

Review of Reviews

2023 North Island Severe Weather Events



**National Emergency
Management Agency**
Te Rākau Whakamarumarū

New Zealand Government

Review of Reviews: 2023 North Island Severe Weather Events

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Section 1 Executive Summary

1.1 Introduction

The Auckland severe weather event in January 2023 and Cyclone Gabrielle in February 2023 (collectively referred to as the North Island Severe Weather Events) resulted in widespread impacts across the North Island.

Our thoughts are with the whānau of the fifteen people who tragically lost their lives during these events, and with the whānau of the person still missing. We acknowledge that local communities are still recovering and will wear the scars of these events for some time.

We also acknowledge and recognise the efforts and sacrifices of all those who worked on the response. These were challenging events that stretched the entire emergency management system's capabilities and capacity, but everyone involved put in an extraordinary effort to support our communities and each other.

The response to the Auckland Flooding and Cyclone Gabrielle events triggered a Government Inquiry into the Response to the 2023 North Island Severe Weather Events. In April 2024, the Minister for Emergency Management and Recovery released the *Report of the Government Inquiry into the Response to the North Island Severe Weather Events*

Agencies and organisations involved in the response also reflected on how well their arrangements, systems and processes supported their response (as per standard emergency management practice). Their reviews ranged from formally commissioned independent reviews or investigations to internal debrief reports.

Having reports on the same events provided an opportunity for the National Emergency Management Agency, with its role as the steward of the emergency management system, to identify common themes from the reports prepared or commissioned by agencies and organisations.

There were no surprises that emerged as the reports were analysed. The findings generally reflect those of the Government Inquiry into the North Island Severe Weather Events.

This project has been referred to as a 'review of reviews' and has been carried out by the National Emergency Management Agency with input from Civil Defence Emergency Management agencies, Emergency Services and agencies whose reports have been included in this review.

1.2 Purpose of this report

The purpose of this report is to inform the response to the Government Inquiry findings. The themes of the 19 North Island Severe Weather Events reports were analysed for consistency with the *Report of the Government Inquiry into the Response to the North Island Severe Weather Events*. To enable comparison the Inquiry report was not included in the thematic analysis.

Additionally, each summary contains prompts that agencies can use to inform discussions within and across agencies and organisations (especially at leadership and governance levels) as part of their strategic planning.

1.3 Review of reviews objectives

1. Provide the Emergency Management System and share with the public the common themes based on a range of reports into the North Island Severe Weather Events.
2. Inform the response to the Government Inquiry findings and enable learning from the reports.
3. Pilot the processes used to conduct any future review of reviews projects, and identify a common theme set that could be considered for use as a national theme set.

1.4 Scope of this review

Inclusion criteria

Reports were in scope if they met the following criteria:

- The report was on emergency management response to the Auckland Flooding Event and/or the response to Cyclone Gabrielle events, **and**
- The report identified areas to improve or strengths to sustain, **and**
- Reports were publicly available by 17 May 2024, **and**
- The reports were commissioned by the government or any agency or organisation, including private or non-government organisations, involved in the 2023 North Island Severe Weather events, **or**
- The report was by a statutory agency e.g. Ombudsman, Office of the Auditor General.

Selected reports

From the 93 reports identified, 19 reports satisfied inclusion criteria. The full list of reports is listed in Section 2.2 on page 9.

The main reasons for a report not meeting inclusion criteria were:

- It was an output of the response (e.g. All of Government factsheet, Action Plan, etc), **or**
- It did not contain reflection on the response (e.g. areas to improve or sustain), **or**
- It was not commissioned by an agency or organisation involved in the response or statutory agency (e.g. Ombudsman, Office of the Auditor General).

1.5 Limitations

Completeness of the emergency management system	Given this report does not provide a reflection of the whole emergency management system, some themes may only relate to specific parts of the system and may not be applicable to the system as a whole.
Identified themes	The themes identified in this report may not all apply to all agencies. We suggest agencies consider how relevant or prevalent these themes are and consider what other questions could be asked.
Focus on two severe weather events	Themes and questions relate to reports on the 2023 Auckland Flooding and Cyclone Gabrielle events only. If agencies or organisations use this report to inform their thinking and decisions that have implications across hazards, then they should consider whether the content may be unique to severe weather events or is applicable to other hazard types.
Inclusion of publicly available reports only	Only publicly available reports were analysed for this report.

1.6 Summary of the main findings and observations

1.6.1 Summary of main themes

Main finding	There were no surprises that emerged as the reports were analysed. The findings generally reflect those of the Government Inquiry into the North Island Severe Weather Events.
Communities	<p>Community resilience was better in communities with strong connections and relationships between community members and leaders, marae, businesses, other community collectives, local authorities and emergency services and prepositioned resources. This included where households were prepared – some with alternative communication channels and power sources.</p> <p>The role iwi Māori played was a strong contributor to community resilience. A lack of formal arrangements to include iwi Māori in Civil Defence Emergency Management (CDEM) structures and varied cultural capability, resources, dedicated staffing, and the provision of, or timeliness of, funding and reimbursement to iwi Māori was raised.</p> <p>Public information improvements identified included public alerting and making sure the information is understandable for all – especially older, disabled and non-English speaking people.</p> <p>How positive the welfare and recovery experiences were for communities depended on how well authorities engaged with communities on risk reduction, readiness, response and recovery.</p>

Command, Control and Coordination

There were gaps in intelligence and situational awareness to inform decision making. This affected the overall effectiveness of **incident management** in supporting communities through the response and early recovery stages.

The most frequently raised themes within **decision making** processes and procedures were declarations, activation, waste and contamination, and prioritisation of welfare and infrastructure resources and equipment.

Leadership behaviours such as communicating the transfer of leadership, clear tasking and having consistent communication of decisions across shifts, when not done well, impacted on staff and other agencies knowing who was in charge, and what was expected of them.

When **operational planning** was done well it enhanced command, control and coordination. When it did not work well there were impacts on clarity of purpose, effectiveness of taskings, decisions on prioritisation, and overall situational awareness.

Operations

Gaps in **intelligence** capability limited situational awareness, decisions on priorities, holistic consequence analysis capability and recovery planning.

Gaining shared **situational awareness** was a key limitation described in most reports impacting how effectively communities were supported through the response and early recovery stages.

There were examples of well-established planning and operational relationships and as well as examples of missed opportunities for better **interoperability** between agencies.

Resources

The goodwill and flexibility of trained emergency managers and volunteers was invaluable. However, there were not enough professional emergency management **personnel** available for an event of this scale and duration.

Securing backup and suitable **equipment** for this type of event reduced the impacts, but these were not always on hand and had to be procured during the response under urgency.

There were numerous issues with **technology** which impacted the ability to gain a shared situational awareness to inform decision-making.

Procurement and the claims and reimbursement processes were the most frequently raised **finance** processes needing improvement.

Capability Development

The need for more **training and development** for response staff, and training for managing complex, large-scale events was consistently raised.

Corporate Governance

A lack of, or unsuitable **processes** were the most common issue across all reviews, including how they interconnect (e.g. between local, regional and national levels).

There was variation in the establishment of **safety** functions, welfare checks on deployed staff and the application of dynamic risk assessments.

Those who had training and who understood their **roles and responsibilities** were better set up for this response. This was even more pronounced for those whose agencies **business continuity** arrangements were well embedded and understood.

1.7 Inform the response to the Government Inquiry and enable learning

Response to Government Inquiry

The main themes outlined above are broadly consistent with the *Report of the Government Inquiry into the Response to the North Island Severe Weather Events*.

The analysis of the themes was shared with the Department of the Prime Minister and Cabinet (DPMC), the agency leading the development of advice to the Government in response to the *Report of the Government Inquiry into the Response to the North Island Severe Weather Events*.

1.8 Piloting processes and implications for a national theme set

New Zealand Lessons Management

Without a mechanism to share lessons and consistent application of themes the process for drawing out a common set of themes from such a varied set of reports was challenging.

New Zealand does not currently have national lessons management guidance. However, there has been general agreement that New Zealand adopt the Australian approach to lessons management.

We applied the Australian National Themes¹, with adaptations made as required. Using the Australian National Themes, along with working definitions, was useful. However, these will need further development for our New Zealand context.

NEMA will work with stakeholders to develop lessons management guidance, a set of national themes and develop a process to share and collate lessons from across agencies.

1.9 Next steps

- NEMA will share the report with agencies, encouraging agencies to use the prompts as part of their strategic planning.

An A3 summary of the main themes along with the prompts is provided in Appendix A.

¹ [Lessons Management Handbook, 2019 \(aidr.org.au\)](https://www.aidr.org.au/lessons-management-handbook) page 27

Section 2 Methodology

2.1 Approach to drawing out themes

How themes were identified

Content from 19 reports was extracted and coded applying the Australian National Lessons Management Handbook's National Theme set². Content that did not align to the Australian National Themes were coded using a key term e.g. working with iwi Māori, welfare, etc.

Analysis of themes have been generalised with no specific reference to an agency. Agencies and organisations whose reports have been included were invited to undertake a natural justice check.

2.2 List of reports included in this analysis

Commissioning Organisation	Report Title
Auckland Council	Auckland Council - Auckland flood response review January 27-29 2023 (Bush International Consulting Review)
Bay of Plenty Civil Defence Emergency Management Group	Bay of Plenty CDEM Group Response Review Cyclone Gabrielle
Electricity Networks Aotearoa	Electricity Distribution Sector Cyclone Gabrielle Review
Fire and Emergency New Zealand	Fire and Emergency Operational Review: Auckland Floods January 2023; Cyclone Gabrielle February 2023
	Accident investigation into Fatal Landslide Independent Report into Muriwai firefighters' fatalities 7 Jul 2023
Hawke's Bay Emergency Management	Hawke's Bay Civil Defence and Emergency Management Group Response to Cyclone Gabrielle
Napier City Council	Napier City Council to Response to Cyclone Gabrielle
National Emergency Management Agency	NEMA's Internal Operational Lessons Report 2023 North Island Severe Weather Events
New Zealand Defence Force	New Zealand Defence Force OIA 2024-4905 Tropical Cyclone Gabrielle
New Zealand Lifelines Council	Aotearoa New Zealand's Critical Infrastructure A National Vulnerability Assessment. Parts A - C
Northland CDEM	Cyclone Gabrielle and Tai Tokerau Northland: Stories of community resilience and messages of support for the rest of Aotearoa New Zealand
Telecommunications Forum Inc	Telecommunications Emergency Forum Cyclone Gabrielle Post Incident Report
The Ombudsman	Insights and observations: The Chief Ombudsman's report on extreme weather events 2023
Te Whatu Ora	Te Ika-a-Māui Weather Events 2023 Post Incident Review Report
	Rapid Insights - Pacific Emergency Response Reflections - Moana Connect. Final - 14 Mar 2023
	Cyclone Gabrielle Post Incident Report Recommendations
Transpower	System operator report: Hawke's Bay loss of supply
Waka Kotahi and Auckland Transport	Auckland Anniversary 2023 - Flood Response Review
Wairarapa Councils	Cyclone Gabrielle Wairarapa Response - After Action Review 6 February to 7 March 2023

² [Lessons Management Handbook, 2019 \(aidr.org.au\)](https://www.aidr.org.au) page 27

Section 3 Thematic analysis

This section provides a summary of each of the themes identified, as well as prompts for discussion relating to each theme. The themes have been clustered in six main theme groups:

- Communities
- Command, control and coordination
- Operations
- Resources
- Capability development
- Corporate governance.

3.1 Communities

Themes with the most direct impact on communities were community resilience, working with iwi Māori, welfare, public information, engagement and recovery. Thirteen reports raised one or more areas to improve or sustain.

3.1.1 Community resilience

Definition applied

The National Disaster Resilience Strategy defines resilience as “*the ability to anticipate and resist the effects of a disruptive event, minimise adverse impacts, respond effectively post-event, maintain or recover functionality, and adapt in a way that allows for learning and thriving.*”³

Summary

Communities with strong connections, prepared households – some with alternative communication channels and power sources – and relationships between community members and leaders, marae, businesses, other community collectives, local authorities and emergency services, were better enabled to manage the disruption and welfare needs caused by these events.

Community members, especially in rural communities, as well as local contractors and businesses were well underway with the clean-up e.g. clearing trees and debris, before authorities arrived.

Good connections between communities, local authorities and emergency services generally enabled better situational awareness for the coordination and deployment of volunteer response teams, surge response staff and resources to support welfare needs.

³ Definition of resilience applied to this theme taken from [National Disaster Resilience Strategy](#) page 7.

In some cases, authorities were regarded as slow to help and or were disconnected to communities' needs. This was more likely when there was a greater extent of damage, longer periods of isolation and loss of communications, as well as greater levels of vulnerability and deprivation in the populations impacted and less engagement from authorities.

With the lead in time to prepare for Cyclone Gabrielle, there was an opportunity to do better to pre-position people and resources into communities in a coordinated way. This depended on having good situational awareness of the expected impacts, understanding which communities often get isolated in severe weather events, and understanding supporting agencies' capabilities.

Prompts for discussion

What are the enablers and/or barriers for collectively building community-led resilience?

How frequently, and to what extent, does your agency communicate with and engage the public through public education campaigns?

3.1.2 Working with iwi Māori

Definition applied

The role, processes and practices of iwi Māori in response and recovery.

Summary

The role iwi Māori played in their local communities was one of the greatest strengths contributing to community resilience. As a result:

- in the absence of regional Pacific hubs, many marae, whānau, hapū and iwi became an important hub of support for Pacific communities.
- many community members felt supported and had their basic needs met in a way they believed was missing from the formal response.

However, there were issues raised such as:

- the lack of formal arrangements to include iwi Māori in CDEM structures.
- variation and/or lack of adequate resources and dedicated staffing impacting iwi Māori advice into response structures and decision making.
- variation in provision and/or timeliness of funding and reimbursement to iwi Māori.

These issues impacted on the variability in the relationships, funding and engagement that is required for effective preparation, response, and recovery from emergencies.

Prompts for discussion

What are the barriers to ensuring the iwi Māori liaison function is appropriately resourced and involved at the outset of any response?

What engagement does your agency undertake to engage with local iwi and marae across the 4Rs (risk reduction, readiness, response and recovery), including shared training and exercising, consolidated planning, and in distribution of updates and operational plans?

3.1.3 Welfare⁴

Definition applied

The process and practices for a planned, coordinated and effective delivery of welfare services⁵ to affected individuals, families/whānau and communities, including animals.

Summary

Reports mostly only described improvements that are needed to support communities through their welfare functions and arrangements.

There were positive examples of cross boundary support between CDEM Groups putting communities first, regardless of geographical boundary lines. Even so, it was challenging to get sufficient situational awareness of community needs, know the most suitable locations and facilities to activate Civil Defence or evacuation centres, and mobilise resources.

Reports described difficulties gaining information on locations and community needs due to:

- loss of communications
- no direct liaison contact with services conducting evacuations
- no contact details of key community leaders and coordination response personnel, or with those setting up spontaneous community hubs
- no pre-prepared welfare arrangements with communities and understanding of their communities' needs, appreciation of kaupapa Māori concerns and pre-positioned resources
- not having a consistent needs assessment tool and data sharing arrangements in place.

Improving understanding of what is meant by, and provided by evacuation centres, community hubs, community-led centres, and civil defence centres would be helpful for communities and agencies.

⁴ There is no welfare sub-theme in the Australian National theme set. We have derived the definition of welfare from [CIMS-3rd-edition-FINAL-Aug-2019.pdf \(civildefence.govt.nz\)](#) page 62.

⁵ Please refer to the [National CDEM Plan](#) for more details.

There were examples where personnel staffing welfare functions and centres felt that their training had not prepared them enough. In some cases, guidance documents, while appreciated, were not easy to digest quickly. Staff were also in positions of having to act in more senior/leadership levels than they had experience with, especially with other agencies and Māori leaders.

Government grants and assistance with temporary accommodation were appreciated.

Prompts for discussion

How confident is your agency in its pre-prepared welfare arrangements? What assures these pre-prepared arrangements are equitable?

In your agency and multi-agency governance roles, how are you enabling information sharing protocols to support a national needs assessment tool?

3.1.4 Public information

Definition applied

Processes and practices to provide the public with information.

Summary

Reports described improvements that are needed for public alerting, including emergency mobile alerts. The widespread loss of telecommunications in Cyclone Gabrielle made the provision of public information incredibly challenging – especially early on as situational awareness was limited.

Other improvements identified were that communication needs to:

- be understandable for all – especially for older, disabled, non-English speaking people.
- convey the seriousness of the event and prepare the community to take the appropriate action.
- inform the public on progress made on re-establishing roads, power and other infrastructure.

Agencies relying on the use of smart phones and phone data meant not all people were able to access important public information. Disabled people, people who were renting, and those on low incomes were most impacted potentially increasing their risk of being further isolated.

Having clarity on who the spokespeople were, and being consistent in timing of updates was a challenge in some cases. Even when this was clear, ensuring spokespeople had consistent messaging to convey could also be a challenge. When this worked well, updates and key messages that were provided to mayors, elected officials and iwi enabled them to update their communities with consistent information.

The All-of-Government factsheet was translated into 29 languages and 5 formats⁶. This factsheet provided information about welfare services and aid.

Prior readiness arrangements with media and radio stations were beneficial, especially for communities with no access to social media.

Timely communication conveying the seriousness of the event was helpful for communities to prepare.

While there was an appreciation by the public of strong social media messaging, it did require a lot of staff time and would require enough trained Public Information Managers to sustain.

Prompts for discussion

What arrangements does your agency have to pre-position alternative communications into communities that often get isolated?

How does your agency ensure public information is accessible (e.g. in multiple languages and formats) and easy to understand?

If your agency issues Emergency Mobile Alerts, to what extent do you test and exercise processes for this platform?

In your multi-agency leadership and governance groups, how do you collectively ensure consistent communications across elected officials and other leaders?

3.1.5 Engagement

Definition applied

Processes and practices used to create meaningful conversations with communities.

Summary

Engagement by authorities with communities contributed to less positive experiences for communities' when:

- links into tangata whenua, iwi Māori, and key community leaders were:
 - not generally preplanned.
 - underused for input into decisions made during early-stage response and recovery.
- approaches were ad-hoc and personality-driven or not prioritised for high-risk or high deprivation communities.
- communication was not consistent.

Reports identified missed opportunities for better information and engagement with communities using support agencies' existing networks and relationships.

⁶ Languages and formats includes New Zealand Sign Language

Prompts for discussion

How robust are your agency's pre-prepared, risk reduction, response and recovery engagement processes? How dependent are they on individuals? How confident are you that your agency's engagement processes are equitable?

In your multi-agency leadership and governance groups, how do you understand and leverage each other's networks and relationships?

3.1.6 Recovery

Definition applied

Processes and practices used to support and establish longer-term recovery during the response.

Summary

The level and quality of engagement by authorities determined how positive the experiences were for communities.

Actions such as councils making facilities free and available (e.g. waste management facilities, libraries) and arrangements to cover costs for communities and businesses were appreciated.

As with public information, recovery also depends on good information to inform priorities, policy and decision making.

Appointing recovery leads early on when this occurred was positive for a smoother transition to recovery. However, even if engagement and appointment of recovery leads went well, clarity on the national level arrangements would have made for a smoother transition into recovery.

Areas to improve on the different mechanisms for reimbursement of costs are covered in the Finance sub-theme (3.4.4).

Prompts for discussion

What arrangements does your agency have in place to appoint a recovery lead early in the response? How confident are you that these arrangements can be successfully implemented?

If your agency uses holistic consequence analysis, how confident are you this capability enables a smooth and efficient transition to recovery? To what extent do these include iwi Māori insights and knowledge?

What could be done through your multi-agency leadership and governance groups to improve the establishment of and communication between recovery entities?

3.2 Command, control and coordination

3.2.1 Incident management

Definition applied	<i>Provision of direction in regard to the overall management of the incident at the higher levels of the operational structure.</i>
Summary	<p>Most reviews described gaining shared situational awareness as a major challenge. This affected the overall effectiveness of incident management in supporting communities through the response and early recovery stages.</p> <p>Setting of response objectives and priorities, when this worked well, set the scene for clarity of purpose, especially when internal communication was strong and consistent across localities, shifts and rotations.</p> <p>Operational rhythm was not always set well, nor were expectations on meeting attendance and requirements. The impact of either not having pre-established processes or fit-for-purpose processes contributed to ad-hoc and uncoordinated advice.</p> <p>Processes around decision making, and the behaviours and processes of those in leadership roles impacted incident management and are summarised next.</p>
Prompts for discussion	<p>How does your agency establish and communicate your response objectives and priorities to promote shared understanding?</p> <p>How does your agency establish and communicate an operational rhythm and provide clarity about meeting agendas and expectations on attendance and reporting requirements? To what extent do you drill or exercise these processes?</p>

3.2.2 Decision making

Definition applied	<i>Processes and procedures used to document and provide governance for making decisions to support the response and early recovery.</i>
Summary	<p>The most frequently raised themes within decision making processes and procedures were declarations, activation, waste and contamination, and prioritisation of welfare and infrastructure resources and equipment.</p> <p>Decisions to activate, when not informed by corporate governance, impacted staffing considerations, decisions on priorities for business-as-usual activities and communication of these to staff.</p> <p>Processes around declarations, where raised, was an area needing improvement.</p>

- It was a challenge to take the time needed to test thresholds and do the required consultation with the pressure and expectation of quick decisions.
- The Civil Defence Emergency Management Act is now 22 years old and does not reflect current technology e.g. to allow for electronic signatures on declarations.

Decision making was not clear cut for addressing issues such as waste and contamination, as the range of expertise required was not held in any one organisation at a local, regional or national level. This was an area of stress and had implications for health and safety assessments.

Prioritisation decisions impacted on coordination of resources to support welfare needs or equipment into affected areas to restore infrastructure services.

Prompts for discussion

How should waste and contamination be managed in future events?
How can this be effectively undertaken and funded?

As leaders, how frequently do you exercise your activation and governance processes, including with other agencies?

3.2.3 Leadership

Definition applied

In relation to operational activity this includes behaviours and processes of those in leadership roles.

Summary

Business-as-usual consensus-based leadership approaches were considered less effective in response compared with more decisive leadership approaches.

Leadership behaviours such as communicating the transfer of leadership, clear tasking and having consistent communication of decisions across shifts, when not done well, impacted on staff and other agencies knowing who was in charge, and what was expected.

Gaps in having the appropriate levels of leadership and experience deployed into the field was attributed to not having a clear understanding of the tasks or having enough trained people.

Having good understanding and use of the lines of communication across local, regional and national leaders was deemed an important factor for an effective emergency response.

Prompts for discussion

To what extent do you establish and maintain relationships and lines of communication with other local, regional and national leaders?

3.2.4 Operational planning

Definition applied	<i>Planning for all aspects of operational activity including preparatory stages, execution of plans and review of plans and planning process.</i>
Summary	<p>When the planning cycle was not working well, there were impacts on clarity of purpose, clarity and effectiveness of taskings, decisions on prioritisation, and overall situational awareness.</p> <p>Input from intelligence (described next) was one of the most frequently raised areas for improvement in the planning cycle.</p> <p>More time and better intelligence for planning and decision making on priorities could have progressed more work in the field through better tasking and subsequent deployment of more appropriately trained people and equipment to deliver the effect.</p> <p>Managing or re-distributing large quantities of goods deployed into the field that were surplus to requirements also created challenges.</p> <p>Contingency planning was also identified as an area for improvement.</p> <p>Strengthening the understanding of the expertise within supporting agencies could improve the identification of capabilities that can be coordinated in response.</p> <p>The interdependences between the roading network and other infrastructure e.g. lifelines and utilities restoration efforts, were also a factor. This created challenges for decisions on feasibility and prioritisation, communication and meeting expectations of the public.</p>
Prompts for discussion	<p>What response plans does your agency have? and to what extent do you review and exercise these?</p> <p>When tasking an agency, how do you ensure that the right approvals are in place?</p>

3.3 Operations

3.3.1 Intelligence

Definition applied	<i>The gathering and analysis of data to inform planning and decision-making throughout operational activity.</i>
Summary	<p>There was no dedicated national intelligence capability.</p> <p>The lack of iwi Māori specific intelligence limited situational awareness and decisions on priorities.</p> <p>Emphasis on response-centric collection of information, and limited holistic consequence analytical capability, impacted recovery planning.</p>

Mapping capability did not support decision making, prioritisation and communication of priorities. Even if technical mapping capability was in place, engagement across agencies, data sharing, file compatibility and uncertainty about the reliability of the data were also factors.

There was little or no interoperability between organisations information systems and data sets. This added to the challenges with creating demonstrable connection between the emergency management response (at all levels) and the communities' needs.

Technology enabled collection methods e.g. smart meters, had potential to provide real-time data. However, as they weren't widely in use, their ability to provide a complete picture was limited.

The gathering of information in the field, development of products and capability did improve during the event, and these were most impactful on situational awareness when shared (which was not always the case).

Prompt for discussion

How do you prioritise the need for improvements to intelligence capabilities?

3.3.2 Situational awareness

Definition applied

Situational awareness is *“an understanding and appreciation of the complexities of an incident, including an understanding of the environment, the situation, likely developments, and implications. Shared situational awareness is achieved when the right level of intelligence is shared by and between all involved in an emergency to enable informed decision-making and consolidated planning.”*⁷

Summary

Gaining shared situational awareness was a major challenge described in most reports and was a major causal factor in effectively supporting communities through the response and early recovery stages.

Limited situational awareness in the early stages of the response was largely due to communication technology failures.

Early engagement and coordination with business-as-usual flooding teams improved forecasting of potential impacts (assuming no monitoring technology failures). This worked best when maps used to inform decision making included interpretation guidance.

Early deployments were regarded as an opportunity to enable better situational awareness, especially in areas where there were limited

⁷ From [Impact Assessments Director's Guideline \[DGL 22/20\] \(civildefence.govt.nz\)](#)

communications (providing staff had alternative communication options).

Not having community contacts with satellite phones and Starlink details made outreach for information from those in the field difficult.

Without good shift handovers supported by a lessons management system as a record to draw on, passing on valuable information to incoming staff did not go well. This added further to the information disconnect and challenges related to obtaining current situational awareness.

The timeliness of distributing situation reports and information flows were sometimes impacted by not having complete or accessible distribution lists.

Prompts for discussion

How do you ensure staff understand what is meant by 'situational awareness'?

What actions does your agency take to ensure that contact lists are up to date?

What contingencies need to be in place to ensure situational awareness is maintained when the primary technology and communication channels fail?

3.3.3 Interoperability

Definition applied

The relationships, activities and interactions between agencies when conducting operations.

Summary

There were challenges in coordination and information flows between local business-as-usual structures and their transfer to regional and national command, control, coordination and communication structures.

There were examples of well-established planning and operational relationships with CDEM Groups by agencies with requirements to do so under the National Civil Defence Emergency Management Plan Order 2015.

Engagement of partner agencies through dedicated liaison staff, planning with partner agencies and regular coordinating committee meetings contributed to a better coordinated response and situational awareness.

Reports identified missed opportunities that would have resulted in better interoperability. For example, readiness activities such as relationship building, exercising and scenario planning activities.

Prompt for discussion

Do you have a shared understanding across agencies of what is expected from, and how to utilise, liaison officers?

3.4 Resources

Resources refers to the equipment, technology, people, facilities and finance used in response. Fifteen of the 19 reports raised issues with resources.

3.4.1 People

Definition applied

People resources include staff and volunteers used in any operational and corporate activities.

Summary

The goodwill and flexibility of trained emergency managers and volunteers was invaluable in the response. However, there were simply not enough professional emergency managers available for an event of this scale and duration. This meant that:

- Incident Management Teams (IMT) were running thin early in response, making it difficult to establish an operational tempo.
- Experienced people were relied on and expected to work long hours, leading to fatigue.
- Sustaining for the duration of the response was difficult.

People were generally not well supported by systems and processes. There also could have been better management of volunteers and rotations of IMT and surge staff. This could have provided better continuity and enable greater efficiencies in managing the disruption from the events for communities.

Several approaches were beneficial.

- When the resources (e.g. people, equipment, facilities of support agencies were known and deployed, this reduced the load on other agencies and services, and meant communities received services quicker.
- Managing the mix of surge and local staff rotations worked well so that local staff could rest, without losing the knowledge and relationships of local communities.

Prompt for discussion

In your multi-agency operational leadership groups, what mechanisms do you have to maintain oversight of the resources (e.g. people, equipment, facilities) of your agencies?

3.4.2 Equipment

Definition applied

Equipment resources include mechanical and emergency response equipment used in response activities.

Summary

Securing back up equipment such as generators and fuel reduced impacts of the event. For agencies carrying out field operations, the

availability of equipment was an issue, eg. vehicles suitable to use in the conditions.

Equipment to protect staff and to carry out tasks had to be procured during response. This was either due to inadequate maintenance of existing equipment, or because there wasn't enough equipment available because of the type and scale of this event.

The lack of necessary equipment created a risk of harm to communities and individual responders, though this was mitigated in response as alternative solutions were found.

Prompts for discussion

What back up arrangements does your agency have for equipment?

How does your agency balance the purchase and maintenance of equipment during business-as-usual versus planning for rapid procurement in an emergency? How do health, safety and well-being risks and legal obligations weigh into these decisions?

3.4.3 Technology and systems

Definition applied

Technology resources include all tangible items like phones, computers, cables, monitors, projectors, speakers, televisions etc. as well as support systems like internet servers, operating systems and software packages.

Summary

The most common issues identified with technology and systems were:

- the lack of a system to capture data across all sources to create a real-time common operating picture across all agencies.
- accessing existing response systems within some agencies was slow and frustrating.
- there were security, privacy, and interoperability issues in trying to consolidate geospatial data and understanding how it should be used.
- some business-as-usual incident management systems were not suited to the scale of this event.
- not having alternative telecommunication resources and systems that will work without power and cell reception.

These issues impaired the ability of each agency to develop shared situational awareness and therefore get the full picture they needed to make decisions.

Prompt for discussion

How do you weigh up the investment in technology and systems with other priorities?

3.4.4 Finance

Definition applied *Finance resources include monies allocated and any related assets related to funding of operational and corporate activities.*

Summary The main points raised in the reports were:

- procurement processes and delegations need to be in place in advance of a response.
- the different mechanisms for reimbursement of costs that arose from response and recovery were complex, created risk, had low uptake and for some, there were misunderstandings, and some community organisations were left out of pocket for several months.

Prompts for discussion To what extent does your agency regularly test your procurement processes and delegations, especially with new staff?

To what extent does your agency test claims and reimbursement processes from end-to-end? Are there any issues that could result in inequities of service?

3.4.5 Facilities

Definition applied *Facilities resources includes buildings and structures, as well as fittings and fixtures and any other areas required for operational and corporate activities.*

Summary A number of response coordination centre facilities were unsuitable or inadequate for this response and in many cases this resulted in re-locating some or all Coordinated Incident Management System (CIMS) functions.

These disruptions impacted on communications between CIMS functions, centres at local, regional and national levels and contributed to staff fatigue and stress.

Prompt for discussion How does your agency prioritise the need for fit-for-purpose facilities?

3.5 Capability development

Capability development refers to the activities that improve the ability of an organisation to respond to events including training and exercising, and processes that set to explore and test new approaches. Eight of the 19 reports identified least one issue relating to this theme, however further issues relating to training and

development are also covered under the Corporate Governance and Resources sections of this report.

3.5.1 Training and development

Definition applied

Structured learning processes to build organisational capacity.

Summary

Issues identified relating to the training and development of response staff were:

- surge staff without prior emergency management training.
- existing Coordinated Incident Management System (CIMS) training packages were too simplistic to cover the complexities of managing a large-scale event.
- inconsistency in training for Incident Management Teams (IMT) roles within and across agencies.
- agencies that rely on surge staff have little incentive for staff and their managers to prioritise emergency management training against business-as-usual work.
- there appeared to be a lack of people trained to draw on, particularly those in key response management roles.

There appear to be no minimum training standards for those involved in response, and the lack of comprehensive training left many response staff without a vision of what response best practice should look like. Consequently, many struggled to manage their areas of responsibility, wasted effort, and had a stressful experience.

Prompt for discussion

How do you prioritise the need for greater professionalisation of the emergency management workforce?

3.6 Corporate governance

This was the most prominent theme amongst the reviews, with 17 of the 19 reports identifying least one issue relating to this theme.

3.6.1 Processes

Definition applied

Documents with descriptions of the steps, methods and requirements to achieve particular goals, outcomes and tasks.

Summary

A lack of, or unsuitable processes, was the most common issue across all reviews, including how they interconnect (e.g. between local, regional and national response levels). Specific process issues were identified with:

-
- scalability or gaps in existing Standard Operating Procedures (SOPs).
 - end-to-end workforce management/deployable capabilities.
 - approvals and tracking e.g. financial expenditure.
 - task management.
 - information management.
 - lessons management.
 - managing logistics and resources.

While agencies had some processes in place to manage smaller events, the scale of this response meant many processes had to be created or refined during the response. This contributed to disorganised coordination centres, interoperability issues between response agencies, further compounded when communication was poor.

Prompts for discussion

To what extent are your agency’s processes and procedures suitable and accessible for both small and complex large-scale events? How often does your agency exercise or test them?

In the multi-agency operational leadership groups, to what extent are you jointly sharing and developing templated processes to avoid duplication of effort by agencies involved in the response?

In your agency or operational leadership and governance groups how confident are you that improvements are identified, actioned and tested in drills or exercises so they are well understood?

3.6.2 Health, Safety and Wellbeing

Definition applied

Processes and behaviours designed to reinforce safe practices, including all aspects of maintaining health and well-being of members.

Summary

Health, safety and wellbeing issues included:

- the complexities of timely advice and decision making on waste management and contamination.
- the safety and wellbeing impacts on staff and volunteers, e.g., long hours, fatigue, being personally impacted by the response, the suitability of equipment, vehicle fleet, infrastructure and personal protective equipment.

There was variation in the establishment of safety functions, welfare checks on deployed staff and dynamic risk assessments. These are critical for managing health, safety and wellbeing risks for public, staff and volunteers during response.

The interaction between the dynamic risk assessment and risk register processes required sufficient identification and knowledge of all

hazards and risks to prevent loss of life or injury. This did not always go well.

Prompts for discussion

What does your agency do to ensure the safety function is activated at the start of every response?

At a governance level, what mechanisms do you have to identify and manage variation in safety practices to ensure the risks to health, safety and wellbeing of all staff and volunteers is managed?

3.6.3 Roles and responsibilities⁸

Definition applied

The relationships between roles in and across organisations including individual positions, institutional and governance arrangements, their mandate and intent, and the structure of agencies and sectors.

Summary

Those who had training and who understood their roles and responsibilities generally found this useful in setting them up well for this response. The response was less effective when those with emergency management responsibilities did not understand their role and that of other agencies.

The issues were around clarity of roles and responsibilities, both of individual positions and of different organisations within the emergency management system, specifically:

- the role of iwi Māori in the emergency management system.
- those in governance roles.
- transfer between business-as-usual and response structures.
- the relationship between, and roles and responsibilities of local, regional, national levels of response.
- lifelines and infrastructure.
- agencies in sectors experiencing recent and current restructures.

Underlying factors such as gaps in engagement, decision making, leadership, systems, processes, training and exercising, within and across agencies compounded these issues.

Relationships between stakeholders due to expectations (misplaced or otherwise) not being met were affected, as well as missed opportunities to utilise other organisations' capabilities to support the response.

⁸ Roles and responsibilities is adapted from, and replaces organisation structure.

Prompts for discussion

How do you ensure your agency's systems, processes, training and exercising support staff in readiness for their response and recovery roles?

What changes are required to address gaps in engagement, decision making, leadership, systems, processes, training and exercising, within and across agencies?

3.6.4 Business continuity

Definition applied

*Business continuity processes and practices so your organisation's critical functions can continue to the fullest extent possible during a disruption.*⁹

Summary

Several reviews identified business continuity as an issue which impacted the resilience of agencies and their ability to respond effectively. Issues identified were:

- business continuity planning which focused on scenarios rather than impacts
- not defining organisational priorities during response
- not reviewing contingency plans when new critical equipment was commissioned
- business continuity planning of contract providers.

This meant that key services and hardware were vulnerable to failure, and staff responding to the severe weather events were still expected to meet business-as-usual deadlines and workloads. This resulted in frustration, fatigue, less effective performance and impacted on business-as-usual service delivery in not affected regions.

Prompts for discussion

To what extent does your agency test or review your business continuity plan?

Do your agency's contracts with service providers include provisions that accommodate their delivery being compromised if they are expected to contribute to the response? If not, what steps should be taken to address this?

As multi-agency leadership and governance groups, how do you identify, plan and test interdependencies between agencies?

⁹ Definition from GOV3 [Security governance \(GOV\) | Protective Security Requirements](#)

Appendix A Review of Reviews main themes and discussion prompts A3

Main Themes and Discussion Prompts



Communities

Community resilience was better in communities with strong connections and relationships between community members and leaders, marae, businesses, other community collectives, local authorities and emergency services and prepositioned resources. This included where households were prepared – some with alternative communication channels and power sources.

The role **iwi Māori** played was a strong contributor to community resilience. A lack of formal arrangements to include iwi Māori in Civil Defence Emergency Management (CDEM) structures and varied cultural capability, resources, dedicated staffing, and the provision of, or timeliness of, funding and reimbursement to iwi Māori was raised.

Public information improvements identified included public alerting and making sure the information is understandable for all – especially older, disabled and non-English speaking people.

How positive the **welfare** and **recovery** experiences were for communities depended on how well authorities engaged with communities on risk reduction, readiness, response and recovery.

Prompts for Agency View

How frequently, and to what extent, does your agency communicate with and engage the public through public education campaigns?

What are the barriers to ensuring the iwi Māori liaison function is appropriately resourced and involved at the outset of any activation?

How confident is your agency in its pre-prepared welfare arrangements? What assures these pre-prepared arrangements are equitable?

What arrangements does your agency have to pre-position alternative communications into communities that often get isolated?

How does your agency ensure public information is accessible (e.g. in multiple languages and formats) and easy to understand?

If your agency issues Emergency Mobile Alerts, to what extent do you test and exercise processes for this platform?

How robust are your agency's pre-prepared, risk reduction, response and recovery engagement processes? How dependent are they on individuals? How confident are you that your agency's engagement processes are equitable?

What arrangements does your agency have in place to appoint a recovery lead early in the response? How confident are you that these arrangements can be successfully implemented?

If your agency uses holistic consequence analysis, how confident are you this capability enables a smooth and efficient transition to recovery? To what extent do these include iwi Māori insights and knowledge?

Prompts for Multi-agency leadership and governance committees or boards

What are the enablers and/or barriers for collectively building community-led resilience?

What engagement does your agency undertake to engage with local iwi and marae across the 4Rs (risk reduction, readiness, response and recovery), including shared training and exercising, consolidated planning, and in distribution of updates and operational plans?

In your agency and multi-agency governance roles, how are you enabling information sharing protocols to support a national needs assessment tool?

In your multi-agency leadership and governance groups, how do you collectively ensure consistent communications across elected officials and other leaders?

In your multi-agency leadership and governance groups, how do you understand and leverage each other's networks and relationships?

What could be done through your multi-agency leadership and governance groups to improve the establishment of and communication between recovery entities?



Corporate Governance

A lack of, or unsuitable **processes** were the most common issue across all reviews, including how they interconnect (e.g. between local, regional and national levels).

There was variation in the establishment of **safety** functions, welfare checks on deployed staff and the application of dynamic risk assessments.

Those who had training and who understood their **roles and responsibilities** were better set up for this response. This was even more pronounced for those whose agencies business continuity arrangements were well embedded and understood.

Prompts for Agency View

To what extent are your agency's processes and procedures suitable and accessible for both small and complex large-scale events? How often does your agency exercise or test them?

What does your agency do to ensure the safety function is activated at the start of every response?

How do you ensure your agency's systems, processes, training and exercising support staff in readiness for their response and recovery roles?

To what extent does your agency test or review your business continuity plan?

Do your agency's contracts with service providers include provisions that accommodate their delivery being compromised if they are expected to contribute to the response? If not, what steps should be taken to address this?

Prompts for Multi-agency leadership and governance committees or boards

In the multi-agency operational leadership groups, to what extent are you jointly sharing and developing templated processes to avoid duplication of effort by agencies involved in the response?

In your agency or operational leadership and governance groups how confident are you that improvements are identified, actioned and tested in drills or exercises so they are well understood?

At a governance level, what mechanisms do you have to identify and manage variation in safety practices to ensure the risks to health, safety and wellbeing of all staff and volunteers is managed?

What changes are required to address gaps in engagement, decision making, leadership, systems, processes, training and exercising, within and across agencies?

As multi-agency leadership and governance groups, how do you identify, plan and test interdependencies between agencies?





Command, Control and Coordination

There were gaps in intelligence and situational awareness to inform decision making. This affected the overall effectiveness of **incident management** in supporting communities through the response and early recovery stages.

The most frequently raised themes within **decision making** processes and procedures were declarations, activation, waste and contamination, and prioritisation of welfare and infrastructure resources and equipment.

Leadership behaviours such as communicating the transfer of leadership, clear tasking and having consistent communication of decisions across shifts, when not done well, impacted on staff and other agencies knowing who was in charge, and what was expected of them.

When **operational planning** was done well it enhanced command, control and coordination. When it did not work well there were impacts on clarity of purpose, effectiveness of taskings, decisions on prioritisation, and overall situational awareness.

Prompts for Agency View

How does your agency establish and communicate your response objectives and priorities to promote shared understanding?

How does your agency establish and communicate an operational rhythm and provide clarity about meeting agendas and expectations on attendance and reporting requirements? To what extent do you drill or exercise these processes?

What response plans does your agency have? and to what extent do you review and exercise these?

When tasking an agency, how do you ensure that the right approvals are in place?

Prompts for Multi-agency leadership and governance committees or boards

How should waste and contamination be managed in future events? How can this be effectively undertaken and funded?

As leaders, how frequently do you exercise your activation and governance processes, including with other agencies?

To what extent do you establish and maintain relationships and lines of communication with other local, regional and national leaders?



Operations

Gaps in **intelligence** capability limited situational awareness, decisions on priorities, holistic consequence analysis capability and recovery planning.

Gaining shared **situational awareness** was a key limitation described in most reports impacting how effectively communities were supported through the response and early recovery stages.

There were examples of well-established planning and operational relationships and as well as examples of missed opportunities for better **interoperability** between agencies.

Prompts for Agency View

How do you ensure staff understand what is meant by 'situational awareness'?

What actions does your agency take to ensure that contact lists are up to date?

What contingencies need to be in place to ensure situational awareness is maintained when the primary technology and communication channels fail?

Prompts for Multi-agency leadership and governance committees or boards

How do you prioritise the need for improvements to intelligence capabilities?

What contingencies need to be in place to ensure situational awareness is maintained when the primary technology and communication channels fail?

Do you have a shared understanding across agencies of what is expected from, and how to utilise, liaison officers?



Resources

September 2024

The goodwill and flexibility of trained emergency managers and volunteers was invaluable. However, there were not enough professional emergency management **personnel** available for an event of this scale and duration.

Securing backup and suitable **equipment** for this type of event reduced the impacts, but these were not always on hand and had to be procured during the response under urgency.

There were numerous issues with **technology** which impacted the ability to gain a shared situational awareness to inform decision-making.

Procurement and the claims and reimbursement processes were the most frequently raised **finance** processes needing improvement.

Prompts for Agency View

What back up arrangements does your agency have for equipment?

How does your agency balance the purchase and maintenance of equipment during business-as-usual versus planning for rapid procurement in an emergency? How do health, safety and well-being risks and legal obligations weigh into these decisions?

To what extent does your agency regularly test your procurement processes and delegations, especially with new staff?

To what extent does your agency test claims and reimbursement processes from end-to-end? Are there any issues that could result in inequities of service?

How does your agency prioritise the need for fit-for-purpose facilities?

Prompts for Multi-agency leadership and governance committees or boards

In your multi-agency operational leadership groups, what mechanisms do you have to maintain oversight of the resources (e.g. people, equipment, facilities) of your agencies?

How do you weigh up the investment in technology and systems with other priorities?



Capability Development

The need for more **training and development** for response staff, and training for managing complex, large-scale events was consistently raised.

Prompts for Agency View

How do you prioritise the need for greater professionalisation of the emergency management workforce?

Prompts for Multi-agency leadership and governance committees or boards

How do you prioritise the need for greater professionalisation of the emergency management workforce?



National Emergency Management Agency
Te Rākau Whakamarumarū