

# HAWKE'S BAY CIVIL DEFENCE AND EMERGENCY MANAGEMENT GROUP RESPONSE TO CYCLONE GABRIELLE



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INDEPENDENT EXTERNAL REVIEW FOR HAWKES BAY CIVIL DEFENCE AND EMERGENCY MANAGEMENT GROUP

MARCH 2024

“The very real consequence of failing to learn lessons is loss of lives and property...We should not belittle the magnitude of this challenge, however; problems recur because they are inherently very difficult to solve. If solutions were evident, emergency response professionals would have adopted them long ago. This should motivate agencies in all emergency response disciplines and at all levels of government to give serious attention to the goal of inculcating a culture of learning from past disasters to prevent future losses.”

*Donahue, Amy, and Robert Tuohy. “Lessons We Don’t Learn: A Study of the Lessons of Disasters, Why We Repeat Them, and How We Can Learn from Them.” Homeland Security Affairs 2, Article 4 (July 2006). <https://www.hsaj.org/articles/167>.*

**CONTENTS**

Overview.....4

Method and Approach.....10

Priority Recommendations by the 4Rs .....13

Additional Suggestions .....16

Observations by Terms of Reference .....21

    Section 1: Response Arrangements within Hawke’s Bay.....21

    Section 2:CDEM Group Emergency Coordination.....33

    Section 3: Operations .....38

    Section 4: Planning.....43

    Section 5: Logistics .....48

    Section 6: Welfare.....50

    Section 7: Public Communications.....53

    Section 8: Relationships with partner agencies and communities .....56

    Section 9: Lifelines .....59

    Section 10: Future resilience .....61

    Section 11: Lessons for national response management .....66

    Section 12:Transition to Recovery .....74

Appendix One: Abbreviations/terms used in this Report.....76

Appendix Two: National and Regional Civil Defence and Emergency Management .....77

Appendix Three: Implementation and Prioritisation.....83

Appendix Four: Stakeholders interviewed for this Review.....84

Appendix Five: Event timeline, February 8-16, 2023.....85

Appendix Six: Review Survey .....114

Appendix Seven: Quick facts: Severe Tropical Cyclone Gabrielle Event, February 2023.....116

## OVERVIEW

### THE CYCLONE IN HAWKE'S BAY

Over the weekend of 11<sup>th</sup>-12<sup>th</sup> February 2023, as New Zealand braced for the impact of severe tropical Cyclone Gabrielle, emergency management<sup>1</sup> authorities in Hawke's Bay felt confident that they had made appropriate preparations.

Public warnings and information about how to prepare had been posted on Facebook. Emergency management personnel, senior leaders, mayors and partner agencies across the region had met to plan their response. The accountable members of the Hawke's Bay Civil Defence and Emergency Management Group Joint Committee had asked probing questions and been given assurances of readiness by their emergency management teams.

Orange weather warnings from Met Service applied to the region. Hawke's Bay Regional Council modellers felt that, while the forecast 300-400mm of rain would test flood protection and drainage schemes, river flows were unlikely to rise beyond the 1 in 50 and 1 in a 100-year return periods on which their design had been based. Even when the weather warning moved to Red on Monday, emergency management staff were reassured that Met Service predictions of rainfall quantum remained unchanged.

And when some members of the public, including mana whenua with deep knowledge of the behaviour of the region's waterways, phoned emergency management authorities with concerns about observable river levels, forestry slash or river maintenance, they were told they were 'overreacting' or that plans were well in hand.

However, during the late evening of Monday 13<sup>th</sup> February 2023 and the early hours of Tuesday 14<sup>th</sup>, rain and winds intensified in the Hawke's Bay ranges and across the Heretaunga flood plains to unprecedented levels. Drainage systems were overtaken, stopbanks were breached or compromised. River flow telemetry failed as electrical substations were damaged, and some rain gauges stopped working for a period, while others were subject to such high winds that they underreported rainfall levels. The combined effects of silt from landslides, high rainfall, and forestry byproducts led to rivers breaching their banks, with silt covering crops and filling homes. Critical infrastructure -roads, electricity, fibre, bridges, businesses - was inundated, damaged or destroyed<sup>2</sup>.

During this critical period, lives were lost, livelihoods ruined, communities were cut off and thousands of people across the region were traumatised, required rescue and were displaced.<sup>3</sup>



<sup>1</sup> In this report the terms 'emergency management' and 'civil defence' are used interchangeably.

<sup>2</sup> For a more detailed outline of the weather event and its regional impacts, refer to Appendix Seven below.

<sup>3</sup> Picture: Guardian at <https://www.theguardian.com/world/2023/feb/17/cyclone-gabrielle-survivors-return-esk-valley-new-zealand>

## REGIONAL RESPONSE

As the weather event intensified, the Hawke's Bay Civil Defence Emergency Management Group Emergency Coordination Centre (HBGECC or GECC) lacked situational awareness and intelligence about much of the danger and damage until too late. With only partial understanding of the severity of the event, they struggled to direct and coordinate first responders, partner agencies,<sup>4</sup> tangata whenua, volunteers and other territorial local authorities (TLAs).

Communications failures, lack of data and the speed, severity and extent of this event overwhelmed staff in the GECC. They, and their partners in the other territorial authority Emergency Operations Centres (EOCs) did some brave and innovative things. They also had significant blind spots and made some mistakes. But above all, they were simply overwhelmed.

It is a profoundly counter intuitive feature of New Zealand's emergency management system, that as a crisis builds, and a declaration of emergency made, the command and coordination function<sup>5</sup> goes to local council staff who, while they may be well intentioned about their roles, are inconsistently trained in the national Coordinated Incident Management System (CIMS), often lack operational experience and, as response moves into recovery, have full time day jobs with which to contend.

Given their modest resources, it was always going to be challenging for local authorities in Hawke's Bay to carry the depth of capability and operational experience needed to lead a response to an event such as this. This is in spite of the fact that the region has a more centralised approach to emergency management than many and an atypically large number of full-time civil defence staff.

Just as local communities continue to grieve and suffer as they move towards recovery, the local councils' emergency management staff have also been traumatised. Many have resigned. Some have left the region altogether as a result of public backlash, amplified in a region with many small, close knit communities. Councils are finding it hard to recruit their replacements.

## THIS REVIEW

This Report describes the Hawke's Bay CDEM response and the early pivot to recovery, within a concentrated timeframe. Our findings have been drawn from the thousands of documents, hundreds of survey responses and dozens of interviews we conducted.

We see the critical lessons for the future that can be drawn from this event as falling into *two broad narratives*. One should inform improvements at *local and regional* levels and must be driven by the Hawke's Bay CDEM Group and TLAs. The other speaks to the need for new investment in enhanced *national* coordination, assurance, consistency and depth of professional leadership in response to emergencies. This is a more strategic matter for central Government.

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<sup>4</sup> In this report we use the term 'partner agencies' to refer to central and local government agencies involved in response and early recovery, including but not limited to the designated lifeline agencies.

<sup>5</sup> The language in the CDEM Act is 'direction and coordination'. In using the term 'command' here and hereafter we are making the point that in emergencies a clear command function is required. That is, one entity must direct and lead the response.



These lessons have been well traversed in previous reviews. The 2020 review of the Napier flood response found many of the same issues and had similar recommendations<sup>6</sup>.

A Ministerial review in 2017<sup>7</sup> suggested greater professionalisation of emergency response and more national consistency, via a series of recommendations that were only partly implemented at the time. We further endorse those recommendations here.<sup>8</sup>

As severe weather events become more common with climate change, the ‘four Rs’ of emergency response<sup>9</sup> will only be satisfactorily delivered through *combining* granular and community led Reduction and Readiness activity, with a more professional Response command and coordination resource that is regionally managed and nationally governed. Recovery from a severe and widespread event must be a partnership between local, regional and national agencies.

### REGIONAL LESSONS LEARNED

At the local and regional levels, the lessons learned from this event include the following:

- Hawke’s Bay Civil Defence and Emergency Management (CDEM) Group plans were as sound as any we have seen but lacked the operational detail needed to address an event of this scale and magnitude.
- The local CDEM Joint Committee and Chief Executives’ Coordinating Group (CEG) had a history of working effectively. This supported coordination between governance bodies and mayors, and with partner agencies. Local mayors were well versed in their responsibilities and powers and were proactive in fronting key messages to their communities.
- CDEM staff were overconfident about their readiness on the basis of prior emergency events such as COVID-19. They lacked a scenario planning mindset, had low multi - agency operational exercise experience and suffered from optimism bias. We have formed the view that they tended to take a best case scenario rather than a precautionary approach to planning, communication and warnings.
- Communities, volunteers, the contractor sector, businesses and utility providers provided critical and heroic response activity. These local resources were not well utilised by the CDEM Group in the response to this event.
- Engagement of iwi Māori and Māori communities was more a matter of ad hoc relationships than the product of systematic and formalised effort.
- At the operational level, Māori agencies and marae felt that their proven abilities to deliver welfare services at scale were either ignored or hampered by bureaucratic decision making from the centre.

<sup>6</sup> See <https://www.napier.govt.nz/assets/Links/2023-12-14-Cyclone-Gabrielle-Response-Review-V4-1.pdf>

<sup>7</sup> See <https://www.dpmc.govt.nz/departamental-agency/nema/ministerial-review-better-responses-natural-disasters-and-other>

<sup>8</sup> Picture: NZDF

<sup>9</sup> The New Zealand integrated approach to civil defence emergency management can be described by the four areas of activity, known as the ‘4 Rs’; Reduction, Readiness, Response and Recovery.

## Independent External Review

- Reduction activity in the form of precautionary river dredging to remove excess shingle, active management of forestry byproducts, stop bank, drain and flood management device maintenance proved inadequate to the event.<sup>10</sup>
- The GECC needed clearer protocols for engagement with other TLAs and their EOCs and with first responder command centres. Communications failures and the lack of integrated systems made it hard for responders to work to a common operating picture.<sup>11</sup>
- GECC communications were seen by many in the community as generic, lacking timeliness and overly focused on social media as opposed to mainstream media channels.
- The GECC did not have a deep enough pool of CIMS trained and operationally confident controllers and staff in the critical functions – particularly with regard to welfare and logistics.

*“Those volunteers were awesome. There was kai. There were clothes. There was shovel power...what our communities came together to do was unbelievable. And thank God, because we didn’t see anyone from civil defence for a week.”*

*“The nannies, who had to swim out of the marae in their nighties, evacuated to us and are still too scared to go back home. They are terrified of even a little rain.”*

This led to CDEM staffing inefficiencies, confusion and burnout.

- Tailored planning for and support from CDEM to migrant, remote, disabled and vulnerable communities also underutilised the available agency, volunteer and community resources; and
- The GECC focused their advice to mayors about the possible declaration of a state of emergency on the need for supplemental powers, rather than on the signalling and public reassurance impacts of such a declaration. In the lead up to the event, civic leaders asked the right questions, but received technical answers. This, along with low situational awareness early in the event, meant the declarations were made too late, in spite of being promptly signed by mayors.

*“There was a failure to evacuate earlier. Residents of places like Pakowhai were failed and not told to get out. This placed them at unnecessary risk and exposed them to massive trauma and loss. The water there didn’t come until later morning. There would have been time to tell each inhabitant face to face or use a loud hailer on the place. What about sirens? We could do that back in World War II. Those people should never have been in their roof spaces.”*

From a CDEM perspective the response and early-stage recovery were based on personalities and relationships, as opposed to repeatable and proven systems and frameworks.

Response tended toward the reactive and tactical, as opposed to taking a more strategic view. Things were often chaotic. They were based on a consensual approach to decision making, as opposed to decisions made on the basis of intelligence and clear command lines.

<sup>10</sup> These matters will be more fully addressed by the independent Flood review noted above. While they are outside our Terms of Reference, we note them here because of the enormous stress placed on these matters by interviewees and public survey respondents. While we understand that sirens are a more complex issue than some communities realise, the core point is that communities expected a low tech, failsafe public warning system. A decision was taken in 2019 to decommission the Napier tsunami sirens in accordance with NEMA guidance. See <https://www.civildefence.govt.nz/assets/Archive/Tsunami-Warning-Sirens-TS-03-14.pdf>

<sup>11</sup> The text boxes in this section and throughout the report are verbatim comments drawn from the Review’s public survey responses. See details about survey method and approach in Appendix Six below.

## Independent External Review

All this takes us back to our core point.

*The great strength of local and regional government should be to understand and plan alongside local agencies, businesses, communities, volunteers, iwi Māori and marae, in order that their collective, ground level intelligence can reduce risks, build resilience and preparedness in advance of an event, and support effective response during it. Local leaders know their communities and whenua best.*

However, as we noted in our Auckland review, part time, volunteer staff, who are inconsistently trained and often lack operational experience, cannot be expected to assume critical command leadership roles that require deep expertise, operational muscle memory and an understanding of interoperability with local and national agencies.

As one respondent to this review commented: *‘the New Zealand emergency management system was designed for a crisis in a region, not a region in crisis.’*

The future regional model we propose centres on using regional hubs to concentrate nationally assured and accredited professional emergency management expertise, which improves planning and Response. We also suggest enhancing local and mana whenua networks and self-sufficiency, which goes to improved Reduction, Readiness and community Resiliency.

### NATIONAL LESSONS LEARNED

The key theme of the national story is the need to take a principles-based approach to building a new national emergency management model. We believe it is past time for New Zealand to invest further in a comprehensive and professionalised centre of expertise in the National Emergency Management Authority (NEMA). A deeper investment in that agency, along with more emphasis on its statutory assurance function, would help mobilise the resources of central government in support of regions in all 4Rs.



The recommendations made by the 2017 Ministerial review of the national emergency management system should be revisited in this regard. While the review led to the establishment of NEMA, it also recommended a number of additional system enhancements that would have assisted in this event.<sup>12</sup>

As an example, although NEMA flew in one additional resource to Hawke’s Bay in advance of the Cyclone hitting the region to assist the regional response, it would ideally have supplied an advance ‘fly in team’ of seasoned experts to the regional command centre the weekend prior to the storm.

Other nationally driven enhancements, such as the mandated use of common operating platforms, national accreditation and assurance of all Group and incident controllers, nationally consistent

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<sup>12</sup> Photo: Guardian.

## Independent External Review

Standard Operating Procedures (SOPs), preassigned tasking protocols and a centralised workforce strategy reflected in a 'spine' of operationally experienced emergency management staff located in regional hubs would also have helped.

We also note in this context that, in Australia, State Emergency Services (SES) volunteers are the first responders to emergencies. They provide assistance to many emergency situations including flood, storm, bush search and rescue and give relief to those impacted. These are models that could be further explored by Fire and Emergency New Zealand, (FENZ) and NEMA.

### EMBEDDING LESSONS LEARNED

The world in which New Zealand's current emergency management arrangements were designed has changed. Weather driven events are increasingly frequent and severe. This is happening in a time when specialist responders, such as the Defence Force and Police, are also facing both cost pressures and increased demand driven by worsening geopolitical and law and order trends.

All of this suggests that changed system settings, culture and policies are urgently required. We believe that New Zealand needs to invest additional resources in a more fit for future emergency management system. The future system must get the balance right between local planning, regional delivery, and national professionalism, enablement and assurance.

Embedding these lessons learned will require honesty, courage and leadership tenacity to address complex changes and drive them forward as a system. We hope that civic leaders in Hawke's Bay, and national leaders – at NEMA and across Government – can jointly develop and implement an improved system of civil defence and emergency management at both local and national levels. It must build on the strengths of the existing model and address its demonstrated weaknesses.

Doing so will promote healing for the communities of Hawke's Bay and hope that their pain and loss can mitigate the suffering of the next communities to find themselves in harm's way.

## METHOD AND APPROACH

### TERMS OF REFERENCE

The purpose of this Independent External Review was to assess the operational performance of the Hawke's Bay Civil Defence Emergency Management (CDEM) Group's response to Cyclone Gabrielle, with a particular emphasis on the systems and processes; roles and responsibilities of Group members and partners; and to what extent the implementation of pre-existing arrangements contributed to an effective management of the response for mana whenua and the community.

This review is focused on Readiness, Response and the pivot to early-stage Recovery from the Cyclone event of February 2023. Specifically, our review examined the period 8<sup>th</sup> - 16<sup>th</sup> February in particular detail, and also addresses the period to the disestablishment of the CDEM GECC in the end of April 2023. Our Terms of Reference specifically required us to examine the following:

- Response arrangements (including response capabilities within Hawkes Bay).
- Communication and information flows; and the interoperability of local Emergency Operations centres.
- The CDEM Group Emergency Coordination Centre and national emergency management structures.
- Relationships with partners.
- Any emerging practice that could support future resilience for communities, local authorities and the Hawke's Bay Civil Defence and Emergency Management Group.
- The criticality of lifeline infrastructure during an emergency.
- Any strategic lessons that could support national level response management; and
- The arrangements in place to support an effective transition to recovery.

Our approach is future focused. We asked respondents to this review to reflect on lessons learned from the event and how they might inform improved future practices, both regionally and nationally.

### METHODOLOGY

In addressing the issues set out in our Terms of Reference, we built on the earlier work carried out by multiple prior reviews, both of prior local events, and of emergency management effectiveness in previous national and local disasters. In addition, we:

- Conducted one on one interviews with Hawke's Bay civil defence staff in key functional roles.
- Held interviews with mayors, local authority chief executives and key governance bodies including post settlement governance entities and Taiwhenua groups.
- Spoke with local tangata whenua.
- Facilitated interviews and focus groups with key community stakeholders and affected groups.
- Received and responded to some informal submissions from stakeholders.
- Commissioned and incorporated comments and suggestions from an online survey to which the wider Hawke's Bay community was invited to respond<sup>13</sup>; and

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<sup>13</sup> The survey received around 1000 responses, mostly from community members directly affected by the response. It was undertaken on our behalf by AskYourTeam, a local survey provider. More details can be found at Appendix Four. Verbatim comments from the survey are used throughout this report in support of our findings.

## Independent External Review

- Conducted a high-level review of internal documentation, such as plans, policies, prior reviews, reports, internal communications and other materials.

The suggestions and recommendations we outline below are accompanied by an indicative implementation map (at Appendix Three) for the consideration of regional and local leaders.

### LIMITATIONS

In keeping with the Terms of Reference, the review is purposefully not a forensic investigation. Rather, the approach we took was exploratory and inquisitive, based on the materials available to us and this insights of these impacted by and involved in responding to the Cyclone Gabrielle event. Our focus is on opportunities to improve the future performance of the Hawke's Bay CDEM Group, like entities in other regions and the national CDEM system.

This review is not focussed on assessing the performance of any other emergency services and response agencies to this event, such as FENZ, Police and others. These agencies will conduct their own reviews.

To the judgement and observations we have made in this report, we bring our collective experience as a review team in crisis and disaster response, executive leadership and organisational performance.

Although this report includes our best efforts at a reconstruction of the relevant timeline of events, the supporting materials were partial or conflicting in places, and the recollections of participants differ. Recordings of several key Incident Management Team (IMT) meetings early in the crisis, for example, were partial and in some cases appear not to have been retained.

Consequently, the timeline included as an Appendix should not be relied upon as being fully definitive. There are multiple discrepancies in the source materials which underpin it. The timeline does, however, offer insight into the way the emergency was managed, particularly in the key hours leading up to the declaration of a local emergency and issuing of an initial emergency mobile alert.

Each person interviewed for this review was given an assurance that individual responses would be treated in confidence and that documentary materials shared with us would be held only by the review team for the purposes of this exercise and not used for any other purpose.

Finally, there are several other reports that address matters related to those in our Terms of Reference. We have made minimal reference to technical matters related to weather and flood as these will be covered in the separate, independent flood review commissioned by the Hawkes Bay CDEM Group and due to report in mid-2024. The later section on national insights should also be considered in the context of the wider national review of North Island severe weather events currently being undertaken by Government.<sup>14</sup> This report should be read with the above limitations in mind.

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<sup>14</sup> Details on the flood review can be found at <https://www.hbifr.nz/thereview#:~:text=About%20the%20Review&text=The%20Review%20is%20independent%20and,the%20end%20of%20May%202024>. The Terms of Reference for the national review can be found at <https://www.dia.govt.nz/Government-Inquiry-into-Severe-Weather-Events-About-the-Inquiry>. Napier City Council has also undertaken a related review, which is discussed in <https://www.napier.govt.nz/our-council/news/article/2408/council-welcomes-recommendations-following-cyclone-gabrielle-response-review/>. The recent Metservice review, discussed at <https://www.nzherald.co.nz/nz/auckland-floods-metservice-admits-its-weather-forecasting-models-were-poor/CQAXHKVNGNADHCGEO6NR3OUNWU/>, is also relevant.

## ACKNOWLEDGEMENTS

Thank you to the many individuals and communities in the Hawke's Bay region who have contributed to this review. Your willingness to draw on your own, sometimes traumatic experiences to provide advice and suggestions to help those who may be impacted by future emergencies has been humbling to witness.

Those who suffered the loss of whānau, property and jobs told us very clearly that they wanted their pain and insights to inform positive changes in both regional emergency management and the wider national system of response.

Thanks too, to the passionate and dedicated people who work in the Hawke's Bay and national first response and emergency management systems, for your candour and openness to change.

We thank the iwi, tangata whenua, volunteer, business, partner agency and community groups who contributed vital insights to this report. We look forward to seeing your roles expand in future Readiness, Resiliency and Response.

We want to specifically acknowledge the support and humility of the mayors and chief executives of the relevant local authorities who initiated this review. Their willingness to address difficult issues, determination to improve and commitment to supporting their communities throughout the ongoing recovery give us confidence that these recommendations and suggestions will be energetically addressed.



15

## HOW TO NAVIGATE THIS REPORT

The following sections are organised by our Terms of Reference. This creates some duplication of key points. Detailed practical suggestions follow each subsection so that they can be seen in context.

Readers unfamiliar with regional and national civil defence arrangements can refer to Appendix Two for a summary or refer to <https://www.civildefence.govt.nz/>.

The entire report should be read in conjunction with Appendix Five, the detailed timeline of events.

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<sup>15</sup> Photo, Chris Skelton, STUFF

## PRIORITY RECOMMENDATIONS BY THE 4RS

We have made a number of suggestions throughout this report with regard to both the regional and national dimensions we address in this review.



In this section, we summarise our ‘tier one’, or priority recommendations. We organise these around the ‘4Rs’ of emergency response: Reduction, Readiness, Response and Recovery. The 4Rs, as shown in the graphic below, should be considered as an integrated and circular system which supports community resilience. As a consequence, a number of the recommendations below overlap.<sup>16</sup>



The 4Rs Emergency Management Model



The various councils in the region will want to reflect on how these recommendations mesh with their existing work programmes and the many other, more detailed suggestions made throughout this report. This is addressed in Appendix Three, in which we suggest a sequencing and prioritisation framework to assist the HBCDEM Group and TLAs in addressing our recommendations and suggestions.

## REDUCTION

1. Develop, implement and communicate a regional **Disaster Reduction Plan** in partnership with local partners and communities. The Plan should include:
  - a. Formalised utilisation of indigenous knowledge and Kaupapa Māori approaches to land and water management and the 4 Rs more generally.
  - b. Risk reduction operations such as:
    - i. River management (dredging, maintenance of river mouths and tributaries etc.)
    - ii. Stop bank planning and maintenance.
    - iii. Drain and flood scheme maintenance.
    - iv. Management of forestry by products.
    - v. Plans for mitigation of utility and service outages; and
  - c. Targeted sub plans for particular communities, including migrant, disabled, vulnerable and remote communities.
2. Advocate to central Government for a principles-based overhaul of the current CDEM system in New Zealand, including changed legislation, and systems and structures that better reflect and respond to the current threatscape.

The future system must remove the confusion inherent in the current model, be adequately resourced and support both improved central coordination and regional and local delivery. This work should include consideration of the role of NEMA and the current Australian SES (State Emergency Service) and Disaster Relief models.

<sup>16</sup> For more detail on the 4Rs, see <https://www.civildefence.govt.nz/cdem-sector/the-4rs>

## READINESS

3. Develop, implement and communicate a regional **Disaster Readiness Plan** in partnership with local partners and communities. The Plan should include:
  - a. Formalised utilisation of indigenous knowledge and Kaupapa Māori approaches to land and water management and the 4 Rs.
  - b. Readiness operations such as:
    - i. River management (dredging, maintenance of river mouths and tributaries etc.)
    - ii. Stop bank planning and maintenance.
    - iii. Drain and flood scheme maintenance.
    - iv. Management of forestry by products.
    - v. Stormwater management plans.
    - vi. Plans for mitigation of utility and service outages; and
  - c. Targeted sub plans for particular communities, including migrant, disabled, vulnerable and remote communities.
4. The HBCDEM Group should invest in **capability building** at regional and local levels, including:
  - a. Ensuring that CDEM partnerships with lifeline utilities, iwi, PSGEs, mana whenua, volunteers, the private, contract and philanthropic sectors, media and communities are more inclusive, mature and enduring.
  - b. Establishing reliable detection and early warning systems that are resilient to outages and provide adequate warning of potential or pending disaster.
  - c. Ensuring officials take a precautionary approach to potential disasters, reducing the risk of optimism bias inherent in a best case scenario approach. A precautionary approach will ensure advance warnings are given to at risk areas and communities.
  - d. Ensuring CDEM staff and partners have contemporary and comprehensive knowledge of communities to enable access to real time information. This should include an up to date and accessible GIS system.
  - e. Ensuring at risk and vulnerable communities have the resources required to be self-sufficient when a disaster occurs; and
  - f. Developing better and more resilient communications systems to ensure that all officials have real time information and can communicate with the public, partners and other authorities.
5. Develop a plan for more regular **scenario development, training and exercising** in conjunction with a wide range of partner entities, including iwi Māori and communities.

## RESPONSE

6. Work with CDEM operational staff and partners to:
  - a. Ensure that those in civic leadership and governance roles are adequately informed and enabled during response.
  - b. Ensure improved operational command leadership clarity and capability.

## Independent External Review

- c. Take an inclusive approach to Response by ensuring that the needs, resources and capabilities of all partners, iwi Māori and communities are considered and utilised.
- d. Resource the CIMS structure with experienced leaders for each function.
- e. Ensure Response is adequately funded and that financial policies and delegations are appropriate and enabling.
- f. Develop improved mechanisms for situational awareness and intelligence gathering that are resilient under most disaster scenarios.
- g. Ensure internal and external communications are regular, timely, accurate and go to all stakeholders and partners.
- h. Ensure public warnings, information and advice are issued regularly, go via multiple channels and are timely.
- i. Ensure operational incident and meeting logs are complete, maintained and retained:  
and
- j. Ensure the Response phase is professionally debriefed, with lessons learned taken into all 4 Rs.

## RECOVERY

7. Ensure a Recovery lead is appointed early in the Response phase to ensure seamless and appropriate transition to Recovery.
8. Ensure that Recovery planning is undertaken using a holistic and inclusive approach, that utilises the insights of mana whenua, partner agencies, and the private, philanthropic, contract and volunteer sectors.

## RESILIENCE

9. Ensure that the current Regional Recovery Agency, (RRA) produces a full lessons learned document at the conclusion of its work, which can inform community Resilience and future regional Recovery efforts.

## SUMMARY OF ADDITIONAL SUGGESTIONS

Below, we summarise the more detailed suggestions made throughout this report. These are our 'tier two' recommendations. They are numerous, and we understand that almost all have resourcing implications beyond what can be achieved within current local authority or NEMA baselines.

As noted, Appendix Three provides an indicative guide to our views on the prioritisation and sequencing of both the tier one recommendations above and these tier two suggestions.

1. Consider requiring mandatory CIMS training for all national, regional and local CDEM and response staff (including lifelines), with training compliance to be audited by NEMA's assurance function.
2. Clarify escalation and tasking responsibilities between command structures within FENZ, Police, NZDF and Group CDEM Controllers and reflect in CIMS documentation.
3. Consider reviewing current CIMS training models, with a view to increasing rigour in regard to common SOPs, training and professional development and regular NEMA accreditation for those in the Controller function.
4. Review the recruitment proposition, reward and support arrangements for staff in key CIMS functional roles.
5. NEMA should consider developing skills, training and development profiles for each functional CIMS role and assuring compliance.
6. Create and mandate the use of standardised task books in hard and soft copy for each functional CIMS role, including key performance metrics, templates and detailed process SOPs.
7. NEMA should consider reviewing the current guidance (and, if necessary, legislative requirements) relating to declarations of states of emergency and expand criteria sets to include more holistic matters. This should be accompanied by new guidance for mayors and group controllers.
8. Government should consider legislative amendment to provide mayors and CDEM Group appointees with the ability to declare a 'major incident' that enables enhanced response and communications, but which limits legislative powers to those that can be used under other Acts.
9. NEMA should consider reviewing the current guidance, (and, if necessary, legislative requirements) requiring declarations to be physically signed. Provision should be made for verbal and/or online approval of emergency declarations.
10. Train those in iwi liaison roles, and other key mana whenua leaders in the CIMS framework.
11. Deepen engagement with Taiwhenua, local marae and Māori communities for preparedness, response and recovery planning, including shared scenario training for event types, and clear delegations that support devolved welfare and service delivery decisions and accountabilities.
12. Utilise marae as distribution and welfare hubs throughout the region and ensure they are supplied with current sitreps and action plans. Ensure that their role in the CDEM system is both appropriately resourced and clearly communicated to local communities.

## Independent External Review

13. At CDEM Group level, more formally engage iwi and other Māori leaders in planning at both governance and executive levels, in order that indigenous knowledge and networks inform the 4Rs, major disaster plans and SOPs.
14. NEMA should consider developing a standardised process to capture lessons learned in a mandatory after action review template for EOCs and GECCs.
15. Develop a field learning lessons learned process such as that used in the National Crisis Management Centre (NCMC) during this response to enable dissemination of real time lessons and opportunities.
16. Designate a lessons learned staff position for all large incidents at regional level, to take accountability for debriefs, after action reviews and information sharing with partner agencies and NEMA.
17. Rebuild, clarify and communicate the operating model for the regional GECC, including its relationship to local emergency coordination and incident management teams in other TLAs and response agencies.
18. Consider whether it is sufficient for the regional AoG lead to be a non-voting observer on the CDEM Group, or whether NEMA should consider legislative change to allow full membership.
19. Develop a disaster Master Plan and operating model for Hawke's Bay CDEM Group.
20. In the context of the Plan, pre plan tasking protocols and test with scenario exercises. Document these across all CDEM and response agencies.
21. Record action items during leadership, CIMS function and coordination meetings and assign one accountable task owner. Recap all tasks in subsequent meetings to ensure tasks have been completed.
22. Consider the fitness for future of Hawke's Bay CDEM building in Hastings. A larger facility and/or different location may be required.
23. NEMA should consider developing and mandating a shared common operating platform and ICT system for emergency management on a national basis in order that all responders are working to a common operating picture and so that lessons learned information can be captured.
24. Create regionally consistent protocols for all CIMS functional communication, including emails and text communications.
25. Create both physical and online information boards at command posts and key sites in order that current sitreps, action plans, public communications, meeting timetables etc. are shared with all players in response and recovery. Plan in advance for information sharing with key partners and stakeholders.
26. NEMA should review overall rostering protocols for major events and complex emergencies, including the consideration of a longer rotation for functional area and responder leadership.
27. Develop a CDEM deployment plan for the Hastings Aerodrome and establish full protocols for its use as a contingency airfield, including asset configuration, cost recovery arrangements and a special helicopter manager position to coordinate airspace when using multiple types of aircraft, and to oversee helicopter safety and loading.

28. Either abandon the current MOU with VHB or turn it into a formal contract and develop a data sharing process to coordinate between the councils and the volunteer Call Centre.
29. Ensure that VHB and other relevant entities (such as private sector contractors) have access to situation reports and other relevant materials to support the tasking and deployment of volunteers.
30. Working with Volunteer New Zealand, NZDF, Police and FENZ, consider the establishment of a new national Disaster Relief Organisation, coordinated by NEMA, with membership from military veterans, reservists, volunteers and retired first responders, to support regional hub expertise by acting as a deployable resource when required. Members should be CIMS trained and participate in regional and local operational exercises and training.
31. Establish a daily operational brief for the GECC and all response agencies, facilitated by controllers and including updates from each functional lead to establish the plan for the day and debrief operational issues or achievements from the prior period.
32. Ensure that multiple scenarios are planned for in multi-agency sessions and subsequently tested in realistic simulation events.
33. NEMA, MBIE and MSD should consider developing a resource procurement and payment system for use in disasters that balance public procurement protocols and the need for accountability with agile asset and resource acquisition and deployment. They should consider the applicability of the emergency procurement provisions of the Government Procurement Rules to this suggestion.
34. Utilise a templated planning process within the planning function of CIMS to identify risks, establish priorities and SMART success metrics and plan strategy and tactics for the 'mission'.
35. NEMA should consider developing a national training and exercise plan to guide regional exercises and with an interface to its assurance and lessons learned capability.
36. HBCDEM exercise plans should be reviewed, to provide a greater emphasis on the balance between frequent smaller-scale training events and larger, inter agency operational exercises. Both should be mandatory for all CDEM personnel.
37. NEMA should consider developing and mandate TLAs' use of a standard national emergency operating platform, to underpin sharing of interagency intelligence inputs, analysis, taskings and communications.
38. Standardise the production of paper and online mapping products to improve situational awareness and enable better intel led decision making.
39. Incorporate the Hawke's Bay GIS team into the Planning area of CIMS.
40. NEMA should develop collateral for a public awareness campaign about donations in a disaster, which can be rolled out on a local or regional basis as required.
41. NEMA should establish a standard database to support the CIMS logistics function, including key induction materials, templates, incident tracking mechanisms and expenditure tracking and management, for assess by all agencies and EOCs at multiple levels.
42. Working with partner agencies such as MSD, Hawke's Bay CDEM should adopt a standard needs assessment tool and database along with information sharing protocols.

43. Working with MSD and other agencies, NEMA should facilitate the development and application of a standardised, national needs assessment tool for use in response and recovery.
44. The HBCDEM Group should undertake full post major event debriefings with staff by CIMS function, facilitated by a mental health professional.
45. The CDEM Group should develop 'incident within an incident' procedures should responder illness, injury or death occur.
46. The Hawke's Bay CDEM Group should review the depth and capability of the PIM workforce with a view to ensuring that all available staff have CIMS training and to allow for specialisation into subcategories of communications management, such as external media, community liaison, central government liaison and so on.
47. NEMA should develop a kete of pre-planned emergency communications for use across multiple channels, along with clear criteria for the use of emergency mobile alerts.
48. In a major event, the CDEM Group PIM should publish daily updates to the community that include both achievements and setbacks to manage public expectations and proactively shape the narrative.
49. Develop a stakeholder master plan at both regional and local levels, including contact information, SOPs, roles and responsibilities for emergency response and recovery, and key relationship owners. Maintain and update the plan annually via the PIM function.
50. Include registers of key community contacts in the CDEM stakeholder plan recommended above.
51. Working collaboratively, develop SOPs and contingency technologies for inwards capture of community intelligence during an event and for outward dissemination through key community leaders and organisations.
52. Work with local PSGEs and Iwi leaders to develop a plan to harness and incorporate indigenous knowledge into the CDEM planning process.
53. Once the outcomes and recommendations of the Government's wider review of the CDEM system are known, the roles, interfaces and relative resourcing of national, regional and local institutions should be redesigned around a more centralised, hub and spoke operating model that balances local insight and centrally managed expertise. We suggest that this could be effected by means of an interagency co design symposium, as opposed to commissioning yet another review.
54. Standardise the regional CDEM operating model to centralise consistently structured CDEM Groups in regions and clarify relationships and accountabilities between NEMA, GECCs, first responders and local TLA EOCs/IMTs.
55. Consider growing NEMA's regulatory and intelligence capability and strengthening that agency's role in monitoring and assuring regional CDEM Group performance
56. NEMA could consider improved national guidance regarding protocols with iwi Māori, post settlement entities and Māori communities in the CDEM '4 Rs'. This should include recognition of the capability that Māori bring to emergency management and the formal inclusion of iwi in regional CDEM Groups.

57. NEMA should consider developing fly in teams of expert professionals, (with a particular focus on controllers, but also including other experts, such as welfare, engineering, science, and communications) in order that (mostly part time) local CDEM staff can be supported by full time, technical experts. Fly in controllers need a mechanism enabling them to act in the role of CDEM controller in any region.
58. Develop clear protocols and triggers for local controllers to hand over to national 'fly in' controllers as a crisis escalates.
59. Create greater clarity for controllers and first responders about who is in command at what stage of an event and where tasking for supplemental resources (such as volunteers and NZDF) sits.
60. NEMA should consider developing a national CDEM workforce strategy, addressing recruitment, training, remuneration and professional development.
61. NEMA should consider requiring all local authority staff with CIMS functions to receive nationally accredited CIMS training and professional development experiences, with a related system of audit across local authorities.
62. Consider more explicitly ring fencing regional operating funding for civil defence and emergency management so that is not competing with other Council funding priorities. Provide greater public transparency about the use of levies.
63. Utilise insights from the Australian SES model to clarify the training and activation of volunteers, their protection from liability and mechanisms for payment for the use of community resources.
64. Review the CDEM funding model, at both local and central government levels.
65. Require local and central government agencies to partner to explore a range of place-based solutions for uninsurable or underinsured communities.
66. NEMA should consider developing formalised shared service arrangements and model agreements, including with partner agencies, first responders and lifelines, to strengthen more consistent region wide approaches and clarify roles and accountabilities on a national basis.

## OBSERVATIONS BY TERMS OF REFERENCE

In this section and those that follow, we outline our more detailed findings and organise our suggestions against the themes within our Terms of Reference. This approach creates some duplication and overlaps between sections.

It also illustrates that, during this event, shortfalls or opportunities lost in particular areas 'layered up' with those in others, to create a combination of system weaknesses that hindered preparedness, Response and early-stage Recovery.

Future improvements will require changes at local, regional and national levels. These have implications for the future design and resourcing of the overall operating model for emergency management in New Zealand.

Taken together, the suggestions in the following sections amount to a considerable, and potentially costly, body of work.

## SECTION 1: RESPONSE ARRANGEMENTS WITHIN HAWKE'S BAY

### OBSERVATIONS: THE NEW ZEALAND WAY

The scale, extent and speed of this weather event was beyond what the New Zealand civil defence and emergency response system is set up to manage. As one respondent put it to us: *"our system was designed to manage a crisis in a region, not a region in crisis."*

Yet, in spite of the fact that some key personnel were absent or personally impacted by the event, the national, regional and local teams who led the response made it happen somehow. Although they were overwhelmed and stressed, they often utilised interpersonal relationships effectively, innovated on the fly, and coordinated the work of disparate agencies and organisations in the interests of their communities. Civic leaders communicated with empathy, in spite of incomplete information. Individuals worked tirelessly through the response. They also learned as they went. The quality of CDEM action plans, sitreps and public communications improved over time.

This was the number 8 wire New Zealand way in action, but it also had its drawbacks. From a CDEM perspective, the response and early-stage recovery were based on personalities and relationships, as opposed to repeatable and proven systems and frameworks. Response tended toward the reactive and tactical, as opposed to taking a more strategic view. Things were often chaotic. There was a consensual approach to decision making, as opposed to decision made on the basis of intelligence and with clear command lines. GECC teams relied on adrenaline and heroics, as opposed to training, operational experience and muscle memory. They functioned well enough in short bursts but momentum was hard to sustain over a long period. They imposed a high toll in terms of physical exhaustion and mental ill health amongst those involved in the response phase of this event.

Because of its inherently fly by wire ethos, this approach also does not tend to learn the lessons of particular disasters well. Multiple recent reviews of significant events in Hawke's Bay and elsewhere have found the same issues and made similar recommendations. We think it is time to further professionalise and better invest in more systematic response arrangements, at local, regional and national levels.

## Independent External Review

From a NEMA and first responder perspective, this event highlighted the limitations and challenges inherent in New Zealand's current emergency management model, particularly when it must address a severe and widespread disaster with multiple impacts and a lengthy recovery period.

From a community and partner perspective, this event strained relationships with councils and created bitterness amongst those who felt unsupported, ignored or shuffled by bureaucracy at a time of great trauma. Lingering sensitivities continue to make it hard for local authorities to have open discussions with the community about the need for *both* improvements in local and national CDEM response *and* the need to lift community and household preparedness and self-sufficiency for the first days of an emergency event.

We suggest that both regional communities and government must invest in greater resiliency, improved planning and improved response. While the natural tendency of those who have been harmed by an event is sometimes to seek out who to blame, a better response is to identify and internalise the lessons learned from a major disaster such as Cyclone Gabrielle so that we are all better equipped to face the next emergency event.

*"The whole thing was an uncoordinated shit show. There was chaos, inequity of response and people in roles who tried hard but didn't know what they were doing. Most of the really useful stuff was done by volunteers and communities themselves. Did we take the lessons from that? Surely we can do better next time with better plans, better comms and deeper, more inclusive partnerships."*

Embedding lessons learned takes honesty, courage and leadership tenacity to address complex changes and drive them forward as a system. We hope that civic leaders in Hawke's Bay, and national leaders – at NEMA and across Government – can jointly build and implement a vision and plan for an improved system of civil defence and emergency management at both local and national levels. Doing so will promote healing for the communities of Hawke's Bay and hope that their pain and loss can prevent the suffering of the next communities to find themselves in harm's way.

It is past time to further professionalise and invest in more systematic response arrangements at local, regional and national levels.

These general observations are foundational to those that follow.

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### OBSERVATIONS: UNCOORDINATED COMMAND LEADERSHIP

Responders, whether in local government or other agencies, were not consistently trained in the New Zealand CIMS framework. In a large scale and complex event, with multiple agencies involved, it is essential to have a common command system and language which is understood by all and implemented in a consistent manner.

At present, CIMS training is not mandatory for all staff in response roles, although it is required for all FENZ staff.

In a disaster on the scale of this weather event, it is natural for each agency - FENZ, Police, St John, Volunteers, NZDF, Te Whatu Ora, utilities and so on – to establish specific command structures. They each have their own missions, responsibilities and cultures. Without an overarching command structure

to which all participants subscribe however, the result will always be confusion, duplication and even conflict. This manifested here in a number of ways, including:

- Lack of clarity about overall command of the event and how command leadership was to be coordinated, which sometimes manifested as tensions between the GECC and local EOCs.
- Patchy coordination and information flows (exacerbated by communication technology failures) between the five-territorial authority EOCs. Flows were similarly poor between the GECC, other command authorities in first response and other government agencies.
- Uneven CIMS capability and seniority in local EOCs and the GECC, which meant a lack of standardisation, knowledge, consistency, operational experience and sometimes, leadership presence.
- Unclear handover from FENZ to the GECC once states of emergency were declared; and
- Unclear mission objectives, prioritisation and tasking for first response and other partner agencies from the GECC, particularly early in the response.

In a disaster such as this, a top table of the relevant key players needs to be established, with a clear single point of command. Under the current CDEM model, this is supposed to be the Group Controller and alternates. In this event, these controllers had variable CIMS training and operational experience. Some were full time CDEM professionals and others were not. Despite the fact that NEMA surged in additional support staff in the first days of the event, including an experienced Controller, in our view, a minority of controllers had a clear understanding of what good should look like in terms of crisis command and the coordination of operational response capabilities.

This resulted in unclear operational tasking and mission objectives, insufficiently frequent and tightly run incident management meetings in the early phase of response, and too many cooks in the kitchen at early GECC meetings. Some respondents told us that, in the words of one, *“far too many adrenalinised desk jockeys cluttered the initial response effort, with the result that some of the key professionals found engagement with the GECC slow and frustrating. People in the GECC were well intentioned but operationally inexperienced.”*

What this meant in practice is that, in spite of generally good relationships in the region, this response sometimes suffered from a lack of understanding between disciplines and agencies. In high pressure situations, if things are unclear, agencies will tend to default to just trying to deliver their own core business well. It can be easy to be unaware of what other agencies are doing or to fail to see the need to find out. Trying to navigate through interagency tensions or confusion can also distract controllers from their core command and coordination role.

As one respondent commented:

*‘It is more than counter intuitive to expect a Group Controller, after a declaration by the Mayor, to take charge (possibly cold) of an event that is rapidly scaling, and then to expect them to exhibit calm and decisive strategic leadership across the massive range of response operations. This expectation on local government needs to change’.*

Improvements cannot be achieved by more training alone. We suggest the development by NEMA of more explicit national SOPs and performance indicators for each CIMS function and particularly that of

## Independent External Review

Controller. All agencies and players must be working to a shared picture of what operational command excellence should look like.

As we discuss elsewhere, we also believe that CIMS training for those in full or part time CDEM roles, in any agency – local government, central government, first response and lifelines – should be mandatory and subject to compliance checks through NEMA’s assurance mechanisms.

To lift overall command abilities and coordination, we further suggest the development, at national level, of a clear success profile for those in the Controller role, with leadership skills and some form of operational experience being explicitly required. A critical skill for those in this position is the ability to rise above the fog of war and weave intelligence inputs into a strategic picture. They must then have the ability to communicate required outcomes and priorities in the context of a shared mission and common operating picture.

We also think that Controller expertise needs to be full time, and as such, is likely best concentrated at regional level<sup>17</sup>. This will allow for more targeted professional development and scenario training and exercising, as outlined in the relevant section below.

All this should not be taken to imply that the answer to this is the funding of a larger standing army of regional and local government CDEM professionals. Throwing numbers at this will not necessarily improve outcomes. Command clarity and coordination can be improved by a combination of selecting the right people, greater rigour and consistency around technical CIMS training and its assurance, and more frequent exercising and training to develop operational confidence and maintain skills.

Such training also needs to be more consistently applied within lifeline and partner organisations and agencies. This will ensure that all responders, irrespective of discipline or agency affiliation, are working to the same best practice emergency management model and have rehearsed complex response command and coordination, in advance of a real event.

### SUGGESTIONS

1. Consider requiring mandatory CIMS training for all national, regional and local CDEM and response staff (including lifelines), with training compliance to be audited by NEMA’s assurance function.
2. Clarify escalation and tasking responsibilities between command structures within FENZ, Police, NZDF and Group CDEM Controllers and reflect in CIMS documentation.
3. Consider reviewing current CIMS training models, with a view to increasing rigour in regard to common SOPs, training and professional development and regular NEMA accreditation for those in the Controller function.

### OBSERVATIONS: CIMS CAPABILITY

In addition to the patchiness in CIMS training described above, current CIMS training packages seem overly simplistic or superficial with regard to the need for intelligence led, disciplined, team-based

<sup>17</sup> This has implications for national CDEM structures, which we address later in the report.

decision making under pressure. As one respondent put it: *“My CIMS staff felt too light for an event of this magnitude”*.

Some responders in key CIMS roles were also forced to learn about the requirements of their function in the heat of this event. Several told us they were unsure of the requirements of the function and what good would look like.

This is evident in the recordings of IMT meetings, in which functional leads can be seen to adopt different approaches to what matters need to be briefed to the wider team and how. As a result, some functions reported very tactically, while others took a larger strategic view. This made it difficult for controllers to see a full and balanced picture.

Inexperienced staff sometimes also made up templates or processes on the fly, which created inefficiencies, duplication, confusion and distraction from public facing activity. This was exacerbated by the fact they were often working within their home organisation’s information management and email systems, as opposed to shared and dedicated emergency management systems and data repositories. From communities’ perspectives, this iterative and messy work created the impression of a bureaucracy in which the right hand did not know what the left was doing.

Given that these functional staff come from (sometimes junior) full time jobs in their local councils into the response team, they cannot be expected to operate well in their functional CDEM roles without excellent training, ongoing professional development and regular involvement in inter agency operational exercises.

In the wake of this event, and given its huge emotional toll on CDEM staff, many of whom have resigned or left the region in the aftermath, it is also important to consider the recruitment proposition and ongoing support for staff in these ‘reserve army’ roles. Many described to us the constant stress of having the ‘CDEM phone’ by their beds and being available 24/7 in the event of an emergency. One said: *“No matter what we do it will never be enough because we aren’t experienced professionals in emergency stuff. It’s like we are being set up to fail in this and the pressure and scrutiny sometimes feel unbearable.”*

As the system is configured at present, there is little in the way of either carrot or stick for these staff and their managers. Supplemental allowances are modest, training is not mandatory and extractions from BAU for exercises and other training can be hard to manage in a small territorial authority. Incentives need to be reviewed for these roles.

In addition, the system needs to be able to manage the capability constraints and pressures that arise when staff in CDEM roles are caught in the emergency themselves. In this event, several system players in key leadership positions were seriously impacted. While CDEM staff proved creative at working around these issues, contingency planning should encompass these ‘incidents within the incident’ and plan for redundancy and work arounds in advance, rather than on the fly.

For example, old school phone trees and an accessible data base of contact and next of kin information for those in critical positions should be retained at the GECC, in the event of communications failure or

key decision makers being out of action. As it happened, critical absences placed extreme pressures on some individuals, particularly those in controller and leadership roles.

#### SUGGESTIONS

4. Review the recruitment proposition, reward and support arrangements for staff in key CIMS functional roles.
5. NEMA should consider developing skills, training and development profiles for each functional CIMS role and assuring compliance.
6. Create and mandate the use of standardised task books in hard and soft copy for each functional CIMS role, including key performance metrics, templates and detailed process SOPs.

#### OBSERVATIONS: EMERGENCY DECLARATIONS

The key issue here was not so much the timing of the various emergency declarations, but the way in which decision making around them was considered by the team at the GECC, the nature of the advice provided to mayors and the practical clunkiness of mayoral approval arrangements.

As our timeline shows, the possibility of a declaration of a state of emergency at territorial authority or regional level was being discussed on Sunday and Monday, prior to the worst phase of this emergency. CDEM staff were aware on Monday of the wisdom of declaring in daylight if possible, considered the merits of a precautionary declaration and debated the issue of local and regional declarations. At the controllers' meeting late Monday afternoon, with the NEMA REMA present, the Group Controller asked regional leads and other experts for their thoughts on the pros and cons of a declaration. Most were in favour of a wait and see approach, based on the data available to them at that time.

At the subsequent meeting to brief the CDEM Joint Committee and other agencies on Monday evening, the matter was discussed further and probed by the mayors, all of whom were well aware of their responsibilities in this regard.

Both meetings concluded that a region wide declaration was preferable to local ones, that any declaration would remain under advisement and that any ultimate decision needed to be based on good data and intelligence.

While the written records of these and other early meetings are brief and some recordings were accidentally erased, we have formed the view that the decision making on the possibility of a declaration of a state of emergency was overly narrow and tactical. It is also clear that advisors came at the matter from different perspectives, with some loss in translation.

On the former point, in the meeting with controllers in particular, the matter was framed in terms of:

- The need for supplementary resources.
- A requirement to compel evacuations; and
- An enhanced ability to recover costs.

Controllers appeared confident that they could manage evacuation under the forecast rainfall and river scenarios. They felt they had sufficient resources on standby to manage an event that they knew would 'stretch' the system, as a potential one in 50 year event, but which should be manageable. Some

worried that asking for more resource could deprive other regions in the path of the Cyclone, such as Tairāwhiti.

Matters that were not considered in the records we have seen, but in hindsight, could have been, included:

- The fact that other North Island territorial authorities were declaring throughout Monday afternoon.
- The fact (possibly not known to the group) that FENZ and Police had been door knocking in Esk Valley and that few residents wanted to move.
- The fact that the change to the red weather warning meant that rain would be more widespread and could thus affect multiple areas and river catchments.
- The need for public information that signalled the potential seriousness of the event; and
- The need for public reassurance.

It is also clear from interviews and from reviewing the tapes that some decision makers came at the declaration decision from the perspective of the democratic rights of the public. They were mindful of the extraordinary powers conferred on local authorities by a declaration and hesitant to, in the words of one, *“do a Treaty of Waitangi and sign peoples’ rights away.”*

Others saw it from the perspective of a national emergency. *“Did Hawke’s Bay have a clear need for resources that might detract from the support to others?”*, said one participant. Still others appeared to be thinking about the sufficiency of boots on the ground. *“Given current projections, this will be tough but doable”* said one.

All of this is hindsight. The key decision makers were human and thus fallible. They reflected carefully on the matter and made the best call they could at the time. They asked the right questions. They tried hard to take multiple perspectives into account.

We have formed the view that the ‘to declare or not to declare’ decision is an overly binary one as the system is currently configured. As per the TAG review<sup>18</sup>, we suggest that the ability for local authorities to declare a ‘major incident’, and follow this with the appropriate warnings, mobile alerts and so on would have been a good option here, in a situation where the decision was borderline, much was unknown and the light was fading. Such a decision could, if communicated by national media, have given some families and communities more time to prepare grab bags or catalysed their decisions in regard to self-evacuation.

Declaring a major incident on a precautionary basis could also have driven a heightened communications tempo which improved public understanding of the potential seriousness of the event. In some respects it would only formalise what had already occurred, but it also would likely have ensured additional media attention and mayoral communications that may have tipped the balance for some members of the public.

Finally, there is something both farcical and dangerous in the current requirement for mayors to physically sign a declaration of emergency by hand on a piece of paper. Epic feats, for example, were

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<sup>18</sup> See <https://www.dpmc.govt.nz/departmental-agency/nema/ministerial-review-better-responses-natural-disasters-and-other>

required of CDEM staff to travel, in the height of the storm, to a Mayor's flooded home to deliver the paper for signing. Similar stories applied with regard to the Chair of the CDEM Group and other mayors. In spite of the heroic efforts of staff, this cost time and seems an oddity in the 21<sup>st</sup> century context.

#### SUGGESTIONS

7. NEMA should consider reviewing the current guidance (and, if necessary, legislative requirements) relating to declarations of states of emergency and expand criteria sets to include more holistic matters. This should be accompanied by new guidance for mayors and group controllers.
8. Government should consider legislative amendment to provide mayors and CDEM Group appointees with the ability to declare a 'major incident' that enables enhanced response and communications, but which limits legislative powers to those that can be used under other Acts.
9. NEMA should consider reviewing the current guidance, (and, if necessary, legislative requirements) requiring declarations to be physically signed. Provision should be made for verbal and/or online approval of emergency declarations.

#### OBSERVATIONS: PARTNERSHIP WITH IWI

Prior to Cyclone Gabrielle, the Hawke's Bay CDEM Group had established relationships with its Taiwhenua groups, Post Settlement Governance Entities (PSGEs), the Tihei Mauri Ora team, hapū<sup>19</sup> and, via Police, with iwi liaison officers.

However, mana whenua were not a formal part of the Joint CDEM Committee or the CEG. (Nor are they able to be under current CDEM legislative provisions.) This has been addressed recently with regional mana whenua leaders participating as non-voting members of the Joint Committee on the basis of amended Committee Terms of Reference. This more formal joint work needs to be extended and embedded, at both governance and operational levels.

During the response however, both those in CIMS functions and mana whenua felt that there was not an appropriate level or style of engagement with iwi Māori, hapū, marae or Māori organisations such as the Taiwhenua service providers. Internal CIMS staff responding to the post event operational debrief survey undertaken by the CDEM Group<sup>20</sup> referenced the following issues:

- Lack of pre-established relationships at multiple levels with iwi, hapū and marae.
- Those in other CIMS functions had little understanding of the role of the iwi Māori liaison function.
- The placement of the iwi Māori liaison under the CIMS Welfare function was not appropriate or respectful.
- Respondents to the survey suggested that there was low understanding of culturally safe practice within the GECC/EOCs, and poor understanding of what a Kaupapa Māori response would look like; and

<sup>19</sup> See <https://www.kahungunu.iwi.nz/copy-of-cyclone-gabrielle> for details on this team.

<sup>20</sup> This stakeholder survey was undertaken for Hawke's Bay Regional Council by <https://simplicity.co.nz/>

## Independent External Review

- Iwi Māori had minimal advance training in CIMS structures and processes. Where training had occurred, it was often funded by FENZ or Te Puni Kokiri, rather than driven by CDEM.

Of the 14 Māori liaison respondents to the debrief survey, 67% felt their induction to the CDEM system was inadequate.

From a mana whenua partnership perspective, there was considerable frustration in advance of the event about the weak connection with Taiwhenua service providers, in that they were not engaged by the CDEM group in preparing for the event. One Taiwhenua entity had staff with CIMS and Te Puni Kokiri training, was tracking weather and planning its 'worst case scenario' (which proved accurate) response. There was little coordination between their command structures and those of CDEM.

Māori leaders and communities were also deeply frustrated that the GECC created geographic zones with hubs to service isolated communities throughout the region instead of using the established network of marae. This created confusion, was not clearly communicated to Māori wardens and iwi liaisons and left mana whenua feeling that their proven expertise in community service support was being ignored and disrespected.

Some marae personnel had recently been trained in CIMS by FENZ and mobilised themselves anyway. They felt unsupported by the wider response and unsure about how to connect to the GECC or local EOCs.

More strategically, mana whenua told us that they felt the current CDEM system did not use indigenous knowledge and networks effectively in community resilience, preparedness and response. *"It's all here",* said one. *"We know this whenua and how its waters behave. We know which Pa and marae are above the flood zone and we know how to contact and support our people. We know how to support traumatised people with manaakitanga. Why wasn't all that built into the system from the start?"*

In the event, Police's Māori wardens proved to be critical liaison points with Māori communities. These personnel were well placed to provide vital community contact information to the response, but again, were unconnected to the GECC.

Community representatives discussed the ad hoc approach of the CDEM group to engagement with Māori communities about preparedness and resilience. One said *"We shouldn't be reliant on one off TPK or other fund initiatives for things like civil defence resources on marae. If we really want to build resilience in our communities, that should be an ongoing, planned investment."*

As the Napier Flood Review recommended, we agree that there would be considerable value, going forward, in formalising iwi/Māori involvement in CDEM structures at governance, executive and operational levels. Councils have begun work on this and should continue to discuss what would work best with iwi and other local tangata whenua leaders.

The Emergency Management Bill currently before Parliament goes some way to mandating such arrangements. We suggest that NEMA should also reflect how it might enhance partnerships at national level, which might go beyond its current cultural advisory arrangements and more formally embed iwi partners at system governance level.

At the operational level, CDEM authorities must have the agility and humility to work with Kaupapa Māori providers, including marae, as vital providers of community intelligence and services. Quite aside from partnership obligations, why invent new arrangements when well tested default arrangements and providers are already in place?

#### SUGGESTIONS

10. Train those in iwi liaison roles, and other key mana whenua leaders in the CIMS framework.
11. Deepen engagement with Taiwhenua, local marae and Māori communities for preparedness, response and recovery planning, including shared scenario training for event types, and clear delegations that support devolved welfare and service delivery decisions and accountabilities.
12. Utilise marae as distribution and welfare hubs throughout the region and ensure they are supplied with current sitreps and action plans. Ensure that their role in the CDEM system is both appropriately resourced and clearly communicated to local communities.
13. At CDEM Group level, more formally engage iwi and other Māori leaders in planning at both governance and executive levels, in order that indigenous knowledge and networks inform the 4Rs, major disaster plans and SOPs.

#### OBSERVATIONS: INNOVATION AND LESSONS LEARNED

It is clear that many people; in CDEM functions, in partner agencies and in the wider community, made impressive contributions to the response and early-stage recovery effort through innovation of all kinds. From a CDEM Group perspective, innovations included a wide range of matters such as:

- Empowering locally led responses such as the work of Te Kahui Oranga and Tihei Mauri Ora.
- Incorporating the NZDF task tracker and logistics frameworks into CIMS functions.
- Working with LINZ to host aerial imagery and data to support response and recovery efforts; and
- Early utilisation of employee assistance to support the wellbeing of CDEM staff during the event.

From a wider system perspective innovations included:

- Effective all of government work, particularly by social agencies on the ground, to support local response and recovery.
- Extended use of Starlink-based technologies by response agencies.
- Harnessing a wide range of volunteer contributions, including the ability to scale up volunteers at short notice; and
- The first use since the 1930s of the Hastings Aerodrome to support helicopter and other air movements.

However, a range of participants in this event expressed concern that key innovations and lessons learned were not adequately captured to inform future responses, particularly when they occurred in community organisations, mana whenua or volunteer groups.

Nor have the combined Police/FENZ/NZDF hotwash templates, or Police's 4R based after action reports for example, which captured key lessons for those organisations, necessarily informed the wider CDEM system.

## Independent External Review

There was also a need for innovation happening in the moment to be caught in real time during the response, in order to share immediate insights, opportunities and concerns.

We suggest that more formal, consistent, lessons learned processes, based on those used by NEMA, need to be communicated to those in CIMS functions. Examples of such templates and mechanisms abound.

More fundamental however, will be the entrenchment of a lessons learned *mindset* in CDEM functions and other response and recovery agencies. The common and repeated themes in prior review reports suggest that the system is somehow failing to internalise and apply lessons. The learning process *should* be straightforward, as in this graphic:



It appears that there are weaknesses in the current CDEM system at each of these steps. In the after action reports we have seen, agencies tended to look short term and internally for lessons, rather than trying to see them in the context of the whole CDEM system.<sup>21</sup>

Nor do agencies appear to see lessons learned through a behavioural change management lens. Responders tend to do what they have always done, absent a clear link between lessons learned and revised training that embeds the changes and performance targets which measure the impacts of the changes.

Past practices are hard to shift and require concerted, explicit effort. As one respondent said: *“We did Covid really well, so when this came along we thought, ‘sweet’, we are up for it. But not only was this a different beast, but we hadn’t learned what we thought we had.”* Another observed: *“We were part way through implementing the Napier flood review recs when this hit us. The urgency to change and apply the lessons tapers off between big events.”*

It is also very easy, in the absence of formal lessons learned processes that engage a wide range of people and perspectives, for optimism bias to creep in to the planning and preparedness phases. In our view, the CDEM Group and local TLA pre event planning was not aimed at black swan or worst case scenarios, but took a rather more complacent approach.

Improving and embedding lessons learned is a significant challenge for all emergency management systems, regionally, nationally and internationally. In the Homeland Security Report quoted at the head of this Review Report entitled ‘The lessons we don’t learn’, the authors analysed after action reviews from many of the United States’ largest disasters, including Hurricane Katrina and 9/11. They concluded:

*“In today’s environment, when the emergency response mission space is expanding...the ability to capitalize on experience and improve capability is ever more important. But organizations cannot just be*

<sup>21</sup>The graphic under discussion here is based on a similar diagram in Donahue, Amy, and Robert Tuohy. “Lessons We Don’t Learn: A Study of the Lessons of Disasters, Why We Repeat Them, and How We Can Learn Them.” Homeland Security Affairs 2, Article 4 (July 2006). <https://www.hsai.org/articles/167>

## Independent External Review

*told to change. Organisational change needs to address the structure, system and culture of an organisation so that patterns of behaviour can be adjusted. Truly institutionalizing a new process requires long term commitment.”<sup>22</sup>*

Organisational and system planning are vulnerable to both political and personnel changes and to distraction by business-as usual. It will be critical that both Hawke’s Bay CDEM Group and the national CDEM system learn from the events of Cyclone Gabrielle. Doing so will require tenacity and focus by local and national leaders.

### SUGGESTIONS

14. NEMA should consider developing a standardised process to capture lessons learned in a mandatory after action review template for EOCs and GECCs.
15. Develop a field learning lessons learned process such as that used in the National Crisis Management Centre (NCCMC) during this response to enable dissemination of real time lessons and opportunities.
16. Designate a lessons learned staff position for all large incidents at regional level, to take accountability for debriefs, after action reviews and information sharing with partner agencies and NEMA.

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<sup>22</sup> Ibid.

## SECTION 2: CDEM GROUP EMERGENCY COORDINATION

### OBSERVATIONS: STRUCTURE OF HAWKE'S BAY CDEM ARRANGEMENTS

As noted above, the Hawke's Bay architecture of command-and-control mechanisms and the existing structure and nature of its plans did not serve it well in this event.

First, the need for coordination and information flows between the five-territorial authority EOCs and the regional GECC undoubtedly complicated the early-stage response. At the simplest level, replication of EOCs and functions created unworkably large meetings which took up too much time. Other challenges included:

- At least initially, there was a lack of regular leadership connection (meetings, shared incident boards etc) between EOC and GECC controllers.
- The five EOCs, with the possible exception of Hastings, could draw on a smaller pool of CIMS trained staff, many of whom lacked CDEM experience or familiarity with the CIMS framework.
- In local EOCs, there was a lack of clarity in command lines between local (EOC) and regional (Group) controllers.
- A lack of contingency communications, such as Starlink, when conventional communication technologies failed.
- No preexisting, shared stakeholder engagement or communications plans.
- Difficulties for EOCs in communicating granular local information to Group and reciprocal difficulties for Group to understand local conditions and resources. The most notable example was perhaps the Taradale evacuation order, which was initially applied by Group to all of Taradale (some 14,000 people), when Napier's local leaders knew that the stop bank concerns would potentially impact a much smaller section of the suburb.
- Lack of prior engagement and experience in joint scenario training and exercising, which limited relationships and meant key staff were often unfamiliar with standard CIMS protocols and templates, as well as the connections between CIMS functions.
- The lack of a common system for information sharing and for recording of actions and decisions.
- The consequential need to coordinate multiple action plans, sitreps and communications, which took time and slowed response.
- Inconsistent prioritisation, escalation and information sharing between EOC controllers and the GECC.
- The need to coordinate and align public information messages from multiple civic leaders and elected members; and
- The GECC interface with other command centres, such as those in Police, FENZ, St John, and Te Whatu Ora was also under planned and ad hoc during the event. While in part this was due to the lack of a common operating system, the relationships, operational experience and skills needed to coordinate multiple response operations were not consistently evident in the GECC. We address this in detail in the next section on the GECC. This also limited early response situational awareness, interoperability and the ability to take diverse perspectives into planning.

At a more strategic level, there was also considerable confusion with regard to the high-level roles of the respective agencies within the national CDEM system early in the response. This was particularly the

## Independent External Review

case with regard to public safety. This became a pressing issue a few days into the response as power outages continued. For example, requests for NZDF to assist with law-and-order matters that were properly the purview of Police came from some local officials.

The early-stage response also missed an opportunity to take advantage of regional all of Government (AoG) networks that could have informed intelligence products and utilised key relationships. The Ministry of Social Development (MSD) Regional Commissioner is the lead for government agencies in the region and these AoG resources were, initially, poorly connected to the local EOCs and GECC.

Relationships held by these agencies could have eased a number of challenges the Group was facing. MSD has six service centres across the region and strong relationships into local marae. Waka Kotahi held some of the critical data on State Highway roads and bridges. The Ministry of Education had networks amongst school principals. Te Whatu Ora needed to bring the public health dimension to the event earlier than it was able to. Te Puni Kokiri had deep relationships with key iwi leaders, and so on.

These agencies found it challenging to have their voices heard in the GECC and to understand what was going on. Initially at least, they tended to meet separately to resolve response and recovery issues. At one point, transport staff told us they retreated to a cupboard in the overcrowded Hastings CDEM facility.

Some respondents commented that they felt the response was smoother in Tairāwhiti because it was led and coordinated by a unitary authority. The Joint Committee should consider whether in future, more fully rationalising CIMS functions across the Group to a regional level may be helpful in consolidating expertise and taking noise out of the response and recovery systems.

In doing so, they will need to carefully balance the need for local granularity - in planning, relationships and intelligence - with the need for a rapid, agile, professional regional response.

### SUGGESTIONS:

17. Rebuild, clarify and communicate the operating model for the regional GECC, including its relationship to local emergency coordination and incident management teams in other TLAs and response agencies.
18. Consider whether it is sufficient for the regional AoG lead to be a non-voting observer on the CDEM Group, or whether NEMA should consider legislative change to allow full membership.

### OBSERVATIONS: FUNCTIONING OF THE GECC

Many respondents to this review also observed that the functioning of the GECC, particularly early in the response, appeared chaotic, with considerable confusion over who was doing what and whether tasks had been completed.

Part of this is attributable to the fact that existing GECC systems and processes were not suitable for an event of this nature. Many had to be built in the heat of the event. However, this comment was also typical of several: *“The GECC was chaos. No organisation initially. No focus. No structure. People everywhere. No disaster SOPs. People working in silos making poor decisions.”*

Other issues noted by respondents in regard to GECC operations were as follows:

- There was no disaster Master Plan or flood emergency plan at regional or local level.

## Independent External Review

- There was a gap in incident management capability between the professional CDEM staff and seconded staff. As one respondent put it, *“You can’t run a disaster using inexperienced people taken from day jobs. There’s just not enough horsepower to address big crises and as a result it can break these people.”* Another said, *“The professionals in the GECC were just spread too thin”*.
- The functioning of the GECC in a major natural disaster had not been operationally practiced, which meant it had to be built in flight.
- The concentration of resource in the central GECC meant that local level resources were often overstretched, particularly in regard to remote and rural communities, which created TLA-GECC tensions.
- There was a lack of understanding by some GECC staff of the roles of partner agencies.
- Early action plans were inadequate and not well communicated. *“There was no battle rhythm on the first day, minus situation boards or a sense of GECC priorities”*.
- There was a revolving door of staff rostering in and out of the GECC, which meant that relationships were disrupted and corporate memory lost, a problem exacerbated by the lack of lessons learned mindset and systems noted in the command and coordination section above.
- Surge staff changed systems and processes, which slowed things down. Things, *“...iterated and reiterated constantly. There was no common model or approach,”* said one respondent.
- Calls for service were coming in on multiple channels (Police, FENZ, CDEM, people at fire stations and via social media), which meant that it was difficult to analyse double ups. Hawke’s Bay 111 Communications Centre jobs numbered over 800 on Tuesday 14<sup>th</sup> February. The 111 system was overwhelmed, and this meant that, in some cases, the GECC tasked responses that had already been serviced; and
- There was poor outward communication by the GECC to first responders, a number of whom had little contact from GECC in the early period of response. One said: *“There was a black hole in respect to information from GECC and EOCs. They were not tasking responders or closing feedback loops. GECC still has a responsibility to provide coordination, for example, where are the CDCs?”* As another put it, *“I just decided to deal with the emergency services rather than GECC as they were calm heads under pressure and subject matter experts in dealing with chaos. I just ignored GECC and took my tasking from the 111 calls.”*

This latter point was critical in the early hours of Tuesday 14th. To give a specific example, the GECC tasked local army reservists via FENZ at 2.05am to pick up first responders in a Unimog from Bay View Fire Station and respond to a family stuck on Glengarry Road by a fallen tree. There was no information about road condition or casualties.

At 2.45am the Unimog arrived at Bay View fire station (the power was out by this time) and proceeded up SH5. It quickly had to turn around due to water levels. The response team then decided to access the Esk Valley using Hill Road. At the school they found 15 plus vehicles with people trapped and in a state of panic. These residents advised the Unimog team that people were stuck in the valley.

As the responders tried to get into the Esk Valley a surge of water came though their vehicle at chest height. The vehicle started moving and was forced to reverse out. It then made an evacuation run from the school to a local marae.

## Independent External Review

Throughout this incident the responders were unable to contact the GECC by phone or text. They had no information about the scale of the flood and the GECC could not receive their situation report from the field.

The initial tasking was the only one received from the GECC by this group of responders that night. From this point, they liaised with Police and FENZ to effect further rescues, still unable to close the loop back to the GECC.

### SUGGESTIONS

19. Develop a disaster Master Plan and operating model for Hawke's Bay CDEM Group.
20. In the context of the Plan, pre plan tasking protocols and test with scenario exercises. Document these across all CDEM and response agencies.
21. Record action items during leadership, CIMS function and coordination meetings and assign one accountable task owner. Recap all tasks in subsequent meetings to ensure tasks have been completed.
22. Consider the fitness for future of Hawke's Bay CDEM building in Hastings. A larger facility and/or different location may be required.

### OBSERVATIONS: INFORMATION SHARING AND MANAGEMENT

As noted above, the information systems in each territorial authority and at the Group ECC were not readily interoperable. In some local EOCs, much work was done on off system spreadsheets and paper templates. This made consistency and information sharing difficult.

In addition, staff in EOCs, or those seconded from other agencies, often used their own home organisation emails, instead of function specific emails reflecting the CIMS framework and feeding a shared database. This meant that valuable information was not able to be shared at handover or held in a common system for lessons learned analysis. Given the rapidity of rostered staff turnover in positions, this created a loss of key insight as well as compromising the historical record of events. All of this also made the creation of quality intelligence products challenging.

A flow on effect of complex regional CDEM structures and disconnected information systems was that those in functional teams often felt poorly informed by functional leads about the latest intelligence and planning. Not all leads returned from joint meetings with updates. Handovers between shifts and functional leads were often poor. This meant that not all staff were working to a common operating picture.

Functional leads and partner agencies also commented that it was hard to track a request for service once submitted to 'the system'. Feedback loops and decision timelines were confused in the early stages of response and recovery. Notes about welfare needs or requests for equipment for example, seemed, in the words of one respondent, *"to disappear into this opaque Group system for days and then pop out again for my own agency to action. I could have done that in the first place. It was very hard to know whether something had been done or not. In the end we just tended to do it ourselves."*

Information sharing also tended to be limited to CIMS functions and arguably insufficient attention was paid to sharing key reports – such as sitreps and action plans - with partners, such as iwi leaders, partner

## Independent External Review

agencies, private sector players and volunteers. It is better to err on the side of over than under sharing to ensure that information is current and can itself be informed by upwards feedback and intelligence flows.

Finally, we note that some key records, such as incident management meeting notes, logs and recordings were overly brief or have not been retained. These are vital to the historical record of the event and central to lessons learned processes.

### SUGGESTIONS

23. NEMA should consider developing and mandating a shared common operating platform and ICT system for emergency management on a national basis in order that all responders are working to a common operating picture and so that lessons learned information can be captured.
24. Create regionally consistent protocols for all CIMS functional communication, including emails and text communications.
25. Create both physical and online information boards at command posts and key sites in order that current sitreps, action plans, public communications, meeting timetables etc. are shared with all players in response and recovery. Plan in advance for information sharing with key partners and stakeholders.

## SECTION 3: OPERATIONS

### OBSERVATIONS: ROSTERING

Respondents told us that a variety of rostering issues constrained the response and recovery system's ability to function effectively. These included:

- In the critical early stages of the response, CIMS trained staff in key positions were turned away from the GECC after positive Covid tests and quarantines were put in place. This increased the burden on remaining staff. In the event, the urgent need for specialist skills in the first hours of the response perhaps outweighed infection risk.
- As noted above, within the GECC, individuals rotated through CIMS roles on a daily basis, often with poor handover and variable levels of capability, training and experience. This, when combined with the lack of interoperable systems and a common operating picture, led to considerable loss of corporate memory and disrupted working relationships with first responders and specialists; and
- Over the wider cast of response personnel, the conventional NEMA response protocols typically applied, with a 1-5-1 roster (one day travel to the incident, five days on duty and one day travel home). In the view of many respondents, this was quite disruptive in an event of this scale and complexity, with significant loss of information at each changeover.

### SUGGESTION

26. NEMA should review overall rostering protocols for major events and complex emergencies, including the consideration of a longer rotation for functional area and responder leadership.

### OBSERVATIONS: CONTINGENCY AIRFIELD AND AIR MOVEMENTS

The Hawke's Bay CDEM Lifeline Plan identifies Hastings Aerodrome as the backup to Napier in the event of tsunami, inundation or earthquake disabling Napier Airport.

Skyline Aviation, which holds the Te Whatu Ora contract for patient transfers in the region, also identifies Hastings Aerodrome as the back up to Napier Airport for hospital patient transfers.

In this event, FENZ and NEMA moved onto Hastings Aerodrome as an ad hoc emergency airbase, with the FENZ air desk taking control of all flight authorisations. The GECC deployed security onto the airfield for two months.

The airfield was used as a base for the NZDF's NH90 helicopters, private helicopters and various small aircraft used to transport patients and other members of the community.

This contingency use of the airfield had last occurred during the Napier earthquake in 1931 and subsequent floods in the 1930s. Contingency plans were underdeveloped. This created a number of issues, both during the response and subsequent to the event, including:

- Aircraft tasking and deployment, including for private helicopters, was initially managed by FENZ. At one point in the early days of response, the GECC asked FENZ to stop tasking and took over, with what some respondents described as chaotic results. A short time later, FENZ control was restored.

## Independent External Review

- Instrument Flight Rules (IFR) aircraft use of the main runway and helicopter use of the east/west approach paths – particularly for sling load operations - highlighted the importance of maintaining obstacle free flightpaths over the neighbouring area.
- Although air traffic was coordinated at the Aerodrome, the Hastings EOC helipad at the Distribution Centre was several kilometres away and was somewhat high risk, given the lack of airspace/helipad coordination. Expert responders also expressed concern at the frequent overloading of aircraft arising from the lack of an expert in a loadmaster role.
- The Aerodrome’s water supply and wastewater struggled to accommodate the hundreds of responders and evacuees on site.
- The Aerodrome access road had to be upgraded for the multiple heavy vehicles using it during response.
- The supply of A1 jet fuel at the airfield had not been preplanned and was unreliable; and
- The Aerodrome was unable to conduct the normal business that provided revenue for the period of use, and incurred additional costs, such as the need to upgrade its access road and improve water supply. At the time of writing, these expenses remained outstanding and there is no obvious mechanism to recover these costs from central and/or local government.

### SUGGESTION

27. Develop a CDEM deployment plan for the Hastings Aerodrome and establish full protocols for its use as a contingency airfield, including asset configuration, cost recovery arrangements and a special helicopter manager position to coordinate airspace when using multiple types of aircraft, and to oversee helicopter safety and loading.

### OBSERVATIONS: USE OF VOLUNTEERS AND THE PRIVATE SECTOR

One of the most positive elements of the New Zealand way discussed above is the willingness of community members to support each other in times of disaster. This event was no exception.

Volunteer resources can also present both opportunities and challenges to emergency management. These resources can be hard to record and track and tend to have variable experience and training in the CIMS operating framework. It can be challenging to check the backgrounds and affiliation of volunteers. Well-meaning community volunteers can actually add considerable management burden and risk to a response.

However, in this instance, Volunteer Hawke’s Bay (VHB) had signed a Memorandum of Understanding (MOU) with the CDEM Group in 2022 to provide and oversee volunteer services, including a Call Centre. It had capability and capacity to coordinate volunteer and contract resources for the GECC.

In the event, advance planning for the use and deployment of community volunteers appears to have been superficial. During early response, the core team of VHB staff, unable to make their voices heard in the GECC, decamped, along with other government agency representatives, to the Te Puni Kokiri building in Hastings and did their best from the outside. The depth of specialist skills and operational experience that existed within the pool of volunteers, backed up by the wider resources of Volunteer New Zealand, seems to have been underutilised by the CDEM Group, both in response and during recovery.

In spite of this, the volunteer response in the region was invaluable. It included, for example:

- Tasked by FENZ, extensive and vital rescue activity by the surf lifesaving community.
- Tasked by Police, vital SAR capabilities deployed in hard to access areas.
- Coordinating initial data entry of details of missing persons for Police.
- Coordinating offers of help from out of region contractors.
- With MSD, providing targeted welfare checks for the elderly and those with disabilities.
- Running the emergency volunteer registration database, which registered 3,000 volunteers within the first four days of response.
- With Tihei Mauri Ora, Te Kāhui Ohanga and CDEM, converting the hall at the A&P showgrounds to manage the distribution operation and helping staff the operation alongside NZDF, NEMA and others.
- Supporting the Hastings Aerodrome hub; and
- In the early stages of recovery, establishing community Facebook groups to coordinate workers to clear silt and empty homes, orchards and businesses.

*As the Barber family huddled in their roof cavity, furniture bobbing against their ceiling in floodwaters below, they heard a motor approach.*

*The sound was a godsend for Chris who six hours previously had been told by 111 operator to smash a hole in the ceiling and shelter with his wife and two young children.*

*Frantically banging on the roof, the family yelled out their whereabouts, and when the inflatable boat arrived Chris asked its wetsuit-clad occupants “are you guys the Navy?”*

*“Nah, we’re just three Māori boys” came the reply.*

Source: <http://www.stuff.co.nz/national/131257319/cyclone-gabrielle-our-extraordinary-stories-of-resilience-after-a-disaster>

Respondents to this review reported a number of specific frustrations with regard to the support provided by Hawke’s Bay CDEM Group to the volunteer services, all of which provide opportunities for future improvement. These included:

- There was no key point of interface for VHB into the GECC to ensure the sharing of intelligence (both ways) and the coordination of volunteer resources. VHB had the ability to mobilise and deploy the 3,000 new volunteers, but the GECC could not, (or would not) provide the information to enable them to do so. HBCDEM’s own volunteer groups were not deployed until day five of the response. These delays cost considerable community goodwill.
- Not all volunteers were called on to participate in lessons learned processes or to problem solve with the GECC and wider CDEM groups, either during or after the event.
- The current process for the vetting of volunteers was insufficiently agile in a disaster of this magnitude and scale, where resources needed to be ramped up quickly.

## Independent External Review

- The VHB Call Centre was not used as outlined in the MOU, in favour of council call centres. Arguably the VHB had more staff trained to receive calls from distressed persons and greater depth to call on from the national volunteer call taker network.
- There were delays in HBCDEM groups responding to offers of help from contractors and private sector providers in the response and early stage recovery phases. This was a common frustration expressed by those who provided contractor support. HBCDEM Intel could not release information about where contractors were needed quickly enough, which created delays and caused several to leave the area; and
- The VHB's own volunteer database also proved inadequate to this event. The organisation is currently rebuilding it.

With regard to the utilisation of the private sector, the philanthropic sector and contract resources, some respondents reported similar concerns that their offers of help were not responded to in a timely way or were not utilised to best effect. Many private businesses, from helicopter companies to transport and engineering providers, offered capability, services and resources to the region, during both response and recovery. One told us, *"We just couldn't get any sense out of the Group running the response and so we just did it anyway and at our own cost."*

Another respondent made the point that, *"Even before something happens, I don't get why all the planning has to be about government agencies. It would make sense to involve local private companies and charities and so on in planning before a disaster so the Council has a full picture of the resources it can draw on. Then it can just pull whatever outfit is relevant to the event into the command centre."*

*"The region had some brilliant help from companies like Wattie's, PanPac and Unison. And the volunteers. Without them we'd still be silted up. It all makes me quite proud of us as a community."*

Continuing the theme of underutilisation of regional resources, a number of respondents commented on the fact that there are many in the community with relevant operational experience who could have been more

systematically 'called up' and put to work during response and recovery, on a volunteer basis. *"We've got some local veterans who've done big operations in their careers and loads of retired cops and firies. Surely civil defence could have used them more effectively in both planning and responding. It's often these people that the community turns to informally anyway."*

We note in this context that, in Australia, State Emergency Services (SES) volunteers are the first responders to emergencies. They provide assistance to many emergency situations including flood, storm, bush search and rescue and give relief to those impacted. These are models that should be further examined by NEMA and regional authorities.

We also note the recent use of models of disaster response and relief using veterans that have been tested in the United States in order to support civilian capability. These are also in place across the Tasman in the charitable organisation, formed in 2016, called Disaster Relief Australia, with a mission statement to, *"unite the skills and experience of military veterans with emergency services specialists to deploy disaster relief teams in Australia and around the world in the wake of disasters."* This organisation now has more than 2,500 volunteer members and 10 fully operational Disaster Relief Teams (DRTs) across Australia. Such a model may be worth exploring in New Zealand.

### SUGGESTIONS

28. Either abandon the current MOU with VHB or turn it into a formal contract and develop a data sharing process to coordinate between the councils and the volunteer Call Centre.
29. Ensure that VHB and other relevant entities (such as private sector contractors) have access to situation reports and other relevant materials to support the tasking and deployment of volunteers.
30. Working with Volunteer New Zealand, NZDF, Police and FENZ, consider the establishment of a new national Disaster Relief Organisation, coordinated by NEMA, with membership from military veterans, reservists, volunteers and retired first responders, to support regional hub expertise by acting as a deployable resource when required. Members should be CIMS trained and participate in regional and local operational exercises and training.



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<sup>23</sup> Photo: RNZ.

## SECTION 4: PLANNING

### OBSERVATIONS: PLANNING

Despite the lack of a Disaster Master Plan noted earlier, the overall Hawke's Bay CDEM Plan and its supporting documents are as good as any we have seen in other regions. But in a disaster of the speed, size and severity of this weather event they proved inadequate. They failed to provide enough detail to be actionable. For example:

- Civil Defence Centre (CDC or evacuation centre) lists were not preselected by type of event, which meant that locations safe from flooding could not immediately be activated and had to be assessed in the midst of the event.
- Evacuation plans lacked details about how evacuations would be conducted and who was responsible for the process.
- There were no large-scale evacuation plans, such as for the whole of Taradale. If flooding had been even more widespread, it is difficult to see how those living on the Heretaunga flood plains could have been evacuated with a single road in and out of the region.
- Plans were insufficiently granular to reflect the distinctive needs of specific communities and demographics, such as care homes, remote communities, migrant and refugee communities and the medically vulnerable.
- Despite being aware of the fragility of communications and lifeline infrastructure (with many critical services carried on the region's bridges, for example), there were few contingency plans for how to communicate when technology failed or was destroyed; and
- Despite some pre cached resources, there was a need to access or acquire significant additional resources in real time, which conventional government procurement protocols made difficult. These were procured but payment arrangements had not been determined up front. This has given rise to some significant deficits held by local TLAs and other parties (such as the Aerodrome).

While the nature of this emergency was such that even the best plans may have been insufficient to the event, we suggest that these issues illustrate some weaknesses in the planning process that can and should be corrected for the future. Agencies need, above all, to plan *together*. They also need to test the effectiveness of their plans by training and exercising them realistically, as is outlined in the next section.

In addition, the plans developed by CDEM experts, or senior managers, need to be properly disseminated to all those in partner agencies and in CIMS functional roles. When the time came for the implementation of plans in this event, a number of those in key CIMS functions told us they did not know what the plans required.

In terms of the operational planning activities carried out under the planning function within CIMS, there were also opportunities for improvement identified by respondents to this review. First responders in particular noted the absence of SMART (specific, measurable, attainable, realistic and timely) mission objectives throughout the response and early-stage recovery phases.

Such objectives are critical to creating a shared understanding of mission outcomes. They create a shared direction that unifies the efforts of multiple partners and agencies. While the IMT meetings and

action plans did list some objectives, these were often vague and did not meet SMART criteria. It was also sometimes hard to reconcile the plans of the various local EOCs and the GECC.

Some respondents felt that action plans and sitreps were not produced often enough or circulated sufficiently widely to promote shared understanding of the direction. Yet personnel changed daily, which meant that incoming staff were often operating from outdated information. Communication technology failures exacerbated this lack of shared mission outcomes and prioritisation of key objectives.

### SUGGESTIONS

31. Establish a daily operational brief for the GECC and all response agencies, facilitated by controllers and including updates from each functional lead to establish the plan for the day and debrief operational issues or achievements from the prior period.
32. Ensure that multiple scenarios are planned for in multi-agency sessions and subsequently tested in realistic simulation events.
33. NEMA, MBIE and MSD should consider developing a resource procurement and payment system for use in disasters that balance public procurement protocols and the need for accountability with agile asset and resource acquisition and deployment. They should consider the applicability of the emergency procurement provisions of the Government Procurement Rules to this suggestion.
34. Utilise a templated planning process within the planning function of CIMS to identify risks, establish priorities and SMART success metrics and plan strategy and tactics for the 'mission'.

### OBSERVATIONS: TRAINING AND EXERCISING

Many respondents told us that the key to improving future response and recovery activity was to upweight the rigour and extent of training and exercising. They felt that prior tabletop exercises in the region had neither been sufficiently realistic nor large enough in scale and inter agency scope to be useful in preparing for this event. One respondent said: *"There was just an enormous gap in incident management capability between those who do this sort of realistic operational training for a living – Police, St John, FENZ, NZDF – and inexperienced people taken from their day jobs."* Another said *"There was optimism bias that we'd done COVID well so we could do a big crisis. We need to have a lot of different people in the room saying, 'what if?' so that we can identify some real black swan things to base exercises on."*

It is also critically important that training exercises find the right balance between targeted exercises for individual players in the CDEM system and region wide training events that involve multiple agencies and partners. The latter are expensive, in both direct costs and abstractions. They should only be undertaken after sufficient training and development have been completed. Local authorities and first responders will therefore need to jointly plan the optimal exercise calendar and cadence for the region.

NEMA may also need to take a greater role in developing structured exercise plans and assuring their execution and review. Its national lessons learned framework will need to capture, analyse and communicate the patterns and themes within regional exercise review data.

Operational training exercises should be both regular and mandatory for those in CIMS functions, in spite of the pull of their day jobs. As one respondent put it: *“Emergency management and leadership skills are perishable and must be regularly drilled and practiced.”*

Leaders, both locally and regionally, also need to set the right context around training and exercising. These must be communicated as opportunities to learn and if necessary, to fail and recalibrate planning. It is important that operational exercises are not seen as punitive.

#### SUGGESTIONS

35. NEMA should consider developing a national training and exercise plan to guide regional exercises and with an interface to its assurance and lessons learned capability.
36. HBCDEM exercise plans should be reviewed, to provide a greater emphasis on the balance between frequent smaller-scale training events and larger, inter agency operational exercises. Both should be mandatory for all CDEM personnel.

#### OBSERVATIONS: INTELLIGENCE

Such was the speed, extent and severity of this event, alongside communication technology and hydrotel failures, that situational awareness in the early stages of the response was low. This compromised early intelligence products and in turn weakened tasking and deployment.

As will have become evident from the above discussion, multiple sources of intelligence, from individual EOCs, first responders, elected members, the community, public agencies and volunteers were not able to be rapidly captured at a central point, analysed and shared. Some of the reasons for this related to challenges in gaining reliable intelligence *inputs*, such as:

- Communications contacts for agency leads such as satellite phone and Starlink details, were not all centrally recorded at GECC, (despite the Hawke’s Bay emergency contact app), which made outreach difficult after conventional communications failed.
- Problems with interoperability and data sharing amongst first response agencies. For example, Police and FENZ could share communications centre data, but could not see council call centre information. The FENZ dashboard could not be shared. As FENZ coordinated the volunteer surf lifesaving response, it gained useful intelligence, but this did not always get to the GECC.
- FENZ and Urban Search and Rescue (USAR) used ArcGIS, Quick Capture and Survey 123 for geographic information, but the latter two were blocked by the Police network. Survey 123 can layer images over each other for real time geospatial intelligence. Not all first responders shared MS teams. Police used Webex. Not all councils shared the same Geospatial Information System (GIS) systems.
- Te Whatu Ora was not involved in the GECC for the first few days due to an error in the invitation list, thus limiting the public health information flows.
- The tools for intelligence and tasking used by NZDF differed from those in other response agencies and did not reflect the CIMS model.
- The community networks, including with iwi, Māori organisations and marae, that had been created during Covid were not utilised for inwards flows of information to the GECC and EOCs; and

## Independent External Review

- There was no one place for community leaders and elected members to send local updates and suggestions in local EOCs and the GECC.

Other issues related to intelligence *analysis* and its connection to tasking, including,

- Thin resourcing in the GECC intelligence function created initial delays in turning data into intelligence and then into updated action plans.
- There was an initial absence in the GECC of a tasking process.
- The lack of consistent templates and shared understanding of core processes meant that much information was lost at shift handovers.
- Staff in the CDEM intelligence function were not all CIMS trained and some struggled to understand the critical link between intelligence and other functions such as logistics and welfare. First responders expressed frustration with one what called *“The one-way traffic into the GECC but not out from it to taskings, or at least not in a timely way”*.
- The relative infrequency of GECC meetings in the initial day or two of the response. For example, a GECC meeting was initially called for 7am on the morning of Tuesday 14 and though agency representatives turned up for it, it did not happen. The first full GECC briefing happened at 3pm that day. One respondent said: *“It took ages to settle into a battle rhythm with the right stuff going in and the right stuff coming out. It was a matter of lack of operational experience in key functions”*.
- The previously discussed lack of command coordination between CIMS leads in the GECC and other response agencies. One respondent said: *“There were too many people at the GECC meetings and too little understanding by those in CIMS functions of the need to brief both up to Intel and out across the response. This made both inwards and outwards intel flows slow”*; and
- This also related to other partner agencies. For example, the coordination with Immigration New Zealand to identify, support and manage the needs of migrant workers was partial and late.

More specifically, the Hawke’s Bay Regional Council GIS team was not woven into the planning or intel functions of CIMS and appears to have been underutilised early in the event. Later, GIS staff worked well with Land Information New Zealand (LINZ) to develop dynamic geospatial products and maps at speed.

However, the HBCDEM Group relied on the ArcGIS common operating picture dashboard which is an online resource. This meant that there were often no hard copy maps and artifacts for staff in the field to draw on when developing operational tasking objectives.

All of this meant in practice that it was almost impossible, in the first few days of the response, to get a consistent and accurate picture of such critical matters as casualty numbers and numbers of people in CDCs.

After the early days of the response, some good intelligence products were eventually produced, but were not always shared. Sitreps and action plans should be widely shared, not just with partner agencies but with the community, elected members and civic leaders who are often the public facing voices of the response effort. As noted elsewhere, other government agencies and volunteers also struggled to access sitreps and action plans from the GECC.

### SUGGESTIONS

37. NEMA should consider developing and mandate TLAs' use of a standard national emergency operating platform, to underpin sharing of interagency intelligence inputs, analysis, taskings and communications.
38. Standardise the production of paper and online mapping products to improve situational awareness and enable better intel led decision making.
39. Incorporate the Hawke's Bay GIS team into the Planning area of CIMS.



24

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<sup>24</sup> Photo: High resolution image of Hawke's Bay flooding from Land Information New Zealand.

## SECTION 5: LOGISTICS

Almost all respondents involved in response and early-stage recovery felt that logistics was an area of particular weakness in the GECC and EOC structures, particularly before support from NZDF's well-honed logistics function was in place.

*"The logistics were a mess. There seemed no rhyme or reason to how they prioritised. We spent days on our own, watching helicopters fly over to richer communities."*

Respondents to Hawke's Bay CDEM Group operational debrief survey, for example, indicated that staff in the CIMS logistics function had received limited training or induction prior to the event. They pointed to an absence of clear systems and processes, which meant they built systems reactively.

Specific issues included:

- As with volunteers, significant numbers of responders offered themselves as providers of additional support early in this event. Many did not receive any acknowledgement or request for support until late in the response.
- There was poor connection between the GECC and the Hastings distribution hub.
- Incoming donations to and outgoing deliveries from the Hastings distribution hub were not initially tracked, which meant there was little awareness of warehouse supplies, aside from food, water and other basics.
- Public communications about items that should not be donated were slow. This reduced response team productivity as they were forced to sort donations and dispose of unwanted items.
- There was significant disconnection and confusion about the removal of waste, including waste from the Napier industrial area that had been contaminated by sewage system failures. The roles and responsibilities of agencies and private sector entities were not clear.
- There was little in the way of lifelines planning and logistics to support the provision of fuel and water. There were no petrol stations for example, specifically designated for first responder use.
- Some critical businesses did not have generators or adequate Business Continuity Plans, which made requisitioning of fuel and medicines for example, very difficult.
- The plans for distribution centres were confused. These needed to be further broken down to community and marae levels.
- Logistics packages were insufficiently tailored to special needs groups such as the medically vulnerable, disabled and so on, in part because of poor coordination with the welfare function.
- Surge staff sent in by NEMA in the early days of the response used different systems. Out of region support staff also relied on local logistics staff for accommodation and transport arrangements, which distracted the latter from their core functions of community support; and
- There was little preexisting documentation to support expenditure tracking and management, or after event audit and claims processes.

CIMS staff in the logistics function received excellent support from agencies with expertise in logistics, such as NZDF, USAID and FENZ, which meant that the quality of tactical response improved as time went on.

## SUGGESTIONS

40. NEMA should develop collateral for a public awareness campaign about donations in a disaster, which can be rolled out on a local or regional basis as required.
41. NEMA should establish a standard database to support the CIMS logistics function, including key induction materials, templates, incident tracking mechanisms and expenditure tracking and management, for assess by all agencies and EOCs at multiple levels.



25

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<sup>25</sup> Hawke's Bay app. See <https://cdn.hbapp.co.nz/news/news/cyclone-gabrielle-response-distribution-centre-walkthrough>

## SECTION 6: WELFARE

### OBSERVATIONS: THE WELFARE FUNCTION IN CIMS

Similar comments apply to those above regarding logistics. Staff in this functional area felt that they had received little induction and that surge staff were generally unprepared for the role. Again, many staff in the welfare support function had not received CIMS training and were unfamiliar with the tools and templates available. This meant they tended to make them up as they went, which promoted inefficiency and inconsistency.

Many of the staff in this function were also too junior to hold the senior relationships in the community, with other agencies and with Māori, which could have facilitated better and faster outreach and engagement.

Other issues raised by CDEM staff survey respondents included:

- Challenges in connecting and aligning the welfare functions of the five council EOCs and the GECC, under the Group Welfare Plan.
- Low understanding by some welfare staff of the needs of rural communities and potential underutilisation of the Rural Advisory groups (RAGs) that had worked effectively during Covid response and the 2020 drought. For example, animal welfare efforts were concentrated on domestic as opposed to production animals. Connections into rural support and health networks were also weaker than in prior responses; and
- Low confidence by CDEM staff with a Kaupapa Māori approach to welfare meant that some iwi and marae concerns were underappreciated. An example was the importance of any degradation of urupa to local Māori.

Engagement between the CIMS function and other social agencies was also variable, as noted in the discussion on the AoG agencies above. The local AoG lead, who was also the MSD Regional Commissioner, had a wealth of contacts that could have prevented duplication but which were underutilised until later in the response.

The GECC also lacked a needs assessment data capture tool, which meant that many families and individuals had multiple assessments with different agencies. This created stress and resentment. From an inter-agency perspective, these differing assessment tools could only be shared manually.

This reflects the current lack of a nationally consistent needs assessment tool. In the absence of this CDEM Groups are all developing their own tools, which will present a problem in any future event involving multiple regions.

The interface between the welfare and logistics CIMS functions also seems to have worked less than ideally. For example, welfare was tasked by logistics, early in the response, to call isolated communities and ascertain their needs. The resulting list was then passed back to welfare with a note that these needs could not be supplied and to call back and find out 'what they really wanted'. Eventually, logistics said communities could choose one of four prepacked food boxes whether they needed everything in the box or not.

Other, similar examples go to such issues as the supply of medications for remote patients or displaced persons.

Welfare support is one area in which preexisting relationships, at the right levels, are critical. This is particularly the case in remote communities. In this event for example, local volunteer fire chiefs proved critical in mobilising local resources and contacting ‘missing’ people. The well-developed welfare relationships and strategies in Wairoa and Central Hawke’s Bay, which were well supported by the relevant Taiwhenua groups, were also remarked on as real positives by several respondents.

Welfare relationships would also benefit from training and scenario exercising in peacetime. Joint engagement in beneficial community projects is also a good way of embedding connections and local knowledge in advance of an event.

#### SUGGESTION

42. Working with partner agencies such as MSD, Hawke’s Bay CDEM should adopt a standard needs assessment tool and database along with information sharing protocols.
43. Working with MSD and other agencies, NEMA should facilitate the development and application of a standardised, national needs assessment tool for use in response and recovery.

#### OBSERVATIONS: CIVIL DEFENCE CENTRES

As noted above, the list of available CDCs was not sorted by event type, and some locations proved unsuitable in a flood emergency.

Nor were CDC locations pre-qualified by capacity and fully tested in advance with partner agencies. An example is the advertising of St Joseph’s College as a CDC, which became known to the Ministry of Education (and the School’s Principal) only via public media. Given the school was in session at the time, the arrival of dozens of displaced people proved challenging. Agencies and the school community rallied around and this CDC was ultimately very effective, but things were harder than they should have been.

Potential CDCs, sorted by capacity and type, should be regularly assessed, reviewed and publicly communicated prior to a predicted event.

Each CDC should have a detailed welfare and logistics plan around its set up and staffing in advance of events.

As recommended above in the section on relationships with tangata whenua, we suggest that the default network of CDCs should be provided by marae, given their long experience in and excellent facilities for servicing the accommodation and welfare needs of their communities.

Working with marae to invest in CIMS training for marae leaders, marae-based caches of civil defence materials, joint operational exercising and clarification of plans, including arrangement for reimbursement of expenses, should all now be priorities for the CDEM operations, planning, logistics and welfare functions.

**OBSERVATIONS: RESPONSE STAFF WELFARE**

A number of GECC and EOC response staff cited poor workforce planning and rostering arrangements as contributing to staff burn out and fatigue. The lack of a plan to deal with ‘incidents within the incident’ and meet the needs of staff who were themselves impacted by the disaster did not help.

Most other first responders had wrap around welfare support to staff in place from the beginning of the response.

As the event progressed, councils provided more welfare and EAP support to staff, and some felt that the post event operational debrief survey was a positive opportunity to vent concerns and articulate things they were proud of. However, the ongoing trauma still being experienced by some response staff and key officials was evident in our interviews. Many others have left their positions.

**SUGGESTIONS**

- 44. The HBCDEM Group should undertake full post major event debriefings with staff by CIMS function, facilitated by a mental health professional.
- 45. The CDEM Group should develop ‘incident within an incident’ procedures should responder illness, injury or death occur.



26

<sup>26</sup> Inside the Flaxmere Community Centre. Photo: Lauren Crimp, RNZ

## SECTION 7: PUBLIC COMMUNICATIONS

### OBSERVATIONS: CDEM PUBLIC INFORMATION MANAGEMENT (PIM) FUNCTION

As will have become evident, the overall lack of a common operating picture across this entire response effort made it not only difficult to coordinate the work of agencies and establish mission objectives, but also made it hard for staff in the public information function to respond to information requests from government, media and communities.

From a community point of view, residents told us they felt that communications were sparse, too generic and overly concentrated into social media channels. As one respondent said: *“I saw their comms. To me it was all just the usual civil defence spam. There wasn’t anything tailored to me or really useful.”* Another commented, *“It was all slow and bitsy on a local level. I got more from watching TV than from the councils.”*

Particular challenges, (and thus opportunities for future improvement), in this function included:

- The CDEM Group lacked a fulsome and pretested communications plan for a major disaster, which meant plans had to be formed in the crucible of the event.
- A lack of quality assured, pre-planned communications packages that could be deployed quickly via multiple channels.
- An absence of clear criteria and trigger protocols for the issuing of emergency mobile alerts (EMAs).
- CDEM PIMs, particularly in the EOCs, were overstretched throughout this event and not all had had CIMS training in the function. Volunteers within the function had little understanding of national communication assets and their role as lifeline communications channels, with the result that national media was arguably underutilised.
- Interoperability issues between NEMA and the GECC made it difficult to push information upwards to the national system and the NCMC.
- Some local PIM staff used business as usual emails and phones which meant that the work of the previous shift was lost at handover.
- Local public information was limited to Hawke’s Bay and did not inform the public of progress made in establishing services (roads, infrastructure and communications) in a timely manner.
- Information was focused ‘out’ on what the GECC was doing, rather than on asking people what their needs were and how to communicate these into the CDEM system.
- Stretched PIM staff were trying to cope with social media, national media, community requests, VIP visits and partner agency requests all at once, when each required a different skill and experience set. This jack of all trades approach also meant that external parties, such as media, did not have a consistent point of contact.
- Communications channels were dominated by social media such as Facebook, which not all in the community could access. Arguably, for example, public radio was underutilised as a communication channel.
- In the stress of the event, inter-agency alignment in the communication of key messages was inconsistent. For example, Transpower’s messaging that Napier power could be ‘out for some

weeks' had not been pre-socialised with the GECC or civic leaders. It created considerable community consternation; and

- Not all PIMs understood their responsibilities to brief up to their civic leader as the face of the response as well as into the national emergency management system and NEMA.

This cannot all be blamed on communication technology failures. Technology is only an enabler. Effective communication requires that players in the system are able and willing to talk to other each and share information. We have formed the view that some staff in the communications space carried their 'defensive' postures toward external media into the emergency space, where these have no place and media become a critical communications partner and ally.

*"Why did the Council say to see Facebook for info when there was no bloody power? It was impossible to find anything out. Why didn't they just use the national media for more location specific info."*

In our view, communications from PIMs to elected members, outside of the mayors and chairs, were initially sparse. This group of governors is a vital source of local intelligence and is often looked to by communities for key messages. Elected members must be properly and promptly equipped by PIMs with information relevant to their wards and communities. Outgoing CDEM briefings to elected members took a while to fall into a regular rhythm, with the result that some felt unsupported as they tried to get key messages to and help for their communities.

Communications to the local community also sometimes failed to underscore the seriousness of the event. One survivor told us: *"We got helicoptered out after hours on the roof and with nothing to our names. We were taken to Napier and as we drove there, I could see people out mowing their lawns, with no idea of what was going on. It was surreal."*

*"Information was woeful. Couldn't get through to Council. Had no power so relied only on the radio which was too vague. Phoned 111 and got told 'you're on your own'. Not really a good thing to hear. I wouldn't have evacuated if I didn't see my neighbour up the road getting out."*

An old-fashioned stakeholder engagement plan and contacts database, adapted as a contingency plan for emergencies, would also have gone a long way in improving community outreach and helping establish a common operating picture. Low tech options, such as community notice boards and flyers, would have also been useful.

In a crisis, good communications also require sufficient depth of expertise in communications that key staff can remain above the fray to lead strategic communications. In this event, most PIM staff were forced into being so reactive and tactical that they lacked time and space to take a longer and more strategic view.

## SUGGESTIONS

46. The Hawke's Bay CDEM Group should review the depth and capability of the PIM workforce with a view to ensuring that all available staff have CIMS training and to allow for specialisation into subcategories of communications management, such as external media, community liaison, central government liaison and so on.
47. NEMA should develop a kete of pre-planned emergency communications for use across multiple channels, along with clear criteria for the use of emergency mobile alerts.

48. In a major event, the CDEM Group PIM should publish daily updates to the community that include both achievements and setbacks to manage public expectations and proactively shape the narrative.

## SECTION 8: RELATIONSHIPS WITH PARTNER AGENCIES AND COMMUNITIES

### OBSERVATIONS: STAKEHOLDER AND PARTNER RELATIONSHIPS

We have made a number of observations on opportunities to improve stakeholder and partner relationships throughout this Report. The critical point is to ensure that key relationships are in place *prior* to an event, and that they are held at the right levels. A positive example here was the preexisting relationships between mayors, council chief executives and first response and lifeline leads that were in place when this event occurred. There were frequent occasions on which personal connections and prior understandings expedited decision making, supported innovation and got communities the help they required.

However, there were also times when stakeholder liaison by those in CIMS functions was lacking or not at the right level. The initial, weak engagement between the GECC and other government agencies such as MSD, the Ministry of Education, Health and other core social agencies is an example. The patchy connections with volunteer and private sector resources discussed earlier in this Report also go to this point. The CDEM Group missed opportunities to leverage other agencies' networks, tools and relationships.

In this event, specific challenges also arose from the recent restructuring of FENZ, which meant that volunteer fire resources were sometimes unknown to the GECC and local EOCs and that new FENZ managers were not always known to community leaders.

Junior and part time CIMS functional staff cannot be expected to know who and how to engage with agency, partner and community leaders during a response without clear guidance and SOPs being developed in advance. For this reason the GECC needs to work with TLAs to develop the comprehensive stakeholder plan in support of its CDEM planning that we suggested in the section on public communications above. The plan must include key contacts and their roles in response and recovery. Such a plan will require considerable maintenance to ensure the requisite granularity and currency.

Our earlier suggestions with regard to multi agency exercising also apply in this regard. It is by working alongside partners and stakeholders that operational experience is honed and understanding of agency specific roles and responsibilities is developed.

Post exercise debriefs should focus on areas of overlap and gaps, to ensure that multi agency response, when required, can cover the grey areas. Areas of confusion in this response and early-stage recovery, such as the roles of Police and NZDF in the public safety space, the role of MBIE in procurement and logistics, the differing logistics systems used by CIMS and NZDF, and the respective roles of CIMS welfare and MSD, could have been clarified if the right training and scenario exercises had been undertaken in peacetime.

### SUGGESTION

49. Develop a stakeholder master plan at both regional and local levels, including contact information, SOPs, roles and responsibilities for emergency response and recovery, and key relationship owners. Maintain and update the plan annually via the PIM function.

## OBSERVATIONS: COMMUNITY ENGAGEMENT

As will have become evident from the preceding discussion, engagement between communities and the GECC and EOCs during this event was ad hoc and personality driven, as opposed to being consistent and well planned in advance. Key leaders had good personal networks and used these effectively, but this was more opportunistic than strategic. For example:

- Engagement with some standing bodies such as with Tihei Mauriora and the Rural Advisory Group was adequate but more ad hoc than it should have been. As discussed earlier, links into tangata whenua, iwi Māori and key community influencers were not generally preplanned and were underused during early-stage response and recovery.
- Engagement between mayors, council executives and elected members were a good source of inward ground level intelligence, but this was not collected or analysed in a central place to inform outwards intelligence and communications.
- It was difficult for those in the community who had useful intelligence inputs, such as real time observations on how the rivers and drains were behaving, to know where to go with their information. Council call centres were overloaded and struggled to analyse information and connect into the GECC.
- Communities were not armed with prior knowledge of key evacuation strategies and CDCs. As we noted earlier, scrambling to find CDCs and communicate their locations and capacity in the cauldron of a fast moving event is doomed to failure. CDCs need to be preselected and communicated to communities in advance of an event where possible. The long build up to this weather event provided an opportunity for the GECC and local EOCs to do so in this case; and
- Community engagement planning appeared not to have been targeted or prioritised to particularly high risk or high deprivation communities. As one respondent from a remote community put it:

*“We all know that this place is prone to flooding and has only one road in or out. We’ve mostly got supplies for a week and each other’s contacts. We know who the most vulnerable are. What we haven’t got is any info about what the civil defence plan is for here, beyond the assembly point sign on the building. We got told by 111 that we were on our own for a few days but we had no idea how to get in touch with the Council or what it was doing about us. We heard zip from them for weeks.”*

Some communities told us of their concerns about lack of communication and support from local authorities for warning systems. Several respondents felt that sirens appeared to have been being *“steadily decommissioned in recent years, with no apparent consultation or rationale being communicated.”* Others pointed to perceived lack of councils’ risk reduction action on forestry slash and the build-up of river shingle deposits.<sup>27</sup>

Some members of remote communities told us they: *‘didn’t see anyone from Council or civil defence for weeks’*, although it was clear from our base data and other interviews that civic leaders and CDEM staff *had* actually visited that location during the early stage response. It will be important, going forward, that leaders and emergency management staff are properly uniformed and readily identifiable as the accountable experts.

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<sup>27</sup> Once again, these matters are out of scope for us. We include them here given that such comments were very frequent in our public survey responses.

**SUGGESTIONS**

50. Include registers of key community contacts in the CDEM stakeholder plan recommended above.
51. Working collaboratively, develop SOPs and contingency technologies for inwards capture of community intelligence during an event and for outward dissemination through key community leaders and organisations.

## SECTION 9: LIFELINES

### OBSERVATIONS: CONNECTING LIFELINE INFORMATION TO THE COMMON OPERATING PICTURE

One of the requirements of the Civil Defence Emergency Management Act 2002 for lifeline utilities is that they establish planning and operational relationships with CDEM groups.

Each utility should engage with local CDEM groups to exchange relevant risk management information and the key elements of their readiness and response arrangements.

CDEM groups and utilities need to know what each other's roles are in any given emergency and how they should interact. NEMA advises that, before an emergency, each needs to ensure that it has:

- Assessed the hazards and risks that could affect their operations.
- Applied an appropriate risk management process.
- Developed and tested an effective set of operational procedures to respond to the range of foreseeable emergency events; and
- Addressed external dependencies.<sup>28</sup>

The Hawke's Bay CDEM Group appears to have had sound relationships with lifeline utilities, at both governance and executive levels. Regular quarterly meetings between CDEM staff and lifelines representatives also meant that preexisting relationships were in place. All of these proved critical during the response to this event and subsequent recovery planning.

Regular lifeline meetings were activated on Monday 13<sup>th</sup>, February 2023 and continued throughout the event. They were recorded and fed into sitreps. This helped to build a common operating picture.

While in the CIMS framework, lifeline coordination sits under Operations, in this event these staff reported direct to controllers due to the constant demand for up-to-date information.

However, the CDEM group operational debrief survey of staff in lifeline liaison roles identified the following challenges during this event:

- The connection between local and national bodies for lifelines was patchy. Lifeline associations and head offices were reporting into NEMA and there were challenges in getting this information down to the regional coalface.
- The initial engagement with public health and Te Whatu Ora was poor, although this improved later in the response.
- Operational lifeline engagement had not been trained or exercised prior to this event.
- Different lifeline utilities and CDEM bodies had different video systems with a GIS base that collected real-time information on status, but there was no ability to centralise and pool live information.
- There is currently no mechanism for CDEM (or other relevant agencies) to require critical local businesses (such as supermarkets, service stations and rest homes) to have and review Business Continuity Plans (BCPs). In the event, many of these proved underdeveloped. In future, some form of CDEM approval (a 'CDEM tick' or similar) may be worth exploring.

<sup>28</sup> See <https://www.civildefence.govt.nz/cdem-sector/lifeline-utilities/cdem-work-with-lifeline-utilities>

## Independent External Review

- There was a gap in the area of responsibilities for solid waste management, and liaison staff identified a requirement for future advance planning in this area.
- Preplanning in regard to the use of Hastings Aerodrome was underdeveloped, as noted above.
- The scale of the event meant that pre identified lifeline coordinators were not always available because of the obligations of their day jobs. This meant that some staff had hasty inductions to the role and did not hold operational relationships with their lifelines counterparts.
- There was no register of service providers for critical assets; and
- Neither was there a list of local telco providers, some of whom were, in the event, still operational and thus arguably underutilised.

Despite of these issues, CDEM respondents spoke favourably about much of the lifeline communication and cooperation that did occur, particularly with Waka Kotahi and Unison.

As noted above, connection between PIMs and media as lifeline utilities was less planned and systematic.

For the future, respondents suggested a number of practical improvements, including:

- The need to have lifeline teams working across all elements of the CIMS structure.
- The need for joint emergency management training and scenario exercises to encompass lifeline utilities, as well as Te Whatu Ora, welfare agencies and iwi partners.
- Exploring the possibility of collecting live utility status data centrally, to inform CDEM response. Some of this information is commercially sensitive and doing this would require that information exchange protocols be agreed in advance at both regional and national levels; and
- Consideration of incentives or regulatory requirements to require BCPs from critical local assets.

## SECTION 10: FUTURE RESILIENCE

## OBSERVATIONS: USING INDIGENOUS KNOWLEDGE, STRUCTURES AND RELATIONSHIPS

Some disaster risk reduction experts argue that the indigenous knowledge of local communities can contribute significantly towards saving human lives and property from the negative consequences of disasters.<sup>29</sup>

In the areas of preparation and reduction, for example, one report suggests:

*“Based on a long and close association with the land and its resources, Māori have developed a detailed knowledge of local natural hazards. This includes oral histories and traditions that record past catastrophic hazard events, place names that designate areas that are high hazard risk, and environmental indicators that inform about the safety and viability of activities linked to changes in the environment. Māori Environmental Knowledge is a valuable and neglected area of information on natural hazards and provides a unique source of expertise that can contribute to contemporary natural hazards management and mitigation in New Zealand.”<sup>30</sup>*

The role played by Ngāi Tahu in post Christchurch earthquake recovery has been well documented.<sup>31</sup> The potential contribution of cultural groups to emergency response and recovery initiatives was highlighted in the formation and operation of the Māori Recovery Network following the earthquakes. The graphic below shows the importance of cultural dimensions to response and recovery.

CONCEPTUAL FRAMEWORK FOR MĀORI RESILIENCE<sup>32</sup>

The challenge is for CDEM systems, both locally and nationally, to use lessons learned from Christchurch and other disasters to integrate Māori resources and cultural strengths into pre-event planning and emergency response plans. To several Māori respondents, as we noted earlier, the failure to fully activate marae as CDCs showed, in the words of one, “a lack of respect and awareness of tikanga by civil defence authorities.”



NEMA’s Natural Disaster Resilience Strategy<sup>33</sup> is clear about the importance of planning with Māori partners and communities. It notes that CDEM authorities should:

<sup>29</sup> See for example, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6014067/>, about the use of such knowledge in Zimbabwean disasters.

<sup>30</sup> From *Journal of the Royal Society of New Zealand* Volume 37, Number 2, June 2007, pp 59-73.

*Māori Environmental Knowledge and natural hazards in Aotearoa-New Zealand*, by Darren N. T. King, James Goff, and Apanui Skippe.

<sup>31</sup> For example in *International Journal of Disaster Risk Reduction* Volume 14, Part 1, December 2015, Pages 46-55,

*A Māori love story: Community-led disaster management in response to the Ōtautahi (Christchurch) earthquakes as a framework for action* by Christine M. Kenney and Suzanne Phibbs.

<sup>32</sup> Source: Adapted from Shakes, rattles and roll outs: The untold story of Māori engagement with community recovery, social resilience and urban sustainability in Christchurch, New Zealand (Kenney & Phibbs, 2014).

<sup>33</sup> See summary at <https://www.civildefence.govt.nz/cdem-sector/plans-and-strategies/national-disaster-resilience-strategy/national-disaster-resilience-strategy-summary-version#:~:text=The%20Strategy%20provides%20the%20vision,align%20with%20for%20collective%20impact.>

## Independent External Review

*“Build the relationship between emergency management organisations and iwi/groups representing Māori, to ensure greater recognition, understanding, and integration of iwi/Māori perspectives and tikanga in emergency management.”*

The Hawke’s Bay CDEM Group appears well aware of and committed to the potential to enrich regional hazard identification, planning and response in this respect. The introduction of a values-based approach to national disaster preparedness planning, which draws upon traditional Māori knowledge and practices, would have broader relevance for Māori, as well as benefits for the overall regional (and national) CDEM system.

The challenge is how practically to engage to do so, at multiple levels within the system and across the wider community. This matter is currently under active discussion in the local Post Settlement Governance Entities (PSGEs) and Taiwhenua groups.

### SUGGESTION

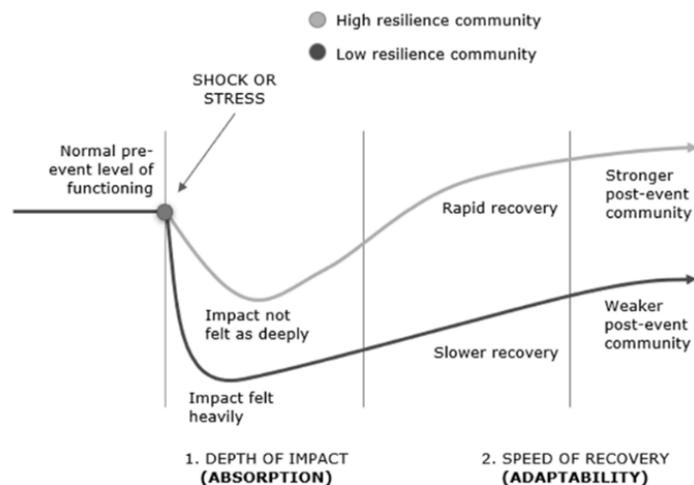
52. Work with local PSGEs and Iwi leaders to develop a plan to harness and incorporate indigenous knowledge into the CDEM planning process.

### OBSERVATIONS: PUBLIC INFORMATION AND COMMUNITY RESILIENCE

This weather event also illustrated both pockets of strong community resiliency across the region (marae, rural areas, some neighbourhoods, many schools) and low resilience in other areas (urban areas without power for prolonged periods, seasonal workers, some rest homes and some critical businesses). As shown in the graphic below from the National Disaster Resilience Strategy, low resilience manifests in worse impacts and slower recovery.

### TWO DIMENSIONS OF RESILIENCE: ABSORPTION AND ADAPTABILITY

Community leaders told us in focus groups that they were not aware of local CDEM plans prior to this event, and that during it they had felt both disconnected from CDEM authorities at the GECC and EOC levels, and unsure who was doing what in terms of response and recovery. One said: *“I guess once the recovery apparatus was set up it’s been better, but in the actual event, there was no single ‘face’ or place to go to for authoritative information.”*



At the strategic level, the emergency management literature shows that resilient communities need strong social capital. This means that communities, and the whānau and individuals within, have pre-existing foundations for working together, know how to collectively identify their needs, what they need

to do, and who can help.<sup>34</sup>Typically, resilient communities will have multiple types of social capital such as relationships between:

- Similar groups or immediate neighbours and families (bonding).
- Different groups, which helps expand networks and access new information and resources (bridging); and
- Communities and institutions or decision makers, which helps influence resource allocation and intervention (linking).<sup>35</sup>

An Australian study, undertaken by the Foundation for Rural & Regional Renewal (FRRR) in partnership with Resilience New South Wales (NSW) and researchers from the University of Sydney<sup>36</sup>, worked with three diverse NSW communities to explore how best to ensure that rural communities were more disaster resilient and future ready. It found that:

*“While the core principles for building disaster resilience are consistent, the research confirmed that one-size-fits-all frameworks and models are not effective. Resilience-building must be community-led and tailored to each community, and communities must have the support and resources to allow them to create their own resilience-building approaches.”*

*“The research clearly demonstrated that when community members worked on projects and activities co-designed by them, adaptive local resilience building was evident. This is an important insight and consideration for agencies and organisations that are designing and implementing resilience building programs with a shared responsibility philosophy of disaster preparedness.”*

There is an opportunity for Hawke’s Bay CDEM authorities to formalise and codify some of the joint working arrangements with communities that have been forged in the response to and ongoing recovery from this event. These can be used to codesign place-based community resilience interventions.

By embedding ongoing joint work, community bonds can be strengthened, communications improved and expectations managed in ways that one off public information campaigns or community surveys will be much less likely to achieve. Fundamental to this work will be the cultural perspectives discussed above.

The graphic below illustrates how such ongoing engagement could work:

#### EFFECT OF DISASTER ON ONGOING COMMUNITY DEVELOPMENT<sup>37</sup>

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<sup>34</sup> See MSD’s useful 2021 study on community resilience at [www.msd.govt.nz/documents/about-msd-and-our-work/publications-resources/statistics/covid-19/community-resilience.pdf](http://www.msd.govt.nz/documents/about-msd-and-our-work/publications-resources/statistics/covid-19/community-resilience.pdf). This study found that even vulnerable communities can develop resilience when they work together with government agencies to prepare and plan for response.

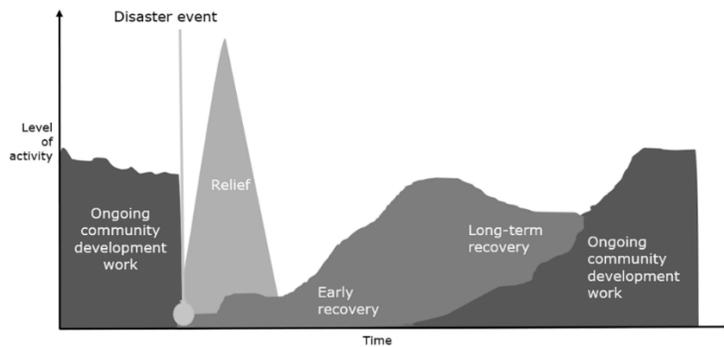
<sup>35</sup> As above page 7.

<sup>36</sup> The the ‘Get Ready Disaster Resilient: Future Ready (DR:FR) pilots project’, see <https://frrr.org.au/blog/2021/09/14/three-year-study-identifies-ways-to-strengthen-community-resilience-to-disasters/>

<sup>37</sup> Source: Sally McKay, in Community recovery (Handbook 2) (Australian Institute for Disaster Resilience, 2018).

## Independent External Review

This co design opportunity will help communities and those involved in emergency management to heal from this event and build both hope and greater adaptivity around future events.



*“Some people and communities just weren’t prepared to be on their own for days. They only got help when local farmers or volunteers came to their rescue. There needs to be way better public education about this.”*

More tactically, there was also a lack of community preparedness at

household level in most impacted areas, although marae and rural communities were arguably more prepared than urban households. First responders and others told us that it was clear that communities and in particular, lower socio-economic areas, typically did not have:

- Sufficient resources to be by themselves for 2-3 days, as per the national CDEM guidance, such as grab bags, medications, reserves of water and tinned food etc. As one respondent said: *“it’s all very well to tell people they can’t expect help to come for a few days or weeks, but if you can only afford to buy one pack of nappies a week now, you’re not going to be able to stockpile ten packs, are you?”*
- Clear understanding of where to go for authoritative information on the event
- Pre-identified hazard specific escape routes. One respondent said: *“We had talked as a whānau about what to do in the event of a wildfire, but not about flooding. You can bet we’re going to make some family plans after this”.*
- What to expect from local authorities and first responders in an event of this magnitude; and
- Knowledge of where CDCs are likely to be located.

One respondent told us: *“Some people were so traumatised and so grateful for the most basic of help. Some had no idea how to access what they were entitled to. Others seemed to expect to go from the helicopter to a five star hotel room. We need to educate these different communities about what’s possible in an event of this sort.”*

In addition to the codesign work suggested above, CDEM Group and local CDEM leaders need to better understand current baseline public expectations and the extent of household preparedness. This could be done through community surveys on resilience indicators. The analysis would support the development of more targeted (by sub region and demographics) public information and awareness collateral and interventions.

Specific interventions will also need to be developed to support the resilience of vulnerable communities and groups. These could include remote areas, the disabled community, eldercare facilities and rest homes, and others at high risk.

## Independent External Review

The answer to much of this would appear to be pre located CDEM supplies at strategic regional locations<sup>38</sup>, better public information and stronger incentives to require the development and testing of BCPs. This has a cost however, that neither local government nor NEMA are likely to be able to support on current baselines. Some pre cached containers in key locations for example, proved critical in this event, but had been funded by short term grants rather than by a sustainable and longer term investment approach.

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<sup>38</sup> Such as the National Emergency Management Stockpile developed in Australia.

## SECTION 11: LESSONS FOR NATIONAL RESPONSE MANAGEMENT

This disaster also provides lessons for the current New Zealand emergency management operating model. We address these issues and opportunities in this section.<sup>39</sup>

It is vital that *both* the local/regional and national emergency management systems learn from the disaster of Cyclone Gabrielle and apply its lessons. They came at a high cost, in lives, jobs, trauma and displacement.

We expect that some of the matters traversed in this section will also be the subject of the national review of this weather event, which was ongoing at the time of writing.

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### OBSERVATIONS: CAPABILITY AND RESOURCING

New Zealand's emergency management system is premised on local planning and delivery of the 4Rs through the local authorities that know their communities best. We agree that this fundamental principle is correct.

However, the counter intuitive feature of our present system, where local authorities *take the lead in command and coordination* as a crisis escalates and an emergency is declared, needs to change.

As we noted in our Auckland review, part timers, who are inconsistently trained and often lack operational experience, cannot be expected to assume critical command leadership roles that require deep expertise, operational muscle memory and an understanding of interoperability with other local and national agencies.

Our suggestion is to upweight the national element of New Zealand's emergency management model, while also retaining its local and regional strengths.

This entails *more* local granularity and better engagement with iwi and communities on the part of TLAs and regional councils, *as well* as concentration of expertise in regional hubs and an enhanced role for nationally supported expert leadership and assurance.

Those of us who have visited emergency command centres in operation are often struck by the contrast between those operated by well-meaning locals, who are sometimes struggling to make things up as they go along, and those run by operationally experienced response agencies, who have the depth of capability and systems to support a tried and tested machine.

The current model, in our view, unhelpfully sets local authorities up to fail in emergency management. They are critical to the system because they know their land, hazards, communities and resources, but they are simply not set up to take *command* in a fast moving, severe or widespread crisis.

Nor can smaller TLAs sustain the depth of capability and professionalism in CDEM roles that is required in a complex or large-scale disaster.

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<sup>39</sup> This section is wide ranging. While national implications are but one element of our Terms of Reference, we explore them in some depth here, given their centrality to our core argument. That is, that the most critical lesson learned from this response is that *both* local/regional *and* national elements of our current emergency management system have to change if New Zealand is to be better prepared for and more effectively respond to future disasters. The improvements suggested in this report for local TLAs, even if fully implemented, would, on their own, be insufficient to ensure future success.

## Independent External Review

Thus, while we think the Hawke's Bay CDEM operating model can and should be improved, we believe that these improvements alone will be insufficient to optimise performance across the 4 Rs, without fundamental change and reinvestment *a/so* taking place at the national level.

We think that the recommendations made by the 2017 Ministerial review of the national emergency management system undertaken by the Technical Advisory Group should be revisited in this regard. In addition to the establishment of NEMA, this review also recommended system enhancements that would have greatly assisted in this event. It called for a system that:

*"Makes the most of local knowledge – balanced with the need for specialist expertise and national capability."*<sup>40</sup>

We suggest that core to this is an expanded role for NEMA, more unified systems between response agencies, and a greater concentration of professional, fulltime expertise in regional hubs taking the operational command pressure off local TLAs in the immediate response phase. The latter, in our proposed model, would be responsible for planning and community resilience and engagement, but would not be obligated to command an event.

The increasing frequency and severity of such emergencies also suggests that NEMA will need to engage with regional and central government to explore new funding models for regional emergency management, perhaps to support a bigger standing army and more extensive and better lanned reserve/volunteer capability in both the centre and in regional hubs.

### SUGGESTIONS

53. Once the outcomes and recommendations of the Government's wider review of the CDEM system are known, the roles, interfaces and relative resourcing of national, regional and local institutions should be redesigned around a more centralised, hub and spoke operating model that balances local insight and centrally managed expertise. We suggest that this could be effected by means of an interagency co design symposium, as opposed to commissioning yet another review.
54. Standardise the regional CDEM operating model to centralise consistently structured CDEM Groups in regions and clarify relationships and accountabilities between NEMA, GECCs, first responders and local TLA EOCs/IMTs.

### OBSERVATIONS: THE NATIONAL EMERGENCY MANAGEMENT BILL

New Zealand's emergency management legislation is currently being amended, with a Bill before the House.

Changes introduced in the new Bill will include:

- Clarifying the role of critical infrastructure providers (services that are essential for everyday life) and strengthening arrangements to enhance the resilience of critical infrastructure.
- Recognising the role Māori play in emergencies and enabling Māori to participate at all levels.
- Ensuring the emergency management system enables better outcomes for people who may be disproportionately impacted by emergencies; and

<sup>40</sup> See <https://www.dpmc.govt.nz/departamental-agency/nema/ministerial-review-better-responses-natural-disasters-and-other>

## Independent External Review

- Integrating the principles of the '4Rs' of risk reduction, readiness, response and recovery.

The new Bill will build upon existing systems and structures and is not intended to be transformative. It will not reform the current emergency management powers, nor remove the existing key local and regional response and recovery roles.

The observations and recommendations in this section, taken together, suggest that a more fundamental set of policy, regulatory and legislative changes may be required. In our view, the current proposed legislation does not go far enough to ensure that our national emergency management system is fit for the future.

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### OBSERVATIONS: NEMA AS NATIONAL CENTRE OF EXPERTISE

We suggest that NEMA needs to be strengthened as an agency to ensure it is better positioned to provide support in local emergencies, direction in national emergencies and improve the professional capability and capacity of the overall CDEM system and its workforce.

In our view, the agency needs to be supported to develop a stronger *regulatory* role in setting guidance for and monitoring more rigorous professional standards for CDEM bodies. It should have a full regulatory toolkit and framework - from education and guidance through to assurance and, if required, enforcement.

Its regulatory insights could then inform a deeper policy function, which is better placed to provide advice to central government on best practice in disaster management practices and new models for funding and delivery.

Such an enhanced role would likely need to be supported by stronger data and intelligence capability and capacity at NEMA.

We think NEMA should also have at its disposal a flexible set of expert resources to deploy across the country. This is not currently resourced but in future might include:

- A national emergency management training centre that delivers and provides oversight of training and operational exercising from national to local level, underpinned by a clear competency framework. This could be linked to existing Police, FENZ and NZDF training facilities and frameworks to ensure greater commonality of roles, tools, processes and systems.
- Professional full time emergency management teams in key locations that are on call for domestic and international response.
- Over time, moving the infrastructural footprints of regional hubs to 'Christchurch style' shared first responder campuses.
- Centralising logistics expertise, critical equipment and key contracts at key points, which can be activated during an event; and
- Planning private and philanthropic partnerships that can assist with surge capacity when required.

### SUGGESTION

55. Consider growing NEMA's regulatory and intelligence capability and strengthening that agency's role in monitoring and assuring regional CDEM Group performance.

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**OBSERVATIONS: COMMON OPERATING PLATFORM**

We, and many previous reviewers of similar events, have repeatedly raised the need for technology systems that support the capture of data from multiple sources and the creation of a common operating picture in emergency situations. A key limiting factor in this response was the inability of response agencies to access information held on Group systems and to share intelligence in real time.

This has been the recommendation of multiple local (such as the Napier Flood review) and national reports over the last several years. NEMA has been working on this matter for some time. Individual CDEM Groups meanwhile, have acquired and customised different systems.

This situation cannot continue. A nationally consistent system that allows for all agencies, IMTs, shifts and responders to share information and build a single source of truth is long overdue. It would greatly aid decision making under pressure, coordination of effort and intelligence analysis in support of quality sitreps and action plans.

The closest thing to a shared system during this event was MS teams, used by most agencies. If this or another system could be agreed, mandated nationally and GIS data linked to it, New Zealand would be much better placed to respond to events of this nature. Technologically this does not seem difficult, but NEMA would need both the resources to invest in the system and the powers to drive compliance with whatever shared system is agreed.

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**OBSERVATIONS: NEMA'S AND TREATY PARTNERS**

While it is well canvassed that iwi Māori and other Māori organisations have a critical role in both local and national emergency management, their roles are not mandated in legislation and there is now a clear and pressing requirement for these groups to be more formally involved in regional Group Plans.

We suggest that NEMA, as the Crown, should take a leadership role in formalising protocols for iwi involvement at all levels of the CDEM system and with regard to all 4Rs. We suggest the agency should also consider its own advisory relationships with iwi Māori at governance level.

**SUGGESTION**

56. NEMA could consider improved national guidance regarding protocols with iwi Māori, post settlement entities and Māori communities in the CDEM '4 Rs'. This should include recognition of the capability that Māori bring to emergency management and the formal inclusion of iwi in regional CDEM Groups.

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**OBSERVATIONS: REGIONAL HUBS AND FLY IN TEAMS**

In our view, New Zealand's emergency management system should be based on a national hub and regional spoke model, with the obligation on NEMA to support the system and the obligation on regional councils to source and consolidate data from local TLAs. This is implicit in the current model but is neither fully articulated nor adequately resourced.

We would concentrate full time CDEM expertise in regional hubs and strengthen both their links to NEMA as system lead and regulator/assurer and their obligations to gather and utilise granular local data from TLAs.

We do not suggest that this sort of structural change be considered as an immediate priority. Form should follow function and the wider, principles-based work on the future operating model should be completed before any consideration of future structures.

But this concept feels right to us. We have tipped the balance too far to local TLAs who cannot be expected to mount a fully professional emergency management function under their current funding models.

It is timely now to strengthen both system leadership in NEMA and invest in more consistent regional hubs working to the same SOPs and using the same systems. NEMA can effectively engage with 15 regions. It is much harder to do so with 67 TLAs<sup>41</sup>.

In summary, the thrust of the future *regional* model we propose centres on enhancing local and indigenous networks and self-sufficiency, which goes to improved reduction, readiness and community resiliency.

The key theme of the *national* story for a future world in which hitherto unprecedented emergencies become increasingly common, is for New Zealand to invest in a professionalised centre of expertise in NEMA with supportive spokes of distributed resource in the regions proving a national 'spine' of emergency response.

This deeper investment in NEMA would help mobilise the resources of central government in support of regions in all 4Rs. It would also help ensure that consistent and well tested command and coordination approaches are applied in the response phase.

As the TAG report observed in 2017, "*Group effort needs to be backed with national capability that can be deployed as required.*" Respondents to this review agreed.

As an example, although NEMA flew in one additional resource to Hawke's Bay in advance of the Cyclone to assist regional response, it would ideally have supplied an advance 'fly in team' of seasoned experts on the weekend prior to the storm. Worst case scenario, they would all have flown home a couple of days later, without being deployed. Best case, their expertise could have helped the local controllers and functional leads and provided additional community reassurance. National emergency communications experts could have assisted local PIMs to deliver more timely and targeted messages to communities, while science experts might have assisted engineers and others. Such a team could also have assisted in coordinating Defence Force and offshore aid agency activities such as USAID.

This idea was mooted in the aftermath of the Christchurch earthquakes and Port Hills Fire and is a common model in other jurisdictions. Implementation planning will take effort as the devil will be in the detail here. Will NEMA own a standing army of fulltime, regionally based professionals in this regard or will it operate a 'reservist army', many of whom may be employed in specialist agencies, that it can call up as required? Is the Australian model of a volunteer disaster relief agency also a useful template?

During recovery, Hawke's Bay has been inundated with representatives of multiple agencies wanting to support the community and Group. The establishment of the Regional Recovery Agency (RRA) has been

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<sup>41</sup> There are 78 local authorities comprising 11 regional councils and 67 territorial authorities (unitary authorities, city and district councils). Additionally, many territorial authorities also have one or more Community Boards.

useful in coordinating these efforts. In the future, a clear nexus between NEMA and the RRA would be helpful to have established in advance. These communities have become wearied, in spite of the Agency's best efforts, by constant demands for engagement with diverse agencies and the multiple community meetings entailed.

#### SUGGESTIONS

57. NEMA should consider developing fly in teams of expert professionals, (with a particular focus on controllers, but also including other experts, such as welfare, engineering, science, and communications) in order that (mostly part time) local CDEM staff can be supported by full time, technical experts. Fly in controllers need a mechanism enabling them to act in the role of CDEM controller in any region.
58. Develop clear protocols and triggers for local controllers to hand over to national 'fly in' controllers as a crisis escalates.
59. Create greater clarity for controllers and first responders about who is in command at what stage of an event and where tasking for supplemental resources (such as volunteers and NZDF) sits.

#### OBSERVATIONS: NEMA'S ASSURANCE ROLE

We have suggested at various points throughout this report the need for NEMA to be the organising brain of the CDEM system and the holder of lessons learned insights that can inform policy, guidance and regulation. This is likely to require more firepower in NEMA's data, intelligence and assurance roles, along with a regular cadence of audit and monitoring activity.

Putting this into effect will also likely require working alongside DPMC and the Office of the Auditor General (OAG) to clarify the respective roles and responsibilities of these agencies.

Monitoring and assurance of particular regional CDEM Groups could also be calibrated to a transparent risk assessment framework, with more intensive support going into those groups that require it.

From this analytical and assurance work should come whole of system learnings that can drive the design of new policies and interventions as required. NEMA may wish to support its assurance teams with an external risk and assurance panel, which could include experts from other jurisdictions and international agencies.

#### OBSERVATIONS: NATIONAL COMMAND SOPS

All of the above would be in service of greater national consistency and compulsion with respect to operating practice, which should be enshrined in national SOPs, as models for regional authorities. It is unfair to expect local bodies to develop such materials in isolation and national level SOPs will help ensure interoperability.

These SOPs must, above all, clarify who is in charge at various stages in an emergency and what the triggers are for escalation and handoff.

#### OBSERVATIONS: NATIONAL EMERGENCY MANAGEMENT WORKFORCE STRATEGY

There is an urgent need for greater professionalisation of the national emergency management workforce to ensure deeper capability, better training and improved retention. As disasters become

## Independent External Review

more frequent and complex, a regionally based, part time, poorly rewarded workforce with little professional development and no career path will not serve us well.

We suggest that NEMA develops a national CDEM workforce strategy to address the matters addressed in this report, such as:

- The recruitment proposition for part time personnel.
- The creation of a professional and portable emergency management workforce that can be surged into regions as required, based on risk. This might include a volunteer and reservist workforce along the lines of the Australian Disaster Relief Agency model. Professional emergency management teams might be based in three main centres for example, and deployed as needed on a 24/7 basis, both domestically and internationally.
- Regional and national career pathways, talent management and professional development.
- Compliance with CIMs training across CDEM groups.
- Design and oversight of regional and national training and exercise curricula, both tabletop and operational scenario exercises; and
- National accreditation for key roles, (such as that of Controller).

### SUGGESTIONS

60. NEMA should consider developing a national CDEM workforce strategy, addressing recruitment, training, remuneration and professional development.
61. NEMA should consider requiring all local authority staff with CIMS functions to receive nationally accredited CIMS training and professional development experiences, with a related system of audit across local authorities.

### OBSERVATIONS: FUNDING MODELS FOR NATIONAL AND REGIONAL EMERGENCY MANAGEMENT

Almost everything we have recommended in this report, at both regional and national levels, comes with a cost. For this reason it was common for respondents to say, in the words of one: *“but why are you bothering? No Government wants to bite the bullet of funding this properly.”*

But this bullet needs to be bitten, if only to ensure that insurance and reinsurance costs, both public and private, remain within acceptable bounds. Specifically, this response shows that Government needs to consider such matters as:

- The optimal balance between taxpayer and ratepayer funded regional CDEM investments.
- The transparency of CDEM levy expenditure at regional level, with a possible need for ringfencing.
- Increases in NEMA and regional council baselines to support these changes; and
- Changed and more transparent advance arrangements for cost reimbursement by those in communities who support response and recovery. It is unacceptable, for example, that the Hastings Aerodrome, local service stations and small convenience stores remain out of pocket for Cyclone Gabrielle costs many months after the event.

NEMA will also need to work with place-based agencies: Kainga Ora, the Ministry of Housing and Urban Development, MBIE, MSD and others to build the resiliency of high deprivation communities that are underinsured, and to engage with uninsurable communities in retreat. As noted earlier, this implies a

greater role for NEMA in operational policy and regulation as well as greater clarity in its relationship with DPMC in these areas.

#### SUGGESTIONS

62. Consider more explicitly ring fencing regional operating funding for civil defence and emergency management so that is not competing with other Council funding priorities. Provide greater public transparency about the use of levies.
63. Utilise insights from the Australian SES model to clarify the training and activation of volunteers, their protection from liability and mechanisms for payment for the use of community resources.
64. Review the CDEM funding model, at both local and central government levels.
65. Require local and central government agencies to partner to explore a range of place-based solutions for uninsurable or underinsured communities.

#### OBSERVATIONS: SERVICE DELIVERY ARRANGEMENTS

As we have discussed, much that went well in this event relied on preexisting relationships, ad hoc innovation and personality-based interventions. This is not a sustainable model for large and complex events. It also mitigated against intelligence capture and created confused communications: between the GECC and the EOCs, with lifeline utilities and between responders and agencies.

We suggest that formalised shared service arrangements (including formalising some of the existing MOUs) need to be developed by TLAs to support a Group wide approach and shared planning and preparedness. Core service delivery arrangements should not have to be developed during an emergency. Key examples at regional level would be templated shared service arrangements with MSD in regard to welfare needs assessments, Volunteer New Zealand for response support, the private sector for contracted services and with marae for CDC support.

We suggest that NEMA also needs to formalise such arrangements. At national level they might relate to NZDF support to logistics and to the roles and responsibilities of surf lifesaving clubs and other critical community responders.

There are some complex matters to navigate here at system level. For example, should all first responder emergency call centres be merged? Should a single regional ECC/IMT involving all agencies be developed at regional hub level?

#### SUGGESTION

66. NEMA should consider developing formalised shared service arrangements and model agreements, including with partner agencies, first responders and lifelines, to strengthen more consistent region wide approaches and clarify roles and accountabilities on a national basis.

## SECTION 12: TRANSITION TO RECOVERY

### OBSERVATIONS: TRANSITION TO RECOVERY

The CDEM Act defines recovery as, “*the co-ordinated efforts and processes used to bring about the immediate, medium-term, and long-term holistic regeneration and enhancement of a community following an emergency*”. Recovery efforts can include:

- The assessment and ongoing monitoring of the needs of a community affected by the emergency.
- The co-ordination and integration of planning, decisions, actions, and resources.
- Measures to support:
  - the regeneration, restoration, and enhancement of communities across the 4 environments (built, natural, social, and economic).
  - the cultural and physical well-being of individuals and their communities.
  - government and non-government organisations and entities working together.
- Measures to enable community participation in recovery planning.
- New measures:
  - to reduce risks from hazards; and
  - to build resilience.

The Hawke’s Bay Joint Committee formally appointed an Interim Recovery Manager for the region on March 13<sup>th</sup> 2023, and formally transitioned from response to recovery at that date. The CDEM Group provided the Interim Recovery Manager with a Transition Report at around the same time. Recovery priorities were identified as:

- Coordination of infrastructure and flood protection repairs (Lifelines and Three Waters).
- Ongoing welfare and accommodation needs.
- Potential managed retreat from vulnerable areas — national policy direction required.
- Ongoing partnership with iwi throughout the governance and delivery phases.
- Economic support (individual and business levels).
- Waste removal and disposal; and
- Community level support and wellbeing.

Following this, a Regional Recovery Agency (RRA) was established with oversight from the Matariki Governance Group, which is the body that oversees the Hawke’s Bay Regional Economic Development Strategy. A permanent Chief Executive was then appointed to the agency.

The RRA has worked with communities, iwi, lifelines and local and central government agencies to develop an extensive recovery plan for the region. The Plan takes a holistic approach to the many dimensions of recovery and has three core principles, as follows:

1. Locally led: recognises that local communities have their own recovery needs and aspirations unique to their local areas that will need to be progressed. In some cases, recovery activities will be led and delivered at the local level by local entities and groups.

2. Regionally coordinated: reflects that while local-level recovery needs and opportunities may differ across communities, there will be areas where recovery aspirations align across the region. Therefore, recovery needs to be regionally coordinated to ensure that support is directed to where it is most needed and to avoid duplication of effort; and
3. Government supported: recognises that the size and impact of Cyclone Gabrielle means that Hawke's Bay cannot fund and implement the recovery activities needed on its own. The Government has committed to supporting Hawke's Bay's recovery from the impacts of Cyclone Gabrielle.<sup>42</sup>

Although some respondents told us they felt the initial pivot to early stage recovery came too soon, most respondents felt the early stage transition to recovery was well handled. The RRA appears to be a sound model from the perspectives of effective governance, community engagement and collaboration with iwi and local stakeholders. The Recovery plan also appears sound, with well-defined short, medium and long term milestones and objectives. It is supported by a detailed communications plan.

One respondent told us that, *"the recovery approach has shown the value in appointing people with local mana and networks who are skilled at navigating local and central government frameworks."*

Another said: *"In the response phase I felt we were not listened to. And there seemed to be this premature pressure to get back to normal. But once the RRA was set up, it felt like communities really did have a voice at the table. In fact, now I've got the opposite complaint. They want too much engagement and it's wearying."*

In contrast, other survey respondents expressed frustration: *"We've been abandoned. No council help. No agencies want to know. They give conflicting advice or they stand around with clipboards and cones and get officious. The insurance is a nightmare. I feel that no one gives a damn."*<sup>43</sup>

However, equally indicative was the respondent from a remote and hard hit community who told us that: *"Those recovery people are just awesome. In the first days it was all communal kai and feeding 70 people every meal, along with supplying essentials like nappies and prescriptions. Over time their emphasis has shifted to supporting us to be self-sufficient and resilient. They've been a bridge to other parts of government, like welfare, health and housing. They've helped so much with insurance and with getting contractors in to do the rebuild work. They are whānau now."*

Recovery staff themselves suggested that there was an early disconnect between the somewhat technocratic approach to recovery reflected in the Transition Plan from the CDEM Group, and the more expansive approach favoured by the Matariki governance group. One said:

*"I hope we keep the learning that the key to successful recovery is appointing the right community leaders who are connected, influential and also listen well. It is not about process. It's about bringing people and the region a shared sense of direction and hope for the future. At the end of the day, leaders have to give the community hope."*

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<sup>42</sup> See <https://www.hawkesbayrecovery.nz/regional-recovery-plan/>

<sup>43</sup> This Review has a short in scope timeframe. Many of these types of comments appear to apply to more recent, later stage recovery experiences, which are out of scope for us.

## APPENDIX ONE: ABBREVIATIONS/TERMS USED IN THIS REPORT

| Abbreviation    | Definition  |
|-----------------|---|
| CDC             | Civil Defence Centre setup to provide welfare support to displaced people   |
| CDEM            | Civil Defence and Emergency Management  |
| CDEM Group      | The CDEM Group structure for the region,  |
| CE              | Chief Executive   |
| CEG             | Coordinating Executives Group   |
| CHB             | Central Hawke's Bay   |
| CIMS            | Coordinated Incident Management System  |
| EMA             | Emergency Mobile Alert  |
| EOC             | Emergency Operations Centre facility from which an IMT will coordinate response   |
| EMAT            | An Emergency Management Assistance Team is a deployable capability or 'fly-in team' to enhance responses to natural disasters and other emergencies |
| FCP             | Forward Control Point   |
| FENZ            | Fire and Emergency New Zealand  |
| GECC            | Group Emergency Coordination Centre   |
| HBCDEM          | Hawke's Bay Civil Defence and Emergency Management  |
| HBCDEM Group    | Hawke's Bay Civil Defence Emergency Management Group,   |
| HBRC            | Hawke's Bay Regional Council  |
| HDC             | Hastings District Council   |
| IFR             | Instrument Flight Rules   |
| IMT             | Incident Management Team, based on CIMS model to operate in an EOC  |
| Joint Committee | The Joint Standing Committee under the local Government Act, 2002   |
| MAR             | NEMA's Monitoring, Alerting and Reporting Centre  |
| NCC             | Napier City Council   |
| NCMC            | National Crisis Management Centre   |
| NEMA            | National Emergency Management Agency  |
| NZDF            | New Zealand Defence Force   |
| PIM             | Public Information Management   |
| RRA             | Regional Recovery Agency  |
| SAR             | Search and Rescue   |
| Sitrep          | Situation Report  |
| TLA             | Territorial Local Authority   |
| USAR            | Urban Search and Rescue   |
| USAID           | United States Agency for International Development  |

## APPENDIX TWO: NATIONAL AND REGIONAL CIVIL DEFENCE AND EMERGENCY MANAGEMENT

### NATIONAL ARRANGEMENTS

NEMA is the New Zealand Government's lead agency for emergency management. It is responsible for providing leadership and support during national, regional and local emergencies.

The decision to establish the National Emergency Management Agency as an autonomous departmental agency hosted by the Department of Prime Minister and Cabinet (DPMC) was part of the Government's response to a Ministerial review into better responses to natural disasters and other emergencies, commissioned after the November 2016 earthquake and tsunami and the 2017 Port Hills fire.

The review's Technical Advisory Group (TAG) found that, although New Zealand's emergency management system was fundamentally sound, several issues needed to be addressed. Its report contained 42 recommendations to improve the system.

NEMA's key functions are as steward, operator and assurer of the national emergency management system. Its website describes these as follows:

*"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 (a new function) we will provide assurance that the emergency management system is fit for purpose."<sup>44</sup>*

NEMA's role is to work across central government and with local government, communities, iwi, science, research and not-for-profit organisations and businesses, to create an emergency management system that is ready and able to provide an effective and integrated response to, and recovery from, emergencies. The purpose is to reduce the impact of emergencies on New Zealand's people, communities, property, critical infrastructure, economy and environment.

In fulfilling its functions, NEMA supports the Director of Civil Defence and Emergency management by:

- Administering all parts of the Civil Defence Emergency Management Act 2002, including:
- Providing advice to government on civil defence emergency management matters
- Identifying hazards and risks.
- Developing, maintaining, and evaluating the effectiveness of the civil defence emergency management strategic framework.
- Ensuring coordination at local, regional, and national levels.
- Promoting civil defence emergency management and deliver public awareness about how to prepare for, and what to do in, an emergency.
- Supporting civil defence emergency management sector capability development, planning and operations, including developing guidelines and standards

<sup>44</sup> See <https://www.civildefence.govt.nz/about/about-nema/>

## Independent External Review

- Monitoring and evaluating the performance of the 16 regional Civil Defence Emergency Management Groups.
- Maintaining and operating the National Crisis Management Centre (NCCM), including the maintenance of a duty team to staff the Centre, and issue warnings and public information; and
- Managing the central government response to, and recovery from, large scale emergencies resulting from geological (earthquakes, volcanic unrest, landslides, tsunami), meteorological (coastal hazards, floods, severe winds, snow) and infrastructure failure.

## ROLE OF LOCAL GOVERNMENT

In New Zealand, Civil Defence Emergency Management (CDEM) Groups are the lead at the local/regional level.

All local authorities, emergency services and lifeline utilities have emergency management responsibilities under the Civil Defence and Emergency Management Act 2002 (CDEM Act) and other related legislation.

The formal structure for civil defence emergency management is provided by the CDEM Act, which among other things:

- Sets out the powers and obligations of the Minister for Emergency Management
- Establishes three statutory positions and sets out their roles, functions, and powers:
  - Director of Civil Defence Emergency Management
  - National Controller
  - National Recovery Manager
- Requires the establishment of CDEM Groups
- Provides for Group Controllers (who have specific powers during states of national and local emergencies); and
- Provides for Group Recovery Managers (who have responsibilities and some powers in managing the recovery after an emergency).

An important feature of the emergency management system is the role local government undertakes through CDEM Groups. There are sixteen CDEM Groups across New Zealand, all established as joint committees of local authorities under the CDEM Act.

Councils, emergency services, local utility providers and welfare agencies are responsible for working in partnership to implement the '4 Rs' of civil defence: Reduction, Readiness, Response and Recovery.

## COORDINATED INCIDENT MANAGEMENT SYSTEM (CIMS)

CIMS is New Zealand's official framework to achieve effective coordinated incident management across responding agencies. It has been used as the methodology to underpin emergency responses since 1998. Akin to the United States Incident Command System (ICS), CIMS provides local bodies with guidance and a framework for response and incident management. As such, CIMS constitutes the best practice model for response to this event.

## Independent External Review

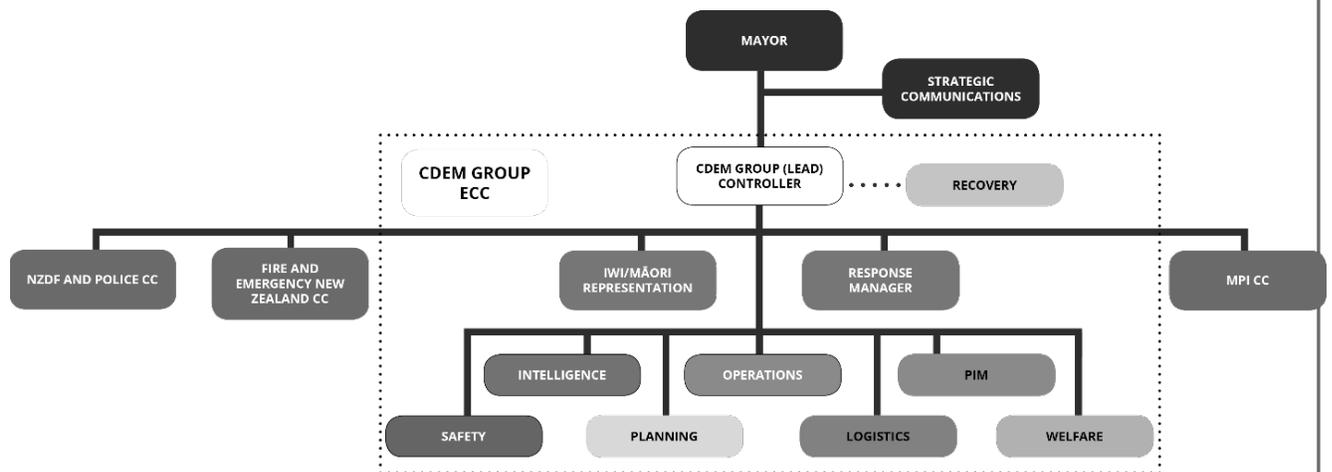
The latest (3rd) edition of CIMS has been applied since July 2020. It incorporates Government decisions announced in August 2018 relating to the Ministerial review of 2017.

The purpose of the CIMS is to provide:

- a framework of consistent principles, processes, and common language that is modular and scalable; and
- a framework for organisations to develop their own CIMS-aligned processes and procedures.

The core CIMS functions are control, intelligence, planning, operations, logistics, PIM (public information management), welfare and recovery (including welfare). There should be a functional lead for each of these functions.

A diagram reflecting the relevant control structure for a local/regional response is set out in the CIMS as follows:



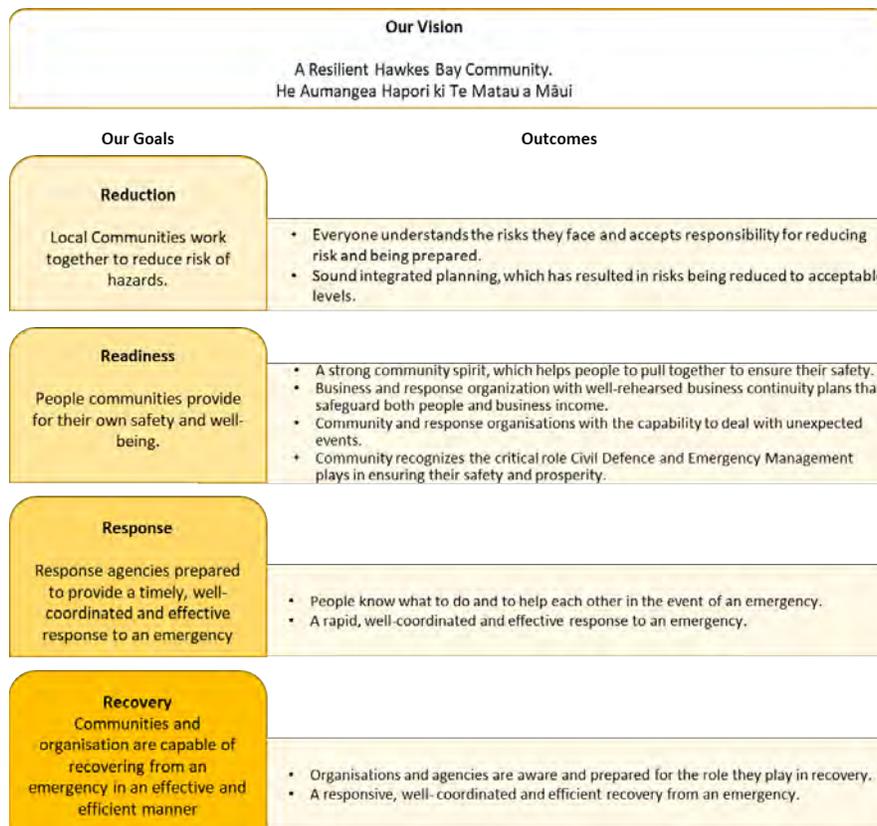
## HAWKE'S BAY REGIONAL STRUCTURES

### CDEM GROUP PLAN

The CDEM Group Plan for Hawke's Bay covers the areas contained within the Central Hawke's Bay District Council, Napier City Council, Hastings District Council and Wairoa District Council.

The Group Plan vision and goals are as shown in the diagram below, along with the outcomes to achieve the vision.

## Independent External Review



The Coordinating Executive Group (CEG) is the management agency of Hawke's Bay Civil Defence Joint Committee. The CEG comprises the following membership:

| Member                                 | Member type | Representative               |
|--|-------------|------------------------------|
| Central Hawke's Bay District Council   | Statutory   | Chief Executive Officer      |
| Fire Service Eastern Region            | Statutory   | Regional Commander           |
| Hastings District Council              | Statutory   | Chief Executive Officer      |
| Hawke's Bay Regional Council           | Statutory   | Chief Executive Officer      |
| Napier City Council                    | Statutory   | Chief Executive Officer      |
| Police Eastern District                | Statutory   | Hawke's Bay Police Commander |
| St John Ambulance                      | Co-opted    | District Operations Manager  |
| Wairoa District Council                | Statutory   | Chief Executive Officer      |
| CDEM Group controllers                 | Co-opted    | Group Controllers            |
| Group Recovery Manager                 | Co-opted    |                              |
| Welfare Coordination Group             | Co-opted    | Chair                        |
| Medical Officer of Health              | Co-opted    |                              |
| Hawke's Bay Engineering Lifeline Group | Co-opted    | Chair                        |
| Regional Commissioner MSD              | Co-opted    |                              |

#### HAWKE'S BAY CIVIL DEFENCE

The Hawke's Bay Civil Defence Emergency Management Group Office (Hawke's Bay Emergency Management) supports the functions of the CDEM Group. It works in partnership with emergency services and other organisations to ensure coordination of civil defence and emergency management within the region.

Hawke's Bay Regional Council is the Administering Authority for the CDEM Group and is responsible for the provision of administrative and related services that may from time to time be required by the Group. This includes hosting Hawke's Bay Emergency Management and employing its staff. However, Hawke's Bay Emergency Management remains operationally responsible to the CDEM Group, through the CDEM Joint Committee and the Coordinating Executive Group (CEG).

The CDEM team is quite large by national standards, with notionally around 16 staff in dedicated, full time emergency management positions. However Central Hawke's Bay and Wairoa have no CDEM staff, and rely on the GECC to provide support, as part of the 2018 centralisation of regional CDEM Group structures and staffing. The GECC is itself supplemented, during events, by Council staff, trained in the CIMS framework, who undertake these roles in addition to their full-time positions.

This local system, nested within the national CDEM system, provides the overall context for the comments and suggestions made in this report.

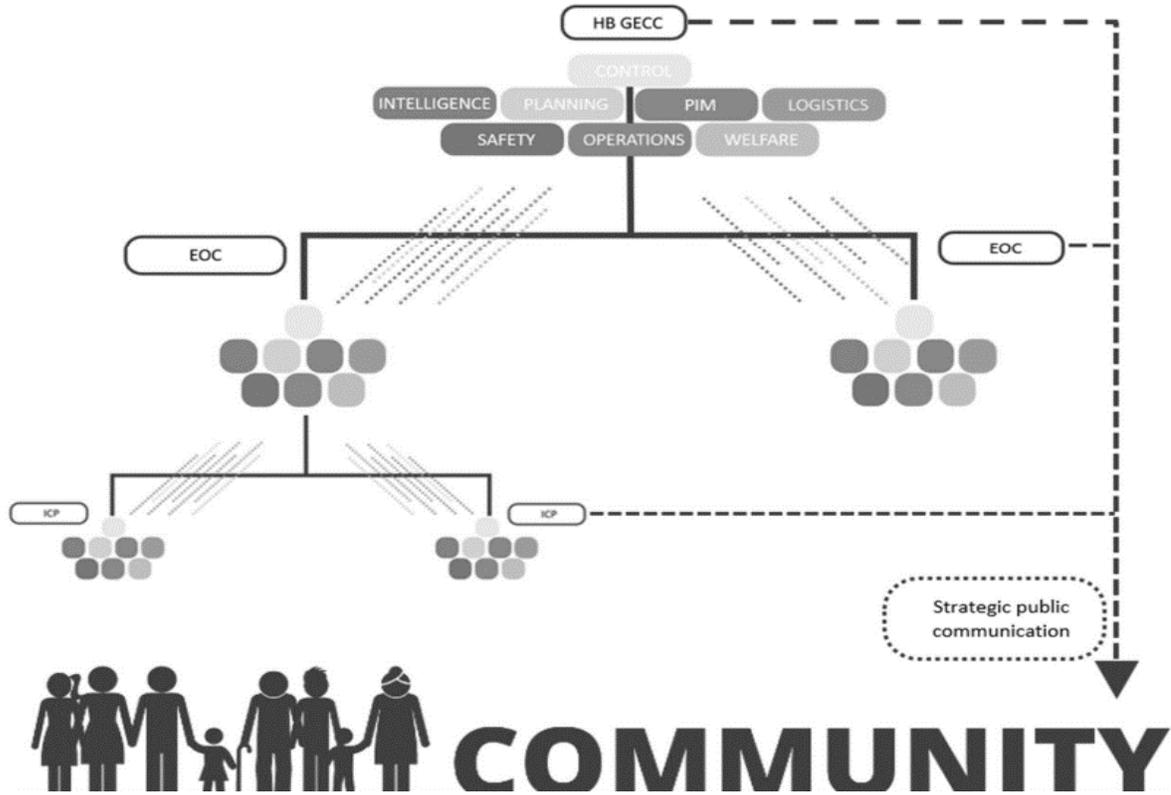
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#### THE ROLE OF MAYORS AND HAWKES BAY REGIONAL COUNCIL CHAIR

Mayors have formal powers under the CDEM Act to issue states of local emergency for their respective districts and cities. These powers can only be delegated in the Mayors' absence.

Additionally, the Group appoints one of its members to be empowered to declare a state of local emergency for the Group area (that is, the region). This appointment is held by the Chairperson of the CDEM group, who is also the Chairperson of the HBRC.

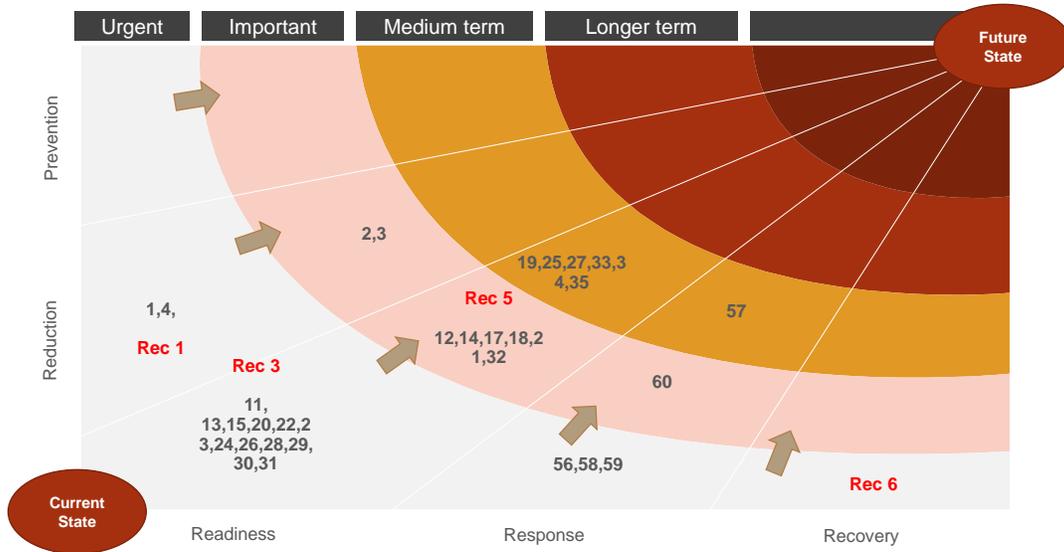
The next graphic shows the CIMS functions within Hawke's Bay GECC and the communications lines expected during emergency management response, with public information coordinated and disseminated from the GECC.



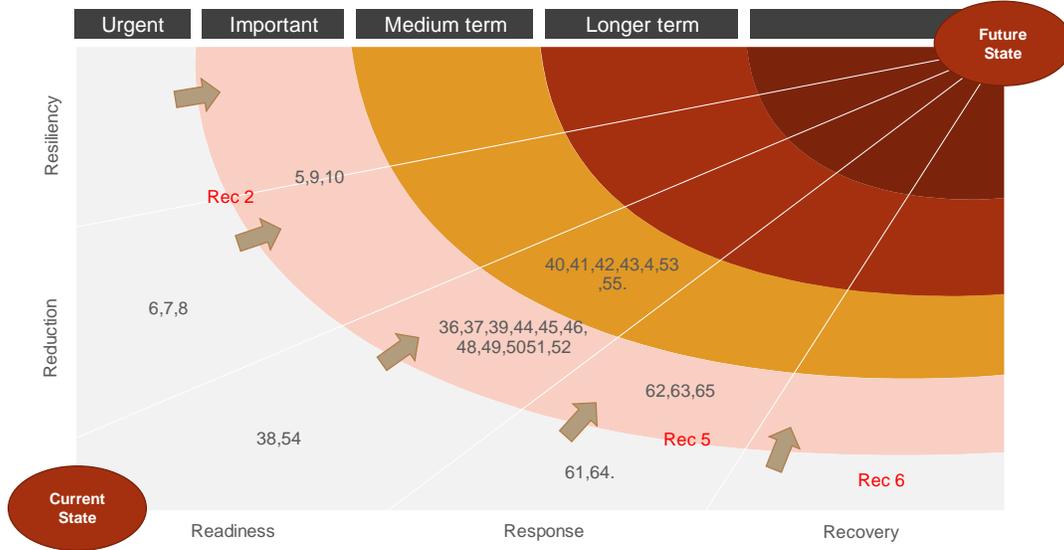
As the diagram suggests, local territorial authority EOCs, each with their own CIMS functions, sit under the GECC, with Incident Command bodies under those. Upwards flows (situation reporting and intelligence) are fed by first responders and EOCs to the GECC and downwards (command, tasking, coordination, public information and intelligence products) flows are driven by the GECC during the response and recovery phases of an emergency.

APPENDIX THREE: IMPLEMENTATION AND PRIORITISATION

Implementation map of recs/suggestions by number: regional



Implementation map by recs/suggestions by number: national



APPENDIX FOUR: STAKEHOLDERS INTERVIEWED FOR THIS REVIEW

|  |   |
|--|---|
| <ul style="list-style-type: none"><li>• Chair of CDEM Joint Standing Committee</li><li>• CDEM Joint Standing Committee</li><li>• Coordinating Executive Group Chair</li><li>• Coordinating Executive members</li><li>• Territorial Local Authority Mayors/Chairs/elected members</li><li>• Territorial Local Authority Chief Executives</li><li>• PSGEs</li><li>• Taiwhenua representatives</li><li>• Mana whenua</li><li>• Group Controllers</li><li>• GECC response managers</li><li>• Local controllers</li><li>• EOC response managers</li><li>• CIMs IMT managers</li><li>• NZ Police</li><li>• FENZ</li><li>• St John</li><li>• Te Whatu Ora</li><li>• NZDF personnel</li><li>• MET Service</li><li>• MSD Regional Commissioner</li><li>• Ministry of Education</li><li>• Te Puni Kokiri staff</li><li>• MBIE staff</li><li>• Surf lifesaving NZ</li></ul> | <ul style="list-style-type: none"><li>• CIMs functional leads</li><li>• Group and other PIMs</li><li>• Group welfare manager</li><li>• Lifelines agency representatives</li><li>• Local iwi representatives</li><li>• Local marae representatives</li><li>• Other agency liaison officers</li><li>• Māori Wardens</li><li>• Civil defence staff working the GECC and EOCs</li><li>• Bridge Pa Aerodrome staff</li><li>• Napier airport representatives</li><li>• NEMA staff</li><li>• Volunteer organisations</li><li>• Recovery leads</li><li>• Community focus group: Esk Valley</li><li>• Community focus group Pakowhai</li><li>• Community focus group Central Hawke's Bay</li><li>• Community focus group Porangahau</li><li>• Marae visits</li></ul> |
|--|---|

## APPENDIX FIVE: EVENT TIMELINE, FEBRUARY 2023 8-16, 2023

Cyclone Gabrielle began affecting Hawke's Bay on February 13<sup>th</sup>, 2023, and had a devastating effect on the region. For only the third time in New Zealand's history, a National State of Emergency was declared on the 14<sup>th</sup> of February 2023.

The timeline below provides an account of the key milestones, decisions and coordination efforts of Hawke's Bay Civil Defence Emergency Management, and their emergency management partners, in the Readiness, Response and immediate Recovery phases (between 8-17 February 2023). The Recovery phase has continued well beyond the scope of this timeline.

The major damage caused by the weather event happened on Monday 13<sup>th</sup> to Tuesday 14<sup>th</sup> February 2023. For this reason, the timeline below is concentrated in particular detail on that 48-hour period.

This timeline has been composed based on various agencies' own post event timelines, documents released to the review by the relevant TLAs and the Regional Council, (including IMT recordings, personal logbook notes, internal emails etc) and notes and documents provided by interview respondents. We have made every effort to corroborate each entry through multiple sources, but the records and recollections of respondents are very difficult to reconcile in some cases.

The timeline should thus be read with caveats. For example, time stamps on emails, calls, EMAs and media announcements sometimes differ for the same materials, given that internet and other outages impacted some actors. The material here is also skewed in that it reflects more Hastings and CDEM Group records than those of the other regional TLAs and their local EOCs. This is simply because more detailed records were kept by the former.

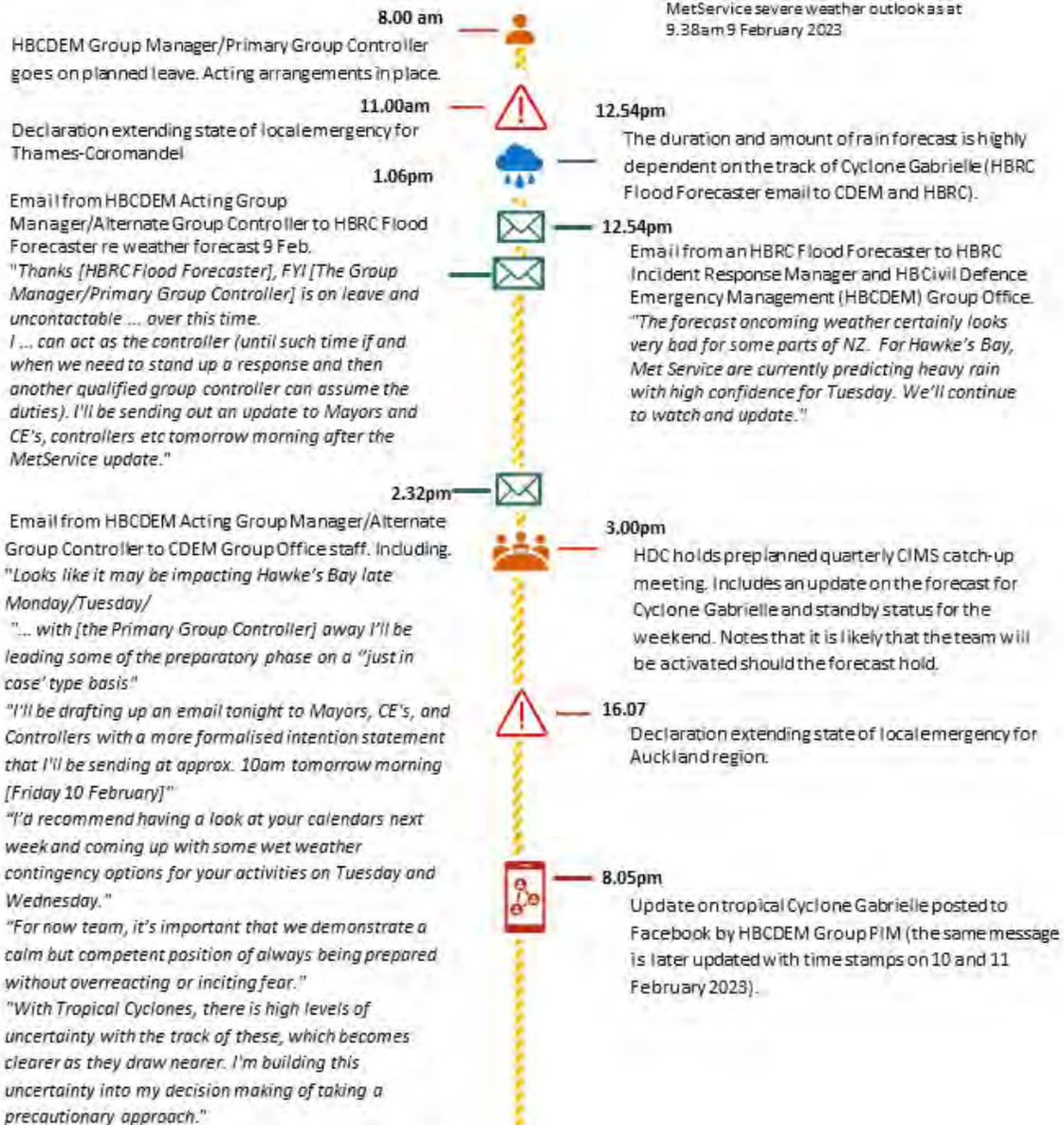
Thursday 9 February 2023

Incident management

- States of local emergency in place in Auckland and Thames-Coromandel Peninsula as a result of earlier floods are extended in anticipation of Gabrielle's arrival.
- FENZ begins monitoring Cyclone and begins updates to Group Managers and brigade networks.
- Police monitoring Cyclone.
- MetService issues a heavy rain forecast for 14 February with high confidence.



MetService severe weather outlook as at 9:38am 9 February 2023



Friday 10 February 2023

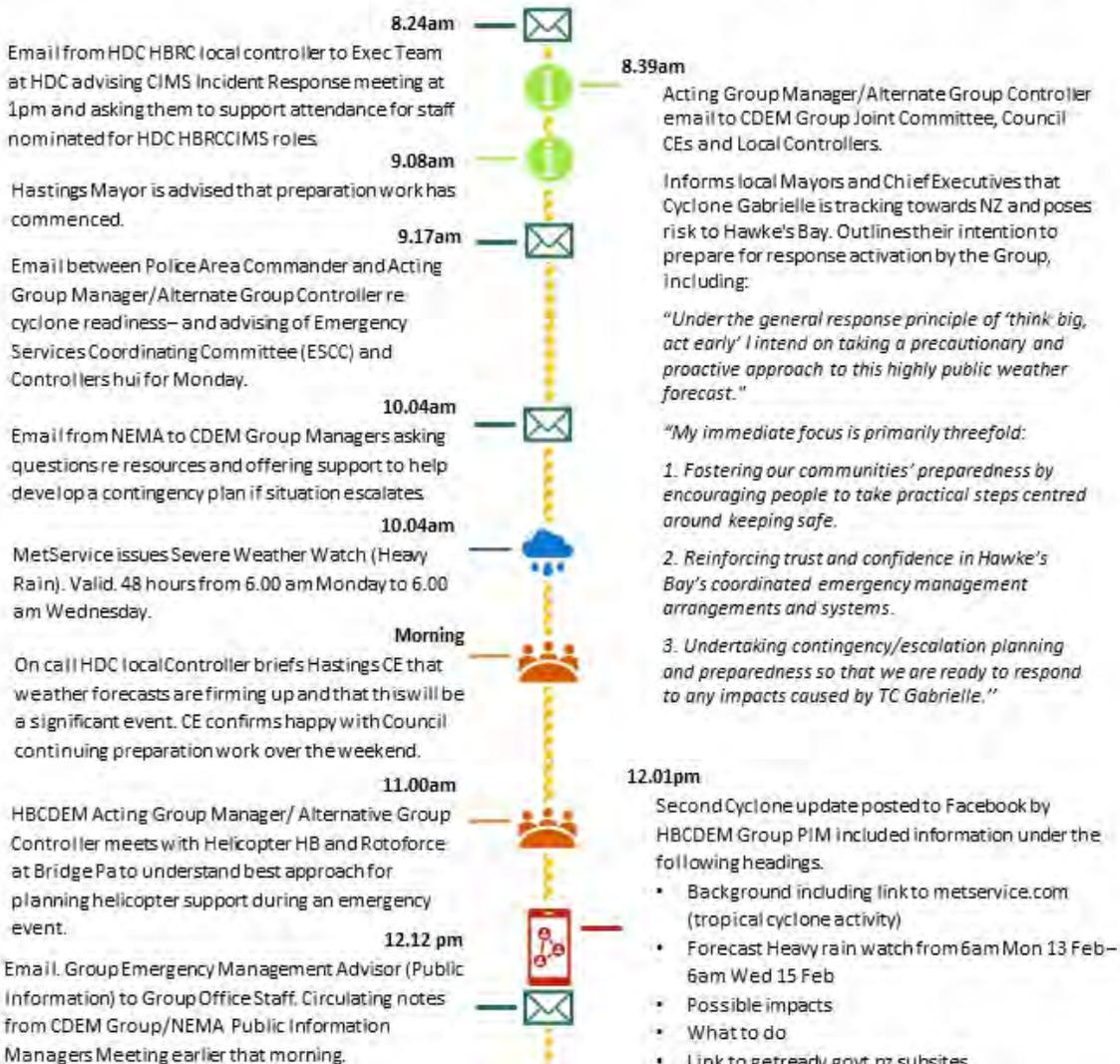


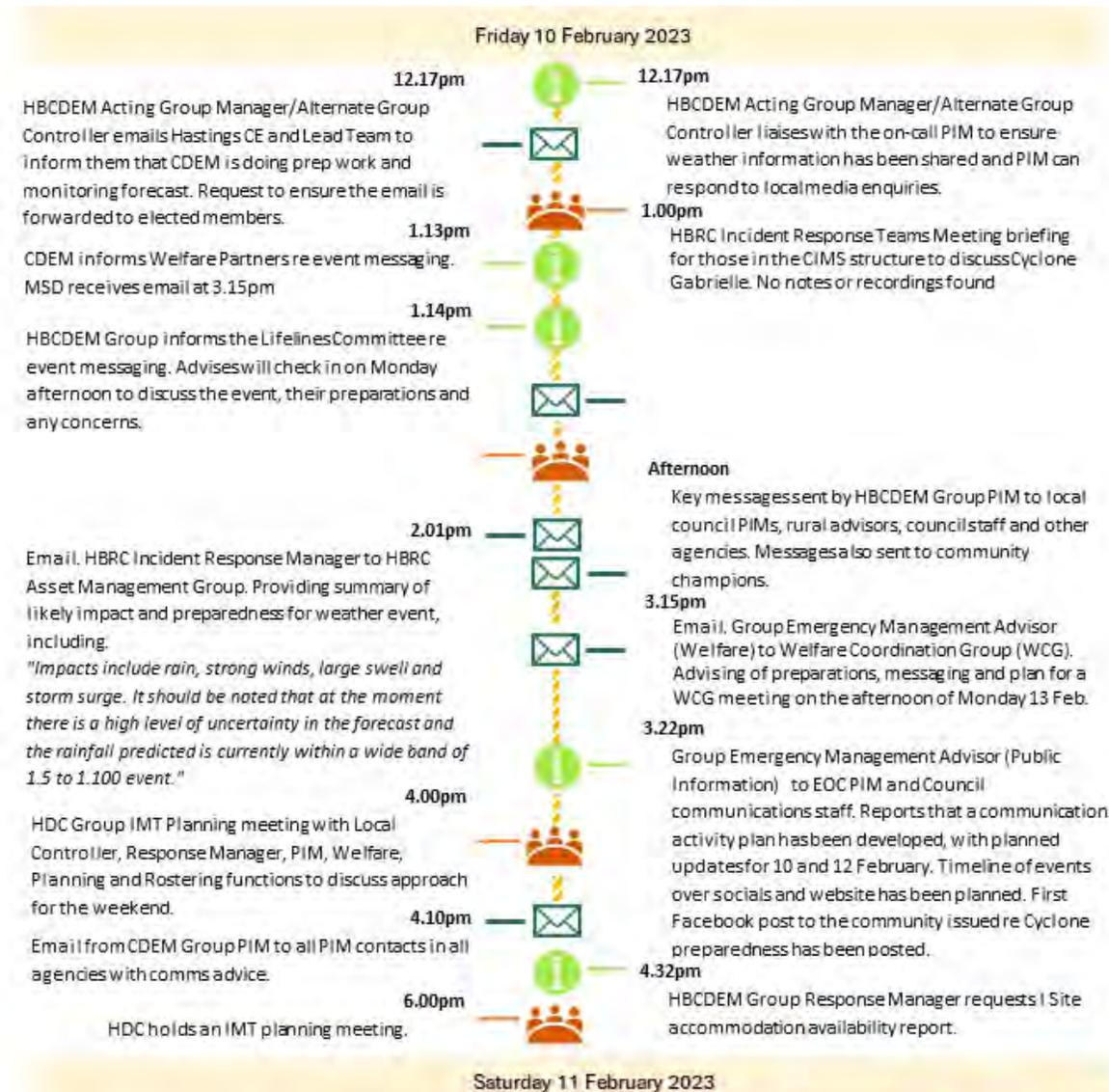
MetService severe weather outlook as at 10.46am 10 February 2023



Incident management

- FENZ moves to twice daily network briefings.
- Police stands up its IMT and begins coordination with CDEM groups. Eastern District command centre moved to 24/7 status. Police MOC (centralised command in support of the local Police District) being prepared.
- Police commence moving staff, 4WD vehicles and generators to key locations

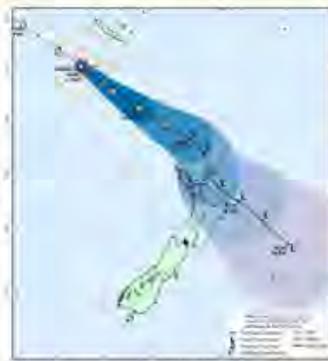




**Saturday 11 February 2023**

**Incident management**

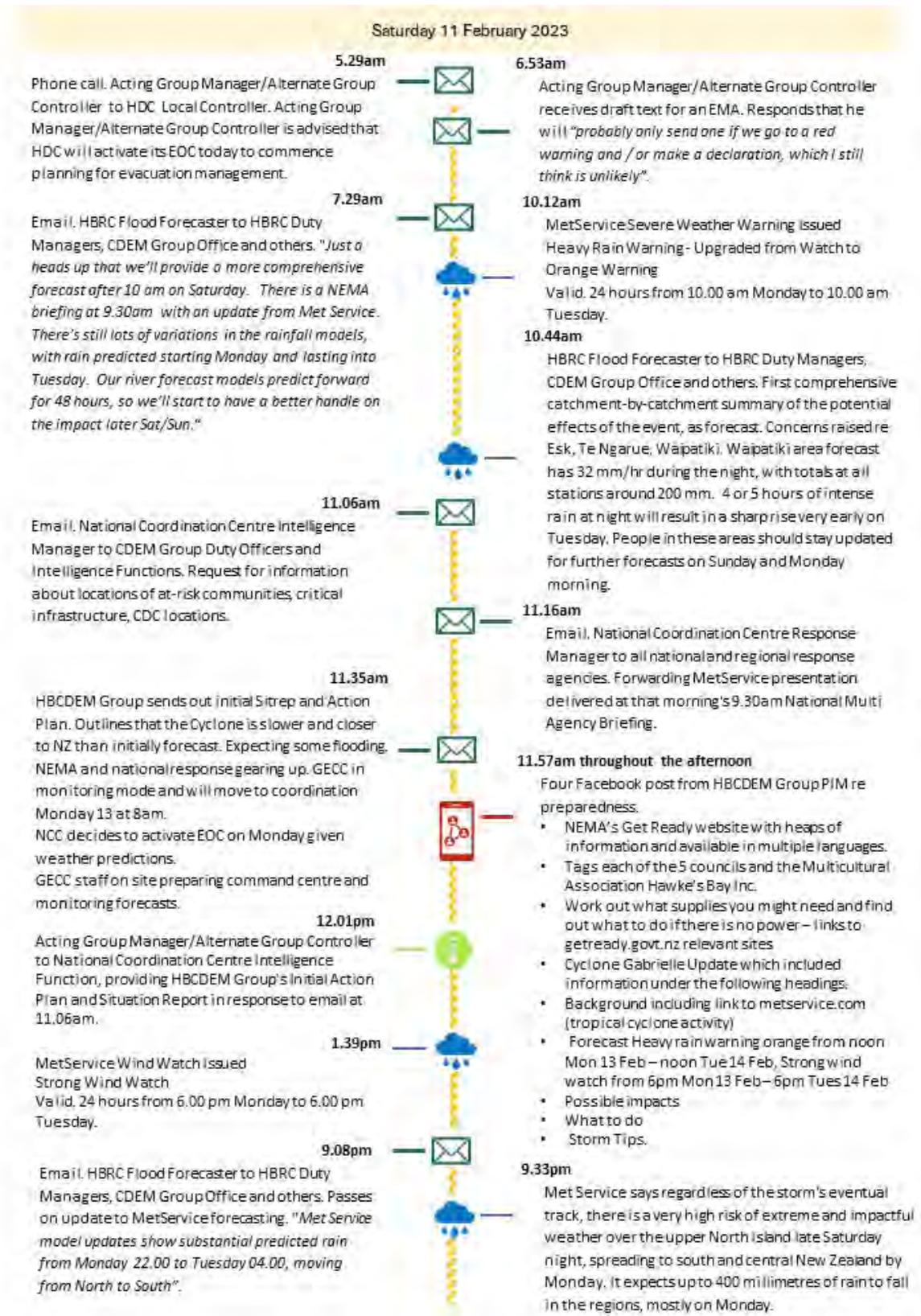
- FENZ Area Commander for Hawke's Bay has advised no additional resources were deployed into Hawke's Bay prior to 13 Feb. However, they did internally move resources within the Hawke's Bay Area – primarily to Waioira
- Additional St Johns staff deployed from Gisborne.
- HBRC Flood forecaster sends email to CD controllers stressing that communities should "take appropriate action".



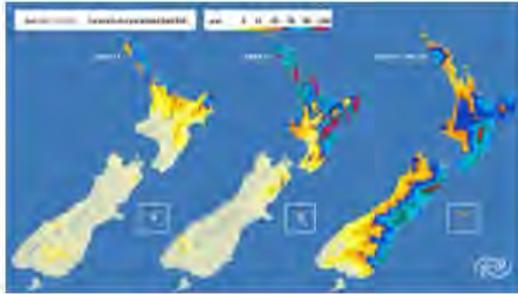
MetService Forecast Cyclone Track Map as at 1.32am 11 February 2023



MetService Severe Weather Watches and Warnings issued 10.12am 11 February 2023



Sunday 12 February 2023



MetService 3-Day Forecast Accumulated Rainfall as at Sunday Feb 12 2023



MetService Severe Weather Watches and Warnings Update issued 9.32pm 12 February 2023

Incident management

- FENZ sets up air desk.
- FENZ predeploys staff to Wairoa.



MetService Forecast Cyclone Track Map as at 8.05am 12 February 2023



MetService Severe Weather Watches and Warnings issued 10.06am 12 February 2023

HBRC Flood Forecaster to HBRC Incident Response Manager and Acting Group Manager/Alternate Group Controller and another Alternate Group Controller. Sends out a short catchment-by-catchment update of the potential effects of the event, as forecast.

*"Just a heads up that if Met Service forecast stays as it is, this will be a substantial event, arriving earlier than previous predictions. Very briefly as a starting point.*

*Heavy rain starting 1pm Monday, continuing to noon Tuesday. 250 – 300 mm in ranges, 100-150 mm on plains*

*Wairoa – 5yr to 10yr at river mouth. Way more rain up above Waikaremoana – Trumper safety, Tuhoi notifications. Rain mainly in Western catchment.*

*Waipatiki to Esk – +50 year rainfall. Likely require Esk holiday park evacuation. Check if anyone in Hukarere Girls School Heretaunga Plains – substantial surface ponding likely.*

*Ngaruroro/Tutaekuri – High risk at places like Mangaone/Rissington, Okawa/Shanley road, Maraekakaho, and any small stream with short time of concentration.*

*Worst case for NG/TK up to 50 year on Tuesday. Concern for Hohepa at river mouth. What advance time do they need for evacuation?*

*UTT – 50 to 100 year in main rivers, including down to Red Bridge. Still too early to tell for Red Bridge.*

*Southern Coast – no significant issues.*

*Bearing in mind that no rain has fallen here yet, but it is raining in Auckland/Coromandel.*

*This could change substantially if Met Service alter their prediction."*

8.52am



7.00am

HBCDEM Group Controller calls meeting for 10.30am of district leadership committee, Emergency Services Coordinating Committee, regional controllers, CEs, Police, St John, MSD, HBDHB, NEMA, FENZ.

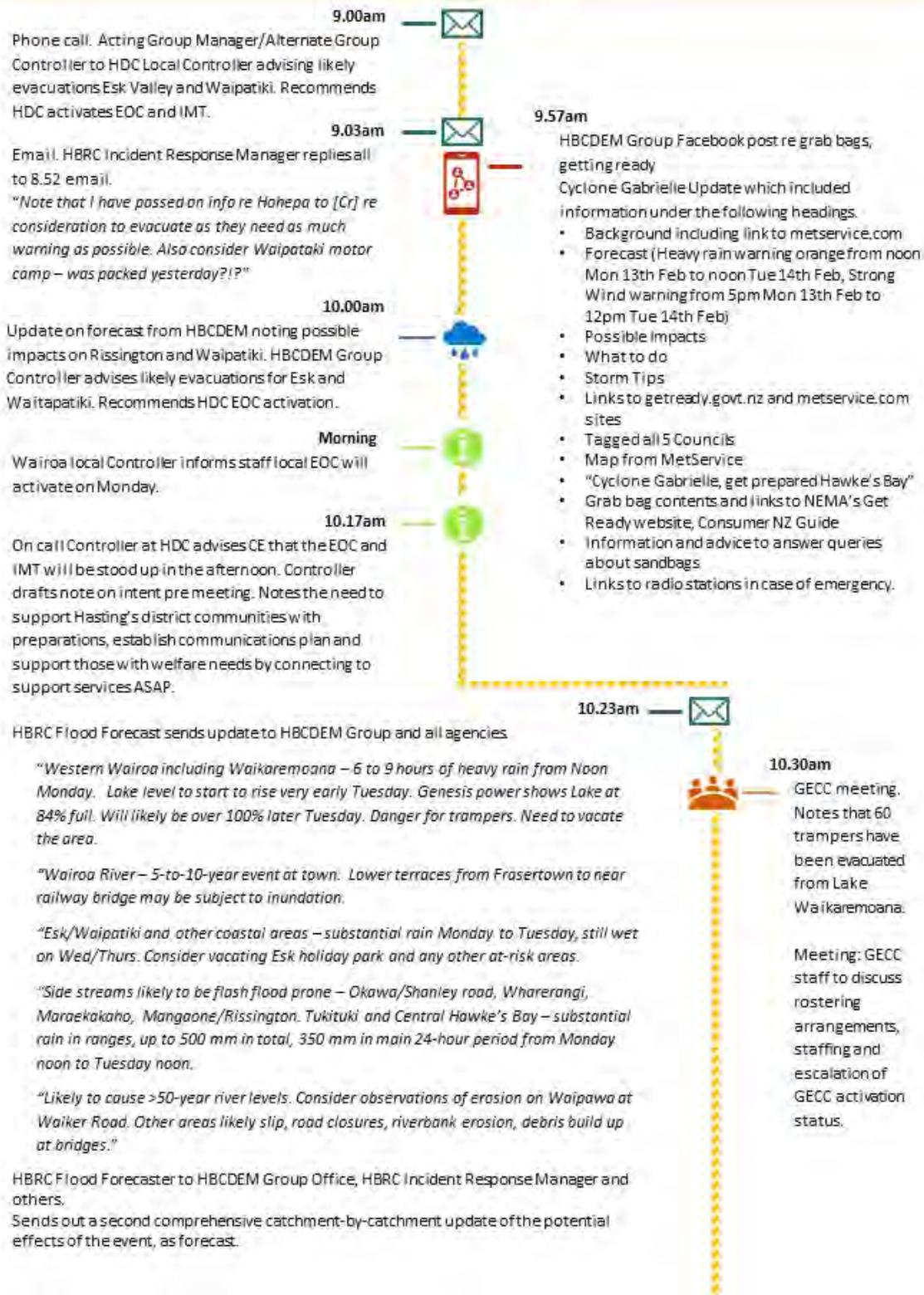


8.59am

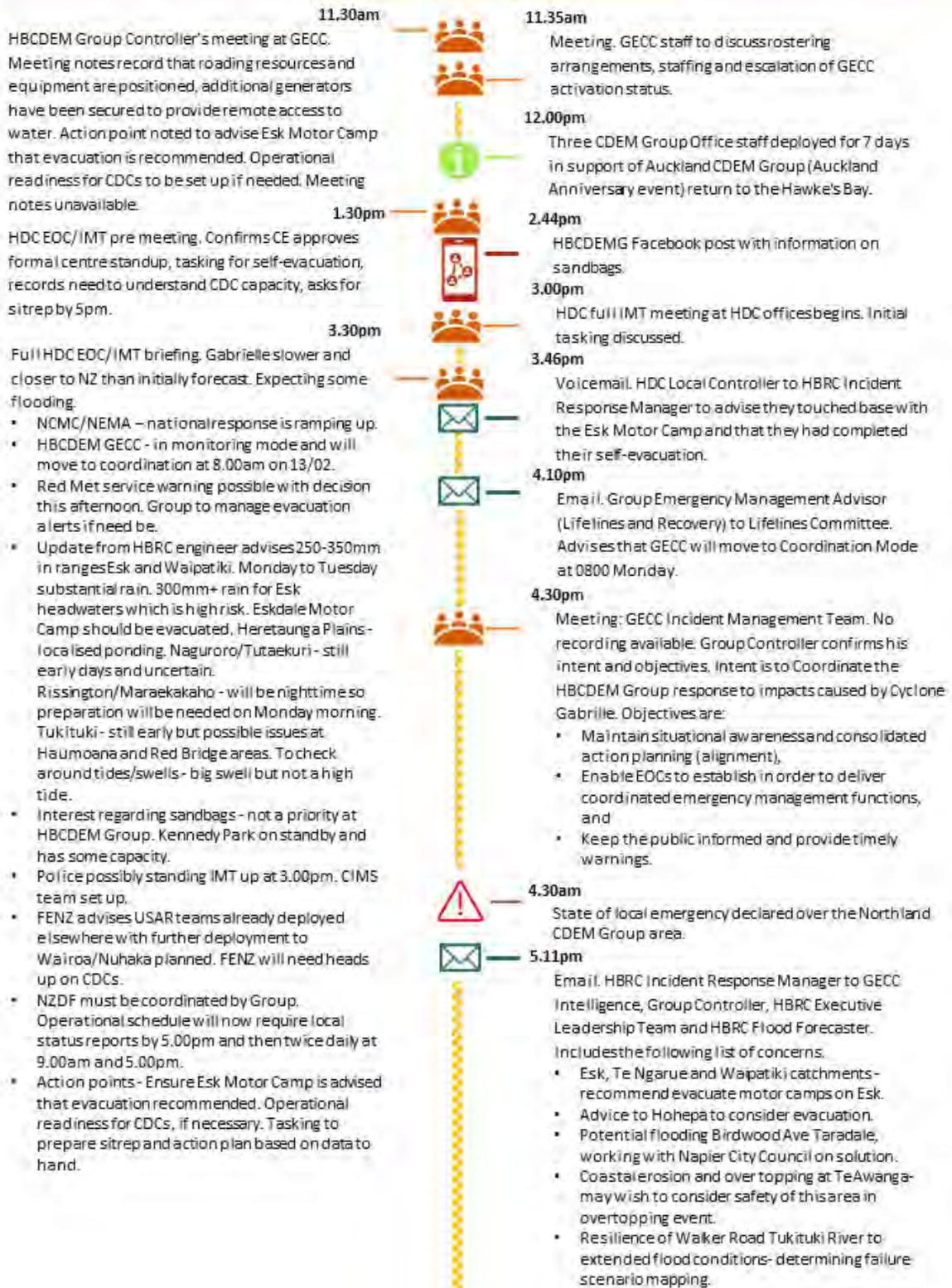
Email. Acting Group Manager/Alternate Group Controller replies all to 8.52 email.

*"My initial intention is to keep Emergency Coordination Centre and Emergency Operations Centres at monitoring today with an escalation to coordinating tomorrow."*

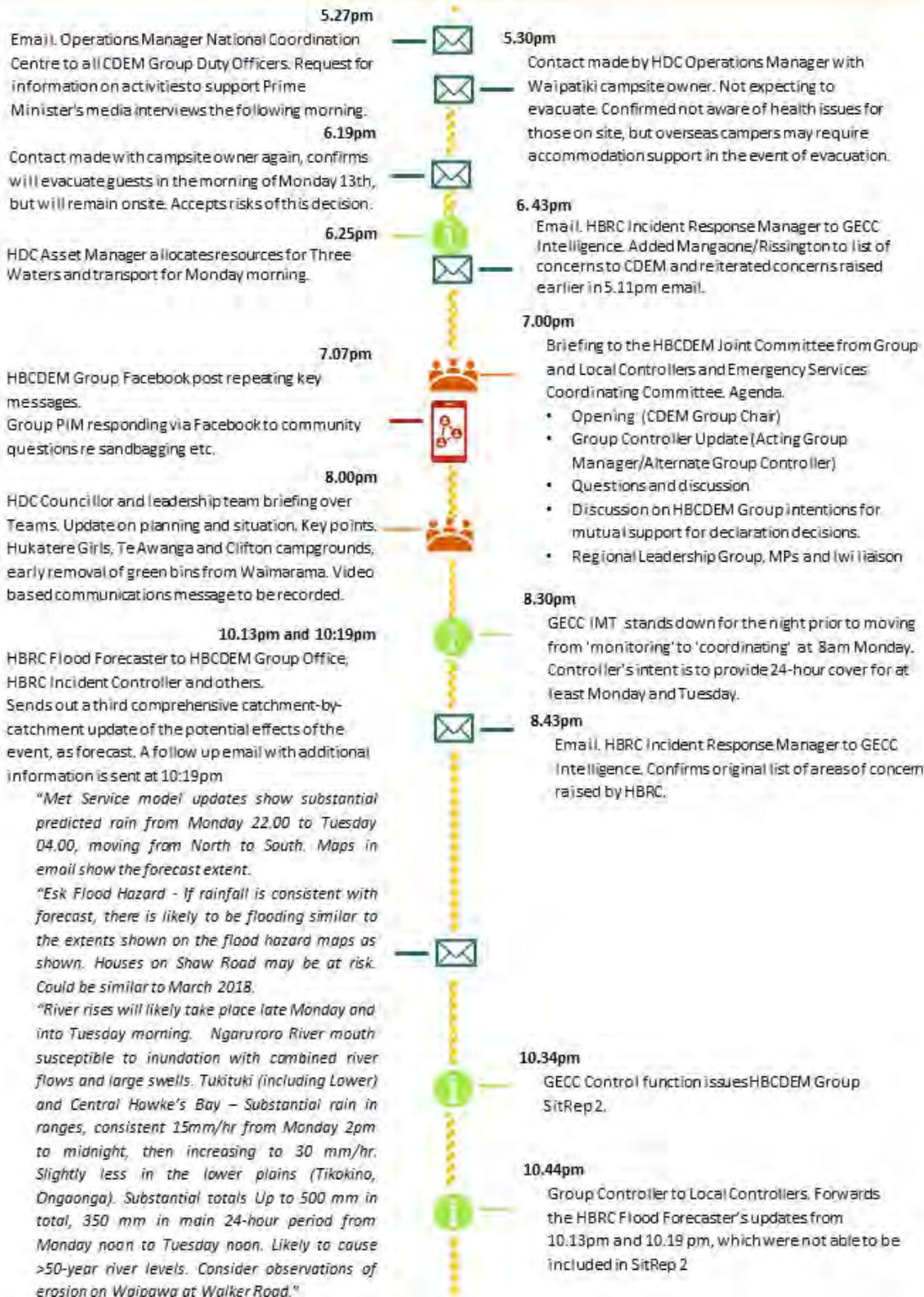
Sunday 12 February 2023



Sunday 12 February 2023



Sunday 12 February 2023



Monday 13 February 2023

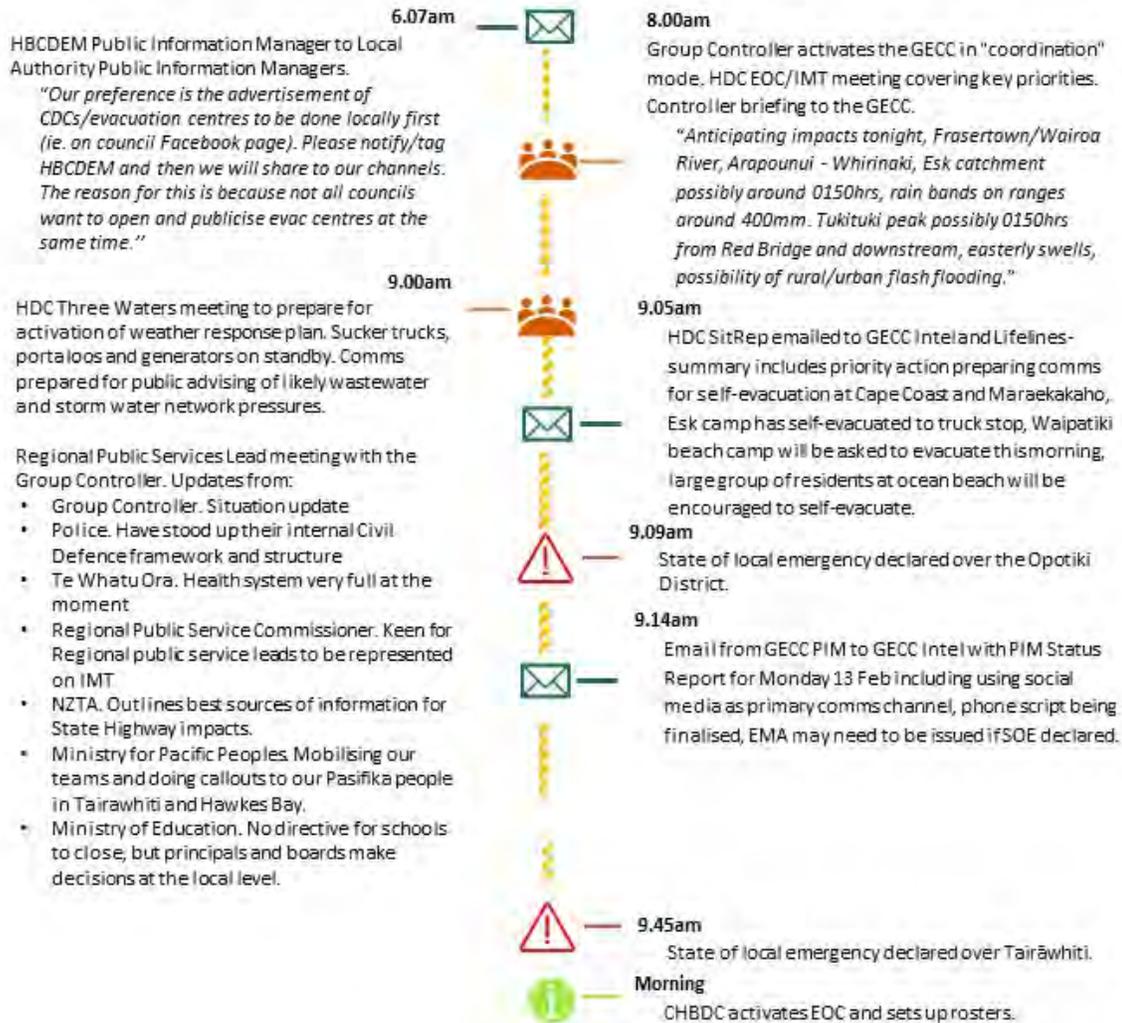


MetService Severe Weather Watches and Warnings Update issued 10.15am 13 February 2023

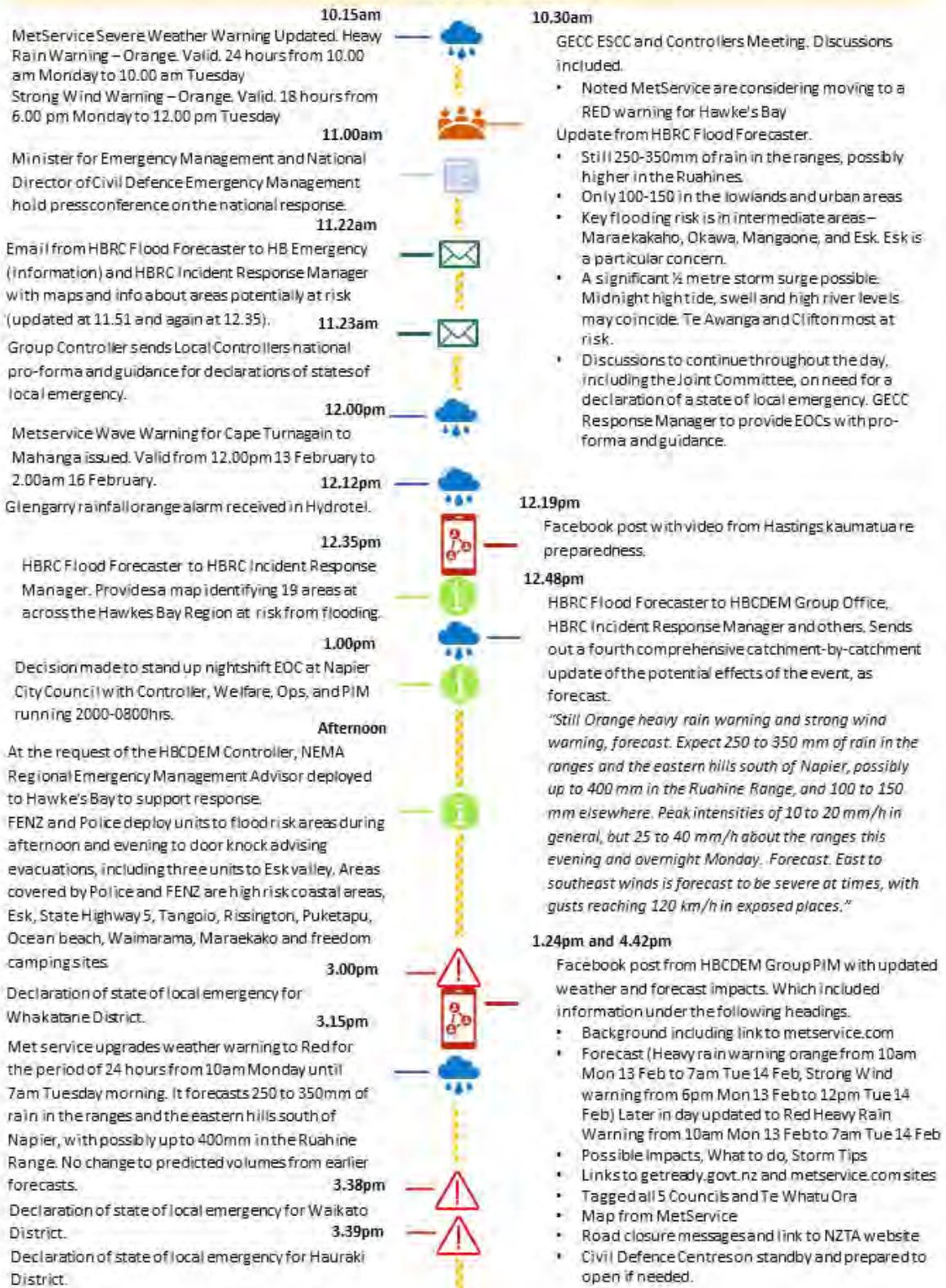
MetService Severe Weather Watches and Warnings Update issued 3.15pm 13 February 2023

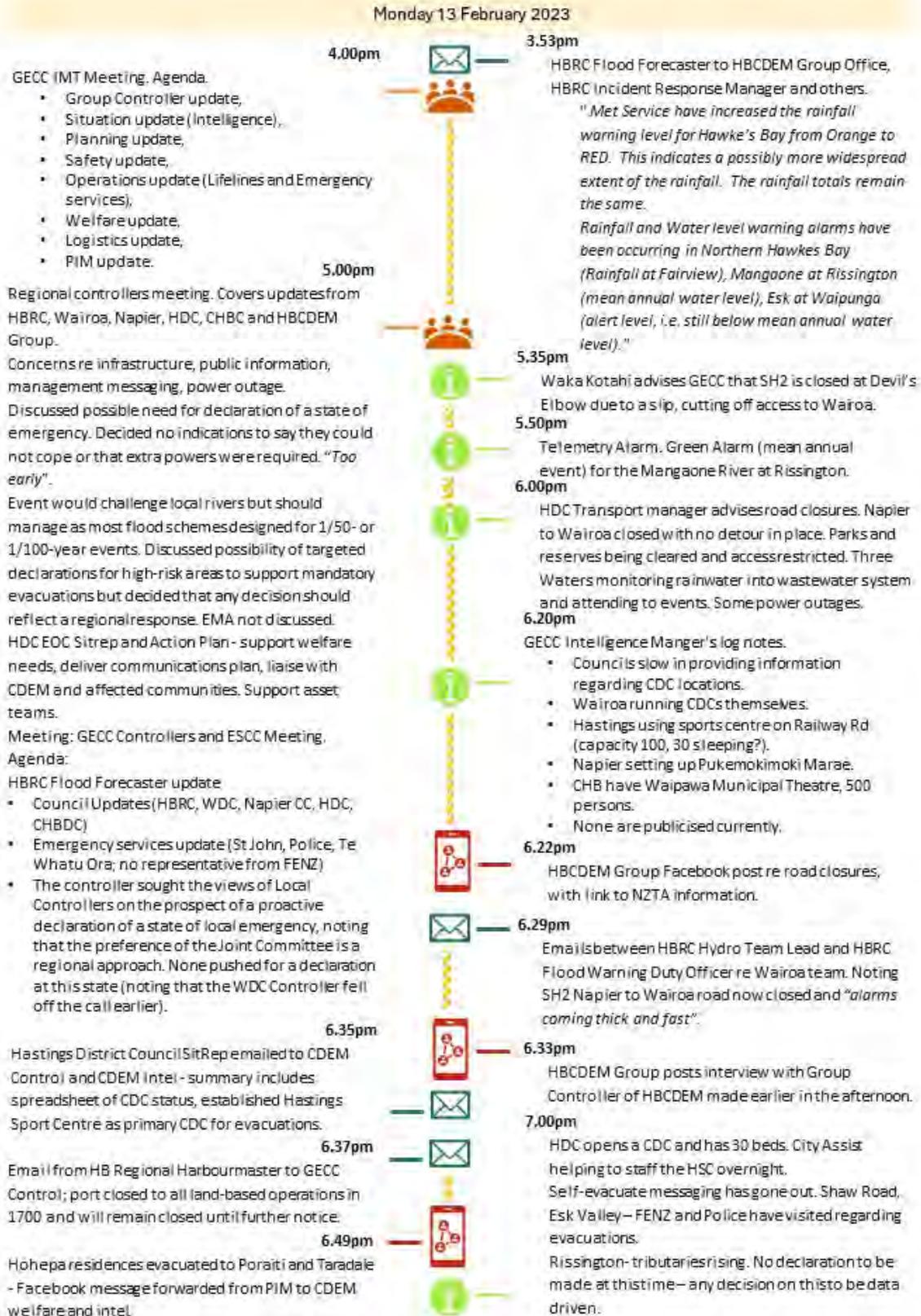
Incident management

- 18 heavy rain and strong wind warnings and watches issued by Met Service across the North Island including Auckland, Northland, Coromandel, Bay of Plenty, Gisborne and Hawke's Bay.
- Many schools across the North Island are closed and some Air NZ flights cancelled.

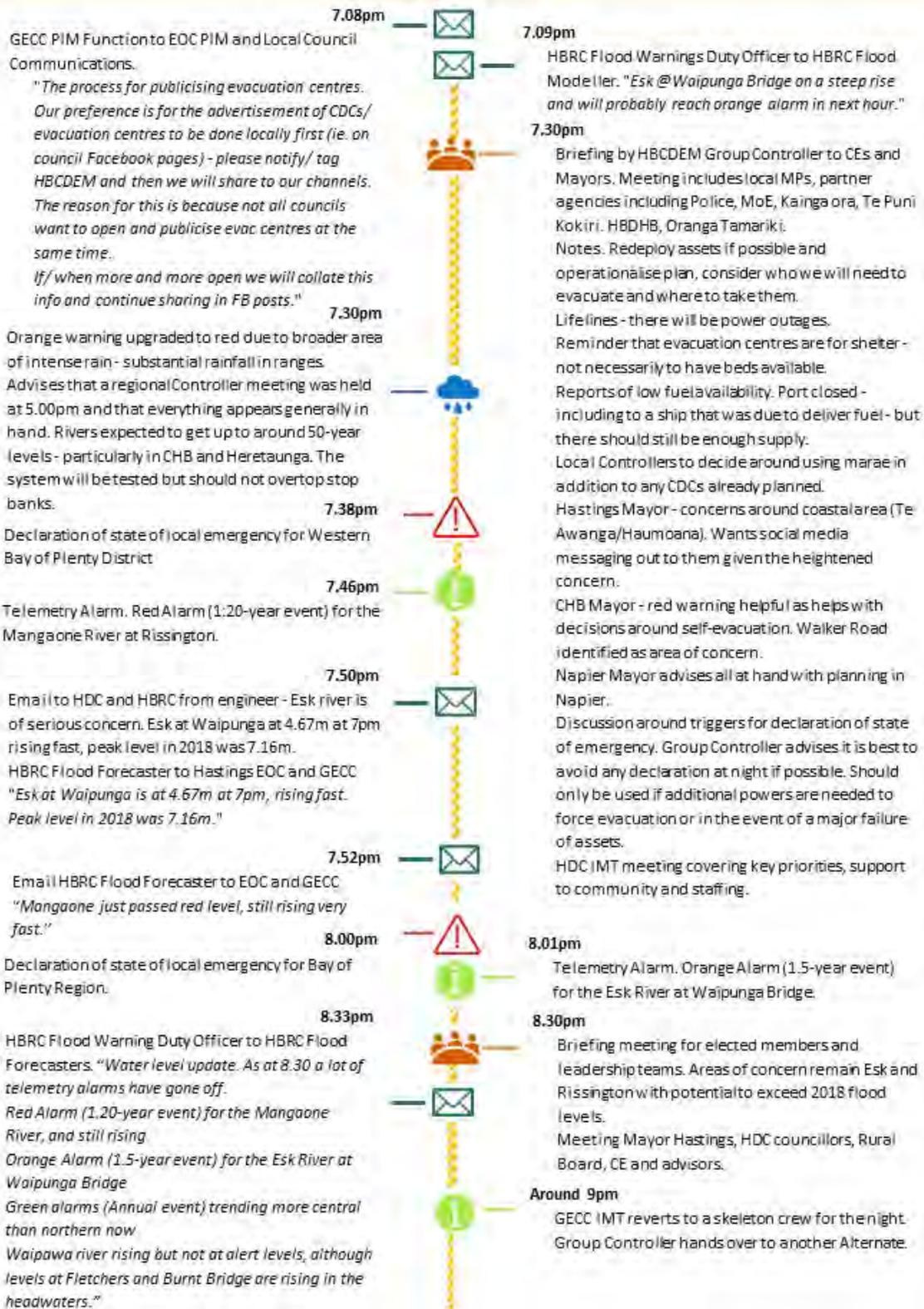


Monday 13 February 2023

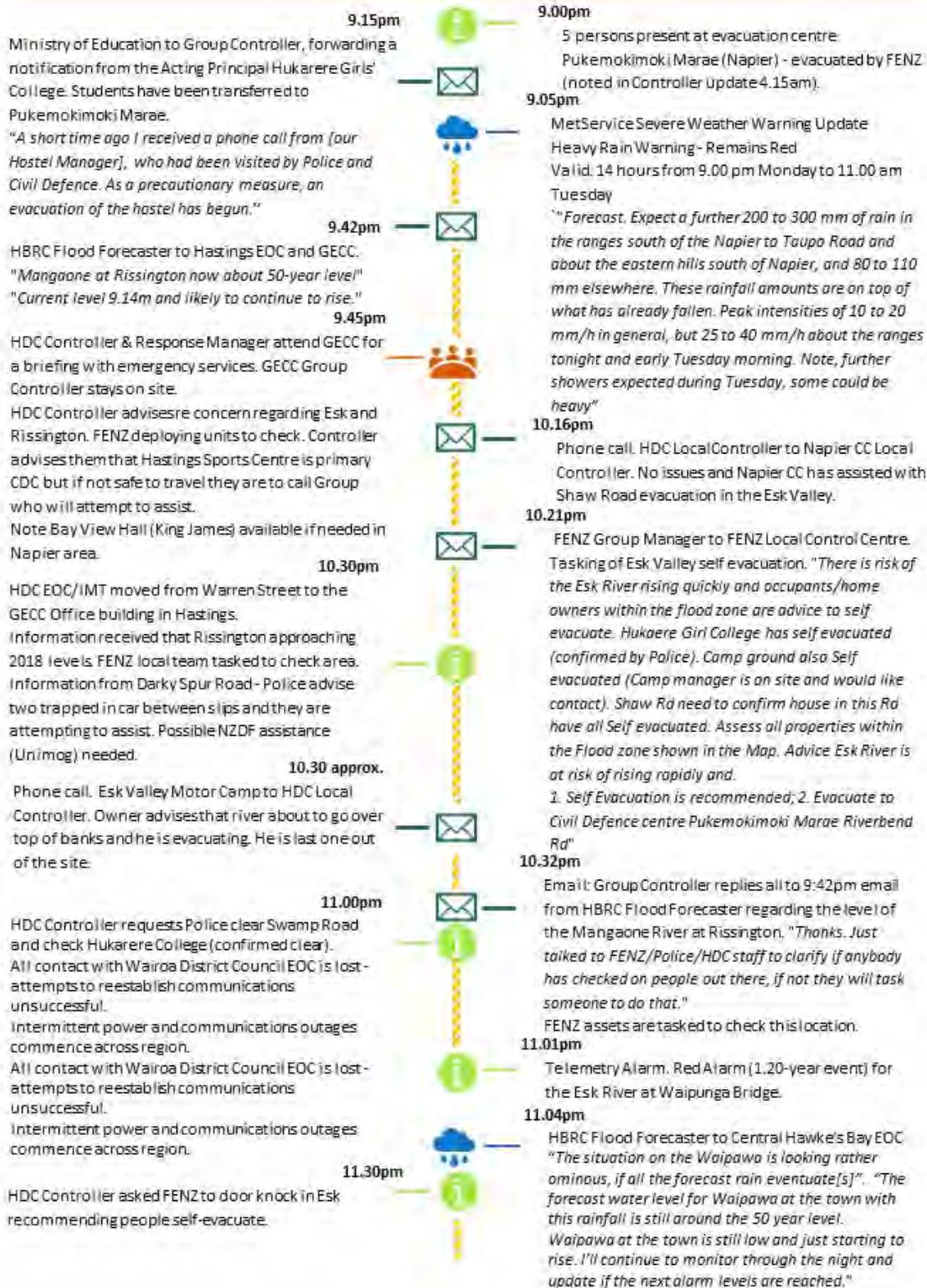




Monday 13 February 2023



Monday 13 February 2023



Monday 13 February 2023

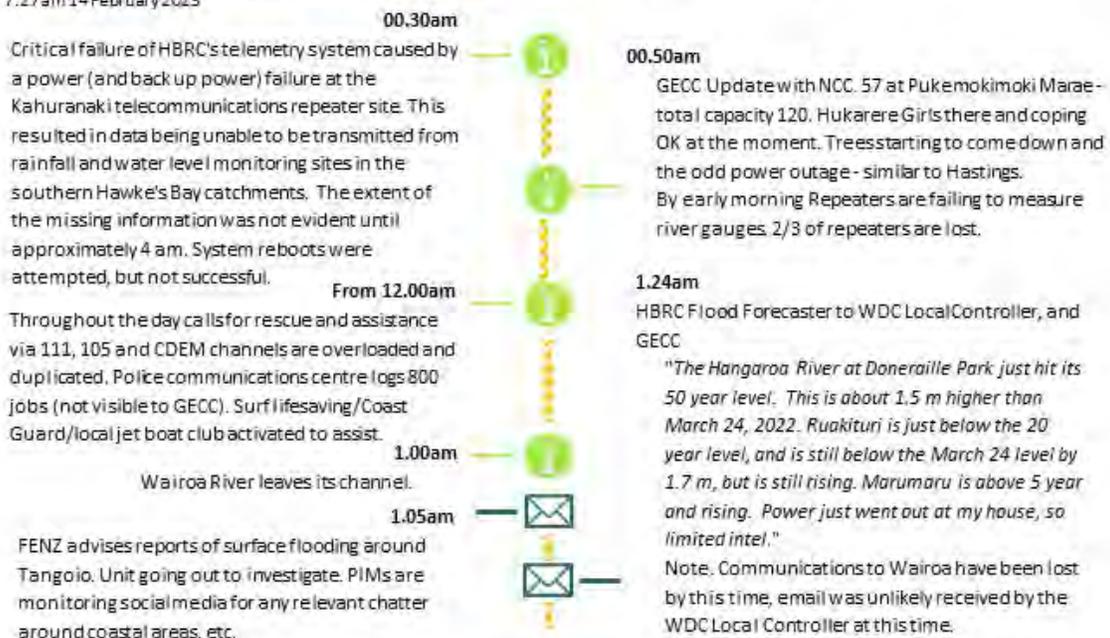


Tuesday 14 February 2023

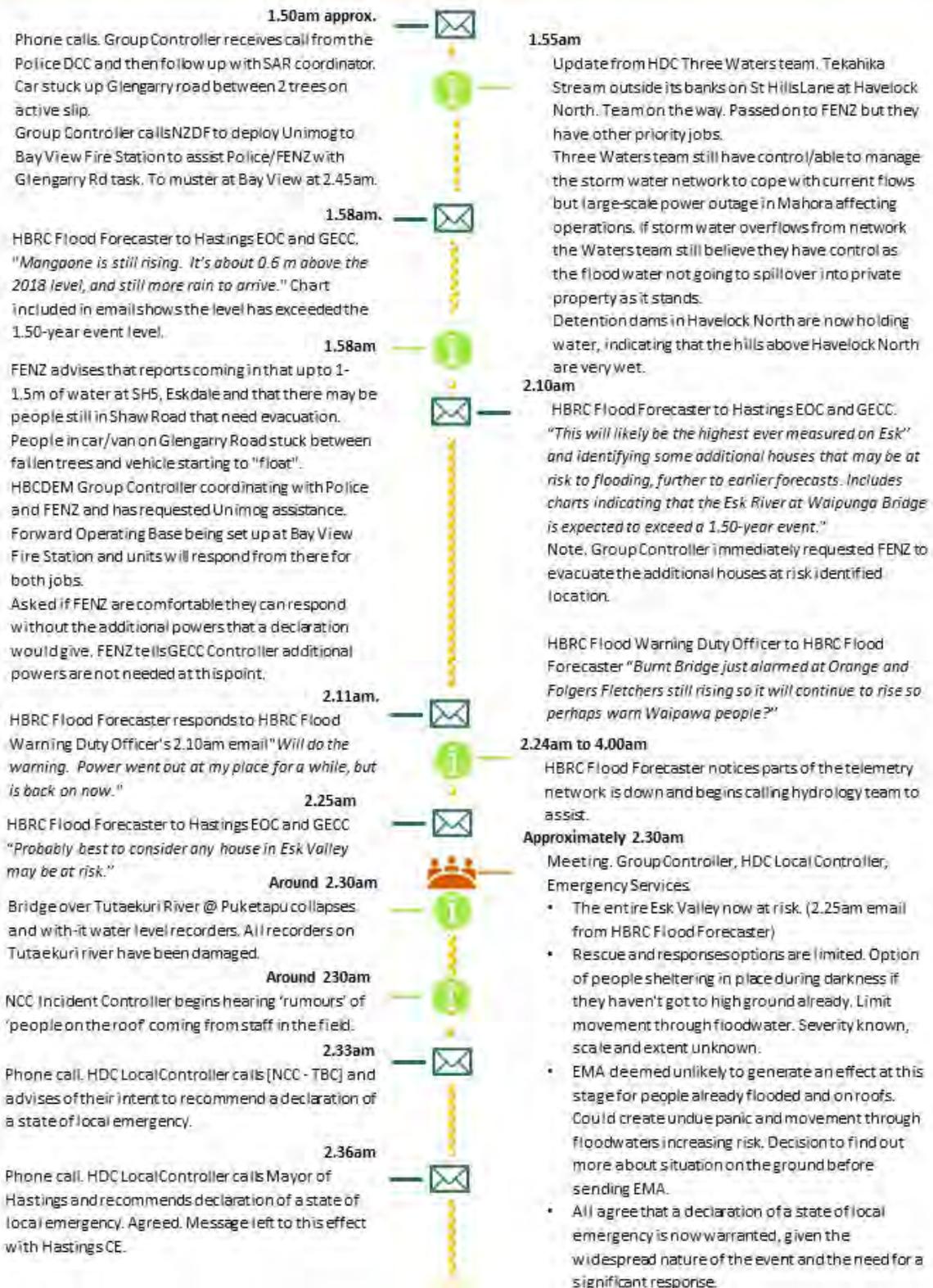


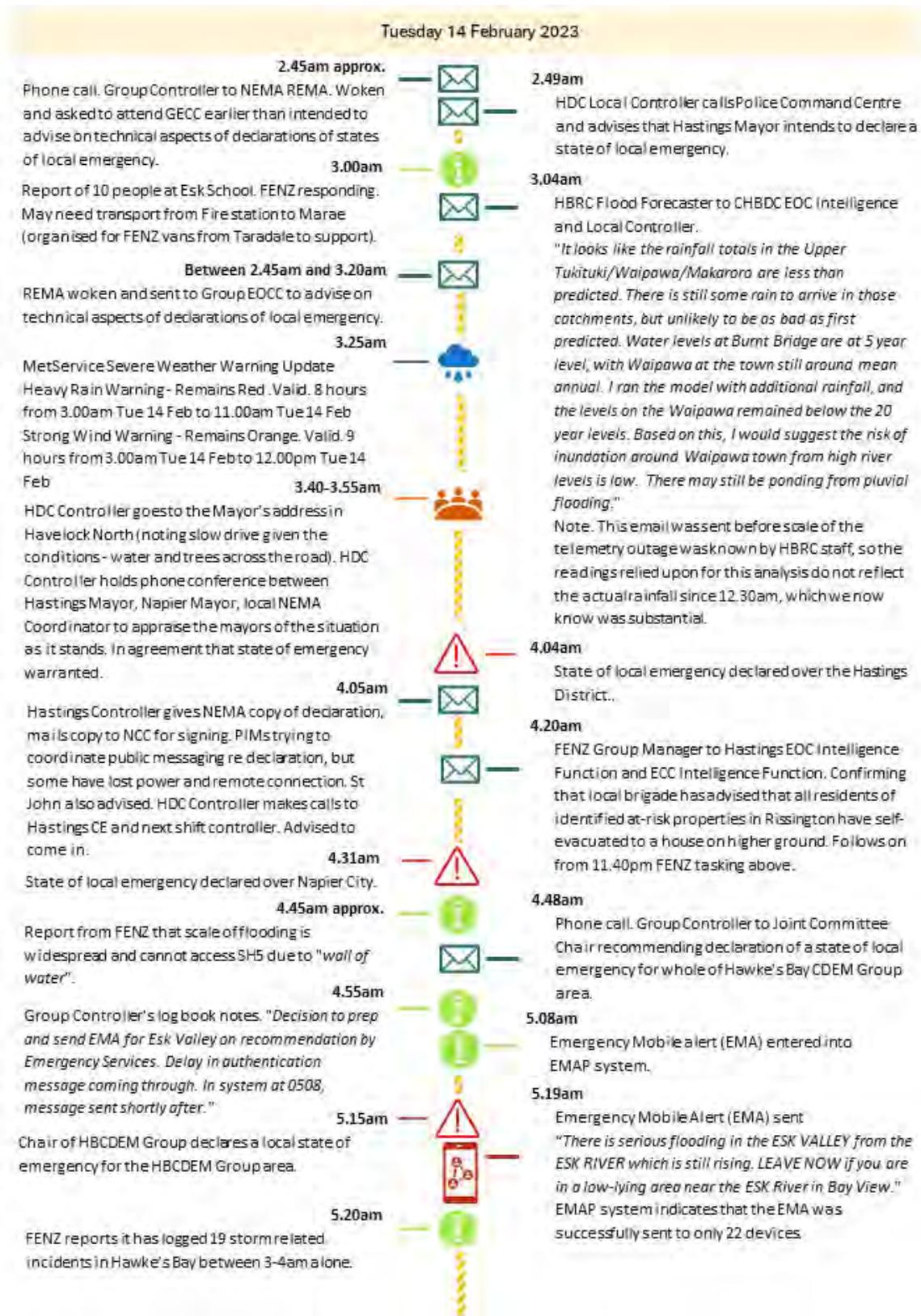
Incident management

- An outage of the MetService rain radar at Mahia occurred for a number of hours during the night. Data was collected, but not available in real time. Collecting data but not sending all data to Wellington. Problem unresolved for some hours. Created false readings.
- Glengarry received nearly 540mm, and Pukeorapa receiving over 400mm of rain. Napier Airport recorded 203.8 mm and Hastings recorded 143.8 mm.
- Wind gusts were recorded up to 90 km/h with exposed stations near the coast reaching higher such as Cape Kidnappers (131 km/h)

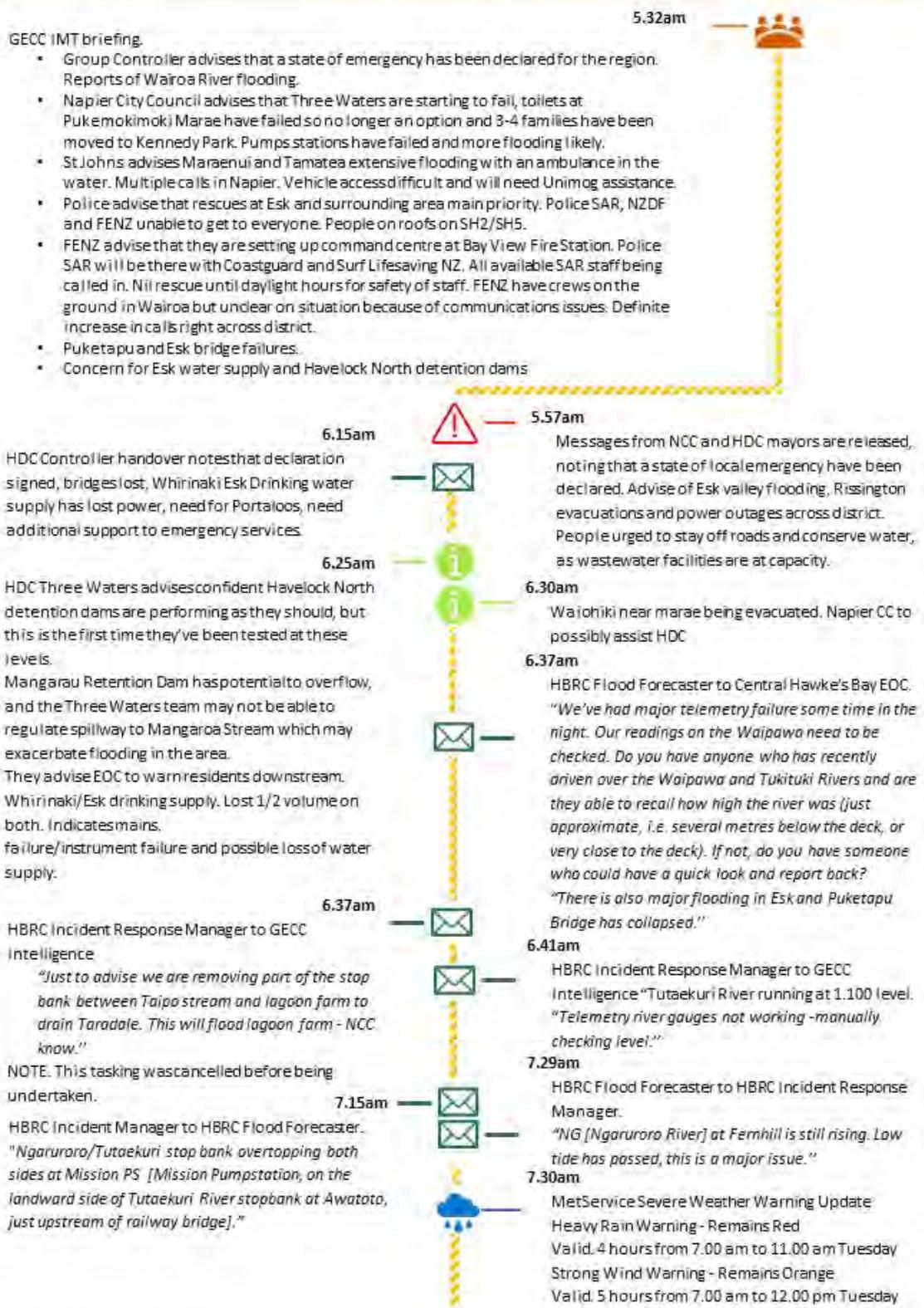


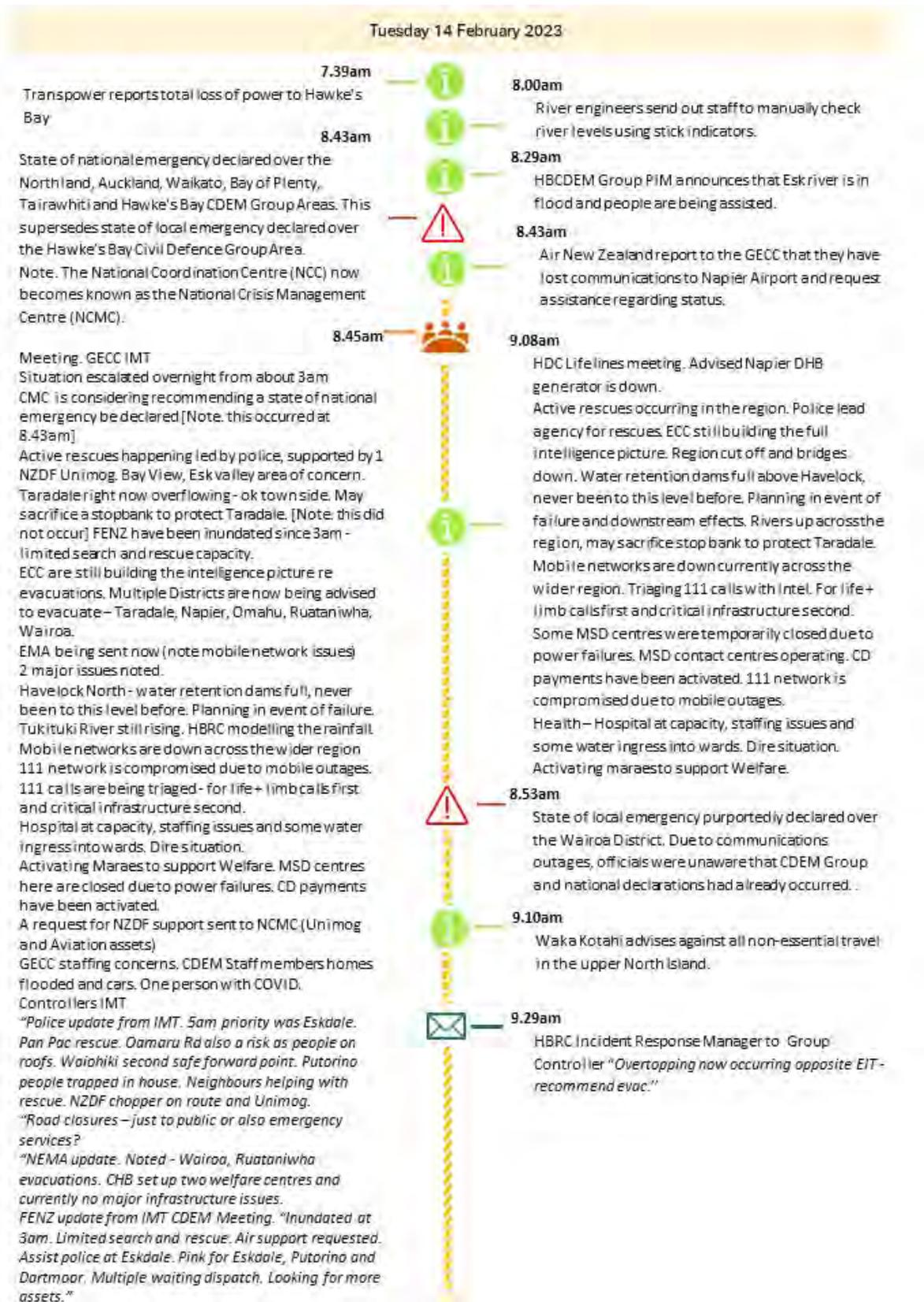
Tuesday 14 February 2023



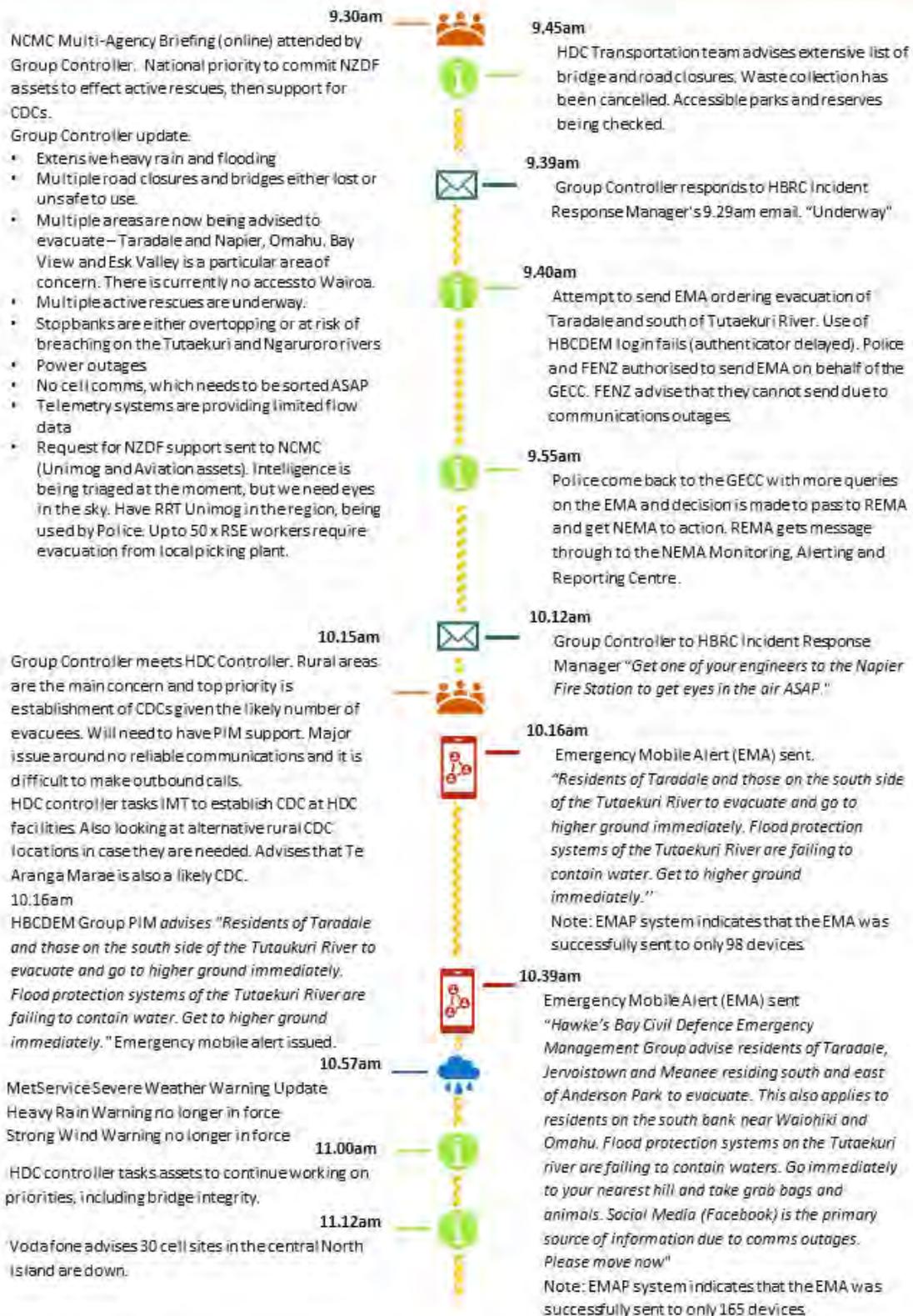


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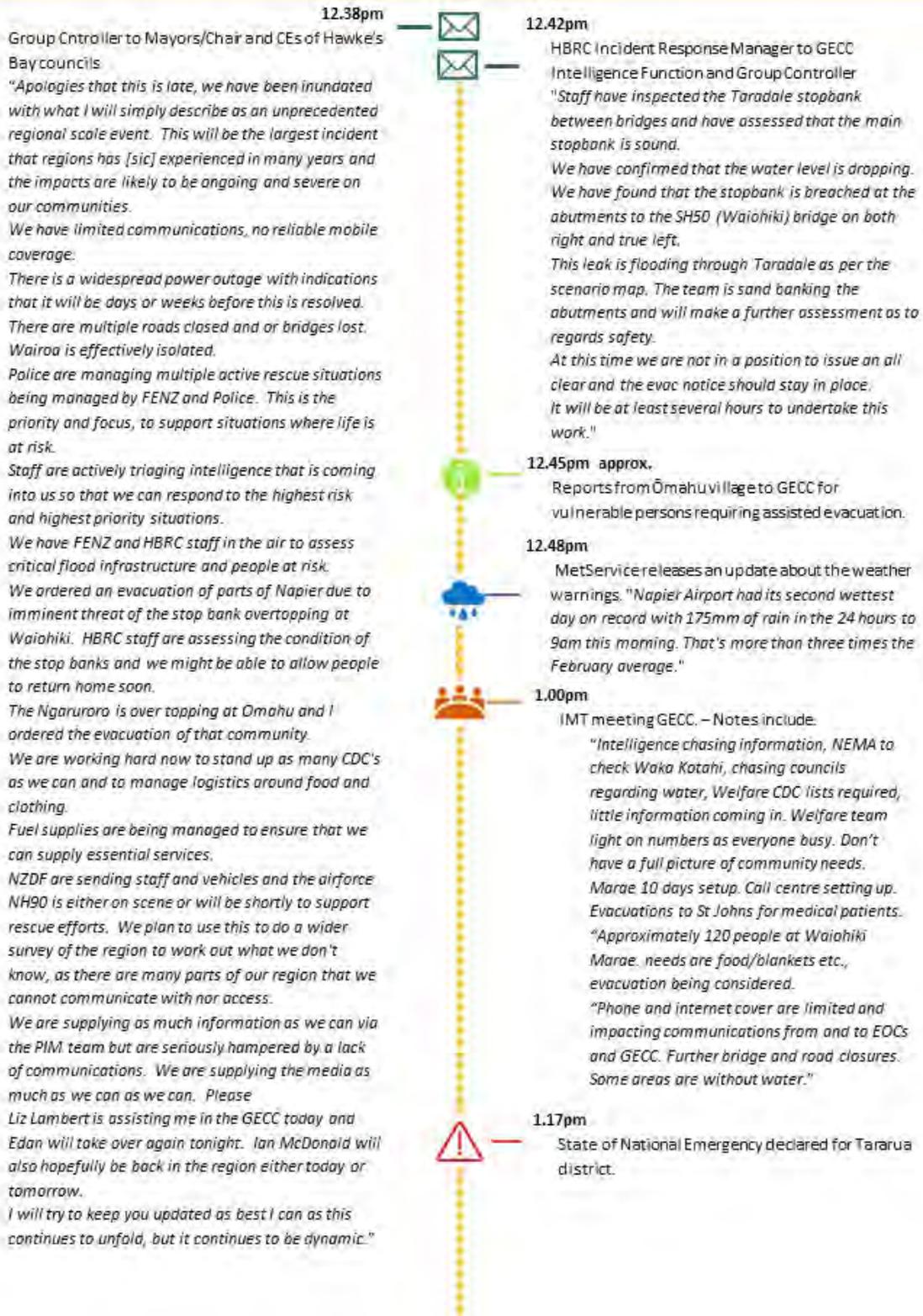
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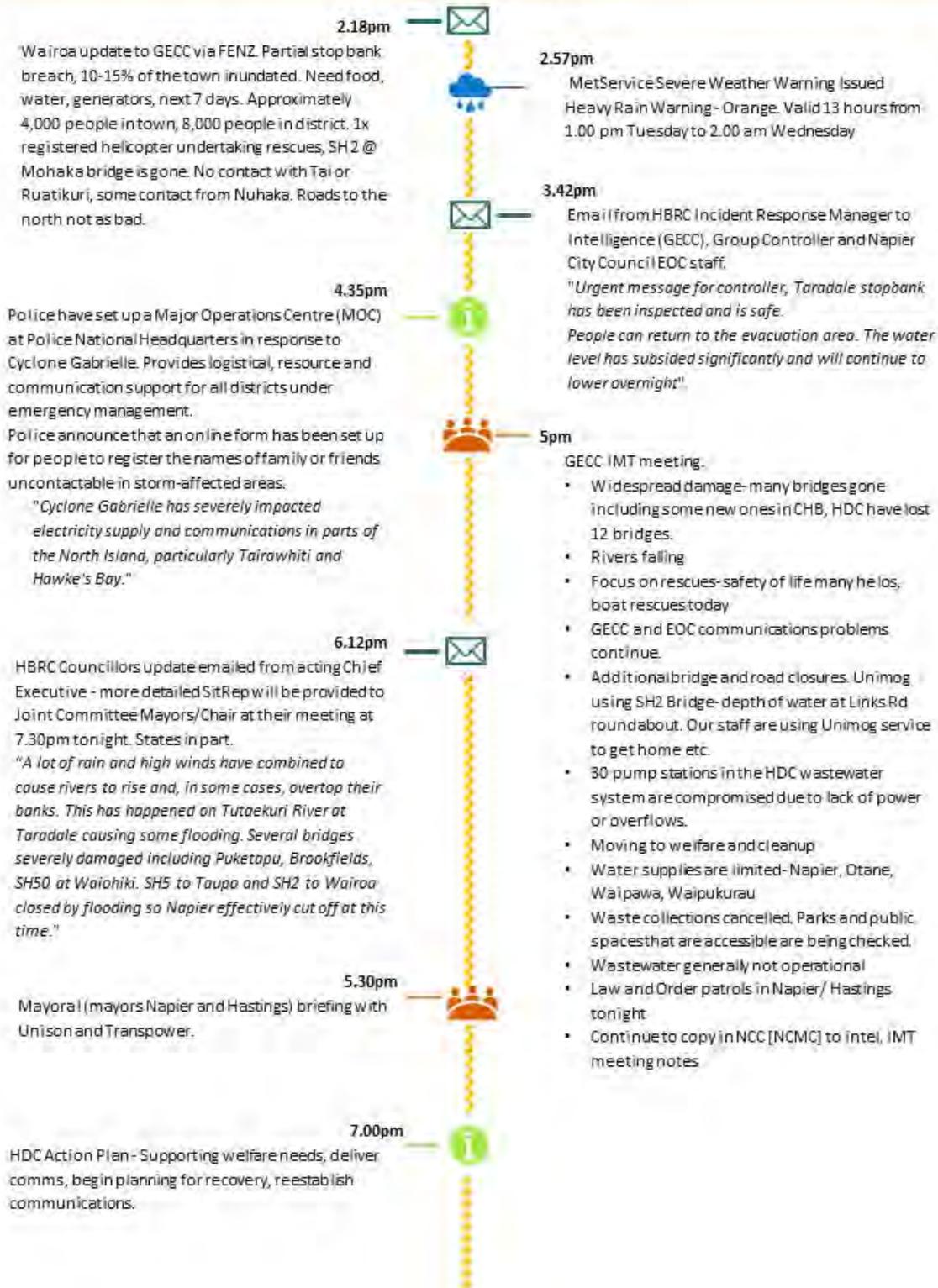
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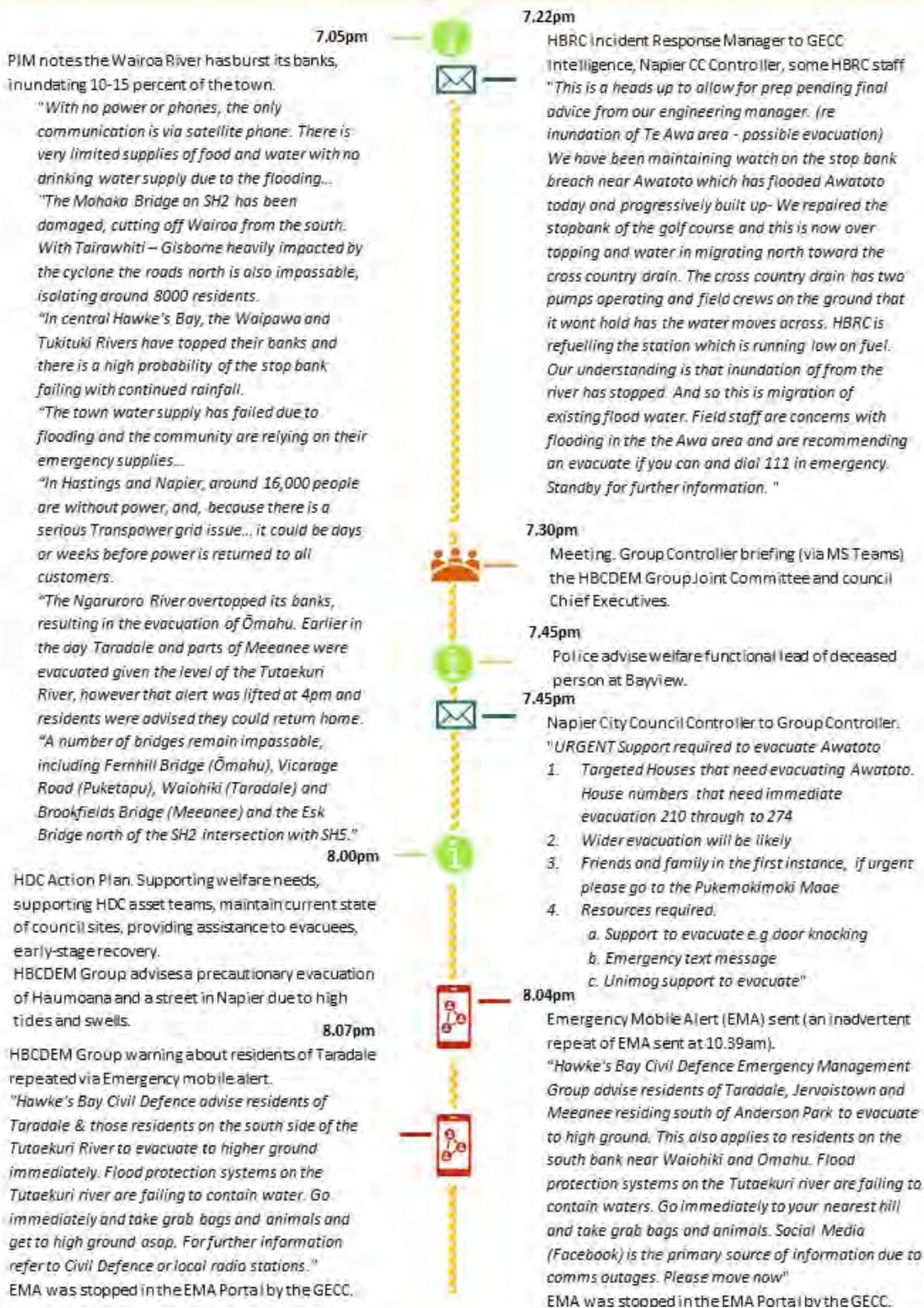
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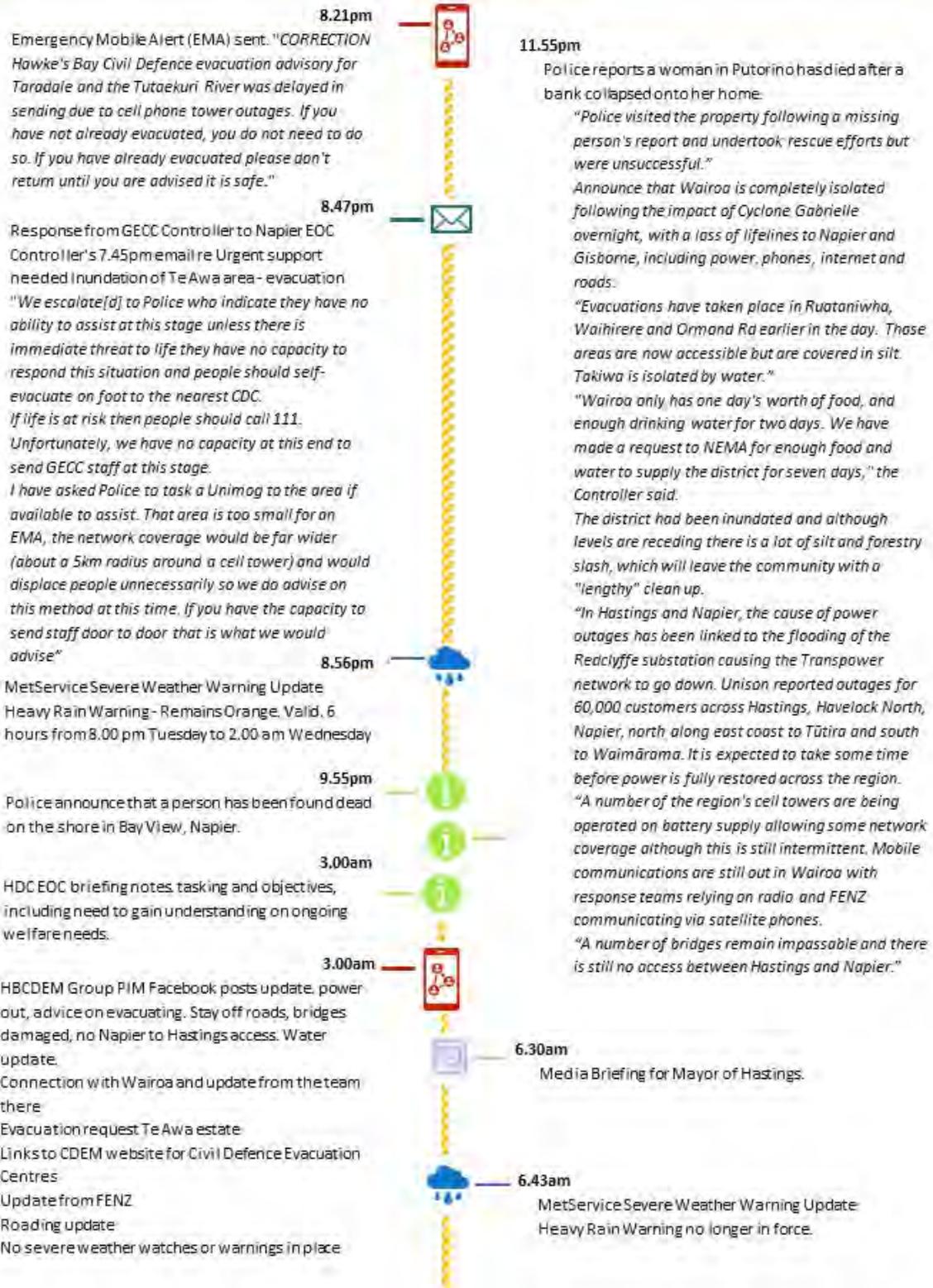
Tuesday 14 February 2023



Tuesday 14 February 2023



Tuesday 14 February 2023



Wednesday 15 February 2023

8.00am



GECC Morning briefing notes. Wairoa communications report water pump required. FENZ and Police continue rescues in Esk Valley. "State highway 2 at Takapau is blocked. "Coastal route (SH 2 between Hastings and Napier) opens only to emergency service vehicles - rail bridge has washed out and concerns the road bridge may be damaged. "Link Rd is flooding under around 1.5m of water (expressway closed between Hastings and Napier). "3 persons missing, 2x confirmed deaths. "Evacuations in Te Awa and Waiohiki. "Process for missing persons and reconciliation is online system (?). Power starting to come back on. "Wairoa and Napier are isolated. Wairoa has some power but no roading. "Napier has no power, no roading, and need food moving to Napier". Lifelines meeting. Power is now the key issue. Unison advises that the Redclyffe substation is badly damaged and cannot access the plant. Priorities are agreed for emergency power supply. Transport advises that the priorities are to gain understanding of damage and accessibility constraints on the rural network, clear urban roads and assess regional routes and bridges. Three bailey bridges are requested from NZTA. Water supply is being supported by diesel generators. Still some areas without water."



MetService Forecast Cyclone Track Map as at 7:27 am 15 February 2023



8.30am

- GECC issues intelligence update. Includes:
- River levels are continuing to fall across the board with the following patterns.
  - Northern sites have dropped 5 to 6m from their peaks and are now flowing near to an annual flood event levels.
  - Central and Southern sites have dropped 2 to 3m below their peaks but are still flowing at up to an orange 1.5yr level.
  - Flooding Updates included the following active evacuations
  - Wairoa, Esk Valley/Whirinaki, Te Awa/Brookfields/Awatoto, Pukemokimoki Marae/Haumoana, Waipawa - Walker Road, Porangahau, Dartmoor/Puketitiri, Waiohiki/Omahu



9.45am

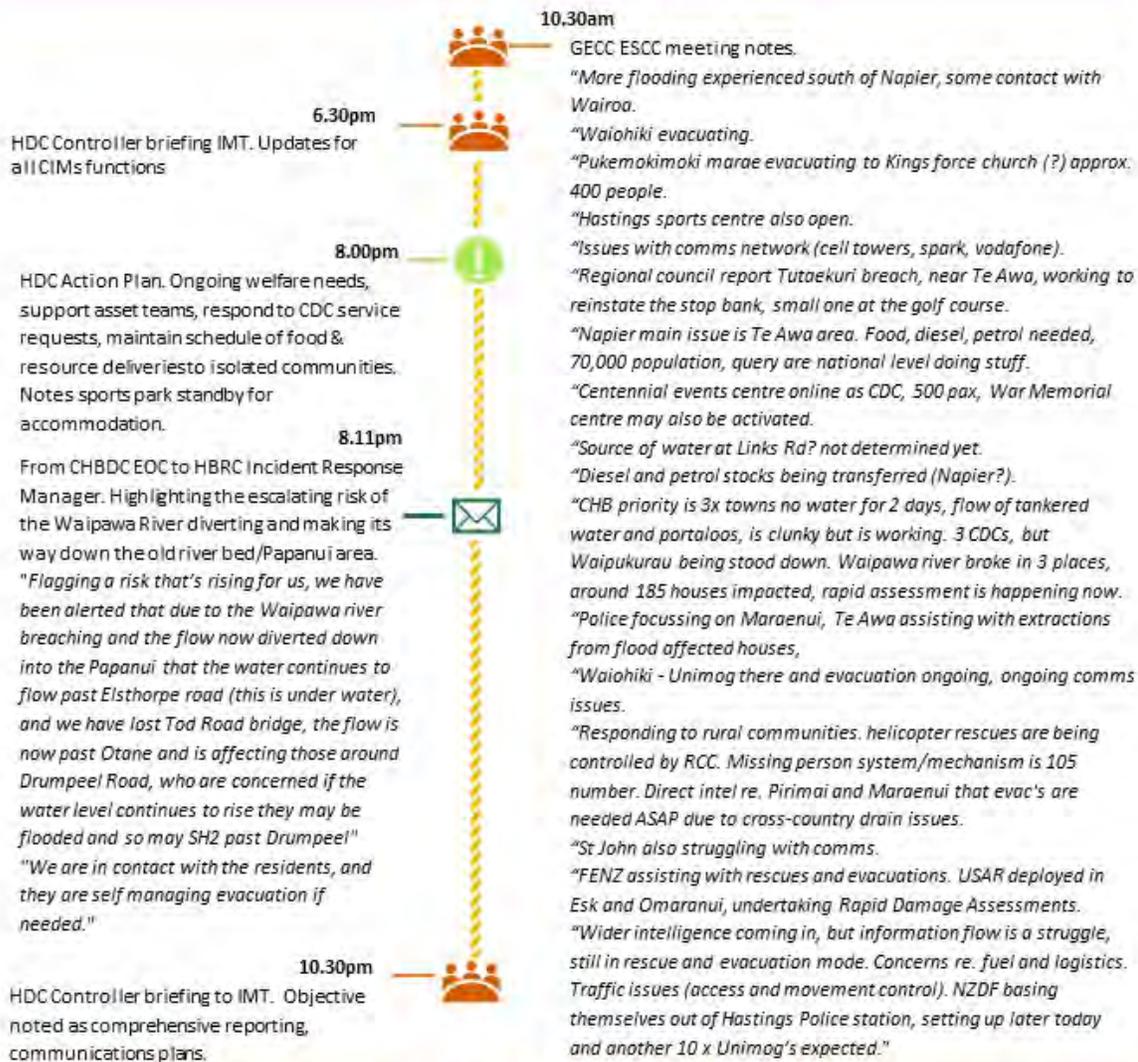
NEMA REMA flies to Wairoa with NZDF and meets with Mayor and CE.

1.10am



EOC NCC meeting on teams. priorities are intel for situational awareness, CDCs, welfare, rosters for staffing. Limitations are no power and most communication channels down.

Wednesday 15 February 2023



Thursday 16 February 2023

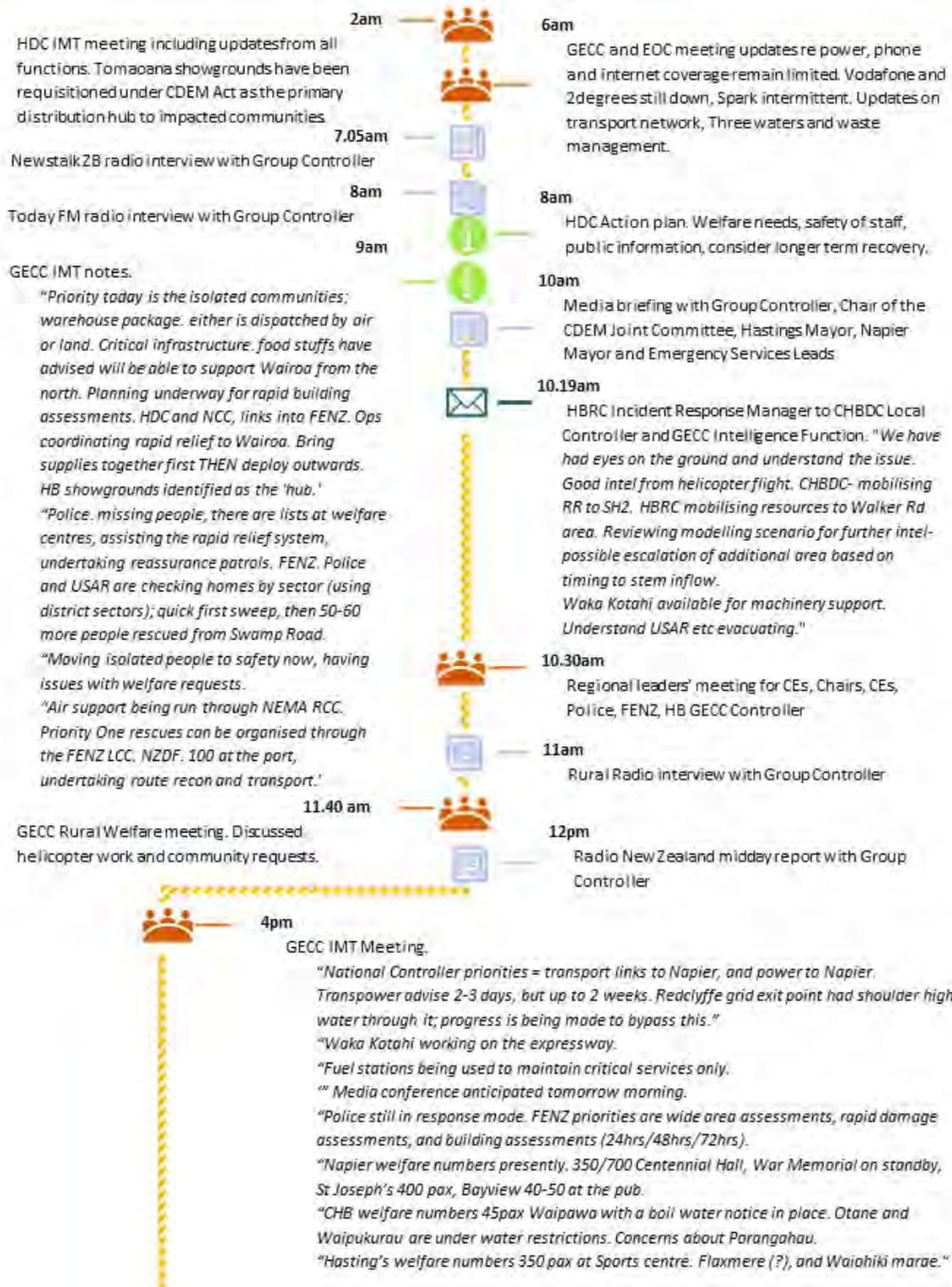


MetService Severe Weather Watch issued 7.44am 16 February 2023

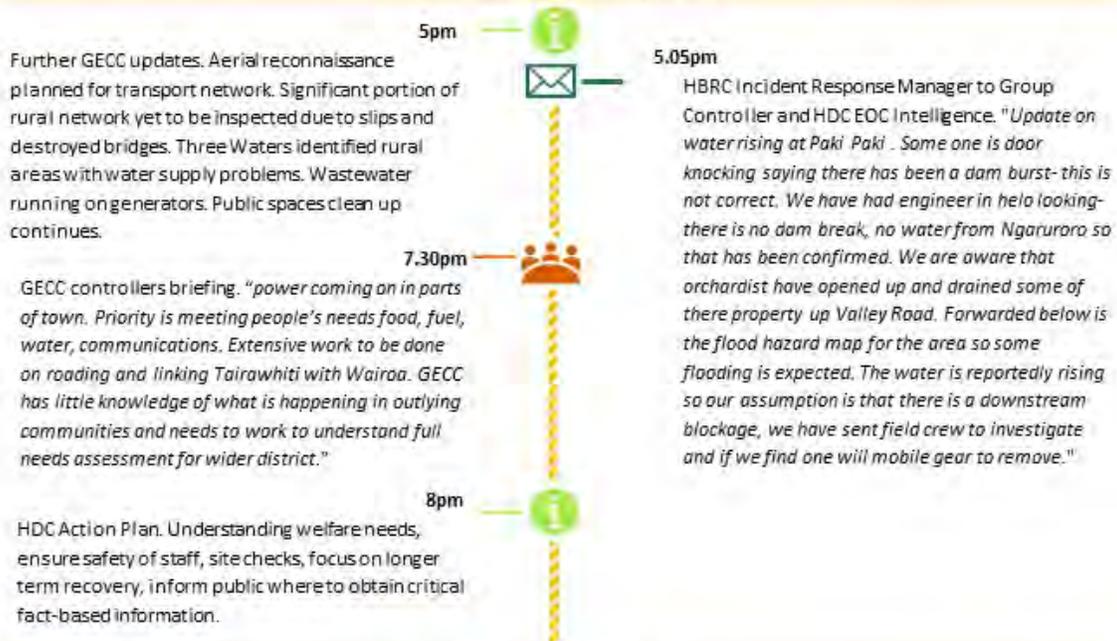


MetService Severe Weather Watch Update issued 4.16pm 16 February 2023

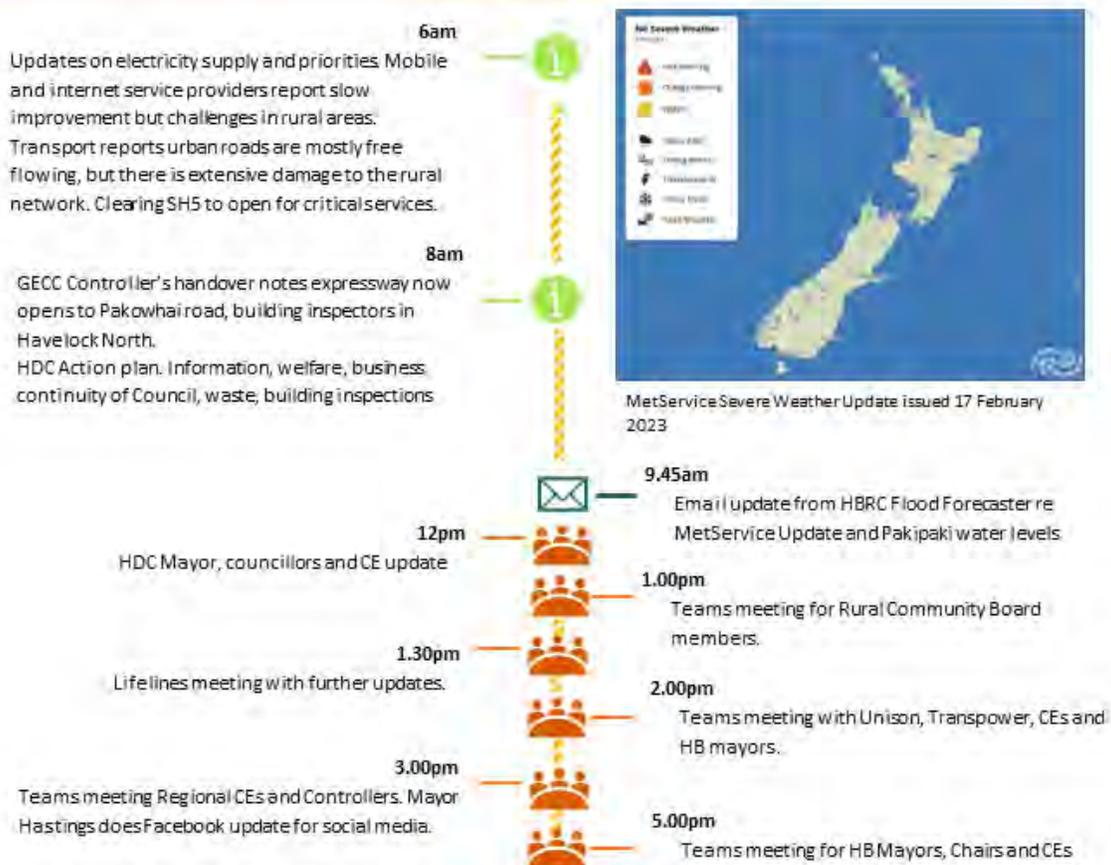
Thursday 16 February 2023



Thursday 16 February 2023



Friday 17 February 2023



## APPENDIX SIX: REVIEW SURVEY

### METHOD

As part of the Independent External Review into the Hawke's Bay Civil Defence Emergency Management response to Cyclone Gabrielle, the community and mana whenua were asked for their input via a short and anonymous online survey.

The online survey was to enable Hawke's Bay communities to share their experiences on the days immediately leading into the event and the immediate emergency response stage, prior to the region's move toward recovery.

The survey asked a small number of simple questions:

1. Were you impacted by Cyclone Gabrielle?
2. During the emergency response to Cyclone Gabrielle, which of the following did you interact with and/or receive support from?
3. Based on the interactions you had or the support you received during the emergency response, what comments do you have?
4. In particular, what could have been done differently or better?
5. Please tell us about any other aspect of your experience during the Cyclone Gabrielle response that you feel the Review Panel may also need to know about.

The online survey was open to the community from November 15<sup>th</sup> 2023, to January 15<sup>th</sup> 2024. A total of 1030 responses were received, across 6 demographic groupings.

Overall, the results and feedback provided did not uncover any significant variations across these demographic groups and is representative of what would be reasonably expected from the community in the aftermath of such an extreme event. Key themes and community perceptions, which were also highly consistent with themes in our respondent interviews and focus groups, included:

- Low community preparedness for natural disasters, particularly with regard to:
  - Where to go for authoritative information
  - Community planning for a flood event
  - Challenges in stockpiling and caching adequate resources for a prolonged event, particularly for vulnerable communities and groups
- Heroic efforts by local communities, volunteers, marae, first responders, NZDF, contractors and some businesses
- Inadequate CDEM communications in the early stages of this event. Specifically, over emphasis on social media that was difficult for some to access, lack of timeliness of critical information regarding risks and evacuations, CDCs and regional conditions generally and no single 'face' of the response effort
- Lack of maintenance of river management, drainage schemes and flood protection systems
- Lack of public warning systems, such as sirens
- Poor leadership from the CDEM Group and GECC
- Issues with the 111 system
- Premature pivot to recovery
- Slowness of councils' response to queries and categorisations during recovery; and
- Defensiveness of local authorities post event.

## Independent External Review

While we made undertakings to survey respondents that their feedback was confidential, some respondents offered us their contact details and asked for additional conversations.

## APPENDIX SEVEN: QUICK FACTS: SEVERE TROPICAL CYCLONE GABRIELLE EVENT, FEBRUARY 2023

On 8<sup>th</sup> February 2023, Tropical Cyclone Gabrielle was named in the Coral Sea. Its formation and subsequent track towards New Zealand were accurately anticipated by weather forecasting models. Gabrielle tracked south-eastwards, then turned to the south and brought intense rainfall and damaging winds to northern and eastern parts of the North Island from 12<sup>th</sup> to 14<sup>th</sup> February 2023 before moving off to the southeast. The strongest impacts were in areas exposed to strong winds and bands of heavy rain to the south of Gabrielle's centre – particularly the Coromandel Peninsula, Tairāwhiti and Hawke's Bay.

The Hawke's Bay Civil Defence Emergency Management (CDEM) Group declared a State of Local Emergency for Hawke's Bay region on 14<sup>th</sup> February 2023. Shortly after, a rare National State of Emergency was declared<sup>45</sup>, also on 14<sup>th</sup> February 2023. All states of emergency were lifted by 14<sup>th</sup> March 2023.

Hawke's Bay CDEM Group activated emergency response arrangements, including the Group Emergency Coordination Centre (GECC), to lead the coordination and management of the response to the Cyclone for the entire Hawke's Bay region. The GECC was supported by local Emergency Operation Centres (EOCs) in each territorial authority (central Hawke's Bay, Hastings, Napier and Wairoa).

Local authorities estimate that, in Hawke's Bay region, around 9,000 people were displaced. Power, phone and internet outages meant that a large number of people remained uncontactable for days.

Power was cut to over 40,000 properties, almost 32,000 of them in and around Napier, when the main Redclyffe substation was damaged after the Tutaekuri River burst its banks.

Downstream, people were evacuated from the low-lying Heretaunga Plains surrounding the river, and parts of Taradale, Meeanee, Pakawhai and Awatoto were inundated. The Esk Valley, Tangoio, Puketapu and Waiohiki, among other areas, were also badly affected.

A flash flood swept down the Esk Valley as the Esk River burst its banks, submerging properties under up to seven metres of water and burying vehicles, businesses and homes in silt.

The Wairoa River burst its banks, flooding 15 percent of Wairoa, containing about half the town's population. Access to Wairoa was cut off after damage on SH2 in the south, and landslides to the north. A number of bridges in the Wairoa District were also destroyed or damaged

The Ngaruroro River also burst its banks, flooding the settlement of Ōmahu.

Water supply in Central Hawke's Bay failed, and a mandatory evacuation was ordered for eastern Waipawa after the Waipawa River rose to record levels. The river eventually breached its stop banks and flooded over 160 homes in lower Waipawa. Severe flooding also occurred in Porangahau.

Floodwaters damaged rail bridges and destroyed key road bridges on the Heretaunga Plains. SH5 linking Napier with Taupō was closed following major slips and infrastructure damage, as was SH2 north of

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<sup>45</sup> For only the third time in New Zealand's history.

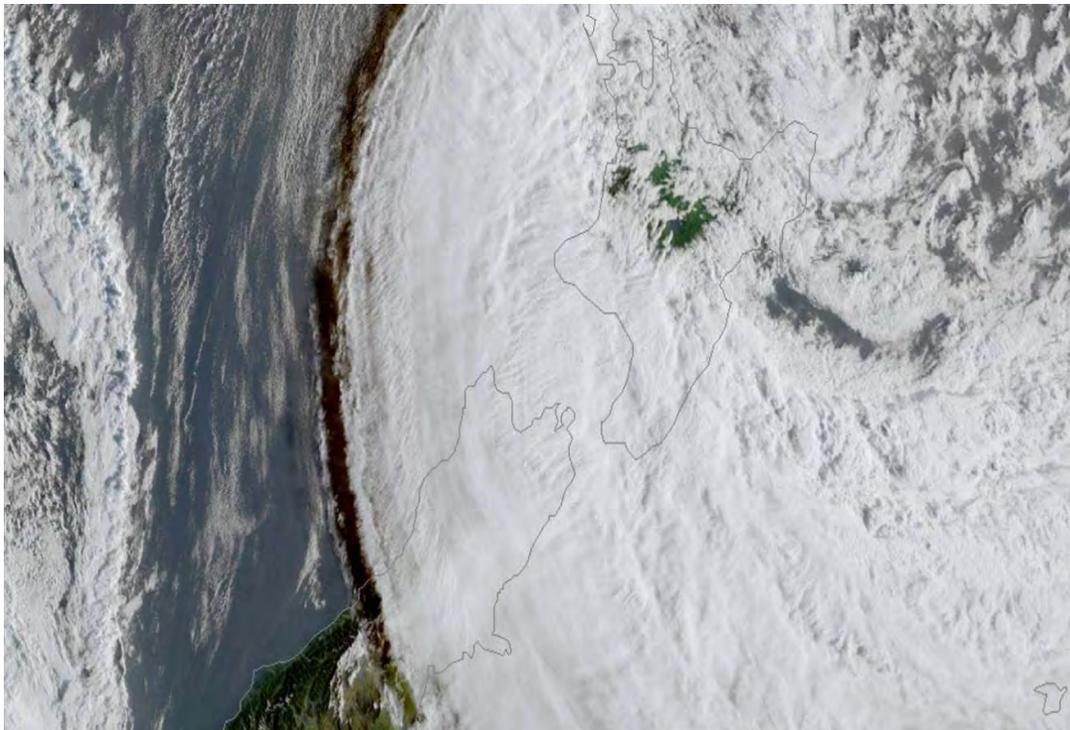
Napier and the Napier–Taihape Road to the west. SH2 south linking Hastings with the Tararua District was also closed. For a period, the region was isolated from the rest of the country.

Gabrielle was the deadliest weather event to impact New Zealand since the Wahine storm (Cyclone Giselle) in 1968, with 11 deaths overall, including 8 in Hawke’s Bay.

It was also the costliest tropical cyclone on record in the southern hemisphere, with total damages estimated to be at least NZ\$13.5 billion, of which the cost of insured damage is estimated at a minimum of NZ\$1.65 billion<sup>46</sup>. The total cost in the Hastings District alone is estimated to surpass NZ\$2 billion.<sup>47</sup>

Following the event, 83 homes in Hawke’s Bay were red stickered, meaning entry into the homes is prohibited, and 840 homes were yellow stickered, meaning access is restricted<sup>48</sup>.

By 25<sup>th</sup> February 2023, the Accident Compensation Corporation (ACC) had received 67 claims from Hawke’s Bay and Tasman regions and IAG (New Zealand’s largest insurer) had received 2064 claims from the region.<sup>49</sup>



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<sup>46</sup> Sowden, Briony (19 March 2023). "Cyclone Gabrielle: The New Zealand flood victims too scared to go home" BBC News.

<sup>47</sup> "Hastings post-cyclone recovery bill set to top \$2 billion". 1 News.

<sup>48</sup> Williams, Caroline (24 February 2023). "The numbers which show how bad Cyclone Gabrielle was". Stuff.

<sup>49</sup> "Hastings post-cyclone recovery bill set to top \$2 billion". 1 News.

<sup>50</sup> A satellite image with the centre of Cyclone Gabrielle north of the Bay of Plenty, taken at 8.20am on Tuesday 14 February 2023. Source: STUFF