Group.</p>
Local Controllers	<p>The functions of a Local Controller are outlined in Section 5.6.</p> <p>Any training and professional development costs for local controllers will be met by the respective local authority or agency, unless otherwise agreed.</p>
Recovery Manager	<p>The functions of the Recovery Manager are outlined in Section 6.4.</p> <p>Any training and professional development costs for the Recovery Manager and alternates will be met by the Group.</p>

8.4 Cooperative Arrangements with Other CDEM Groups

The Nelson Tasman CDEM Group will provide support and assistance when requested to other CDEM Groups with respect to their CDEM functions. This will include, but not necessarily be limited to:

- assistance in the event of an emergency;
- sharing relevant hazards information and planning mechanisms to help develop a common understanding and approach to civil defence and emergency management, including the development and implementation of CDEM Group Plans;
- seeking and promoting mutual operational arrangements such as training opportunities and standard operating procedures.

Memoranda of Understanding (MOUs) with Marlborough, Canterbury and West Coast CDEM Groups are in place. Copies are available at the CDEM Group Office.

To assist with cooperation and better understanding of joint issues, the three neighbouring CDEM Groups, all have observer status on the Nelson Tasman CDEM Group.

Assistance may also require specific arrangements to be made on an 'as needed' basis.

The CDEM Act (2002) (s113) provides for the recovery of actual and reasonable costs associated with provision of assistance to other CDEM Groups.

8.5 Financial Arrangements

8.5.1 Introduction

The activities of the CDEM Group which may incur Group costs can be broken into two main areas:

1. *Programmed Activities:*
 - a. the annual work programme (as agreed upon) and other readiness and response activities (e.g. exercises, training, etc),
 - b. Group services such as the CDEM Office and appointments such as the Group Controller.
2. *Emergency Expenditure:*
 - a. expenditure incurred by the Group in the lead up to, during and immediately after a declared state of emergency (e.g. reimbursement for cost of specialist advice).

This section outlines the financial arrangements under these circumstances and the method of cost apportionment.

This section also clarifies which are Group costs and what costs are expected to be met by individual local authorities and/or other agencies.

8.5.2 Programmed Activities

The Group is responsible for funding:

- Administrative and related services under s.24 of the CDEM Act, 2002 (initially funded by NCC as the administrative authority). Group appointments, including the Group Controller,
- agreed Group CDEM Office costs,
- agreed annual work programme.

The CDEM office will be responsible for preparing an annual budget and work programme in consultation with the CEG for ratification by the Group.

Group costs will be apportioned equally between the two unitary authorities.

Apart from any agreed direct contribution as its share of Group costs, each local authority member of the Group will be responsible for:

- funding the reduction, readiness, response and recovery arrangements required in its district.
- meeting the costs of its representation on the CDEM Group and CEG.

Unless agreed otherwise, the costs of completing any specific actions as outlined in the Group work programme will be met by the local authority concerned.

8.5.3 Expenditure in a Civil Defence Emergency

In the lead up to a declared emergency (Level 2)²

The Group is responsible for funding:

- All costs associated with the resourcing, activation and operation of the GEOC,
- All reasonable direct expenses incurred by the Group Controller,
- All reasonable direct expenses (such as travel, meals and accommodation) incurred by recognised Group technical advisors when they are requested to attend meetings to provide specialist technical advice.

During a declared emergency (Level 4)³

The Group is responsible for funding:

- All costs associated with the resourcing, activation and operation of the GEOC,
- All reasonable direct expenses incurred by the Group Controller and Recovery Manager,
- All reasonable direct expenses (such as travel, meals and accommodation) incurred by recognised Group technical advisors when they are requested to attend meetings to provide specialist technical advice.

Group costs will be apportioned equally between the two unitary authorities.

Local authorities take full first line responsibility for dealing with the impact of disaster in their geographic and functional areas of responsibility.

Each local authority is to be initially responsible for meeting all emergency expenditure incurred in its district or under its jurisdiction, and arising out of the use of its resources and services under the control of either a local Controller (directed to carry out any of the functions or duties of, or delegated to by, the Group Controller), or the Group Controller.

A clear record of who authorises any expenditure, its purpose etc is required to be kept (*refer National Civil Defence Emergency Management Plan*).

The Group Controller will ensure all costs are properly accounted for.

8.5.4 Recovering Costs in a Civil Defence Emergency

Upon termination of a declared Level 4 emergency, the Group Controller will recommend to the CDEM Group which costs, in addition to those listed in Section 8.5.3, could reasonably be met by the Group. There may be circumstances where shared Group funding could be applied where there are widespread adverse regional, environmental, social, or economic impacts, and consequential regional benefits from localised response efforts to reverse these impacts.

² Refer section 5: Response and Table 4.2,

³ Refer section 5: Response and Table 4.2

Claims for government assistance are to be made by the organisation incurring the expenditure. The CDEM Group will co-ordinate and check respective local authority claims, independently prepare a claim for agreed Group costs, and submit the consolidated application. The procedure for this is outlined in the National Civil Defence Emergency Management Plan.

Any reimbursement of CDEM Group expenditure by central government will be distributed back to constituent councils in proportion to the amount of expenditure in each council area.

Volunteers suffering personal injury or damage to or loss of property while carrying out emergency work under the control or authority of a Controller may also submit claims to the local authority employing the Local Controller or in the case of the Group Controller to the CDEM Group. The procedure for this is outlined in the National Civil Defence Emergency Management Plan.

8.5.5 Emergency Recovery Finances

Upon termination of a declared emergency, the expenditure management regime established for the response phase must be closed off and recommenced for the recovery phase under the control of the Recovery Manager.

A clear record of who authorises any expenditure, its purpose etc 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 council 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 paragraphs 9-11 of Part 2 of the National Civil Defence Plan.

If it becomes apparent that there will be a significant number of people suffering hardship and more immediate relief is required, the CDEM Group may establish a Mayoral Relief Fund depending on the circumstances.

Mayoral Relief Fund

In the event of a significant emergency it may be necessary to collect public donations to assist those impacted by the event. To this end a Trust deed has been prepared by the CDEM Group which has as its aim the collection and distribution of monies donated to the CDEM Group at the time of an emergency. The Trustees of the Trust are the Mayors of Nelson City and Tasman District, one other person from each of the two Councils, and an independent person.

Monetary donations to the Mayoral Relief Fund will be encouraged rather than donated goods and services.

9 ANNEXES

9.1 Glossary of Terms

Term / Abbreviation	Definition
4Rs	<ol style="list-style-type: none"> 1 Reduction (identifying and analysing long-term risks to human life and property from natural and non-natural hazards; taking steps to eliminate these risks if practicable, and, if not, reducing the magnitude of their impact and the likelihood of their occurring); and 2 Readiness (developing operational systems and capabilities before a civil defence emergency happens, including self-help and response programmes for the general public, and specific programmes for emergency services, lifeline utilities and other agencies); and 3 Response (actions taken immediately before, during, or directly after a civil defence emergency to save lives and property, and to help communities recover); and 4 Recovery (the coordinated efforts and processes used to bring about the immediate, medium-term and long-term holistic regeneration of a community following a civil defence emergency).
The Act	The Civil Defence Emergency Management Act 2002
CDEM	<p>Civil defence emergency management.</p> <p>As defined under the Act:</p> <ul style="list-style-type: none"> ▪ means the application of knowledge, measures, and practices that are necessary or desirable for the safety of the public or property; and are designed to guard against, prevent, reduce, or overcome any hazard or harm or loss that may be associated with any emergency; and ▪ includes, without limitation, the planning, organisation, coordination and implementation of those measures, knowledge and practices.
CDEM Group	Civil Defence Emergency Management Group established under section 12 of the Act Civil Defence Emergency Management Act 2002. Unless otherwise stated in the Plan, refers to the Nelson Tasman CDEM Group, a joint standing committee with membership comprising the Mayors of Nelson City and Tasman District Councils.
CDEM Group Plan	Means a plan prepared and approved under section 48 of the CDEM Act.
AFT CDEM Office	Civil Defence Emergency Management Office to carry out such functions as are assigned to it by the CDEM Group. Currently the CDEM Office is established and managed by Nelson City Council.
CEG	Co-ordinating 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; co-ordinating 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.
CIMS	Co-ordinated Incident Management System. Establishes a framework to assist in effective, efficient and consistent response to an incident / emergency management.
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 co-ordinated response under the Act.

Emergency Services	The New Zealand Police, New Zealand Fire Service, National Rural Fire Authority, rural fire authorities and hospital and health services.
GEOC / EOC	Group Emergency Operations Centre /Emergency Operations Centre. An established facility where the response to an event may be managed and supported.
Group Controller	A person appointed Group Controller under section 26 of the Act with those functions set out in section 28 of the Act, and delegations as listed in Annex C3.
Group Recovery Manager	A person appointed by the CDEM Group to act as Recovery Manager with functions determined by the CDEM Group in accordance with the Draft Terms of Reference (SOP G208)
Hazard	As defined under the Act: means something that may cause, or contribute substantially to the cause of, an emergency.
ICP	Incident Control Point. A facility where site response to an incident is managed and controlled.
Lead Agency	The organisation with the legislative authority; or because of its expertise and resources, agreed authority; primarily responsible for control of an incident
LEOC	Local Emergency Operations Centre. A facility where local coordination of an event or emergency may be managed from.
Local Controller	A person appointed local controller under section 27 of the Act and with the delegations listed in Annex C3.
Minister	As defined under the Act: means subject to any enactment, the Minister of the Crown who, with the authority of the Prime Minister, is for the time being responsible for administration of this Act.
NCMC	National Crisis Management Centre is a secure all-of-government facility maintained in a state of readiness in which the national response to emergencies can be managed
NWCG	National Welfare Coordination Group is a national-level, strategic welfare group that plans, supports and helps co-ordinate welfare activity in the response and recovery phases of an emergency.
Readiness	Actions taken to ensure communities know what to do in the event of an emergency, there are effective warning mechanisms, and responding organisations are well trained and practiced in preparation for an emergency.
Recovery	The co-ordinated process of reconstruction of infrastructure and the restoration of social, economic and physical well-being of a disaster-affected community.

Recovery Taskforce	Recovery Taskforce comprising approximately 6 personnel, chaired by the Recovery Manager, to lead regional recovery activity under this Plan.
Reduction	The application of techniques and management principles to reduce the probability and/or the consequence of an occurrence.
Response	Actions take in anticipation of, and immediately after an emergency or disaster to ensure that its effects are minimised and that people affected are given immediate relief and support.
SOP	Standard Operating Procedure refers to a document describing a formally established set of operational procedures that are the commonly accepted method for performing certain emergency management tasks.
WAG	Welfare Advisory Group is a regional level group that provides advice to the CDEM Group and co-ordinates all responding welfare agencies activities.

9.2 Hazard Summary - Nelson Tasman region

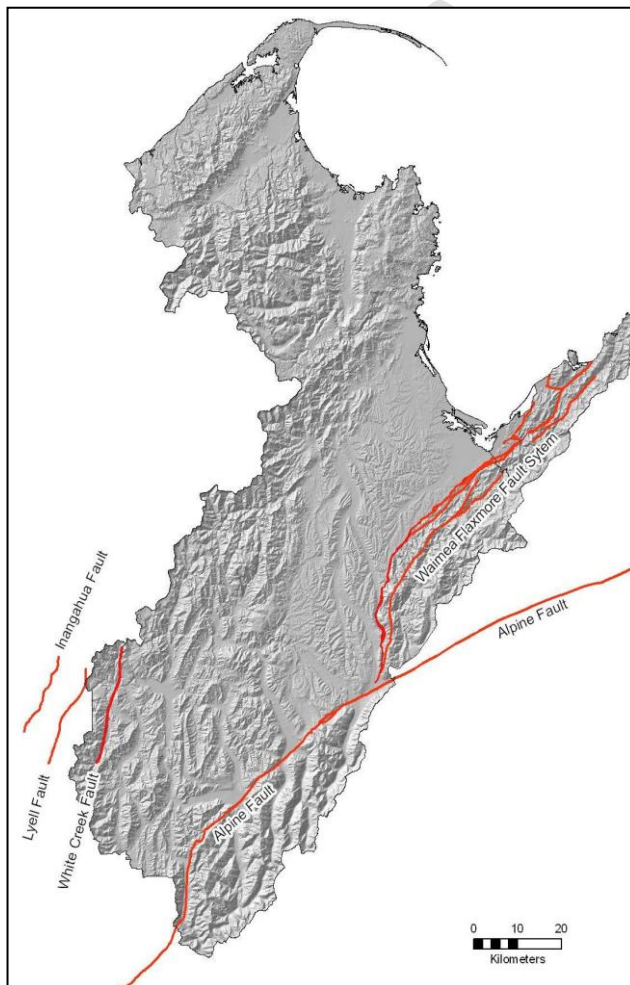
9.2.1 Introduction

The range of hazards that could affect the Nelson Tasman region have been identified and are listed in Table 2.4. These hazards represent a range of expected frequencies and degrees of seriousness. The risk that these hazards present has been evaluated (Section 2) in accordance with the MCDEM guidelines.

The most significant hazards facing the Nelson Tasman region are earthquakes and flooding and these are further detailed below (Sections 9.2.2. and 9.2.3.). A brief summary of the remaining natural and technological hazards that are rated as *moderate* or above in are presented in Section 9.2.4.

9.2.2 Earthquakes

Figure 9.1. Active faults in or near the Nelson Tasman region



Central New Zealand, which includes the Nelson Tasman Region, lies within a seismically active zone. It is traversed by the boundary between the Pacific and Australian tectonic plates. The major fault through the Nelson Tasman region (and in New Zealand overall) is the Alpine Fault which is formed by this tectonic boundary which extends southwest through the southern part of the region. Branching off the Alpine Fault, in approximately a north to northeast direction, are a number of other faults, in particular, the Waimea - Flaxmore Fault system in the east and the Lyell and White Creek faults in the west. The devastating 1929 Murchison Earthquake resulted from movement on the White Creek Fault.

There is evidence⁴ of repeated movement along the Alpine Fault occurring over recent geologic time, with several surface ruptures occurring over the last 1,000 years.

⁴ Yetton, M D. 2002: *Paleoseismic Investigations of the North and West Wairau Sections of the Alpine Fault, South Island, New Zealand.* Earthquake Commission Research Report No. 99/353.

The Alpine Fault has accumulated enough strain to rupture along its whole length within the region and such an event is capable of generating a major earthquake of magnitude 7.1 or greater on the Richter Scale. Studies indicate that there is a high probability of movement occurring on the Alpine Fault within the next 100 years.

The other main active faults within or near the Nelson Tasman region are the southern end of the Waimea Fault. The rest of the Waimea-Flaxmore Fault System (i.e. to the north away from the Alpine Fault), the Eighty-eight, Whangamoia and Bishopdale faults and the White Creek and Lyell faults to the west of the region are less active (i.e. have higher recurrence intervals) but are nevertheless still considered to be active. The faults located in the Nelson Tasman region that are considered active are shown in Figure 9.1.

Other faults present in the region, notably the Maunga, Wakamarama, Pikikiruna, Karamea, Tutaki and Tainui faults. Despite obvious topographical features (e.g. scarps) there is no evidence of movement occurring on these faults during the past one million years and whilst not considered active, future movement on these faults can not be discounted.

Earthquakes can result in a range of impacts. Surface rupture along a fault can result in the displacement of the ground surface by up to several metres, both in a horizontal and vertical sense, severely damaging any structures or utilities that lie across it. The displaced land may be raised, lowered or tilted and this can occur some distance from the fault trace. Severe ground shaking can damage built structures, trigger slope failure and cause unconsolidated fine grained sediments that are water saturated to liquefy. Liquefaction can result in the ejection of liquefied material to the surface (sand boils), subsidence and lateral spreading, all of which can damage structures and utilities (particularly underground services).

Earthquakes have the potential for loss of life and serious injury, typically greater if occurring during working hours. They can result in severe damage to roads and bridges, water supplies, wastewater services, power supplies, and telecommunication links. Structural damage to buildings and infrastructural lifelines may take months or years to fully repair (some effects may even be permanent). Disease could spread due to lack of fresh water supplies and compromised wastewater facilities. Communities, such as Murchison & Golden Bay, could be isolated for significant periods should large landslides block access roads.

Historical Records of Ground Shaking

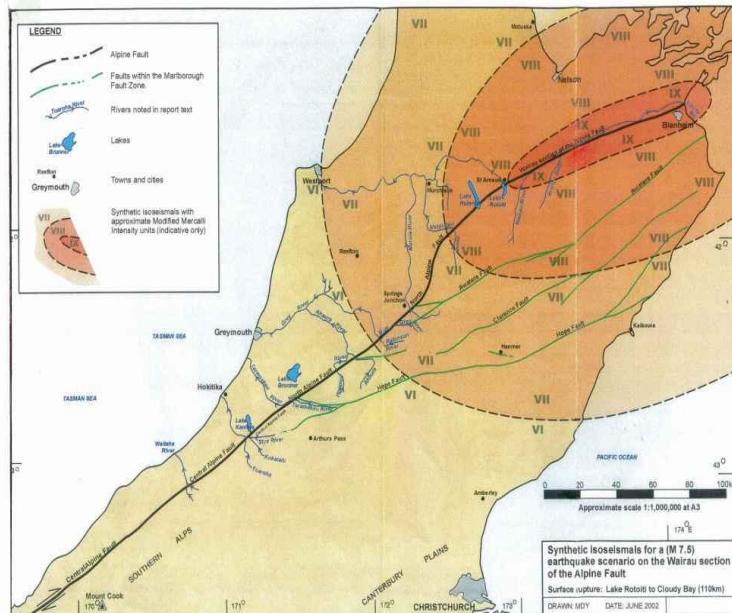
In historic times (post European settlement) the Nelson Tasman region has experienced moderate levels of seismicity. The 1929 Murchison Earthquake (7.8 on the Richter Scale) is the only large magnitude shallow earthquake known to have occurred within the region and resulted in observed ground shaking intensities of 7 on the Modified Mercalli intensity scale (MM7) to MM9 across the district. At least four large shallow earthquakes whose epicentres lie outside the region have resulted in observed ground shaking intensities of MM7 or more within the Nelson Tasman region. The estimated probability of MM7

and MM8 intensities being felt within the next 50 to 100 years for selected urban areas located within the Nelson Tasman Region are listed in Table⁵.

The Alpine Fault has not ruptured in historical times, however it has in prehistoric times. Previous fault rupture on the North Alpine Fault Segment south of Lake Rotoroa is dated to have occurred between AD1600 and 1670. On the Wairau Segment near Tophouse the latest fault rupture is dated between AD200 and AD1000. Earthquakes on both these segments of the Alpine Fault are considered a strong possibility within conventional planning periods (i.e. the next 50 to 100 years). Such earthquakes can be expected to result in ground shaking intensities across the region of between MM6 and MM9. Figure9. shows modelled zones of shaking intensities (isoseismals contours) for a 7.5 on the Richter Scale earthquake scenario on the Wairau section of the Alpine Fault.

Recent studies of the Waimea-Flaxmore Fault System⁶ determined that this fault has ruptured three times over the last 20,000 years giving an average recurrence interval of 6,000 years. These fault ruptures have estimated magnitudes of 6.5 to 7.4 on the Richter Scale and would result in severe ground shaking near the epicentre, potentially as high as MM IX, though a lesser level of ground shaking is more likely should only part of the fault move during an earthquake event. Large ancient landslides along the fault system in the Richmond foothills are probably earthquake induced and widespread damage can be expected when an earthquake originates on the fault system.

Figure9.2 Synthetic Isoseismals for a (M 7.5) Earthquake scenario on the Wairau section of the Alpine Fault¹.



⁵ Coote, T P; Downes, G L, 1995: *Preliminary assessment of earthquake and slope instability hazards in Tasman District*, Report prepared by the Institute of Geological and Nuclear Sciences Ltd for the Tasman District Council.

⁶ Fraser, J.G., Nicol, A., Pettinga, J.R., Johnston, M.R. 2006: *Paleoearthquake Investigation of the Waimea - Flaxmore Fault System*, Nelson, New Zealand.

Table 9.1. Estimated return periods of MM6 to MM9 intensity earthquakes²

Centre	Estimated Mean Return Periods (years)				Probability			
					MM7		MM8	
	MM6	MM7	MM8	MM9	50yrs	100yrs	50yrs	100yrs
Richmond/ Nelson	7	25	88	350	87%	98%	43%	67%
Mapua								
Takaka								
St Arnaud	8	28	85	370	84%	97%	41%	64%
Murchison	9	30	100	410	82%	97%	39%	63%

9.2.3 Flooding

Floods are the most commonly occurring major natural hazard in the Nelson Tasman region. They occur across the entire region and have caused the most damage in recent times of the hazards identified. Flooding can range from widespread overland flood flows from the regions principal rivers affecting much of their flood plains to more localised and isolated flooding in smaller catchments. Surface ponding can occur in low lying areas, particularly if existing drainage and stormwater networks are inadequate or become blocked with debris.

The risk associated with flooding is a function of both the hazard (i.e. the likelihood of flooding) and the consequence of the flooding (i.e. what may be damaged by the flooding). Consequently, the areas in the Nelson Tasman region that are exposed to a greater risk of flooding are where developed areas (both agricultural and urban areas) are affected by flood waters. This includes parts of Nelson, Motueka, Riwaka, Takaka, Brightwater, Wakefield, Tapawera townships, as well as the main river valleys. Localised flooding of small catchments can essentially occur anywhere within the region.

Flooding as a result of sustained high intensity rainfalls (typically thunderstorms) is the more frequent flood hazard. Thunderstorms can result in localised flooding of smaller catchments (including urban stormwater catchments) and generally have their worst impact over an area of less than 100 km². The weather systems that produce thunderstorms are unpredictable and the onset of such flooding is typically fast and can occur with very little warning (hence often referred to as flash flooding).

Flooding in the larger river catchments is derived from longer duration rainfalls occurring over wide areas. Weather systems that may generate such widespread rainfalls are usually more predictable and can be forecast up to one or two days ahead, but much uncertainty and variability remains. The rise, and subsequent fall, in river levels during such flooding are generally slower but longer lasting than those generated by thunderstorms. Tasman District Council operates an extensive flood monitoring system across the region where the onset of flooding in the lower reaches of the principal rivers can be anticipated

up to several hours ahead of time. Nevertheless, circumstances can still arise where flooding can occur with little warning.

The duration of widespread river floods can last for many days, and surface impoundment of floodwaters can last for up to a week (or more) depending on the site conditions and duration of rainfall. Often, but not always, localised flooding in small catchments subsides relatively rapidly after rainfall eases. Flooding does not just result in inundation of land with floodwaters. Flood flows can result in considerable erosion and can sweep away most things in its path. Floodwaters can carry rocks, mud, and other debris considerable distances, re-depositing them over wide areas.

Severe damage can occur to property, businesses and farmland (crops, stock and equipment), buildings and infrastructural assets (roads, power, telecommunications, water supplies, river protection works, etc.). It may take many months to completely rectify any damage after some floods with delayed access severely affecting rural areas. Whilst flooding can result in injury and loss of life, it is more likely to result in damage to property and disruption to peoples lives. Flooding may result in the isolation of communities where flooding cuts transport links and the displacement of communities where evacuation is necessary. Public health is at risk from water/sewage contamination in the major settlements and the dispersal of human and farm effluent in rural areas. General social disruption can occur as schools and workplaces are closed and people are dislocated from homes.

Flood frequency

Floods are often described in terms of their frequency of occurrence, with larger floods being less frequent than smaller floods. The probability of occurrence of a flood event of a particular size at a particular location can be determined statistically. It is often expressed as an annual exceedance probability (AEP), that is, the probability of a flood of that size or greater occurring in a given year. The same probability can also be expressed as a return period which describes the average time span between particular sized floods. It is possible for a 1% AEP flood (i.e. a 100 year return period on average), for example, to occur in successive years or even in the same year.

Although it is difficult to generalise and there will always be exceptions, a 20% AEP flood (i.e. a 5 year return period on average) can be expected to be largely contained within the banks, though it may extend into the vegetated margins and minor breakouts may occur. Fords would most likely be impassable. A 20% to 10% AEP flood (i.e. a 5 to 10 year return period on average) can be expected to flood lower terraces and berm land and result in modest shallow overland flows in vulnerable areas. Larger (and less frequent) floods will result in significant flooding with widespread flood flows extending away from the river channels.

Flood protection works

Major flood protection works (predominantly stopbanks) have been constructed on the Maitai, Waimea, Motueka and Riwaka rivers and afford a level of protection from flooding. There are other flood protection works in places elsewhere in the region. The Waimea and Motueka stopbanks were originally designed and constructed to contain flood flows with an annual exceedance probability of 2% (i.e. a return period of 50 years on average) with some free board. It is important to note that stopbanks do not guarantee protection from all

possible flood events. They can fail, not only from overtopping, but also from piping, slumping or lateral erosion during flood events less than their design flow. The current level of protection afforded by the stopbanks in the Nelson Tasman region is the subject of ongoing investigation.

Climate Change

Flood frequency statistics are determined from past flood records and reflect the climatic conditions occurring over that period. Should predicted changes to the climate occur in the future, the expected frequency of flooding is likewise expected to change. The consensus appears to be that incidences of extreme weather and associated flooding will increase in the future, however, there remains uncertainty on the magnitude of any such increase. That is, a flood of the size that has a 1% AEP flood (i.e. a return period of 100 years on average) may increase in likelihood, for example, such that the same size flood now has a 3.3% AEP (i.e. a return period of 30 years on average) and hence can be expected to occur more often.

9.2.4 Other Hazards

Human Pandemic

The 2009 H1N1 flu epidemic (swine flu) was a timely reminder that no community is immune or isolated from disease outbreaks elsewhere. There are over 40 notifiable diseases in New Zealand. Outbreaks of rare or new diseases can be difficult to detect, identify and/or treat. The Ministry of Health rates an influenza outbreak as having a high risk rating.

A pandemic may result in large scale illnesses and potentially deaths. Considerable welfare demands and isolation (quarantine) of individuals and/or communities may be necessary. Medical and health services could potentially be overwhelmed and even directly affected by the illness themselves. Other emergency services may have their capabilities reduced due to illness or quarantining of personnel. Potentially there could be a significant economic impact from incapacitation of the workforce through illness and/or the need to quarantine people.

Fuel supply - Infrastructure failure

Hydrocarbon fuels are essential to the functioning of communities, business and agriculture throughout the region. It is a vital resource across many sectors and necessary for existing emergency services to respond. Many back up electricity supplies are reliant on hydrocarbon fuels. Fuel supplies are essential in the response and recovery phase following a large natural disaster. A fuel shortage would severely limit existing transportation networks with flow on effects impacting all aspects of community functions. The response capacity of emergency services may become restricted. There will be significant impacts to rural and urban businesses (including agriculture/horticulture).

A 2009 study⁷ of fuel storage in the Nelson Tasman region identified that majority of fuel is brought into the Nelson Tasman region via Port Nelson.

⁷ *Fuel Storage in the Nelson/Tasman Region*, prepared for the Tasman District Council and the CDEM Group by Opus International Consultants Ltd, 2009.

Distribution within the region is via the roading network. Storage throughout the region is varied, ranging from service stations, industries, contractors, quarries, sawmills, farms, and airports/aerodromes.

An interruption to fuel supplies could occur from a restricted availability of the fuel itself, in which case there will be some warning of the impending shortage as existing stocks are depleted. Such a scenario would likely affect New Zealand as a whole. The more likely scenario is a disruption to fuel supplies as a result of damage to the distribution network resulting from a significant trigger event (such as a large earthquake or flood resulting in road closures and infrastructure damage). Such a scenario may only affect parts of the region where they become isolated or a much wider area in a larger, more region wide, disaster event.

Slope Instability

The Nelson Tasman Region has a complex geology and is a seismically active. Slope failure mechanisms initiating slope instability varies with the terrain with most being a combination of pre-existing geologic conditions and human modification of the land being triggered by extreme rainfall and/or earthquake induced ground shaking. Numerous landslides were triggered by the 1929 Murchison Earthquake, and less significantly the 1968 Inangahua Earthquake. Many of these landslides, but not all, were in unpopulated areas. Other large landslides, such as the active Tahunanui Slump in Nelson City and others along the Richmond foothills, are interpreted as being initiated by pre-historic earthquake ground shaking.

Some areas are subject to an elevated erosion and/or slope instability risk reflecting the engineering characteristics of the soils and underlying geology. In particular, the Separation Point granites are susceptible to severe erosion during heavy rainfall, particularly where they have been exposed through vegetation removal and/or earthworks.

Landslides cause damage by direct impact and burial, the formation of landslide dams, and slides falling into water bodies causing localised tsunami or seiches. Much of the damage done by landslides is of a permanent nature. Loss of life and injury is a distinct possibility. The most frequent damage has been the severing of road, power and telecommunications networks. Community water supplies may also be contaminated by landslide debris.

Landsliding on a scale requiring CDEM involvement is most likely to occur in conjunction with a major storm or earthquake event. There are no major instances of slope instability identified that could directly threaten populations or facilities without earthquake or severe storm triggers.

Coastal Hazards

Many parts of the Nelson Tasman coastline are vulnerable to erosion and/or seawater inundation. Much of the coastline of the region is subject to persistent, long term (as opposed to infrequent episodic) erosion at rates exceeding 0.5 metre/year on average in places.

Low lying land adjacent to the coastline and estuaries is vulnerable to inundation from elevated sea levels. Elevated sea levels can arise from, or from a combination of, storm surge, wind build up effects and wave run up which can

elevate sea levels up to 2 metres above the normal tide cycle. Land below approximately 3.5 metre above mean sea level and generally within 1 km of a coastal margin (either open coast or estuarine) is considered vulnerable, though this will be influenced to an extent by the particular topography of the coastline.

It is erosion and inundation events that occur rapidly during a significant storm event where they coincide with high tides that are likely to require a CDEM response, particularly where coastal communities and infrastructure is threatened. Predicted global climate change is for both a rise in sea level as well as an increase in the frequency of storm activity.

Tsunami

While incompletely researched, there have been a number of reported tsunami events in the Nelson Tasman Region in the past 150 years⁸. The largest event, between 15 and 18 August 1868, produced waves of up to 1.5 m high with waves reportedly coming over the Boulder Bank. More recently the 2004 Sumatran, 2009 Samoa and 2010 Chilean tsunamis, whilst detected on tide level recorders, essentially resulted in no observable effects in the Nelson Tasman region.

Tasman and Golden bays are not directly exposed to tsunami arriving from across the Pacific Ocean. Nevertheless, tsunami can propagate through Cook Strait though much of the wave's energy is dissipated in the process. Also, reasonable warning times can be expected for such tsunami, consequently they present only a modest risk to the Nelson Tasman region.

Locally and/or regionally sourced tsunami, whilst much less likely to occur, could potentially be much larger. Such tsunami will give no warning other than directly feeling the source earthquake. Consequently, such tsunami present a greater hazard to the Nelson Tasman region. A local tsunami generating earthquake would in itself cause widespread damage across the Nelson Tasman region.

Table 9.2 below shows estimated tsunami heights and their expected frequency. Whilst only a general estimate, it does provide a useful indication of the likely scale of tsunami that could occur. The effects of a tsunami of 2 metres or less will be limited to vulnerable coastal areas, though this will depend on the state of the tide at the time of arrival.

⁸ Goff J.R., Chague-Goff, C. 2001: Catastrophic events in New Zealand Coastal Environments in *Conservation Advisory Notes No. 333*, Department of Conservation, New Zealand.

Table 9.2. Estimated tsunami wave heights for Golden and Tasman bays⁹.

Return period (years)	Estimated wave height at the shoreline (m)				
	Local EQ source		Distant EQ source		Nelson City (all sources)
	Golden Bay	Tasman Bay	Golden Bay	Tasman Bay	
100	0 - 2	0 - 2	0 - 2	0 - 2	1.7
500	0 - 2	2 - 4	2 - 4	2 - 4	2.4
2,500	2 - 4	4 - 6	2 - 4	2 - 4	3.7

Extreme Weather

Weather is a continuous natural phenomenon that more often than not poses no threat to the region. Often the weather provides a positive benefit. Of relevance to CDEM is severe weather phenomena which presents various hazards, in particular, extreme rainfalls, wind, snow falls and, to a lesser extent, drought. The effects of extreme rainfall are considered separately under flood hazard (section 0). Other weather phenomena such as hail and lightning strike may cause significant damage but are unlikely to require a CDEM response and are not considered further.

Wind

Severe winds can impact the region causing considerable damage to structures and vegetation. For example the severe wind storm that took place in July 2008. Damage can occur directly to structures from the wind or from wind blown debris (which includes trees) impacting structures and infrastructure (overhead power and communication lines, pipe lines, blocking of transportation routes etc.). Depending on the season, considerable losses can occur in horticultural areas. Exotic forests can, and have been, severely impacted with severe winds flattening significant areas.

Snow

Severe snow falls can render the roading network impassable and damage infrastructure (particularly overhead power and communication lines) leaving communities isolated and without power for prolonged periods. The areas that are at risk are inland settlements in the region, in particular St Arnaud and Murchison, but also many outlying rural areas may also be affected. Transportation routes such as Takaka Hill as well as routes connecting the region to the south are also vulnerable.

Drought

Unlike other extreme weather events the onset of drought is slow and prolonged. Initial impacts are generally to agriculture and horticulture as water supplies are depleted. Whilst this can have a severe economic impact it is only when drinking water supplies are compromised, both rural and urban, that a coordinated CDEM response is likely.

⁹ Berryman, K. 2006, Review of Tsunami Hazard and Risk in New Zealand. *Institute of Geological and Nuclear Sciences Client Report 20005/104, Project Number: 430W1154*

Rural and Urban Fire

Whilst urban and rural fires unfortunately occur from time to time, emergency services are well prepared to deal with such situations. However, a large (and out of control) urban fire, particularly if in industrial areas or one that involves hazardous materials, has the potential to stretch emergency services and may require the evacuation of affected properties. This could require CDEM involvement (such as occurred during the large 2005 Takaka milk factory fire). Rural fires can extend over wide areas and can engulf dwellings and infrastructure in its path and may also require a CDEM response (such as occurred at Glenhope in 2009).

Plant or Animal pest/disease

A pest or disease outbreak (such as foot and mouth, fire blight, or a foreign insect infestation) can have severe impacts on agriculture, horticulture, forestry, aquaculture and may also affect indigenous species. There is the potential for significant economic loss and social disruption, particularly if travel restrictions are required and large areas need to be isolated and quarantined.

Infrastructure failure

Minor failures of infrastructure do occur and can be expected to only affect a relatively small area, be readily attended to with normal service resumed in a timely manner. Such incidences are not of concern to CDEM. However, less frequent but larger scale failures, both in terms of duration and area affected may require a CDEM response. There is a high public expectation that infrastructure systems will be quickly returned to an operational state.

Electricity

Communities, utilities, businesses and industry are reliant on electricity supplies. Much key infrastructure relies on electricity (e.g. water supply, wastewater systems, communications, medical services, petrol stations, food outlets etc.). Many key service providers have limited generator backup. Majority of homes rely on electricity for lighting, heating, refrigeration, cooking, water pumps etc.

Disruption of the electricity supply could occur from failure of the distribution system (substation, lines, etc.) or a generation failure such as from low lake levels limiting generation capacity or generation plant outage. Failure may be triggered by a sudden natural event (earthquake, snow, high wind) with little warning, or in the case of a drought limiting generation capacity, an event where there is a relatively long lead in time.

Water

Human well-being is reliant on access to potable water supplies. Most urban areas are provided with a reticulated supply. Majority of rural households have their own individual supplies (e.g. groundwater bores, rainwater collection tanks). Such supplies can be impacted to varying degrees by a number of causes including failure of the reticulation, contamination of the supply or simply depletion of the supply (leakage or drought). There is limited storage capacity in most community supplies, often only 24 hours.

Where water supplies are contaminated there is the potential for disease outbreak, particularly if contamination occurs without early detection. Health issues arise where insufficient water is available for drinking, food preparation and personal hygiene.

Wastewater

Urban communities rely on reticulated wastewater disposal systems (which include pipe networks, pumping stations, and wastewater treatment plants). Failure can occur from power supply failure (pumps and control systems), mechanical breakdown (of pumps) and destruction of the pipes network. Failures can result in the discharge of raw sewage into the environment.

Communication/Information systems

There is increased interdependence on communication and information systems, not only for business and commerce, but also for the operation of utilities, infrastructure, and emergency services. Reliance is across central and local government, the financial sector, businesses and the wider community. Failure can lead to widespread disruption and may significantly exacerbate difficulties for emergency services to respond to incidents. Failure of communication and information systems could occur from software failure, hardware failure, network failure or power supply failure.

Transport accident (Road & Air)

The Nelson Tasman region features a regional airport at Nelson with flight paths directly over parts of Tahunanui and Richmond. Numerous small airports and other light aircraft facilities are dispersed throughout the region. An air crash into a residential area will require a significant response by emergency services.

Traffic accidents regularly occur and emergency services routinely deal with such situations as part of their normal operations. Of concern to the CDEM is the potential for less frequent large scale accidents (e.g. a tourist bus with large numbers of casualties) or accidents involving hazardous materials (e.g. a petrol tanker) stretching or overwhelming emergency services and/or resulting in evacuation of affected areas.

Civil Unrest/Criminal act

Whilst most incidents can be expected to be dealt with by the appropriate emergency services, large serious incidents may need a CDEM response in support of the Police. For example, an urban firearms incident (such as the 2009 “Napier siege” incident) where evacuations of surrounding neighbourhoods are required.

9.3 CDEM Group Partners

There are two main groups of organisations referred to in the Plan:

- CDEM Group Partners; and
- Strategic Stakeholders.

CDEM Group Partners

These are organisations appointed as members of the Coordinating Executive Group (CEG).

- Nelson City Council
- Tasman District Council
- Emergency Services
- NZ Police
- NZ Fire Service
- St John Ambulance
- Nelson Marlborough District health Board
- Ministry of Social Development
- Ministry of Civil Defence and Emergency Management (Observer on CEG)

Strategic Stakeholders

Groups or organisations which have an emergency management mandate or which contribute to the CDEM Group's objective of a resilient Nelson Tasman region. Note: this is not an exhaustive list and is used for illustrative purposes only.

<ul style="list-style-type: none"> ▪ Lifeline Utilities ▪ Emergency Services (those not on CEG) ▪ NZ Defence Force ▪ Insurance Sector ▪ Iwi ▪ Government Social Services ▪ Welfare and Community Services ▪ Professional Associations ▪ Neighbouring CDEM Groups 	<ul style="list-style-type: none"> ▪ Volunteer Groups ▪ Industry and Commerce ▪ Government Agencies ▪ Media Agencies ▪ Scientific/ Technical Associations and Advisors ▪ Works and Services Providers ▪ Private Health Care Sector
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9.4 Delegations to the Group Controller and Local Controllers

Group Controller

The Group Controller and his/her alternates are delegated the authority to:

1. Co-ordinate the activities (as are required to perform his/her duties) detailed in s.18 (2) CDEM Act (2002)¹⁰, under the direction of the Coordinating Executive Group, and to respond to and manage the adverse effects of emergencies in the Nelson Tasman area (s.17 (1)(d) CDEM Act (2002)).
2. Require information to be provided under s.76 of the CDEM Act (2002).
3. Exercise all the emergency powers conferred on the Group by s.85 CDEM Act (2002), provided that the Group Controller shall make reports on the actions undertaken at such intervals as directed by the chairperson of the Group.

Local Controllers

Local Controllers, and their alternates are delegated those powers conferred on the Group Controller by delegation under Sections 17(1)(d), 18(2), 76, 78, 81, 85, 86, 87, 88, 89, 90, 91 and 94, CDEM Act (2002), subject to:

1. Local Controllers, and their alternates, only exercising those powers delegated under sections 18(2), 76, 78, 81, 85, 86, 87, 88, 89, 90, 91 and 94 in the event of complete isolation of the community to which that Local Controller has been appointed, AND the proposed response action is urgent, AND where there is no ability to communicate with the Group Controller for direction, and the Local Controller forms the opinion, from all the circumstances that due to the magnitude and severity of the event it is likely that a declaration has been made.
2. Local Controllers and their alternates, to spend up to a maximum of \$50,000 in respect of any Civil Defence Emergency Management response activity in the event of complete isolation of the community to which that Local Controller has been appointed AND where there is no ability to communicate with the Group Controller for direction.

¹⁰ Civil Defence Emergency Management Act (2002)

For further information about the Plan
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