



Fire and Emergency

Operational Review

Auckland Floods
January 2023

Cyclone Gabrielle
February 2023

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Ngā kai o roto

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Foreword

Kupu Whakataki

As two extreme weather events hit our North Island, I witnessed the drive, determination and high levels of expertise that make Fire and Emergency New Zealand personnel among the most respected and resourceful I have known in my career. Lives were lost and the damage was extensive but, despite significant challenges, our people responded with skill and determination.

During the January and February 2023 severe weather events in the North Island, Fire and Emergency personnel performed multiple specialist roles, as well as surging personnel into other agencies who needed our expertise.

Our people were operating in the most challenging of conditions. The Auckland Floods were a rapid onset and escalating emergency, while Cyclone Gabrielle was a geographically widespread national emergency with patchy or non-existent communications. What these events have in common is that they were significant severe weather events and responding to such incidents is not a main Fire and Emergency function. Regardless of this, we expect to help New Zealanders when they need us to the best of our ability. The purpose of bringing these two events together in an Operational Review is to ensure lessons are learnt and improvements are made to better support our frontline in future weather-related events.

I want to acknowledge there is much to be proud of. However, I also acknowledge our people were under significant pressure and, despite successfully performing multiple and complex operations, at times they did so without the required planning, procedures, or equipment

for weather-related disasters. Many of our people were also impacted by these events personally and there is much to learn about how we better support our personnel to respond and recover.

I would like to thank the authors of this report, the Review team and all those who participated for providing us with better insights into these two significant events. Lessons management and learning is a practice that facilitates our growth and continuous improvement. Disasters of this magnitude provide us with a better understanding of how we can improve, gained by experience.

I acknowledge this report will not do justice to the determination, resourcefulness and resilience of our people. It is not possible for an Operational Review to describe the events of early 2023 or tell Fire and Emergency's full story. I am grateful for the efforts of our communication centre personnel, first responders and specialist teams who responded to the calls for help that continued day and night during these severe weather events. Some of these calls for help were from our own people. I'm also grateful for those who supported our frontline, including our Fire and Emergency teams, contractors and our families, friends, and partner agencies.

I look forward to working with the National Commander and Fire and Emergency Executive Leadership Team to deliver improved severe weather operations.

Steph Rotarangi

Deputy National Commander

Introduction

He Tīmatanga kōrero

After significant incidents, it is our usual practice to carry out reviews to learn from them and support ongoing improvement. Following the severe weather events that struck parts of the North Island in January and February 2023, I commissioned this Operational Review into those events. This Review is now complete and has found we can make improvements to support weather-related responses. I accept the Review's Key Insights and thank the authors and all those who contributed. It takes courage to stand up and tell your stories and talk about where we can do things better. Fire and Emergency is committed to being a learning organisation.

Following these events, we have taken every opportunity to use early observations and learnings to lift our capability and improve our systems. Much work has been done since early 2023. The publishing of the Review provides further clarity and an opportunity to continue improving and prioritising our efforts.

While there is a lot of detail to be considered, in summary the Review found the following:

- Our people helped communities despite significant challenges, and they acted with skill, ingenuity, and empathy. During both events, Fire and Emergency personnel made an exceptional contribution to New Zealanders in the most challenging of circumstances.
- Cyclone Gabrielle was the first time our organisation encountered such a widespread and severe weather event across so many Districts. Many people in many roles worked above and beyond what was expected of them to ensure communities and the country received the kind of service they have come to rely on from Fire and Emergency.

- Fire and Emergency successfully managed our main functions during these significant events. However, there is room for improvement to support our people when performing additional functions, such as responding to severe weather-related events. New Zealanders expect their Fire and Emergency service to be there when needed and our people lived up to this expectation, but we can do more to enable our responders and support personnel.
- This Operational Review found opportunities to significantly improve the planning and administration processes that support our people and we have further work to do to better deliver severe weather-related responses in such challenging circumstances. Many of the improvements for weather-related incidents outlined in this Review will also benefit our main functions, in particular fire and Urban Search and Rescue (USAR) response.
- With a changing climate already impacting us, we can anticipate an increase in the frequency and possible severity of weather events, and we will need to improve and prioritise our training, exercising, resourcing and equipment accordingly.

Across our organisation we are in a constant state of prevention, readiness, and response. It is important to pause and reflect on the Key Insights captured in this report, the hard work undertaken and the commitment of our people to serve and support. I look forward to working with everyone to deliver on the appropriate outcomes following this Review.

Russell Wood

National Commander

Executive summary

Whakarāpopototanga matua

This Operational Review covers two significant severe weather events: the Auckland Anniversary Weekend Floods (26–28 January 2023) and Cyclone Gabrielle (February 2023). Preparing for and responding to weather-related events is an additional function for Fire and Emergency. This means we must assist New Zealanders as much as we can, but not at the cost of our main functions as defined by our legislation.

Purpose

The National Commander initiated this Review because of the significance of both weather events, the geographic scale of Cyclone Gabrielle, and because it gives us the opportunity to better understand the interactions between Fire and Emergency's main and additional functions as outlined in the Fire and Emergency New Zealand Act 2017.

The Review's purpose is to identify Key Insights. This will inform the ongoing cycle of learning and improvement within Fire and Emergency.

In line with the Terms of Reference, this report provides Key Insights for Fire and Emergency's consideration based on Observations from our people.

The Review

The Auckland Floods and Cyclone Gabrielle Review Team first came together on 26 April 2023 at the request of the National Commander of Fire and Emergency, supported by the Deputy National Commander responsible for Operational Assurance.

The Terms of Reference for reviewing both events are the same. We are looking for Key Insights relevant to significant weather events.

We started by interviewing the duty National Commanders Group at Fire and Emergency National Headquarters in Wellington and then those in key roles in the National Coordination Centre (NCC). We then travelled to Auckland to hear about the Auckland Floods then Cyclone Gabrielle impacts. Following this, we went to the Bay of Plenty, Tairāwhiti and Hawke's Bay to review the impacts of Cyclone Gabrielle across these Regions and Districts, meeting, interviewing, and hearing stories from a wide range of personnel involved in the response.

This process is based on:

- 28 After Action Reviews (AAR);
- over 100 individual interviews with people from around the country; and
- over 1,000 recorded individual Observations.

Key Insights

During the Review process, we observed several common themes in both events. These form the Key Insights of this Operational Review, which are as follows:

Key Insight 1

Fire and Emergency is required to assist New Zealanders in weather-related events to the extent that we have the capability and capacity to do so. Our personnel successfully delivered on this obligation, we rescued countless people impacted by these severe weather events while managing our other 24/7 first responder responsibilities. We achieved this by surging resources nationally, deploying our people accordingly and adjusting known specialist response processes (such as USAR) to suit the severe weather context.

However, there is room to improve our approach. Our planning, doctrine and our first responder equipment and training specific to weather-related events should be reviewed in the context of a changing climate which is likely to bring more frequent weather-related, long duration and concurrent events.

Key Insight 2

Fire and Emergency personnel use the Safe Person Concept (SPC), Dynamic Risk Assessment (DRA) and the Safety Officer role, along with other processes, to manage risk assessment and mitigate hazardous situations. The significant scale and nature of these events provides an opportunity to review our personnel's understanding of the SPC, DRA and Safety Officer role, as well as assess the specialist training and equipment required for dealing with severe weather.

Key Insight 3

Fire and Emergency Incident Management Teams (IMT) and incident management structures were used extensively in these events, within both Fire and Emergency and our partner agencies. Our people provided IMT expertise at National, Regional, Local and Incident levels. Fire and Emergency worked well with other agencies and provided much needed support and skillsets. However, our resourcing of IMTs and systems to support them were tested to the limit. Efficiencies should be investigated to ensure enough trained and competent people are available to fill appropriate roles and further work is required to ensure our personnel are working with appropriate conditions and training.

Key Insight 4

Fire and Emergency uses systems to prepare for and manage large volumes of calls and/or specialist response. The significance and scale of these weather-related incidents provided insights to the benefits and constraints of such systems, including the Multiple Incidents Procedure (MIP) environment and specialist response deployment procedures for USAR. We found that the MIP helped manage rapidly escalating demand but may have prevented Fire and Emergency from gaining the situational awareness required for IMT resources and specialist responders to prioritise multiple demands. Likewise, we found that our current methodology for USAR deployment may be improved to enhance situational awareness for IMTs.

Key Insight 5

Fire and Emergency uses a 'surge and backfill' model to allow us to maintain first response and specialist response capacity. Simply put, this means that we select and train specialists often from our frontline crews and, in significant events, deploy them and backfill their first responder roles using off-duty firefighters to ensure our trucks can continue to respond. Likewise, we use our Executive Officers, management, and business as usual (BAU) support personnel to fill IMTs. These events put our model to the test in two very different ways: Auckland Floods due to its rapid onset and disruptive nature and Cyclone Gabrielle due to its geographic distribution and long duration. There is an opportunity for Fire and Emergency to revisit its BAU, specialist response and surge capacity models, taking into account how our specialist teams integrate with first response and considering overall resourcing, preplanning, function and control.

Key Insight 6

Many of our own people were impacted by these events. We deployed as needed and, in some cases, were cut off from home with limited communications. Other Fire and Emergency personnel were isolated, performing multiple, complex and much-needed responses for communities without support or communications. We suffered loss, both within Fire and Emergency and in our communities. We dealt with significant property and infrastructure damage but kept going. Our fire stations became hubs for our communities, and we worked to assist people with their immediate needs. Much time and effort was spent contacting personnel to get updates on their welfare needs and deliver needed support. However, there was variation between what our people expected from welfare support and what Fire and Emergency provided. Events of this significance and size are important times to revisit wellbeing support and processes.

Conclusions

Changing weather systems are impacting our firefighters and communities. Over any given year, New Zealand faces several large emergencies. More and more of these are leading to a declared state of emergency. The Auckland Floods and Cyclone Gabrielle have shown us that climate change will likely increase the incidence and consequence of extreme weather events.

One of our additional functions under section 12 of the Fire and Emergency New Zealand Act 2017 is to respond to weather-related events, natural hazard events and disasters, though only if this doesn't stop us performing our main functions under section 11 of the Act. On the other hand, New Zealanders expect us to respond when we are needed, and we strive to meet their expectations. Fire and Emergency is usually among the first agencies called upon and our people face challenging and unknown conditions. We need to be safe, trained and equipped.

Weather-related responses require specialist training, equipment and safe management. Long-duration events also require surge capacity. BAU planning and response must continue. Further consideration is required to ensure Fire and Emergency's planning and administration is improved to allow our main functions to be supported while our additional functions are delivered, or we may not be able to safely respond to aspects of major events like these.

Our people are highly motivated to serve communities and Fire and Emergency can be justifiably proud of our actions during two extreme events. Our personnel responded with skill, ingenuity and empathy. We couldn't get to everyone, but many worked above and beyond what was expected of them to ensure communities and the country received the kind of service they have come to rely on from Fire and Emergency.

Terminology

For the purposes of this Review, 'personnel' means all Fire and Emergency people, including our volunteers and career frontline crews as well as our leadership, management and business support staff.

'Partner agencies' means the many organisations and people that supported New Zealanders during these events including iwi and other emergency management agencies.

'Main functions' and 'additional functions' are those as described by sections 11 and 12 of the Fire and Emergency New Zealand Act 2017.

A glossary is provided on page 23 for further terms.

The Review Team

The Review Team was supported by the Fire and Emergency Operational Assurance Team within the Service Delivery Design Branch. The Review Team acknowledges the dedicated effort from all Fire and Emergency personnel to protect lives and property to the best of their ability.

Operational Assurance Team

The Operational Assurance Team advises the Deputy Chief Executives Service Delivery (Operations and Design) and the Executive Leadership Team. This advice is to:

- ensure they meet their responsibilities for Fire and Emergency; and
- support continuous improvement to Fire and Emergency's operations.

The Operational Assurance Team is required to be independent and objective.

Methodology

The review is impartial, fair, and was conducted in accordance with the Auckland Floods and Cyclone Gabrielle Operational Review Terms of Reference and our organisational values. At Fire and Emergency, our Lessons Management Process focuses on the performance of systems and processes and does not place blame or make comments about individuals' performances. This encourages us to learn from experience and embrace opportunities to improve. Fire and Emergency relies on people's willingness to share and discuss their experiences, both positive and negative, with others.

This review draws on information provided to the Review Team through debriefs and interviews and data collected through Fire and Emergency reporting systems. It considers Observations and Insights from the many interviews conducted during the review process.

The Review Team focused on the aspects of the flooding events defined in the Terms of Reference. They used the international best practice lessons analysis methodology known as OILL, derived from:

- Observations
- Insights
- Lessons Identified
- Lessons Learned

Observations are the building block of the Lessons Management Process. They are facts or occurrences that a member regards as worth noting, as an example of good practice or an opportunity for improvement.

Observations need to be concise factual statements which can be understood in isolation from other information. They should be short, written in plain English, identify the circumstances of the observation, identify the roles (not names) of people involved and provide details of what happened and the impacts which it had. A solution may be suggested if desired.

The Review team analysed over 1,000 Observations. We note that individual Observations can be discoverable and contravene confidentiality. It is important to note this report has considered Observations but is reporting on Key Insights.

An **Insight** is a deduction drawn from the Observations collected, which the Review Team recommends needs further consideration. Insights provide guidance for future analysis and potential action. Insights can be positive or negative and can contribute to reinforcing positive behaviour or changing practices. Insights may be developed when a single observation poses a high risk to the organisation or when three or more similarly themed Observations have been collected. This Review provides six Key Insights for Fire and Emergency's further consideration within its improvement process.

A **Lesson Identified** is a viable course of action (recommendation), based on the analysis of one or more Insights, which can either sustain a positive Observation or address an area for improvement. The development of a recommendation usually involves some level of analysis of the root cause of the Insight. There may be several actions required to achieve the recommendation and the changes in behaviour required to improve performance.

A Lesson Identified has only the potential to add value and needs to be communicated and implemented for any benefit to be derived from it.

It will take time to analyse the Key Insights from this Review in more detail before recommendations are developed. This is also because much work has been done already following these significant events, on the basis of early Observations and AARs. This includes the standing up of specialist water teams and delivery of new equipment for weather-related response.

A Lesson Identified becomes a **Lesson Learned** only once recommended changes have been implemented, embedded, and institutionalised in the organisation and there is an ongoing change in associated behaviour, operational norms/standardised procedures, and practice. Depending on the changes required, it may take several years for the change to be institutionalised across the entire organisation, or even longer for a cultural change or new programmes of work (such as may be required for our additional functions).

The Operational Assurance team play a lead role in delivering Lesson Learned to Fire and Emergency.

In scope

This Review focuses on:

- Fire and Emergency's preparations and response to the Auckland Floods and Cyclone Gabrielle.

The Review Team found that there were advantages and disadvantages to combining the two severe weather events into one Operational Review. Examining two significant operational responses that took place in short succession created some issues with reporting – for many Auckland personnel, it was difficult to clearly separate the events. However, there are benefits to considering both events together due to their similarities and timing.

Out of scope

- Activity and actions of other agencies involved.
- Individual performance of personnel associated with the events listed above.
- Any legal or other investigation processes, including occupational health and safety and/or coronial investigations. This includes the fatal landslide incident at Muriwai where two firefighters lost their lives.

Terms of reference

The following Terms of Reference have been approved by the Chief Executive and National Commander (refer to Auckland Floods and Cyclone Gabrielle Operational Review Terms of Reference).

1. Planning and preparedness for severe weather-related events and pre-planning instigated when the information was provided about the advancing Cyclone Gabrielle.
2. Establishment, effectiveness, and sustainability of our Local Coordination Centres (LCCs), Regional Coordination Centres (RCCs) and NCC.
3. The organisation's ability (including 111 Fire Communication Centres) to respond to these emergency situations efficiently, including identifying any gaps in service delivery and operational performance.
4. Our frontline firefighters' understanding of the SPC, and the training and equipment they had for dealing with significant storm and flooding on a scale never experienced previously.
5. How USAR capabilities were integrated and deployed, including the effectiveness of the deployment for our various USAR capabilities.
6. Preparedness and effectiveness of water response technical specialists and their equipment to support the areas most impacted by the flooding.
7. Effectiveness of Fire and Emergency's coordination, command and control at incidents at District, Region and National level.
8. Effectiveness of Fire and Emergency's engagement with local authorities, communities, iwi, and partner emergency service agencies.
9. Fire and Emergency's timeliness and effectiveness working with emergency management partner agencies, including impacted Civil Defence Emergency Management (CDEM) groups, local civil defence management structures and the National Emergency Management Agency (NEMA).
10. Effectiveness of our approach to safety, health and wellbeing, with a key focus on supporting our people's welfare.
11. Assessment of the overall impacts and effectiveness of Fire and Emergency's infrastructure and asset network.
12. Assessment of the effectiveness of our internal and external public information management.
13. Financial management of the costs of the Fire and Emergency response.
14. Compliance with relevant legislation, regulations, and operational procedures.
15. Accuracy and timeliness of reporting, including financial and management.

Review sponsor

Steph Rotarangi

Deputy Chief Executive Service Delivery Design
Deputy National Commander

Review team

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Ian Pickard Retired Assistant National Commander

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Key Review Insights

He tirohanga arotake matua

The Review Team evaluated the Auckland Floods and Cyclone Gabrielle Operations against the Terms of Reference for this Review. This detailed analysis forms the basis of the following Key Insights.

Key Insight 1

Opportunities to improve planning, doctrine, training and equipment specific to weather-related events

Fire and Emergency is required to assist New Zealanders in weather-related events to the extent that we have the capability and capacity to do so. Our personnel successfully delivered on this obligation, we rescued countless people impacted by these severe weather events while managing our other 24/7 first responder responsibilities. We achieved this by surging resources nationally, deploying our people accordingly and adjusting known specialist response processes (such as USAR) to suit the severe weather context.

However, there is room to improve our approach. Our planning, doctrine and our first responder equipment and training specific to weather-related events should be reviewed in the context of a changing climate which is likely to bring more frequent weather-related, long duration and concurrent events.

Planning

- Section 21 of the Fire and Emergency New Zealand Act 2017 requires planning that identifies the needs, resources, constraints and capabilities in the local area that are relevant to Fire and Emergency's functions. Fire and Emergency's definition and implementation of Local Planning could be reviewed following these events.

Procedures

- Operational Instructions exist for adverse natural events and identify responsibilities and hazards for such events. This doctrine would benefit from review; including National, Regional and/or Local procedures to assist in common understanding.
- There is also an opportunity to review our compliance with other relevant procedures and legislation such as financial approvals for significant events, fatigue management and working at heights.

Preparations

- Weather forecasts form the basis for Fire and Emergency preparedness decisions. We use forecasts to consider when to recall personnel, deploy specialist teams and establish National, Regional and Local support.
- We have pre-determined triggers and deployment procedures for some response types. There is value in considering similar processes for weather-related incidents.
- Pre-determined triggers for standup and deployment for weather events may also allow for better analysis of any impact on main functions.

Equipment, fleet and infrastructure

- Accessing equipment and fleet suitable for first response in severe weather events is an important consideration.
- Driving in severe weather and around floodwaters needs to be carefully considered in line with fleet capability and training requirements.
- Ensuring our infrastructure is resilient to flooding and severe weather is another important consideration to allow effective readiness and first response.
- Operational crews responded without suitable personal protective equipment (PPE) for floodwaters. Fire and Emergency should consider if our PPE and decontamination processes are appropriate.

Management response

Fire and Emergency commits to assessing:

- our approach to and operationalisation of Section 21 of our Act;
- our doctrine for weather-related events and national emergencies;
- our deployment triggers and deployment conditions for weather-related events; and
- our fleet, equipment and infrastructure requirements for weather-related response.

Key Insight 2

Opportunities to review Safe Person Concept, Dynamic Risk Assessment, Safety Officer roles and specialist response capability for weather-related events

Fire and Emergency personnel use the SPC, DRA and the Safety Officer role, along with other processes, to manage risk assessment and mitigate hazardous situations. The significant scale and nature of these events provides an opportunity to review our personnel's understanding of the SPC, DRA and Safety Officer role, as well as reviewing the specialist training and equipment required for dealing with severe weather.

SPC and DRA for weather-related events

- SPC and DRA training is delivered in structured programmes attended by Fire and Emergency operational personnel. Fire and Emergency could review this training and ensure all appropriate personnel have undertaken such training.
- Fire and Emergency may consider if its follow-up refresher and/or other training improves consistency of understanding of SPC and DRA and the appointment of Safety Officers.
- If Fire and Emergency improves its severe weather event doctrine (see Key Insight 1) this may be relevant to any SPC, DRA and Safety Officer training and experience.

Equipment for working in and around water

- As an additional function, Fire and Emergency does not have a wide range of specialist response equipment (such as specialist PPE and equipment) suitable for dealing with a significant storm and flooding on the scale of these events.
- Fire and Emergency personnel acquired resources such as boats to help evacuate people.
- Fire and Emergency does not have a wide range of equipment suitable for dealing with landslips and should consider whether enhancements are required and, if so, at what scale. This should be considered with Fire and Emergency's main functions (i.e. maintaining specialist USAR capability while developing District capability).

Specialist water response capability

- Fire and Emergency had just begun a roll out of Specialist Water Response teams at the time of these events. These crews were deployed much earlier than anticipated with USAR assuming accountability by default. They performed multiple rescues in challenging circumstances but require further support and development.
- Fire and Emergency should continue to develop its specialist water response capability as appropriate and review the level and standard of their equipment, how teams are to be responded and the procedures within which they operate.

Management response

Fire and Emergency commits to:

- assessing our approach to SPC, DRA and the Safety Officer role;
- assessing our specialist PPE and equipment for water related rescues;
- continuing to develop operational capability for dealing with severe weather through specialist teams and enhanced District capability; and
- continuing to improve the policy, procedures and equipment of our specialist Water Response Teams.

Key Insight 3

Opportunities to improve the establishment, effectiveness and sustainability of our Incident Management Teams and systems

Fire and Emergency IMTs and incident management structures were used extensively in these events, within both Fire and Emergency and our partner agencies. Our people provided IMT expertise at National, Regional, Local and Incident levels. Fire and Emergency worked well with other agencies and provided much needed support and skillsets. However, our resourcing of IMTs and systems to support them were tested to the limit. Efficiencies should be investigated to ensure enough trained and competent people are available to fill appropriate roles and further work is required to ensure our personnel are working with appropriate conditions and training.

Training and resourcing

- Fire and Emergency could consider ways to better define relevant levels of incident management functions for severe weather events.
- Fire and Emergency could review its systems to ensure personnel are competent and current when performing IMT roles and have a full understanding of New Zealand's lead agency requirements as well as Fire and Emergency's main functions (e.g. USAR).
- Fire and Emergency can improve training appropriate to our IMT roles and IMT support roles.
- Fire and Emergency can better define resourcing and roster requirements and consider setting trigger points to activate IMTs at National, Regional and Local levels.

IMT deployment considerations

- All IMT personnel need to be trained and deployed at the right seniority level to ensure effective communication and coordination. This includes embedding the right support functions for incidents (e.g. finance, admin etc).
- Liaison officers deployed to partner agencies need to be familiar with partner agency processes to allow for effective working relationships.
- There is a shortage of experienced Public Information Managers and this is a role identified as an opportunity to build capacity. Other roles also need further work to ensure adequate resourcing.
- There should be appropriate remuneration and conditions for our personnel when performing incident management functions.
- Starting times, duty rotations, backfill of BAU roles and time off in lieu should be implemented to manage fatigue.
- IMT should have adequate facilities and security to allow for effective operations.

Doctrine and data

- Fire and Emergency could improve our IMT policies at the National, Regional, Local and Incident level with a view to consolidate systems and processes, and development of consistent doctrine.
- The role of command, control and coordination for severe weather events could be better understood and Fire and Emergency may consider improvements to its training, doctrine and databases.

Supporting our personnel

- Fire and Emergency can consider how to better support and recognise our people who perform IMT roles.
- Long term operational resourcing of IMTs must be considered and addressed.

Management response

Fire and Emergency commits to assessing:

- training and resourcing of IMTs including deployment conditions and recognition;
- clarity of role and responsibilities for command, control and coordination for significant events; and
- our long-term resourcing and sustainability of IMTs.

Key Insight 4

Opportunities to improve our ability to respond specialist teams, manage large call volumes and maintain appropriate situational awareness

Fire and Emergency uses systems to prepare for and manage large volumes of calls and/or specialist response. The significance and scale of these weather-related incidents provided insights to the benefits and constraints of such systems, including the MIP environment and specialist response deployment procedures for USAR. We found that the MIP helped manage rapidly escalating demand but may have prevented Fire and Emergency from gaining the situational awareness required for IMT resources and specialist responders to prioritise multiple demands. Likewise, we found that our current methodology for USAR deployment may be improved to enhance situational awareness for IMTs.

Multiple incident procedure (MIP)

- MIP creates restricted radio communications with 111 Fire Communication Centres (ComCens). This means that ComCens aren't advised of 'running calls' (those given directly to crews out in the community) and that no situation reports (SitReps) are broadcast. Together, these reduce the opportunities for gaining situational awareness.
- It also meant that, with the large number of simultaneous incidents, the same fire trucks were continually deployed, creating difficulty in rotating and resting crews.
- Our procedure for MIP is current, however a refresh is appropriate following these events, including revisiting the benefits and constraints of the MIP system.

Maintaining effective communications

- ComCens need effective communication to control our resources. They operate within Police's Intergraph Computer-Aided Dispatch (ICAD) network which currently has no acceptable method of taking blocks of calls from the ComCen and allowing them to be prioritised and managed locally.
- The configuration of ComCen's phone system prioritisation could be revisited to ensure centres aren't overloaded with work during localised events while other centres are relatively unaffected.

- There is an inability to separate Auckland radio channels into different geographic areas. In times of high radio traffic, this restricted our ability to communicate effectively.
- Such technical limitations, especially with MIP in place, the resourcing constraints noted in Key Insight 5 below and the other challenges in responding to the high demand these events generated, can lead to delays in essential communication such as Emergency Management Alerts (EMAs) or situational updates.
- In these circumstances with ComCen remaining the default controller of response, IMTs experienced difficulty fully managing resources. Incidents of this scale tend to be managed by multiple officers, making effective communications even more important.
- Fire and Emergency could consider whether improvements are needed to its communications systems.
- Long term operational resourcing of IMTs must be considered and addressed.

USAR integration

- Our USAR teams are highly trained specialists. There is an opportunity to improve the awareness and understanding, both within Fire and Emergency and by our partner agencies, of the range of weather-related skills and capabilities that USAR and our other specialist teams have, their time frames for deployment, reporting lines and equipment available.
- USAR deploy with a prearranged and structured IMT and predefined reporting lines. During Cyclone Gabrielle, noting that this was in the context of patchy and/or non-existent communications, USAR teams primarily managed their own response, personnel accountability and wellbeing. ComCen and IMTs may have had reduced oversight over USAR's resource allocation and/or positioning as a result.
- Fire and Emergency could consider if USAR and other specialist response is integrated appropriately with IMT command and control.

Management response

Fire and Emergency commits to:

- assessing our approach to MIPS;
- investigating future opportunities for ComCen technology; and
- assessing specialist response deployment procedures and incident management structures.

Key Insight 5

Opportunities to review our first response, specialist response and surge capacity models

Fire and Emergency uses a 'surge and backfill' model to allow us to maintain first response and specialist response capacity. Simply put, this means that we select and train specialists often from our frontline crews and, in significant events, deploy them and backfill their first responder roles using off-duty firefighters to ensure our trucks can continue to respond. Likewise, we use our Executive Officers, management and BAU support personnel to fill IMTs. These events put our model to the test in two very different ways: Auckland Floods due to its rapid onset and disruptive nature and Cyclone Gabrielle due to its geographic distribution and long duration. There is an opportunity for Fire and Emergency to revisit its BAU, specialist response and surge capacity models, taking into account how our specialist teams integrate with first response and considering overall resourcing, preplanning, function and control.

ComCen capacity

- ComCens have very limited surge capacity due to the technical skillsets ComCen personnel need to have. Our ComCen personnel performed multiple tasks in very challenging circumstances including multiple power and communications outages.

Demand on senior officers

- In large-scale events such as those covered by this Review, there is high demand on our senior officers because we need to staff a range of coordination and operations centres (LCC, RCC, NCC, Emergency Operation Centre, National Crisis Management Centre (NCMC)) to support the incident, manage specialist response and liaise effectively with partner agencies, as well as staff IMTs and manage BAU.
- We have an opportunity to consider how we manage and balance these demands.

Demand on first responders

- There were many stories of personnel overcoming huge odds to ensure people were removed to safety, of adaptability and persistence, of Fire and Emergency becoming the community hub for those displaced and going far above our legislated mandated functions to meet the needs of our communities. This put significant demand on our people and systems.

Resourcing

- Fire and Emergency has an opportunity to revisit its business as usual, specialist response and surge capacity models to ensure it has suitable resourcing for large incidents and/or long duration events.
- We may consider how severe weather impacts our people and limits their ability to attend work due to roads closed and/or personal impacts.

Management response

Fire and Emergency commits to assessing:

- our ComCen resourcing and technical workflow;
- our approach to long duration event resourcing; and
- our specialist response capability model.

Key Insight 6

Opportunities to improve wellbeing support

Many of our own people were impacted by these events. We deployed as needed and, in some cases, were cut off from home with limited communications. Other Fire and Emergency personnel were isolated, performing multiple, complex and much-needed responses for communities without support or communications. We suffered loss, both within Fire and Emergency and in our communities. We dealt with significant property and infrastructure damage but kept going. Our fire stations became hubs for our communities, and we worked to assist people with their immediate needs. Much time and effort was spent contacting personnel to get updates on their welfare needs and deliver needed support. However, there was variation between what our people expected from welfare support and what Fire and Emergency provided. Events of this significance and size are important times to revisit wellbeing support and processes.

Fire and Emergency personnel requirements

- Welfare means different things to different people ranging from:
 - personal phone calls
 - calls to firefighters' families
 - delivery of food and dry clothing
 - generators for homes
 - being kept informed of the state of the response
 - planning in place for the duration
 - how long welfare checks and support are required.
- There was some variance between what personnel expected from welfare support and what Fire and Emergency provided.
- Fire and Emergency should consider the effectiveness of our approach to our personnel's welfare support. This could include how we ensure our systems and those of our suppliers can surge for large or rapid onset events and the ways we contact and connect with our people, preferably by someone they know and trust.

Preparations

- There is an opportunity at the National, Region and Local level to consider pre-planned welfare needs to include responsibilities, contact schedules, welfare support options or recording mechanisms, where it is possible to do so.

Locating Fire and Emergency personnel

- When deploying multiple teams across the country, Fire and Emergency may wish to consider a nationally-based welfare reporting system that identifies the location of deployed Fire and Emergency personnel, their welfare needs, when welfare contact was made, and/or what welfare support was provided.

Access to information

- For those making welfare and wellbeing checks, there were challenges with:
 - access to personal information via our internal processes
 - accuracy of the contact information
 - recording information and
 - managing the workload of individual contacts and any welfare needs.
- Fire and Emergency may wish to consider access to information for welfare needs.

Management response

Fire and Emergency commits to assessing:

- the effectiveness of our approach to Fire and Emergency personnel welfare support;
- welfare pre-planning doctrine in preparedness; and
- appropriate access to information.

Closing comments

Kupu whakakapi

The Auckland Floods and Cyclone Gabrielle, although quite different, were both severe weather events, the effects of which had not been experienced for decades. According to then-Prime Minister Chris Hipkins:

“*Cyclone Gabrielle is the most significant weather event New Zealand has seen in this century. The severity and the damage that we are seeing has not been experienced in a generation.*”

Managing main and additional functions

Fire and Emergency has a finite response resource in terms of our people and our equipment. When events such as Cyclone Gabrielle and the Auckland Floods occur, partner agencies and communities rely heavily on us to do what is required to support New Zealanders. We need to do this in a safe and managed way.

Improvements can be made

Fire and Emergency has an opportunity to assess its planning, operations, equipment and resourcing to ensure it is better placed to respond to weather-related incidents in the context of a changing climate. We can also continue to improve our wellbeing to our people so that they are able to continue to serve communities.

Service in the face of adversity

Many personnel who responded to the weather events of January and February 2023 were faced with overwhelming situations. Even though at times they were not equipped to deal with the enormity of the tasks they faced, they showed ingenuity and tenacity while ably assisting communities.

There are many stories of personnel overcoming huge odds to ensure people were removed to safety, of adaptability and persistence, of Fire and Emergency becoming the community hub for those displaced and going beyond our mandated functions to meet the needs of our communities.

There were also many stories of Fire and Emergency personnel and their families being personally affected by the severe weather yet putting this aside to assist communities.

This Operational Review will not do justice to these stories or detail the full extent of their contribution. Our people went above and beyond.

Final comments

Fire and Emergency can be justifiably proud of the service provided to communities during two extreme events, with personnel responding with skill, ingenuity and empathy. Many personnel in many roles worked above and beyond what anyone could have reasonably expected to ensure communities and the country received the kind of service they have come to rely on from Fire and Emergency.

Review authorisation

Whakamanatanga arotake

This report has been authorised by Operational Assurance:

Everything in this statement is true to the best of my knowledge and belief, and I made the statement knowing that it might be admitted as evidence for the purposes of the standard committal or at a committal hearing and that I could be prosecuted for perjury if the statement is known by me to be false and is intended by me to mislead.

Trevor Brown

Assistant National Commander

National Manager Operational Assurance

Glossary

Rārangi kupu

Acronym	Meaning
AAR	After-Action Review – Fire and Emergency three-tier process.
AEM	Auckland Emergency Management.
BAU	Business as usual – what is normally done day to day.
CDC	Civil Defence Centre.
CDEM (Group)	A group of Civil Defence and Emergency Management agencies – see section 22 of the Civil Defence and Emergency Management Act 2002.
ComCen(s)	Short form for all, or individual, Fire and Emergency Communication Centres.
DRA	Dynamic Risk Assessment – the process of continuously evaluating risks to our people and the public and evaluating tactics to lessen evolving risks or issues. See SPC.
ECC	Emergency Coordination Centre
EMA	Emergency Mobile Alert – an all-of-Government approach to messaging local cellphone tower(s) to advise the public of actions they should take to stay safe.
HBCDEM	Hawke’s Bay Civil Defence and Emergency Management
IMT	Incident Management Teams for both Fire and Emergency and local/national Government organisations.
LCC	Fire and Emergency’s Local Coordination Centres.
MIP	Multiple Incident Procedure – reduced messaging to speed up resource re-deployment in times of large call volumes.
NCC	Fire and Emergency’s National Coordination Centre.
NCMC	National Crisis Management Centre .
NEMA	National Emergency Management Agency .
NZDF	New Zealand Defence Force.
OILL	Process for reviewing events and situations – Observation, Insights, Lessons identified, Lessons learned.
PPE	Personal protective equipment.
RCC	Regional Coordination Centre
SLS	Surf Life Saving New Zealand.
SPC	Safe Person Concept – Fire and Emergency’s foundation safety approach. Everyone is responsible for safety.
Te Hiku	The Region of Fire and Emergency for the Northland and Auckland regions.
USAR	Urban Search and Rescue – a main function under the Fire and Emergency New Zealand Act 2017 S11 (2) (f) , tied to certification with INSARAG (International Search and Rescue Advisory Group).

Appendix – event timelines

Āpitihanga – rārangi wā taiopenga

Note on MIP. This is used during events or multiple incidents when Fire and Emergency ComCens receive more calls than can be managed under normal circumstances.

MIP was declared during the Auckland Flooding and Cyclone Gabrielle. During a MIP, it isn't possible to capture the Fire and Emergency response in a detailed chronological order.

The Review Team constructed the following timelines using information from the independent Auckland flood response review, social media pages and council reports to the best of their ability. It is included to provide context to the situation our people faced. It is not a full record of events.

To the best of our knowledge, images used in this timeline are attributed correctly.

Timeline – Auckland flooding

Thursday 26 January 2023

2057 hours MetService issues a heavy rain warning for Auckland from 0600 to 2200 hours on Friday 27 January 2023.

Friday 27 January 2023

1110 hours MetService issues a heavy rain warning for Auckland and Great Barrier Island.

1436 hours As emergency call numbers increase, Fire and Emergency implements its MIP.

1448 hours A local Rodney board member emails Auckland Council managers about extreme flooding and impassable roads in Rodney.

1552 hours MetService advises that 60 mm of rain has fallen in the last hour, causing flooding.

1626 hours The Chief Executive of Auckland Council advises the Mayor that Auckland Emergency Management (AEM) is supporting Fire and Emergency and other response agencies with the flooding response.

1647 hours The Auckland Council Duty Manager activates their IMT in response to severe flooding in West Auckland.

1650 hours Virtual AEM IMT starts, with Fire and Emergency attending, initially chaired by the Duty Officer and later by the Controller.

1700 hours Fire and Emergency advises the IMT meeting of multiple calls, stuck vehicles, people on roofs, and that we are working with Westpac Rescue Helicopter to carry out rescues. Fire and Emergency advises its USAR team that Surf Life Saving New Zealand (SLS) is involved in rescues. Police advise evacuations are under way in 10 homes, and some elderly people are stuck in rest homes. The Police Eagle helicopter is overhead, providing updates on the situation.

1708 hours Fire and Emergency requests the AEM evacuation centre details from the IMT. These are urgently needed as multiple locations are affected.

1710 hours Fire and Emergency and Police ask about the threshold for a declaration of a state of emergency. At the same meeting, Fire and Emergency notes a need for greater coordination and that, at present, they can get the resources needed.

- 1718 hours** Fire and Emergency asks whether the Elton John concert at Mt Smart Stadium should be cancelled.
- 1743 hours** CDEM Group Controller asks to be informed immediately of any requests from Fire and Emergency or Police for resources, as this will inform the decision whether to declare a state of emergency.
- 1750 hours** NZ Transport Agency Waka Kotahi is informed and notifies the IMT that floods are blocking the Northern Motorway.
- 1754 hours** The Group Controller states they could declare a state of emergency for greater Auckland now, but they are still waiting for further assessments, and the declaration seems premature based on the advice from Fire and Emergency and Police.
- 1756 hours** The Group Controller instructs leaders from Police and Fire and Emergency to be proactive if they are overwhelmed, given that the decision whether to declare a state of emergency is finely balanced.
- 1758 hours** Fire and Emergency reports mass evacuations in Henderson.
- 1810 hours** SH1 is closed at the Brynderwyns, south of Whangārei.
- 1815 hours** AEM staff, the Mayor and the Mayor's Chief of Staff meet. AEM advises the Mayor that a declaration is not needed, and this is supported by other agencies.
- 1821 hours** Fire and Emergency ComCens report that 111 calls have now reached 500.
- 1900 hours** The Elton John concert at Mt Smart Stadium is cancelled. Auckland Council organises buses to evacuate concertgoers.
- 1930 hours** It is reported that a body is found in Wairau Valley.
- 1935 hours** There is a report of a landslide in Remuera with one person missing, later found to be deceased. Fire and Emergency crews and USAR respond.
- 1950 hours** Waka Kotahi declares the Southern Motorway closed.
- 2035 hours** Fire and Emergency reports it has over 1,000 111 calls and wants to reiterate the message to people to only call 111 if lives are at risk.



Firefighter uses rope to rescue residents caught in flooding in Rānui. Courtesy of Hayden Woodward.

2037 hours

SLS reports it has rescued 69 people from the North Shore using inflatables. Fire and Emergency reports all resources are fully utilised and some evacuees are being housed in fire and police stations. Auckland Airport cancels all flights. There are people isolated upstairs in the international terminal.

2040 hours

Police state they have a preference for a declaration to be made.

2110 hours

The Mayor waits for advice on whether a local declaration is required or would be useful.

2125 hours

A complete declaration of a local state of emergency is emailed to the office of the Mayor.

2127 hours

The local declaration is signed and a document is provided to go public.

2214 hours

The Minister for Emergency Management announces that the Mayor has declared a state of emergency.

Saturday 28 January 2023

0038 hours

It is reported a second body is found in Wairau Valley.

Auckland's state of emergency remains in place but activity moves to recovery.



A major landslide in Titirangi, Auckland, covering the main access road, 29 January 2023. Courtesy of Dr Jan Kupec.

Timeline – Cyclone Gabrielle

Monday 13 February 2023

- 0521 hours** At least 23,000 homes across Northland and Auckland are without power.
- 0545 hours** It is announced the Harbour Bridge will likely remain closed for the day due to high, unpredictable winds. It opens an hour later, but with only two lanes each way and speed restrictions.
- 0603 hours** Cyclone Gabrielle is 200 km off the east of Northland, and it is predicted Northland, Auckland, Coromandel and Gisborne will bear the brunt of the bad weather.
- 0610 hours** AEM advises Auckland Airport is closed for all domestic flights, with many international flights in and out being delayed or cancelled.
- 0632 hours** MetService indicates the centre of Cyclone Gabrielle may not make landfall, but the weather will get worse during the day.
- 0646 hours** Auckland Transport urges all to remain home unless travel is essential.
- 0704 hours** It is reported Coromandel is affected by severe gales and heavy rain, with many power outages on the West Coast. By now, there are over 35,000 homes without power.
- 0717 hours** Whangārei District reports 22,000 homes without power.
- 0845 hours** In Auckland, train services are suspended and there are substantial changes to ferry timetables and disruptions to bus schedules. Many schools are closed, and employers ask their staff to work from home. Ports of Auckland suspends operations for two days.
- 0850 hours** Mobile phone networks are affected. One NZ (Vodafone) indicates that 43 cell sites are down, 29 of which are in Northland. Spark cell networks are also affected.
- 0917 hours** Cyclone Gabrielle makes landfall in New Zealand. Auckland has opened 27 Civil Defence Centres (CDCs), with eight sites housing people overnight. Community groups have opened 12 community-led centres. A concern is raised about the high risk of coastal inundation and storm surge with the high tide on Monday night, and people are urged to stay away from the coast.
- 0930 hours** Whangārei records double the average monthly rainfall for February. SH1 in Northland remains closed between Waipu and Brynderwyn.
- 1017 hours** There are numerous road closures for SH25 and SH25A, isolating the Coromandel Peninsula. Coromandel residents are urged to stay home and not travel unless absolutely necessary.
- 1100 hours** The Minister for Emergency Management indicates the Government is not yet at the point of having to declare a national emergency. NEMA is assessing the situation every four hours.
- 1105 hours** Approximately 58,000 people at the top of the North Island are without power.
- 1130 hours** Fire and Emergency reports that between 0500 and 1100 hours, it responded to 177 calls in Northland, Auckland, Waikato, Bay of Plenty and Hawke's Bay. Most calls are about trees blocking roads, power lines down and loose roofs.
- 1145 hours** People in low-lying areas near the rivers in Whangārei are urged to self-evacuate, with a CDC established at McKay Stadium.
- 1300 hours** The Bay of Islands records 11-metre-high waves. The Coastguard New Zealand operations centre works closely with emergency services to support the many boats sheltering at sea.
- 1310 hours** After cancelling 509 flights, Air New Zealand announces domestic flights will resume on Tuesday 14 February.
- 1420 hours** Fire and Emergency reports low-lying areas of Whangārei are being evacuated, first responders' safety is top priority, and people should only call 111 if there is a fire or lives are at risk.

1557 hours

All trains in Auckland are cancelled, with ferry services finishing early evening as the weather is predicted to worsen. By now, 40,000 people in Northland are without power.

1605 hours

Waikato District Council declares a local state of emergency.

1640 hours

Hauraki District Council declares a local state of emergency.

1647 hours

As emergency call numbers increase, Fire and Emergency implements its MIP.

1750 hours

Fire and Emergency reiterates it is prioritising responding to calls where life and safety are at risk.

1920 hours

Apartments in Mt Eden are evacuated because the nearby shot tower is unstable and liable to collapse.

2050 hours

Large parts of Waiheke Island have lost power.

2100 hours

Fire and Emergency reports 90 storm-related calls between 1900 and 2000 hours, the majority in Northland, Auckland and Waikato. MetService issues a red heavy rain warning for Northland, Auckland and Coromandel.

2110 hours

The Piha Volunteer Fire Brigade reports 'multiple serious issues' across Piha. The Surf Club and Royal New Zealand Returned and Services' Association (RSA) are open for displaced people.

2140 hours

Bay of Plenty Emergency Management issues an EMA to people in Waihi Beach and Athenree to prepare to evacuate. A further EMA is sent to people in Maketu shortly afterwards.

2350 hours

Fire and Emergency reports 110 storm-related call-outs between 2200 and 2300 hours, including a house slipping down a bank and a person trapped on top of a vehicle in a river in Whangārei.

2357 hours

The Fire and Emergency Operations Commander at Muriwai contacts the Te Hiku RCC asking them to send out an EMA to all residents in Muriwai to immediately evacuate to the Surf Club.



Hawke's Bay. Courtesy of Fire and Emergency Geospatial Products and Analytics team.

Tuesday 14 February 2023

- 0027 hours** The Fire and Emergency Operations Commander at Muriwai calls the Te Hiku RCC again, re-emphasising the urgency of an EMA.
- 0035 hours** Fire and Emergency notifies the public of a developing situation in Muriwai –a house has fallen in a slip, and many Police and fire vehicles are in the area. Multiple landslides are reported on one road.
- 0039 hours** The Fire and Emergency Operations Commander at Muriwai calls the RCC again for an EMA to be sent.
- 0045 hours** The Muriwai Volunteer Fire Brigade says due to extreme slip risks, residents living on Domain Crescent and Motutara Road must evacuate immediately to the Surf Club or out of Muriwai.
- 0059 hours** Auckland 2018 (AUCK 2018) from Muriwai calls the North Fire Communication Centre directly requesting an urgent EMA be sent to all Muriwai residents to evacuate to the Surf Club.
- 0105 hours** Fire and Emergency reports it has responded to two houses collapsing on Motutara Road, with people trapped in one house. There are USAR teams and fire crews on-site. The need for residents to evacuate is reiterated.
- 0135 hours** AEM issues an EMA for Muriwai to evacuate the two affected streets and go to the Sand Dunz Café.
- 0200 hours** A Fire and Emergency update says USAR teams are responding to many calls, including the incident in Muriwai, where residents are being evacuated to the local Surf Club. Between 2400 and 0100 hours, there are 59 calls, bringing the total in the previous 12 hours to 779.
- 0520 hours** A Fire and Emergency update reports responding to 867 calls in the previous 12 hours.
- 0530 hours** AEM confirms 200 people have been evacuated from Muriwai to the Surf Club. It also confirms widespread damage across Auckland, with surface flooding, trees down, and major power outages.
- 0614 hours** AEM confirms 113 people are being accommodated in 14 evacuation centres. The heavy rain warning has passed, but Auckland is still experiencing strong winds. With sodden ground, trees are likely to fall.
- 0630 hours** NEMA confirms 10 regions are under a state of emergency, with the cyclone following its predicted path south and slightly east down the North Island.
- 0641 hours** Fire and Emergency provides an update on the Muriwai incident, where two volunteer firefighters were trapped when a slip engulfed the house they were working around.
- 0732 hours** Fire and Emergency's Chief Executive indicates there are grave concerns for the remaining trapped firefighter.
- Early morning 14 February 2023, the Awakino River on the northern outskirts of Dargaville breaches its banks. Fire and Emergency and Police immediately evacuate about 12 homes in the area. A further 400 homes are requested to self-evacuate as a precautionary measure, with Police and Fire and Emergency door-knocking to assist the evacuation. About 300 people are evacuated ahead of the evening high tide.
- 0800 hours** Thames–Coromandel CDEM Local Controller indicates 'the whole Coromandel is closed', with every state and local highway closed.
- 0818 hours** Fire and Emergency reports that in the 12 hours between 1900 and 0700 hours, crews have responded to 985 incidents.
- 0820 hours** New Zealand Defence Force (NZDF) reports it has three vehicles and response teams assisting with Northland evacuations, and a Royal New Zealand Navy Vessel is undertaking a search and rescue operation for someone adrift at sea in a yacht with the assistance of Westpac Rescue, Coastguard New Zealand and USAR.
- 0843 hours** A Civil Defence National State of Emergency is declared.

Timeline – Tairāwhiti

Saturday 4 February 2023

Gisborne District is informed about a weather system that eventually becomes Cyclone Gabrielle. At the time, they are recovering from the effects of Cyclone Hale.

Thursday 9 February 2023

The public is advised to start preparing for a weather event.

Friday 10 February 2023

MetService issues a heavy rain watch for Gisborne from 1500 hours Sunday to 1200 hours Tuesday. Tairāwhiti CDEM Group activates the Emergency Coordination Centre (ECC), with staff co-locating to coordinate the response.

Saturday 11 February 2023

MetService issues a red heavy rain warning for Tairāwhiti region, with strong winds, up to 400 mm of rain and waves up to eight metres high.

Sunday 12 February 2023

1000 hours

Fire and Emergency decide to place critical personnel in Ruatōria.

1300 hours

Three Gisborne District Council staff, with Police, Fire and Emergency and Hato Hone St John personnel, leave Gisborne with Starlink, digital radios and satellite phones. The Gisborne port has been cleared of ships.

1600 hours

Civil Defence reconfirm that this event will be regionally managed and locally coordinated, with a single source of truth for weather forecasts as issued by the ECC. Schools north of Tolaga Bay are closed.

1800 hours

Gisborne District Council staff and others arrive in Ruatōria and visit communities to reinforce preparedness.



Fire and Emergency crews on scene with other emergency services to rescue a family from a submerged ute in the Kopuaroa Stream, Tairāwhiti, 9 February 2023. Courtesy of NZ Herald.

Monday 13 February 2023

- 0830 hours** The ECC is activated and USAR staff deployed into four sites across the region. Gisborne District Council staff are identified to support evacuation centres if required.
- 0907 hours** A local state of emergency is declared for the Tairāwhiti region, with the Hikuwai River at eight metres and rising, predicted to peak at 10 metres.
- 1100 hours** The first reports of flooding are received. Rivers are expected to peak between 0200 and 0400 hours and self-evacuation is to be considered, with evacuation centres to open in the afternoon.
- 1245 hours** NZDF departs for Ruatōria. The Hikuwai River is now at 10.5 metres high and rising.
- 1400 hours** The first notification for some residents to self-evacuate is made, with Police and Fire and Emergency assisting. The Civil Defence Centres open at 1800 hours.
- 1500 hours** The first power outages occur. At 1600 hours, the entire region moves to red severe weather warning.
- 1555 hours** The Whakatāne District declares a state of emergency and evacuates all homes in West Ōhope, as well as some on Harbour Road.
- 1700 hours** In Tolaga Bay, 560 houses are without power.
- 1900 hours** The bridge at Mangatuna washes away, SH2 closes between Wairoa and Napier, and Waikohu District Civil Defence, north of Gisborne, advises that those wishing to evacuate must do so now.
- 1945 hours** The Tairāwhiti Region is struck by a 4.2 magnitude earthquake, 25 km west of Gisborne.
- 2100 hours** The Hikuwai River is over 13.5 metres high.
- 2300 hours** The Waipaoa River, Te Karaka reaches 8.2 metres. People in Ormond township are advised they should evacuate to higher ground.
- 2330 hours** Gisborne District Council experiences issues with their flood warning text system.

Tuesday 14 February 2023

- 0215 hours** Gisborne and Wairoa lose internet, cellphone coverage, EFTPOS and landlines.
- 0330 hours** A member of Taranaki Emergency Management Office calls NEMA via Starlink to advise that Gisborne has lost all communications. Around the same time, Fire and Emergency and Police begin a targeted evacuation of Te Karaka residents to the local school.
- 0415 hours** Tairāwhiti CDEM Group is struggling to set up Starlink in Gisborne city due to storm conditions.
- 0424 hours** Fire and Emergency uses fire truck sirens to wake all Te Karaka residents for evacuation.
- There is surface flooding in Gisborne city.
- 0843 hours** The Minister for Emergency Management declares a state of national emergency.
- 0900 hours** CDEM staff relay to NCMC that communications in Gisborne are out. Fire and Emergency AirDesk, which coordinates aircraft rescue operations, is established in the Emergency Coordination Centre.
- 1100 hours** Gisborne and Wairoa have not had any internet, cellphone coverage, EFTPOS or landlines since 0215 hours. Critical water issues remain, power is out to a wider region, there is no 111 capability and the region is cut off. One Civil Defence Centre in Gisborne is full and two others still have space available.
- 1530 hours** Limited power and 111 capability for landlines is restored. MetService reduces the forecast to an orange weather watch as river levels recede.



The Waipaoa River after it burst its banks into Te Karaka. Courtesy of Stuff Limited.

Wednesday 15 February 2023

Multiple water pipes have broken, and people are required to conserve water. Power to most of Gisborne has been restored, and surface flooding is subsiding. Air New Zealand services are restored, and weather warnings have been lifted.

Over the next few days, power is restored to most communities, state highways reopen, emergency food, fuel and water supplies are delivered, and teams start checking the welfare of residents over a wide area.

Timeline – Hawke’s Bay

Saturday 11 February 2023

1200 hours MetService issues an orange heavy rain warning for Hawke’s Bay.

Sunday 12 February 2023

– MetService upgrades the orange heavy rain warning to a heavy rain and strong wind warning.

Monday 13 February 2023

– MetService increases the rain warning for Hawke’s Bay to red for 21 hours from 1000 to 0700 hours 14 February 2023.

1830 hours SH2 Napier to Wairoa and SH5 Napier to Taupō are closed.

Tuesday 14 February 2023

- 0400 hours** Hawke's Bay CDEM Group reports evacuations are under way in the Esk Valley. It instructs residents to call 111 immediately if they feel unsafe and need help. It issues an EMA for the Esk Valley warning residents of serious flooding with rising river levels and instructing those in low-lying areas to leave now.
- 0431 hours** HBCDEM declares a local state of emergency for Napier and Hastings.
- 0515 hours** HBCDEM (Hawke's Bay Civil Defence and Emergency Management) declares a Hawke's Bay-wide state of emergency, adding Wairoa District and Central Hawke's Bay District to the previous declaration. They report the most affected area is Esk Valley, where Fire and Emergency teams are responding. Rissington residents have been evacuated, there are power outages across the district, and bridges at Esk River and Puketapu are impassable.
- 0628 hours** The storm has flooded the wastewater network and an urgent reduce water use message is broadcast.
- 0810 hours** River levels across the region are reported as very high, bridges are closed, and the Esk River is in flood with residents being assisted.
- 0843 hours** The Minister for Emergency Management declares a state of national emergency.
- 0955 hours** NZDF resources are on their way to Hawke's Bay and rescues are under way. Taradale and Omahu residents are evacuated to CDCs.
- In Wairoa, the river has burst its banks, flooding 10–15 percent of the town, which houses around half of the town's 8,000 people. There is no power or phone, with the only communication available via satellite. There are limited supplies of food and water and no drinking water due to flooding.
- 1600 hours** Taradale, Jervoistown and Meeanee residents can return home. Waiohiki and Omahu residents are advised to evacuate immediately to the nearest hill with a grab bag and animals.
- 1208 hours** Cyclone Gabrielle is far worse than forecasts predicted and Hawke's Bay is significantly impacted. The focus remains on welfare, with active rescues and evacuations followed by protection of critical assets. Flooding in Waipawa and Waipukurau triggers evacuations. Significant power outages continue across the region, and communications are difficult with cellular networks out. Five bridges are now impassable.
- 1220 hours** Severe weather warnings or watches are lifted for Hawke's Bay. Rivers are still extremely high, and conditions are hazardous, with evacuations still being required.
- 1247 hours** Transpower declares a grid emergency following the loss of electricity supply to Hawke's Bay and Gisborne.
- 1645 hours** MetService issues an orange heavy rain warning for 13 hours, ending at 0200 hours on 15 February 2023.
- 1739 hours** The Hastings Sports Centre CDC is nearing capacity, and people are advised of the location of other CDCs.
- 1949 hours** Haumoana and Te Awa Ave are evacuated due to high tides and swells.



Esk Valley. Courtesy of Fire and Emergency Drone team.

Wednesday 15 February 2023

1200 hours

Evacuation notices are lifted for Waipukurau and Waipawa, and teams check that properties are safe for occupants to return to. Residents are advised this could take some time.

1406 hours

Evacuations continue across Hawke's Bay. The Maritime Rescue Coordination Centre reports there are 25 active requests for assistance, including people trapped in houses and on roofs.

So far, at least 300 people have been rescued through a multi-agency response supported by Hato Hone St John, Police, NZDF and Fire and Emergency, with helicopter support provided by local companies. Large areas of the region are still unable to be contacted, and surveillance flights are under way. Wairoa is a key area of concern and NZDF helicopters deliver critical supplies to the district.

Transpower lines companies are working to restore power, including gaining access to the flooded Redclyffe substation, which is badly damaged. There are 40,800 homes without power in Hawke's Bay, with 31,700 of these in Napier.

Timeline – Wairarapa

Monday 13 February 2023

1415 hours

There are heavy rain and strong wind warnings for the Wairarapa. These remain until 1500 hours on Tuesday 14 February.

Tuesday 14 February 2023

0200 hours

In Wellington, ferry sailings are suspended for 24 hours.

0700 hours

Flooding has started on SH2, but no major issues have been reported.

Castlepoint loses power early Tuesday morning, leading to communication, landline, cellphone and Wi-Fi outages.

The Castlepoint Road is closed, cutting off coastal communities such as Tinui.

0843 hours

The Minister for Emergency Management declares a National State of Emergency.

1245 hours

High water levels are reported at the Ponatahi Bridge, but all roads are open.

1328 hours

Tararua District is in the National State of Emergency.

1630 hours

Several roads are closed due to flooding and SH2 at Remutaka Hill is closed due to wind and slips. A heavy rain warning remains in place for Wairarapa until 1200 hours on Wednesday 15 February 2023.

Wednesday 15 February 2023

1030 hours

MetService issues a heavy rain warning for the Wairarapa and Eastern Hills until 1800 hours on 16 February 2023.

2230 hours

Power is restored to Castlepoint.

–

Tinui, a small east coast settlement near Masterton, is Wairarapa's worst-affected area, with three times more rainfall than in inland areas.

Flood levels reach up to 400 mm on some Tinui buildings. Fire and Emergency rural fire crews from across Wairarapa provide assistance. The NZDF deploy to the Wairarapa to support emergency services personnel. Twenty soldiers are based at Featherston and working with the local EOC.

Fire and Emergency units conduct initial assessments in the area. The Upper Hutt Community Rescue Team is based in Masterton. At Flat Point, Fire and Emergency uses 4WD vehicles to assist with reconnaissance.



Tinui flooding. Courtesy of the Wairarapa Times-Age.

