

**Taranaki Civil Defence Emergency  
Management Group**

Tuesday 29 November 2016  
10.30am

Taranaki Emergency Management Office (TEMO)  
45 Robe Street, New Plymouth



**Agenda for the meeting of the Taranaki Civil Defence Emergency Management [Joint Committee] Group to be held at the Taranaki Emergency Management Office (TEMO), 45 Robe Street, New Plymouth, on Tuesday 29 November 2016 commencing at 10.30am.**

<b>Members</b>	Councillor M J Cloke Mayor R Dunlop Mayor N Volzke Mayor N Holdem	(Taranaki Regional Council) (South Taranaki District Council) (Stratford District Council) (New Plymouth District Council)
<b>Attending</b>	Councillor A Melody Mr C Stevenson Mr S Briggs Mr I Wilson	(New Plymouth District Council) (Chairperson Taranaki CDEM CEG) (Taranaki CDEM Group Controller) (Ministry of Civil Defence Emergency Management)

### Apologies

### Notification of Late Items

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Item 3	10	<a href="#">Taranaki Civil Defence Emergency Management Co-ordinating Executive Group Minutes - 10 November 2016</a>
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## Agenda Memorandum

**Date** 29 November 2016



**Memorandum to  
Chairperson and Members  
Taranaki Civil Defence Emergency Management Group**

**Subject: Election of Group Chairperson**

**Item:** 1

**Approved by:** G K Bedford, Director, Environment Quality  
B G Chamberlain, Chief Executive

**Document:** 1780858

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### Purpose

The purpose of this memorandum is to elect a Chairperson for the next term (2016-2019) of the Taranaki Civil Defence Emergency Management Group.

### Executive summary

The Civil Defence Emergency Management Group consists of the four local authorities of Taranaki, represented by the mayor/chair, or by their alternative appointed representative who must be one of the elected councillors of that local body. The Group is able to appoint one of its members to act as the chairperson of the Group in accordance with Section 15 of the Civil Defence Emergency Management Act 2002. Section 2.8 of the Group's adopted Model Standing Orders (NZS9202:2003), outlines that a joint committee may appoint its own chairperson. The Group has previously determined that the Chairperson shall hold office for a period of three years (ie until the next triennial local body elections).

The Taranaki Civil Defence Emergency Management Group must therefore elect a Chairperson for the duration of the Taranaki Civil Defence Emergency Management Group

### Recommendation

That the Taranaki Civil Defence Emergency Management Group:

1. elects (*name to be inserted here*) as Chairperson of the Taranaki Civil Defence Emergency Management Group to serve until the local body elections 2019, unless circumstances otherwise dictate.

### **Decision-making considerations**

Part 6 (Planning, decision-making and accountability) of the Local Government Act 2002 has been considered and documented in the preparation of this agenda item. The recommendations made in this item comply with the decision-making obligations of the Act.

### **Financial considerations—LTP/Annual Plan**

This memorandum and the associated recommendations are consistent with the Council's adopted Long-Term Plan and estimates. Any financial information included in this memorandum has been prepared in accordance with generally accepted accounting practice.

### **Policy considerations**

This memorandum and the associated recommendations are consistent with the policy documents and positions adopted by this Council under various legislative frameworks including, but not restricted to, the Local Government Act 2002, the Resource Management Act 1991 and the Civil Defence Emergency Management Act 2002.

### **Legal considerations**

This memorandum and the associated recommendations comply with the appropriate statutory requirements imposed upon the Council.

## Agenda Memorandum

**Date** 29 November 2016



**Memorandum to  
Chairperson and Members  
Taranaki Civil Defence Emergency Management Group**

**Subject: Minutes Taranaki Civil Defence  
Emergency Management Group meeting  
– 6 September 2016**

**Item:** 2

**Approved by:** G K Bedford, Director-Environment Quality

B G Chamberlain, Chief Executive

**Document:** 1782301

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### Resolve

That the Taranaki Civil Defence Emergency Management Group:

1. receives the minutes of the Taranaki Civil Defence Emergency Management Group meeting held in the Taranaki Regional Council chambers, 47 Cloten Road, Stratford, on Tuesday 6 September 2016 at 10.30am
2. notes that the minutes of the Taranaki Civil Defence Emergency Management Group meeting, held in the Taranaki Regional Council chambers, 47 Cloten Road, Stratford, on Tuesday 6 September 2016 at 10.30am were authenticated by the Group Chairperson, B R Jeffares, and the Taranaki Regional Council (Administering Authority) Chief Executive, B G Chamberlain, pursuant to Model Standing Orders.

### Matters arising

### Appendices

Document #1741102 –Minutes Taranaki Civil Defence Emergency Management Group  
Tuesday 6 September 2016

**Minutes of the Taranaki Civil Defence Emergency Management Group meeting held in the Taranaki Regional Council Chambers, 47 Cloten Road, Stratford on Tuesday 6 September 2016 commencing at 10.30am.**



<b>Members</b>	Councillor	B R Jeffares	(Taranaki Regional Council)
			(Chairperson)
	Mayor	N Volzke	(Stratford District Council)
	Mayor	R Dunlop	(South Taranaki District Council)
	Councillor	H Dodunksi	(New Plymouth District Council)
<b>Attending</b>	Councillor	K Squire	(Stratford District Council)
	Mr	G K Bedford	(Taranaki Regional Council)
	Mr	C Stevenson	(Chairperson Taranaki CDEM CEG)
	Mrs	B McKerrow	(New Plymouth District Council)
	Mr	S R Hall	(Taranaki Regional Council)
	Mr	S Briggs	(Taranaki CDEM Group Controller)
			(Senior Emergency Management Officer)
	Mr	B Ingram	(Emergency Management Officer)
	Ms	J Mack	(Taranaki Regional Council)
	Mr	I Wilson	(Ministry of Civil Defence)
			(Emergency Management)
	Mr	L Dagg	(Stratford District Council)
<b>Apologies</b>	The apology from Mayor A Judd (New Plymouth District Council) was received and sustained.		
<b>Notification of Late Items</b>	There were no late items of general business.		

**1. Confirmation of Minutes – 11 August 2016**

**Resolved**

THAT the Taranaki Civil Defence Emergency Management Group

1. takes as read and confirms the minutes and resolutions of the Taranaki Civil Defence Emergency Management Group meeting held at the Taranaki Regional Council chambers, 47 Cloten Road, Stratford, on Thursday 11 August 2016 at 10.35am

Volzke/Jeffares

**Matters arising**

There were no matters arising.

## **2. Taranaki Civil Defence Emergency Management Co-ordinating Group Minutes – 11 August 2016**

### **Resolved**

That the Taranaki Civil Defence Emergency Management Group:

1. receives the minutes of the Taranaki Civil Defence Emergency Management Co-ordinating Executive Group meeting held in the Taranaki Regional Council chambers, 47 Cloten Road, Stratford, on Thursday 11 August 2016 at 12.30 pm
2. adopts the recommendations therein.

Volzke/Dunlop

## **3. Update from the Chief Executive working party & CDEM Group**

- 3.1 Ms B McKerrow, New Plymouth District Council, advised the Group that the working party had met prior to the meeting to review the draft constituting agreement identifying Members' particular obligations and responsibilities and funding arrangements. The working party has agreed on the key principles within the Brendan Morris consultant report and the intention is to present these to their respective councils before the end of this triennium in order to proceed with the process of implementation.

## **4. Taranaki June 2015 Flood & Storm Event Reports**

- 4.1 Mr S Hall, Taranaki Regional Council, provided a presentation and spoke to the memorandum that has been presented to the Taranaki Regional Council and Taranaki Civil Defence Emergency Management Co-ordinating Executive Group on the effects of, and responses to, the 2015 storm and flood events.
- 4.2 It was noted by the Stratford District Council and South Taranaki District Council that their figures produced in the report had increased and the report needed to be updated. Mayor Volzke, Stratford District Council, also commented that no mention was made of the damage or costs associated with SH43 within the Stratford District. Updated figures will be provided to enable the report to be updated.

### **Resolved**

That the Taranaki Civil Defence Emergency Management Group

1. receives the memorandum on the *Taranaki June 2015 Storm and flood event reports* and attached memorandum and reports
2. notes the various recommendations and findings of the reports
3. requests an update on implementation of the recommendations in due course.

Dunlop/Volzke

## **5. June 2015 flood response costs**

- 5.1 Mr G K Bedford, Taranaki Regional Council, spoke to the memorandum providing the Group with a summary of the final costs incurred by the CDEM Group during the June 2015 flood event.

### **Resolved**

That the Taranaki Civil Defence Emergency Management Group

1. receives the memorandum on the June 2015 flood response costs and reimbursements.

Jeffares/Dunlop

## **6. Delegation of functions and powers to Chief Executive during interregnum following local authority elections**

- 6.1 The memorandum recommending the Group delegates to the Chief Executive, Taranaki Regional Council, any exercise of its powers and functions during the interregnum following the local authority elections on 8 October 2016 was received and discussed.
- 6.2 It was noted that that Hon Gerry Brownlee would be acting Minister of Civil Defence whilst Hon Nikki Kaye was on sick leave. It was agreed the Group write to Hon Nikki Kaye offering best wishes and speedy recovery from her illness.

### **Resolved**

That the Taranaki Civil Defence Emergency Management Group:

1. delegates to the Chief Executive, Taranaki Regional Council, the statutory responsibilities of the Taranaki CDEM Group (excluding the declaration of a local emergency) for the period between the local triennial elections (Saturday 8 October 2016) and the swearing in of councillors and appointment of representatives of the respective councils to the Taranaki CDEM Group following the election.

Dunlop/Dodunski

## **7. General Business**

### Thanks and Acknowledgement

Group Chairperson, B R Jeffares, thanked the Members and Council management and officers for their work and support of the Group during the 2013-2016 triennium. The meeting is the last to be held prior to the 2016 local authority elections.



There being no further business, Chairperson Councillor B R Jeffares (Taranaki Regional Council), declared the Taranaki Civil Defence Emergency Management Group meeting closed at 11.15 am.

**Minutes authenticated pursuant to Model Standing Orders**

**Taranaki Civil Defence  
Emergency Management  
Group Chairperson** \_\_\_\_\_

**B R Jeffares**

**Taranaki Regional Council  
Chief Executive** \_\_\_\_\_

**B G Chamberlain**

## Agenda Memorandum

**Date** 29 November 2016



**Memorandum to  
Chairperson and Members  
Taranaki Civil Defence Emergency Management Group**

**Subject: Taranaki Civil Defence Emergency  
Management Co-ordinating Group  
Minutes – 10 November 2016**

**Item:** 3

**Approved by:** G K Bedford, Director-Environment Quality

B G Chamberlain, Chief Executive

**Document:** 1782322

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### Purpose

The purpose of this memorandum is to receive the unconfirmed minutes of the Taranaki Civil Defence Emergency Management Co-ordinating Executive Group meeting held on Thursday 10 November 2016, and to adopt the specific recommendations contained therein.

### Recommendations

That the Taranaki Civil Defence Emergency Management Group:

1. receives the minutes of the Taranaki Civil Defence Emergency Management Co-ordinating Executive Group meeting held in the Taranaki Regional Council chambers, 47 Cloten Road, Stratford, on Thursday 10 November 2016 at 10.30 am
2. adopts the recommendations therein.

### Decision-making considerations

Part 6 (Planning, decision-making and accountability) of the Local Government Act 2002 has been considered and documented in the preparation of this agenda item. The recommendations made in this item comply with the decision-making obligations of the Act.

### Financial considerations—LTP/Annual Plan

This memorandum and the associated recommendations are consistent with the Council's adopted Long-Term Council Community Plan and estimates. Any financial information included in this memorandum has been prepared in accordance with generally accepted accounting practice.

### Policy considerations

This memorandum and the associated recommendations are consistent with the policy documents and positions adopted by this Council under various legislative frameworks

including, but not restricted to, the Local Government Act 2002, the Resource Management Act 1991 and the Civil Defence Emergency Management Act 2002.

**Legal considerations**

This memorandum and the associated recommendations comply with the appropriate statutory requirements imposed upon the Council.

**Appendices/Attachments**

Document #1773907 – Minutes Co-ordinating Executive Group Meeting Thursday 10 November 2016

**Minutes of the Taranaki Civil Defence  
Emergency Management Co-ordinating  
Executive Group held in the Taranaki  
Regional Council chambers, 47 Cloten Road,  
Stratford on Thursday 10 November 2016  
commencing at 10.30pm.**



<b>Members</b>	Mr	C Stevenson	(Chairperson) (South Taranaki District Council)
	Mr	G K Bedford	(Taranaki Regional Council) (Hazards Advisory Group)
	Mrs	B McKerrow	(New Plymouth District Council)
		S Davidson	(New Plymouth District Council)
	Messrs	L Dagg	(Stratford District Council)
		M O'Mara	(Stratford District Council)
		J Clough	(Rural Advisory Group)
		S Briggs	(Taranaki CDEM Group Controller) (Senior Emergency Management Officer)
		R Blume	(St John)
<b>Attending</b>	Mrs	K van Gameraen	(Taranaki Regional Council)
	Mrs	J Ritchie	(Taranaki Regional Council)
	Ms	F Greenhill	(Taranaki CDEM Recovery Manager)
	Mr	I Wilson	(Ministry of Civil Defence and Emergency Management) <i>from 11.20am</i>
<b>Apologies</b>	The apologies from Mr P Fitzell (New Zealand Fire Service), Mr S Cockburn (St John), Ms A Kemp (Taranaki District Health Board), Mr B Rush (New Zealand Fire Service), Mr B Ingram (Welfare Manager) and Snr Sgnt T McIntyre (New Zealand Police) were received and sustained.		
<b>Notification of Late Items</b>	Stratford District Council Annual Report 2016		

**1. Confirmation of Minutes – 11 August 2016**

**Resolved**

THAT the Taranaki Civil Defence Emergency Management Co-ordinating Executive Group

1. takes as read and confirms the minutes and recommendations of the Taranaki Civil Defence Emergency Management Co-ordinating Executive Group meeting held in the Taranaki Regional Council chambers, 47 Cloten Road, Stratford on Thursday 11 August 2016 at 12.30 pm.

Briggs/Dagg

### **Matters Arising**

There were no matters arising.

## **2. Minutes of the Taranaki Civil Defence Emergency Management Group**

- 2.1 The confirmed minutes of the Taranaki Civil Defence Emergency Management Group's meeting held on Tuesday 6 September 2016 were received for information.

### **Recommended**

THAT the Taranaki Civil Defence Emergency Management Co-ordinating Executive Group

1. receives the confirmed minutes of the meeting of the Taranaki Civil Defence Emergency Management Group held on Tuesday 6 September 2016.

Stevenson/McKerrow

## **3. Taranaki CDEM Advisory Group Minutes**

- 3.1 The minutes of the Taranaki CDEM Advisory Groups were received, noted and discussed, being:  
Hazardous Substance Technical Liaison Committee – Tuesday 23 August 2016  
Rural Advisory Group – Tuesday 30 August 2016  
Welfare Co-ordination Group – Wednesday 7 September 2016  
Lifelines Advisory Group – Tuesday 13 September 2016  
Taranaki Seismic and Volcanic Advisory Group – Tuesday 18 October 2016
- 3.2 The Group received and noted the Taranaki Seismic Monitoring Report 2015-2016 presented to the Taranaki Seismic and Volcanic Advisory Group.

### **Recommended**

THAT the Taranaki Civil Defence Emergency Management Co-ordinating Executive Group

1. receives the minutes of the meeting of the Hazardous Substance Technical Liaison Committee held on Tuesday 23 August 2016
2. receives the minutes of the meeting of the Rural Advisory Group held on Tuesday 30 August 2016
3. receives the minutes of the meeting of the Welfare Co-ordination Group held on Wednesday 7 September 2016
4. receives the minutes of the meeting of the Lifelines Advisory Group held on Tuesday 13 September 2016
5. receives the minutes of the meeting of the Taranaki Seismic and Volcanic Advisory Group held on Tuesday 18 October 2016

6. receives and notes the Taranaki Seismic Monitoring Report 2015-2016 presented to the Taranaki Seismic and Volcanic Advisory Group.

Stevenson/Clough

#### **4. Update on review process and timeline for CDEM Group Plan for Taranaki**

- 4.1 Mrs J Ritchie, Taranaki Regional Council, spoke to the memorandum updating the Group on the review process and timeline for the CDEM Group Plan for Taranaki.
- 4.2 It was noted and agreed that the review process for the CDEM Group Plan for Taranaki (the Plan) and the district council's Chief Executives' Working Party, progressing the implementation of the Brendan Morris Taranaki CDEM Review (the Review), are running concurrently and that both have strong linkages in respect of the outcomes implementations from each. Due to the importance of each project/review, it was agreed that regular reporting to the Group and the Taranaki Civil Defence Emergency Management (CDEM) Group on progress of the Plan and Review was important especially in the financing and resourcing areas and personnel changes.
- 4.3 The recent local authority triennial elections were noted, especially the election of a new Mayor for the New Plymouth district that will result in a change in membership of the (CDEM) Group. It was suggested and agreed that a briefing and update on progress of the Plan and Review be presented to the CDEM Group's meeting on 29 November 2016. The Chief Executive from each district council would attend to provide information and context on the Review to the CDEM Group.

#### **Recommended**

THAT the Taranaki Civil Defence Emergency Management Co-ordinating Executive Group

1. receives the memorandum Update on review process and timeline for CDEM Group Plan for Taranaki
2. notes the Group Plan project team work referred to in the 12 May 2016 meeting was subject to delays for various reasons
3. notes that a report of the GNS risk management workshop has been completed and a draft of Section One of the Group Plan has been provided to the Project Team for consideration and review
4. accepts that the timeframes for the Group Plan review need to be amended.

McKerrow/O'Mara

#### **5. Taranaki Civil Defence Centre Strategy**

- 5.1 Mr S Briggs, Senior Emergency Management Officer, spoke to the memorandum presenting to the Group the *Taranaki Civil Defence Centre Strategy* (the Strategy).
- 5.2 The Strategy was discussed by the Group. It was noted that the Taranaki CDEM Welfare Manager, in liaison with the Taranaki Regional Council Iwi Communications Officer, were

Taranaki Civil Defence Emergency Management Co-ordinating Executive Group Meeting  
Thursday 10 November 2016

discussing with Iwi of Taranaki the availability and use of marae as Civil Defence Centre's (CDCs) and the recruitment and training of their volunteers. It was agreed that the Strategy be amended to recognise the discussions and work in progress in this area.

**Recommended**

THAT the Taranaki Civil Defence Emergency Management Co-ordinating Executive Group

1. receives the memorandum
2. receives the *Taranaki Civil Defence Centre Strategy*
3. authorises the Taranaki Emergency Management Office to proceed with the recommendations in the *Taranaki Civil Defence Centre Strategy*.

O'Mara/Stevenson

**6. Taranaki CDEM Responses 2016-2017**

- 6.1 The memorandum providing the Group with a summary of the events that have been notified to the Duty Emergency Management Officer and their associated responses to date for the financial year was received and discussed.

**Recommended**

THAT the Taranaki Civil Defence Emergency Management Co-ordinating Executive Group

1. receives the memorandum on the Taranaki CDEM Responses 2016-2017..

Briggs/Dagg

**7. Taranaki Emergency Management Office Report 2016-2017**

- 7.1 Mr S Briggs, Senior Emergency Management Officer, spoke to the memorandum providing the Group with a summary of the implementation of the *Taranaki Civil Defence Emergency Management Group Annual Business Plan 2016-2017*.

**Recommended**

THAT the Taranaki Civil Defence Emergency Management Co-ordinating Executive Group

1. receives the memorandum *Taranaki Emergency Management Office Report (2016-2017)* on the implementation of the *Taranaki Civil Defence Emergency Management Group Annual Business Plan 2016-2017*.

Bedford/McKerrow

**8. Taranaki CDEM Group Controller Manager Annual Report 2016**

- 8.1 Mr S Briggs, Taranaki CDEM Group Controller spoke to the memorandum to receive the Taranaki CDEM Group Controller's annual report 2016.

**Recommended**

THAT the Taranaki Civil Defence Emergency Management Co-ordinating Executive Group

1. receives and notes the Taranaki CDEM Group Controller's annual report for 2016.

Stevenson/McKerrow

**9. Stratford District Council Annual Report 2016**

- 9.1 Mr L Dagg, Stratford District Council, spoke to the memorandum to receive the Stratford District Council's annual report 2016.

**Recommended**

THAT the Taranaki Civil Defence Emergency Management Co-ordinating Executive Group

1. receives and notes the Stratford District Council's annual report 2016.

Dagg/Davidson

**10. MCDEM Update Report**

- 10.1 Mr I Wilson, Ministry of Civil Defence Emergency Management, spoke to the memorandum introducing an update report to the Group from the Ministry of Civil Defence Emergency Management.

**Recommended**

THAT the Taranaki Civil Defence Emergency Management Co-ordinating Executive Group

1. receives and notes an update verbal report from the Ministry of Civil Defence Emergency Management.

O'Mara/Briggs

**11. Meeting Dates 2017**

- 11.1 The meeting dates proposed for the Taranaki Civil Defence Emergency Management Co-ordinating Executive Group for 2017 were received and noted.

**Recommended**

THAT the Taranaki Civil Defence Emergency Management Co-ordinating Executive Group

1. receives and notes the meeting dates for the Taranaki Civil Defence Emergency Management Co-ordinating Executive Group for 2017.

Stevenson/Bedford



## **12. General Business**

There were no items of general business.

There being no further business, the Chairperson, Mr C Stevenson (South Taranaki District Council) declared the meeting of the Taranaki Civil Defence Emergency Management Co-ordinating Executive Group closed at 12.10pm.

### **Confirmed**

**Chairperson:** \_\_\_\_\_  
**C Stevenson**

**Date:** **9 February 2017**

## Agenda Memorandum

**Date** 29 November 2016



**Memorandum to  
Chairperson and Members  
Taranaki Civil Defence Emergency Management Group**

**Subject: Update – TEMO, 2017-2019 budget and  
Taranaki CDEM Constituting Agreement**

**Item:** 4

**Approved by:** G K Bedford, Director-Environment Quality  
B G Chamberlain, Chief Executive

**Document:** 1781002

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### Purpose

The purpose of this memorandum is to provide the Civil Defence Emergency Management Group with an update on progress by the four councils towards funding arrangements and the setting of an operational budget for the 2017-2018 year.

### Executive summary

At the CDEM Group meeting of 11 August 2016, the CDEM Group determined that the CEG should proceed to identify and establish structures and functional delivery of responsibilities in a manner generally consistent with the recommendations contained in the Morris report. It was indicated to the Group, that the next step would be to bring together a chief executives' working party to draft up a constituting agreement identifying Members' particular obligations and responsibilities, the appropriate staffing requirements for the Taranaki Emergency Management office (administered by the Regional Council on behalf of the four councils), and determining funding arrangements including a budget for 2017-2018. The CEOs were then to take the agreed constituting agreement back to each council for approval.

This memorandum provides a brief update on progress.

- The Chief Executives' Working Party has continued to progress the implementation of Brendan Morris' CDEM Review by email and at the last CEG meeting.
- The CEs have confirmed the need for TLAs to enhance local capability – in-house and with extra resourcing supplied from TEMO. They have agreed that the costs of the additional TEMO resourcing should fall to the three district councils, as the resourcing is to directly benefit these councils and to meet the particular identified need.
- The suggested TEMO staffing structure has been released to affected staff for consultation, both generically and then subsequently, with focus on the CDEM

manager's position. Following consideration of the responses provided by affected and interested parties, an amended job description and schedule of duties for the CDEM manager role has been adopted and the position has now been advertised. It is expected that a short list of candidates should be available for consideration before the end of this calendar year.

- It was agreed that implementation will need to be phased – ie. some transitional costs will fall within this current financial year. These have not been budgeted for and will mean additional costs to be met by Members.
- A draft budget for 2017-2018 and associated funding arrangements have been determined based on the overall staffing structure and responsibilities set out in the Morris report. It is noted that feedback from current TEMO staff has offered variations of the allocation of specific responsibilities across the full proposed staffing complement. That is, the final allocation of duties and work programme may vary to a degree from that set out in the Morris report.
- This means in turn that at this time the CDEM Group cannot be presented with a full work programme for 2017-2018. The Group is therefore advised that the draft budget for TEMO for 2017-2018 has been prepared on the basis of the appointment of a Group Manager, four other fulltime CDEM officers, and a part-time administrator officer.
- The budget and funding model has been distributed to all four councils for review. The proposed indicative budget and funding arrangement that have been distributed have been incorporated into today's agenda item on the understanding of feedback from CEOs that councils have agreed to the proposals provided.
- It is stressed that these figures are indicative only and are provided as input into each council's annual planning process. They are subject to finalisation after calculation of adopted costings including staff appointments.

The Group is accordingly advised that the indicative budget for TEMO for 2017-2018 is \$1,027,205, with each council's share being :

Taranaki Regional Council	33%	\$ 349,250
New Plymouth District Council	40%	\$ 410,882
Stratford District Council	8%	\$ 82,176
South Taranaki District Council	18%	\$ 184,897

### Decision-making considerations

Part 6 (Planning, decision-making and accountability) of the *Local Government Act 2002* has been considered and documented in the preparation of this agenda item. The recommendations made in this item comply with the decision-making obligations of the *Act*.

### **Financial considerations—LTP/Annual Plan**

This memorandum and the associated recommendations are consistent with the Council's adopted Long-Term Plan and estimates. Any financial information included in this memorandum has been prepared in accordance with generally accepted accounting practice.

### **Policy considerations**

This memorandum and the associated recommendations are consistent with the policy documents and positions adopted by this Council under various legislative frameworks including, but not restricted to, the Local Government Act 2002, the Resource Management Act 1991 and the Civil Defence Emergency Management Act 2002.

### **Legal considerations**

This memorandum and the associated recommendations comply with the appropriate statutory requirements imposed upon the Council.

### **Attachment**

Document 1732819: Draft Constituting Agreement Taranaki Civil Defence Emergency Management

## **DRAFT**

### **Constituting Agreement**

#### **Taranaki Civil Defence Emergency Management Group**

##### **1. Parties**

Each of the following local authorities is a party to this agreement and a member of the Taranaki Civil Defence Emergency Management Group:

Taranaki Regional Council  
New Plymouth District Council  
Stratford District Council  
South Taranaki District Council.

##### **2. Definitions**

In this Agreement:

“Act” means the Civil Defence Emergency Management Act 2002

“CEG” means the Coordinating Executive Group established under section 20 of the Act

“CDEM” means civil defence emergency management

“CDEM Group” means the Taranaki Civil Defence Emergency Management Group established under section 12 of the Act

“EOC” means the Emergency Operations Centre

“Party” means a party to this Agreement

“Taranaki region” means the Taranaki region as defined in the Local Government (Taranaki Region) Reorganisation Order 1989

“TEMO” means the Taranaki Emergency Management Office.

##### **3. Term of Agreement**

This Agreement shall commence when all the parties have signed the Agreement.

This Agreement shall remain in force until changed by resolution of the CDEM Group.

##### **4. Purpose of Agreement**

The purpose of this Agreement is to set out fundamental elements and arrangements for civil defence emergency management in Taranaki, including the individual and collective roles and responsibilities of the parties, the CDEM delivery model, the

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budget development process, funding arrangements and staff structure and TEMO management arrangements.

## **5. Roles and responsibilities**

Section 17 of the Act sets out the roles and responsibilities of members of the CDEM Group.

All local authorities are both individually as well as collectively responsible for each of the functions set out in section 17.

The parties acknowledge the role played by many other agencies and organisations in assisting in the delivery of effective civil defence emergency management in Taranaki.

### **5.1 Local authority roles and responsibilities**

#### **5.1.1 Taranaki Regional Council**

The Taranaki Regional Council's responsibilities are essentially to lead and support regional coordination for CDEM in Taranaki and to provide all the services of the administering authority necessary for effective and efficient delivery of CDEM services across Taranaki.

This role will include the following functions and activities based on the 4Rs as well as the administering authority function:

##### **Reduction**

- Provide regional hazards and risk monitoring management support and advice to TEMO as required by the Group
- Implement methods for natural hazards under section 11.1 of the *Regional Policy Statement for Taranaki 2010*

##### **Readiness**

- Maintain CDEM staff capacity to lead and support regional coordination at the Group EOC/TEMO during response and recovery by support for CDEM staff training and professional development
- Support TEMO in the delivery of public information, public education and engagement and community resilience programmes

##### **Response and recovery**

- Provide CDEM personnel for regional coordination roles at the Group EOC/TEMO during response and recovery
- Provide support for fulfilling key CDEM Group appointments such as Group and alternate controllers, welfare managers and recovery managers
- Provide EOC support for the region's district councils in local CDEM coordination and delivery as required

##### **Administering authority**

- Provide TEMO/Group EOC accommodation and related services
- Employ TEMO staff and maintain management oversight of TEMO administrative functions

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- Provide budget advice, financial management and reporting for the CDEM Group
- Enter into contracts with service providers on behalf of the Group
- Provide secretariat services for the CDEM Group and CEG (convening meetings, providing venues, distributing agendas, providing minutes and catering)
- Provide general administrative functions – records, files, correspondence etc.

### 5.1.2 Territorial authorities

The responsibilities of the region's three district councils – the New Plymouth, Stratford and South Taranaki district councils – relate primarily to local CDEM coordination and delivery within their local authority areas. Territorial authorities also have lifeline utility responsibilities under the Act.

This role will include the following functions and activities based on the 4Rs as well as the lifeline utility responsibilities:

#### Reduction

- Provide support and assistance for civil defence in Taranaki by linking district policy and planning to objectives with the CDEM Group Plan and the *Regional Policy Statement for Taranaki 2010*
- Undertake implementation of methods for natural hazards under section 11.1 of the *Regional Policy Statement for Taranaki 2010*

#### Readiness

- Develop and maintain capability and capacity to lead local CDEM coordination and delivery by:
  - Appointing leadership roles: local controller, information gathering and planning, welfare manager and recovery manager and alternates
  - Supporting the region's district council staff to undertake professional development, training and participation in exercises
  - Developing a local EOC capability and ensuring all systems and processes, and facilities and resources, are robust (such as communications, impact assessment, welfare delivery, local recovery management)
  - Supporting TEMO in the preparation and delivery of community resilience programmes

#### Response and recovery

- Activate local CDEM response and recovery when required
- Provide CDEM personnel for local coordination and delivery roles at the local EOC during response and recovery
- Provide support for fulfilling key CDEM Group appointments such as alternate controllers, welfare managers and recovery managers
- Provide liaison with TEMO
- Provide support for other territorial authorities and TEMO with CDEM delivery as required

#### **Lifeline utility responsibilities**

- Fulfill responsibilities under section 60 of the Act to ensure territorial authority lifeline utilities are able to function to the fullest possible extent during and after an emergency.

### **5.2 Collective CDEM Group roles and responsibilities**

#### **5.2.1 The CDEM Group**

The responsibilities of the CDEM Group are to:

- Ensure hazards are effectively managed
- Set the strategic direction for the Group via the Group Plan and implementation via annual work plans
- Ensure, maintain and provide resources for effective CDEM including staff and training within TEMO
- Ensure capability and capacity across CDEM and CEG members
- Provide assistance to other CDEM Groups
- Promote and raise public awareness
- Monitor and report on progress on implementation of plans
- Lead the development and implementation of strategy work and work programmes.

#### **5.2.2 The CEG**

The responsibilities of the CEG are to:

- Lead the development and implementation of strategy and work programmes as approved by the CDEM Group
- Oversee development, management and monitoring of annual CDEM budgets
- Oversee development and approval of CDEM Group and CEG agendas and minutes
- Provide oversight and management of TEMO staff for CDEM work programme deliverables
- Provide strategic advice to the CDEM Group
- Monitor and review work programmes
- Coordinate input into annual TEMO and CEG member plan processes
- Each member to ensure effective liaison, championing and implementation of CDEM initiatives within their respective organisations.

#### **5.2.3 TEMO**

The responsibilities of TEMO are to:

##### **General**

- Maintain relationships and robust communication networks with Taranaki CDEM Group partners and other agencies
- Provide project coordination and management including the ongoing development, implementation, monitoring and review of the CDEM Group Plan and supporting CDEM strategy, policy and plans



- Prepare in consultation with CEG, the annual report of the CDEM Group's activities, budget and performance to the Group for adoption and publishing once adopted
- Represent the CEG on national bodies and projects
- Monitor and respond as appropriate to activities and developments at national level (including legislative or regulatory change or national level guidance)
- Participate in CEG and advisory groups, and other events or collaborations as appropriate

#### **Reduction**

- Educate local communities about hazards and how to prepare and respond to them
- Provide support to the region's district councils and the Taranaki Regional Council on linking hazard risk research to local planning and implementation

#### **Readiness**

- Work alongside the region's district councils to build and maintain local CDEM response and recovery capability
- Coordinate and deliver public education and engagement
- Provide professional development and training for CDEM personnel
- Coordinate the development of inter-agency response plans and assist in the development of agency-specific response plans, to specific hazards
- Support communities to prepare for emergencies through liaison with community boards and groups and through the preparation, exercising, and maintenance of community response plans
- Coordinate development of community volunteer capability
- Maintain the Group EOC/TEMO in a ready state

#### **Response**

- Monitor and respond to the adverse effects of emergencies on behalf of the CDEM Group and disseminate warnings
- Provide support for local CDEM responses

#### **Recovery**

- Assist with recovery operations at the local and CDEM levels.

### **6. CDEM delivery model**

The overriding principle for CDEM delivery across the Group is based on a centrally coordinated and locally delivered approach. This means that regionally there will be CDEM coordination, support and administration across the CDEM Group area with local CDEM coordination and delivery based on territorial authority (district council) areas.

The following elements form the basis of the CDEM delivery model across the 4Rs:

- The CDEM Group Plan establishes the framework for comprehensive, integrated and coordinated CDEM across all members of the CDEM Group and covering risk reduction, readiness, response and recovery activities for all hazards

- A Group-wide CDEM Group Annual Business Plan is developed to support the Group Plan and implement CDEM initiatives and programmes
- Annual individual performance work plans are developed to direct the day-to-day activities of each CDEM staff member
- To maintain accountability to the CDEM Group, plans will be prepared for adoption by the CDEM Group, via the CEG
- The Taranaki Regional Council is responsible for CDEM coordination and support across the CDEM Group area and for the provision of all administrative services necessary for the effective delivery of CDEM services across the region
- The region's three district councils are responsible for developing and maintaining organisational capability and capacity to lead local CDEM coordination and delivery
- Localised emergencies will be responded to and supported locally and led by the region's district councils
- Regional scale events will be responded to by local responses, coordinated and supported, and if necessary, directed at a regional level
- Communities are supported in an emergency by welfare services delivered at community level
- The CDEM Group is regarded as a single organisation, not individual CDEM organisations.

It is important for the effective implementation of the delivery model that a close working relationship exists between the emergency management staff and management of each local authority through the CEG representative.

## **7. Budget development process**

Each year, a draft budget will be prepared by the Taranaki Regional Council as the administering authority, under the direction of the CEG and for the consideration and agreement of the CDEM Group, noting that the agreed Group budget will be referred to the region's four local authorities for adoption.

By 30 November of each year, the Taranaki Regional Council will provide an indicative budget to the four councils for the purposes of annual planning and budgeting. By the end of February each year, the Taranaki Regional Council will provide a finalised draft for consideration by the four councils. This is for inclusion in councils' annual or long-term planning processes. The four councils have until 30 April of each year to provide feedback to the CDEM Group, CEG and the Taranaki Regional Council on the draft budget. This allows for the CDEM budget to be finalised prior to the adoption of each council's annual or long-term plan.

## **8. Funding arrangements**

The parties agree to the following funding split to pay for the costs of CDEM in Taranaki:

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Taranaki Regional Council:	33.34% of the approved budget
New Plymouth District Council:	40.33% of the approved budget
South Taranaki District Council/ Stratford District Council:	26.33% of the approved budget

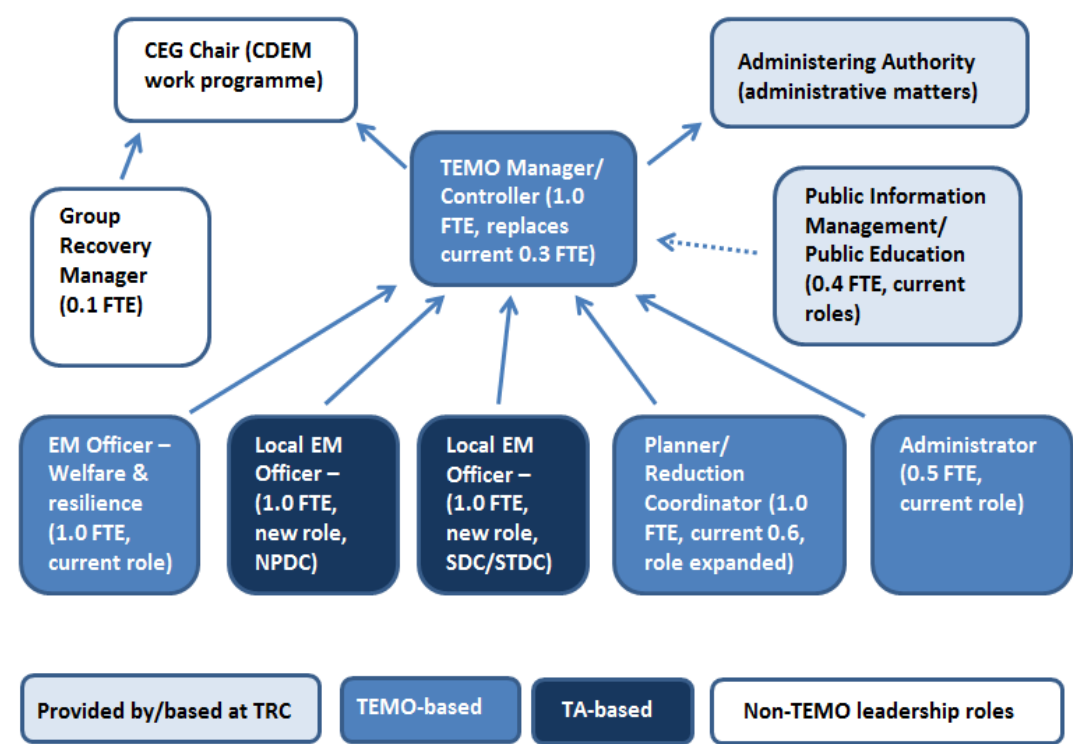
**Note:** the split between the South Taranaki District Council and the Stratford District Council is to be agreed between themselves.

It should also be noted that the above funding split is to be applied to approved operating budgets and to approved new capital expenditure. Renewal of capital expenditure is to be funded by accumulated depreciation.

9. Staff structure and TEMO arrangements

The staff structure and TEMO arrangements are generally to be accordance with Figure 1 below.<sup>1</sup>

Figure 1 General staff structure and TEMO arrangements



The TEMO Manager/Controller is to be responsible for managing the CDEM Group work programme and guiding district council capability development. The position reports to the CEG Chair for all CDEM related matters and to the Taranaki Regional Council for administrative matters.

<sup>1</sup> The structure, reporting lines and resourcing shown in Figure 1 are conceptually what has been agreed to but will be further refined.

All subordinate TEMO-based staff and district council-based staff report directly to the TEMO Manager/ Controller. In addition, a part FTE public information management and public information roles provided by and based at the Taranaki Regional Council also report to the TEMO Manager/ Controller for CDEM related work.

The Group Recovery Manager position reports directly to the CEG chair.

## Agenda Memorandum

**Date** 29 November 2016



**Memorandum to  
Chairperson and Members  
Taranaki Civil Defence Emergency Management Group**

**Subject: November 2016: Update on review  
process and timeline for CDEM Group  
Plan for Taranaki**

**Item:** 5

**Approved by:** G K Bedford, Director Environment Quality  
B G Chamberlain, Chief Executive

**Document:** 1780516

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### Purpose

The purpose of this memorandum is to provide the Civil Defence Emergency Management Group (the Group) with an updated high-level timeline for the statutory review of the Civil Defence Emergency Management Group Plan for Taranaki 2012-2017. The updated timeline is **attached** in diagrammatic form to this memorandum.

### Executive summary

A review of the CDEM Group Plan– a statutory plan required under s48 of the CDEM Act 2002 (the Act)–is required every 5 years. A review of the current Group plan for Taranaki–*The CDEM Group Plan for Taranaki 2012-2017*–must therefore be complete (or nearly complete) by September 2017.

At a meeting on 12 May 2016, officers provided the operational advisory group of CDEM–the Coordinating Executive Group (CEG) – with a timeline and project scope for the review of the CDEM Group Plan for Taranaki. CEG approved the establishment of a project team to guide the review process. However, the project team’s work was subject to delays because of pressure of work on other areas, the imminent local government elections, and the outcome of the Brendan Morris review of current Taranaki CDEM organisation and engagement (the Morris review)<sup>1</sup>.

The original timeframe for the milestones referred to in the May meeting needs to be amended for the above reasons and in particular because the discussions on, and consideration of, the Morris review have taken longer than anticipated. This memorandum updates members on work that has been undertaken to date, including the risk management workshop for which a report has been completed, and the provision of a draft of Section One

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<sup>1</sup> Brendan Morris Consulting Limited, August 2016, *Review of structural and functional delivery of responsibilities of the members of the Taranaki CDEM Group and Coordinating Executive Group*

of the Group Plan to the Project Team for consideration and review. It also updates members of the next steps in the review process.

## Recommendations

That the Civil Defence Emergency Management Group:

1. receives the memorandum *November 2016: Update on review process and timeline for CDEM Group Plan for Taranaki*
2. notes the Group Plan project team work was subject to delays for various reasons
3. notes that a report of the GNS risk management workshop has been completed and a draft of Section One of the Group Plan has been provided to the Project Team for consideration and review
4. accepts that the timeframes for the Group Plan review need to be amended as noted in this Memorandum
5. notes the next steps in the review process.

## Background

As many members will be aware, the CDEM Group Plan is a statutory plan required under s48 of the CDEM Act 2002 (the Act). A review of the Plan is mandatory after 5 years (section 56 of the Act) and a new plan must be operational by the end of the previous plan. A review of the current Group plan for Taranaki– *The CDEM Group Plan for Taranaki 2012-2017*– must therefore be complete (or nearly complete) by September 2017.

The proposal for the 5-yearly review must be publicly notified and specify a period for public submissions to be made to the Group or a subgroup or committee of the Group. The submission period must not be less than one month and not more than 3 months unless the Group directs (s 52 of the Act).

The Plan must align with the Act, the National Plan and Guide, and it must follow written guidelines prepared by the Ministry for Civil Defence & Emergency Management (MCDEM). Formal approval of the Plan takes place at Taranaki CDEM Coordinating Executive Group (aka “CEG”) and CDEM Group meetings. We must also allow 20 working days for the Minister of Civil Defence Emergency Management to provide comments on the Plan. Because it is an operational matter, CEG members, and the Project Team initiated by CEG, has oversight over the work undertaken to implement the review.

At a meeting on 12 May 2016, officers provided CEG members with a timeline and project scope for the review of the CDEM Group Plan for Taranaki. The memorandum addressed the fact that, under the Act, several agencies are required to be involved in the Group Plan review, including the district councils and other lifeline agencies, the Police, NZ Fire Service and the Taranaki District Health Board. The memorandum provided an outline of some of the major milestones that need to be achieved for the review as a whole to be completed.

The Group Plan review is particularly important for the district councils given that CDEM matters may in future require more resourcing and consequently affect annual and long-term work plans. For other member organisations it may affect business continuity and other emergency-related plans.

At the May meeting CEG members provided confirmation that the review of the Plan was a priority that would receive the appropriate resourcing, and approved the establishment of a project team to guide the review.

The original timeframe for the milestones referred to in the May meeting needs to be amended for the above reasons and in particular because the discussions on, and consideration of, the Morris review have taken longer than anticipated. This memorandum updates members on work that has been undertaken to date, including the risk assessment workshop held (for which a report has been completed), and the provision of a draft (of Section One of the Group Plan) to the Project Team for consideration and review. It sets out the next steps in the review process.

### **Delays to the review process**

Shortly after the May CEG meeting, a project team was set up. Unfortunately, the project team's work was delayed because of pressure of work on other areas, the imminent local government elections, and work on the Morris review. For similar reasons, the draft document of principles proposed for presentation to the Group meeting of 14 June did not take place.

The May memorandum also stated that when the Morris review was completed (due early August 2016), "workshops and decisions on integration/implementation of findings" would take place in August-September 2016. The Morris review was reported to the Taranaki CDEM Group on 11 August 2016 and the Group committee authorised the CEG to put the review's recommendations into place.

The original timeframe for the milestones referred to in the May meeting needs to be amended because the discussions on, and consideration of, the Morris review have taken longer than anticipated. An updated draft timeline is **attached** to this memorandum.

### **Work undertaken to date**

The May CEG memorandum discussed the issue of resourcing and detailed three initiatives for work on the Group Plan review. Two of those initiatives included facilitation of workshops by contractors and the set up of a project team to manage the overall review process.

#### *Risk Management workshop facilitated by GNS*

To inform the Group Plan review, the Group engaged GNS Science to plan and facilitate a one-day workshop to reassess Taranaki's risk profile and rank its hazards, using the 2009 risk assessment framework developed by the Ministry of Civil Defence & Emergency Management (MCDEM). The workshop took place at TEMO on 17 August 2016 and included 33 representatives from sixteen organisations.

Participants reviewed and consolidated the hazard list, and rated each hazard for likelihood and consequence (the risk analysis), resulting in an overall risk rating using a risk matrix. A risk evaluation or 'SMG' assessment was made along with an assessment of confidence in the research or information available to make those evaluations. The outcome was a list of hazards ranked in order, from highest to lowest, to identify which hazards pose the most risk to the region. The top 15 items will focus priorities for the Group by way of the Plan.

### *Setting up a Project Team to manage the overall review process*

The Project Team originally consisted of the CEG Chair, TRC administering officer, senior EMO, a senior officer from each of the three district councils and the two emergency services (fire and police). Some of the original members are no longer available and the team has been re-formed.

The draft section of Part One of the Plan – the introduction and context section (which includes the hazard section) – has recently been provided to the Project Team to consider and provide feedback. Feedback will be collated and incorporated where possible into the draft document.

### *Status of Timeline*

It is clear that it will not be possible to adhere to the original indicative timeline provided with the May memorandum given the delays around integration and implementation of the Morris review. The Management and Governance section of the Plan may not be able to be finalised until high-level decisions are made on arrangements for local CDEM implementation.

An updated draft timeline is **attached** to this memorandum. At this stage we are delayed on our internal discussions and this puts more pressure on the process from early next year onwards. Stakeholder, community and iwi consultation workshops are a particular risk. As indicated in an earlier memorandum, there may be a few months leeway in respect of the final deadline date, but this will cover the Minister's comments and formal approval only.

### **Next steps**

Officials are currently organising dates with the Project Team to 'workshop' material for the 4R section of the Group Plan, and the two sections that follow, (Monitoring and Evaluation and Management and Governance). This is the crux of the Group Plan, and requires the most discussion and consideration. These sections of the Plan must set out the Group's expectations of each member and partner agency.

The workshops will discuss and determine draft principles, objectives, criteria (monitoring), management, and responsibilities – for each of the 4Rs: ie reduction, readiness, response, and recovery. Some agencies will naturally have more responsibilities in one area than in others, however, the workshop process enables the development of high-level matters for the Group as a whole. A more detailed list of activities will be set out in the Group's work plan.

Once these workshops have occurred, and the material collated and incorporated into the draft to the satisfaction of the Project Team, it is hoped that a draft Plan will be available by March 2017.

### **Decision-making considerations**

Part 6 of the *Local Government Act 2002*, (planning, decision-making and accountability), has been considered and documented in the preparation of this agenda item. The recommendations made in this item comply with the decision-making obligations of the *Act*.



### **Financial considerations—LTP/Annual plan**

This memorandum and the associated recommendations are consistent with the Council's adopted Long-Term Plan and estimates. Any financial information included in this memorandum has been prepared in accordance with generally accepted accounting practice.

### **Policy considerations**

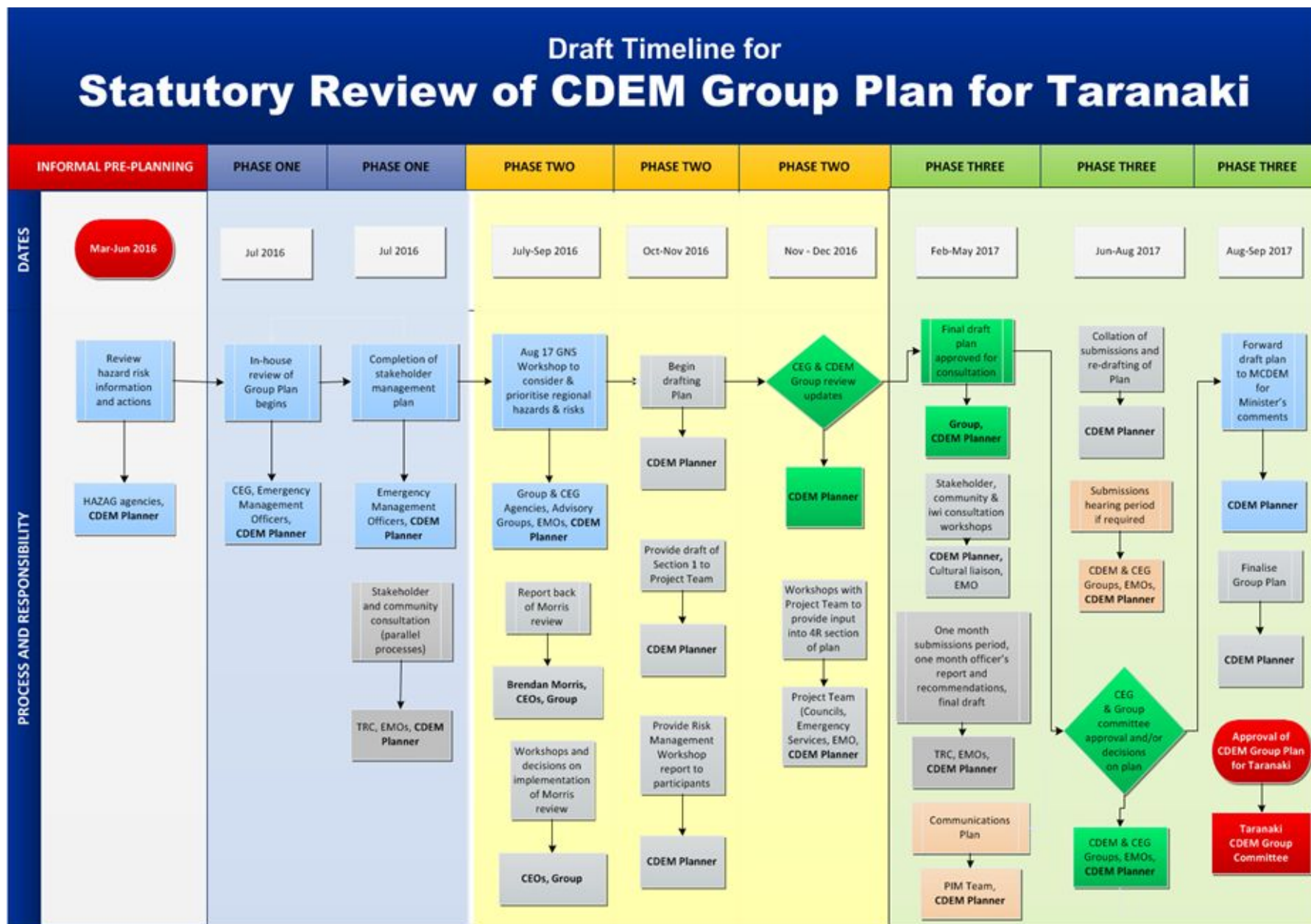
This memorandum and the associated recommendations are consistent with the policy documents and positions adopted by this Council under various legislative frameworks including, but not restricted to, the *Local Government Act 2002*, the *Resource Management Act 1991* and the *Biosecurity Act 1993*.

### **Legal considerations**

This memorandum and the associated recommendations comply with the appropriate statutory requirements imposed upon the Council.

### **Appendices/Attachments**

Document #1782680: Draft Updated Timeline for Statutory Review of CDEM Group Plan



## Agenda Memorandum

**Date** 29 November 2016



**Memorandum to  
Chairperson and Members  
Taranaki Civil Defence Emergency Management Group**

**Subject: Emerging issues: Kaikoura earthquakes  
and tsunami responses**

**Item:** 6

**Approved by:** G K Bedford, Director - Environment Quality  
B G Chamberlain, Chief Executive

**Document:** 1781403

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### Purpose

The purpose of this memorandum is to outline to the Group, concerns and issues that are emerging around the nature of the monitoring and alerting actions of various parties, and the current state of the GeoNet seismic monitoring network, in the light of the Kaikoura earthquakes and tsunami events of 14 November.

### Executive summary

A number of parties have raised concerns over the initial messaging (in terms of both content and delivery) in relation to the Kaikoura earthquake and tsunami sequence of Monday 14 November. Others have voiced their views on the adequacy of the GeoNet seismic and tsunami activity monitoring networks to provide the factual content for the messaging.

This memo presents a timeline for the events surrounding the notifications and alerts, to provide some context and background to the various critiques that have been made. It is stressed that the commentary provided below is provisional and interim, and so no actions or firm conclusions are drawn at this time.

In summary, officers consider that the events have raised questions around:-

- the ability of MCDEM to deliver clear, timely and accurate messaging to the public and to response agencies;
- the consistency of CDEM groups' tsunami event alerting methods and public understanding of the use of the various signalling systems in place around New Zealand;
- current messages around tsunami risk
- how the public should interpret and respond to a potential or actual tsunami event;
- the best practice CDEM and emergency service responses to a tsunami alert (taking into account risk, timing of alerts, and time available for a response); and
- the current status of the GeoNet system.

Officers note that the Minister of Emergency Management and the Director of MCDEM have both independently indicated that there is a need to review and learn from the Kaikoura event response and to improve various aspects of CDEM monitoring and response at national and regional levels. Officers also note that currently NZ is still very much in a response phase for the Kaikoura event, and that not everything is yet clear. Thus, while it is anticipated that Taranaki CDEM Group will in due course be inputting into review processes, it would be premature to do so immediately or in the near future. This memo is therefore only to be taken as a provisional statement of observations rather than an expression of this Group's views.

## Recommendations

That the Taranaki Civil Defence Emergency Management Group:

1. receives the memorandum Emerging issues: Kaikoura earthquakes and tsunami responses
2. notes that in due course there will be opportunity to review and submit on learnings arising from the event, its notification, and its response, at regional and national level

## Background

Set out below is the content of an article prepared by Stuff.co. It is very useful as the basis of a timeline of the initial phase of the Kaikoura earthquake and tsunami.

### Timeline of the 7.8 quake and response reveals plenty of room for improvement

NICK PERRY

The huge earthquake that hit New Zealand this past week, buckling roads, uplifting sections of coastline and killing two people, also exposed problems in how the country monitors its earthquake risk and prepares for tsunamis. And it raised questions about whether the city of Wellington put people at risk by reopening buildings too soon.

The nation was spared the devastation of five years ago when 185 people were killed in the Christchurch earthquake. But some consider it was more by luck this time than by good planning.

Here's what happened, minute by minute, after the quake hit early Monday, with details on how officials intend to improve:

The duty officer for the country's official earthquake warning site is asleep. Although earthquakes pose a huge threat to New Zealand, the GeoNet site is not monitored around the clock.

#### 12.03AM (Monday 14 November)

GeoNet generates its first computer estimate for the quake: magnitude 6.5. It's a big miss. Quakes are measured on an exponential scale, and this one would prove to be 20 times larger and 89 times more powerful than that. For some quake-hardened New Zealanders, a magnitude 6.5 might signal it's time to get some more sleep. A magnitude 7.8 might signal it's time to run for higher ground.

#### **12.05AM**

The nation's emergency call number, 111, fails after operators evacuate their building in the capital, Wellington. As ceiling tiles fall around them, operators think they've activated a backup system, but in their haste to leave have failed to do so.

#### **12.09AM**

GeoNet's automatic estimates of the quake have risen to magnitude 7.5. The duty officer is now awake and reviews the data. She downgrades the quake to a magnitude 6.6, and upgrades the site's confidence in its estimate.

GeoNet director Ken Gledhill said that estimate was a result of a glitch in their system, in which the monitoring stations closest to the quake were relied upon too heavily. He said those stations became overloaded and did not work properly during the severe quake.

"We have to wake people and get them out of bed to look at complex data and make serious calls very quickly," he said. "It is not an ideal situation."

Gledhill wants the site monitored 24 hours a day and appears to be gaining support for that.

#### **12.30AM**

The Pacific Tsunami Warning Centre in Hawaii estimates the quake at a magnitude 7.4 and says it doesn't believe there's a tsunami threat.

Kanoa Koyanagi, a geophysicist at the centre, said the quake was borderline for issuing an alert. He said the centre is primarily concerned with tsunamis that might affect the broader Pacific region or might hit a country that doesn't have its own monitoring system.

"When it comes to the 'threat' or 'no threat' message, we've turned over that responsibility to those countries that already have a tsunami warning system," he said.

That includes New Zealand. But it turns out authorities in New Zealand were looking to the Pacific warning centre for direction on whether there was a threat, according to Gledhill.

He said GeoNet workers noticed a tide gauge in Kaikoura was dropping rapidly, a sign that a tsunami might be coming. So they told civil defence authorities. Experts believe the quake was so powerful it permanently raised the entire coastline in places by up to one metre, exposing local abalone, or paua.

#### **12.21AM**

The US Geological Survey in Golden, Colorado, issues its first estimate of the quake: magnitude 7.4. The USGS uses seismometers from around the world to monitor earthquakes around the clock. Geophysicist Jessica Turner said the Kaikoura quake was particularly complicated to assess because it triggered so many faults over such a wide area.

She said the only way to properly gauge the size of an earthquake is to wait until the waves of energy have travelled through the Earth's crust.

"With really large earthquakes, the first magnitude is always going to be a little off," she said. "But we want to get our quickest information out there, so people can have the information and brace themselves for aftershocks."

She said New Zealand's reliance on local seismometers works for smaller quakes, but will inevitably make it difficult to measure larger quakes.

#### **12.37AM**

New Zealand's Ministry of Civil Defence and Emergency Management sends out a tweet: "There is no tsunami threat to New Zealand." It's retweeted hundreds of times.

The agency based its assessment in part on the erroneous belief that the quake had struck only on land, which doesn't usually produce a tsunami. By now, authorities were watching the Kaikoura gauge and other tide gauges with alarm.

The agency's director, Sarah Stuart-Black, declined this past week to answer questions about how it made its decisions after the quake.

The Pacific warning centre was also watching the tide gauges, but Koyanagi said it was already too late to warn Kaikoura.

"If you feel strong shaking, and you're near the coast, you've got to move to higher ground," he said. "Because there's not going to be a warning in time for that situation."

#### **12.56AM**

Civil defence authorities reverse course: "situation has changed - tsunami is possible," they tweet. They advise people move away from the coast.

By now, a tsunami of about 2 metres has already hit the coast around Kaikoura. Residents caught a break: It hit at low tide. Gledhill says it could have caused deaths and huge amounts of damage if it had hit at high tide. The rest of the country escapes major problems as well.

#### **12.57AM**

Police report the emergency number is working again after crews activate a secondary backup system. Many near the quake's epicentre have no way to make calls anyway, because phone lines and cell networks are down.

#### **1.01AM**

Civil defence officials issue more tsunami warnings. Some local authorities begin sounding piercing tsunami alarms. Some places, including Wellington, have no alarms. In other places, local officials elect not to use them.

"No one is happy with it," said Gerry Brownlee, New Zealand's acting minister of civil defence. "Civil defence has already recognised that we could do better."

Brownlee said he wants to examine the structure of the organisation. And officials also want to introduce a push alert system for cellphones, a system some other countries already have.

#### **1.18AM**

The US Geological Survey makes its final quake assessment: magnitude 7.8. Scientists at the USGS have used 163 stations worldwide to make their call, including 29 in New Zealand. Turner, the geophysicist, said the rule of thumb is that people can expect aftershocks of up to one magnitude less than the initial quake. Monday's quake ended up holding to that rule: Strong aftershocks continued to rumble throughout the day, causing more damage, and the two biggest were magnitude 6.2.

But at this moment, most New Zealanders, reliant on GeoNet for their earthquake information, still believe the quake is a magnitude 6.6, potentially impacting what decisions they make.

#### 1.51AM

GeoNet upgrades its quake estimate to magnitude 7.5. Two days later, the agency will consult with USGS and agree that it was a 7.8.

#### 5.12AM

The Wellington City Council asks people to stay home from work on Monday while crews assess buildings. They later say the city will reopen for business Tuesday.

#### TUESDAY-FRIDAY

Wellington authorities evacuate several downtown buildings and cordon off streets. A nine-story office building and a parking garage are found to be in danger of collapsing, and surrounding buildings are cleared as well. A girl's high school decides to close one of its buildings and send its younger students home as a precaution. The list of building closures grows to about two dozen.

Deep beneath the prime minister's office, the emergency bunker used by civil defence leaders springs a water leak. Stuart-Black, the agency director, says the leak was caused by the quake, but it was small and quickly repaired.

Some residents fault city officials for reopening buildings too hastily. Brownlee, the acting minister of civil defence, says the majority of Wellington buildings are performing well, and people shouldn't get too pessimistic. "In these circumstances, life does go on," he says.

The table below sets out the main monitoring and response actions of Taranaki CDEM within the first nine hours. Key elements are highlighted in yellow and discussed further below. Shane Briggs, Senior Emergency Management Officer, was duty officer at the time.

Time	Who	What/message	Elapsed time (from notification)
00:05	GeoNet	6.8, 20 km north-west of Cheviot (Monday 14 Nov 2016 at 12:02 am).	
00:09	Taranaki ECC	Duty Officer posts EQ details on Facebook. <i>Expect aftershocks. Remember to Drop, Cover and Hold. There is no tsunami threat.</i> (based on GeoNet posting)	+00:04
00:16	Pacific Tsunami Warning Centre, Hawaii	<b><i>BASED ON ALL AVAILABLE DATA... THERE IS NO TSUNAMI THREAT FROM THIS EARTHQUAKE.</i></b>	+00:11
00:23	Taranaki ECC	Duty Officer at TEMO and checked building.	+00:18
00:25	NCMC	National Advisory: Earthquake (01).	+00:20

00:40	NMC	National Advisory: <i>No Tsunami Threat to New Zealand (01). Based on current information, the initial assessment is that the earthquake is unlikely to have caused a tsunami that will pose a threat to New Zealand.</i>	+00:35
00:43	Taranaki ECC	All emergency services contacted. No reports of damage or injury. 111 system is down.	+00:38
00:46	Taranaki ECC	Duty Officer posts power outage updates on Facebook. <i>If you find any power lines down keep clear and call Powerco on 0800 27 27 27. if the situation is life threatening call 111.</i>	+00:41
00:51	PTWC	NOTE INCREASE OF EARTHQUAKE MAGNITUDE. A DRAWDOWN OF 2.5 METERS WAS OBSERVED AT KAIKOURA TIDE STATION. A DAMAGING LOCAL TSUNAMI MIGHT HAVE OCCURRED. APPROPRIATE ACTIONS SHOULD BE TAKEN TO PROTECT LIVES AND PROPERTY.	+00:46
00:52	NPDC	Contacted ECC and provided Status Report.	+00:47
01:00	NMC	National Warning: Tsunami Threat (01). <i>Tsunami warning for all southern coastal areas of New Zealand. A tsunami is possible.</i>	+00:55
01:02		G Bedford called the duty officer to advise tsunami visible on GeoNet gauge.	+00:57
01:29	NMC	National Warning: Tsunami Threat (02). <i>Tsunami warning for Eastern coast of North and South Island including the Chatham Islands. It may arrive in the Eastern Coast of the North Island shortly. Move inland or to higher ground immediately.</i>	+1:24
02:01	NMC	National Warning: Tsunami (03). Tsunami warning for all of the eastern coast of the North Island and all of the east coast of the South Island including Chatham Islands. Confirmation has been received that a tsunami was generated. Waves have been detected on the GeoNet Tsunami Gauges.	+1:56
02:06	PTWC	THE FOLLOWING ARE TSUNAMI WAVE OBSERVATIONS  CASTLEPOINT 0.12m WELLINGTON 0.43M KAIKOURA 1.47M	+2:01



02:20	NCMC	National Warning: Tsunami (04). Tsunami warning land threat from the East Cape to Southland including Wellington and the Chatham Islands. There is a beach and marine threat for the remainder of New Zealand	+2:15
02:30	NCMC	First national Group Controllers meeting	+2:25
02:32	Taranaki ECC	Duty Officer posts 'Marine and Beach Threat' and provides advice.	+2:27
03:08	Taranaki ECC	Media Release (01). 'Marine and beach' tsunami threat for Taranaki.	+3:03
03:20	NCMC	National Warning: Tsunami (05). Issued a tsunami warning (marine and land threat) from East Cape to Southland, including Wellington (which also includes the Cook Strait area), Marlborough Sounds/Tasman Bay and the Chatham Islands; and a marine threat for all other New Zealand coastal areas	+3:15
03:30	NCMC	National Group Controllers meeting	+3:25
03:50	Taranaki ECC	SitRep (02). <i>No major damage has been reported although damage reports are expected once it's daylight and people go to work. A 'Marine and beach' threat for Taranaki was issued at 02:20. The duty officer is monitoring the situation and responding to public enquires and social media posts. A media release has been issued for the Marine and Beach threat. Further aftershocks are expected.</i>	+3:45
04:14	NCMC	Initial Action Plan - Warning & Impact Phases covering the period 0300-1800.	+4:07
04:24	NCMC	National Warning: Tsunami (06). No change.	+4:19
05:44	NCMC	National Warning: Tsunami (07). <i>Tsunami warning (marine and beach threat) for the East Coast of New Zealand, from East Cape to Southland, and also the Kapiti Coast and Tasman Bay/Marlborough Sound.</i>  <i>The Chatham Islands and the region between Blenheim and Banks Peninsula is still prone to a marine and land threat, and future maximum wave amplitude of approx. 1-3 metres can still possibly be expected to occur.</i>	+5:39
05:53	Taranaki ECC	Duty Officer posts on Facebook. <i>If you are a building owner, landlord or property manager, please ensure your buildings are safe. If in doubt, seek engineering</i>	+5:48

		<p><i>advice.</i></p> <p><i>If you have suffered damage, contact your insurance company as soon as possible. Take photos before you clean up any mess.</i></p>	
06:00	NCMC	National Group Controllers meeting.	+5:55
06:10	Taranaki ECC	Group Controller live interview with More FM.	+6:10
06:56	NCMC	<p>National Warning: Tsunami (08). <i>Tsunami warning (marine, beach and land threat) for the East Coast of New Zealand, from East Cape to Southland, and also the Kapiti Coast and Tasman Bay/Marlborough Sounds.</i></p> <p><i>The Chatham Islands and the coastal areas between Blenheim and Banks Peninsula are still prone to a marine and land threat, and future maximum wave amplitude of approx. 1-3 metres can still possibly be expected to occur.</i></p>	+6:51
07:00	Taranaki ECC	Group Controller live interview with the Hits.	+6:55
07:xx	Taranaki ECC	Group Controller live interview with More FM.	
07:55	Taranaki ECC	Group Controller interview with Daily News.	+7:50
08:32	NCMC	<p>National Warning: Tsunami (09). <i>Tsunami warning (marine and beach threat) from Napier to north of Dunedin, Cook Strait coastal areas and The Chatham Islands. Please see the attached map for affected areas.</i></p> <p><i>The threat for all other regions has been lifted. All previous threat regions will experience unusually strong currents for some time.</i></p>	+8:27
08:37	Taranaki ECC	<p>Update to Lifelines, Welfare and Rural groups. Emergency services in Taranaki have had no reports of damage, although there are still some power outages across the region.</p> <p>All roads are open, New Plymouth Airport is open, Port Taranaki is open.</p> <p>The CDEM Duty Officer will continue to monitor the situation. If you aware of any damage or significant issues, please contact the Emergency Coordination Centre.</p>	+08:32
09:02	Taranaki	SiteRep (3). 'Marine and beach' tsunami threat	+8:57

	ECC	<p>lifted in Taranaki. However, Taranaki people are still urged to exercise caution when in or near coastal waters.</p> <p>GNS Science has advised large aftershocks may occur.</p> <p>Taranaki Civil Defence Emergency Management Emergency Operation Centre (EOC) is standing down. The Duty Officer will continue to monitor the situation.</p>	
09:02	NCMC	National Warning: Tsunami (10). No change.	+8:57
09:06	Taranaki ECC	Media Release (2). 'Marine and beach' tsunami threat lifted in Taranaki.	+9:01

## Discussion

### Delays in MCDEM notification of tsunami, and confusing messaging

The first period of interest is the 38 minute period from when PWTC alerts that there has been a 2.5m 'drawdown' at Kaikoura (in layperson's terms, a tsunami, or at the very least a violent and very large disturbance of the sea level), and when NCMC advised there was a "tsunami is possible" alert for "all southern coastlines". Also, the language/terminology from NCMC is unclear. By the time NCMC gave their warning, around two hundred kilometres of coastline had already been hit by the tsunami.

It was then a full 1 hour and 10 minutes between when PWTC gave an alert of the 'drawdown' (and GeoNet displayed the drawdown), and the subsequent NCMC confirmation that waves had been detected by GeoNet.

The delay in the first national Controllers teleconference (2 hours and 25 minutes) is probably due to Group Controllers having previously stated that they do not want to hold teleconference too soon after any event. They need time to assess the situation, and teleconferences are a hindrance. It is worth noting that the teleconference was 1 hour after the confirmation a tsunami had been generated (2 hours and 25 minutes after the EQ) and some CDEM Groups (e.g. Canterbury) hadn't started formal evacuations, and were reluctant to do so, because of the massive disruption to communities this would entail and their assessment that the main tsunami risk had already passed in any case by this stage.

The reference by MCDEM to a 'threat' when the tsunami was already a reality is confusing. What is the difference to the lay person, between a 'threat', and 'risk', and 'hazard', and a 'danger'?

What was meant by MCDEM by their reference to 'southern coastlines' being at threat of a tsunami? It was the north-eastern coastline of the South Island that was most impacted, followed by the southern and south-eastern coastline of the North Island. Is Wellington really on the 'east coast' of the North Island? MCDEM switched the advised zone of potential impact from 'southern coastline' to 'eastern coast' during the event.

### **GeoNet staffing and equipment**

The GeoNet system had a duty officer assigned but not staffed as such (ie rostered to be awake and at their desk). However, it appears that this did not affect the initial assessment, as all information to hand is that other expert parties and agencies arrived at the same conclusion ie that there would be no tsunami. It does not appear that the pre-existing degree of alertness of the GNS duty officer affected the initial diagnosis.

However, from this region's perspective there are greater issues than whether the GeoNet duty officer was awake or asleep at the time. Scrutiny of the GeoNet tsunami monitoring network figures below will indicate that NZ has 16 tsunami/sea level monitoring stations around its coastline. Only one of these is on the entire west coast of New Zealand (Manukau). Otherwise, the only stations that can provide information of relevance to Taranaki are at North Cape, or Wellington, or the SW corner of the bottom of the South Island (Puysegur Point). In the last major Solomon Islands earthquake with associated tsunami (Magnitude 8.1, 6 February, 2013), the PTWC was issuing warnings for New Plymouth as being basically in the direct 'line of fire'. The Taranaki CDEM Group noted with concern at that time that we had no means of monitoring for the timing or height of any actual wave arrival. A subsequent report (see attached document 1177345) confirmed that on the basis of historical tsunami events, New Plymouth and the north Taranaki coastline has a specific vulnerability to tsunamis from this direction, even though our overall tsunami hazard is somewhat lower than that for other regions around New Zealand.

A second matter to note is that the GeoNet seismic network is purely land-based. But in Taranaki, our major faultline for shallow earthquakes lies offshore and brushes our north-west coastline. While submerged seismometers are considerably more expensive than land-based monitors to install and maintain, they would offer much enhanced capability for rapid and accurate determination of magnitude and location (and hence determining the likelihood of a tsunami event). This has been discussed in general terms within the TSVAG. In the light of the Kaikoura event, it might be a matter for the Group to raise in due course with more imperative.

A separate item in today's agenda covers other matters re the potential for enhancement of the GeoNet system in Taranaki that have already been raised by the TSVAG.

### **National community alerting systems**

There is no consistency around the use of sirens for tsunami warning purposes. MCDEM has left it to each regional CDEM Group. It is very apparent this has resulted in confusion in the minds of the public and in their use by groups. Not all areas have them. It appears some groups activated them; others did not even though they were installed, on the basis of either not wanting to cause panic or because it was too late anyway. Where they were activated, some groups believed the local communities should have considered them a warning to turn on radios for further communication; other groups regard them as a signal to immediately evacuate.

The Taranaki CDEM has rejected any use of sirens for tsunami warning purposes. We have over 200 km of coastline; the cost of installing (and thereafter maintaining) enough sirens in a highly corrosive, very windy environment to give a sufficiently loud and reliable audible signal at every coastal location is beyond credible resourcing. In some locations sirens are used for other purposes in coastal areas (eg volunteer coastguard call-out, shark warning). People have 'siren fatigue' (eg car alarms, false alarms from intruder house security systems,

volunteer fire brigade systems) and therefore might well ignore tsunami sirens even if installed. We have good public alerting alternatives (eg OPTN texting).

### **MCDEM messaging around earthquakes and potential tsunamis**

The latest advice from MCDEM for someone on the coast who experiences a strong earthquake is- '**Long** (ie more than a minute) **and strong** (ie too hard to stand up): **be gone** (ie head inland- a tsunami is possible)'. The problems with this advice are:-

- GNS are simultaneously stating that an earthquake under land is highly unlikely to cause a tsunami; but a person near the coast has no way of knowing whether the earthquake they just felt was under land or under the sea. What are they to do? If the answer is- 'evacuate in any case', then there will be many false alarms, that eventually will have less effect; and having people move away from their homes (and resources), congesting roads while in a degree of anxiety or panic, brings its own set of difficulties and problems in a disaster;
- in addition, tsunamis can travel much further than only to those coastal zones where the 'rule' applies. There could be communities who should evacuate because of tsunami risk even when the 'shaking' rule does not apply in their locality;
- the Kaikoura earthquake sequence meant that the tsunami occurred some 45 minutes or more after the earthquake event. If people are told to rely on their own experiences, then once shaking stops and there is no evidence that a tsunami has occurred, they may well start returning to their homes/place of immediate previous activity prematurely.

Therefore, it is suggested that while the '**long and strong: be gone**' advice remains critical for those closest to the epicentre of a potentially tsunami-inducing seismic event, having rapid and accurate messaging remains vital.

MCDEM national advisories and warnings: The MCDEM '*Tsunami Advisory and Warning Plan Supporting Plan SP-1/16*' was released by MCDEM last year. The direction it gives to CDEM Groups re tsunami warnings is ambiguous. It states '*CDEM groups and CDEM Group members are responsible for the planning for, development and maintenance of appropriate public alerting and tsunami response systems for their areas...receive official national tsunami advisories and warnings via the NWS. CDEM groups and CDEM Group members are responsible for further local threat assessment and deciding on appropriate local public alerting*' (pg 4). This implies a degree of local autonomous decision-making. This, on this basis it would have been appropriate for groups noting the GeoNet and PTWC information to act immediately. But later on the document states (A4 CDEM Group action guide) 'On receipt of one or more of the notification's listed above...'. The implication is that groups must wait until they receive a National Advisory or National Warning notification, before issuing any local warnings or evacuation notices.

The same document states that a **National Advisory-potential tsunami threat** is issued when the current threat is unknown or that there is a possibility that a tsunami has been generated; a **National Warning- tsunami threat** is the highest level of action: it is issued when a threat is imminent or likely. But the messaging that came out from NCMC during the Kaikoura event was as follows- at 1 am a **National warning** stated that a tsunami was possible- the terminology that is used in a National Advisory. It was not until the next National warning notification at 01.29 am, that the language within the notification made it plain that a tsunami had indeed occurred and that parts of the NZ coastline was under threat.

The same document sets out the 'response indicators' for MCDEM. This table indicates that a local (NZ vicinity- within 55km of the shore) tsunami risk occurs only above a threshold of Mw > 7.5 and depth less than 100km. In hindsight this appears adequate from the

perspective of considered scientific information- the final assessment of the magnitude of the Kaikoura earthquake was that it was a magnitude of 7.8. But now that it is exposed that the initial provisional assessment of an earthquake event might be considerably lower (eg 6.5 in the case of Kaikoura), then there needs to be a re-examination of the response indicator thresholds set out in this table.

## **Conclusions**

As with any civil defence emergency event, there will no doubt be extensive debriefing and reviewing of the actions of all agencies involved in the Kaikoura earthquake. The object is always to learn the lessons and apply them, so that next time there will be less impact and disruption and better potential for recovery. It is already apparent that there are many such opportunities arising from the Kaikoura event.

## **Decision-making considerations**

Part 6 (Planning, decision-making and accountability) of the *Local Government Act 2002* has been considered and documented in the preparation of this agenda item. The recommendations made in this item comply with the decision-making obligations of the *Act*.

## **Financial considerations—LTP/Annual plan**

This memorandum and the associated recommendations are consistent with the Council's adopted Long-Term Plan and estimates. Any financial information included in this memorandum has been prepared in accordance with generally accepted accounting practice.

## **Policy considerations**

This memorandum and the associated recommendations are consistent with the policy documents and positions adopted by this Council under various legislative frameworks including, but not restricted to, the *Local Government Act 2002*, the *Resource Management Act 1991* and the *Civil Defence Emergency Management Act 2002*.

## **Legal considerations**

This memorandum and the associated recommendations comply with the appropriate statutory requirements imposed upon the Council.

## **Appendices/Attachments**

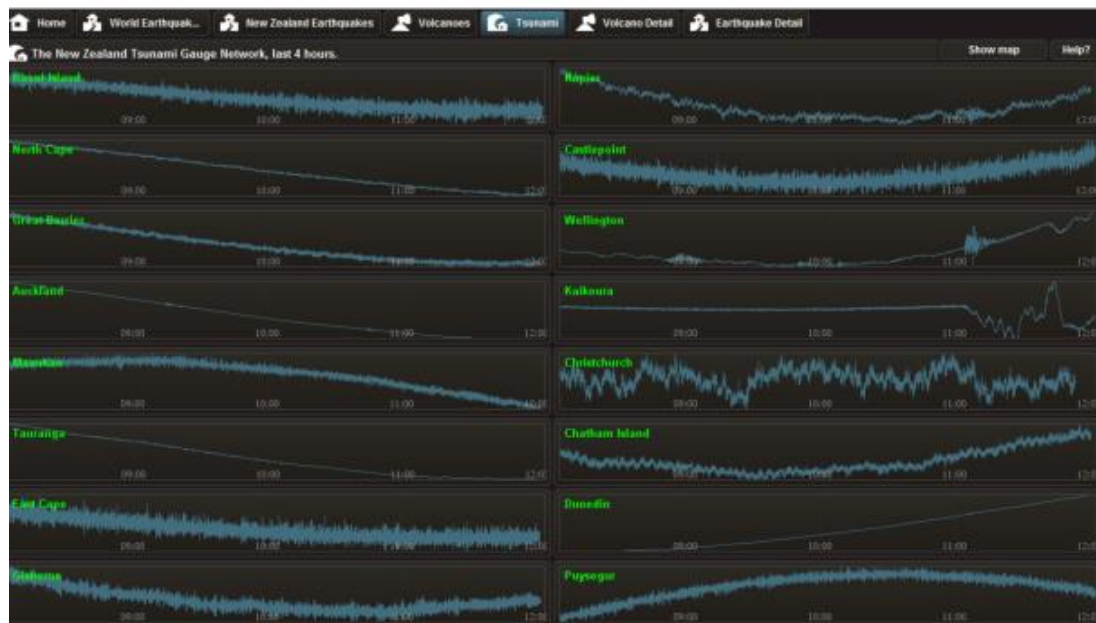
Document 1781428: *Councils' powers may be considered in Civil Defence review: Government Article from Stuff.co* 22 November 2016

Document 1782151: *Gerry Brownlee furious with GeoNet comments: Article from NZ Herald* 20 November 2016

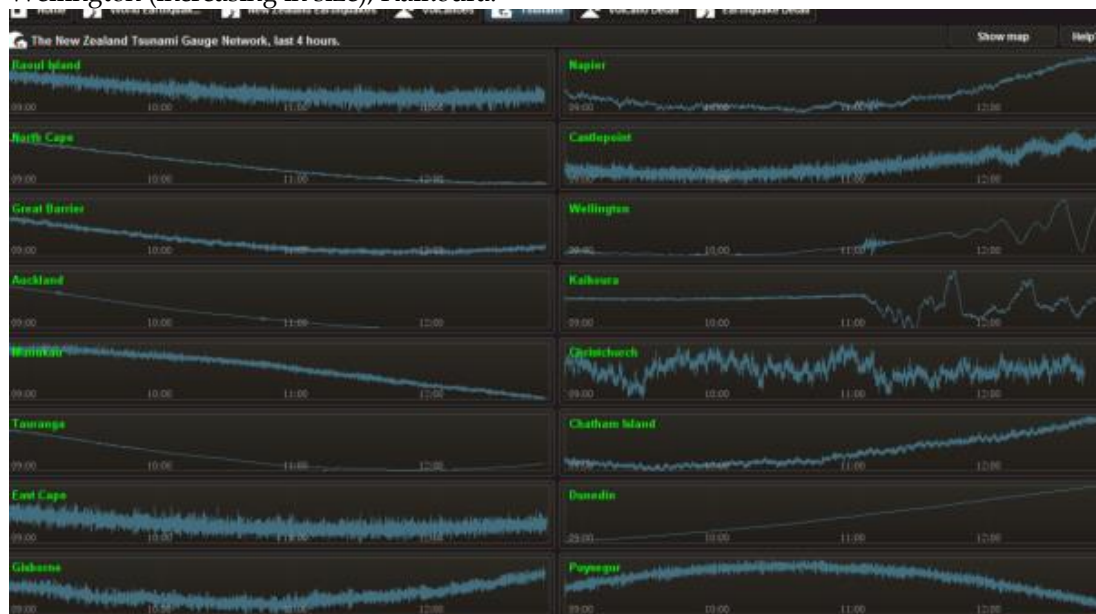
Document 1177345: *'The 2013 Solomon Islands tsunami in New Zealand'*, eCoast Ltd  
GeoNet tsunami network (sea level monitors) screen shots at 1, 2, 5, and 7 hours after the initial earthquake sequence

**GeoNet tsunami monitoring system screen capture.** The times shown are in UTC, so 13 hours need to be added to obtain NZ daylight saving time (ie 'clock' time).

Kaikoura earthquake strikes at figure 11.00; there are initial simultaneous disturbances of sea level at Wellington and Napier and very large sudden drop in sea level at Kaikoura; and then about 45 minutes later the tsunami strikes Wellington. The tsunami is about 3 metres high at Kaikoura; it is an hour or so after low tide at the time (depending on location). MCDDEM warns that a tsunami is 'possible'.



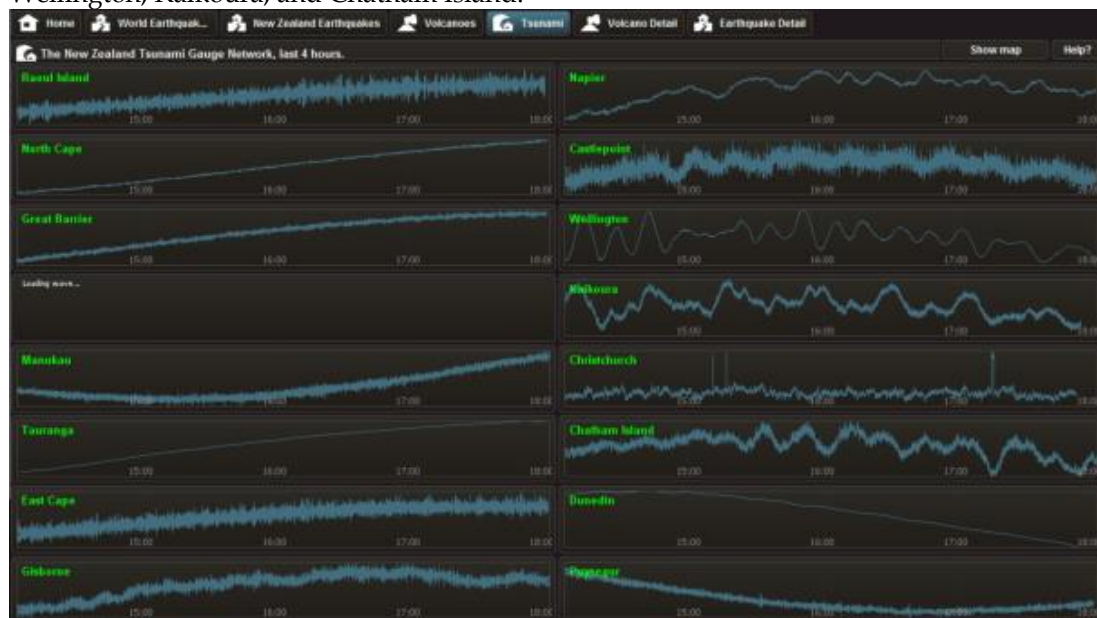
Sea levels **2 hours** after the initial earthquake. Tsunami effects at Castlepoint (Wairarapa), Wellington (increasing in size), Kaikoura.



Sea levels **5 hours** after the initial earthquake. Tsunami effects at Napier, Castlepoint, Wellington, Kaikoura, and Chatham Island



Sea levels **7 hours** after the initial earthquake. Tsunami effects at Napier, Castlepoint, Wellington, Kaikoura, and Chatham Island.





Print [nzherald.co.nz](http://nzherald.co.nz) Article

# The New Zealand Herald

## Gerry Brownlee furious with Geonet comments

By [Nicholas Jones](#) @nickjonesnzer  
5:55 PM Sunday Nov 20, 2016

Acting Civil Defence Minister Gerry Brownlee has blasted comments made by the head of Geonet – saying he feels blindsided.

Brownlee said he took issue with Dr Ken Gledhill, who works for GNS Science and heads its Geonet department, talking publicly about how better technology would help the service, when no approach had been made to the Government.

Brownlee said he would contact the leadership of GNS Science, including acting chief executive Neal Wai Poi, tomorrow and express that view.

That centred on the fact that Gledhill or his team had not made an approach or report to the Government about their view that a better monitoring system was desirable.

Gledhill spoke to media from the Beehive's civil defence bunker today. He said his team had a good idea of what system improvements could be made, but hadn't yet asked the Government to support those changes.

Prime Minister John Key this week said a national disaster warning system that would likely send a text to every cellphone in the country is not far away, and Gledhill said there were also technological improvements that would aid analysis that informed those alerts.

"Definitely. Can I use an analogy of a pilot sitting in the cockpit of an aircraft, and he's got all these gauges and dials and things around him. If we had a set-up like that – where all the data was being displayed, and easily can be assimilated, and we had a staffed centre, we would be different.

"At the moment it's a bit like each one of those gauges has to be brought up separately by the person using the system. So, yes, we can definitely improve it.

"I think at the moment we need to work out what is possible ... we have a pretty good idea how we could do everything better. But we haven't actually specifically asked [Government for funding]. There are projects underway which will address this."

Following the earthquake that struck the top of the South Island and tsunami threat, Gledhill used a blog post to reiterate the need for a 24/7 monitoring centre.

He said the existing situation was "not ideal" because "we have to wake people and get them out of bed to look at complex data and make serious calls very quickly".



John Key and Gerry Brownlee survey damage to the Kaikoura and Marlborough areas.

A full-time monitoring system would require eight more staff and some technological upgrades, and would take three years to set up, he said.

Brownlee has said a change to the monitoring system is possible, saying he wanted to discuss the matter with GNS Science.

"The question will be for GNS...how they think they should structure for the future. We will obviously talk to them about that. But I think simply...saying it has got to be 24/7, the question is, what would be the difference the other day?" Brownlee said on TVNZ's *Q&A* programme.

"Because if you look at [what international centres are saying] they are all saying, actually, this was a really interesting event, multiple faults rupturing at one time, very, very difficult to get a handle exactly on what was happening."

Labour leader Andrew Little has backed the call for an upgraded monitoring system, and said Brownlee shouldn't be "precious" about Gledhill's comments.

"He is talking about a very topical issue, which is that we are a country prone to earthquakes and yet the monitoring of that seems to be on a workday, business hours basis.

"However sensitive Gerry Brownlee might feel about a public servant speaking out, the reality is there is an issue there that has been highlighted."

Little said he believed Geonet would need at least two control centres, in case one was itself affected by a natural disaster.

New Zealand First leader Winston Peters said a broader inquiry into New Zealand's resilience to natural disasters was needed.

In a speech in Katikati yesterday, he called for a cross-party support for an inquiry which would look at everything from construction and infrastructure standards to the adequacy of emergency response services.

"The most recent serious earthquake directly impacted small towns and a relatively sparsely populated area of the country," Peters said.

"The next major earthquake could hit a major population centre as happened with the Christchurch earthquakes."

Shortly after the magnitude 7.8 earthquake early on Monday morning, GeoNet's first computer estimate was magnitude 6.5. After the duty officer arrived and reviewed data the magnitude was revised to 6.6.

Just over half an hour after the earthquake Civil Defence tweeted that there was no tsunami threat, but 20 minutes later tweeted that a tsunami was possible.

Gledhill said today that there were always lessons to learn after such events, but "it was actually responded to incredibly quickly by our duty person and the processes were followed really well".

"The tsunami turned out to be a surprise, and it wasn't a surprise just for us – my international colleagues, who I obviously talk to, they had the same issue.

"Large, on-land earthquakes do not usually cause tsunamis. We did not know that it had gone offshore, that was a big factor ... I don't think with the current setup we could really have done much better."

Gledhill stressed again that even the best monitoring centre might not have been quick enough for many coastal communities, and the best advice was that if you live near the ocean and feel a strong earthquake, head for higher ground immediately.

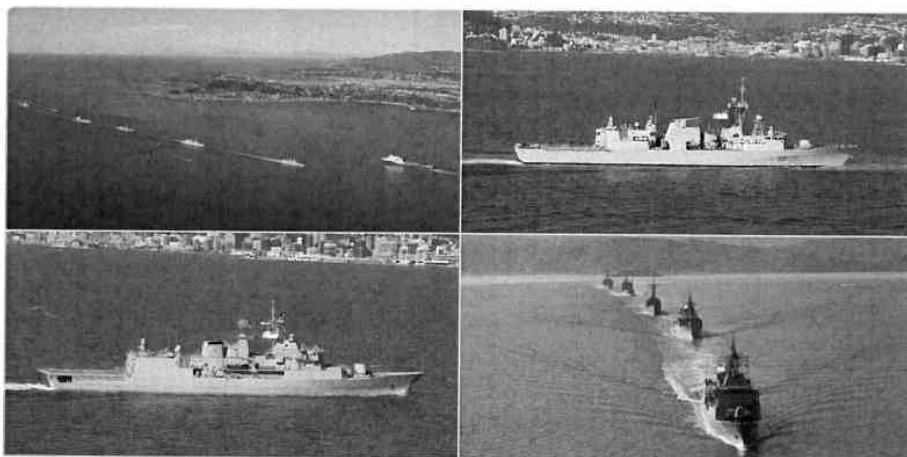
Other updates from today's briefing include:

- **Brigadier John Boswell from the NZ Defence Force** said they had identified 36 points along the inland road to Kaikoura that were of concern, with three proving "very difficult" to negotiate.

The road remains closed to the public. On Friday a 27-truck NZDF convoy got through. Another smaller convoy was on the road currently.

"As an indication of just how slow and difficult it is, it is taking them three hours to travel the first 60km. So they are moving at about 20km an hour. There are some real issues with that road."

Boswell said the NZDF hopes to use the inland road as the main way to get supplies and support to Kaikoura, but the HMNZS Canterbury was being kept at Lyttelton on standby, having delivered 190 evacuees to the port overnight.



**NZ Defence Force**  
@NZDefenceForce

Follow

We welcome our international friends to Wellington this morning!

10:15 AM - 20 Nov 2016

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The USS Sampson and other warships from Canada, Australia and New Zealand have travelled up the coast and will be in Wellington harbour for most of today, before going on to Auckland to join the New Zealand Navy's 75th birthday celebrations.

"It's an opportunity for the US Secretary of Navy and Ambassador [Mark Gilbert], the Acting Prime Minister and senior defence officials to thank those ships for the considerable support they have provided.

"That was absolutely critical. We would have struggled to unload Canterbury as quickly as we did without the efforts of those four ships."

• **Dr Stewart Jessamine from the Ministry of Health** said boil water notices were still in place in earthquake-affected areas, and there was always a risk of gastroenteritis disease.

There had been about six reports in the past week of gastroenteritis disease, but these were contained and there was no outbreak, Jessamine said.

"The last one started about two or three days ago. All the patients are well, we've got no evidence of it being transmitted within the community."

The Ministry of Health was aware of people taking raw milk from farms that would otherwise have to throw the milk away.

"Our only advice in that space is ... there is always a risk that that might be infected as well with bacteria from the cows. So if you are going to drink it, boil it up to 70 degrees for a minute." The experience with the Canterbury earthquakes made it clear that after the initial response, attention would need to turn to mental health issues.

By [Nicholas Jones](#) @nickjonesnzer

– [NZ Herald](#)

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## **Councils' powers may be considered in Civil Defence review: Government**

SAM SACHDEVA AND MICHAEL HAYWARD

Local councils' powers to control how they handle disasters may be reconsidered in a review of Civil Defence's structure, the Government says.

The Ministry of Civil Defence and Emergency Management (MCDEM) and local Civil Defence groups have come under fire for their response to last week's earthquake and the tsunami warnings it triggered.

Residents in Napier, Wellington, Christchurch and Southland have complained about mixed messages regarding the tsunami risk, with a lack of clarity around which areas needed to evacuate and why sirens were not sounded.

Under the current Civil Defence structure, local Civil Defence groups – formed of elected councillors within a region – are in charge of handling the response to an emergency, with support from MCDEM.

A [2012 review](#) of Civil Defence's response to the February 2011 earthquake in Christchurch recommended that local authorities no longer have power to control the response to emergencies, while still keeping the power to declare them.

The MCDEM director at the time, John Hamilton, said the change was not necessary, despite highlighting "tensions" within the Canterbury Civil Defence group before they deadly quake.

Acting Civil Defence Minister Gerry Brownlee said he would not start planning any review until "we get some clear space" from response efforts.

"We're not going to divert any of the resources of Civil Defence, or other agencies of state quite frankly... while we're dealing with something that has to be our absolute priority." However, asked whether the Government would reconsider the recommendation regarding local councils' powers, Brownlee said, "We've got to look at it."

### **'CUMBERSOME' STRUCTURES QUESTIONED**

The layers of communication between scientists, MCDEM and local authorities in some areas, such as tsunami alerts, was a concern, he said.

"The science is firstly conveyed by GNS to Civil Defence, Civil Defence then makes the call and conveys that to the local authorities who then have the responsibility to issue the warnings – now, just saying that sounds cumbersome, so there's a lot to sort out there just yet."

Brownlee did not believe Hamilton was wrong to advise against making the change following the Christchurch earthquakes, given most "disasters" in New Zealand were regional in nature.

#1781428

"If you have a river burst its bank or a big slip somewhere, it will affect a very small number of people."

"In this case, we've got a number of problems that are across a very large geographical chunk of New Zealand, and each area is handling it a little differently."  
Councils could not be shut out of any Civil Defence structure given the importance of their staff, Brownlee said.

#### LOCAL KNOWLEDGE IMPORTANT - MAYOR

Hurunui Mayor Winton Dalley said local people were in the best position to make local decisions, using local knowledge such as the location of vulnerable people.  
"We would have been able to service our community better, more quickly, if we'd had the ability to make decisions at a local level."

For events such as a tsunami, there was a reliance on national information as there wasn't a local ability to judge risk, but immediate responses to an event had to start local or "nothing happens for a period of time", Dalley said.

MCDEM director Sarah Stuart-Black said the ministry's focus was still on public safety and community wellbeing, but work on a review could start within weeks. Stuart-Black would speak to Brownlee about the terms of reference for any review, but said it would be best if it was as wide as possible.

"We need to look at issues across the whole response effort rather than ending up with something that's quite narrow."

The local response from individual Civil Defence organisations was likely to be examined, she said.

-Stuff





## The 2013 Solomon Islands Tsunami in New Zealand

by Jose Borrero, eCoast Ltd

On 6 February 2013, an 8.1 magnitude earthquake struck the Solomon Islands. The undersea earthquake's epicentre was about 75 km west of Lata on Nendo Island, the largest of the Santa Cruz Islands group in the Temotu province of the Solomon Islands. The earthquake occurred on the interface where the Australian plate subducts beneath the Pacific plate.

Following the earthquake, the Pacific Tsunami Warning Centre put many of the countries in the southwest Pacific on a tsunami alert. The Solomons, Papua New Guinea, Vanuatu, Fiji and several other islands were under a tsunami warning, while Australia, New Zealand, and eastern Indonesia were under a tsunami watch.

The earthquake generated a tsunami which was measured on tide gauges throughout the region. At Lata, the tsunami was measured with a maximum peak-to-trough wave height of more than 1.8 m. Video footage taken during and after the tsunami showed damage and inundation suggestive of runup heights of at least 3 to 5 m – values later confirmed by tsunami researchers who visited the area. Smaller tsunami surges also affected parts of Vanuatu and New Caledonia.

In all, 13 people were reported killed and five people remain listed as missing with thousands made homeless after hundreds of homes and buildings were washed away or badly damaged.

Here in New Zealand, members of the New Zealand Tsunami Experts Panel (TEP) monitored the situation and provided technical support to New Zealand Civil Defence throughout the event. Based on the size and location of the earthquake, it was clear that no large-scale threat existed for the New Zealand coast. The possibility of a potential marine and beach threat was discussed, however, and the TEP suggested that late arriving surges and associated currents should be expected, particularly along the west coast between Taranaki and Milford Sound.

Computer simulations conducted as the tsunami was en route from the source region to New Zealand also suggested relatively small wave heights, as shown in Figure 1. This was confirmed as tsunami waves first arrived in the evening (~8:30 pm NZDT) of

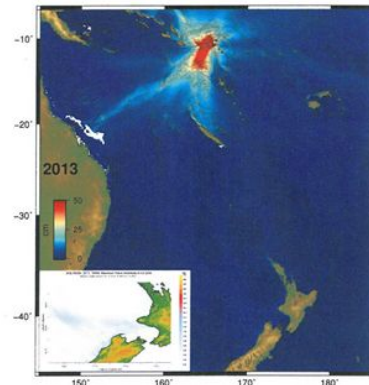


Figure 1: Maximum computed wave heights across the southwest Pacific and Tasman Sea resulting from the 6 February 2013 earthquake in the Solomon Islands. Inset map shows computed wave heights off the west coast of New Zealand (Modelling done by Jose Borrero, eCoast Ltd).

6 February and peaked in the early morning hours of 7 February (Figure 2). At Port Taranaki, the largest waves had peak-to-trough heights of ~0.28 m (Rob Bell, NIWA, pers. comm.). The tsunami signal was also monitored in real time by Mulgor Consulting ([www.mulgor.co.nz/LWNZPorts/](http://www.mulgor.co.nz/LWNZPorts/)), which clearly shows the tsunami energy arriving at levels well above background noise at both Port Taranaki and Port Nelson.

Looking back at Figure 1, note that most of the tsunami wave energy is directed into northern New Caledonia and mostly blocked from the Tasman Sea with a secondary lobe of energy directed towards the Great Barrier Reef. This is different to what occurred in 2007, when a similarly sized earthquake struck about 500 km further west in the Solomon Islands, near Gizo.

The 2007 event (Figure 3) was positioned such that more energy was pushed southwards into the Tasman Sea, eventually causing maximum wave heights at Port Taranaki approximately twice as large (0.60 m) as those during the 2013 event and was greatest at Charleston near Westport (1.1 m). This is due partly to the focusing of the wave energy along the relatively shallow bathymetric feature known as the Lord Howe Rise which runs from the Coral Sea into the west coast of New Zealand (Figure 4).

This phenomenon – where wave energy is concentrated along a bathymetric feature – is called “wave guiding” and is important in trans-oceanic tsunami propagation. Wave guides are a major factor in why places like Crescent

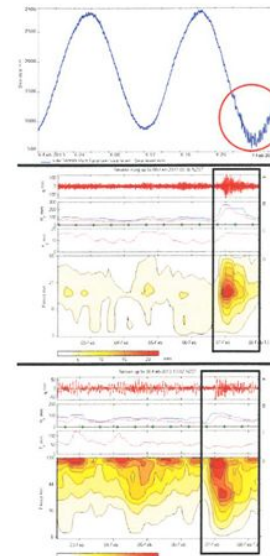


Figure 2: (top) Tide gauge record from the Port of Taranaki for the 2013 tsunami (time in d hh: mm: ss NZST). The red circle indicates the tsunami signal. Peak wave heights occurred just after midnight on 7 February and coincided with low tide. Data provided by Port Taranaki Ltd and analysed by Rob Bell, NIWA. Long wave records from Port Taranaki (middle) and Port Nelson (bottom) clearly show the arrival of the tsunami. Data provided by Port Taranaki Ltd and Port Nelson Ltd and analysed by Derek Goring, Mulgor Ltd.

City, California are more likely to be affected by tsunamis.

The implications of these tsunami events in the context of New Zealand suggests that a large earthquake (magnitude 8.5 or higher) occurring on the South Solomon Trench east of the 2007 earthquake's epicentre would be capable of producing significant surges, strong currents in harbours, and inundation of low-lying areas along the west coast of New Zealand.

Scenarios such as this are included in an ongoing research project funded through New Zealand's Natural Hazards Research Platform that looks specifically at tsunami effects in New Zealand ports and harbours. This study is being conducted by eCoast in conjunction with Mulgor Consulting, GNS Science and the University of Auckland and is due to be completed in 2015.

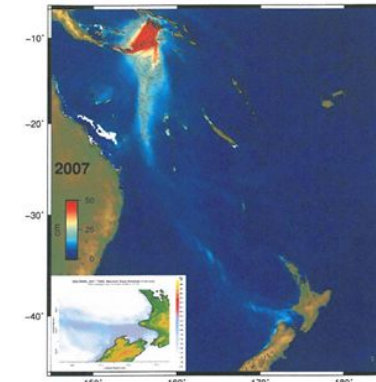


Figure 3: Maximum computed wave heights across the southwest Pacific and Tasman Sea resulting from the 1 April 2007 earthquake in the Solomon Islands. Inset map shows computed wave heights off the west coast of New Zealand (modelling done by Jose Borrero, eCoast Ltd).

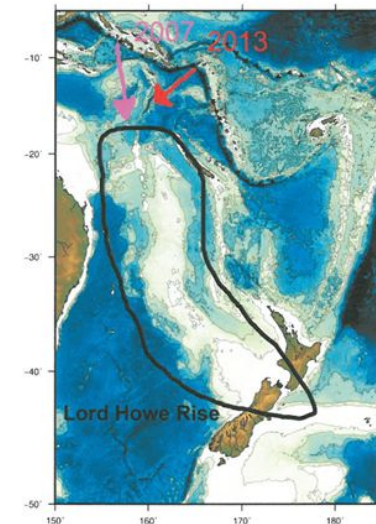


Figure 4: The bathymetry of the southwest Pacific and Tasman Sea showing the location of the 2007 and 2013 earthquakes relative to the Lord Howe Rise.

As Life Members John Duder, Terry Hume, and John Lumsden reminded us at the 20th annual conference: “The cure for anything is salt water – sweat, tears, or the sea.”

– Isak Dinesen



## Agenda Memorandum

**Date** 29 November 2016



**Memorandum to  
Chairperson and Members  
Taranaki Civil Defence Emergency Management Group**

**Subject: GeoNet seismic monitoring network  
report for 2015/2016**

**Item:** 7

**Approved by:** G K Bedford, Director – Environment Quality  
B G Chamberlain, Chief Executive

**Document:** 1781179

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### Purpose

The purpose of this memorandum is to present the annual report for the 2015/2016 year on the GeoNet seismic monitoring network for Taranaki. A copy of the report is attached separate to this agenda. Dr Brad Scott of GNS will be making a presentation during today's meeting.

### Executive summary

The CDEM Group commissions and receives a report each year from GNS reviewing and interpreting the data from the GeoNet seismic activity monitoring network that is of relevance to Taranaki. This is over and above the publicly available information provided through the GeoNet website.

During the period July 2015 to June 2016, 241 earthquakes in Taranaki were detected and recorded for cataloguing, using the new GeoNet Rapid system. This accounts for about 1% of the earthquake nation-wide in a typical year (as compared with Taranaki representing 2.7% of New Zealand's land area). Patterns of seismic activity followed those seen in previous years- a shallower NE-SW band along the coastline and near off-shore west of Mt Taranaki; a cluster centred NE of Stratford; and deeper (>100 km) earthquakes in SE Taranaki.

Since 2011/2012 there has been a change in the way seismic events are recorded and analysed, with GeoNet Rapid. It is noted that this system speeds the reporting of larger events, but with some loss of sensitivity of much smaller events (well below human perception).

The GeoNet system also detects ground deformation and regional movement. Taranaki is drifting northwards at a rate of about 4 cm per year, but is not showing evidence of twisting or distorting internally.

This memo also notes some matters about enhancing the network's performance and usefulness for Taranaki that have been raised with GNS. Another memo in today's agenda



outlines a number of broader concerns that have emerged post the Kaikoura earthquakes and tsunami.

### **Recommendation**

That the Taranaki Civil Defence Emergency Management Group:

1. receives the 2015/2016 annual report for the GeoNet seismic monitoring network for Taranaki

### **Background**

Although not as seismically active as other regions, Taranaki is still subject to 200-300 earthquakes each year [the vast majority too small for the community to feel] and of course Mt Taranaki is a dormant volcano. Should there be volcanic activity elsewhere in the North Island, Taranaki would be particularly affected also.

In 2010 it was noted that scientists of the Institute of Geological and Nuclear Sciences Ltd [GNS] had advised that while New Zealand had not experienced major disruption from earthquake activity since the 1930s-1940s, historical evidence and scientific research showed that this was a rather unusual lull and the risk was higher than more recent experience might lead people to believe. Since then, there has of course been the sequence of earthquakes in Christchurch, a more recent Seddon/NE South Island sequence, and now in the last couple of weeks the Kaikoura sequence with its attendant widespread damage that has both brought a new awareness and also brought the 'lull' to an end.

The GeoNet network in Taranaki for the detection of seismic activity was established in 1993, and began generating useable data in 1994. The network was established with the assistance of funding provided by the Taranaki Regional Council, STOS, and MCDEM, with support from DSIR, and it is now run and funded by GNS, with maintenance support from the TRC. Initially, its primary focus was on the detection of seismic movement associated with volcanic activity.

The CDEM Group Plan for Taranaki specifies as one target, that there should be a network to monitor seismicity recorded within the vicinity of Mt Taranaki/Egmont for precursor signs of volcanic eruption. The actions arising from this target are that there will be '*continued maintenance of the Taranaki Volcano-Seismic Network to ensure effective monitoring of seismic activity and the activation of early warnings*'; and '*continuation of seismic monitoring in conjunction with the GeoNet programme run by the Institute of Geological and Nuclear Sciences*'

### **Discussion**

Over the last decade GNS and Council staff have liaised on providing and then maintaining an expanded capacity for the region. A memorandum of understanding for the interim and the upgrade, covering commitment, co-ordination, support and the provision of data was signed on 13 July 2007.

The upgraded network includes new motion, deformation, and displacement detection and recording technology, data communication networks that are more robust and of greater capacity, and more modern data management and interpretation systems. The planned upgrades have been implemented in Taranaki and have included 3 new sites (in addition to the 6 already in use, some of which have been re-located) and upgraded equipment at the existing sites, to give more accurate detection and location of seismic activity in the region, together with more reliable transfer of data and enhanced data analysis capability.

Data and its analysis from GeoNet is reported annually to the CDEM Group, and CDEM staff are alerted to any unusual or heightened activity occurring anywhere in New Zealand in as close to real time as technically possible. Data is also available publicly on the GNS website. The CDEM Group commissions a more detailed report for the region annually, reviewing and interpreting the annual data, and assessing any evidence of state of or trends in seismic and volcanic activity against the historical record, for the benefit and information of CDEMG.

This data and reports significantly inform the Taranaki CDEM Group understanding of earthquakes, volcanic eruptions, tsunami, and landslides regionally and nationally.

The Taranaki Seismic and Volcanic Advisory Group meets annually to review the GNS report and to receive a briefing on volcanic research being undertaken in New Zealand. The TSVAG consists of representation from the universities of Auckland and Massey, GNS, DoC Taranaki, MCDEM, and Taranaki CDEM. The group considers the reports and any matters or issues arising. For the information of the CDEM Group, it is noted that following the last meeting a couple of matters were identified as important to be pursued with GNS, in terms of improving the value of the GeoNet monitoring network to the Taranaki region. The Group will also note the commentary elsewhere in today's agenda concerning the state of tsunami detection and alerting in New Zealand generally, some of which are of particular interest and relevance to Taranaki.

### **Decision-making considerations**

Part 6 (Planning, decision-making and accountability) of the *Local Government Act 2002* has been considered and documented in the preparation of this agenda item. The recommendations made in this item comply with the decision-making obligations of the *Act*.

### **Financial considerations—LTP/Annual plan**

This memorandum and the associated recommendations are consistent with the Council's adopted Long-Term Plan and estimates. Any financial information included in this memorandum has been prepared in accordance with generally accepted accounting practice.

### **Policy considerations**

This memorandum and the associated recommendations are consistent with the policy documents and positions adopted by this Council under various legislative frameworks including, but not restricted to, the *Local Government Act 2002*, the *Resource Management Act 1991* and the *Civil Defence Emergency Management Act 2002*.

### **Legal considerations**

This memorandum and the associated recommendations comply with the appropriate statutory requirements imposed upon the Council.

### **Appendices/Attachments – separate report**

[Document 1766792: Taranaki Seismic and ground Deformation Monitoring: July 2015 to June 2016 \(GNS\)](#)

Document 1763415: Letter to GNS requesting GeoNet monitoring network upgrade

19 October 2016  
Document: 1763415

Ken Gledhill  
Director  
Institute of Geological & Nuclear Science Ltd  
PO Box 30368  
LOWER HUTT 5040

Dear Ken

## **TARANAKI SEISMIC AND VOLCANIC ADVISORY GROUP**

At its annual meeting yesterday the Taranaki Seismic and Volcanic Advisory Group was pleased to receive and discuss the usual Annual Report on GeoNet Monitoring of Seismic and Volcanic Activity in the Taranaki Region.

The Group is always keen to see that monitoring is as effective and informative as is practicable given advances in modern technology. To this end the Group noted that the current scale of the network within Taranaki remains inadequate for rapid automated determination of seismic events detected by the GeoNet system that is now available elsewhere. It is understood that a minimum of ten seismographs is necessary for effective calculation whereas the Taranaki network consists of only nine. The Group has asked that I write to you advocating for an expansion of the network within Taranaki.

A second matter that the Group has asked me to pursue with you is consideration of the installation of further ground deformation monitoring stations. In particular, the Group noted that the location of the three current stations does not give good straddling of the north east/south west fault line running through Mount Taranaki, and believes that the installation of two further units located perpendicular to this fault line would significantly enhance the capabilities of this network to detect tectonic movement.

I urge you to give this favourable consideration in the determination of the Institute's work programmes.

Yours faithfully  
BG Chamberlain  
**Chief Executive**

A handwritten signature in blue ink, appearing to read 'Gary Bedford', is written over the printed name of the Director - Environment Quality.

per: G K Bedford  
**Director - Environment Quality**

## Agenda Memorandum

**Date** 29 November 2016



**Memorandum to  
Chairperson and Members  
Taranaki Civil Defence Emergency Management Group**

**Subject: Proposed CDEM Group submission on  
New Plymouth District Council draft  
District Plan**

**Item:** 8

**Approved by:** G K Bedford, Director-Environment Quality  
B G Chamberlain, Chief Executive

**Document:** 1779039

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### Purpose

The purpose of this memorandum is to provide a summary of the submissions developed on behalf of the CDEM Group in response to the New Plymouth District Council draft District Plan and to receive the Group's endorsement of, or amendments to, the draft submissions.

### Executive summary

The Resource Management Act 1991 (RMA) requires all territorial councils to review their District Plans every 10 years and the New Plymouth District Council is currently underway with this process. To test whether it is on the right track, New Plymouth District Council has released a draft District Plan for informal consultation, and feedback is due by Friday 16 December 2016.

Submissions have been prepared on behalf of the Taranaki CDEM Group in respect of its functions and responsibilities under the Civil Defence Emergency Management Act 2002 (the Act) and its commitment to support improved delivery of civil defence emergency management at the district level and in particular, disaster risk reduction. The submission is supportive of the draft District Plan and of the work being undertaken by the Council to control land use and development, including in the coastal area. It commends the pre-plan consultation process undertaken by the Council. The Group notes in the submission that it hopes to work through any matters of concern via the pre-hearing process.

Some submissions are in respect of proposed changes to the RMA by the Resource Legislation Amendment Bill, which is in the Select Committee phase of the legislative process, and expected to be enacted in late 2016 or early 2017. The RLA Bill proposes to raise "the management of significant risks from natural hazards" to a Section 6 matter – which gives the matter national importance. Although it is not possible for the Group to know the outcome of the RLA Bill's progress through the House at this time, the submission requests

that the Council reflect the appropriate statutory requirements that will prevail at the time the Bill is passed into law. Other corresponding changes in the RLA Bill to subdivision processes and hazardous substance functions of the Council are also the subject of minor submissions.

Other requests made in the submission and summarized in this memorandum include the need for the District Plan to acknowledge and provide for risk management measures across the 4Rs and the list of hazards referred to in the CDEM Group Plan for Taranaki (under review). Just as importantly, it is an appropriate time for the Plan to reflect the local operational responsibilities proposed for the Council, under the new CDEM Group delivery arrangements proposed for the region. Other matters include submissions on five specific areas of the plan: Living and Working Environments – Infrastructure and Connectivity; Natural Environments – Natural Hazards; District-wide Activities – Subdivision; District-wide Activities – Hazardous Substances; and District-wide Activities – Network Utilities.

## **Recommendations**

That the Taranaki Civil Defence Emergency Management Group:

1. receives for their endorsement the *Proposed CDEM Group submission on New Plymouth District Council draft District Plan*;
2. notes the summary of the submission's key points in the memorandum; and
3. agrees that the submissions (*/amended as follows....*) will be provided to New Plymouth District Council on the Group's behalf within the required timeframe.

## **Background**

The Resource Management Act 1991 (RMA) requires all territorial councils to review their District Plans every 10 years. The RMA requires the District Plan to sustainably manage the natural and physical resources of the district to provide for the social, economic, and cultural wellbeing of New Plymouth citizens, and for their health and safety. The current District Plan became operative in 2005 and was the first Plan prepared under the RMA.

In June 2015 the New Plymouth District Council (the Council) and the community adopted a joint 'District Blueprint'. This document contains eight key directions that will be the Council's planning focus for the next 30 years, and will guide the District Plan review, among other things. The Council's draft Plan is also focused on providing for the perspectives of tangata whenua.

To test whether the draft District Plan is on the right track, New Plymouth District Council has released a draft District Plan for informal consultation. Submissions have been prepared on behalf of the Taranaki CDEM Group in respect of its functions and responsibilities under the Civil Defence Emergency Management Act 2002 (the Act) and its wish to support improved regional civil defence emergency management and in particular, disaster risk reduction.

Feedback on the draft is due by Friday 16 December 2016.

## Summary of submission

The submission is supportive of the draft District Plan and of the work being undertaken by the Council to control land use and development, including in the coastal area. The Group also commends the pre-plan consultation process undertaken by the Council. The Group notes in the submission that it hopes to work through any matters of concern via the pre-hearing process.

## General matters

Under the Resource Management Act 1991 ('the RMA'), every territorial authority must provide for 'the avoidance or mitigation of natural hazards'. The Resource Legislation Amendment Bill ("the RLA Bill"), which proposes some changes to the RMA, is currently moving through the legislative process and is in the Select Committee stage.

The RLA Bill proposes to raise "the management of significant risks from natural hazards" to a Section 6 matter – which gives the matter national importance. If the RLA Bill is enacted as currently drafted the Council must "recognise and provide for" a higher degree of provision than previously required and this changes the management emphasis from natural hazards *per se*, to the "management of significant risks" from natural hazards. The Group considers that this increase in status and change in emphasis needs to be reflected in the draft District Plan.

Although it is not possible for the Group to know the outcome of the RLA Bill's progress through the House at this time, the submission requests that the Council reflect the appropriate statutory requirements that will prevail at the time the Bill is passed into law.

The submission also requests that the District plan acknowledge and address the need for practicable risk management measures across all of the 4Rs (reduction, readiness, response and recovery) in respect of the natural hazards identified at the recent Taranaki Civil Defence and Emergency Management Group Plan Risk Assessment Workshop. The list of hazards (see submission) will be included in the draft CDEM Group Plan for Taranaki, due to be notified in 2017, and will direct all emergency management work over the next five years.

The Submission notes that several of the listed hazards are infrastructure-related, or human-made hazards, and the emergency response in each such case will be led by other government agencies. However, in giving effect to the new CDEM Group delivery arrangements proposed for the region, the New Plymouth District Council will be responsible for a local operational response, in support of the lead agencies, within its area.

In terms of risk reduction, the submission suggests that the Council increase the level of information its website and public resources provides about how individual and communities can reduce their risk of, and vulnerability to, a disaster, and to increase their preparedness.

The Group's submission focuses on five specific parts of the draft District Plan as follows:

### **Living and Working Environments – Infrastructure and Connectivity**

The submission requests that reference is made in the Draft Plan to the vital role that transport routes and infrastructure play in providing evacuation routes and transport of essential supplies. It requests that the Council considers including recognition of natural hazards within the policy related to design, provision, maintenance and location of infrastructure. It also requests that the Council consider inserting a policy or policies to provide for and manage the safety of major built infrastructure in the district, such as dams and water scheme assets.

### **Natural Environments – Natural Hazards**

The Group requests that the introduction to this section is amended to include landslide (as distinct from river bank erosion), tsunami (as distinct from coastal inundation), severe wind, and severe storms or cyclones. These additional natural hazards were named as some of the top 15 hazards affecting the region in the recent risk management workshop. The Group attaches an inventory of hazard information and research, The *'Summary of Hazard Information and Research for the Taranaki CDEM Group Region'*, for the Council's reference, to support its request.

### **District-wide Activities – Subdivision**

The Group notes that if Section 106 of the RMA is amended as currently proposed by the RLA Bill, a consent authority may refuse subdivision consent in certain circumstances, including where there is a significant risk from natural hazards (s 133(1)(a)).

The Group requests that both policies in this section be reconsidered, and possibly extended, to include provisions for volcanic hazards and for wind loading or bracing zones or alternatively, to refer to the list of hazards set out in the CDEM Group Plan for Taranaki (under review).

### **District-wide Activities – Hazardous Substances**

Under the Resource Management Act 1991 ('the RMA'), every territorial authority must provide for 'the prevention or mitigation of any adverse effects of the storage, use, disposal, or transportation of hazardous substances'. The submission supports the approach that New Plymouth District Council has taken in respect of hazardous substances.

The RLA Bill proposes to remove the control of hazardous substances as an explicit function of local authorities to prevent duplication of regulations under the Hazardous Substances and New Organisms Act 1996 (HSNO Act). Because of the uncertainty around this proposal, the submission requests that the Council reflect the appropriate statutory requirements at the time the Bill is passed into law.

### **District-wide Activities – Network Utilities**

Pursuant to the CDEM Act 2002, entities defined in Schedule 1 as "lifeline utilities" have statutory civil defence and emergency management responsibilities. This includes airports and ports; any gas and electricity producer, supplier, or distributor; any entity that supplies or distributes water or provides a waste water or sewerage network, an entity that provides

a telecommunications, roading, or rail network; or an entity that produces, processes, or distributes petrol or other petroleum product.

Because of its water, waste water and roading responsibilities, the Council is a designated “lifeline utility” under the Act. The Council is also a “local authority”, which must plan and provide for civil defence emergency management within its district. Under the Act, a local authority must ensure that it is able to function to the fullest possible extent, even though this may be at a reduced level, during and after an emergency.

The submission requests the Council add some text to acknowledge their CDEM roles and responsibilities, as both a local authority and a lifeline utility entity. In addition, the submission requests that natural hazard zones, in particular flood and volcanic hazard zones, should be avoided for the location of any new network utilities, and that network utilities should be managed to avoid hazard risk as much as possible.

### **Conclusion**

The submission requests that the matters raised by the Group be considered during the next phase of the *Draft District Plan* review process. Officers of Taranaki CDEM are happy to discuss and explore any of the matters raised, with staff of the Council. Feedback on the draft Plan is due by Friday 16 December 2016.

### **Decision-making considerations**

Part 6 (Planning, decision-making and accountability) of the *Local Government Act 2002* has been considered and documented in the preparation of this agenda item. The recommendations made in this item comply with the decision-making obligations of the *Act*.

### **Financial considerations—LTP/Annual plan**

This memorandum and the associated recommendations are consistent with the Council’s adopted Long-Term Plan and estimates. Any financial information included in this memorandum has been prepared in accordance with generally accepted accounting practice.

### **Policy considerations**

This memorandum and the associated recommendations are consistent with the policy documents and positions adopted by this Council under various legislative frameworks including, but not restricted to, the *Local Government Act 2002*, the *Resource Management Act 1991* and the *Biosecurity Act 1993*.

### **Legal considerations**

This memorandum and the associated recommendations comply with the appropriate statutory requirements imposed upon the Council.

### **Appendices/Attachments**

Document #1775924: Letter to the Chief Executive Officer of the New Plymouth District Council providing submission on the New Plymouth District Council Draft District Plan



Document #1685675: Taranaki CDEM Group, 2016, *Summary of Hazard Information and Research for the Taranaki CDEM Group Region*

29 November 2016  
Document: 1775924

The Chief Executive Officer  
New Plymouth District Council  
Private Bag 2025  
**NEW PLYMOUTH 4342**

Attention: The Planning Manager

Dear Sir/Madam



Office: 06 758 1110  
Freephone: 0800 900 049  
45 Robe Street  
New Plymouth 4310

Postal address:  
c/- Taranaki Regional Council  
Private Bag 713  
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### Submission on the New Plymouth District Council Draft District Plan

1. The Taranaki Civil Defence and Emergency Management Group ('the CDEM Group') thanks the New Plymouth District Council for the opportunity to make a submission on the New Plymouth City Council Draft District Plan.
2. The Group makes this submission in view of its functions and responsibilities under the Civil Defence Emergency Management Act 2002 ('the Act') and its wish to support improved regional civil defence emergency management and in particular, disaster risk reduction.
3. The Group supports the work being undertaken by the New Plymouth District Council to control where activities and development can locate in the district, and how land can be used and developed, including management of the coastal area.
4. The Group commends the pre-plan consultation process undertaken by the New Plymouth District Council. The Group notes that there are some matters it wishes to raise and it hopes to work through these matters via the pre-hearing process.

### General matters

5. The Group understands that, under the Resource Management Act 1991 ('the RMA'), it is a function of every territorial authority to provide for 'the avoidance or mitigation of natural hazards' and 'the prevention or mitigation of any adverse effects of the storage, use, disposal, or transportation of hazardous substances'.
6. As you may be aware, the Resource Legislation Amendment Bill ("the RLA Bill") proposes to raise "the management of significant risks from natural hazards" to a Section 6 matter – a matter of national importance. If the RLA Bill is enacted as currently drafted the Council must "recognise and provide for" a higher degree of provision than previously required and this changes the management emphasis from natural hazards *per se*, to the "management of significant risks" from natural hazards. The Group considers that this increase in status and change in emphasis needs to be reflected in the draft District Plan.

7. Discussions with Ministry for the Environment officials have indicated that this proposal is one of the most widely supported. The corresponding changes to section 106 regarding consideration of natural hazards in subdivision consents was also generally supported by submitters on the RLA Bill, which is likely to go through its 2<sup>nd</sup> and 3<sup>rd</sup> reading either late 2016 or early 2017.
8. As it is not possible for the Group to know the outcome of the RLA Bill's progress through the House at this time, the Group requests that the Council reflect the appropriate statutory requirements that will prevail at the time the Bill is passed into law.
9. The Group also would like to see the District plan acknowledge and address the need for practicable risk management measures across all of the 4Rs (reduction, readiness, response and recovery) in respect of the natural hazards identified at the recent Taranaki Civil Defence and Emergency Management Group Plan Risk Assessment Workshop:

#	Hazard
1	Volcanic: Taranaki
2	Infectious Human Disease & Pandemics
3	Flooding
4	Earthquake
5	Severe Storm/Cyclone
6	Terrorism
7	Severe Wind
8	Animal Epidemic
9	Coastal erosion / flooding
10	Plant & Animal Pests Incursion
11	Volcanic: Distant Ash fall
12	Infrastructure Failure: Dam
13	Infrastructure Failure: Water Supply
14	Tsunami
15	Landslide

10. This list of hazards will be included in the draft CDEM Group Plan for Taranaki, which will be notified in 2017, and will direct all emergency management work over the next five years.
11. Several of the listed hazards are infrastructure-related, or human-made hazards, and the emergency response will be led by other government agencies. However, if the event is large enough, the Group may coordinate a response for the economic and social benefit of the district. In giving effect to the new CDEM Group delivery arrangements proposed for the region, the New Plymouth District Council will be responsible for a local operational response, in support of the lead agencies, within its area.
12. In terms of the District Blueprint, the Group submits that a risk management objective could usefully come under the 'Citizens' key direction, as the outcome is stated as "Enable engaged and resilient citizens". One of the objectives of the Group is to enable citizens to increase their resilience to disasters, and the effects of disasters, as a further way of encouraging connectedness and well-being.

13. In relation to disaster risk reduction, the Group requests that the New Plymouth District Council increase the level of information its website and public resources provides about how individual and communities can reduce their risk of, vulnerability to, and preparedness for, a disaster. This work may be part of policies or plans on how the Council will undertake its CDEM function in the district.
14. At a more specific level, the Group's submission focuses on five specific parts of the draft District Plan as follows:
  - a. Living and Working Environments – Infrastructure and Connectivity;
  - b. Natural Environments – Natural Hazards section;
  - c. District-wide Activities – Subdivision;
  - d. District-wide Activities – Hazardous Substances; and
  - e. District-wide Activities – Network Utilities

#### **Living and Working Environments – Infrastructure and Connectivity**

15. The Group supports the approach taken by the New Plymouth District Council in respect of the infrastructure and connectivity section of the draft district plan.
16. The Group requests that reference is made to the vital role that transport routes and infrastructure play in providing evacuation routes and transport of essential supplies into and around the region, especially during, or after an emergency event. The Group requests that these matters are included in the objectives and policies in the Infrastructure and Connectivity section of the draft plan.
17. The Group also requests that New Plymouth District Council considers natural hazards within the policy related to design, provision, and maintenance of infrastructure (IC-P5). The Group comments that such consideration may be particularly important in the location of piping networks needed to transport water, waste water, electricity, gas and telecommunications.
18. In addition the Group notes that the table of top 15 hazards shown above places 'infrastructure failure: Dam' and "infrastructure failure: Water supply" as number 12 and 13 respectively. The Group asks the New Plymouth District Council whether a policy or policies may be needed to provide for and manage the safety of major built infrastructure in the district, such as dams and water scheme assets.

#### **Natural Environments – Natural Hazards**

19. The Group supports the general approach taken by the New Plymouth District Council to natural hazards and the objectives listed in the Natural Hazards section of the Draft Plan (page 37).
20. The Group notes that the introduction to the Natural Hazards section refers to flooding, river bank erosion, coastal erosion and inundation, earthquakes and volcanic eruptions.
21. The Group requests that this list be amended to include landslide (as distinct from river bank erosion), tsunami (as distinct from coastal inundation), severe wind, and severe storms or cyclones. These additional natural hazards were named as some of the top 15

hazards affecting the region in the recent risk management workshop (see the table above).

22. Group officials and some partner agencies, including the New Plymouth District Council, recently provided information for an inventory of hazard information and research. The *'Summary of Hazard Information and Research for the Taranaki CDEM Group Region'*, is **attached** for your reference.
23. The Group therefore requests that the additional hazards be incorporated, where appropriate, under provisions NH-P1-NH-P5.

#### **District-wide Activities – Subdivision**

24. The Group supports the approach taken by New Plymouth District Council in respect of objectives for subdivision in the District Plan. The subdivision section refers to the effects of some of the natural hazards referred to in the Natural Environments – Natural Hazards section, and provides for the avoidance of subdivision which creates new or exacerbates existing natural hazards (S-P1).
25. In addition, Policy S-P2 proposes to ensure that subdivision is appropriately located and designed to avoid, remedy or mitigate adverse effects and to provide certain other elements.
26. The Group notes that if Section 106 of the RMA is amended as currently proposed by the RLA Bill, a consent authority may refuse subdivision consent in certain circumstances, including where there is a significant risk from natural hazards (s 133(1)(a)). An assessment of that risk will require an assessment of –
  - a. the likelihood of the occurrence of one or more natural hazards;
  - b. the material damage to the land being subdivided, or other land, or structures, that would result from natural hazards; and
  - c. any likely subsequent use of the subdivided land that would accelerate, worsen, or result in material damage of the kind referred to in paragraph (b).
27. The Group requests that both policies be reconsidered, and possibly extended, to include provisions for volcanic hazards and wind loading or bracing zones or alternatively, to refer to the list of hazards set out in the CDEM Group Plan for Taranaki (under review and due to come into force in 2017).

### **District-wide Activities – Hazardous Substances**

28. The Group supports the approach that New Plymouth District Council has taken in respect of hazardous substances.
29. However, the Group notes that the RLA Bill proposes to remove the control of hazardous substances as an explicit function of local authorities. The intent of this proposal is to prevent duplication of regulation given that hazardous substances are already regulated under the Hazardous Substances and New Organisms Act 1996 (HSNO Act).
30. This proposal may or may not be passed into law and it is not possible for the Group to know the outcome at this time. Because of the uncertainty around this proposal, the Group requests that the Council reflect the appropriate statutory requirements at the time the Bill is passed into law.

### **District-wide Activities – Network Utilities**

31. The Group supports the approach that New Plymouth District Council has taken in respect of the operation, service, design and location of network utilities.
32. Pursuant to the Act, entities defined as “lifeline utilities” have statutory civil defence and emergency management responsibilities. Entities are described in Schedule 1 and include airports and ports; any gas and electricity producer, supplier, or distributor; any entity that supplies or distributes water or provides a waste water or sewerage network, an entity that provides a telecommunications, roading, or rail network; or an entity that produces, processes, or distributes petrol or other petroleum product.
33. Because of its water, waste water and roading responsibilities, the Council is a designated “lifeline utility” under the Act. The Council is also a “local authority”, which must plan and provide for civil defence emergency management within its district. Under the Act, a local authority must ensure that it is able to function to the fullest possible extent, even though this may be at a reduced level, during and after an emergency.
34. The Group requests that New Plymouth District Council add some text that acknowledges their CDEM roles and responsibilities, as both a local authority and a lifeline utility entity. This is particularly appropriate given the new CDEM Group delivery arrangements proposed for the region and the Council’s responsibilities for local operational response within its area.
35. In particular, with respect to Policies NU-P4, NU-P6 and NU-P8, the Group requests that natural hazard zones should also be avoided for the location of any new network utilities, and that network utilities should be managed to avoid hazard risk as much as possible. The Group also requests that flood and volcanic hazard zones, in particular, be included in controls for performance standards, where appropriate.

### **Conclusion**

36. The Group once again thanks the New Plymouth District Council for the opportunity to submit on the *New Plymouth Draft District Plan 2016*.

37. The Group requests that the matters raised in this submission be considered during the next phase of the *Draft District Plan* review process.
38. Should you have any queries on the matters raised in the submission please do not hesitate to contact the undersigned.
39. Officers of Taranaki CDEM are happy to further explore any matter raised above, with staff of the Council.

Yours faithfully  
BG Chamberlain  
**Chief Executive**

Per: G K Bedford  
**Director – Environment Quality**

**Encl:** Taranaki CDEM Group, 2016, *Summary of Hazard Information and Research for the Taranaki CDEM Group Region*, (Frodo No.1685675).

Frodo #1685675

## Summary of Hazard Information and Research for the Taranaki CDEM Group Region

### General papers:

High-level hazard information contained in Officials' Committee for Domestic and External Security Coordination, *National Hazardscape Report 2007*, Department of the Prime Minister and Cabinet (#1002756)

Beban J G, Coomber M A, and Saunders W S A, 'Analysis of natural hazard provisions in regional policy statements, territorial authority plans, and CDEM Group Plans, *GNS Science Report 2014/28*, May 2014

NZ National Commission for UNESCO, 1984, *Natural Hazards in New Zealand*

Crozier, M J (Ed), 1990, *Natural Hazards 90: Natural Hazard Assessment in New Zealand*, Research School of Earth Sciences, Victoria University of Wellington (#1002752)

New Plymouth District Council, 1996, *Natural Hazards Technical Paper*, Planning and Environmental Services Department, (#1002723)

*Risk Wise*, 2008, Tudor Rose, UK (#994522)

International Council for Science, 2008, *A Science Plan for Integrated Research on Disaster Risk: Addressing the challenge of natural and human-induced environmental hazards* (#994531)

Risk Management Partners, 2004, 2008, 2016, *LAPP Fund Member Authority Risk Profile*, New Plymouth District Council

Taranaki Regional Council, *Civil Defence Emergency Management Plan 2012-2017*, September 2012

Hazard as per CDEM Group Plan	Contingency Plans	Research and reports	Other	Comments/notes
Volcanic eruption - Mt Taranaki : Lahars and associated floods, Tephra (Ash fall), Pyroclastic flows, Lava flows, Gases and acid rain		<b>Volcanic hazards:</b>		
	Taranaki Regional Council, 2015, Mt Taranaki Volcanic Unrest Response Plan for the Taranaki Civil Defence Emergency Management Group	Bayley S, 'Living with Volcanoes—The Taranaki Story', Tephra, 21(2) 18-23, 2004	NZFS: Need for air intake socks for all motors including Fire Appliances and stationary generators etc. A source for the socks has been located however the varying types and cost precludes having them in stock.	
		Bebbington M, Cronin S J, Chapman I, and Turner M B, 'Quantifying volcanic ash fall hazard to electricity infrastructure', Journal of Volcanology and Geothermal Research 177, 1055–1062, 2008 Department of Internal Affairs and Ministry of Civil Defence and Emergency Management for Taranaki United Council, 1987, Future Volcanic Activity in Taranaki: Likely Impact and Effect on Taranaki Infrastructure and the Implications for Civil Defence and Emergency Response Contingency Plans.		
		Grant-Taylor T L, GNS, 'Volcanic History of Western Taranaki', New Zealand Journal of Geology and Geophysics Volume 78-86, 1963 Hickling J, Clements M, Weinstein P, and Woodward A (1999), 'Acute health effects of the Mount Ruapehu (New Zealand) volcanic eruption of June 1996', International Journal of Environmental Health Research, 9:2, 97–107 Hull A G, 'Earthquake and Volcanic Hazards in Taranaki—Potential threats to oil and gas production and distribution infrastructure' in 1996 New Zealand Petroleum Conference Proceedings Volume I, 10 to 13 March 1996, pp 261–271 International Volcanic Health Hazard Network (IVHNN), Cities and Volcanoes Commission, GNS Science and the United States Geological Survey (USGS), Guidelines on Preparedness Before, During and After an Ashfall, (pamphlet), www.ivhnn.org		Frodo #1657184
		Maetzig Rob, <i>More slips likely on unstable Egmont</i> , Taranaki Daily News 20 November 1998		Frodo #1657187



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Frodo #1685675

Hazard as per CDEM Group Plan	Contingency Plans	Research and reports	Other	Comments/notes
		Maetzg Rob, Rain causes monster landslide on Egmont", Taranaki Daily News 19 November 1998		Frodo #1657192
		Ministry of Agriculture and Forestry, Volcanic Eruption!—Impacts and hazard mitigation for New Zealand's primary production industries, (pamphlet), 2009		Frodo #1763510
		Neall V E, 1976, Volcanology of Egmont National Park, Egmont National Park Board.		
		Neall V E and Alloway B V, 1991, Volcanic Hazards at Egmont Volcano, Ministry of Civil Defence, Volcanic Hazards Information Series No 1.		
		Neall V E, 2003, The Volcanic History of Taranaki , Massey University of New Zealand, Soil and Earth Sciences Occasional Publication No. 2,		
		Sewell, D U, 1986, Natural Hazards: Volcanic Eruptions Edition, Action Publications		#1003917
		Tunbridge M, Public Health Service Volcanic Resource, MidCentral Health Limited, 2013		
		Wardman J B, Wilson T M, Bodger P S, Cole J W and Stewart C, 'Potential impacts from tephra fall to electric power systems: a review and mitigation strategies', Bulletin of Volcanology, Vol 74, No 10, December 2012		
		Wilson T M, Stewart C, Sword-Daniels V, Leonard G S, Johnston D M, Cole J W, Wardman J, Wilson G, and Barnard S T, 'Volcanic Ash impacts on critical infrastructure', Journal of Physics and Chemistry of the Earth, 2011		
		Neall V E and Stewart R, 1998, 'Egmont Lahar Event 5 September 1998 – Report of an Inspection'.		Frodo #1657189
		<b>Planning and forecasting</b>		
		Becker J S, Johnston D M, Leonard G S, Robertson C M, and Saunders, W S A, 'A Synthesis of challenges and opportunities for reducing volcanic risk through land use planning in New Zealand', The Australasian Journal of Disaster and Trauma Studies, Volume 2010-1		
		GNS Science, 'Resilient infrastructure: planning for the next volcanic crisis in New Zealand', course notes, Planning for a volcanic Crisis Short Course, Auckland, 2013		
		Green R M, Bebbington M S, Cronin S J, & Jones G (2013); Geochemical precursors for eruption repose length; Geophysical Journal International, 193(2), 855-873.		
		Johnston D, Becker J, Jolly G, Potter S, Wilson T, Stewart C, and Cronin S, 'Volcanic Hazards Management at Taranaki Volcano: Information Source Book', GNS Science Consultancy Report, 2011/37		
		Martin B J, Likely Impacts within the Taranaki region of future eruptions from Egmont Volcano, University of Auckland Masters Thesis, unpublished, 1998		
		Ministry of Agriculture and Forestry, 'Impact of a volcanic eruption on agriculture and forestry in New Zealand', MAF Policy Technical Paper 99/2, 1998		
		Ministry of Agriculture and Forestry, 'Volcano Alert', 2000 Update		
		Scott, B.J.; Travers, J. 2009 Volcano monitoring in NZ and links to SW Pacific via the Wellington VAAC. Natural hazards, 51(2): 263-273; doi:10.1007/s11069-009-9354-7		
		Spence R J S, Kelman I, Baxter P J, Zuccaro G, and Petrazzuoli S, 'Residential building and occupant vulnerability to tephra fall', Natural Hazards and Earth System Sciences, 5, 477-494, 2005		
		Turner M B, Cronin S J, Bebbington M, and Platz T, 'Developing a probabilistic eruption forecast for dormant volcanoes: a case study from Mt Taranaki, New Zealand', Bulletin of Volcanology 70: 507–515, 2008		

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Frodo #1685675

Hazard as per CDEM Group Plan	Contingency Plans	Research and reports	Other	Comments/notes
		<p>Turner M. B, Bebbington M S, Cronin S J, &amp; Stewart R B (2009); Merging eruption datasets: building an integrated Holocene eruptive record for Mt Taranaki, New Zealand; Bulletin of volcanology, 71(8), 903-918.</p> <p>Wilson T, Dantas A, and Cole C, 'Modelling livestock evacuation following a volcanic eruption: an example from Taranaki volcano, New Zealand', New Zealand Journal of Agricultural Research, 2009, Vol 52, 99-110</p> <p>Wilson T M, Stewart C, Cole J W, Johnston D M and Cronin S J, 'Vulnerability of farm water supplies to volcanic ash', GNS Science Consultancy Report 2009/01, February 2009.</p>		Frodo #1763387
		<p>Alloway B V and Neall V E, (date unknown) 'Summary Diagram of the Presently Known Eruptive History of Egmont Volcano in the last c12,000 year period'</p>		Frodo #1657621
		<p>[TBC] 'Operational Requirements for an Earthquake Forecasting Programme for New Zealand'</p> <p>Johnston D, Paton D, Scott B, Houghton B, Kozuch M, Vere-Jones D, (GNS), 'Volcano and Earthquake Alerts, Warnings and Forecasts in New Zealand', 1999</p>		Frodo #1657604
		<p><b>Response and Recovery</b></p> <p>Wilson T, Cole J, Cronin S, Stewart C, and Johnston D, 'Impacts on agriculture following the 1991 eruption of Vulcan Hudson, Patagonia: lessons for recovery', Journal of Natural Hazards (2011) 57: 185-212</p> <p>TRC, 1996?, Establishment of Baseline Air and Water Quality in various Eastern Hill Country Catchments in relation to possible ash fallout during an active phase of Mt Ruapehu.</p>		Frodo #1657195
		<p>[TBC]</p> <p>NIWA Report EVW70206, June 1997, 'The 1995/96 eruptions of Mt Ruapehu: Stream water quality impacts and ecosystem recovery.</p> <p>Blong R J, 1984, 'Volcanic Hazards: The Effects on Utilities and Machinery', (extract from Volcanic Hazards: A Sourcebook on the Effects of Eruptions (1984) (held in TRC Library).</p>		Frodo #1666037
Volcanic eruption – distant source:		<p>NIWA, Numerical Simulations of Volcanic Ash Dispersal from the Ruapehu Eruptions of 1995 and 1996, prepared by Richard Turner (NIWA) and Tony Hurst (GNS)</p>		
Earthquake – severe - local fault:	New Zealand Fire Service (NZFS). Each Fire Station has an Emergency Plan and each one includes reference to potential or actual relocation sites if the station has to be evacuated. NZFS also has Task Force plans which identify Fire Appliances and manpower that can be mobilized into or out of areas as required.	<p>Ministry for the Environment and GNS (2003), Planning for development of land on or close to active faults: A guideline to assist resource management planners in New Zealand.</p>	<p>NZFS: All Fire Stations in Taranaki were surveyed for earthquake risk and Hawera, Stratford and Okaiawa stations have been strengthened.</p>	
		<p>Hull A G and Dellow G D, 'Earthquake Hazards in the Taranaki Region', GNS Science Consultancy Report 1993/03</p>		
		<p>Sherburn S and Quinn R, 'An Assessment of the Effects of Hydraulic Fracturing on Seismicity in the Taranaki Region', GNS Science Consultancy Report 2012/50, February 2012</p>		
		<p>Sherburn S and Scott BJ, Taranaki Seismicity June 2014-June 2015, GNS Science Consultancy Report 2015/32, August 2015</p>		
		<p>Taranaki Seismicity, [annual report 2009-2015], GNS Science Consultancy Report</p>		

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Frodo #1685675

Hazard as per CDEM Group Plan	Contingency Plans	Research and reports	Other	Comments/notes
- Inglewood fault		Disposal of debris following urban earthquakes: Guiding the development of comprehensive pre-event plans, GNS Science Report 2009/33, August 2009		
- Waverley fault		GNS, Significant Earthquakes affecting the Waverley region in Historical Time 1840 to present', Extract from South Taranaki Earthquake Hazard Analysis – Waverley Fault Zone Study Stage 2 Townsend T, Hull A and Begg J (GNS), 'South Taranaki Earthquake Hazard Analysis Waverley Fault Zone Study: Pre-Historic Earthquake Investigations', GNS Report 33592D.20		Frodo #16576511
		Waverley Earthquake Fault Workshop, Tracey Townsend, GNS, June 1997		Frodo #1657620
- Oanui fault				
- Unknown faults				
Liquefaction	Taranaki Regional Council, Liquefaction Factsheet, May 2013	Dellow G D and Ries W, 'Liquefaction Hazard in the Taranaki Region', GNS Science Consultancy Report 2013/57, April 2013 commissioned by the Taranaki Regional Council, New Plymouth District Council, Stratford District Council and South Taranaki District Council.		
Earthquake – severe - distant fault				
Coastal hazards:		Lumsden, J L, 1993, Report on Shoreline Erosion Adjacent to the Bell Block Sea Wall, North Taranaki, Taranaki Regional Council, 1993 Lumsden, J L, 1995, Report on Shoreline Erosion Adjacent to the Bell Block Sea Wall, North Taranaki, New Plymouth District Council		Frodo #1657629
		Fulton-Bennett K & Griggs G B, "Coastal Protection Structures and their Effectiveness", Joint publication of the State of California Department of Boating and Waterways and the Marine Sciences Institute of the University of California at Santa Cruz, (extract only – on Rip-rap		Frodo #1657634
- Erosion	New Plymouth District Council, Coastal Strategy, www.newplymouthnz.com, Council Documents, Plans and Strategies, 2006	Foster D N, Design of Rubble Mound Breakwaters and Revetments		Frodo #1710622
	New Plymouth District Council, Coastal Strategy Implementation Plan, www.newplymouthnz.com, Council Documents, Plans and Strategies, Coastal Strategy, Updated 2014	Lumsden John, 1995, Beach Management – Putting Seawalls in their Place, Transactions, Vol 22, No Institution of Civil Engineers, November 1995.		Frodo #1710702
	New Plymouth District Council, Coastal Erosion Strategy, www.newplymouthnz.com, Council Documents, Plans and Strategies, 1995	Buckeridge, J St JC, A Systems Approach to the Geotechnical Design of Rigid Seawalls		Frodo #1710737
		Barrett Rob J, 'Use of Plastic Filters in Coastal Structures', Proceedings of the Xth International Conference on Coastal Engineering, Tokyo, Japan, September 1966		Frodo #1710742
				Frodo #1710767

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Frodo #1685675

Hazard as per CDEM Group Plan	Contingency Plans	Research and reports	Other	Comments/notes
		Dunham J W & Barrett R J, 'Woven Plastic Cloth Filters for Storm Seawalls', Journal of the Waterways Harbors and Coastal Engineering Division, February 1974. Wainui Beach Protection Scheme, April 1976		Frodo #1710779 Frodo #1710782
		Burgess J S, Aug 1975, 'Beach Change – a Vital Factor in Coastal Erosion Control', Journal of Soil & Water, August 1975.		Frodo #1710785
		Forbis, John, Dec 1974, 'Man and the Sea', Journal of Soil & Water, December 1974		Frodo #1710796
		Patchett, M A and others, Investigations of Erosion at Oakura Beach, Taranaki Catchment Commission, 1978?		Frodo #1710832
		Goldsmith, P and Kirk R, Beach Erosion: Oakura & Neighbouring Beaches 1977-1978: Comprehensive Study & Recommendations		Frodo #1710841
		Patchett M A, for Taranaki Catchment Commission, Investigations of Erosion at Onaero Beach, 1978		Frodo #1710846
		Dr R M Kirk, Morris & Wilson, Coastal Erosion and Sand Transport around Port Taranaki Research Proposal		Frodo #1710848
		Stephens P & Dymond J, Landcare Research NZ Ltd, 1999, Design of a Monitoring System for Bare Sand Changes and Coastal Erosion in Taranaki, Landcare Research Report LC9899/056		Frodo #1710553
		TRC, 2002, Taranaki Coastal Info Inventory Metadata Info Sheet		Frodo #1711147
		Journal of Soil & Water, December 1974, 'Beach Reclamation Costly',		Frodo #1710789
		Journal of Soil & Water, December 1974, Grant for Coastal Observation.		Frodo #1710798
		Journal of Soil & Water, April 1976, 'Wainui Beach Protection Scheme'.		
		TRC, 1995, 'Calculation of Erosion Rate from New Plymouth District Council's Survey Data'.		
-	Tsunami	Taranaki Regional Council, 2010, Tsunami Initial Action Plan for the Taranaki Civil Defence Emergency Management Group	Goodier, C and Clode G, Taranaki Tsunami Inundation Analysis, Hawke's Bay Regional Council, Asset Management Group Technical Report, Prepared for Taranaki Civil Defence Emergency Management Group, HBRC Plan Number 4362, June 2012	
		Taranaki Civil Defence Emergency Management Group, 2010, Tsunami Contingency Plan, May 2010	National Tsunami Hazard Model, GNS Science Consultancy Report 2013/59, 2013.	
		Taranaki Regional Council, Taranaki Tsunami Inundation Analysis, report prepared by Hawke's Bay Regional Council Consultancy, June 2012	Berryman, Kelvin (compiler), Review of Tsunami Hazard and Risk in New Zealand, GNS Client Report 2005/104, September 2005.	
			Power, W. L. (compiler) (2013). Review of tsunami hazard in New Zealand (2013 update). GNS Science consultancy report 2013/131	
			Power W L, 'Tsunami hazard curves and de-aggregation plots for 20km coastal sections, derived from the 2013 National Tsunami Hazard Model', GNS Science Consultancy Report 2013/59, January 2014	
			De Lange W P, Healy T R, 1984, 'New Zealand Tsunamis 1840-1982', New Zealand Journal of Geology and Geophysics, 1986, Vol 29, 115-134	Frodo #1657201
			De Lange W P, Healy TR, 1984, Annotated list of New Zealand Tsunami Events 1840-1982, New Zealand Journal of Geology and Geophysics, 1986, Vol 29,	Frodo #1657203
			'Climate Hazards and Extremes – New Plymouth District: Tsunami Risk', NIWA Client Report: CHC2007-131, November 2007, NIWA Project NPD06301	
-	Storm surge[1]			

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Frodo #1685675

Hazard as per CDEM Group Plan	Contingency Plans	Research and reports	Other	Comments/notes
Slope instability:		DeRose Ron C, 1996, Relationships between slope morphology, regolith depth, and the incidence of shallow landslides in eastern Taranaki hill country DeRose R C, Trustrum N A, Thomson N A, Roberts A H C, 1995, 'Effect of landslide erosion on Taranaki hill pasture production and composition', New Zealand Journal of Agricultural Research, 1995, Vol 38:457-471 'Climate Hazards and Extremes – New Plymouth District: Landslide Hazard Assessment', NIWA Client Report: WLG2007-005, January 2007, NIWA Project NPD06301 Hewitt, AE, LandCare, May 1998, Structural Vulnerability of Taranaki soils	[TBC: Stratford District Council: Non-standard sites register, which includes details of sites with soil instability.]	Frodo #1711100  Frodo #1711108  Frodo #1711111
- Mt Taranaki				
- Eastern Hill Country		O'Leary S M, Stephens B R, 'A Guide to the Use of New Technique for Monitoring Sustainable Land Use in North Island Hill Country', Landcare Research Contract Report LC9697/002, July 1996. (Frodo #846196) MAF, Landcare and TRC, "Sustainable Land use in the Taranaki Hill Country – a Case Study, TRC Technical Report 92-19 (Frodo #846128) DSIR, 'Physically Sustainable Land Uses in the Taranaki Region', DSIR Contract Report No 92/27, (Frodo #846138) 'Forested Land', Technical Paper, Report 92/29 (1992) (Frodo #846143) 'Rural Land Use to achieve sustainable management', Discussion Paper, July 1992 (#846144)		
River and stream bank erosion	Proposed Soil Conservation Protection Plan – Waitara River – Ngati-Maru Marae, Te Upoko o Te Whenua, October 1992 (Frodo #846136)			
Riverbed aggradation		Taranaki Catchment Commission, Nov 1981, Aggregates for the Taranaki Region		Frodo #1661715
Flooding inundation:	Taranaki Regional Council: Flood Event Standard Operating Procedure  Taranaki Regional Council: Flood Warning Procedures Manual  Taranaki Regional Council: Severe Weather Event Procedures Draft Taranaki Flood Response Plan for Taranaki CDEM Group NPDC Stormwater and Flood Protection Asset Management Plan June 2015	NIWA Project ELF 10222, 'Probable Maximum Flood: Guidelines for NZ, Niwa Client Report CHC 2010-041, April 2010  Taranaki Catchment Commission, Oct 1982, 'Flood Events in Taranaki, Part A – Historical Index, and Part B – River Index (Frodo #17919) Aggradation in Rivers in Ring Plain  McDonald R, 1982, Flood Events in Taranaki, Technical Report 82-4, for Taranaki Regional Council McDonald R, 1983, Flooding in Taranaki 1954-1980, Technical Report 83-6, for Taranaki Regional Council  Butcher B, Ministry for the Environment, 1994, Review of Flood Protection Scheme Maintenance	NZFS: All Fire Stations have pumping capability in varying capacities via fire appliances and portable pumps.	(Frodo #890704) (Frodo #1597134)  (Frodo #1455984) Check library for Frodo no
- Lower Waitara River	Waitara Flood Response Plan 2005  Lower Waitara Flood Protection (Frodo #954234) NZFS: Waitara Fire Station is built in the flood zone. Their emergency plan specifically covers the need for relocation.	Waitara Township, Flood Protection Review, 1990, Taranaki Regional Council Royds Garden & G & E Williams, 1991, Waitara River Scheme Review, for Taranaki Regional Council Gibb Dr J G, Report prepared for New Plymouth District Council, Strategic options for the Training Moles at the Waitara River mouth (Draft), October 1996.		Frodo #1661713
- Lower Waitotara River	Waitotara Flood	Reducing the Risk: Proposed river clearance and maintenance programme for the Waitotara Catchment, TRC, Feb 2006, (Frodo #28555)		

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Frodo #1685675

Hazard as per CDEM Group Plan	Contingency Plans	Research and reports	Other	Comments/notes
	Response Plan 2008 Waitotara River Flood Management Strategy, Sept 1995 Waitotara River Catchment Plan (Frodo #997827)	Waitotara Valley, Feb 2004 Storm Event, (Frodo #65709)		
- Lower Tongaporutu				
- Stony River				
- Eastern Hill Country		Bell S, 1990, A Drop in the Bucket: A Natural Hazard in Makakaho Valley		Check library for Frodo no
- New Plymouth – Central business district		Newton-King, O'Dea Gibson & Evans, Environmental Impact Report on Flood Control Proposals for the Huatoki & Mangaotuku Streams & Tributaries, (Concise report only) New Plymouth City Council, April 1982		Frodo #1657618
- New Plymouth – Lower Waiwhakaiho		TRC, 'Low flows in the Waiwhakaiho River', (Frodo #1601516)		
- Stratford				
- Hawera				
- Opunake				
Heavy Snow beyond National Park boundary	This scenario and most of the scenarios below are business as usual for the New Zealand Fire Service and they will respond appropriately.	Chappell P R, 'The Climate and Weather of Taranaki, 2nd edition', NIWA Science and Technology Series, Number 64, 2014	[TBC] Stratford District Council: GIS layer for snow build up at 400 m above sea level for the purpose of building consents.  NZFS: All fire brigades in the region have had 'working at heights' training.	
Severe Hail		Chappell P R, 'The Climate and Weather of Taranaki, 2nd edition', NIWA Science and Technology Series, Number 64, 2014		
Severe Frost		Chappell P R, 'The Climate and Weather of Taranaki, 2nd edition', NIWA Science and Technology Series, Number 64, 2014		
Lightning		Chappell P R, 'The Climate and Weather of Taranaki, 2nd edition', NIWA Science and Technology Series, Number 64, 2014 'Climate Hazards and Extremes – New Plymouth District: Lightning', NIWA Client Report: WLG2006-022, April 2006, NIWA Project NPD06301		
Damaging winds		Chappell P R, 'The Climate and Weather of Taranaki, 2nd edition', NIWA Science and Technology Series, Number 64, 2014		
Tornado		'Climate Hazards and Extremes – New Plymouth District: Cyclones of Tropical Origin', NIWA Client Report: WLG2006-027, June 2006, NIWA Project NPD 06301 'Climate Hazards and Extremes - Taranaki Region: High Winds and Tornadoes', NIWA Client Report: WLG2007-048, June 2007		

# Taranaki Civil Defence Emergency Management Group - CDEM Group submission on NPDC draft District Plan

Frodo #1685675

Hazard as per CDEM Group Plan	Contingency Plans	Research and reports	Other	Comments/notes
Drought		<p>'Climate Hazards and Extremes in Taranaki Region: Tornado Update', NIWA Client Report: AKL2007-078, November 2007, NIWA Project NPD08101</p> <p>Ministry of Primary Industries (formerly Ministry of Agriculture and Forestry), 'Drought definition, recognition and assistance measures', (2009)</p> <p>Chappell P R, 'The Climate and Weather of Taranaki, 2nd edition', NIWA Science and Technology Series, Number 64, 2014</p> <p>Taranaki Irrigation Study – Final Report for TRC, Report C11022/2, February 2012 (Frodo #1015334)</p> <p>R McDonald, Periods of Low Rainfall in Taranaki, (Frodo #16090772)</p> <p>TRC, 'Low flows in the Waiwakaiho River', (Frodo #1601516)</p>		
Heat wave		<p>Daw G, An Explanation of El Nino, La Nina and the Southern Oscillation, NIWA Report AK97129, 1997</p> <p>Chappell P R, 'The Climate and Weather of Taranaki, 2nd edition', NIWA Science and Technology Series, Number 64, 2014</p>		Frodo #1657182
Lifeline Utility failure:		Centre for Advanced Engineering, Risks & Realities: A Multi-Disciplinary Approach to the Vulnerability of Lifelines to Natural Hazards (This book is held in the TRC Library).		
- Electricity (network local supply) – long term	NZFS: Station standby generators are installed at New Plymouth, Okato, Patea, and Oakura. At most other stations there are small generators with limited capacity on fire appliances.			
- Electricity (network local supply) – short term				
- Road network – long term				
- Road network – short term				
- Information and Communication Technology – long term (more than 8 hours)	<p>New Plymouth Fire Station has an Incident Command Centre.</p> <p>The Taranaki area has a Command Unit vehicle.</p>		<p>Incident Command Centre contains:</p> <ul style="list-style-type: none"> <li>3 x laptop computers</li> <li>1 x satellite phone</li> <li>1 x land mobile radio</li> <li>1 x radio repeater</li> </ul> <p>All equipment is portable and can be relocated to any site.</p> <p>Command Unit contains:</p> <ul style="list-style-type: none"> <li>6 x base radios both UHF &amp; VHF</li> <li>4 x separate phones</li> <li>1 x satellite phone</li> <li>3 x computers</li> <li>Satellite and mobile internet</li> <li>2 x large screen monitors</li> <li>Ability to use high gain aerials</li> </ul>	

# Taranaki Civil Defence Emergency Management Group - CDEM Group submission on NPDC draft District Plan

Frodo #1685675

Hazard as per CDEM Group Plan	Contingency Plans	Research and reports	Other	Comments/notes
	New Plymouth District Council Information and Communications Technology Business Continuity Plan			
- Information and Communication Technology – short term (less than 8 hours)	New Plymouth District Council Information and Communications Technology Disaster Recovery Plan			
- Water – major urban supply – long term	NPDC Water Asset Management Plan June 2015  Hawera Water Supply Water Safety Plan, Draft Version 1a dated 9 June 2015		Taranaki has 4 potable water tankers (1 at Stratford, 1 at Eltham and 2 at Hawera) and can also use private contractors.	
- Water – major urban supply – short term	NPDC Water and Wastes Incident Response Plan December 2015			
- Water – small community supply – (including drought, as above) - long term	NPDC Water Asset Management Plan June 2015			
Water – small community supply – (including drought, as above) - short term	NPDC Water and Wastes Incident Response Plan December 2015			
- Water supply contamination (chemical or biological)	NPDC Water and Wastes Incident Response Plan December 2015			
- Sewerage – long term		Natural Gas Corporation, Landowner Pipeline Safety Info		Frodo #1711138
- Gas – high pressure gas pipeline	NZFS: Business as usual	Natural Gas Corporation, Pipeline Safety Information		Frodo #1711118
- Gas – local gas supply – long term	NZFS: Business as usual			
Hazardous substances	Taranaki CDEM, Emergency Debris Management Plan 2012 (Frodo #1003624)	TRC, 'Management of Unwanted and intractable hazard wastes'		(Frodo #1633964)
	Civil Defence Hazardous Substance Evacuation Procedures (Frodo #1657622)	TRC, 'Hazardous Waste Management in Taranaki',  TRC, 'Roles at Clandestine Meth Lab sites' TRC, 1993, 'Hazardous Substances and the Civil Defence Response'.		(Frodo #1633984) (Frodo #988569) Marked confidential
- Local ground and water (spillage or leakage)	NZFS: Business as usual			
- Widespread (industrial spillage or leakage)	NZFS: Business as usual	TRC, 'Examination of the Toxicity of Petroleum Pipeline' (Frodo #1601574) Environment Canada, 1986, A Survey of Chemical Spill Countermeasures, Report EPS 9/SP/2 Kletz, Trevor A, 1985, What went wrong? Case Histories of Process Plant Disasters, Gulf Publishing Co, Houston Texas.		Frodo #983501  Frodo #983006



# Taranaki Civil Defence Emergency Management Group - CDEM Group submission on NPDC draft District Plan

Frodo #1685675

Hazard as per CDEM Group Plan	Contingency Plans	Research and reports	Other	Comments/notes
- Oil Spill	The Inspectorate section of the Taranaki Regional Council holds the documents that make up the Regional Oil Spill Contingency Plan, and the Council also holds copies of oil spill contingency plans for sites holding petroleum-related consents. NZFS: Business as usual			
- Aerial emissions				
Major transport accident				
- Air	New Plymouth Airport Emergency Response Plan NZFS: Business as usual			
- Roading	New Plymouth District Council Roading Incident Response Plan NZFS: Business as usual	NZTA, New Zealand Road Safety Research, (annual reports)  National Road Safety Committee, Road Safety Strategy 2010  Accident Compensation Corporation and Land Transport Safety Authority, 2000, Down with Speed: A review of the literature, and the impact of speed on New Zealanders		Frodo #982718  Frodo #982729
- Rail	NZFS: Business as usual			
- Marine/Port	Port Taranaki and Harbour Safety Management System Manual, Aug 2014 (Controlled copies: Frodo #1455975)  NZFS: Business as usual			
Structural failure (including dam failure):	NZFS can deploy Urban Search & Rescue (USAR) Teams from Palmerston North or Auckland as required.			
- Small structure	NZFS - Business as usual			
- Significant structure (Flood retention dams, stadiums (Yarrows), hospitals (TDHB))	NZFS - Business as usual			
Fire				
- Structural –downwind effects (smoke)			NZFS can legally evacuate areas as required and can request assistance from, or provide it to, the NZ Police.	
- Vegetation –downwind effects (smoke)				
Climate Change		Landcare Research and Environment Waikato, 2005, "Climate Change Workshop Presentations". Pastoral Greenhouse Gas Research Consortium, 2007, "5 Year Science Progress Report 2002–2007"		

# Taranaki Civil Defence Emergency Management Group - CDEM Group submission on NPDC draft District Plan

Frodo #1685675

Hazard as per CDEM Group Plan	Contingency Plans	Research and reports	Other	Comments/notes
		<p>Ministry for the Environment, 2008, Climate Change effects and impacts assessment: A guidance manual for local government in New Zealand, 2nd Ed.</p> <p>Ministry for the Environment, 2008, Preparing for Climate Change: A guide for local government in New Zealand, Publication 891.</p> <p>NIWA project NPD06301, Climate Trends, Hazards and Extremes - Taranaki Synthesis Report, NIWA Client Report: AKL-2008-080, Oct 2008</p> <p>NIWA, MWH, GNS and BRANZ (2012) Impacts of Climate Change on Urban Infrastructure and the Built Environment: Toolbox Handbook</p> <p>ProAct Network, Ministry of the Environment – Finland, UN International Strategy for Disaster Reduction, 2008, The Role of Environmental Management and Eco-Engineering in Disaster Risk Reduction and Climate Change Adaptation</p> <p>Schneider Stephen H, 1989, 'The Changing Climate', Scientific American, September 1989.</p> <p>Nielson, Rolf Haugaard, 'Chill Warnings from Greenland', New Scientist, August 1993.</p> <p>Balling R C, Idso S B, &amp; Hughes, W S, 1992, 'Long-term and recent anomalous temperature changes in Australia', Geophysical Research Letters, Vol 19, No 23, pp 2317-2320, 2 December 1992</p> <p>Nicholls N, Torok, S and Plummer N; 1993, Comment on Balling R C, Idso S B, &amp; Hughes, W S, 1992, 'Long-term and recent anomalous temperature changes in Australia'.</p> <p>Moran, AJ, 5 February 1993, 'Response of the Bureau of Meteorology to Balling, Idso and Hughes article in Geophysical Research Letters, Tasman Institute.</p> <p>Lawrence J, 1993, Response to 'Long-term and recent anomalous temperature changes in Australia', Ministry for the Environment, NZ.</p> <p>Nicholls N, 2 March 1993, Further response to comments on 'Long-term and recent anomalous temperature changes in Australia', Bureau of Meteorology Research Centre.</p> <p>Dr Roth R, How well do we know our Climate?: Some Critical Remarks about the Problem.</p> <p>Lindzen R S, 1992, 'Global warming: the origin and nature of alleged scientific consensus', Electricity Supply Magazine, No 5, June 1992.</p> <p>Salinger M J, Greenhouse warming – Preparing for a climate change.</p> <p>Smith R Keith and Hume Terry, Global warming and our coastline</p> <p>Musselman R C and Fox D G, 1991, 'A review of the role of Temperate Forests in the Global CO<sub>2</sub> Balance', Journal of Air &amp; Waste Management Association, June 1991, Volume 41, No 6</p> <p>Miller A, Mintzer I, Brown P G, 1990, 'Rethinking the Economics of Global Warming', Issues in Science and Technology, Fall 1990.</p> <p>Maclaren J P &amp; Dyck W J, 1991, Bioenergy &amp; the Greenhouse Effect: NZ's Policies &amp; Options</p> <p>Barde, Jean-Philippe, ??? The Economic Approach to the Environment,</p> <p>Sutton W R J (Tasman Forestry), 1991, Plantation Forestry and its Contribution to Atmospheric Carbon</p> <p>Maunder W J, 'Global Warming – a Hot Time to Come', Journal of Soil &amp; Water, Summer 1987</p> <p>NZ Climate Committee of the Royal Society of New Zealand, Abridged report, Climate Change in New Zealand, 1988.</p>		<p>This document is a summary of the one abo</p> <p>#994525</p> <p>Frodo #1710957</p> <p>Frodo #1710950</p> <p>Frodo #1710924</p> <p>Frodo #1710936</p> <p>Frodo #1710864</p> <p>Frodo #1710940</p> <p>Frodo #1710946</p> <p>Frodo #1710859</p> <p>Frodo #1710854</p> <p>Frodo #1710978</p> <p>Frodo #1710982</p> <p>Frodo #1711022</p> <p>Frodo #1711047</p> <p>Frodo #1711036</p> <p>Frodo #1710972</p> <p>Frodo #1710966</p>

# Taranaki Civil Defence Emergency Management Group - CDEM Group submission on NPDC draft District Plan

Frodo #1685675

Hazard as per CDEM Group Plan	Contingency Plans	Research and reports	Other	Comments/notes
		Salinger Dr M J, Hicks Dr D M, 1990, 'The Scenarios', Extracts from 'Climatic Change: Impacts on New Zealand', Ministry for the Environment, 1990		Frodo #1710994
		Salinger Dr M J, Hicks Dr D M, 1990, 'Appendix 1: Regional Climate Change Scenarios', Extracts from 'Climatic Change: Impacts on New Zealand', Ministry for the Environment, 1990		Frodo #1711010
		Hicks Dr D M, 1990, 'Coastal Impacts - Physical', Extracts from 'Climatic Change: Impacts on New Zealand', Ministry for the Environment, 1990		Frodo #1711004
Public Health Threat				
- infectious human disease and pandemic	Taranaki CDEM Group Pandemic Influenza Strategy 2006 Taranaki District Health Board Pandemic Response Plan 2011-2014 New Plymouth District Council Pandemic Plan 2013 New Plymouth District Council Water and Wastes Pandemic Plan 2010 NZFS refers to "Area Pandemic Plan" New Plymouth station has a stock of goggles and dust masks]			
Biological				
- Biosecurity incursion (plants and animals)	Foot and Mouth Plan ???			
War				
Terrorism / external threat / nuclear threat				
Economic failure (recession/ depression)				
Extra-terrestrial object				
National event	NZFS: Can mobilise appliances around the country via Task Force Plan, and USAR from Palmerston North or Auckland. Can also mobilise a group of Commanders from around NZ for Command and Control if required.			

## Agenda Memorandum

**Date** 29 November 2016



**Memorandum to  
Chairperson and Members  
Taranaki Civil Defence Emergency Management Group**

**Subject: 2017 Meeting Dates**

**Item:** 9

**Approved by:** G K Bedford, Director, Environment Quality  
B G Chamberlain, Chief Executive

**Document:** 1780858

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### Purpose

The purpose of this memorandum is to inform Members of the proposed meeting dates for the Taranaki Civil Defence Emergency Management Group for 2017.

### Executive summary

It is anticipated that the Taranaki Civil Defence Emergency Management Group will meet four times in 2017.

The proposed meeting dates for 2017 are outlined as follows:

Tuesday 7 March 2017  
Tuesday 20 June 2017  
Tuesday 5 September 2017  
Tuesday 28 November 2017

### Recommendations

That the Taranaki Civil Defence Emergency Management Group:

1. receives and notes the meeting dates, subject to any amendments, for the Taranaki Civil Defence Emergency Management Group for 2017.

### Decision-making considerations

Part 6 (Planning, decision-making and accountability) of the Local Government Act 2002 has been considered and documented in the preparation of this agenda item. The recommendations made in this item comply with the decision-making obligations of the Act.

**Financial considerations—LTP/Annual Plan**

This memorandum and the associated recommendations are consistent with the Council's adopted Long-Term Plan and estimates. Any financial information included in this memorandum has been prepared in accordance with generally accepted accounting practice.

**Policy considerations**

This memorandum and the associated recommendations are consistent with the policy documents and positions adopted by this Council under various legislative frameworks including, but not restricted to, the Local Government Act 2002, the Resource Management Act 1991 and the Civil Defence Emergency Management Act 2002.

**Legal considerations**

This memorandum and the associated recommendations comply with the appropriate statutory requirements imposed upon the Council.

## **Agenda reports**

### **Taranaki Civil Defence Emergency Management Group**

**November 2016**

#### **Item 7**

[Taranaki Seismic & Ground Deformation Monitoring Report](#) (2.5 MB)