Lessons From Disaster


How Environment Canterbury responded to, and recovered from the 2010/2011 Canterbury Earthquakes, and what impact this has had on the way the organisation approaches future disaster resilience.

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A special thanks to current and former staff who gave up their time and willingly re-visited the events connected with the 2010/2011 Canterbury Earthquakes.

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Whāia te iti kahurangi ki te tūohu koe me he maunga teitei

Seek the treasure you value most dearly: if you bow your head, let it be to a lofty mountain
Operations: Processes and Systems
You Won’t Always Get It Right
Know Your Strengths and Vulnerabilities
Prioritise Re-establishing Work Spaces
Leverage Alternative Locations For Work and Operations
Cloud-Redundant Systems and Remote-Work Policies
Open, and Interoperable Systems
Digital First Workplace
Situational Awareness
Innovation and Creativity
Curiosity, Learning, and Continuous Improvement
Functional and Role-Based Disaster Planning
Financial Resilience
Insurance Claim Management
Disaster Scenario Planning
Role-Based Backup and Redundancy
Knowledge Retention and Process Documentation

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Before / After
Manager
Before
Before / After
Leader
Before
Before / After
Governor
Before / After

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Background

The impact of the 2010/2011 Canterbury Earthquakes on Environment Canterbury (ECAN), its staff, its many stakeholders, and the community as a whole, was significant and far-reaching. The experiences the Canterbury community lived through were life-changing and will continue to be for many generations to come.

The earthquakes were largely “unexpected” by most in Canterbury and acted as a reminder of the fact that Cantabrians live in a region prone to natural disasters. The earthquakes tested the resilience of the community in responding to and recovering from catastrophic disruption, and five and half years on, there is plenty of evidence to say Canterbury as a community has proven itself to be resilient.

For all the stress, hardship, and suffering disasters cause individuals, organisations, and communities, they present opportunities for improvement. Given the number of sources for future disasters in Canterbury, there is significant value to be gained from pausing, stepping-back, and reflecting on what transpired following the 2010/2011 Earthquakes and asking the question, “what can we learn from our experiences and how can we do better next time?”

ECAN recognises it plays an important role in the community and as part of its commitment to continuous improvement and developing its organisational resilience, believes it is important to examine its own response following the earthquakes. The goals for “Lessons From Disaster” can be summarised as follows:

- Capture an overall picture of how ECAN performed
- Understand how and why ECAN was able to perform the way it did
- Extract key lessons and principles from ECAN’s experience that are repeatable and valuable in the face of future events
- Identify areas for improvement.

Lessons From Disaster is the product of 12 in-depth interviews carried out with ECAN staff and external stakeholders. Their experiences, perspectives, and answers to interview questions have been used to compile a set of key principles that aim to fulfil the goals outlined above.

ECAN wanted the reflection and examination process to be open and inclusive. Subsequently, it was agreed the outputs of the process would be made publicly available in an “open wiki” format so that anyone could comment, amend, and/or add to the content. The outputs are intended to serve numerous audiences, and although the holistic and qualitative nature of the process is
subject to bias and individual interpretation, the open and inclusive publication of the content is intended to counter this risk.

The overarching intention for the learning process is that it is on-going, and ECAN expects the “bigger picture” will develop over the years to come. Learning from events as significant as the 2010/2011 Canterbury Earthquakes is multi-generational and it is hoped Version 1.0 developed five and half years on is a good starting platform.

Definitions

Disaster

A disaster is a sudden, calamitous event that seriously disrupts the functioning of a community or society and causes human, material, and economic or environmental losses that exceed the community’s or society’s ability to cope using its own resources. Though often caused by nature, disasters can have human origins.

Resilience

An individual’s, group’s, organisation’s, or community’s ability to recover from setbacks and disruption, adapt positively to change, and keep going in the face of adversity.

Purpose and Vision

The purpose of “Lessons From Disaster” is to examine how ECAN responded to and recovered from the 2010/2011 Canterbury Earthquake so that general disaster resilience principles can be understood, defined, and shared with the community, ECAN better understands its strengths and vulnerabilities in-terms of disaster resilience, and practical steps are developed that could maintain, and increase ECAN’s disaster resilience.

Methodology

12 one-on-one interviews were conducted over a period of 8 weeks. The individuals interviewed included:

- Dame Margaret Bazley - ECAN Commissioner
- Ross Vesey - Chief River Engineer

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The questions asked and background interviewees had prior to each interview can be found here.

## Outputs

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## Executive Summary

The Canterbury Earthquakes came at a pivotal time for ECAN. Government Commissioners had been appointed only months before the 4th September 2010 earthquake (September Earthquake). The organisation had been under intense public scrutiny for sometime and the sentiment within the organisation was “cautious and uncertain” about the future.

Although the September Earthquake did not fundamentally change the organisation the way the 22nd February 2011 (February Earthquake) earthquake did, it did have a galvanising effect on staff, creating a unifying, common experience that bound everyone together. The shared earthquake experience helped the organisation breakthrough some of the bureaucratic
hierarchies that had plagued it in previous years, and signalled to staff their safety and well-being mattered.

Furthermore, the September Earthquake created a new set of expectations, operating parameters, and projects on which the organisation’s performance would be judged. No longer would the organisation’s performance be judged in the context of a business-as-usual setting. The earthquake created a new working context that many staff signalled gave them a sense of a fresh start, a new stage to perform on.

The February Earthquake and subsequent aftershocks forced the organisation to “dig-deep” and test the depth of its resilience at all levels. The loss of the ECAN’s Central Office, home to the vast majority of staff, forced the organisation and individuals to operate in new ways. The organisation transformed from being a centralised workplace, to one that was distributed and broken-up across multiple locations. Staff had little choice but to adapt to sometimes less than desirable conditions, roll-up their sleeves and carry-out tasks not written in their job descriptions. Staff at all levels took on new challenges as well as additional work, all whilst dealing with their own personal crisis at home.

Despite the inconveniences, increased work-load, and stressful operating environment, many staff reported a new sense of purpose, freedom, and drive following the February Earthquake. The Commissioners and the Senior Leadership Team recognised the need to empower and trust their people to “get on with their jobs” and saw to it the systems and operating structures were put in place to ensure staff had the freedom and support they needed to do so. Every staff member interviewed reported the excitement of having the freedom to perform, and being trusted to make decisions, knowing the leadership team was not only there to support them if something went wrong, but were encouraging them to take action in the first place.

The increased transparency, trust, and regular communication up and down the organisation enabled ECAN to continue to operate effectively despite being decentralised, and spread across multiple locations. The depth of experience and the strength of the relationships individuals had in key roles across all areas of the organisation, enabled many of the challenges presented in the months following the February Earthquake to be managed and overcome.

Within weeks following the February Earthquake, the majority of ECAN staff had new offices, and the organisation had adapted to its new operating environment. Core IT and operational systems were never “offline” and staff were able to operate remotely and keep the organisation alive. Although there continued to be stresses and strains on staff over the months that followed, the organisation was able to rise to the challenge and perform.
The targets set by Commissioners when they arrived in office were met, as were statutory enforced consenting timelines. Staff were paid on-time and relationships with key stakeholders that had previously been strained were not only been repaired, but significantly strengthened. Furthermore, five and half years later, the organisation moved into a new, purpose-built office in the heart of the city that is built to 130% of the building code.

The February Earthquake truly did create a new platform and stage on which ECAN could perform. It gave staff a mandate and the permission to express their talent and often broad skillsets beyond what they traditionally had been able to do in a business-as-usual setting. When individuals in an organisation feel free to perform and take action, is it any surprise ECAN performed the way that it did and overcame the challenges it was presented with?

What is most notable about ECAN’s experience is how “unconscious” and unplanned its response was. All interviewees said the earthquakes were a surprise and they had not expected or planned for them. What this indicates based on the strength of ECAN’s response is there was a level of resilience embedded in the subconscious of the organisation. It also implies how fortunate ECAN was that this was the case. The biggest lesson ECAN and other organisations like it must take from this is to ensure resilience is planned for and not left to chance.

There are a number of key first-principles that emerged from the interviews conducted that help explain how ECAN was able to perform the way that it did. Although there are many principles outlined in the Lessons and Key Principles section of this paper, there are a number that stand above the rest.

**Key Principles**

- Put People First
- You Can’t Over Communicate
- Small Things Matter
- Resilience Is 50% Planning, 50% Agile
- Be Open, Inclusive, and Empowering
- Decisive and Clear Leadership Provides Certainty In Chaos
- Integrate Resilience and Disaster Planning Into Business-As-Usual Activities
- Permission To Fail: We Won’t Always Get It Right
- Relationships Count: With Internal and External Stakeholders
- Stress Test Resilience During Peacetime
- Know Your Finances
- Be Flexible
- Encourage and Facilitate People To Talk About Their Experiences
- Develop Redundancy In Roles, Systems, and Processes

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● Expand Disaster Management Planning To Include Short, Mid, and Long Term Response and Recovery
● Disaster Leadership May Need To Be Different From Business-As-Usual Leadership
● Know Your Strengths and Vulnerabilities: People, Property, Systems, and Processes

Focusing on first-principles is important as these are principles and operational guides that are true irrespective of the disaster context. The enquiry process has purposefully avoided reducing resilience down to a series of checklists or manuals; this ironically creates “fragile” resilience.

By understanding what made ECAN resilient from a first-principles basis and consciously integrating these principles into business-as-usual practices, ECAN and other organisations like it can develop increased resilience in the face of future disasters. Resilient New Zealand said in its report “CONTRIBUTING MORE: IMPROVING THE ROLE OF BUSINESS IN RECOVERY” that resilience is 50% Planning, and 50% Agility. What this means is there will always be a large “unknown” component of disaster response and recovery that you can never plan for. What you can plan for however is how as an individual, organisation, and community you will behave and make-decisions when faced with a disaster. The first-principles agreed on as part of your planning for disaster are what supports your ability to be agile when disaster strikes.

There has been a significant amount of natural staff turnover since the September Earthquake and many of the “old-hands” who were instrumental in ECAN’s response and recovery have retired. Much of the experience gained managing through the response and recovery from the Earthquakes has therefore left the organisation and apart from implicit knowledge transfer to new staff and the natural process of continuous improvement, there has been no process of formally integrating the experiences of the last five and a half years into business-as-usual processes.

This paper is an important step towards the development of greater organisational resilience within ECAN however it is only the first step in what should be a continuous process of improvement. Staff who have to deal with the fallout from a future disaster will be able to readily access these lessons and key principles however many of the principles need to be activated prior to a disaster to be valuable. Therefore, to improve ECAN's disaster resilience, the following recommendations to the organisation are made.

Summary Recommendations

● Review “Lessons from Disaster” and inform staff and external stakeholders of the findings.
● Undertake a strategic review of the findings from “Lessons From Disaster” and develop an action plan for implementation.
● Integrate resilience principles into business-as-usual practices, including staff performance reviews, team meetings, and risk management, strategic planning and business-case development activities.

● Run a disaster simulation on at least a 3-year repeating basis.

● Consider the deployment of the following software and systems to improve the connectedness of the organisation prior to and in the aftermath of a disaster:
  ○ [https://www.15five.com/](https://www.15five.com/) - Employee Engagement and Feedback Service

### Lessons and Key Principles

Below are the key first-principles that underpinned ECAN's earthquake response and recovery.

#### Key Principles and Actions By Theme

##### Governance and Leadership

**Put People First**

- Ensure the safety, welfare, and well-being of staff as a priority.
- People are the life-blood of the organisation and the organisation’s ability to perform is determined by the staff’s ability to perform.

> “In all my years working with people, from all walks of life, it’s incredible what people are willing and able to do when they feel cared for and supported.”

  Dame Margaret Bazley, Commissioner

**Small Things Matter**

- People remember a smile, or when leaders take time-out to check-in with staff and external stakeholders on a personal level.
- Take the time to connect with staff on a one-on-one basis, listen to their stories, empathise, and ask “how can I help?”

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“I remember the day following the earthquakes, the senior leadership team were tired and feeling a little wary. Dame Margaret came along and gave us all a hug. It made all the difference.”

Jill Atkinson, Director

You Can’t Over Communicate

- Communicate frequently to internal and external stakeholders on a regular and predictable basis e.g. everyday at 1pm.
- Communication is the glue that keeps individuals connected to the organisation.
- The regularity and predictability of communication provides certainty in an uncertain environment, no matter how trivial the content of the communication. Always communicate.
- Don’t speculate or unnecessarily burden staff with concerns/risks that are immaterial, unlikely to eventuate, or may distract staff.
- When communicating “bad-news” ensure it is communicated with a strategy for mitigating the fall-out or down-side.
- Stamp-out speculation, rumour, and noise, by directly addressing them and providing clarity.

“The daily email regime we set-up immediately following the disaster let people know the CEO and the leadership were on the job, staff were still connected to the organisation, and ECAN was alive and well. It made a world of difference to staff who were living through a huge amount of uncertainty; it gave them certainty they were still part of ECAN.”

Acting-CEO, Wayne Thomas

Be Open, Inclusive, and Empowering

- There is no room for ego or heroism. Be open to help from others and establish channels and mechanisms for help and support to emerge from within and outside the organisation.
- Ask for help early and often from internal and external stakeholders.
- Establish a simplified operating framework ahead of time that becomes operable when disaster strikes. The framework should make it easy to delegate decision-making authority to staff. This framework should include:
  - Clear operational priorities that are reviewed regularly
  - Clear communication channels and regular times for communication
  - An emphasis on fast, and calculated action and decision-making
○ A means for communicating what help the organisation requires from internal and external staff and stakeholders; help will naturally emerge.
○ Support emerging leaders and action-takers; don’t ignore them or shut them down.
○ Regular review meetings and retrospectives at all levels of the organisation to ensure continuous learning, accountability, and feedback.
○ Encouragement of internal and external stakeholders who are looking for opportunities to improve or enhance processes, systems, or relationships.
○ Emphasis on using pre-existing financial and operational delegations to their full extent.

● Continuously re-emphasise the importance of staff participation and action. Support staff by reassuring them "mistakes/failures" are expected and what is important is the learning from the mistakes/failures.
● Celebrate victories and successes collectively, regularly, and often, no matter how small.

“What was so exciting about the 12-18 months following the earthquakes is how much we were able to get done. We all felt we had the freedom and the support of the leadership to just get on and make decisions.”

Tania Harris, Consents Manager

Resilient Leadership Blueprint: 50% Planning, 50% Agile

● Disaster response and recovery leadership is different from the style of leadership needed for business-as-usual operations.
● Leading in disaster is about being prepared to operate in a new and uncertain environment. This means leaders have turned their minds to all aspects of their organisation and operational priorities ahead of time, and have established first-principles from which they will make agile decisions.
● Develop a first-principles and scenario-based disaster management plan that captures fundamental operational priorities, decision-making criteria, and suggested actions to guide agile action in the event of a disaster.

“Wayne Thomas (Acting CEO) said to me ‘It’s been a hard 6 months...and you’ve loved every minute of it haven’t you?’ I had. It was exciting, and stimulating. We were all just making decisions, and going for it.”

Neville Bishell, Property Manager

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Disaster Leadership Is Different

- Great business-as-usual leaders may not make the best leaders in a disaster response and recovery environment.
- Take the time prior to disaster to understand the skillsets, approaches, leadership styles, and roles required to lead in a disaster environment.
- Be open to shifting leadership responsibilities to individuals better suited to manage in disaster.
- Given the importance of leadership following a disaster, develop disaster leadership performance criteria based on first-principles.

“We had to move away from our sometimes bureaucratic approach as an organisation and this change had to come from me as CEO and the senior leaders. We had to lead by example. We had to make decisions quickly. Act decisively. Above all else, we had to empower our people to get on with the job.”

Wayne Thomas, Acting CEO

“The quality of the leadership, particularly from Wayne Thomas, was incredible. I cannot say it enough, leadership and the style of leadership really matters when an organisation is faced with crisis. Wayne was empowering, humble, and inclusive. ECAN were very fortunate to have such a capable leader at the time.”

Dame Margaret Bazley, Commissioner

Share Leadership Responsibilities

- The stress and pressure of leading in disaster must be distributed across a capable team and not rest with one or two individuals.
- Regularly review responsibilities vs. personal capability and welfare. Be open to re-assigning or cycling responsibilities amongst leadership team members.

“The senior leadership team was very good at sharing responsibilities and helping each other out wherever we could.”

Jill Atkinson, Director

Develop Leadership Redundancy Ahead of Time

- Should the worst happen to some or all of the leadership team during a disaster, ensure there is leadership redundancy in-place who are capable of performing.
• This means they are trained, have a high-level of situational and organisational awareness, and have access to the knowledge, and people inside and outside the organisation to support them.

Be Decisive

• In uncertain environments, internal and external stakeholders look to senior leaders for certainty and direction.
• Leadership must be open and honest about what is happening and show restraint from making “promises” based on a desire to provide hope or false certainty.
• Act with purpose and communicate clearly.
• Internal and external stakeholders are hyper-sensitive to leadership that appears:
  ○ Confused;
  ○ Uncertain;
  ○ Out-of-its-depth; or
  ○ Isolated from staff and closed to feedback/suggestions
• Internal and external stakeholders are very tolerant and supportive of leadership that appears:
  ○ To be organised
  ○ Makes timely, and prudent decisions based on a clear and rational process
  ○ Communicates regularly about constraints and unknowns
  ○ Are open to feedback and are inclusive

“In the first week following the disaster, it really felt like it was my responsibility to direct where as an organisation we would go.”
Acting CEO, Wayne Thomas

Visible, Supportive, and Agile Governance

• If appropriate, councillors/commissioners should take the time to interact with staff and increase their visibility around the organisation as this provides reassurance that the disaster and related uncertainties are being managed.
• Attendance at staff events and contributions to regular communications is also helpful.
• Councillors/commissioners must adjust expectations to match the new environment, what the organisation is capable of, and what the new set of priorities are.
• Understanding ahead of time what the core organisational functions are and what priority the organisation should assign to each after any major disaster removes any delay or ambiguity as to what the organisation must be focused on. This will need to be reviewed in the immediate aftermath of a disaster based on real-world circumstances, and regularly reviewed throughout the response and recovery.

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“I spent time interacting with staff. I knew from my experience that people want someone to talk to and to listen. Time spent investing in and communicating with people, especially when things are tough, really pays off.”

_Dame Margaret Bazley, Commissioner_

**Forward Looking Leadership**

- Leadership must look beyond the immediate needs and risks to the organisation as part of business-as-usual strategising and turn their minds to opportunities and risks that are on the horizon. This must include risks and opportunities that may arise as a result of a disaster. See _Scenario Planning_ for more detail.
- Small changes in behaviour and process in the present can help prepare the organisation to capture the opportunity or avoid a risk in the future.

**Positive Risk Management**

- Part of planning for disaster is thinking about and being open to the opportunities for improvement or change across the organisation in the aftermath of a disaster.
- Consider putting people, systems, and processes in place ahead of time that directly or indirectly support the organisation to capture these opportunities.

“We were able to accelerate maintenance and enhancements to the Waimak river banks that had not being planned for another 18 months as a result of the Earthquakes. We were also able to complete enhancement work on areas that were damaged but ordinarily we would not have being able to justify and undertake.”

_Ross Vesey, Chief River Engineer_

“We have been able to build a purpose-built home for our organisation as a result of the Earthquakes and we now have a building that is built to 130% of the building code.”

_Miles McConway, Director - Finance and Corporate Services_
People, Culture, and Collaboration

Know Your People

- There is no substitute for knowing your people, what they are capable of, and how they perform under stress and pressure.
- Managers should ensure they check-in on staff as part of their business-as-usual management process prior to and following a disaster.
- High-levels of employee engagement prior to a disaster will ensure the organisation can rely on staff being committed to the cause during response and recovery.
- Following a disaster, maintain high-levels of engagement with staff, prioritise their safety, welfare, and well-being.

“In many ways we were fortunate we had so many good people involved in the organisation who were so capable in the face of disaster.”

Don Rule, Director

Recruit For Resilience

- Resilience is a valuable characteristic outside of a disaster response and recovery environment.
- Resilient individuals are more willing and able to adapt to change, are curious, positive in their outlook, and open minded. These characteristics are becoming increasingly relevant as technology driven disruption increases.
- Consider including resilience as an attribute you look for as part of the organisation’s recruitment process.

Integrate Disaster Planning and Resilience Into Business-As-Usual Practices

- Maintain awareness amongst staff of the risk of and readiness for disaster by talking about it as an agenda item in staff one-on-ones and team meetings.
- Talk about what as individuals and a team you would do in the immediate aftermath of a disaster.
- Talk about the opportunities disaster may present as well as the ways the impacts of disaster could be contained.
- Normalise disaster planning and readiness by making it a part of the broader operational context for staff and teams e.g. disasters are something we expect and are ready for.
● By taking this course of action, when disaster does strike, the size of the shock is minimised.

“If I was in charge today knowing what I know now, I would certainly ensure as an organisation we were talking about disaster preparedness and turning our minds to how we would respond to different scenarios.”

Wayne Thomas, Acting CEO

People Want To Help

● The vast majority of internal staff and external stakeholders want to help and are prepared to go above and beyond to do so.
● People will work longer hours and undertake more work than they ordinarily would.
● Ensure there are controls in place to ensure people aren’t taking on too much and putting themselves under stress.

“Bus drivers tried to get as many people who were on their buses at the time of the February Earthquake as close to home as they could. They did a fantastic job.”

David Stenhouse, Public Transport Manager

“Our workload increased and people just got on with it. People just wanted to help. That’s what we found. They wanted to be busy.”

Tania Harris, Consents Manager

People Are Remarkably Tolerant and Resilient

● Providing staff feel engaged, safe, and their welfare and well-being is looked after, they will tolerate “less than ideal” conditions or circumstances for extended periods of time.

“Prior to the earthquakes, there were always little niggles and staff confrontations. But afterwards, it all disappeared for what seemed like years. People had a new focus and a new sense of a common goal.”

Neville Gur, Human Resources Manager

“It was remarkable how staff just gone on with it. Some of the temporary offices were less than desirable however staff were focused on their jobs and overlooked most of the inconveniences.”
People React Differently

- People are affected in different ways by disaster and disruption.
- In a large workforce, living across a broad geographical area, people will be impacted in different ways.
- Anticipate a percentage of the workforce will be working at reduced capacity for some time and periodically throughout the response and recovery phase of disaster.
- Some people may leave the organisation suddenly.
- Be sensitive and maintain an open dialogue with staff. This should be done as part of business-as-usual practices also as it builds a cultural habit of openness and willingness to share.

"Family is people’s first instinct following a disaster like an earthquake. It’s important you acknowledge this."

Neville Bishell, Property Manager

“A number of staff just up’ed and left. We didn’t see them again. I think for some people who didn’t have any strong ties to the city or community, the disaster was too much for them to manage. ”

John McClelland, Finance Manager

Be Flexible With People

- Have a remote-working policy in place. Enabling staff to work from home or another location, even for extended periods of time following a disaster, is crucial in giving staff the flexibility they need in-order to manage their personal circumstances whilst still performing for the organisation.
- Define the controls and parameters needed for a successful remote-working policy in a post-disaster environment.
- Consider a flexi-time policy to further provide flexibility for staff coping with the new stresses and pressures in a post-disaster environment.
- Given the fact staff will take on greater responsibilities and work-load during the response and recovery phase of a disaster, greater flexibility is one way to compensate them for this.

“Line-managers were very flexible with their people, especially in the months following the February Earthquake. The flexibility meant staff weren’t having to
juggle and balance some of the other stresses in their lives as well as rigid work hours.”

Neville Gur, Human Resources Manager

Take Time Out

- Encourage staff, particularly those under stress and pressure at home and work, to periodically take time out.
- Cycle responsibilities amongst team members for “high-pressure” tasks and allow staff to do more menial tasks that help them switch-off and unwind.
- Make use of the organisation’s multi-location operational structure, giving staff the option of working from another location.

“I certainly felt tired after doing weeks and months of extra time and taking on new responsibilities. I loved it but in hindsight, I should have been a little easier on myself.”

David Stenhouse, Public Transport Manager

People Are Capable Of More Than Their Job Descriptions

- Staff will willingly take on tasks and projects they traditionally are not employed to undertake. From installing office furniture and painting walls, to relocating equipment and running events, look within the organisation for the skills needed to get the job done.
- Simple, purposeful work that is different from an individual’s regular responsibilities provides a healthy outlet and respite from the stress and pressure some will experience post-disaster.

“I remember coming into one of our temporary offices and seeing all these people who normally worked on a computer or in a lab, with paint brush or screwdriver in their hand. It made me remember, people have so many different skills they can bring to their jobs outside of those they are recruited for.”

Wayne Thomas, Acting CEO

Talk Openly About The Impact Of Disaster and Offer Support

- Encourage staff to talk about and process the events and impact of disaster amongst each other.
- Raise awareness through communication channels and directly through line-managers of the importance of staff sharing their stories - the good and the bad - and seeking help as required.
● Draw on the services of an organisational psychologist to validate the emotions and experiences staff may be having, and offer tips on how to manage better.
● Leadership and management should lead by example by sharing their own stories and proactively building reflection into their business-as-usual people management processes.
● Facilitate “all-hands” meetings and events where staff come together and have time during work-hours to talk about what’s happened and happening in a relaxed and informal environment.

“To have to respond to an earthquake like we had to was shock even though we were prepared and responded well.”

David Stenhouse, Public Transport Manager

Build Relationships

● Investing in and maintaining positive, working-relationships with key service providers, partners, and customers as part of business-as-usual activities is critical as these relationships may be pivotal in dealing with and overcoming circumstances and challenges in the aftermath of a disaster.
● It is far easier to ask an external party for help when there is a pre-existing relationship of trust and confidence.

“When we decided to re-launch the public transport network, we couldn’t force our bus operators to do it. We were sensitive to their situation and used language such as ‘what can you do’ and ‘how could we make this happen’. Maintaining relationships within the public transport network was so important.”

David Stenhouse, Public Transport Manager

Collaboration Is Essential

● Disaster presents new opportunities to collaborate with existing and new stakeholders and these opportunities should be capitalised on as they help strengthen key relationships.
● Approach collaborations in an open way. Be clear on what help you are looking for and proactively look for opportunities to support other parties.
● Working on “hard problems” together with stakeholders is a great way to overcome historic grievances and build credibility and organisational capital for the future.
● Large scale disasters can have an impact on every part of the local, regional, and in some cases, national social, economic, physical, and political infrastructure. Therefore, collaborations between stakeholders will be necessary to overcome challenges.
● Proactively manage stakeholder relationships prior to a disaster as part of business-as-usual operations and ensure, key stakeholders are included in disaster management planning where they are key enablers.

● Update a stakeholder map in the aftermath of a disaster, ensuring all stakeholder relationships, pre-existing, emerging, and new - are understood and are being managed.

“We spent time checking in with our stakeholders. It was a great opportunity for us to go that extra mile and let them know we were here to help.”

Tania Harris, Consents Manager

Experience and Knowledge Counts

● The value of experience and intuitive knowledge gained through years on the job should not be underestimated.

● Disasters can expose an organisation’s lack of experience and this can be costly in terms of time, money, and outcomes.

● Maintaining sufficient experience and knowledge within the organisation as well as proactively managing the transfer of knowledge to the next generation of staff as part of business-as-usual practices is critical.

● Ensure disaster resilience on a role-by-role basis is explicitly addressed as part of role onboarding, and in knowledge management materials.

“The fact that Wayne Thomas (Acting CEO) came from the finance team and had also managed property in the past, meant he had his finger on the pulse, and was able to make decisions very quickly.”

Neville Bishell, Property Manager

Provide Support

● Develop a policy to define what/if any financial or other support will be made available to staff and teams following a disaster

● The knowledge that support exists, enables staff to focus and get on with their jobs.

“We put about 20K-30K into a fund where staff who were having trouble with their insurance claim could go and see an expert. We knew if we were going to get the best out of our people, we didn’t need them distracted by their insurance claim.”

Neville Gur, Human Resources Manager

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Manage Non-Performance

- As the organisation moves to a more liberal operating model to cope with the extra demands and complexity of disaster, there may be some staff who take liberties.
- So long as line-managers are regularly checking in with their staff, any non-performance should be visible and can managed through normal processes.

“The vast majority of people were respectful of the additional liberty and trust they were afford in the aftermath of the earthquakes. We had very few issues in terms of people ‘taking advantage’. Our people were great.”

Neville Gur, Human Resources Manager

Contact Lists

- Ensure staff, managers, and leadership all have access to an up-to-date staff contact list.
- The list should be accessible in a physical form, via mobile phones, and through the organisation’s intranet.
- Maintain the staff contact list and integrate this maintenance process into business-as-usual processes.

“I walked round with my staff phone list for 2 years following the earthquake, that’s how important it was to me. Something that simple, but wow, in the event of a disaster, being able to contact staff, that’s the most important thing.”

Tania Harris, Consents Manager

Operations: Processes and Systems

You Won’t Always Get It Right

- Internal and external stakeholders must understand that in a disaster environment, the organisation won’t always get it right and that’s ok.
- Staff must feel they won’t be punished for making a rational decision that is imperfect.
- Taking an imperfect action is better than taking no action at all.
- The organisation should adopt an act-learn-adjust approach to disaster response and recovery. Continuous and iterative improvement supports the Agile process.
  - Take some action
  - Learn from the outcomes of the action
  - Adapt the next action based on the learnings gathered

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● Reduce the time required for staff to adjust to the new way of working in a post-disaster environment by integrating this approach into business-as-usual practices and processes.

“We were making decisions so quickly in those early days that in hindsight may not have been the best if we’d had perfect visibility or knowledge. What was important, was we made decisions, and get things moving.”  
   Neville Bishell, Property Manager

Know Your Strengths and Vulnerabilities

● Know what parts of the organisation are capable of taking on greater strain and pressure and those that are more vulnerable. This should include:
  ○ People
  ○ Property
  ○ Systems
  ○ Processes
● Identify core functions and processes of the organisation that “cannot fail” in a disaster and proactively develop redundancy and strength around them.
● Stress-test the organisation by running disaster response and recovery simulations.
● Maintain an up-to-date register of strengths and vulnerabilities.
● Review the register regularly and ensure vulnerabilities are being managed as part of continuous improvement activities.
● Review and update the register in the immediate aftermath of a disaster so that resources and focus can be allocated accordingly.

Prioritise Re-establishing Work Spaces

● Until remote or distance working is more commonplace, the office is the heart of the organisation.
● Find satisfactory office space following a disaster if offices are rendered inaccessible or uninhabitable. This should be a priority in-order to restore normal workplace operations as quickly as possible.
● Staff are flexible and will travel however consider ways to lessen the burden for staff.
  ○ Car-sharing
  ○ Tax incentives
  ○ Public transport
● Maintaining relationships with key stakeholders and real estate agents who have access to property and office space is an important part of developing redundancy in this area of operations.
“Getting staff back together was so important for morale. I remember seeing staff greet each other for the first time in weeks having been apart. There was so much energy and excitement. Opening our temporary offices gave people a new work-home, a place to go to.”

Dame Margaret Bazley, Commissioner

Leverage Alternative Locations For Work and Operations

- ECAN has certain core capabilities distributed around the region; consents, engineering, and administration.
- Determine whether there are external partners that could provide outsourced support.
- Re-directing workload and staff to alternative locations that have not been impacted by the disaster should be considered to reduce the demands on more heavily impacted areas.
- The process of re-directing work should be tested on a regular basis to ensure it works smoothly and can be relied on.

Cloud-Redundant Systems and Remote-Work Policies

- Investing in technical infrastructure and software systems that are cloud-based and geographically redundant ensures core operational systems are “always available”.
- Establishing, investing in, and maintaining remote-working and mobility infrastructure that enables any secure device to connect to the organisation’s systems/network means operations can continue from anywhere.

“The fact the IT team were able to get us back up and running so quickly was core reason we were able to respond and continue to work the way that we did.”

Wayne Thomas, Acting-CEO

Open, and Interoperable Systems

- Being able to quickly share data and information with external stakeholders may be critical to developing a response and recovery roadmap in a complex, multi-stakeholder disaster environment.
- Open systems that are standards-based ensure data can be freely shared with other parties quickly and cost-effectively.

Digital First Workplace

- Continue to reduce reliance on paper-based systems of record.

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• Paper records are at risk of being lost, destroyed, or rendered inaccessible. Electronic records that are backed-up on cloud-infrastructure are accessible from anywhere and offer a high-level of redundancy and security.

“It took weeks to complete a cash-flow because our financial records at the time were on paper in our abandoned office. Pushing everything online removes any risk of not having access to vital information we need to run our organisation.”

John McClelland, Finance Manager

Situational Awareness

• Ensure senior leadership understand the organisation’s internal and external environments, the rules within which the organisation operates, the threats, financial position, opportunities, and performance capability in key functional areas of the organisation.
• Increased situational awareness enables leadership to make more effective and critical decisions when responding to a disaster.
• Cultivate and maintain an understanding of where the organisation sits within the local, regional, and national stakeholder and political ecosystem.

Innovation and Creativity

• Innovation and creativity are processes that must be practiced and exercised. Therefore staff must be encouraged and incentivised to be innovative and creative as part of business-as-usual practices and processes.
• Small innovations and creative problem solving are celebrated during disaster response because the impact of the “breakthrough” is potentially more tangible and critical. However, these breakthroughs are no less valuable in during business-as-usual operations. The difference is the urgency or immediacy of their value may not exist to highlight the value.
• It is crucial the organisation is mindful of innovative and creative breakthroughs during business-as-usual operations and goes out of its way to celebrate them in-order to cultivate an innovative and creative culture.

“We managed to get a Facebook Page up to communicate with the general public about the status of Public Transport within days of the February Earthquake. That was huge insight for us in-terms of using non-traditional channels of communication with our passengers.”

David Stenhouse, Public Transport Manager

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Curiosity, Learning, and Continuous Improvement

- A workforce that develops a greater thirst for knowledge and curiosity, develops greater awareness of the world around it.
- These characteristics are also key to thriving in a post-disaster environment where staff operate with greater autonomy.

Functional and Role-Based Disaster Planning

- More can always be done in advance of a disaster to reduce the decision-making and prioritisation burden around core operational functions.
- By developing ahead of time a set of basic checklists and decision trees that help direct and prioritise decision-making and next steps following a disaster, this will reduce the stress and pressure on staff.
- Each organisational role, team, and function should develop a simple actions and decision-making checklist that is prioritised and organised by disaster severity.

“I sat at home the evening of the disaster and I made a list of priorities for the organisation. This is certainly something we could have turned our minds to ahead of time so it wasn’t so overwhelming or unfamiliar.”

Wayne Thomas, Acting-CEO

Financial Resilience

- Maintain 75%-80% of cash-reserves or approximately one month’s outgoings in liquidity.
- Do not depend on lenders to loan money in the immediate aftermath of a disaster.
- Maintain strong relationships with creditors and debtors.
- Proactively manage debt ratio at all times to reduce cash-flow risk from delayed payment or debt write-offs post-disaster.
- Up-to-date and accurate cash-flow visibility provides leverage and decision-making certainty when the organisation has to spend money outside of existing budgets in direct response to a disaster.
- Ensure all staff with spending authority understand the process for accounting for costs following a disaster. Communicate regularly any changes in accounting processes or cost-coding to reduce the financial administration burden.

“We learned the value of having sufficient liquid cash-reserves from the GFC.”

John McClelland, Financial Manager
Insurance Claim Management

- Act quickly and be prepared for the process to take longer and demand more resources than expected.
- Key staff responsible for managing insurance should maintain a high-level of proficiency and understanding with regard to the organisation’s insurance policies, and how the claims process works.
- Following a major insurance event, a claim management and resolution strategy should be developed by the organisation so that the process is well managed.
- Resource the insurance process effectively. Delays in settling insurance claims may be very costly to the organisation in both tangible and intangible ways.

Disaster Scenario Planning

- Invest time as part of business-as-usual processes, thinking about how as individuals, teams, and as an organisation you would react to and manage different disaster scenarios.
- Mental preparation is an important part of developing resilience and through regular scenario planning and problem-solving exercises, staff develop familiarity around the disaster response process.
- The objective for scenario planning is less about developing detailed disaster management plans and more about developing general competence amongst staff so that as an organisation, you can confront disaster on the front foot.
- The more regular and integrated the practice is into business-as-usual practices, the more value staff will realise when disaster does strike.
- Many of the skills practiced as part of scenario planning are transferable to other business-as-usual activities and therefore value can be derived from the exercises outside of a disaster environment.
- There may be certain higher probability or risk scenarios where it would beneficial to develop a detailed risk mitigation and response plan.
- Incorporating scenario planning into business case analysis and investment strategies may also be beneficial to developing long-term resilience and capturing the real-cost savings of investing in resilience ahead of time to avoid disaster-based risks.

“When considering whether or not to invest more into river bank protection, it would be sensible to consider certain disaster scenarios and costs of failure in the event of certain types of disaster as part of business-case planning. At the moment, business cases don’t allow us to consider additional investment to improve resilience to certain disaster scenarios.”
Role-Based Backup and Redundancy

- Proactively develop backup and redundancy for each role in a team so that "single-point-of-failure" risks are mitigated across the organisation. This can be done by ensuring core processes performed by a role are understood by more than one person and these processes are documented.
- Prioritise developing redundancy around roles that perform core organisational processes and functions.

“There were roles in our team no one else really knew how to do. Of course, we would have figured them out however it makes sense for at least one other person to be familiar with a process and key processes are documented.”

John McClelland, Finance Manager

Knowledge Retention and Process Documentation

- To counter the loss of knowledge and experience through staff turnover, increased effort should be made to capture the knowledge and experience of staff on a regular basis.
- Thorough documentation of processes and systems ensures others can perform effectively in “unfamiliar” roles. This is especially relevant in the event that staff members normally responsible for a process are incapacitated as a result of a disaster.

“There was a lot of experience in the senior leadership team at the time of the earthquakes and this enabled us to get on with the job of recovery because we knew how things worked, we had developed key relationships, and in some ways we’d been there and done it before.”

Neville Bishel, Property Manager
Summary of Key Principles By Role

Individual

Before

- Mentally Prepare: Test how prepared you are for a disaster once a month.
  - How would others carry-out your tasks?
  - What are your strengths and vulnerabilities?
- Maintain a list of up-to-date organisational contacts as well as key stakeholders (if appropriate).
- Proactively develop relationships with colleagues and external stakeholders.

Before / After

- The safety, welfare, and well-being of you and your family is your priority.
- Communicate: Let your line-manager know you’re safe.
- Ask for help if you need it.
- Be open to new challenges.
- Don’t take on too much. Balance is important.
- Talk about your experiences.
- Be sensitive towards others; everyone reacts differently.
- Take time out.
- You won’t always get it right. That’s OK.
- Take action. Learn from your actions. Adapt your approach. Be agile.

Manager

Before

- Know your people.
- Integrate disaster planning and resilience into business-as-usual practices.
- Develop role-based backup and redundancy.
- Prioritise knowledge and process documentation.

Before / After

- People want to help.
Prioritise your people; take the time to check-in regularly.
People are capable of more than just their job descriptions.
People want to work and focus on problem solving.
People are tolerant and flexible.
Be open, inclusive, and empowering.
Talk openly about the impact of disaster and offer support.
Don’t be afraid to be vulnerable.
Look for opportunities to collaborate.
You can’t over communicate.
Small things matter.
Be flexible with people.

Leader

Before

- Prepare for responding to and recovering from disaster through disaster scenario planning and organisational stress-testing. Don’t leave response and recovery planning until after a disaster.
- Identify and prioritise how core operational functions should be re-established should something go wrong.
- Define new disaster-specific roles based on scenario planning and identify staff ahead of time capable of filling these roles. Ensure there are backups for these roles too.
- Develop a Resilient Leadership Blueprint: 50% Planning, 50% Agile.
- Look forward and adopt a positive approach to risk management.
- Know the organisation’s strengths and vulnerabilities.
- Develop situational awareness.
- Maintain financial resilience.
- Invest in cloud-redundant technologies and systems. Develop a digital workplace.

Before / After

- Put people first.
- Communicate regularly and consistently, no matter how trivial the content of the communication.
- Empower your organisation. Be open, inclusive, and let staff make decisions.
- Share leadership responsibilities.
- Don’t overburden yourself.

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● Review and retrospect frequently. Establish a daily “standup meeting” with key leaders and staff as a forum for priority setting, problem identification, maintaining accountability, and problem solving.
● Be decisive and consistent.
● Experience and knowledge counts.
● Offer support: the small things matter.

Governor

Before / After

● Disaster response and recovery may demand a different leadership style and/or leader(s).
● Increase visibility internally and externally. This helps sure-up and support leadership.
● Be realistic about expectations and outputs.
● Work closely with the CEO and share some of the burden of responsibility where appropriate.
● Maintain an open and accessible dialogue with the leadership team.
● Solve problems.

The Resilience Review: Current State

This review is by no means comprehensive and is indicative only. It is based on the comments and observations of those interviewed. Therefore only broad, systemic, and consistent observations (identified by more than 33% of the interviewees) have been noted.

The majority of the strengths and vulnerabilities were explicitly identified by interviewees and a number have been inferred by the author based on observations and deductions from reviewing the interviews.

Environment Canterbury’s Strengths

● Strong culture united around a common cause.
● Open and inclusive leadership style.
● Healthy mix of experienced and new staff.
● Key staff involved in the Canterbury Earthquakes disaster are still with the organisation.
● There is a strong culture of continuous development and improvement, particularly in key areas of consents and information technology.
● A “can-do” attitude and culture exists within the organisation.
Environment Canterbury’s Vulnerabilities

- Current operational strategies and processes do not explicitly consider or integrate resilient practices.
- The 2010/2011 Christchurch Earthquakes are fading from memory and there is no process for maintaining future disaster readiness. There is a need to maintain a degree of alertness and preparedness amongst all staff.
- Disaster scenario planning is not performed.
- Disaster management planning has not been expanded to include:
  - Role-based response and recovery checklists and decision-making guides
  - Role-based backups and redundancy
  - Priorities for core operational functions
- There is no formal process for managing and distributing up-to-date staff and external stakeholder contact lists to all staff.
- The organisation has no plans to stress-test disaster management plans or resilience.
- Core operational processes remain undocumented or if they have been documented, staff are unsure where they are located.
- There remain key-person-risks throughout the organisation.
- Staff must proactively maintain and develop relationships with key stakeholders or risk the degradation of these relationships over time.

Recommendations

- Review “Lessons from Disaster” and inform staff and external stakeholders of the findings.
- Distribute role-based materials to staff.
- Undertake a strategic review of the findings and develop an action plan for implementation.
- Integrate resilience principles into business-as-usual practices, including staff performance reviews, team meetings, and risk management, strategic planning and business-case development activities.
- Run a disaster simulation on at least a 3-year repeating basis.
Consider the deployment of the following software and systems to improve the connectedness of the organisation prior to and in the aftermath of a disaster:

- [https://www.15five.com/](https://www.15five.com/) - Employee Engagement and Feedback Service
- [http://crisismanager.co.nz/](http://crisismanager.co.nz/) - Crisis Management Application for connecting with and checking-in on staff

### Appendix 1 - Interview Questionnaire

#### Canterbury Earthquakes – Lessons Learned Project

### Background

Although disaster and disruption is not something we welcome, the climate created following events like the Canterbury Earthquakes of 2010/2011, challenge us to re-think our approach to what we do and how we do it. Given the inevitability of disaster and disruption, ECAN is gathering the key lessons learned across the organisation over the last 5 years with an aim to improving the way the organisation plans for and responds to disaster and disruption in the future.

The goal of the project is to produce practical, actionable, and easily accessible materials that summarise the fundamental lessons gathered from conversations with key personnel who were part of ECAN’s journey through the earthquakes, the earthquake response, and recovery. The intention is the materials wherever possible will be openly accessible subject to privacy and strategic considerations, and will not be static and will evolve overtime.

### The Opportunity

The unique journey that has transpired over the last 5 years contains many important lessons for ECAN, as well as other organisations like ECAN in Canterbury and beyond. Documenting the journey, the highs and the lows, the key decisions and the changes in a pragmatic and accessible way so that they can be referenced for future use, is essential. Why?

It is from these lessons ECAN can better prepare for disaster and disruption in the future, make changes ahead of time rather than bare the cost of making them during recovery or reinventing what is already known. Understanding how disaster and recovery works in practice and
integrating this into everyday thinking and operations will also make ECAN a more resilient and potentially effective organisation. The opportunity is too great to miss.

The Spirit of the Project
The spirit of the project is to capture a holistic view of what happened, why things happened, and on reflection, what worked and what didn’t. This approach requires respondents to be open, curious, reflective, and considerate of the whole picture, unafraid of pointing out mistakes, successes, and key lessons learned along the way.

The project is sensitive to the delicate nature of some of the areas being examined and provides assurance to all contributors the project intends to present forward-focused and constructive viewpoints rather than critical and destructive.

Respondents will be invited to review the outputs from the project prior to publication to ensure the accuracy of statements and/or views presented where their names are directly attributed.

The Scope
The scope includes everything connected to the Canterbury Earthquakes and the subsequent response, recovery, and rejuvenation. For some, the journey may start prior to the earthquakes and for others, on 4 Sept. 2010, 22nd Feb. 2011 or later. There is no right or wrong.

There are however a number of guiding principles in addition to the questions defined below that may help respondents shape their thinking and responses:

- **Story-telling**: we want stories that highlight key decisions, thinking, ideas, feelings, emotions, activities, and communication that illustrate the impact and response to the earthquakes at the individual, the team, the customer, and the organisational level.
- **What worked and what didn’t**: take the position of the neutral observer and reflect on what happened and if you had a time machine, what would you have done differently.
- **High-Value Lessons**: identify specific lessons that stand out and cannot be missed.
- **Highs and Lows**: we want to know about the highs, lows, and challenges experienced at an individual, managerial/leadership, and organisational level.
- **Transformational**: what happened that was truly transformational and should be a part of everyday practices at ECAN

The Interview
The interview will be conversational in style and audio recorded unless you request otherwise. Each interview will last 1 hour and there may be a need for a follow-up phone interview or email to clarify aspects of the conversation.

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The Questions

The list of questions is not exhaustive however defined below provides a clear outline of the kind of questions you will be asked during your interview.

Current

- When did you join ECAN? When did you leave ECAN?
- What is your current role? (if applicable)
- Describe what function you and your team serve in ECAN's day-to-day operations today? (if applicable)

Pre-Earthquake - Pre September 2010

- Describe what function you and your team served in ECAN's day-to-day operations prior to and at the time of the earthquakes?
- What was the size of your team/department?
- How experienced was your team?
- How would you describe the ECAN's organisational culture at the time?
- What was the impact of the Commissioners on the organisations readiness and ability to respond to the earthquakes?

Earthquakes

- Describe the impact and your, your team's, and ECAN's response to one or more of the earthquakes across the following areas:
  - Your day-to-day work and responsibilities
  - Your team's day-to-day work and responsibilities
  - Staff morale
  - Key infrastructure and systems you relied on to get work done
  - Individual, Team, and Organisational performance
  - Organisational culture
  - Decision-making and autonomy
  - Procedures and operating model
  - Customers and the way they interacted with the organisation
- Consider each of the above areas using the following time-scales:
  - Immediately following an earthquake
- Days after
- Weeks after
- Months after
- Years after
- Subsequent earthquakes

● Describe specific events, decisions, and changes, either positive or negative, that happened following the earthquake for:
  - You
  - Your Team
  - ECAN

● Describe specific challenges you, your team, and ECAN faced following the earthquakes and how these were overcome?

● Were there specific partnerships you, your team, or ECAN had prior to or formed following the earthquake that positively or negatively impacted the speed, quality, and/or ability to respond?

● In your opinion, how well did you, your team, and ECAN respond?

● Describe how your, your team's, and ECAN's response progressed over time and what you learned about what worked and what didn't?

● Describe specific lessons you, your team, or ECAN learned following the earthquakes and how these positively impacted the way work was done and is done today?

● What changes made following the earthquake have stuck? Are there specific changes that were beneficial but have now been overturned or lost?

● When you think back on the last 5 years at ECAN following the earthquakes, how positive or negative are you about what you, your team, and ECAN achieved?

● If you knew what you know now, what would you go back and change about the way you, your team, and ECAN responded to the earthquakes?

● Do you have any recommendations that are relevant/important to how you or your equivalent in the future, your team, or ECAN should respond to natural disasters in the future? Are there any changes that need to be made now to properly prepare?