



## Meeting of the HB Civil Defence Emergency Management Group Joint Committee

**Date:** Monday 28 June 2021  
**Time:** 1.30pm  
**Venue:** Council Chamber  
 Hawke's Bay Regional Council  
 159 Dalton Street  
 NAPIER

### Agenda

| Item   | Title  | Page |
|--|--|------|
| 1.   | Welcome/Karakia/Notices/Apologies  |      |
| 2.   | Conflict of Interest Declarations  |      |
| 3.   | Confirmation of Minutes of the HB Civil Defence Emergency Management Group held on 22 March 2021 |      |
| 4.   | Action Items from Previous HB CDEM Group Joint Committee Meetings                                | 3    |
| 5.   | Call for Minor Items Not on the Agenda   | 7    |
| <b>Decision Items</b>                        |  |      |
| 6.   | Covid-19 Response Review   | 9    |
| <b>Information or Performance Monitoring</b> |  |      |
| 7.   | Community Resilience Update  | 27   |
| 8.   | Group Managers General Update  | 31   |
| 9.   | NEMA Update  | 77   |
| 10.  | Discussion of Minor Items Not on the Agenda  | 89   |





## HB CDEM GROUP JOINT COMMITTEE

Monday 28 June 2021

### Subject: ACTION ITEMS FROM PREVIOUS HB CDEM GROUP JOINT COMMITTEE MEETINGS

#### Reason for Report

1. **Attachment 1** lists items raised at previous meetings that require action, and each item indicates who is responsible, when it is expected to be completed and a brief status comment. Once the items have been reported to the Committee they will be removed from the list.

#### Decision Making Process

2. Staff have assessed the requirements of the Local Government Act 2002 in relation to this item and have concluded that, as this report is for information only, the decision-making provisions do not apply.

#### Recommendation

1. That the HB CDEM Group Joint Committee receives the "*Action Items from Previous HB CDEM Group Joint Committee Meetings*" report.

#### Authored by:

**Annelie Roets**  
**GOVERNANCE ADVISOR**

#### Approved by:

**Ian Macdonald**  
**GROUP MANAGER/CONTROLLER**

#### Attachment/s

- 1 [↓](#) Action Items for June 2021 meeting







### Hawke's Bay CDEM Group Joint Committee

Monday, 28 June 2021

### Action Items from Previous Meetings

#### 22 March 2021 meeting

|   | Agenda Item  | Action  | Responsible | Status/Comment  |
|---|--|---|-------------|---|
| 1 | Group Plan Review: Communications and Project Plan | CDEM staff to engage with all TAs to have a brainstorm in how to capture the views of the communities in the Group Plan and the Resilience Plans. | I Macdonald | Ongoing. Will be considered as part of Group Plan project.  |
| 2 | Hawke's Bay CDEM Group Draft Budgets 2021 LTP      | Challenging to understand the income lines and the impact it will have on the ratepayer – more clarity be given on this                           | I Macdonald | Ongoing – Some changes to clarify have been made. Will be included in first report on new financial year. |





## HB CDEM GROUP JOINT COMMITTEE

Monday 28 June 2021

### Subject: CALL FOR MINOR ITEMS NOT ON THE AGENDA

#### Reason for Report

1. This item provides the means for committee members to raise minor matters they wish to bring to the attention of the meeting.
2. Hawke's Bay Regional Council standing order 9.13 states:
  - 2.1 "A meeting may discuss an item that is not on the agenda only if it is a minor matter relating to the general business of the meeting and the Chairperson explains at the beginning of the public part of the meeting that the item will be discussed. However, the meeting may not make a resolution, decision or recommendation about the item, except to refer it to a subsequent meeting for further discussion."

#### Recommendation

That the HB Civil Defence Emergency Management Group Joint Committee accepts the following "*Minor Items Not on the Agenda*" for discussion as Item 10.

| Topic | Raised by |
|-------|-----------|
|       |           |
|       |           |
|       |           |

#### Authored by:

**Annelie Roets**  
GOVERNANCE ADVISOR

#### Approved by:

**Ian Macdonald**  
GROUP MANAGER/CONTROLLER

#### Attachment/s

There are no attachments for this report.





## HB CDEM GROUP JOINT COMMITTEE

Monday 28 June 2021

### Subject: COVID-19 RESPONSE REVIEW

#### Reason for Report

1. The purpose of this report is to ask the Committee to note and endorse a report identifying the lessons and corrective actions for the Hawke's Bay CDEM Group Response to COVID-19.

#### Officers' Recommendation

2. That the HBCDEM Group Joint Committee notes and endorses the attached report *Lessons of the HBCDEM Response to COVID-1*

#### Background and Discussion

3. The after action review process for the COVID-19 response from March 2020 to June 2020 was undertaken by an independent consultant experienced in emergency management matters over the period of August and September 2020.
4. The after-action process allowed for a wide range of experiences, views and opinions to be identified and analysed. The resulting report attached to this paper focuses on the lessons that were identified and the recommendations made by the consultant.
5. This report expands on her conclusions to identify corrective action areas, what work has been completed and what is proposed. The identification of possible corrective actions is the start of the continuous improvement process. As work programmes are developed and projects scoped, the actual corrective actions may need to change.
6. For this reason, it is intended that the Group office will create a more formal tool for identifying, tracking, and reporting to allow for continuous improvement as a result of exercises and events. It is planned to deliver this tool for CEG to consider at its next meeting, along with a discussion on the Group Work Programme.
7. The attached report was approved by the CEG at its meeting on 24 May 2021.

#### Strategic Fit

8. The recommendations are consistent with the Group Plan in that they provide for an effective response and recovery to an emergency through a continuous improvement process.

#### Consultation

9. A wide range of individuals and organisations including tangata whenua were engaged as part of the after action review process. As such no other consultation requirements were identified.

#### Financial and Resource Implications

10. There are no significant financial or resource implications that may result from this decision.

## Decision Making Process

11. Committee is required to make every decision in accordance with the requirements of the Local Government Act 2002 (the Act). Staff have assessed the requirements in relation to this item and have concluded:
  - 11.1. The decision does not significantly alter the service provision or affect a strategic asset.
  - 11.2. The use of the special consultative procedure is not prescribed by legislation.
  - 11.3. The decision does not fall within the definition of the Adminstrating Authority's (HBRC) policy on significance and engagement.
  - 11.4. No persons can be identified who may be affected by this decision.
  - 11.5. The decision is not inconsistent with an existing policy or plan.
12. Given the nature and significance of the issue to be considered and decided, and also the persons likely to be affected by, or have an interest in the decisions made, the Committee can exercise its discretion and make a decision without consulting directly with the community or others having an interest in the decision.

## Recommendations

That Hawke's Bay CDEM Group Joint Committee:

1. Agrees that the decisions to be made are not significant under the criteria contained in Council's adopted Significance and Engagement Policy, and that the Joint Committee can exercise its discretion and make decisions on this issue without conferring directly with the community or persons likely to be affected by or to have an interest in the decision.
2. Notes and endorses the "*Lessons of the HBCDEM Response to COVID-19*" staff report.

## Authored and Approved by:

**Ian Macdonald**  
**GROUP MANAGER/CONTROLLER**

## Attachment/s

- 1 [↓](#) Lessons of HBCDEM COVID19 Response

# Lessons of the HBCDEM Response to COVID-19

(16 March – 30 June 2020)

## Contents

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| C. Summary of Learnings and Corrective Actions                |     |   |

## 1.0 Summary

The Hawkes Bay Civil Defence Emergency Management Group (hereafter referred to as the Group) began planning their response to the emerging threat of the COVID-19 virus in late January 2020 with the Welfare Manager working with National Emergency Management Agency (NEMA) in Wellington. Over this time the Group office was in enhanced monitoring mode after first cases of mystery virus were reported to the World Health Organisation at the end of December 2019.

At the same time the Group was also beginning to support the Rural Advisory Group and Councils after a large-scale adverse drought event had been declared for the North Island.

On March 16 the Group formally activated its GECC and on the following day the Hawke's Bay DHB also activated. The Hawke's Bay CDEM Group Controller and DHB Incident Controller had held discussions over the preceding week and had agreed that even though the DHB were the mandated lead agency for human pandemic, the CDEM Group was better placed to lead the coordination of the wider response between agencies and the emergency services. The DHB would remain as the lead agency for the clinical response.

All four Councils in the Hawkes Bay region subsequently activated their EOC's operating their (essential) business as usual, staffing their EOC, supporting the welfare response and also supplying staff for the GECC.

Additional requirements such as social distancing meant that some of the staff deployed to the EOCs and GECCs worked from home and face to face meetings were replaced by Zoom or Teams meetings. The GECC in Hastings operated with a maximum of 10-12 staff at any one time (normally up to 45) and operated shifts in "bubbles".

New Zealand went into Alert Level 4 nine days later and a state of national emergency was declared under the CDEM Act 2002 (this was extended seven times).

The key role of CDEM group was to co-ordinate the social and economic response required to achieve the public health objective at the regional level. This involved a particular focus on co-ordination of Welfare but also critically through local political leadership. Members of CDEM group also played a more operational role in supporting Health operations. In particular Police were tasked with enforcement of section 70 and COVID response Act orders.

Public Information Management was seen as critical to the success of the national response. Unlike any other emergency response, public information and advice was primarily delivered from the most senior level of government. Nevertheless, co-ordination of PIM at the regional level between DHB, CDEM Group and other stakeholders such as Iwi was critical.

The Group's Emergency Coordination Centre (GECC) was staffed by both Group office and Council staff. While the Hawkes Bay District Health Board was the lead agency for human pandemic, the CDEM declaration made the Group the lead agency for Hawke's Bay. Both organisations and the emergency services worked together to create a coordinated response for the people of Hawkes Bay.

The response to COVID-19 was different to any other emergency responses that New Zealand CDEM Groups have dealt with. Communities and businesses were faced with COVID-19 Alert Level 3 and 4 restrictions, impacting their ability to work, conduct business and access important services such as childcare and schools. Many parents were working from home while looking after their children. All of this was over an extended period.

Chief Executives were looking after the welfare of their staff while getting information out to their elected members who were trying to find ways to support their communities from their home.



NEMA issued a directive that all Groups were to concentrate on the welfare of people impacted by the lock down or the need to isolate at home. Groups were directed to establish a call centre to be operational two days later.

Ngāti Kahungunu Iwi (incorporated) have not had a mandated position on the Coordinating Executive Group (CEG) or the Joint Committee, but together with the Joint Committee and DHB (to name a few) became the Regional Leadership Group (RLG) that steered the region over this difficult time.

In the welfare sector temporary forms and systems applicable to a pandemic were developed by the Group until the NEMA Welfare system Āwhina was rolled out. However, the Group made an informed decision not to use Āwhina which did not provide an end to end solution which the Group had developed. This meant further work was required on the administrative and maintenance of the system.

Organisations stepped up to help their vulnerable clients, while others evolved from business as usual to welfare support and the new term Network of Networks was used. Many of these were unaware of the role that Group had and some of the Networks started their welfare support before the Group Welfare commenced their support.

The Network of Networks kaupapa was to support ALL the vulnerable in their communities and while this new way of delivering welfare was seen as positive there are some suggestions to improve the response for any future responses with the Networks all willing to be involved in a coordinated way in any future response.

The term "fit for now-fit for future" was termed and this means looking at the welfare delivery using the Network of Networks for welfare delivery in future responses.

While some people involved in the Group Emergency Coordination Centre (GECC) want further training and to be involved in future responses, others felt overwhelmed and were not able to handle the high pressure workload (working from home with limited support compared to working in an office environment).

The relationships and the coordinated response were described very positively by the DHB and Public Health, Police and Fire and Emergency NZ.

The GECC demobilisation began on 13 May with the change to Level 2. Welfare service delivery progressively transitioned across to the partner agencies as part of their business as usual.

The Hawkes Bay area had a total of 44 cases, and all had recovered by May 26.

With the de-escalation of the initial response to COVID-19, the Group initiated an independent after-action review of the Group led response up to 30 June 2020. This report summarises the key findings of that review, highlighting the methodology used, key learnings and opportunities moving forwards to improve the way the Group responds to emergencies.

Most of the recommendations from the review are not specific to a pandemic response and can be used to create a resilient response to any future events.

A timeline of the COVID 19 response is attached as Appendix A

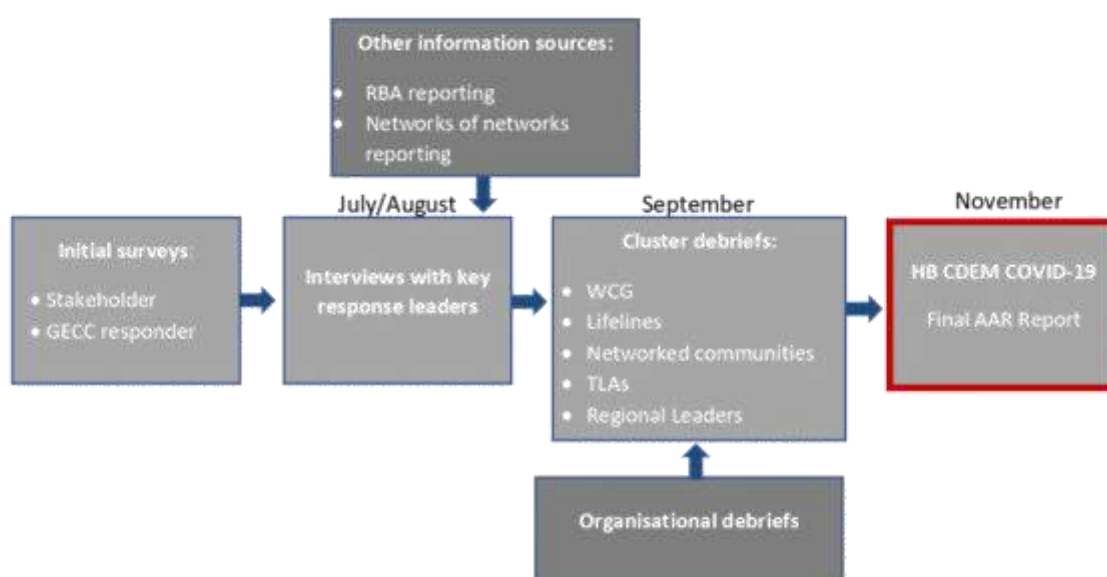
## 2.0 Purpose

The purpose of this report is to identify the key learnings of the independent After-Action Review (AAR) of the Hawke's Bay Civil Defence Emergency Management (HBCDEM) response to COVID-19 up to 30 June 2020. The intent of the report is to focus on the key learnings and opportunities for improving the way the Group responds to future emergencies. The Insights and Recommendations in this report are as found in the independent After-Action Review.

### 3.0 AAR Methodology

The Group engaged an independent consultant experienced in emergency management to undertake an After-Action Review (AAR) of the Hawke's Bay CDEM-led response to COVID-19 up to June 30. This process occurred with response stakeholders, local authority staff, emergency services, GECC Teams and Group staff.

The AAR methodology adopted for the review is based on guidance from the World Health Organisation (WHO) for After Action Reviews (AAR's) and aligns with national best practice within the CDEM sector and the Australian Institute for Disaster Resilience. Specifically, a mixed method review process has been followed, combining interviews with key response leaders, surveys, and workshops to engage with response stakeholders, GECC Teams and Group staff (see figure below).



**Figure:** The After-Action Review (AAR) process

All planned interviews and most of the workshops were held, with a few of the workshops cancelled due to COVID-19 resurgence Alert Level restrictions. The interview questions were sent out to teams and staff to answer, and an online workshop was held with the Mayors and Chief Executives.

Appendix B identifies the people and groups involved in that process.

### 4.0 Summary of findings

Most of the feedback from the AAR process aligns to the following six themes which are used to structure AAR findings below:

- Iwi involvement
- Regional Leadership Group
- Group and Local Controllers
- Emergency Services
- The GECC and Council EOCs
- Networks of Network (NoN) and Welfare Coordination Group (WCG)

#### 4.1 Iwi Involvement

Iwi groups such as Taiwhenua and Tihei Mauri Ora (TMO) worked with Hawke's Bay CDEM and provided support to people affected by COVID-19, seeing and acting on the need for enhanced welfare support to tangata whenua.

##### Insights and recommendations:

- Iwi would like to be involved in both the governance of HB Civil Defence Management and the welfare readiness and response. A number of other CDEM Groups have iwi representation on the Joint Committee and/or CEG.
- One of the Networks believed that the Group should have cultural training (recognising and understanding all cultures that live/stay in HB) and that explaining how CIMS operates while providing others with the recognised CIMS training to their teams.

#### 4.2 Regional Leadership Group

The Regional Leadership Group (RLG) was facilitated by the CEG Chair and consisted of the Chair of the Joint Committee, the Group Controller, Chair of the DHB, Chair of Ngāti Kahungunu, the Mayors, local Members of Parliament, Area Commander Police and the MSD Regional Commissioner. They met every evening and were updated by the Chair of the Joint Committee each morning during response.

##### Insights and recommendations:

- Group and TLAs should discuss the balance of allocating resources to both the local (EOC) and regional (ECC) response during readiness,
  - Look at including the Regional Emergency Management Adviser (REMA), Local Controllers\*, and FENZ Area Commander on the Regional Leadership Group meetings.
- \* In some meetings invitees do not have speaking rights with questions going through a nominated person – in this case this could be the Group Controller.
- CDEM Group to ensure clear and concise facts and information regarding the response are regularly communicated to RLG.
  - The RLG advise the Incident Controller at the commencement of the response on what information they want and how they want it delivered noting this may change over the duration of the response.
  - Look at balancing the local and regional issues for planning for recovery. This helps set the priorities for Group Controllers and Recovery Managers.

#### 4.3 Group and Local Authority Incident Controllers

The Group, Local and Incident Controllers who ran the respective ECCs and EOCs were interviewed during the debrief process.

##### Insights and recommendations:

- Quarterly meetings/workshops to bring together the Controllers and CIMS Function Heads with the kaupapa being (to name a few)
  - Building /rebuilding trust and confidence between Controller and Teams,
  - Creating better relationships,
  - Agreeing on issues such as content of daily briefings,
  - Consideration of the involvement of Local and incident controllers in the RLG (this was suggested by one of the RLG members),
  - An agreed process for deploying council staff to the GECC (and to include duration, working hours),



- Controller daily briefings to better encourage open discussion and resolution of common issues.

#### 4.4 Emergency Services

The Emergency Services response to COVID-19 was coordinated through the Emergency Services Coordinating Committee in this case chaired by the Group Controller. Their meetings were held daily during the response prior to the Group Controllers meeting with the Chair of the Joint Committee and daily Controllers briefing. The Emergency Services Coordinating Committee was used as a forum to set priorities, coordinate response activities and maintain a common operating picture.

##### Insights and recommendations:

- Public Health perception of the CDEM and partner response was that this was highly successful at supporting the Public Health response. The network of networks proved highly successful in supporting the wider welfare function. Police operations were critical in supporting social distancing and home stay orders and Public Health and Police developed effective working processes for requests for enforcement support.
- Circulate minutes of the ESCC meetings with outcomes/actions for members to follow up.
- Using CDEM and Emergency Services logos on media releases will make media outlets realise that responses are a coordinated effort,
- Agree, in the readiness phase the digital platform to use for meetings/communications, e.g. MS Teams or Zoom

#### 4.5 Group Emergency Coordination Centre (GECC) and Emergency Operating Centres (EOCs)

The Group Emergency Coordination Centre (GECC) was staffed with both Group office staff and staff from Councils in the region. All five Territorial Local Authorities within the Hawke's Bay region also maintained coordination centres to coordinate the local response to COVID-19.

##### Insights and recommendations:

- Discuss and review the Response Framework in regard to the Councils agreed procedure for deploying staff to the GECC.
  - Through the organisations Controllers/Response Managers who know staff previously identified for roles or staff who have the right attributes suitable for roles and understand the vulnerability of staff, or
  - Contacting staff directly
- While training and exercising opportunities for staff was considered important, building relationships for the key players needs to take priority.
- Procedure for staff deployed to the GECC such as
  - a comprehensive induction process for staff deployed from other organisations.
  - pastoral care,
  - availability of EAP services,
  - quality food, hot-debriefs, adequate breaks and appropriate working time policy's,
  - adequately rested to mitigate against response fatigue,
- Establish a roster coordination position early in the GECC response who understand what staff are required.
- A procedure for the sign-off of media releases by appropriate external agencies in particular Public Health.

#### 4.6 Networks of Networks and Welfare Coordination Group (WCG)

The Group led response to COVID-19 Alert level 3 and 4 restrictions was a Welfare-driven response to support vulnerable communities in the Hawke's Bay.

Welfare service delivery was a combination of urgent and longer-term support provided by foodbanks, NGOs, community networks (e.g. Taiwhenua, TMO, Aged Concern to name a few) and the Group.

In the Group Response Framework states welfare is coordinated for the region by the Group in Levels 3, 4, 5, (p18 of the Response Framework)

A survey post response of those assisted by the CDEM Group response found that 85% were better off because of the assistance of CDEM and 92% got the assistance they required.

##### Insights and recommendations:

- The WCG needs to look at a "fit for now and fit for future" welfare response and the Networks of Networks work alongside the WCG.
- Discuss and review the Response Framework in regard to Council involvement in welfare and the involvement of the Network of Networks.
- Moving forward the networks want to be recognised as providers of welfare for emergencies (and many operate in peacetime as well) and work in a coordinated way with the Group Welfare Team.
- The networks want a "voice" in the welfare planning stage preferably in the readiness phase but always in the response phase.
- These groups (or similar) will activate in future events-decisions and relationships need to be made now for coordinated future events.
- Include the Networks of Networks in readiness planning for welfare service delivery during response.
- Conduct a scoping exercise looking at the Networks of Networks involved and what areas/demographics they cover to ensure all vulnerable areas/demographics are covered.
- Provide guidance to the Networks of Networks regarding the safe use of volunteers/community workers in emergency events- Legal responsibility if volunteers are directed by HBCDEM.
- Invite Council Welfare Managers to Networks of Networks meetings during response.
- Provide admin support for the Welfare team early in response.
- Have a policy or procedure for what type of PPE is required, who is required to wear this PPE and where can it be accessed.

#### 5.0 References

1. Lessons Management–Australian Institute for Disaster Resilience
2. Hawkes Bay Group response Framework 2019
3. Guidance for After Action Review (AAR)–World Health Organisation
4. Organisational Debriefing–Ministry of Civil Defence and Emergency Management
5. Disease Outbreak After Action Review Toolkit–USAID United States Agency international Development

#### 6.0 Appendices

Appendix A – National and Local Timeline

Appendix B –Interview and workshop Attendees

Appendix C – Summary of Lessons Identified and Recommended Actions

## Appendix A – National and Local Timeline

Between 31 December 2019 and 3 January 2020, 44 patients with a mystery illness were reported by the Chinese Authorities to World Health Organisation (WHO) and on 7 January Chinese Authorities identified and isolated a new type of Coronavirus and between January 13 and 20 January virus spreads from China into Thailand, Japan and south Korea.

The Ministry of Health set up a team to monitor the outbreak on 24 January and the following day 25 January three cases were confirmed in Australia. On 31 January WHO declares this outbreak as a "public health emergency of international concern".

late January – Hawke's Bay CDEM Group begins enhanced monitoring of situation and commences review of plans. Attendance at national telephone conferences and liaison with Hawke's Bay DHB and cluster groups commences.

3 February the NZ Government placed entry restrictions on foreign nationals travelling here from or transiting through China and on 11 February WHO named this disease COVID 19 with deaths already surpassing the SARS outbreak of 2002-2004.

28 February New Zealand's first case was reported, and this had increased to five cases by 7 March.

11 March WHO officially declared the outbreak a pandemic.

14 March the Government announced that people entering the country must self-isolate for 14 days and cruise ships were banned from the country.

16 March HB CDEM formally activated their Emergency Coordination Centre commenced detailed planning, with the HB DHB activating the following day.

Napier City Council activated on 23 March, Hastings District Council CHB and Wairoa on 25 March

The Government closed the country borders to all but NZ citizens and permanent citizens on 19 March and while there was no community transmission all indoor gathering of more than 100 people were cancelled.

20 March Hawkes Bay has first case of COVID 19.

The four level Alert system was introduced with the Prime Minister asking people over 70 and people with compromised immune systems to stay home as much as possible and asked others to work from home if they could do so.

Initially Alert Level 2 was set, however this was raised to Alert level 3 on 23 March with New Zealand surpassing 100 cases and then at 11.59 on 25 March the country moved to Alert Level 4 (eliminate) and a state of national emergency was declared.

25 March the GECC rostered staff on two shifts – 7am-2pm and 1pm-8pm.

29 March NEMA issued direction to all CDEM Groups on specific operation, welfare and call centre requirements to be provided by 31 March.

30 March there were 12 confirmed and probable cases in HB and one day later (31 March) 15 cases.

By 6 April HB had 33 cases and by 13 April 41 cases.

16 April the GECC moves to one shift from 0730-1730 and this was supported by a virtual team between 8am-5pm.

27 April at 11.59 NZ moves to Alert Level 3 (restrict) and 4 May GECC team works from 0800-1700 with staff on call at weekends.

9 May cases globally surpassed four million. NZ moved down to Alert level 2 (reduce) on 13 May with the state of national emergency expiring and a national transition period beginning.

By 26 May, all HB confirmed and probable cases had recovered (44 cases)

8 June NZ moved down to Level 1 (prepare) –with no overseas travel and restrictions at the border, NZ citizens coming into the country and those with special exemptions are required to isolate in a managed isolation facility for 14 days with testing required on day 3 and 12.

Restrictions on work, school, sports, domestic travel and gatherings were lifted.



## Appendix B – Interview and Workshop Attendees

| <b>Interviews – Face to Face and Zoom</b>                            |   |
|--|---|
| Wairoa District Council Controllers<br>Kitea Tipuna and Nathan Heath | Wairoa District Council Alternate Controller<br>Juanita Savage    |
| Napier City Council Controller<br>Antionette Campbell                | Napier City Council Alternate Controller<br>Malcolm Smith         |
| Hastings City Council Controller<br>Dean Fergusson                   | CHBDC Controller and alternate<br>Doug Tate and Josh Lloyd        |
| HB CDEM Group Controller<br>Ian Macdonald                            | HB CDEM Deputy Group Controllers Liz<br>Lambert and Craig Cameron |
| Hawkes Bay DHB Incident Controller<br>Ken Foote                      | Hawkes Bay DHB Alternate Incident Controller<br>Hayley Anderson   |
| Chair of the Joint Committee<br>Rick Barker                          | NEMA REMA<br>Andrew Hickey  |
| CEG Chairs and Deputy Chair<br>Monique Davidson and James Palmer     | Fire and Emergency NZ<br>Area Commander Ken Cooper                |
| New Zealand Police Force<br>Martin James                             | HBRC Incident Controller<br>Chris Dolley                          |
| HBRC/GECC Iwi Relationships<br>Pieri Munro                           | Welfare Ministry Social development (MSD)<br>Cheryl Nicholls      |
| Group Welfare Manager<br>Alison Prins                                | Tiherie Mauri Ora<br>Paul Faleono                                 |
| Wairoa Iwi/Welfare<br>Nigel How                                      | Tamatea Hub<br>Roger Maaka  |
| Taiwhenua Ahuriri Hub<br>Tania Eden                                  |   |
| <b>Workshops</b>   |   |
| Welfare Coordination Group   | Supermarkets and Food Delivery                                    |
| Hawkes Bay CDEM Group office team                                    |   |
| <b>Email Replies- power point sent out with the questions</b>        |   |
| 2 x PIM Team   | 2 x Welfare/Operations Team                                       |
| 1 x Logistics Team   | 2 x Intel Staff and Managers                                      |
| <b>Zoom Meeting</b>  |   |
| Regional Leadership Group (RLG) and<br>Council Chief Executives      |   |



## Appendix C – Summary of Learnings and Corrective Actions

| Category                         | Summary of Learnings   | Corrective Actions Undertaken <sup>1</sup>  |
|----------------------------------|--|---|
| <b>Iwi Involvement</b>           | <ul style="list-style-type: none"> <li>Engage Tangata Whenua through all layers of the Emergency Management system, from governance through to operational.</li> <li>Develop cultural capability within the Emergency Management workforce.</li> </ul> | <ul style="list-style-type: none"> <li>HBRC Maori Committee engaged as part of the HBCDEM group plan review and to provide advice on how tangata whenua would like partnership with CDEM to evolve.</li> <li>NEMA CDEM Act review to include principles of Treaty of Waitangi in legislation and formalise iwi involvement.</li> <li>Cultural training for Group office staff requested from HBRC Te Pou Whakarae.</li> </ul> |
| <b>Resource Management</b>       | <ul style="list-style-type: none"> <li>Deconflict and plan workforce resource requirements between local and regional levels of response and recovery.</li> </ul>  | <ul style="list-style-type: none"> <li>Workforce capability advisor role established.</li> <li>Project established for Regional Emergency Coordination Team</li> <li>Conversations underway with council People and Capability teams</li> </ul>   |
| <b>Regional Leadership Group</b> | <ul style="list-style-type: none"> <li>Review the mandate, terms of reference, scope, membership, agenda, and administration of the Regional Leadership Group and governance.</li> </ul>   | <ul style="list-style-type: none"> <li>Regional Leadership Groups no longer actively meets, however relationships still exist and organisations involved in CDEM cluster groups</li> <li>Consideration of formalising the Hawke's Bay RLG in the Group Plan</li> </ul>  |

<sup>1</sup> This is a record of actions undertaken so far and future work areas. Further work will be done to identify further work post the current CDEM Review and as part of the review of the Group work programme.

|   |   |   |
|---|---|---|
| <b>Group<br/>Controllers<br/>and Local<br/>Authority<br/>Incident<br/>Controllers</b> | <ul style="list-style-type: none"><li>• Develop a mechanism for controllers to:<ul style="list-style-type: none"><li>○ Engage both in readiness and response.</li><li>○ Develop relationships.</li><li>○ Build trust and confidence.</li><li>○ Freely discuss issues and resolutions</li><li>○ Coordinate the collective regional response effort.</li><li>○ Agree the approach for communicating with governance.</li><li>○ Effectively manage resources and deconflict competing requirements</li></ul></li></ul> | <ul style="list-style-type: none"><li>• Bi-monthly controllers catch ups established and well attended.</li><li>• 6-monthly function specific training established.</li><li>• Emphasis placed on relationships and trust building.</li><li>• Deployment protocols to be included in Regional Emergency Coordination Team project.</li><li>• Welfare Coordination Group terms of reference reviewed and refreshed.</li></ul> |
|---|---|---|

|  |  |   |
|--|--|---|
| <b>Group<br/>Emergency<br/>Coordination<br/>Centre</b> | <ul style="list-style-type: none"><li>• Review the Response Framework and the shared service arrangements in response.</li><li>• Develop GECC plans and procedures for emergency management, including a staff management system</li></ul> | <ul style="list-style-type: none"><li>• Independent Operational Response Framework Review underway</li><li>• Plans and procedures put through continual improvement. Staff management policy in scope as next steps of Regional Emergency Coordination Team project.</li><li>• Operations Manual being developed which builds on existing operational plans and procedures and will consider operational response lessons</li></ul> |
|--|--|---|

|   |  |  |
|---|--|--|
| <b>Emergency Services Coordination Committee-ESCC</b> | <ul style="list-style-type: none"><li>• Agree and plan mandate, terms of reference, scope, membership, agenda, and administration.</li><li>• Leverage collective branding and coordinate media engagement.</li></ul> | <ul style="list-style-type: none"><li>• ESCC meeting administration now provided by HBCDEM Group Office.</li><li>• Operational Communications Plan to include multi-agency media release protocols.</li><li>• Microsoft Teams now used as primary information system.</li><li>• Independent Response Framework review underway</li><li>• Induction process reviewed and included in foundation training. Note, this was used during COVID.</li><li>• HBRC EAP services available to staff (note, this was available during COVID)</li><li>• Preferential food suppliers identified and used for training.</li><li>• Working policy is within scope of the Regional Emergency Coordination Team project which is being scoped.</li><li>• Roster coordinator position filled by full-time CDEM staff member (Note, this was completed during COVID).</li></ul> |
|---|--|--|

|   |   |  |
|---|---|--|
| <b>Welfare<br/>Coordination<br/>Group and<br/>Network of<br/>Networks</b> | <ul style="list-style-type: none"><li>• Strategically plan for the future of Welfare in emergency events, including roles and responsibilities.</li><li>• Develop and review WCG mandate, terms of reference, scope, membership, agenda, and administration.</li><li>• Develop roles and responsibilities, including for Iwi and communities in response as providers of emergency welfare in their own right.</li><li>• Provide recognised CIMS capability development to partners and communities.</li><li>• Provide administration support for the Welfare team early in response.</li></ul> | <ul style="list-style-type: none"><li>• WCG engaged, structure reviewed, and terms of reference review drafted.</li><li>• Network of Networks appreciated as communities of interest or association and engaged on a case-by-case basis (for what works best for them).</li><li>• Hawke's Bay risk profile being developed as part of the Group Plan review.</li><li>• Volunteering Hawke's Bay now engaged to register and keep a database of community volunteers in response.</li><li>• CIMS training provided and future direction of training to be unit standard based.</li><li>• National PPE policies applied.</li></ul> |
|---|---|--|





## HB CDEM GROUP JOINT COMMITTEE

Monday 28 June 2021

### Subject: COMMUNITY RESILIENCE UPDATE

#### Reason for Report

1. This report is to inform the Joint Committee of the community engagement activities of the Group.

#### Executive Summary

2. There is a wide range of activities being undertaken to ensure Hawke's Bay communities understand our risks and are prepared to support themselves and others in the initial stages of an emergency event. There is a focus on understanding our tsunami risk, as the recent tsunami warnings highlighted an ongoing need to engage with the community to ensure they understand our tsunami risk, and the correct actions they need to take.

#### Background

3. The following community resilience activities are currently underway:

##### *Tsunami education campaign*

4. A letter will be delivered to every property in Hawke's Bay located a tsunami zone in the next month. This is to advise them that they are in a tsunami zone and should evacuate if they feel a long or strong earthquake. The letter includes a sticker, FAQs and evacuation planning advice. This will be supported by a letter to elected officials and a Facebook and media campaign.

##### *Hawke's Bay Resilience Working Group*

5. A collective impact project group made up of organisations and agencies who deliver community-based resilience building projects across Hastings and Napier is being created to ensure that all know what each other is doing, and any gaps or opportunities are co-ordinated. Current members are HBCDEM, Safer Napier, Safer Hastings, Napier City Council, Hastings District Council, Red Cross, Fire and Emergency NZ, Taiwhenua, Neighbourhood Support, MoE, Pasifika and Migrant Networks and Te Puni Kōkiri. Community resilience projects will be developed in conjunction with the other activities of the working group parties.

##### *Wairoa District*

6. Following the March tsunami warnings, tsunami inundation maps were put up in Wairoa shop windows and community meetings held in Mahia, Whakaki, and Nuhaka. community resilience plans (CRPs) have been updated in these communities with learnings from this event. The Waikaremoana CRP is being reviewed, Wairoa CRP restarted (delayed due to COVID), and a CRP with Putarino is underway.

##### *Napier City*

7. Planning has begun for the installation of tsunami information boards along the foreshore from Westshore to Waitangi. The Bay View community have begun a review of their CRP. Tsunami information signage and evacuation routes are also being planned in this area.

*Hastings District*

8. Emergency information brochures about floods and tsunami have been delivered to Clive, Te Awanga, Haumoana and Waimarama residents. Previously there has been a digital approach, with this information available online. Following feedback from the community, printed materials have now been delivered to residents. Tsunami information boards have been created and will be installed by Hastings Recreational Services in the Cape Coast area. Planning has begun for tsunami information boards to be installed at Clive. Planning is underway to work with the Whakatu community on a CRP.

*Central Hawkes Bay District*

9. The Porangahau, Te Paerahi, Whangaehu, Wanstead and Flemington CRP are being reviewed and tsunami evacuation routes will be installed in the coastal locations. Emergency information is being developed and CRPs offered at Kairakau, Mangakuri, Blackhead and Pourerere.

*Network of Network hui*

10. There has been hui with the children and young person, older persons, disability, Pacifica and migrant networks to ensure that these communities understand their risks and are well placed to support community responses to emergencies.

*School and early learning services emergency planning*

11. Group office staff and the Hawke's Bay Ministry of Education Office are holding a series of workshops in August for Hastings and Napier Schools and Early Learning Services, to support emergency planning.
12. CHB and Wairoa schools have held a planning evening to ensure they are working to best practice guidelines with a networked approach to emergency planning and response.

*East Coast LAB community workshops*

13. The Group is hosting community workshops in Wairoa, Napier and Central Hawke's Bay, run by East Coast LAB, on the science behind the earthquake and tsunami risk facing Hawke's Bay communities.

*Te Hīkoi a Rūaumoko*

14. This is a bilingual children's story, based on matauranga Māori, that teaches children about earthquakes and tsunami. This has been re-created as an interactive eBook, which enables children and teachers to explore and discover more about purakau and matauranga surrounding earthquakes and tsunami. This is a local project with the eBook development funded by Earthquake Commission and Massey University.
15. The hard copy book is also being reprinted and will be distributed, along with a household plan template, to all preschool children in Hawke's Bay at their B4 School check. This is coordinated by Health Hawke's Bay and will reach approximately 2,000 children and their families each year.
16. A Resilience Fund application has been made to NEMA to create other culture version of Te Hīkoi a Rūaumoko, with the creation of three Pacifica and two Asian editions being planned.

**Strategic Fit**

17. These activities align with the objectives of the Group Plan.

**Considerations of Tangata Whenua**

18. We have a close relationship with Te Puni Kōkiri, taiwhenua and marae around the rohe. All of our working groups and resilience projects include tangata whenua representation.



### **Consultation.**

19. Consultation is ongoing with community champions, TLA staff, local agencies and NGOs, Māori, Pacifica and migrant groups, as well as our networks of older persons, disability and children and young persons.

### **Decision Making Process**

20. Staff have assessed the requirements of the Local Government Act 2002 in relation to this item and have concluded that, as this report is for information only, the decision making provisions do not apply.

### **Recommendation**

That the Hawke's Bay CDEM Group Joint Committee receives and notes the "*Community Resilience Update*" staff report.

### **Authored by:**

**Jae Sutherland**  
**ACTING TEAM LEADER COMMUNITY**  
**RESILIENCE**

### **Approved by:**

**Ian Macdonald**  
**GROUP MANAGER/CONTROLLER**

### **Attachment/s**

There are no attachments for this report.





## HB CDEM GROUP JOINT COMMITTEE

Monday 28 June 2021

### Subject: GROUP MANAGERS GENERAL UPDATE

#### Reason for Report

1. The purpose of this report is to inform or update the Hawke's Bay CDEM Group Joint Committee on a number of matters not specifically addressed in other items on this agenda and to give the Committee an opportunity to ask questions and give feedback if desired.

#### Discussion

2. The matters covered in this report include:
  - 2.1. November 2020 Napier Rain Event Lessons Learnt Report
  - 2.2. Group Office Staffing
  - 2.3. COVID-19 Resurgence Planning
  - 2.4. March 2021 Earthquake Trifecta and Tsunami Alerts
  - 2.5. Know your Tsunami Zone Campaign
  - 2.6. Managing Buildings in an Emergency: Regional Rapid Building Assessment System
  - 2.7. Group Work Programme Review
  - 2.8. Central Government Emergency Management Reforms.

#### *November 2020 Napier Rain Event Multi-Agency Lessons Learnt Report*

3. This review has been completed by the Fire and Emergency New Zealand (FENZ) National Operational Efficiency team. Interviews were conducted and the final report was received on 10 June.
4. The intention is for this to be presented to the CEG by FENZ at its next meeting in July. Once the CEG approved the report it will be included in the next Joint Committee agenda.

#### *Group Office Staffing*

5. As the Committee may be aware the CDEM Group office has been holding four vacancies since the start of the year. Three of these vacancies have been filled including EMA (Community Resilience), EMA (Intelligence) and the EMA (Public Information and Communications). The new staff in these roles have either started in the last few weeks. The current Group office structure is attached to this item.
6. The fourth vacancy is the role of Team Leader Community Resilience. This vacancy was seen as an opportunity to relook at the structure of this team and the role of the Senior EMA (Welfare). As a result, a decision was made to appoint Jae Sutherland as Acting Team Leader and a change process was undertaken and is now complete. Interviewing for this role has commenced.

### *COVID-19 Resurgence Planning*

7. In the last quarter the Group office have held three multi-agency resurgence planning meetings. These meetings have been useful to keep updated with different agency efforts around resurgence planning and the regional vaccination programme.
8. The location of regional pre-determined checkpoints (via NZ Police) will be sent to NEMA to be used in health orders should a regional lockdown be required. Stakeholders have been asked to feed through any concerns on the positioning of these regional boundaries to the Group office.
9. The main considerations at this point is accessibility to health and other key services in larger centres for Mahia and Pōrangahau residents who are currently outside of the checkpoint boundaries.
10. We have received the latest version of the National COVID-19 Response Plan. This plan is aimed at the national level, however, several minor updates were made to our regional plan (e.g. updated diagrams).
11. An updated version of the Regional Resurgence Plan was released in early June and are continuing to hold monthly planning meetings with our partners.

### *March 2021 Earthquake Trifecta and Tsunami Alerts*

12. The debrief notes to Tsunami Warning(s) 5 March 2021 have been completed and are attached to this report. Any actions from this either have already been implemented or will be included in the work programme.
13. Also attached for the information of the Committee is the NEMA National Post Event Report for this event. We received this in the last couple of days.

### *Know your Tsunami Zone Campaign*

14. This is one of the actions to come out of the previously mentioned debrief. Work has just been completed finalising a letter to the approximately 30,000 landowners that own property in a tsunami evacuation zone in the Group area. This letter will inform people of the fact their property is in a tsunami evacuation zone, what they need to do and where to get further information. The letter will also include a sticker which people can attach to the back of their door or somewhere appropriate so non-residents on site can see the property is in a tsunami evacuation zone.
15. This will be backed up with a communications plan across mainstream and social media. This is programmed to begin in early July.
16. The cost of this is in approximately \$35,000 and will need to be covered from under-expenditure from other CDEM budgets or treated as unbudgeted expenditure.

### *Managing Buildings in an Emergency: Regional Rapid Building Assessment System*

17. As a result of learnings from recent events and the release of a recent Directors Guideline on Impact Assessment, there has been some discussion with FENZ, Napier City Council (NCC) and Hastings District Council (HDC) on speeding up the development of a regional approach to managing buildings in an emergency.
18. There are many different strands to this, including an overarching impact assessment plan and procedures, rapid impact assessments, more specialised detailed building assessments, the tools that support these processes.
19. The rapid building assessment process involves a certain amount of cross-over between the roles and responsibilities of the CDEM Group and TLAs as building control authorities.
20. With the direct support of Group office staff, HDC have agreed to lead the development of a project to create a regional rapid building assessment system. This project would also involve support and resourcing from FENZ and all TLAs.
21. The aim is to develop a region wide system that supports effective and efficient processing and recording of rapid building assessments that provide for public safety, while allowing controllers to make informed decisions in the response and support the ongoing recovery from an event.

22. While this project is currently in an initial scoping phase, it is intended that a formal paper be presented to the CEG at its next meeting in July.

#### *Group Work Programme Review*

23. The current Group Work Programme can be found at [Group Work Programme 2018-19 and 2019-20](#). Due to the COVID-19 response an updated work programme for 2020-21 was not developed.
24. With the identification of lessons from the COVID-19, Napier Rain Event and Trifecta of earthquakes responses it is timely to commence the review of the current work plan (what has been achieved) and develop a new programme for 2021-22 and 2022-23.
25. It is intended that a draft be presented to the CEG at its next meeting in July.

#### *Central Government Emergency Management Reforms*

26. The National Emergency Management Agency (NEMA) has commenced work has commenced the development and consultation on what they have termed the “Trifecta Programme” this is a review of the Civil Defence Emergency Management Act and National Plan, and the implementation of the National Resilience Strategy.
27. NEMA staff will be attending this meeting and can answer any detailed questions on this programme.
28. The timeframes for this work is ambitious and does involve significant involvement from subject matter experts in the Group office and some local authority staff. This may impact on group work projects over the next 12 months. It is difficult to quantify this and as a result NEMA have been asked to provide a consultation plan so Groups can internally coordinate work programmes.

#### **Decision Making Process**

29. Staff have assessed the requirements of the Local Government Act 2002 in relation to this item and have concluded that, as this report is for information only, the decision making provisions do not apply.

#### **Recommendation**

That the Hawke's Bay CDEM Group Joint Committee receives and notes the “Group Managers General Update” staff report.

#### **Authored and Approved by:**

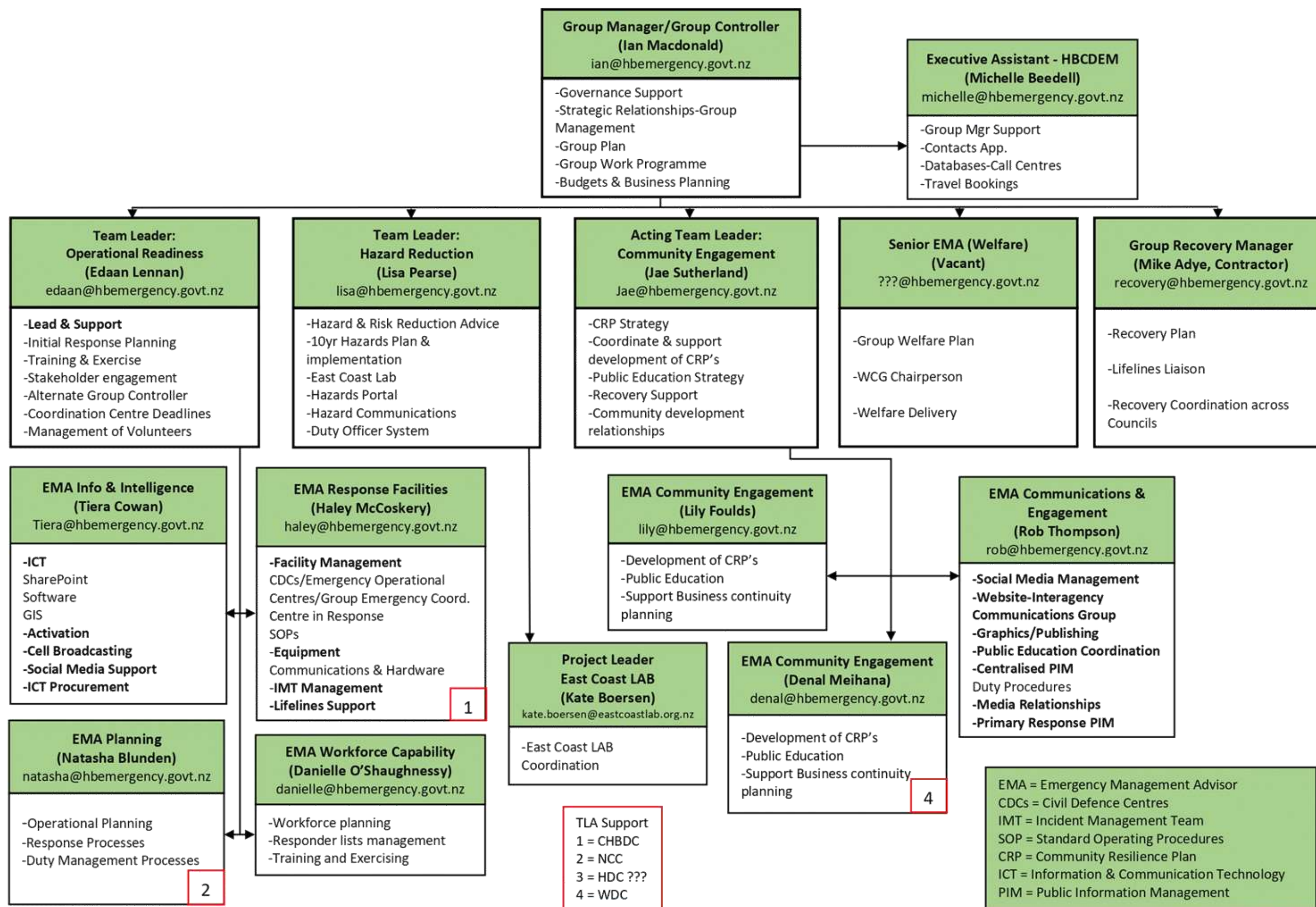
**Ian Macdonald**  
**GROUP MANAGER/CONTROLLER**

#### **Attachment/s**

- 1 [Down Arrow](#) Current CDEM Group Structure
- 2 [Down Arrow](#) 5 March 2021 HBCDEM Debrief notes to Tsunami Warnings
- 3 [Down Arrow](#) Hikurangi and Kermadec Island Earthquakes Post-Event Report











# HBCDEM Debrief notes to Tsunami Warning(s) 05 March 2021

## Executive Summary

The response to the 5<sup>th</sup> March earthquakes and tsunami warnings is generally viewed as being well managed. In any emergency response, it is important that the opportunity is taken to analyse the actions taken and develop learnings to inform a continuous learning system. Below is a summary of the key learnings and the corrective actions taken subsequently:

| Issue   | Actions   |
|---|---|
| <b>Website</b><br>The website's capacity could not cope with the volume of people using it, and subsequently crashed during the response  | Website capacity increased and tested to cope with large demand   |
| <b>Know your zone public education</b><br>People in the tsunami zone were not aware of their risk exposure.   | A public campaign of "know your zone" has been launched including direct communication with property owners in evacuation zones   |
| <b>Using council networks to communicate</b><br>Messages were not fully disseminated to the impacted communities through communication channels   | A response communication plan will be developed once the EMA Communication and Engagement is embedded.  |
| <b>Templated messaging</b><br>Due to changes in the National Tsunami Warning Plan in late 2020, pre-templated messages were not up to date, causing operational lag and errors in our messaging. For example, a Facebook post was released which contained internal response information not suitable for public use.<br><br>Templates to allow for targeted geographical messages via the EMA also need to be reviewed and if appropriate new templates developed. | This needs to include council call-centre messaging and communicating messaging to councils for dissemination.<br><br>Templates for the EMA system need to be reviewed or where needed developed. |

## Purpose

The purpose of the debrief was to capture the Group Emergency Coordination Centre (GECC) staff observations from the 5<sup>th</sup> March 2021 Earthquake Trifecta event and to give staff the opportunity to 'have their say', as well as providing closure and a chance to celebrate our successes.

## Scope

This debrief was scoped exclusively to the internal actions of the GECC staff. Any observations made about external agencies was from the perspective of the HBCDEM Group and the GECC.

Observations and learnings were also discussed across agencies have occurred in 'cluster meetings' (e.g. Controllers, Lifelines, Welfare, Emergency Services) and discussion points have been captured in each meeting's normal administration processes.

The learnings were also discussed with all controllers at a meeting on 8 March 2021.

This document covers all three earthquakes on 5<sup>th</sup> March. Observations are broken down into the initial response phase, that occurred in the early hours of the morning, and the subsequent response phase, which occurred for the second and third earthquake.

## Methodology

An internal HBCDEM Group Office staff debrief was held Tuesday 16 March. The **STOP** model was used as a model to discuss the following topics

- Summarise the event,
- Things that went well,
- Opportunities for Improvement,
- Problem Statements.

These problem statements were then fed into a root cause analysis, to analyse the observations and draw out business insights. The template used in as the Appendix is attached to this report.

## Summary of event

The event summary was provided by the HBCDEM Group Controller to the HBCDEM Joint Committee on 22<sup>nd</sup> March 2021. This summary should be read prior to this debrief report to contextualise the observations presented in the debrief.

## Initial Response

### Activation

The activation of the Internal Group Office staff was seen as generally working well and a good test of a new system using MS Teams and On-Call Response Manager for the first time. Several positive observations were made about the timeliness and use of technology to enable many-to-many communication (as opposed to individual phone calls which is one-one communication). Several risks were highlighted, such as the visibility of branded vehicles in tsunami evacuation areas and the unintended intrinsic messages that our actions give the public.

Staff who evacuated to Tsunami Evacuation areas were looked to for leadership by the gathering community. Although no issues presented at this particular response, having identifiable CDEM staff may present a personal safety risk if the public sentiment changes to frustration and anger during a significant event. A simple solution would be the ability of CDEM staff to remove or cover branding from vehicles.

The HBCDEM Group Office team quickly self-activated. The On-Call Response Manager established a virtual conference immediately after the shaking and the staff were quickly able to inform their personal situation and coordinate initial and internal response actions. Staff remained on this call whilst evacuating to higher ground, driving into the GECC, and conducting other concurrent response coordination.

The HBCDEM Group had recently completed a new activation chapter of the Operations manual, and this was the first time that had been used in an event. This provided a positive example of why detailed operational planning pays off in the early stages of response.

Rapid and remote communication allowed Command and Control to be established quickly and an initial event appreciation was undertaken. Decisions were informed, and easily communicated to all staff and external agencies who were responding, such as the decision by the Group Controller to stand up the Coordination Centre in Lyndon Road Hastings. This was an important decision because partner organisations, such as emergency services, started to spontaneously arrive in order to coordinate their agencies' response actions.

The rapid activation was enabled by Microsoft Teams in an internal HBCDEM Staff locked channel. The functionality of being able to call out from the conference and 'build the team' as we went was especially beneficial. The platform allowed staff to remain on the Team's call and concurrently use their phones for other conversations.

The councils had varying degrees of activation particularly to the Kermadec quake. HDC, WDC, and CHBDC stood up incident management teams and had clearly defined controllers. NCC and HBRC did not activate their Incident Management Teams, but their controllers did come to the GECC in order to liaise and coordinate, which generally worked well. Having councils with activated incident management structures was seen as preferable for the GECC staff as it gave a 'centre-of-gravity' for the response actions within each council.

#### Warning and Informing

Under the National Tsunami Advisory and Warning Plan, NEMA has responsibility for all aspects of producing Tsunami Warnings and delivering messaging at a national level to radio and TV. CDEM groups are responsible for putting local context into messaging if appropriate and disseminating using their channels.

Facebook and the CDEM website were used as the main platform for communicating with the public. National messaging was being passed on by NEMA via mainstream media. Staff members were tasked to log in from home and conduct FB posts based off initial understanding of the situation. This process, whilst responsive, carries a risk of internal hazard analysis being inadvertently used in public messaging. Although this information was reliable and correct for Hawke's Bay as a response indicator, it was ahead of the lead organisation messaging (NEMA) and could have been misinterpreted for other regions.

All of our Facebook posts are linked to the HBCDEM Website. This caused a high level of traffic (36,000 hits) to the website and it subsequently slowed and became unresponsive. Updating both Facebook and the website's emergency status is conducted independently and can add complexity and inefficiency. No further social media communication channels were used such as twitter or Tik Tok; an approach which may lead to the HBCDEM not fully leveraging our online presence during response. One opportunity for improvement is to link multiple platforms up to the New Zealand Common Alerting Protocol and automate the National Warning System messages being distributed.

The Regional Warning system was the primary means of informing partner agencies for important developments and National Warning System messages. Several technical issues were experienced with the RWS platform "Whipir" prior to this event that had not been rectified by the service provider.

Backup RWS options were employed, including Microsoft Teams messages and using email distribution lists. Whilst achieving the outcome, these backup systems do not provide the same consistency that partner agencies look for when creating their own internal automated message distribution systems. The membership of the RWS is approximately 20 organisations and does not constitute the full range of partner organisations that HBCDEM communicates with through the ESCC, Lifelines, and WCG, and Council network.

This event identified the importance of having up to date contact information for our warnings systems, backups, and ultimately the importance of relationships when technology fails.

Work still needs to be done to ensuring clarity for partner organisations, such as councils, to onforward and distribute RWS messages through their own local networks and community contacts.

In the latter earthquake during business hours, councils were receiving overwhelming volumes of phone calls from members of the public wanting to know what the evacuation meant for them. CDEM and Councils have never had the capacity to deliver individualised advice during an emergency such as a tsunami. There seems to be an increasing expectation driven in part by raised awareness of hazards that impact Hawke's Bay and the success of the Hawke's Bay CDEM social media footprint.

There is not a clear process for communicating into and out from the GECC for public enquiries. Calls were being transferred to various locations, all providing differing levels of service. Call were redirected to the Palmerston North Call Centre, to GECC staff's cell phones, GECC phones that were not staffed, the 111 system, and to individuals working within each council in an uncontrolled manner.

Developing a communications plan that considers how we communicate messaging with Councils and our response partners would help to ensure messaging is widely disseminated and will also set expectations and levels of service that can be sustained. Feedback was received from some councils that messaging was difficult to developed using information sent to them from the regional warning system.

An alert through the Red Cross Hazards App was attempted by the GECC staff, but due to a technicality ultimately did not send the warning. Further investigation and engagement with the Red Cross team needs to be undertaken once HBCDEM embed the EMA Communication and Engagement so that we can be confident in this as a communication channel.

The decision of whether to issue an Emergency Mobile Alert (EMA) was considered by the controller, who decided that as there was no land threat to Hawke's Bay, the emergency did not meet the criteria for sending an Emergency Mobile Alert. EMAs were issued in other regions that did have a land threat (e.g. Northland, Bay of Plenty and Tairāwhiti) and this created a public expectation that EMAs would be issued across NZ.

### Evacuations

Self evacuations were triggered in the community by the early earthquake being felt as long, or interpreted as strong in parts of Napier. One of our staff members estimated there to be approximately 80-100 people in Tiffen Park on the Napier Hill.



For the final earthquake, small evacuations for properties in the Red Evacuation Zone were conducted across the region using different channels, the Councils and Emergency Services. Digital evacuation messages were put out over Facebook and onto the website. Changes had been made to the national Tsunami Warning Plan in late November 2020. As a result, pre-templated messages for evacuation were found to be out-of-date, so messages were created and uploaded ad-hoc.

Community sentiment on Facebook was that most people did not know what Tsunami zone they were in. We were using the term "Red Zone"; which likely contributed to 'shadow evacuations' taking place (i.e. people evacuating who weren't in the red zone and who didn't need to).

Compounding this effect was that the website was overloaded (where we were directing people to go to check their zone) and that the images on Facebook were hard to navigate to and use. Actions we can take (have taken) to mitigate this is to change our language to "Beach and Marine" instead of "Red Zone"; upload our detailed tsunami evacuation maps to the website and build in website resilience.

Parts of the community were incorrectly expecting to be contacted on their cell phone through a Civil Defence text alert or notification. This may have been confused with the EMA system which is not a text alert system. This showed that there is still high expectation that people will receive personalised alerts from CDEM, which is not the case in Hawke's Bay or indeed the rest of the country.

People may have been getting confused with their friends / relatives getting an Emergency Mobile Alert in Tairāwhiti and other regions, a specific community's 'text-tree' or that they were on the Red Cross Hazards App and had not received a warning through there.

Several of the more remote organisations (e.g. camping grounds, schools) across the Hawke's Bay's coastal area still expect a call from their council and be able to directly connect with them on the phone. This occurred in many cases. Some communities who are not in the red zone, would like to be as it helps with their internal emergency procedures and messaging to parents to allow them to evacuate and 'close the school'.

Overall, the fact that evacuations were managed differently in different communities presents both a strength that the approach is tailored for the community, and an opportunity to improve in standardising and streamlining the evacuation process.

Wairoa Council had used primarily community networks to activate pre-established community response plans, including telephone trees.

In Napier, FENZ staff were the primary field staff in evacuating people off beaches and freedom camping areas. This was supported by council staff.

In the Hastings and Central Hawke's Bay districts, the council's respective incident management teams deployed contractors to patrol evacuation zones, close roads, and phoned out to known communities such as schools and campgrounds. Where available this effort was supported by FEMZ volunteer crews.

Planning for escalation was another opportunity for improvement and this work is ongoing. If the event had continued in duration, or had escalated in scale, most of the CDEM staff were feeling 'burnt-out' by the end of the working day on 5 March (after having been responding since 2:30am that morning). Contingency planning faced difficulties such as trying to source council staff to surge

into the initial response in case of potential aftershocks. On this occasion this was not required but to the lifting of the warnings in the afternoon.

This was particularly relevant considering the Hawke's Bay CDEM Group office team had experienced high attrition since the COVID lockdown and were carrying several vacancies in important positions. In place backups for PIM worked well however there was limited capacity for a second or third shift if required.

## Appendix 1

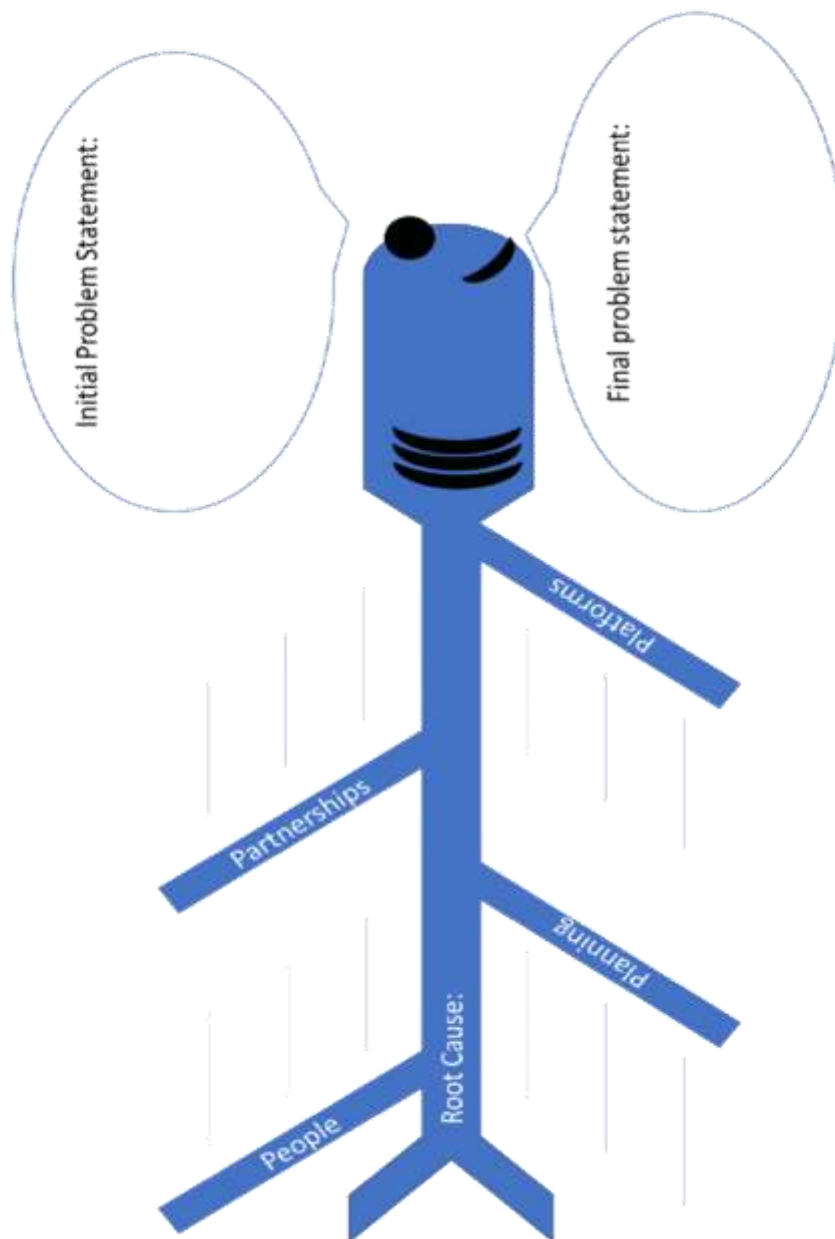


## HBCDEM Staff Debrief

|   |  |
|---|--|
| Event Name:   |  |
| Date(s) of Event:   |  |
| Your name (optional):   |  |
| Your role in response<br>- Describe your involvement (optional) |  |

| The <b>STOP</b> model is used to conduct internal debriefing and determine corrective actions |                               | Time Target | Contributes to outcome       |
|---|-------------------------------|-------------|------------------------------|
| <b>S</b>  | Summary of the Emergency      | 10 minutes  | Who did what, when           |
|   |                               |             |                              |
| <b>T</b>  | Things that went well         | 20 minutes  | We understand our strengths  |
|   |                               |             |                              |
| <b>O</b>  | Opportunities for Improvement | 20 minutes  | We understand our weaknesses |
|   |                               |             |                              |
| <b>P</b>  | Problem statements            | 10 minutes  | What are our problems        |
|   |                               |             |                              |

## Appendix 1



## How to do a “fishbone analysis” or “root cause analysis”

1. Pick one problem statement from the previous activity and write it into the initial problem statement textbox
2. Brainstorm all the possible causes of this problem in relation to the major categories of people, planning, partnerships, and platforms.
3. Reiteratively ask “Why does this happen?” - as each idea is given, the facilitator / individual writes it as a branch from the appropriate category.
4. Continue to ask “Why?” and generate deeper levels of causes. Layers of branches indicate causal relationships. Define the ‘root cause’ in the spine of the diagram.
5. Reframe the initial problem statement with the final problem that incorporates the findings of the root cause analysis



# Hikurangi and Kermadec Islands Earthquakes 5 March 2021

## Post-Event Report

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## 1 PURPOSE

The National Emergency Management Agency (NEMA) is working to embed a culture of continuous improvement. Every emergency provides an opportunity to reflect on our performance and identify opportunities to improve our work to build safe and resilient communities in Aotearoa New Zealand. NEMA works with its partners, stakeholders and the media to achieve this.

The purpose of this report is to provide an overview of the NEMA response to the earthquakes and subsequent tsunami threats generated by a series of large earthquakes off the East Coast of New Zealand and in the Kermadec Islands on 5 March 2021. The report captures aspects of the response that may be improved and aspects that worked well. In particular, the report focuses on lessons for effective communication in future events, with the intention of providing clear and timely advice, mitigating confusion, and ultimately, preserving life safety.

The report represents NEMA's standard process following each response with debriefing, capturing lessons, and identifying any corrective actions that may be necessary. Although this process focuses on NEMA's own response performance, the end-to-end tsunami warning process involves a number of agencies. The report identifies areas where NEMA will lead work with these agencies to improve the overall process. The response of regional CDEM Groups and wider context of the CDEM framework and its structures were not in scope for the report.

## 2 EXECUTIVE SUMMARY

New Zealand's tsunami risk is comparable to or larger than its earthquake risk. The most significant threat comes from tsunami generated within one to two hours travel time from the nearest New Zealand coastline. No part of the New Zealand coastline is completely free from tsunami hazards.

The National Emergency Management Agency (NEMA) is New Zealand's lead agency for tsunami hazards and has statutory responsibility for issuing official warnings and advisories relating to tsunami activity. In giving effect to this role NEMA is led by its wider objective of putting the safety and wellbeing of people at the heart of the emergency management system.

On Friday 5 March 2021, three large earthquakes occurred offshore of New Zealand. The first earthquake occurred at 2.27am (a Magnitude 7.3 off East Cape) and was followed by two earthquakes in the Kermadec Islands, a Magnitude 7.4 earthquake at 6.41am and a Magnitude 8.1 earthquake at 8.28am. They all generated tsunami that overlapped and were recorded around New Zealand. This was a complex series of events that resulted in a response that was generally well-managed. This report focuses on the collective response to these three separate events.

There were many positives for NEMA during this response, including the prompt evacuation actions by the public, the performance of the National Warning System and use of Emergency Mobile Alerts (EMAs), and proactive engagement with the media throughout the response. However, areas for further improvement remain, in particular ensuring more timely advice is provided to the public and speeding up the end-to-end warning process.

A comprehensive debriefing process was undertaken after this response to ensure that lessons were captured from these events. This report provides an overview of the events and their impacts, the response at the national level, and the strategic and operational findings captured through the debrief process. It also suggests remedies for areas that can be improved.

### 2.1 Strategic Findings

#### 2.1.1 The provision of advice to the public needs to be sped up

While there is a fine balance between the need for speed and accuracy in the event of tsunami warning, for local source events speed should be of the essence. Speeding up the provision of tsunami warnings is a key focus for the Government, and NEMA and GNS Science have identified some areas for improvement in relation to the tsunami warning process.

#### 2.1.2 Further improvements to the distribution of agency responsibilities would improve the tsunami warning process

Rapid and effective tsunami warnings continue to be hampered by the current practice whereby GNS Science is responsible for monitoring and making tsunami threat assessments while NEMA is responsible for issuing tsunami warnings and advisories. The layers of this arrangement create complexity and can cause delay.

#### 2.1.3 Collaboration between agencies was supported by existing relationships

Relationships should continue to be developed and maintained, particularly through cross-agency exercising and system learning. Continued strong engagement between the NEMA and GNS Science Duty Teams is needed to ensure swift assessment and response (warnings).



### 2.1.4 Public understanding of what to do when there is a local source tsunami is improving

The primary tsunami warning for a local source earthquake will always have to be the natural warning signs themselves (i.e. the shaking) due to the short travel time from the earthquake epicentre to the nearest coastline (often under 15 minutes). It is encouraging that many coastal communities did not wait for official warnings and self-evacuated upon recognising the natural warning signs following the East Cape earthquake on 5 March 2021. This is a positive sign and indicates that public education messages, in particular the “Long or Strong, Get Gone” messaging and tsunami arrangements for local source tsunami events, have been effective.

## 2.2 Operational Findings

### 2.2.1 Scientific advice from GNS Science continues to be best for New Zealand

As a New Zealand-based organisation, only GNS Science has the necessary depth and breadth of local scientific knowledge required to make informed estimates of a tsunami’s threat for New Zealand.

### 2.2.2 Activation in response was effective

The NEMA Duty Team was responsive and the use of Microsoft Teams was good for communication and visibility of actions. There was clear and decisive decision making, especially following the third earthquake event (based on the magnitude and location of the earthquake).

### 2.2.3 The widespread use of EMA messaging was generally effective but the overlap of national and local EMAs needs further consideration

This was the first response where a significant number of EMA messages were disseminated over wide geographic areas. Three EMAs were sent by NEMA to instruct people to evacuate. Eighteen EMAs were also sent by CDEM Groups to widen evacuation areas and to notify people in regions where strong and unusual currents were expected.

Although in line with pre-existing mandates, the issuing of both national (NEMA) and local (CDEM Group) EMAs led to some confusion. This needs to be addressed moving forward.

### 2.2.4 Public information was disseminated through a wide variety of channels and extensive ‘reach’ was achieved

The NEMA Public Information Manager and the wider communications team proactively engaged with the media throughout the response.

The media did an excellent job of clearly communicating life safety messages throughout what was a dynamic and complex sequence of events, reinforcing the vital role they play as an emergency communications channel.

Support was expressed for the role played by the GNS Science representative who contributed to the media stand-ups, alongside the Minister for Emergency Management and acting Director CDEM, to provide scientific context and advice.

### 2.2.5 There is continued confusion between the use of land threat versus beach and marine threat

The use of the term 'Beach and Marine Threat' continues to be perceived by both the media and the public as the same as a 'Land Threat'. Confusion between the two threat categories can result in an incorrect perception from the public that they need to evacuate.

This has been an identified issue in previous tsunami threats and changes have been made to the text used in warning and advisory templates to better explain the differences. However, further refinement of the text and public education will be required in advance of future events.

### 2.2.6 The events had the potential to stretch NEMA resources

Although this series of events did not result in casualties or significant land damage, the long duration nature of such a response from the early hours of the morning began to impact on NEMA staff wellbeing and resourcing.

Due to the early and repeated tsunami notifications that all NEMA staff receive, even those staff not on duty were experiencing constant interruptions to sleep prior to any rostered shift they were required for. The impacts of this would have become more pronounced with a longer duration event.

## 2.3 Although tsunami warning processes have improved, more work is needed to address recurring issues

A number of areas have been recommended for improvement following previous tsunami responses and have been acted on. However, a number of areas do not have quick fixes and require continued focus to lift the effectiveness of New Zealand's tsunami monitoring and warning systems.

NEMA has established an Exercises, Evaluation and Lessons Management Team to improve cross-agency continuous improvement processes following emergency responses and simulation exercises. The planned introduction of a national lessons management system will bolster continuous improvements efforts and support the increased effectiveness of the tsunami warning system.

## 3 INTRODUCTION

### 3.1 New Zealand's tsunami risk

New Zealand's tsunami risk is comparable to or larger than its earthquake risk. Large tsunamis have occurred in New Zealand within written history but have resulted in few deaths and relatively modest damage. However, Maori tradition records several large tsunami killing many people within the last 1000 years. Archaeological evidence indicates that several coastal settlements around New Zealand were abandoned for higher ground in the mid-1400s and there is also geological evidence of tsunami with up to 60m run-ups affecting the New Zealand coast within the last 6000 years.

New Zealand's location astride a plate boundary means that it experiences many large earthquakes. Some cause large tsunami. New Zealand's coasts are also exposed to tsunami from submarine and coastal landslides, and from island and submarine volcanoes. In addition, tsunami generated by large earthquakes at distant locations, such as North and South America, or the Aleutians in the North Pacific Ocean, could also be damaging in New Zealand.

Tsunami with run-up heights of a metre or more have occurred about once every 10 years on average somewhere around New Zealand, a similar frequency to Hawaii and Indonesia, but about one third of that in Japan. Smaller tsunami occur more frequently and are often only detectable on sea-level recorders.

With intensification of coastal development over the last few decades, a large tsunami today is likely to be very damaging. One of the most significant threats comes from tsunami generated within one-two hours travel time from the nearest New Zealand coastline.

New Zealand can expect tsunami in the future. Some coasts are more at risk than others because of their proximity to areas of high local seismic activity, or exposure to tsunami from more distant sources. No part of the New Zealand coastline is completely free from tsunami hazard.<sup>1</sup>

Over the last five years, New Zealand has experienced a number of regional or local tsunami events and our ability to respond to these threats has developed over this period although there are further lessons to learn. Some of the previous events experienced were:

- East Cape earthquake and tsunami: 2 September 2016
- Kaikoura earthquake and tsunami: 14 November 2016
- Kermadec Islands earthquake and tsunami 16 June 2019.

#### 3.1.1 The tsunami warning process

NEMA is New Zealand's official agency for providing tsunami advisories and warnings. GNS Science, via the National Geohazards Monitoring Centre, is responsible for monitoring and reviewing earthquake and tsunami related data to determine what it means for New Zealand. Only advisories and warnings issued by NEMA represent the official threat status for New Zealand, as the information used is confirmed by GNS Science.

Assessing tsunami activity and providing accurate, timely warnings depends on the location (distance) of the earthquake. A distant source tsunami gives GNS Science time to gather confirmed data and assess the tsunami's characteristics. The more distant the tsunami's origin, the more time available to assess it, and the more accurate that assessment will be. Unfortunately, the inverse is also true. If the tsunami's origin is close to New Zealand (a so-called

<sup>1</sup> For more on New Zealand's tsunami hazard, see Power, W. L. (compiler). 2013. Review of Tsunami Hazard in New Zealand (2013 Update), *GNS Science Consultancy Report 2013/131*.



local-source event), a tsunami could arrive within minutes and communities must act immediately. GNS Science may not have enough time to assess the threat, and NEMA may not have enough time to issue an official warning before the first waves arrive.

The warning process is different for local-source earthquakes as compared with tsunami generated from further away (regional and distant-source tsunami). Local-source tsunami include those originating in the Kermadec Island area, which have been identified as requiring similar treatment to a local-source event, given tsunami waves may have a travel time of approximately one hour to the nearest New Zealand coastline depending on the earthquake epicentre. This report focuses on local-source and Kermadec Island-source earthquakes and associated processes.

New Zealand's first tsunami monitoring information originates from the United States' National Oceanic and Atmospheric Administration (NOAA), which is responsible for the Pacific Tsunami Warning Center (PTWC) in Hawai'i which focusses on Pacific Ocean countries tsunami threats. PTWC is able to locate and characterise earthquakes anywhere in the Pacific basin and provide a tsunami threat estimation and ongoing updates until the threat has passed, in some cases over 24 hours later for trans-Pacific waves.

New Zealand has augmented this internationally sourced capability with the National Geohazards Monitoring Centre (NGMC)<sup>2</sup>, a 24/7 service operated by GNS Science with funding from the Ministry of Business, Innovation and Employment (MBIE). When regional and distant earthquakes occur, the NGMC receives a tsunami threat message from the PTWC which it then uses to determine whether the threat meets NEMA's thresholds for advisories and warnings. For local earthquakes, the NGMC determines the earthquake characteristics from New Zealand's own geophysical networks.

When NEMA receives notification of an earthquake, either via Geonet or the Pacific Tsunami Warning Centre (PTWC) in Hawaii, the NEMA Duty Team reviews the earthquake parameters against pre-agreed thresholds and consults with GNS Science. If the earthquake is within the thresholds, NEMA will rapidly send out an *Earthquake being assessed* message via the National Warning System. When an earthquake is close to, but does not meet the thresholds, NEMA acts upon advice from GNS Science. These thresholds are outlined in the *Tsunami Advisory and Warning Plan [SP 01/20]* (available at [www.civildefence.govt.nz](http://www.civildefence.govt.nz)). The NEMA Duty Team uses standard operating procedures to guide them in the process of whether or not to issue an advisory or warning.

National Warning System messages are sent to central government agencies, regional CDEM Groups, local authorities, emergency services, lifeline utilities and media. The information is also published on NEMA's website and social media channels (Facebook and Twitter).

The NEMA Duty Team is comprised of eight staff covering the roles of Duty Manager, Duty Officer, Warning Systems Specialist, Public Information Manager, Webmaster, a Duty Support Officer and two Regional Emergency Management Advisors (to support CDEM Groups in the North Island and the South Island). NEMA Duty responsibilities are performed by staff in addition to their business as usual roles. Unlike the GNS Science National Geohazard Monitoring Centre (NGMC), which is a dedicated and centralised 24/7 'awake' capability, NEMA's Duty Team is not 'awake' 24/7, working instead on an around the clock on-call basis.

<sup>2</sup> <https://www.gns.cri.nz/Home/Services/National-Geohazards-Monitoring-Centre>

### 3.1.2 Continuous improvement

Extensive work has gone into developing tsunami standard operating procedures over the years, and after every real event or exercise, they are modified as required to reflect any lessons identified. Investment in new tools to lift New Zealand's assessment capability has supported improved outcomes.

Since Exercise Tangaroa in 2016 (a national exercise based on a tsunami generated in the Kermadec Islands) and subsequent real local-source events, significant improvements have been made in the provision of tsunami warnings and advice to the public. These have included:

- The introduction of the Emergency Mobile Alerting (EMA) system, a cell-based broadcasting system for providing warning messages direct to the public in at-risk areas.
- An upgrade of the National Warning System that provides warning and advisories to partner agencies, the media and the public through improved processes.
- Ongoing public education, including the introduction of the "*Long or Strong, Get Gone*" campaign to encourage the public to follow natural warning signs and self-evacuate following a large earthquake felt on the coast.
- The establishment of GNS Science's National Geohazard Monitoring Centre, a 24/7 awake monitoring capability.
- Investment in Deep-ocean Assessment and Reporting of Tsunamis (DART) buoys. NEMA receives threat advice from GNS Science; they are in turn advised by the Tsunami Experts Panel (TEP), which uses data from DART buoys to confirm tsunami detection, supplement models and refine threat maps.
- Improved collaboration and engagement between the NEMA and GNS Science Duty Teams, including a weekly duty drill where various scenarios are exercised.
- Strengthening how we work with broadcast media to ensure a common understanding of our arrangements and enable effective use of their channels during events.

## 4 OVERVIEW OF THE RESPONSE

### 4.1 Event Overview

On Friday 5 March 2021, three large earthquakes occurred offshore of New Zealand. The first earthquake occurred at 2.27am (a Magnitude 7.3) off East Cape which was widely felt across the country. This was followed by a Magnitude 7.4 earthquake at 6.41am and a Magnitude 8.1 earthquake at 8.28am in the Kermadec Islands to the north east of the North Island. All three earthquakes caused tsunami that reached New Zealand shores.

This was a complex series of events. This report focuses on the collective response to these three separate events.

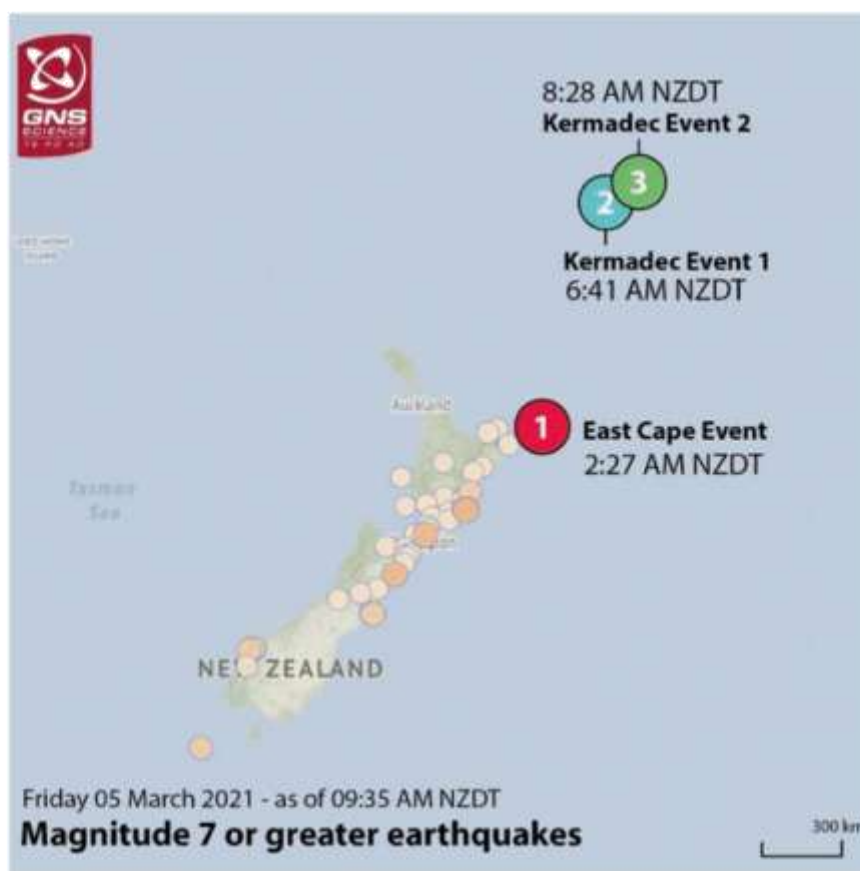
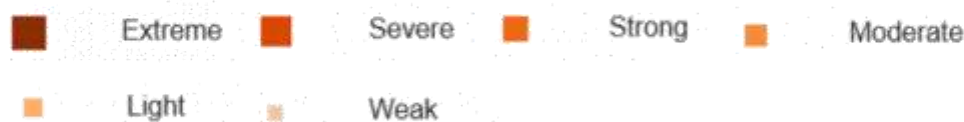


Figure 1: Map showing location of the three large offshore earthquake that occurred on 5 March 2021

(Source: GNS Science).

Other earthquakes are noted using a felt scale





#### 4.1.1 East Cape Event, Magnitude 7.3, 2.27 AM, 5 March 2021

The East Cape (Hikurangi) earthquake occurred at 2.27am on 5 March 2021 and required scientific assessment to determine whether there was a tsunami threat to New Zealand. A National Advisory: Earthquake Being Assessed message was issued at 2.42am, four minutes after the NEMA Duty Team was notified of the earthquake.

After scientific assessment by GNS Science, a *National Tsunami Warning: Threat to Land and Marine Areas* was issued at 3.28am, 48 minutes after the *National Advisory: Earthquake Being Assessed* message was issued. An Emergency Mobile Alert advising at-risk communities (see Figure 3) to evacuate immediately was issued at 3.36am, one hour and 9 minutes after the earthquake occurred.

Further National Warning and Advisory messages were issued over the next two hours (as per arrangements set out in the [National Advisory and Warning Plan](#)), until GNS Science advice determined the threat to land had passed and evacuees were advised they could return home. A *National Advisory: Tsunami Activity – Cancelled* message was issued at 6.01am. No significant damage due to earthquake shaking was reported following this event.

#### 4.1.2 Kermadec Event 1, Magnitude 7.4, 6.41 AM, 5 March 2021

After receiving notification of this earthquake by PTWC at 6.51am and following scientific advice, the NEMA Duty Team issued a *National Advisory: Tsunami Activity* message 38 minutes later at 7.29am, advising of the likelihood of strong and unusual currents and unpredictable surges at the shore. Further National Advisory messages followed over the next hour at 7.47am and 8.30am continuing to advise people to stay away from beaches and out of the water due to strong and unusual currents and surges.

#### 4.1.3 Kermadec Event 2, Magnitude 8.1, 8.28 AM, 5 March 2021

A *National Warning: Tsunami Threat* message was issued at 8.45am, 17 minutes after the NEMA Duty Team was notified of this earthquake by PTWC. This warning was based on previously determined scientific thresholds for earthquakes of magnitude 7.9+ at a depth of <150km in this region. The warning was accompanied by an Emergency Mobile Alert message issued at 8.46am advising at-risk communities (see Figure 5) to evacuate immediately.

Following further scientific assessment by GNS Science, a *National Warning: Tsunami Threat to Land and Marine Areas* message was issued at 9.11am which contained more refined information relating to the threat areas. Further updates were provided at 9.49am, 10.44am, 11.40am, 12.41pm, until the tsunami threat was downgraded and a *National Advisory: Tsunami Activity* message was issued at 1.17pm warning of strong and unusual currents, and unpredictable surges at the shore. At this point people that evacuated were advised they could return, while they were still advised to stay out of the water due to on-going strong currents. A further update was provided at 2.48pm. Following further advice from GNS Science that the tsunami threat had passed, a *National Advisory: Tsunami Activity – Cancelled* message was issued at 3.45pm, signalling the end of the response to this event.

This was the first response where a significant number of EMA messages were disseminated over wide geographic areas. Three EMAs were sent by NEMA to instruct people to evacuate.

Throughout the day, Northland, Auckland, Waikato, Bay of Plenty, Tairāwhiti and Canterbury CDEM Groups also used the Emergency Mobile Alert system to advise residents in at-risk communities to evacuate, to stay away from the coast and beaches and when it was safe to return home.

Although in line with pre-existing mandates, the issuing of both national (NEMA) and local (CDEM Group) EMAs led to some confusion. This needs to be addressed moving forward.

The NCC stood down at 4.00pm with ongoing monitoring through usual duty processes.

#### 4.1.4 Tsunami waves generated

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All three earthquakes on 5 March 2021 produced tsunami waves that overlapped and were recorded all around New Zealand.

Tsunami waves were recorded by the DART buoy network, with actual wave arrivals observed after about 20 minutes and processed data being available to the Tsunami Experts Panel (TEP) an hour after the earthquake.

This is important for two reasons:

- Initial tsunami forecasts were based on seismic magnitudes and only grossly described the tsunamigenic potential of the earthquakes.
- DART instruments provided 'clean' open-ocean tsunami signals associated with each earthquake that were used to calibrate tsunami models. Direct measurements of the tsunami from the DART buoy network allowed GNS Science to better estimate the size, location and timing of tsunami arrivals at the New Zealand coastline, which in turn supported the issuing of warnings and advisories by NEMA, including faster notification of when it was safe to return following evacuation.

GNS Science instruments recorded the tsunami from the M7.3 East Cape earthquake reaching a maximum amplitude of about 30-35 cm at Lottin Point (East Cape) and about 10-20 cm at Great Barrier Island. This was closely followed by tsunamis generated by the M7.4 and M8.1 Kermadec Island earthquakes. These waves overlapped to produce a tsunami between 35 and 40 cm in amplitude at the Great Barrier Island tsunami gauge and recorded at many other gauges around New Zealand. The unusual wave activity lasted several days.

## 4.2 Summary of Actions Taken by NEMA Staff

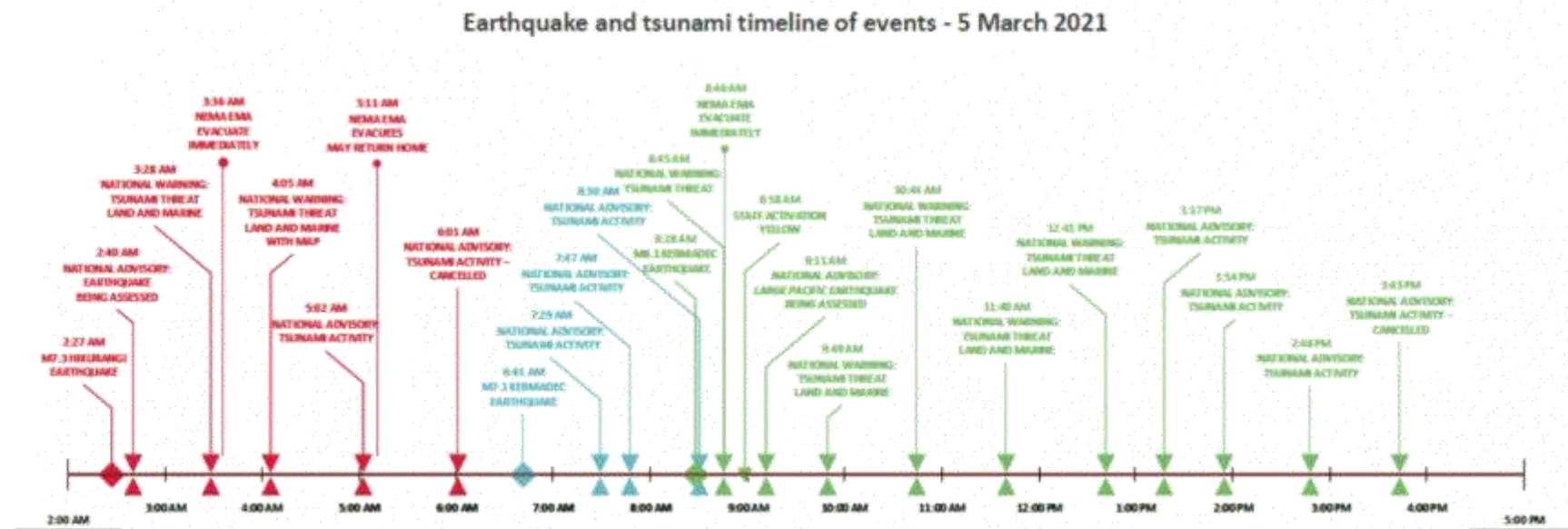


Figure 2: Earthquake and tsunami timeline of events – 5 March 2021

#### 4.2.1 NEMA Response actions on 5 March 2021

The NEMA Duty Team initially responded to the first earthquake remotely as the first and second earthquakes occurred outside of normal business hours on Friday 5 March 2021. The NEMA National Coordination Centre (NCC), located in the basement of the Beehive in Wellington, was activated within an hour following the first earthquake.

The initial earthquake event on Friday 5 March 2021 met the threshold for NEMA to immediately issue a *National Advisory: Earthquake Being Assessed* message while it waited for GNS Science to provide further information. This message provides rapid assurance to the public that NEMA is actively assessing the situation while the formal advisory or warning is being confirmed. Updates to Twitter, Facebook and the NEMA website occurred automatically (pushed to social media by the National Warning System).

NEMA issued the initial 'Earthquake Being Assessed' message at 2.42am. At 2.55am, GNS Science provided information to indicate that a land threat on the East Coast was possible. However, before NEMA could issue a tsunami warning based on this advice, GNS Science provided new advice at 3.06am that there was no land threat.

The difference between a land threat and a beach and marine threat is quite significant, especially during the middle of the night. NEMA standard operating procedures for a land threat require the sending of an Emergency Mobile Alert (EMA) to the public (to alert them to evacuate immediately), whereas a beach and marine threat would not require the issuing of an EMA.

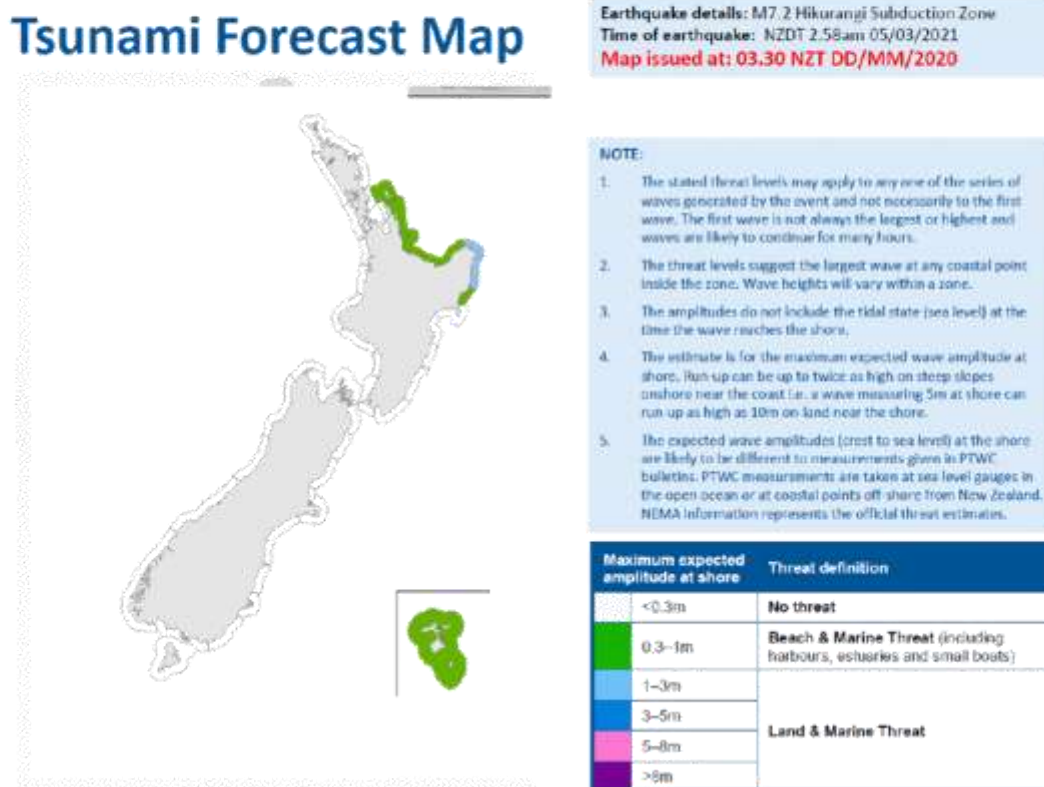
Based on the advice from GNS Science, the NEMA Duty Team elected to use a different template to communicate the advice. However, as the Duty Team was preparing the national advisory message, GNS Science advised a return to a land threat. The NEMA Duty team had to develop a new templated message based on warning for a land threat, along with an Emergency Mobile Alert message to at-risk areas to evacuate immediately. Once again, updates to Twitter and Facebook occurred automatically (pushed to social media by the National Warning System). The changing science advice delayed the issuing of the warning.

GNS Science has a suite of pre-prepared maps for a range of scenarios that allow for a swift estimate of expected threats to the New Zealand coastline. However, each event is unique, and a bespoke map is created with the relevant earthquake parameters to better define the threat and these take time to produce.

The second national warning system message issued at 3.30am included a bespoke map indicating which coastal zones were under threat (see Figure 3 below).



Figure 3: Tsunami Forecast Map issued for the Hikurangi earthquake (Event 1) at 0330 AM on 5 March 2021.

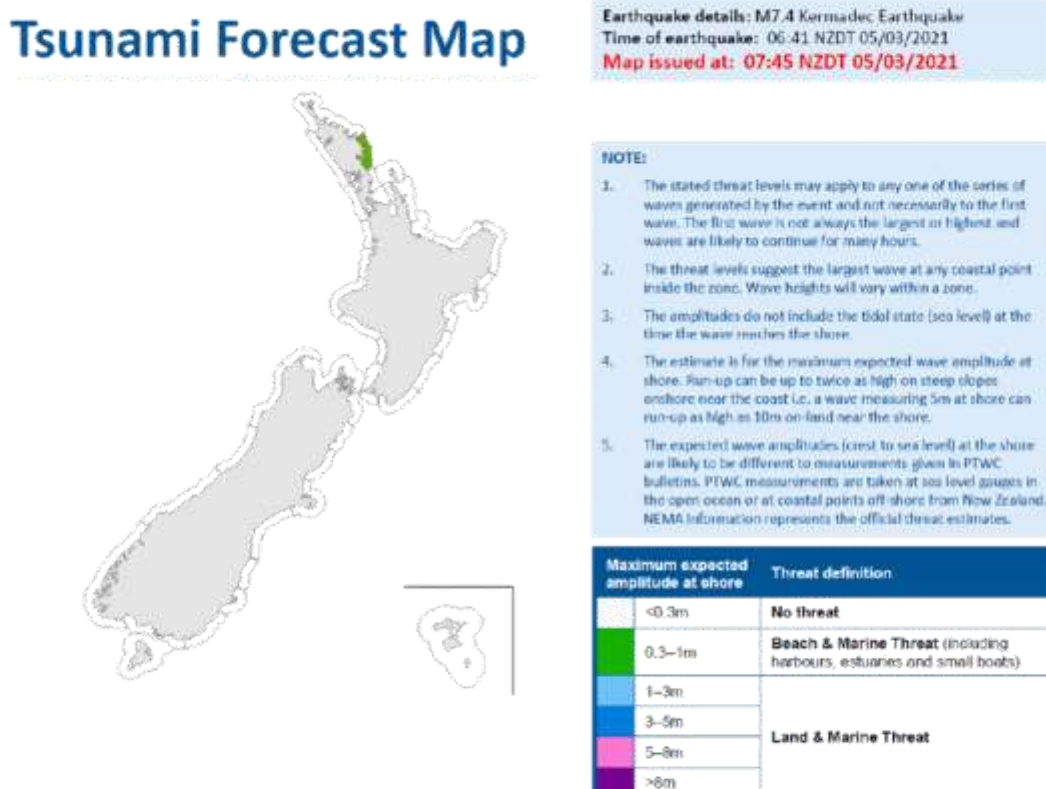


Following further assessment by GNS Science, the threat from this event was downgraded at 5.02am and a *National Advisory: Tsunami activity – expect strong and unusual currents and unpredictable surges at the shore* message was issued, allowing those who had evacuated to return to their homes.

At 6.01am, the National Advisory message was cancelled, based on GNS Science's modelling and ocean observations on tide gauges and the New Zealand DART Buoys that the threat of strong and unusual currents had passed for all parts of New Zealand including the Chatham Islands. The NEMA Duty Team returned to monitoring, while the NEMA NCC was still activated.

At 6.51am, The NEMA Duty Team received notification from the Pacific Tsunami Warning Centre (PTWC) in Hawaii of a magnitude 7.5 (later downgraded to a magnitude 7.4) earthquake in the Kermadec Islands. Based on the location, this event did not meet the thresholds for immediately issuing a warning message and was therefore discussed with GNS Science. A *National Advisory: Tsunami Activity* message was subsequently issued at 7.29am, including the bespoke notation that this message was referring to a separate earthquake to the Hikurangi earthquake earlier in the morning to avoid confusion. A subsequent advisory message (issued at 7.45am) included a bespoke forecast map indicating which coastal zones were under a beach and marine threat (see Figure 4 below).

**Figure 4: Tsunami Forecast Map issued for the Kermadec earthquake (Event 2) at 0745 AM on 5 March 2021.**



While continuing to respond to this event, the NEMA Duty Team received notification of a second significant earthquake in the Kermadec Islands occurring at 8.28 am. As a magnitude 8 earthquake (later upgraded to magnitude 8.1), this earthquake met the threshold for issuing a *National Warning: Tsunami Threat to Land and Marine areas* and this was subsequently issued at 8.45 am, 17 minutes after the earthquake occurred (at 8.28am) and five minutes after the NEMA Duty Team was notified of this earthquake by the PTWC. This warning was based on previously determined scientific thresholds for earthquakes of magnitude 7.9 or above at a depth of <150km in this region. This message included a pre-developed map indicating the coastal areas required to immediately evacuate (see Figure 5). Following this message, an Emergency Mobile Alert was issued at 8.46 am to at-risk communities (black areas on the map) instructing them to evacuate immediately.

Following further scientific assessment by GNS Science, a *National Warning: Tsunami Threat to Land and Marine Areas* message was issued at 9.11am which contained more refined information relating to the threat areas. A subsequent National Warning message issued at 0949 included a bespoke forecast map, providing more detail on the coastal areas at risk and the expected tsunami amplitudes at shore (see Figure 6).

Further updates were provided at 10.44am, 11.40am, 12.41pm, until the tsunami threat was downgraded and a *National Advisory: Tsunami Activity* message was issued at 1.17pm warning of strong and unusual currents and unpredictable surges at the shore. At this point people that evacuated were advised they could return, while they were still advised to stay out of the water due to on-going strong currents. A further update was provided at 2.48pm.

Following advice from GNS Science that the tsunami threat had passed, a *National Advisory: Tsunami Activity – Cancelled* message was issued at 3.45pm, signalling the Beach and Marine

threat had passed for all areas. This meant that all people who had evacuated could now return home. At this point, EMA messages advising of evacuation were cancelled.

**Figure 4: Initial Advice Land Threat Map issued for the Kermadec Island earthquake (2) at 0845 am on 5 March 2021.**

### Initial Advice Land Threat Map

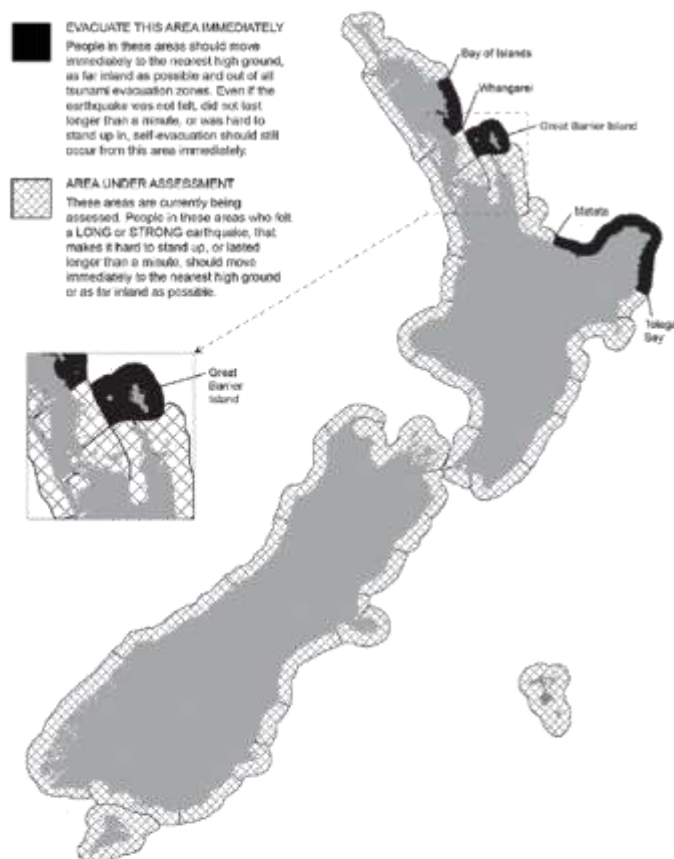




Figure 5: Tsunami Forecast Map issued for the Kermadec Island earthquake (2) at 0935 AM on 5 March 2021

## Tsunami Forecast Map

Earthquake details: M8.1 Kermadec Earthquake #2  
 Time of earthquake: 08:28 NZDT 05/03/2021  
 Map issued at: 09:35 NZDT 05/03/2021



### NOTE:

1. The stated threat levels may apply to any one of the series of waves generated by the event and not necessarily to the first wave. The first wave is not always the largest or highest and waves are likely to continue for many hours.
2. The threat levels suggest the largest wave at any coastal point inside the zone. Wave heights will vary within a zone.
3. The amplitudes do not include the tidal state (sea level) at the time the wave reaches the shore.
4. The estimate is for the maximum expected wave amplitude at shore. Run-up can be up to twice as high on steep slopes onshore near the coast i.e. a wave measuring 5m at shore can run up as high as 10m on-land near the shore.
5. The expected wave amplitudes (crest to sea level) at the shore are likely to be different to measurements given in PTWC bulletins. PTWC measurements are taken at sea level gauges in the open ocean or at coastal points off-shore from New Zealand. NEMA information represents the official threat estimates.

| Maximum expected amplitude at shore | Threat definition   |
|-------------------------------------|---|
| <0.3m                               | No threat   |
| 0.3–1m                              | Beach & Marine Threat (including harbours, estuaries and small boats) |
| 1–3m                                | Land & Marine Threat  |
| 3–5m                                |   |
| 5–8m                                |   |
| >8m                                 |   |

It should be noted that three major earthquakes in one day is unique and, as a result, this generated a large volume of messages via the National Warning System. As the events 'overlapped' it was important to be very clear about which messages related to which event.

It was fortunate that these events did not lead to major land inundation, however, strong and unusual currents and surges were recorded/observed.

Throughout the response, media were kept informed by the Public Information Management team through proactive calls and reactive responses. Radio and television interviews were proactively arranged. A media stand-up was held at 11.30am in the Beehive Theaterette, with the Minister for Emergency Management, the Acting Director Civil Defence Emergency Management, and a GNS Science representative.

### 4.3 Use of locally owned tsunami warning sirens

The decision to use sirens and their ongoing maintenance is the responsibility of CDEM Groups and local authorities. If CDEM Groups and local authorities do choose to install tsunami sirens they need to comply with the *Tsunami Warning Sirens Technical Standard [TS03/14]*.

Sirens were not widely used to provide warnings following the earthquakes on 5 March 2021. Northland CDEM Group was the only Group which used sirens as part of their warning system, with some 202 sirens activated on both the east coast of Northland and the northern part of the West Coast of Northland. No issues were identified during this activation by the Northland CDEM Group.

A siren replacement programme has already commenced in Northland (prior to the events of 5 March 2021) using new technology and conforming to the *Tsunami Warning Sirens Technical Standard [TS03/14]*. This is a significant step forward and the capability of the new sirens will allow a reduction in the number of sirens across Northland. Northland's geography and patchy mobile coverage means the Northland CDEM Group considers that the siren system continues to be an important part of tsunami response in Northland.

It is important to recognise that sirens are only one component within a wider warning system, and, as with any tools, have their advantages and disadvantages.

NEMA's position on the use of fixed sirens for tsunami warning is provided in the *Tsunami Warning Sirens Technical Standard [TS03/14]*. In short, NEMA does not regard sirens as effective or reliable alerting mechanisms in local source tsunami events. Local source tsunami, where the earthquake has occurred close to New Zealand's coastline can arrive within minutes at areas closest to the shore and there may not be time to issue an official warning before the first wave arrival, nor even activate the sirens. The sirens themselves may also be damaged by the earthquake itself. Sirens are known to cause complacency, which subverts the most reliable warning system for local source tsunami - the natural warning itself.

## 5 STRATEGIC FINDINGS

### 5.1 The provision of advice to the public needs to be sped up further

Since 2016, there have been significant improvements in the provision of tsunami warnings and advice to the public, including the implementation of the Emergency Mobile Alert system, and improvements to the National Warning System. However, there will always be areas for improvement in the effort to keep people safe.

There is a fine line between the need for speed (automation) and bespoke crafting of National Warning System messages, public information messages and social media posts. The end-to-end process for issuing a tsunami warning is complex and takes time (often under considerable time pressure) and decisions are made with the information available at the time (but noting that the situation is often evolving and will change rapidly).

There was a high level of uncertainty in the advice being provided by GNS Science following the first (East Cape) earthquake on 5 March 2021 due to the complexity of the earthquake event, and advice fluctuated between a land threat and a beach and marine threat. NEMA waited for the 'best' advice before issuing a warning and this resulted in the first warning being issued 48 minutes after the initial *Earthquake Being Assessed* message. NEMA acknowledges that a warning to the public should be issued more quickly.

It should be noted that it is seldom possible to issue any official warning for a local source event, given the short travel time (often less than 15 minutes to the nearest coastline). It is therefore imperative that the public heed natural warning signs and our public education campaigns underscore the importance of *Long or Strong, Get Gone*. In these circumstances, official warnings will still be issued to provide swift confirmation to communities of any assessed threat and to provide a warning to communities further away from the earthquake source.

In contrast, the warning message for the third earthquake (Kermadec 2) at 8.45 am, was issued much faster within 17 minutes of the earthquake occurring. This can be attributed to the fact that pre-computed maps have already been embedded in the national warning system templates for Kermadec source events and NEMA staff were already awake and in the National Coordination Centre responding to the previous Hikurangi and Kermadec earthquakes.

Although the response for this event was satisfactory, NEMA assesses the timeframe can still be improved.

There is a fine balance between the need for speed and accuracy in the event of tsunami warning. However, for local-source events, speed should be of the essence. Speeding up the provision of tsunami warnings is a key focus for NEMA and GNS Science. Both agencies have identified some areas for improvement in relation to the tsunami warning process which are described below.

#### Recommendations

- NEMA to continue to work with GNS Science on speeding up tsunami warnings.
- Work with GNS Science to enhance NEMA's ability to issue public advice while science assessments are still underway.

#### What we are already doing

- In the meantime, NEMA has developed an interim solution to improve the tsunami warning process for local-source events, which involves the application of a series of pre-established maps to guide the initial response to earthquakes from M7.0 and higher in the



Hikurangi Trough area. In this situation, NEMA will issue an EMA reinforcing the *Long or Strong Get Gone* message to areas that are likely to be under land threat, even in the absence of GNS Science advice. This process took effect from Friday 19 March 2021, and only applies for earthquakes in the Hikurangi Trough area.

## 5.2 Review agencies' responsibilities for tsunami warning

This issue has been raised following previous tsunami responses and continues to be a factor in the effective and timely provision of tsunami warnings and advice to the public.

Rapid and effective warnings are hampered by the current practice where GNS Science is the agency with responsibility for making tsunami threat assessments, while NEMA is the agency responsible for issuing tsunami warnings in New Zealand. In most other countries, tsunami warning is undertaken by the agency that is also responsible for monitoring and assessment (similar to the MetService being responsible for both assessing weather threats and issuing warnings). The current arrangement for tsunami adds layers of complexity and causes delay.

Effective warnings are also impeded by the fact that, unlike the GNS National Geohazard Monitoring Centre, which is a dedicated, centralised 24/7 'awake' capability, NEMA's Duty Team is not dedicated, centralised, and 'awake' 24/7.

The 2018 Technical Advisory Group Report *Better Responses to Natural Disasters and Other Emergencies* recognised that if NEMA did not have an awake duty team, delays with communication of warnings and establishing a response would be inevitable.<sup>3</sup> In its response to the Report, the Government recognised the need for an integrated 24/7 operation for the monitoring, alerting and warning of emergencies, and recommended it be considered as part of the development of a business case for a new National Emergency Management Facility.<sup>4</sup>

In the 2019 Cabinet paper agreeing to the establishment of NEMA, the Government committed to some of the money appropriated for NEMA in Budget 2019 being used to address issues with the current approach in which NEMA (then MCDEM) staff are on call and woken up if needed.<sup>5</sup>

NEMA has a programme of work underway to review Duty arrangements, which sits alongside the ongoing work with GNS Science to improve the end-to-end system for tsunami monitoring and warning.

### Recommendations

- Continue to explore options to speed up tsunami warnings, including transferring the responsibility for tsunami warning to GNS Science, and/or a dedicated 24/7 (awake) monitoring, alerting and warning capability for NEMA.

### What we are already doing

- Continue engagement already underway between the NEMA and GNS Science duty teams to ensure swift two-way communication during events and identifying areas within the end-to-end process that could be sped up.

<sup>3</sup> <https://dpmc.govt.nz/sites/default/files/2018-01/ministerial-review-better-responses-natural-disaster-other-emergencies.pdf>

<sup>4</sup> <https://dpmc.govt.nz/sites/default/files/2018-08/natural-disasters-emergencies-government-response-tag-report.pdf>

<sup>5</sup> <https://dpmc.govt.nz/sites/default/files/2019-09/nema-4158513.pdf>



### 5.3 Collaboration between agencies was enhanced by pre-existing relationships

New Zealand has a relatively small but interconnected CDEM sector (made up of NEMA plus 16 regional CDEM Groups employed by local councils). Recent exercises and emergency events since 2016 such as Exercise Tangaroa (national tsunami exercise) and the Kaikoura earthquake and tsunami, have consolidated the existing history of collaboration between CDEM and other emergency management professionals. Overall, the relationships between agencies that have been developed and tested in recent exercises and events have been a major contributor to the success of responses to recent emergency events. The relationships that now exist in the sector should be cultivated further as agencies continue to develop their preparedness for events and look towards future simulation exercises.

#### Recommendation

- Continue to mature existing relationships, particularly through cross-agency simulation exercising, system learning and continuous improvement initiatives.

#### What we are already doing

- Under the aegis of the Emergency Services Leadership Board, agencies are planning a table-top exercise to evaluate the multi-agency response to the March 5 earthquake and tsunami events.

### 5.4 Public understanding of regional and local source tsunami is improving

NEMA and GNS Science are constrained in their ability to issue timely and effective tsunami warnings because of the limited response time available following local and regional source events. Furthermore, threat assessment is not an exact science - the series of earthquakes on 5 March 2021 proved to be complex for scientists. Similar challenges were experienced after the East Cape earthquake and tsunami of 2 September 2016 and the Kaikoura earthquake and tsunami of 14 November 2016, which were both complex and unusual events.

The primary tsunami warning for a local source earthquake will always have to be the natural warning signs themselves (i.e. the shaking) and understanding of this by the public is improving. Official warnings are unlikely to be issued rapidly enough to warn communities nearest to the tsunami source and it is encouraging that many coastal communities did not wait for official warnings and self-evacuated upon recognising the natural warning signs following the East Cape earthquake on 5 March 2021. This is a positive sign and indicates that public education messages, in particular the "Long or Strong, Get Gone" messaging and local tsunami arrangements about local source tsunami events, have been effective. We note that a \$340,000 continuation of the *Long or Strong, Get Gone* campaign had already been planned for April-May 2021. A burst of television advertising was subsequently brought forward to the week beginning 9 March 2021 to build awareness while events of 5 March were fresh in the public's mind.

#### Recommendations

- Continue the "Long or Strong, Get Gone" public education campaign.
- Broaden the reach of the annual "Shake Out" campaign in partnership with emergency services agencies.

## 6 KEY OPERATIONAL FINDINGS

This section summarises the key operational findings from the events of 5 March 2021.

### 6.1 Leadership of coordinated interagency response

#### 6.1.1 Scientific advice from GNS Science continues to be best for New Zealand

GNS Science is the only agency with the necessary depth and breadth of local scientific knowledge required to make informed estimates of a tsunami's effect on New Zealand. Information that comes from international agencies, such as the Pacific Tsunami Warning Centre (PTWC) in Hawaii, is always examined as part of the assessment process – but data from international agencies should never be considered as definitive for New Zealand.

#### Recommendation

- Continue to ensure all CDEM Groups, media and central and local government agencies are aware that NEMA represents the official source of information for tsunami warnings in New Zealand and that Pacific Tsunami Warning Centre (PTWC) messages do not represent the official warning status for New Zealand.

#### 6.1.2 Activation in response was effective

Feedback indicates that the NEMA Duty Team was responsive and the use of Microsoft Teams was good for communication and visibility of actions. The support the CDEM Groups received from the NEMA Senior Regional Emergency Management Advisors was of value and appreciated. The Duty Team were confident in their roles and supported each other. There was clear and decisive decision making, especially following the third earthquake event.

The National Warning System performed well and the use of additional contextual information indicating that messages related to new and different earthquakes was well-received.

GNS Science provided scientific information that was fit for purpose to enable warnings to be disseminated and communication was clear. There was value in having GNS Science representatives in the National Coordination Centre (NCC) and contributing to the media stand-ups to provide scientific context and advice.

#### Recommendations

- NEMA to continue to work with GNS Science, CDEM Groups and partner agencies to ensure roles and responsibilities are understood.
- GNS Science and NEMA to continue to undertake regular drills and simulated exercises to identify areas for improvement to communication channels and standard operating procedures.

#### 6.1.3 The widespread use of EMA messaging was generally effective

Over the course of the three events on 5 March 2021, 21 Emergency Mobile Alerts (EMAs) were issued by NEMA and CDEM Groups (see Appendix B). This was the first real event where there were a significant number of EMA messages disseminated over wide geographic areas since the system was introduced in 2017. EMAs were issued to instruct people to evacuate as well as advise when it was safe to return home. EMAs were also sent in regions where strong and unusual currents were expected.

The map below shows the areas where EMAs were issued over the course of all events on 5 March 2021. A detailed list of the EMAs sent is attached at Appendix B.



Figure 6: Map showing areas where EMAs were issued on 5 March 2021.

Success rates were between 95.2% and 100% for each provider (Spark, Vodafone, 2 degrees) – this means the number of cell sites within the defined area that successfully broadcast the message. Based on a 2019 Colmar Brunton Survey – which found that 70% of handsets receive EMAs - NEMA estimates that approximately 1.5 million people received an alert on 5 March 2021.

There was some confusion by the public about which agency (NEMA or a regional CDEM Group) was responsible for issuing some of the EMA messages and this detail wasn't always clear within the messages issued by CDEM Groups. There were also some concerns expressed by members of the public who thought they should have received a message but didn't. Generally, this was due to them being located in an area that was not under land threat and where a message had therefore not been broadcast. In other instances, members of the public complained that they received the EMA messages too late. This was because some CDEM Groups issued EMA messages for areas that were only under a beach and marine threat, sometime after the initial evacuation messages that were issued by NEMA.

#### Recommendations

- NEMA to continue to work with CDEM Groups on tsunami warning procedures to ensure consistent response at local levels.
- NEMA to review process for CDEM Groups issuing EMAs to develop thresholds for use and to standardise language and format.
- NEMA to review the impact of national and local EMAs being issued to understand whether clarity is improved or diminished for local communities.
- NEMA to continue to develop public education material on the purpose of the EMA system and when and how messages are received.



## 6.2 Public information management

### 6.2.1 Public information was disseminated through a wide variety of channels and extensive 'reach' was achieved

Throughout the response to the earthquakes and tsunami on 5 March 2021, a variety of platforms were utilised to disseminate accurate information to the public, including media briefings, social media (Facebook and Twitter), and web-based activity.

The Public Information Manager and the wider NEMA communications team proactively engaged with the media throughout the response.

The media did an excellent job of clearly communicating life safety messages throughout what was a dynamic and complex sequence of events, reinforcing the vital role they play as an emergency communications channel. This event brought to fruition the benefits of the ongoing partnership between NEMA and key broadcast partners for the issuing of life safety information during emergencies.

There was recognised value in having a GNS Science representative contributing to the media stand-ups to provide scientific context and advice, and to support the preparation of the Minister for Emergency Management and acting Director CDEM.

#### Recommendations

- NEMA to continue to work with media outlets before, during and after events to further strengthen relationships.
- NEMA to continue to invite GNS Science representation in media stand-ups during events to provide scientific context and advice and to support the preparation of spokespeople.

### 6.2.2 There is continued confusion between the use of land threat versus beach and marine threat

We have received feedback from CDEM Groups that there remains some confusion with the media and public over the use of the term 'Beach and Marine Threat' (i.e. when people need to stay out of the water and away from the shoreline and when boats/ships could be affected by unusual currents/swells) and that this continues to be perceived as the same as a 'Land Threat' (i.e. when people need to evacuate inland or to higher ground). This has been an identified issue in previous tsunami threats and changes have been made to the text in warning and advisory templates to better explain the differences. Confusion between the two can result in an incorrect perception from the public that they need to evacuate.

Following previous events, National Warning System templates have been amended to more clearly indicate that for areas not under a land threat, no evacuations are necessary but to warn that strong currents may be present so people should avoid beach and marine activity. However, further refinement of the template text and public education will be required in advance of future events.

#### Recommendation

- Further review the tsunami warning and advisory templates and associated maps to continue to improve clarity on the actions the public are expected to take.

### 6.2.3 The events had the potential to stretch NEMA resources

Although this series of events did not result in casualties or significant land damage, the long duration nature of such a response from the early hours of the morning began to impact on NEMA staff wellbeing and resourcing.

Due to the early and repeated tsunami notifications that all NEMA staff receive, even those staff not on duty were experiencing constant interruptions to sleep prior to any rostered shift they were required for. The impacts of this would have become more pronounced with a longer duration event.

There were also impacts on the rostered Duty Team, who were leading the response to the tsunami events, but also monitoring for other event notifications, and operating on little sleep. This would be alleviated if NEMA has a dedicated 24/7 'awake' capability, allowing dedicated rostered staff to focus on monitoring for any additional events while a simultaneous event response was led by other NEMA 'response' staff.

In addition, although not evident in this response due to the absence of casualties or damage caused by the tsunami impacts, there was the potential for a resourcing capacity issue to develop given NEMA's dual responsibility as both the national warning agency for tsunami, and its responsibility for the coordination of emergency response.

NEMA has two distinct roles in relation to tsunami – to issue warnings and to lead and coordinate the response if that becomes necessary. The analysis of threat information and subsequent issue of timely and accurate warnings (potentially over a period of 24 hours or more) is labour intensive and diverts resources from NEMA's response coordination role. NEMA is stretched in its current resourcing model if it is required to perform both roles simultaneously.

Considering the life-safety context of the tsunami warning responsibility, the accuracy and timeliness of threat information has to take priority while the warning is in effect; however, resourcing this comes at the cost of sufficient simultaneous attention to the response coordination role (which in other responses would be NEMA's primary or only focus).

#### Recommendations

- Continue to review and improve the NEMA duty system.
- Continue scoping the NEMA 24/7 (awake) monitoring, alerting and warning capability, with a view to implementation as soon as practicable.
- Continue to increase capability and capacity through emergency management system workforce planning, including the provision of surge staffing from across the National Security System and through increased collaboration with emergency services agencies under the umbrella of the Emergency Services Leadership Board.

#### What we are already doing

- Work is already underway to improve coordination and collaboration between NEMA and emergency services agencies, which will bolster NEMA's capability to fulfil its coordination role in parallel with its warning role.

## 7 CONCLUDING OBSERVATIONS

Overall, the response to the earthquake and tsunami threat on 5 March 2021 was efficient and effective. There were many positives for NEMA including the prompt evacuation actions by the public, the performance of the National Warning System and the use of Emergency Mobile Alerts, and the proactive engagement with the media throughout the response.

This was a complex series of events, and a number of improvements introduced over the last five years to speed up and improve the delivery of tsunami warning messages showed their value during this response. These include the use of Emergency Mobile Alerting by both NEMA and the regional CDEM Groups, improvements to the National Warning System, the development of the 24/7 capability of the National Geohazards Monitoring Centre (NGMC) at GNS Science, and the focus on the development of the relationship between the NEMA and GNS Science Duty Teams.

The positive evacuation actions taken by the public showed the value and take up of the "Long or Strong, Get Gone" messaging and the importance of ongoing tsunami public education engagement. There was also demonstrated value in the proactive engagement NEMA has undertaken with the media to help improve tsunami warning understanding, and to bolster media arrangements during an emergency.

Following the comprehensive debriefing process, the following key findings have been identified that will benefit from a continued improvement focus:

- I. The provision of advice to the public needs to be sped up
- II. Further improvements to the distribution of agency responsibilities would improve the tsunami warning process
- III. Collaboration between agencies was supported by existing relationships
- IV. Public understanding of what to do when there is a local source tsunami is improving
- V. Scientific advice from GNS Science continues to be best for New Zealand
- VI. Activation in response was effective
- VII. The widespread use of Emergency Mobile Alert messaging was generally effective
- VIII. Public information was disseminated through a wide variety of channels and extensive 'reach' was achieved
- IX. There is continued confusion between the use of land threat versus beach and marine threat
- X. The events had the potential to stretch NEMA resources.

A number of areas have been recommended for improvement following previous tsunami responses and have been acted on. However, some areas do not have quick fixes and require continued focus to lift the effectiveness of New Zealand's tsunami monitoring and warning systems. NEMA's planned introduction of a national lessons management system will bolster our continuous improvements efforts.



## APPENDIX A NATIONAL WARNING SYSTEM MESSAGES

### A.1 East Cape Event, 2.27 AM, 5 March 2021

| Time issued on 5 March | Message   |
|------------------------|---|
| 0240 AM                | National Advisory: Earthquake Being Assessed                  |
| 0328 AM                | National Warning: Tsunami Threat Land and Marine              |
| 0405 AM                | National Warning: Tsunami Threat Land and Marine with Map     |
| 0502 AM                | National Advisory: Tsunami Activity                           |
| 0601 AM                | National Advisory: Tsunami Advisory for New Zealand Cancelled |

### A.2 Kermadec Event 1, 6.41 AM, 5 March 2021

| Time issued on 5 March | Message                             |
|------------------------|-------------------------------------|
| 0729 AM                | National Advisory: Tsunami Activity |
| 0747 AM                | National Advisory: Tsunami Activity |
| 0830 AM                | National Advisory: Tsunami Activity |

### A.3 Kermadec Event 2, 8.28 AM, 5 March 2021

| Time issued on 5 March | Message   |
|------------------------|---|
| 0845 AM                | National Warning: Tsunami Threat                              |
| 0949 AM                | National Warning: Tsunami Threat to Land and Marine           |
| 1044 AM                | National Warning: Tsunami Threat to Land and Marine           |
| 1140 AM                | National Warning: Tsunami Threat to Land and Marine           |
| 1241 PM                | National Warning: Tsunami Threat to Land and Marine           |
| 1317 PM                | National Advisory: Tsunami Activity                           |
| 1354 PM                | National Advisory: Tsunami Activity                           |
| 1448 PM                | National Advisory: Tsunami Activity                           |
| 1543 PM                | National Advisory: Tsunami Advisory for New Zealand Cancelled |

## APPENDIX B EMERGENCY MOBILE ALERT MESSAGES

### B.1 East Cape Event, 2.27 AM, 5 March 2021

| Time issued on 5 March | Message                           | Issued By       |
|------------------------|-----------------------------------|-----------------|
| 0336 AM                | TSUNAMI – Evacuate Immediately    | NEMA            |
| 0511 AM                | UPDATE – Evacuees may return home | NEMA            |
| 0519 AM                | TSUNAMI – Return Home             | Tairāwhiti CDEM |

### B.2 Kermadec Event 1, 6.41 AM, 5 March 2021

No EMA messages issued for this event.

### B.3 Kermadec Event 2, 8.28 AM, 5 March 2021

| Time issued on 5 March | Message  | Issued By          |
|------------------------|--|--------------------|
| 0846 AM                | TSUNAMI – Evacuate Immediately                             | NEMA               |
| 0858 AM                | TSUNAMI – Evacuate Immediately (Great Barrier Island Only) | Auckland EM        |
| 0905 AM                | TSUNAMI – Evacuate Immediately                             | Tairāwhiti CDEM    |
| 0922 AM                | TSUNAMI – Evacuate Immediately                             | Northland CDEM     |
| 0948 AM                | TSUNAMI – Evacuation Continues                             | Tairāwhiti CDEM    |
| 1010 AM                | TSUNAMI – Evacuation Continues                             | Northland CDEM     |
| 1011 AM                | TSUNAMI – Evacuate Immediately and Strong Unusual Currents | Bay of Plenty CDEM |
| 1058 AM                | TSUNAMI – Strong and Unusual Currents                      | Waikato CDEM       |
| 1135 AM                | TSUNAMI – Strong and Unusual Currents (Metropolitan Only)  | Auckland EM        |
| 1142 AM                | TSUNAMI – Strong and Unusual Currents                      | Tairāwhiti CDEM    |

|         |  |                    |
|---------|--|--------------------|
| 1152 AM | TSUNAMI – Strong and Unusual Currents                      | Northland CDEM     |
| 1200 PM | TSUNAMI – Strong and Unusual Currents                      | Canterbury CDEM    |
| 1334 PM | TSUNAMI – Change in Evacuation (Great Barrier Island Only) | Auckland EM        |
| 1334 PM | TSUNAMI – Return Home                                      | Northland CDEM     |
| 1411 PM | TSUNAMI – Strong and Unusual Currents Advisory Lifted      | Canterbury CDEM    |
| 1456 PM | TSUNAMI - Cancelled  | Bay of Plenty CDEM |
| 1512 PM | TSUNAMI – Return Home                                      | Auckland EM        |
| 1549 PM | TSUNAMI – Strong and Unusual Current Advisory Lifted       | Auckland EM        |





## **HB CDEM GROUP JOINT COMMITTEE**

**Monday 28 June 2021**

### **Subject: NATIONAL EMERGENCY MANAGEMENT AGENCY UPDATE**

#### **Reason for Report**

1. This report is to allow for NEMA to provide a verbal update to the Joint Committee on any relevant national matters.

#### **Recommendation**

That the HB CDEM Group Joint Committee receives and notes the “NEMA Update” staff report.

#### **Authored by:**

**Ian Macdonald**  
**GROUP MANAGER/CONTROLLER**

#### **Approved by:**

**Ian Macdonald**  
**GROUP MANAGER/CONTROLLER**

#### **Attachment/s**

- 1 [📄](#) NEMA Update and presentation





# NEMA Update for the Hawkes Bay CEG

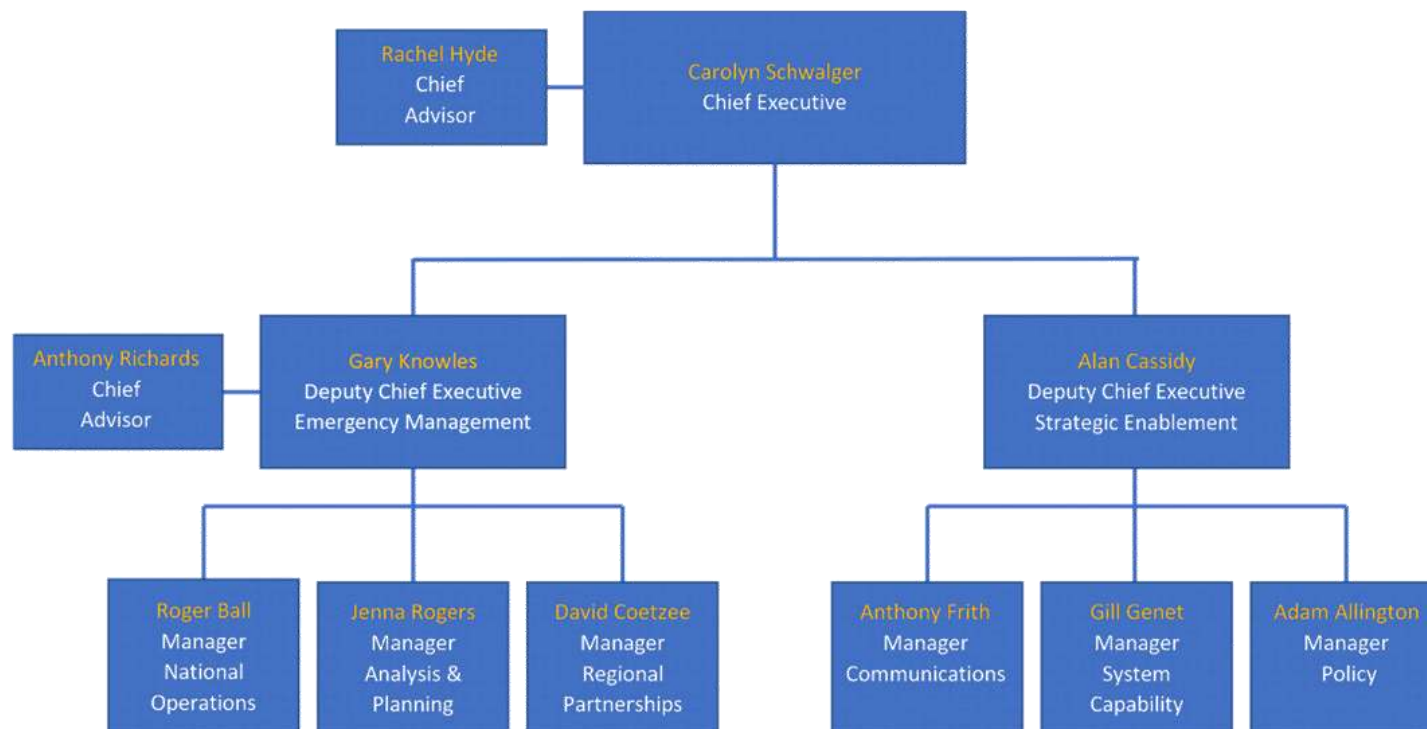
Adam Allington

24 May 2021



**National Emergency  
Management Agency**  
Te Rākau Whakamarumarū

# NEMA's structure and operating model





# A New Direction for NEMA



**Our Strategic Framework**  
**Tā Mātou Anga Rautaki**



**National Emergency Management Agency**  
 Te Rākau Whakamaramaru

**Our Purpose**  
**Ā Mātou Whāinga**  
 Empowering communities before, during and after emergencies.

**Our Vision**  
**Ā Mātou Tirohanga**  
 A safe and resilient Aotearoa New Zealand.

**Our Role**  
**Tō Mātou Tūranga**  
 We are the Government lead for emergency management.

**Our Functions**  
**Ā Mātou Mahi**


**As Steward...**  
 We provide strategic leadership for risk reduction, readiness, response and recovery activities, and build emergency management capability and capacity.

**As Operator...**  
 We lead or support the response to and recovery from emergencies while also supporting the operation of the emergency management system.


**As Assurer...**  
 We provide assurance that the emergency management system is fit for purpose.

**Strategic Outcomes**


**Ā Mātou Whāinga Rautaki**




All communities are better prepared to respond to and recover from emergencies.



Impacts of emergencies on people, the economy and the environment are reduced.



Māori participation in the emergency management system is recognised, enabled and valued.



The emergency management system is well-coordinated, high-performing and enjoys widespread trust and confidence.

**Our Values**   **Ā Mātou Uara**

**Courageous**  
 Kia māia  
**We stand up.**

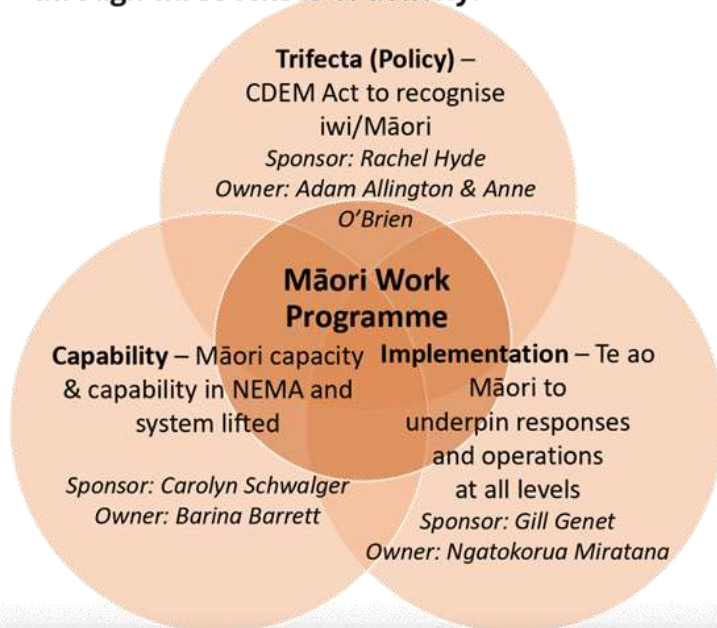
**Connected**  
 Kia honohono  
**We join together.**

**Committed**  
 Kia manawanui  
**We believe in what we do.**

**Respect**  
 Kia taute  
**We do it with respect.**

# Māori Work Programme

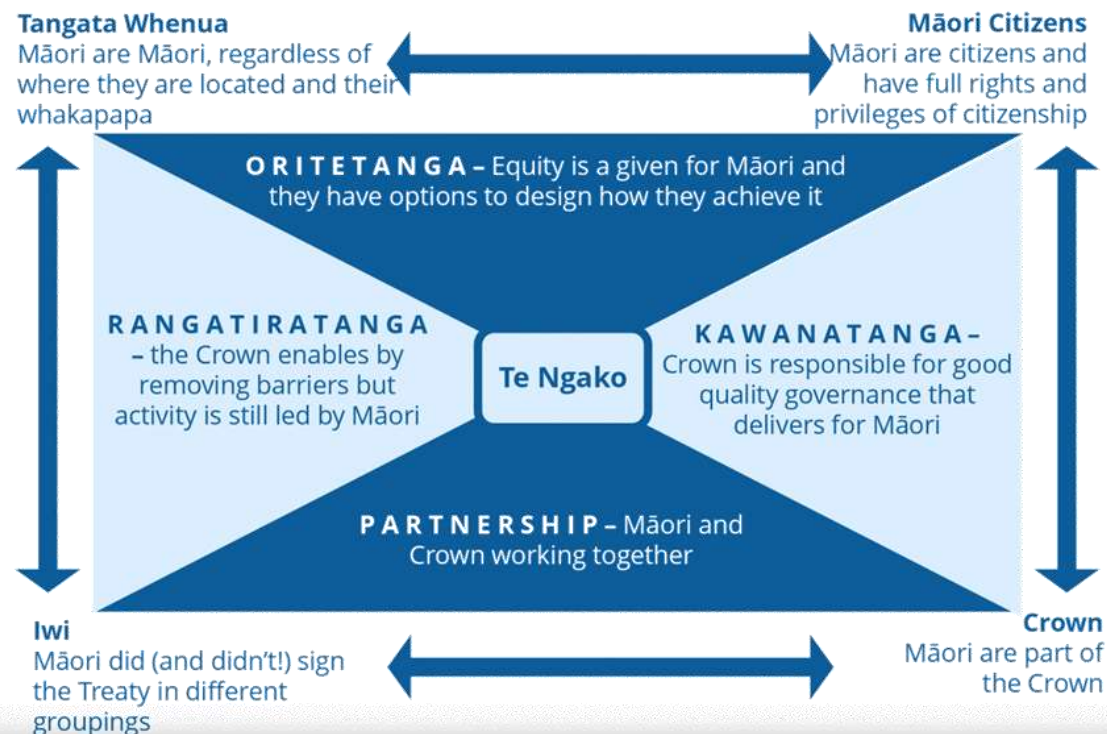
NEMA's work programme weaves a focus on partnership with Māori through three lenses of activity:



The value partnership with iwi/Māori can bring to NEMA



The value partnership with NEMA can bring to iwi Māori



**National Emergency Management Agency**  
Te Rākau Whakamarumaru



# Regulatory Framework Review “Trifecta” Programme

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# Regulatory Framework Review “Trifecta” Programme

Three projects with significant alignment:

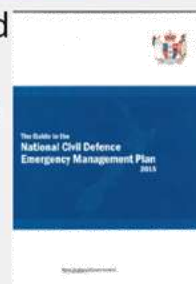
## Amendments to the Civil Defence Emergency Management **Act** 2002

- Picks up TAG’s recommendations
- Emergencies since the TAG also informs work
- Awaiting decisions on the timeline



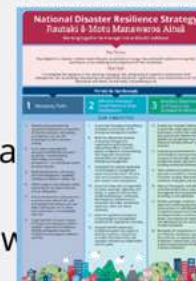
## Review of the National CDEM **Plan** Order 2015 and accompanying **Guide**

- Plan needs to be reviewed (every 5 years)
- A draft Plan developed during 2021
- Guide will be developed in late 2021/early 2022



## Development of the National Disaster Resilience Strategy (**NDRS**) **Roadmap**

- Initial roadmap to be developed in 2021
- Longer-term roadmap developed with National CDEM Plan review
- Roadmap will detail how the Strategy objectives will be achieved



## Programme Objectives

- Align content and products
- Optimise engagement with less stakeholder disruption
- Transparent governance and managing risks
- Strategic alignment with NEMA’s future
- Improving the EM system

# What are we looking at?



## Government decisions from TAG

- Bringing role of **EM Assistance Teams** into the Act
- Enabling **GNS Science to issue tsunami warnings** and ensure warning providers protection from civil liability
- **Protecting volunteers from civil liability** in emergencies
- Allowing CDEM Groups to meet via **audio or visual meetings** during an emergency
- Clarifying **criteria for declaring a state of local emergency** – that the emergency powers are necessary, or likely to be necessary
- Reconsidering TAG proposals around the **ability of the Director to intervene in states of local emergency** where matters of national interest are at play
- Examining the **role of Controllers and Recovery Managers** during an ‘undeclared emergency’
- Monitoring, evaluation and **compliance of the sector**, including minimum standards

## Priority workstreams – requiring fresh thinking

Recognising iwi/Maori perspectives

Legal framework

Lead agency

Housing recovery

Government funding

Disabled people

Critical infrastructure

# Regulatory Framework Review (Trifecta) engagement timeline

## Preliminary engagement

- Focused on matters that will inform the development of a CDEM Amendment Bill
- Initial stakeholder survey
- National Emergency Management Conference

March to July  
2021

July to October 2021

## Hiatus in engagement\*

- Parliament bills process requires a hiatus in engagement on all matters relating to the Bill from its introduction to the third reading
- Public engagement through Select Committee

October 2021 to  
May 2022

## Implementation and NDRS Roadmap

- National Disaster Resilience Strategy Roadmap development
- CDEM Act and Plan implementation and post-implementation follow-up

From June  
2022

May to June 2022

## Sector engagement

- Regular Group Managers call
- Focused on potential changes to the National CDEM Plan (Order) and Guide and legal framework generally

## Final consultation

- Further and final consultation on the on the Plan and Guide

\* Subject to Ministerial and Cabinet decisions, the Bill will be introduced to Parliament by the end of 2021.



**National Emergency  
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Te Rākau Whakamarumaru

# Questions? Insights?

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## HB CDEM GROUP JOINT COMMITTEE

Monday 28 June 2021

**Subject: DISCUSSION OF MINOR ITEMS NOT ON THE AGENDA**

### Reason for Report

1. This document has been prepared to assist Joint Committee members to note any Minor Items of Business Not on the Agenda to be discussed as agreed in Agenda item 5.

| Topic | Raised by |
|-------|-----------|
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