



impact

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Choosing to remember community resilience in Japan



Meriken Park at Port of Kobe – Earthquake damage
protected to remind future generations.

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Common acronyms

MCDEM Ministry of Civil Defence & Emergency Management
CDEM Civil defence emergency management
EOC Emergency Operations Centre
EMO Emergency Management Officer

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EDITORIAL

John Hamilton, Director Civil Defence



Working together

Publication of this issue of *Impact* has been delayed while our attentions have been focussed on Canterbury and assisting the region respond to the earthquake that struck early on the morning of Saturday 4 September 2010.

The last thing I had done on the preceding Friday was to make a draft for this column in which I noted we had had a long period with little activity! Not surprisingly, those comments are now out of place and instead I will take the opportunity to laud the response activities that kicked in on Saturday.

The Canterbury experience reminds us just how difficult it is to forecast when and where earthquakes might strike and to predict their consequences. It can be argued that this one caught us by surprise. Some will say we were lucky: it struck in the early morning when streets are empty. Christchurch recently adjusted bar closing times back to an earlier time of 0300hrs.

The surface rupture occurred in a rural area and not through an urban suburb. The weather was comparatively fine and probably the most significant result was there was no loss of life attributed directly to the quake and the casualty rate was low. While New Zealand received offers of international support and assistance, the circumstances suggested the response was within national capacities.

Not surprising, but nevertheless very pleasing, was the manner in which civil defence emergency management authorities and supporting agencies mounted the response. It was swift and focussed and occurred at all levels, and was well co-ordinated locally, regionally and nationally.

The response by the people of Canterbury was equally quick, but also stoic and co-operative. As the scale of the effort required in response became clearer, it was obvious resources would be stretched but by and large affected communities showed patience and understanding despite the trauma, emotion and personal losses.

The value of preparedness has been emphasised again: at home through 'drop, cover and hold', torches, water and food, first aid kits or house

insurances; as a community through land use planning and risk management, the application of building standards and emergency planning; and in critical lifelines through understanding, established relationships and fostering a culture of co-operation, heedful watching and swift work arounds.

The Canterbury experience reminds us just how difficult it is to forecast when and where earthquakes might strike and to predict their consequences

The list could go on and in particular must include the media in its many forms and how we might best use their reach and speed to distribute critical messages to the public and inform the response agencies of issues as they arise.

There will be lessons to be identified: there always are and when applied, they help improve mechanisms and enhance the response in the next emergency. I would encourage those that have been involved in the response to pause when they can, to identify aspects that deserve to be improved and convey them to an appropriate contact.

In the meantime, take great pride in what has been accomplished. It has shown collaboration and teamwork, fortitude and commitment and a spirit of "we can do this." Well done and thank you for the superb efforts in trying times. ■

CDEM perspectives of the Canterbury quake

The Canterbury earthquake on Saturday 4 September was the most significant civil defence emergency for some time. There was, and continues to be, significant media coverage of this event. Given the significance of this event, Jon Mitchell, Alternate Canterbury CDEM Group Controller, and David Coetzee, National Controller, have agreed to share their initial personal observations to provide a CDEM perspective*.

Jon Mitchell, Canterbury observations

The impact of the Canterbury earthquake and its aftershocks have had an incredibly galvanizing effect on all of the communities affected. Individual families, neighbourhoods, districts, regions, and response and recovery agencies were brought together like never before on that morning and the following days.

Community resilience proved to be alive and well in the affected parts of Canterbury. The willingness of members of the community to meet their own immediate needs first and then reach out to neighbours, enabled our communities to clamber back to their feet and support each other while local emergency agencies activated and organised their responses.

The willingness of volunteers from a wide range of organisations and community groups (themselves affected by the first and later quakes) to step up to their designated or ad-hoc roles was personally and professionally inspirational. The support provided by MCDEM staff along with staff from virtually every government agency, has been superb. Where issues did arise they were able to be dealt with in constructive, innovative and pragmatic ways.

During the week following the initial quake we witnessed an influx of volunteers from across the country to rapidly expand and then relieve local capabilities in emergency welfare, medical and public health, welfare and support, policing, engineering, building inspection, logistics support, and emergency response coordination, on a scale all too seldom seen in New Zealand.

For example for several shifts, the Canterbury Regional ECC was staffed by local government personnel, emergency management professionals, NZ Defence Force, emergency services, and partner agencies from regions including the Far North, Auckland, Waikato, Wellington, West Coast, Nelson Tasman, Otago and Southland – working seamlessly

with colleagues from the Canterbury Regional EMO, Environment Canterbury and staff from less affected local authorities within Canterbury itself.

The influx of response and recovery staff did not go entirely without hitches, usually as a result of unilateral requests for resources and support, or actions otherwise circumventing agreed response and resource coordination processes. Although nobody suffered and only a few egos bruised, there is clearly a need to ensure that more coordinated approaches, using the mandated local-regional-national chain of coordination, are fully embedded in the immediate future.

As the Director has said in his editorial, there will be lessons to learn from this event and the various individual and collective responses to it. The Canterbury Earthquake Response and Recovery Act is an immediate indication of the validity of concerns raised by the Canterbury CDEM Group in the past about the appropriateness of interpretation of the CDEM Act by some agencies in relation to emergencies or disasters of the scale of this earthquake – or worse.

This event has made it quite clear that some authorities need to take earthquake risk and resilience more seriously in decisions they make about the location, design and resourcing of their response and/or coordination capabilities. While some were able to immediately activate and begin to carry out their designated functions, others were compromised for quite some time, adding to personnel and organisational stress and reducing the effectiveness of decision-making processes.

The historic national tendency to hold emergency management capability and governance to a relatively low common-denominator, by international standards, and to invest too little in nationally-consistent and managed training and education, resulted in initial responses to this event being not as well vertically or horizontally



*These are the personal observations of Jon Mitchell and David Coetzee. They are not necessarily representative of the Canterbury CDEM Group or that of MCDEM. An official post-event evaluation involving all responding agencies is yet to be undertaken.



integrated or coordinated as they could have been. We, as the wider-national emergency management community, need to take the opportunity afforded by this disaster to honestly and thoroughly review our collective legislation, plans, and capabilities, as well as supporting training and education, to ensure that we are sufficiently ready in future for even more challenging events.

The influence of local political agendas, inter-agency disconnects, and the ill-ease within many territorial authorities with the regional model introduced by the CDEM Act itself cannot be underestimated. The real challenge will be whether we will be able to address these issues honestly and constructively to ensure that our communities receive the protection they expect and deserve.

David Coetzee, national observations

The national level response to the Canterbury earthquake demonstrated how the machinery of government can unite in times of crises. In this event the response by Government and its agencies was lifted to a level commensurate with the scale of the emergency, reaching beyond the measures provided by the CDEM Act and National CDEM Plan. It left us with a fresh perspective on national level response to large scale emergencies.

The central government response to the event started with the National Crisis Management Centre (NCMC) being activated by MCDEM within an hour following the earthquake. We called upon a wide range of national support agencies to send representatives to the NCMC and their response was swift and without hesitation. Deployment of USAR Task Forces using NZ Defence Force resources was actioned from the NCMC within a couple of hours and by mid-morning of Saturday 4 September, the NCMC was humming smoothly, gathering intelligence, coordinating support and providing public information. The activation of the NCMC and commitment by support agencies has continued up to the time of writing this article and will no doubt continue through the recovery process.

MCDEM staff realised at the onset of the event that business as usual and personal commitments would have to be set aside for a while; this response would require all hands on deck. A call to the Department

of Internal Affairs for NCMC support yielded an immediate and professional response.

Likewise, at the higher levels of Government, extraordinary involvement and commitment was demonstrated in acknowledgement of the scale of the event. As early as Monday 6 September we saw the appointment of a Minister responsible for earthquake recovery and the establishment of a Cabinet Committee on Canterbury Reconstruction. Meanwhile a joint Mayoral fund was established with an initial contribution by Government of \$5 million.

One week later we saw the passing of the Canterbury Earthquake Response and Recovery Act, introducing a Recovery Commission and paving the way for the relaxation or suspension of provisions in enactments that may present challenges to efficient and swift response and recovery, as well as to provide for adequate statutory powers in this regard. We subsequently saw various Orders in Council passed in urgency to provide for the conditions and measures required. The Prime Minister, our own Minister and other Ministers were prominent in their engagement, with first visits to Canterbury on the day of the earthquake.

But my experience of agencies working together in this response was not limited to national agencies. A call for NCMC staffing assistance made to the Wellington, Manawatu-Wanganui and Hawke's Bay CDEM Groups yielded a constant flow of experienced CDEM officers to work alongside MCDEM staff. Their support ranged from attending to the respective desk functions through to support in the NCMC cafeteria.

This event, albeit with all its good outcomes, leaves us with much to contemplate. We saw the introduction of extraordinary arrangements, not replacing but supplementing existing arrangements, and how they can be made to work together. We are now in a position to measure our readiness to respond to large scale emergencies, from staffing capacities and internal procedures, to formal plans and arrangements.

In this regard we are left with new perspective and are in a better position to 'think big'. Finally we must make sure we entrench the positive new elements that were not there before. ■



Get Ready, Get Thru campaign spokesperson, Peter Elliot, visited Greenlane Countdown to talk to shoppers about the importance of preparing for a disaster.

Get your five to survive a disaster

Could your family get through a disaster with what's in your shopping trolley? That's the question Auckland City Council's emergency management team hope to get shoppers thinking about with a new 5-Survive in-store campaign launched last month.

Research shows that 85 per cent of New Zealanders have not made basic preparations to survive a disaster, even though the essentials can easily be picked up in the weekly supermarket shop.

Over the next six weeks, advertising in Countdown, Woolworths and Foodtown supermarkets throughout Auckland city will direct shoppers to 5-

Survive items needed to get through an emergency: water, first aid items, non-perishable food, a waterproof torch and an emergency toilet (toilet paper, large rubbish bags and a bucket).

Auckland City Council emergency manager Jane Lodge says the campaign will show Auckland city residents how easy it is to get prepared.

"Once shoppers have engaged in the idea of preparedness by getting a basic survival kit together, we hope that they will then be motivated to add more items weekly. It's an easy way to spread the cost," she says. ■

Room 13's disaster inquiry

Room 13, from Roslyn School in Palmerston North, went on an inquiry journey about disasters. At first we did some knowledge attacking with finding out what a disaster is, what a natural disaster is and what a man-made disaster is. From here we (the children) asked some questions about anything to do with disasters. We call them our wonderings.

As a class we had a huge interest in tsunamis but we linked floods to it as well. Next we used some key questions about tsunamis and floods to gain a deeper understanding about these two natural disasters. We watched YouTube clips and listened to an audio about the 1984 Southland floods. We learnt all about the effects these two disasters can have on people and the environment.

From this we thought "now we know what the effects are, we need to know how to be prepared". We talked about it with our families and only seven out of 31 families had a survival kit.

Using www.getthru.govt.nz, www.prepare.co.nz

and www.whatstheplanstan.govt.nz we learnt how to be prepared before a disaster, during a disaster and after a disaster. We even learnt there is a thing called a Getaway Kit.

After this we wanted to make more children aware of how to be prepared for a disaster or to start thinking about how to be prepared for a disaster, so we made posters using comic life.

Our teacher then invited the civil defence from the Manawatu area to view our posters and give us feedback on them. They were really impressed. They choose a winning poster and gave that group a prize.

Everybody also got a civil defence bag and some balloons to take home. We all now know that if a disaster ever hits the Manawatu, we will know what to do.

Written by Room 13, Roslyn School



Teacher, Claire Jefferies, with the winning students. Each was each presented with an emergency wind-up flashlight/radio.

Leading by example

The ability of a community to cope with an emergency is based to a large extent on the measures it takes before the emergency occurs. However, getting communities to participate in actions that enhance preparedness and create resilience to disasters has proven to be a significant challenge to the civil defence emergency management sector. Three small Hawke's Bay communities help pave the way forward.



On a perfect day in Hawke's Bay you don't expect the worst, but returning from scouting out a tsunami evacuation route, **Stu Hastings** and **Steve King** (pictured) have disaster on their minds.

Stu and Steve have been working on behalf of residents of the small Hawke's Bay coastal communities of Haumoana, Te Awanga and Clifton. All three communities are located on a no-exit road, Clifton marking the end of the line. The main road crosses the Tukituki River so if the bridge is damaged in a major event, all three communities could be isolated. To make matters worse, this road is also threatened by coastal erosion.

Residents have therefore been putting together a Community Response Plan to help them cope in an emergency. It's a new initiative aimed at making people safer by involving them directly in planning for their community to establish self-reliance.

Local people are conducting stock takes of what resources are at hand, such as who has a tractor or a four-wheel-drive and where there are generators, as well as evacuation alerts and procedures. They have already developed contact lists of community groups, motor camps, schools, day-care centres and rest homes, making sure that vulnerable people are identified.

Under the chairmanship of Stu Hastings, the eleven-member working group meet fortnightly and receive advice and direction from Hawke's Bay Civil Defence and Emergency Management Group staff.

There will soon be signage showing the best evacuation routes from the coastal area in the event of a severe storm or a tsunami. The group is looking at routes through private land if the main exit roads can't be used. Routes to higher ground on neighbouring farmland that can be reached quickly



on foot are the only solution for some parts of the community.

"If there's a large earthquake offshore that generates a tsunami, people on the coast will have only minutes to get to safety. By being part of the planning process they will be better prepared to know the evacuation routes and where they need to muster," says Stu. "We're also establishing the best method of alerting residents if an evacuation is needed in an emergency such as a tsunami or severe flooding."

Once the Haumoana, Te Awanga and Clifton group has completed the process, Hastings Civil Defence anticipates the community response planning format will be repeated in other coastal communities such as Whirinaki and Waimarama.

Developing a Community Response Plan

Warren Meldrum is an Emergency Management Officer with Hastings District Council. Warren has been actively involved with the communities at Haumoana, Te Awanga and Clifton and he shares several insights into the process of building the trust and relationships necessary for community resilience initiatives to succeed.

Our Community Response Plan is a pilot for Hawke's Bay CDEM group. Being the first we had no idea of exactly what it entailed and how much work would be involved. It soon became apparent that the plan would rapidly become too cumbersome if we overcomplicated things by trying to cater for all the 'what ifs'. We therefore tightened the scope and focussed upon our top ten hazards. We started planning based around the worst case scenario; that the community is isolated post-event and has



The more the community working group got into the planning process and began to see good results, the more involved and enthusiastic the group became and the plan, to a large degree, started driving itself.

to go it alone without help from emergency services. For each hazard we would either shelter in place or evacuate.

Our primary focus was the development of a workable document. We did not want to fall into a “paper plan syndrome” by creating a plan full of extraneous material which would detract or interfere with its use during an emergency. Therefore all related documentation, correspondence and background information is held in a master file separate from the working plan. Only key information is contained in the working plan.

An important lesson learned was the need to



prepare the community ahead of plan development either by media campaign, letter drop or door to door survey if possible. This is because the first few meetings of the working group were pretty much dedicated to establishing realistic, workable expectations and education about hazards.

A string of hazards tours needed to be organised to support this process including one to the local wastewater treatment plant which was initially perceived as a hazard. Working with the community beforehand would have resolved a lot of misinformation about hazards.

I did not fully appreciate how much behind the scenes work the plan entailed. One example, relates to organizing evacuation routes through private land. This required meetings with landowners to gain consent, formalising and documenting this, establishing signage needs and erecting signage. Getting landowners to agree to the proposed route being signposted was an unexpected obstacle.

One landowner did not want a route signposted because of problems with local gangs. For every hour spent with the working group there were many hours of work behind the scenes, despite a lot of this work being undertaken by the group.

I learned to be mindful of planning being hijacked and diverted down tracks which although potentially useful, detract from the business at hand. Plan the course of action and stay on it.

Finally, don't underestimate the snowball effect. The more the community working group got into the planning process and began to see good results, the more involved and enthusiastic the group became and the plan, to a large degree, started driving itself. ■

The Hawke's Bay coastal communities of Haumoana, Te Awanga and Clifton face an additional challenge as they work towards community self-reliance: coastal erosion of the main road.



Choosing to remember

The Disaster Reduction and Human Renovation Institution in Kobe displaying the time and date of the devastating Hanshin-Awaji earthquake

Earlier this year Nichola Costley, Regional Planner for West Coast Regional Council, was nominated by the MCDEM and selected by the Japan Foundation, to take part in a disaster prevention exchange to Japan. The exchange was funded by the Japanese Government as part of their Japan-East Asia Network of Exchange Students and Youth Programme. Twenty young professionals (under 35) from East-Asia, Australia and New Zealand were provided an opportunity to view and discuss disaster prevention best practices with government officials, community leaders, and community members in Tokyo, Kobe, and Niigata. Nichola shares some of her experiences.

A focus of the programme was how to achieve a strong society with strong and enduring links between individuals and groups within communities. Visiting Tokyo, Kobe, and Niigata I saw many examples of recovery initiatives in communities affected by disaster and the strong emphasis within Japanese culture of preserving a community memory of these events.

COMMUNITY RECOVERY

There were many opportunities to talk to community leaders and government officials who worked with communities to fund, support, and encourage

recovery efforts in areas affected by earthquake or flooding.

In North Noda, a suburb of Kobe, 90% of the community was devastated by the great Hanshin-Awaji earthquake of 1995 and the resulting fires. Prior to the earthquake, there had been concerns voiced by the community about the aesthetics of the area and the narrow streets. Not surprisingly, narrow streets were a major issue in the initial response, restricting the access of emergency vehicles.

A major rebuilding effort was undertaken to create a new residential area with a commitment from



An earthquake memorial in Biwa neighborhood. Much work has gone into ensuring people remember, and therefore learn from this disaster.

community leaders to bring individuals together in the decision-making process. The results speak for themselves. In a country where space is a premium, most people were willing to give up a part of their land in order to create wider streets. While this urban planning initiative contributed to the beautification of the area, it also improved access for emergency responders.

This is an excellent example of a community working together for the greater good. Flower plaques have been set in the middle of the streets with a red dot in the centre to indicate the required setback distances and the date that particular neighbourhood was completely recovered and restored. Whether this would happen in New Zealand or other western countries is questionable, however, its success is a credit to this community and its leaders.

We then traveled up into the hills to the small rural village of Yamakoshi, home to the famous koi carp. The area was seriously affected by an earthquake in 2004 and Yamakoshi suffered from earthquake-induced landslides and dam breaches. In addition, the village was impacted by record snowfall the same year. This resulted in the majority of houses being uninhabitable, and much of the industry and livelihood of the community was seriously affected. The entire village, made up of 14 community groups ranging from five to 200 individuals, was evacuated following the earthquake. As was the case with North Noda, the community had a major part in the recovery process and in deciding what sort of village they wanted to rebuild.

Unfortunately there were problems with outside

officials coming in to 'help' the community get back on its feet. As these officials were generally younger, from the city and not a part of the community, they were not initially welcomed. Advice and assistance offered to decision makers and community leaders (who were more often men) was often not welcomed.

To overcome this, one person joined groups that represented the women in the area. Once he was accepted he found it was much easier to engage with the men as well. Officials realized they needed to work one-on-one in small casual meetings held over a meal. This casual approach enabled the disclosure of the real effects on the family rather than would have been the case in a more formal meeting or within a larger group.

Not surprisingly, the recovery methods and objectives of the government were often very different from that of the affected community. There were various examples of how this was recognised and how the community was supported to realise its aspirations and desires in recovery. In one case for example, a community decided that it would first recreate its graveyard followed by its shrine, before rebuilding their houses.

This reflected the cultural priorities of a community which lived with and treasured its ancestors and history; priorities very different from than those of central government. This reinforces the concept of working within the priorities of the community, as opposed to those of officials. The long-term goals may be the same but it is how they are achieved. For the people affected, that is the most important component in the recovery process.

The long-term goals may be the same but it is how they are achieved. For the people affected, that is the most important component in the recovery process.



A North Noda street, widened when the area was rebuilt. The plaques seen in the street mark the extent to which individual homeowners surrendered part of their land for the street to be widened. Inset: Plaque detail.

tellers who recall what happened to them during and after the earthquake. Our storyteller, Mr. Yamada, credited the survival of his family to the placement of a torch near his bed. Hearing these stories and seeing the emotion of the storyteller, coupled with interactive displays, pictures, movies, and a life-size recreation of an earthquake ravaged street, was a vivid and moving experience. A section of the waterfront in Kobe has also been preserved to show the degree of slumping in the area along with crooked streetlights and pictures and explanations.

In the Biwa neighborhood of Kobe, 80% of the houses were destroyed and 41 people died during the earthquake; an event that is now credited with the beginning of the volunteer movement. A neighborhood memorial has been established commemorating the lives lost and bucket-passing drills to extinguish fires have been established. It was acknowledged that although this fire-fighting technique is unlikely to be used, it was considered an effective way to bring people together regularly and to get them involved. An annual summer festival in North Noda brings people together to remember the event and celebrate together the rebuilding of their community.

Other important community lessons continue to be reinforced by these disastrous events. When, rather than if, something of this scale happens again, it has now been agreed that communities are to be moved as interconnected, interdependent groups, rather than as individuals. This was learned following the Hanshin-Awaji earthquake when the elderly and impaired were first priority to be moved into temporary housing. Unfortunately, there were some deaths amongst the elderly which were attributed to loneliness due to the loss of the community support that had maintained them prior to the earthquake.

Now back in New Zealand and reflecting on what I have seen, the question for those of us in CDEM is whether it is possible to create and foster these community relationships and linkages within communities before a disaster occurs? Is this possible, or does a community need a catalyst, such as disaster, to prompt them to see what we recognised in Japan – that those people who are socially linked are more resilient than those who are not. Where do we start? ■

The focus is thus on engaging with members of the community to encourage and empower them. During the recovery process the slogan 'Return back to Yamakoshi' was the stated goal for both villagers and officials to work towards.

COMMUNITY MEMORY

Preserving a communal memory of disaster events was highly valued in the communities we visited. In all the places we visited that had been affected by a disaster, there were a range of memorials, parks, museums, community exercises and festivals that focused on remembering the event.

The major objective of these memorial projects is to ensure that memories are preserved and passed on to younger generations so that lessons learned in such pain and with so much loss, are not forgotten. Festivals, memorials, and drills also help to sustain a greater level of connectivity within and between the community groups. Our tour group noted on numerous occasions that people who are socially linked appear to be more resilient than others when faced with disaster and during the recovery process.

One such community initiative is the Disaster Reduction and Human Renovation Institution in the city of Kobe, an inspiring interactive museum focused on remembering the great 1995 Hanshin-Awaji earthquake. The museum features live story

People who are socially linked appear to be more resilient than others when faced with disaster



A double strike of two large earthquakes within minutes of each other, and with one quake 'hiding' the other, is unusual and almost certainly increased the size of the tsunami and its destructiveness on some Tongan islands.

Global earthquake readings and GPS recordings from Samoa initially indicated a single large 'normal-faulting' quake of magnitude 8.

However, tsunami modellers at GNS Science noticed that tsunami waves recorded by deep ocean tsunami gauges in the southwest Pacific strongly indicated the earthquake was a 'thrust' event, which has a compressional movement within the earth's crust rather than the extensional motion from a normal-faulting earthquake.

No matter how hard the tsunami modellers tried, they were unable to reconcile the tsunami gauge data with the data from permanent GPS instruments in Samoa and global seismic recordings.

Six weeks after the event GPS measurements from a small Tongan island showed there must have been two large earthquakes – and the tsunami gauge readings indicated these earthquakes must have occurred within a couple of minutes of each other.

Lead author John Beavan, a geophysicist at GNS Science, said the conflicting data was initially very perplexing, and the discrepancies could not be resolved in spite of determined efforts. "In the end, it was pure detective work that uncovered the two earthquakes," Dr Beavan said.

Several weeks after the earthquake, colleagues in Tonga obtained post-earthquake GPS measurements from two survey marks on the outlying Tongan island of Niuatoputapu.

"When I processed the data and looked at the GPS results I was astonished to see that the island of Niuatoputapu had moved nearly 400mm east."

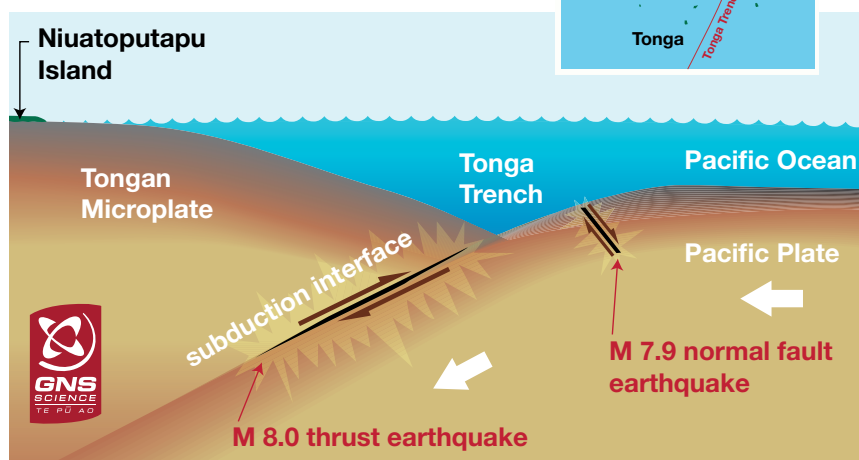
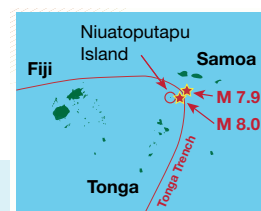
This was a much bigger displacement than was expected, and in a completely different direction.

It is rare for two large earthquakes to occur so close together in time. Dr Beavan said it was possible

scientists had not recognised similar events in the past because seismic waves become entangled making it almost impossible to distinguish individual earthquakes when they occur close together.

Dr Beavan said it was possible, though unlikely, that two large near simultaneous earthquakes could occur on the plate boundary under New Zealand.

"This is a rare phenomenon, but it is possible wherever there is a subduction-type plate boundary." ■



Auckland to host earthquake conference

The **ninth Pacific Conference on Earthquake Engineering** will take place in Auckland from 14 to 16 April, 2011. The conference, held every four years since 1975 by the New Zealand Society for Earthquake Engineering (NZSEE), has grown to attract earthquake engineers from throughout the Pacific region and further afield. The conference again promises to be an important forum for the exchange of findings and experiences in mitigating the effects of earthquake and earthquake related hazards around the Pacific rim.

The theme chosen for the 2011 conference, **Building an Earthquake Resilient Society**, challenges participants to re-evaluate the requirements of a truly resilient society beyond the engineering context, and to incorporate the social, economic and human dimensions of earthquake engineering. Keynote presentations that explore aspects of the conference theme will be presented by eminent individuals in the field of earthquake engineering at the start of each day.

For more information, visit <http://pcee.nzsee.org.nz> ■



With Auckland's new local government structure coming into force on November 1, the region's civil defence emergency management (CDEM) teams are gearing up for change and a new inter-disciplinary way of working.

New Auckland CDEM structure revealed

The newly-formed Auckland CDEM Department, led by Clive Manley who will act as Manager, Civil Defence Emergency Management and Group Controller, will provide a single, integrated structure to manage civil defence and emergency management, rural fire and hazards and risk management regionally, using the principles of the 4 R's: Reduction, Readiness, Response and Recovery. This approach "provides the Auckland Council with the ability to adopt a cohesive, regional approach to comprehensive emergency management from day one" says Clive Manley.

The new CDEM Department will sit within the Office of the Chief Executive alongside other Auckland Council departments such as, Risk and Assurance, Communications and Public Affairs and Human Resources. With Clive Manley reporting directly to Auckland Council Chief Executive, Doug McKay, it is anticipated that this streamlined management

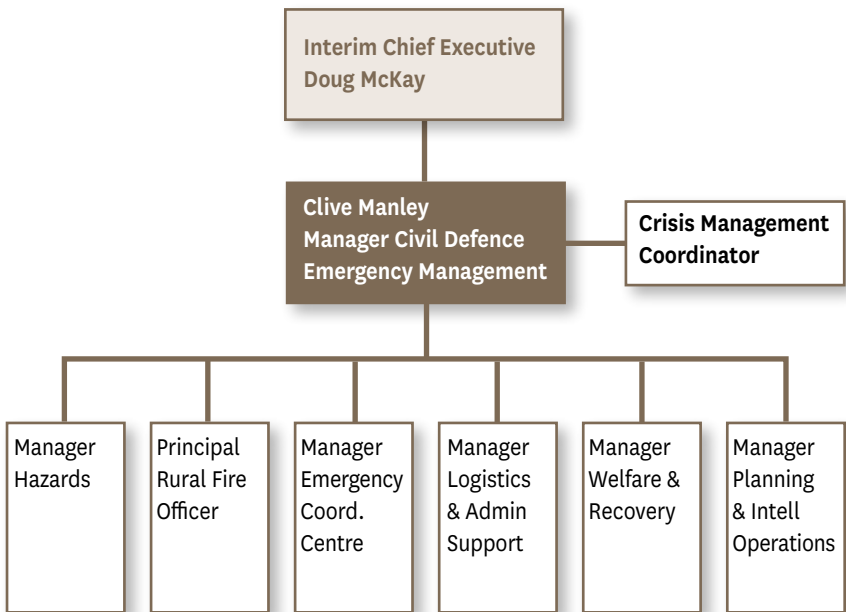
structure will enhance emergency response by providing improved access to key decision makers.

The CDEM Department structure has been designed with the needs of the Auckland region in mind. It was developed in collaboration with key Auckland CDEM stakeholders and the Ministry of Civil Defence & Emergency Management.

Within in the CDEM structure, control, coordination, policy and strategy development, is centralised in the CDEM Department. However, the delivery of CDEM at the community level is decentralised, occurring through local area offices. The geographic spread of the North/West, Central and Southern area offices, supported by the Emergency Coordination Centre, has been designed to align with existing emergency services boundaries, thereby maximizing the CDEM and Rural Fire infrastructure.

The new CDEM Department will take a 'whole of council' approach to comprehensive emergency management by liaising with all departments. This will require strong working relationships with other departments of the Auckland Council along with external stakeholders. For example, the inclusion of the Hazards Management Unit within the CDEM Department ensures a direct functional link with Infrastructure and Environmental Services, encouraging a cross-council partnership to risk reduction and hazard management.

Governance of the new CDEM Department is also changing. The Second Generation Group Plan is currently under review and due to be delivered in June 2011. In the interim, the CDEM Department will transition to the new Auckland Council under the existing Group Plan, with arrangements in place to ensure there is no interruption to civil defence emergency management services and 24/7 response capability. The proposed Auckland governance structure recognises the importance of local boards in providing leadership and advocacy to the local area offices. ■



Australasian Hazards Management Conference continues success

The Australasian Hazards Management Conference is run annually, alternating between locations in New Zealand and Australia.

The 2010 conference was held in Wellington 11-12 August. The conference provides a forum to discuss the integration of hazard information into effective risk management. For example, applying hazard information to best practice planning; developing effective warning systems; improving response and recovery from events; and creating resilient communities through integrating science into practice.

The conference is structured around two days of presentations, with two additional days of half and full-day workshops. Conference participants included hazard and disaster researchers, disaster risk management practitioners and policy people.

Notable highlights included key note presentations by Stephanie Chang and Mark

Benthien. Stephanie Chang (University of British Columbia) spoke on "Anticipating cascading consequences of infrastructure failures in disasters" and described collaborative approaches in identifying infrastructure interdependencies and the importance of mitigating infrastructure risk across systems.

Mark Benthien (Southern California Earthquake Center, United States), talked on "The Great California Shakeout" exercise reported in the March 2009 issue of *Impact*. ShakeOut is the largest earthquake drill of its kind, first developed in 2008 and involves millions of participants through a broad-based outreach programme including schools, community groups, families and the media. The 2009 ShakeOut involved more than 6.9 million people, with participants in every county of the state of California.

In 2009 the "Great West Coast ShakeOut"

was held on New Zealand's West Coast – the first example of how to replicate the ShakeOut concept outside of California. Other drills are now planned elsewhere in the US and other countries, including the possibility of a New Zealand nationwide ShakeOut in 2012.

Half-day and full-day workshops covered a range of topics, including among others: GIS in emergency management, Cities at risk, Emergency management planning for local government, Emergency Management and the health sector, and Risk Reduction through land-use planning.

Links to the conference abstracts, presentations, and workshop details can be found at www.hazardseducation.org. The next Australasian Hazards Management Conference will be held on the Gold Coast of Australia, 26-29 July 2011. Watch out for details.

Nelson Tasman volunteers recognised

More than eight decades of voluntary work for Nelson Tasman civil defence were recognised at a ceremony held at Tasman District Council in Richmond.

Tasman Mayor, Richard Kempthorne, says our region is lucky to be so well served by civil defence volunteers. "Their length and breadth of experience is such a valuable resource. Our region is vast and we need to be able to call on people on the ground with knowledge and expertise when situations arise. It's wonderful that they can be recognised in this way."

CDEM Long Service Awards recognise the contribution of individuals who have volunteered their time and effort to civil defence. The awards are given for at least ten years CDEM service at local or national

level, following nominations by CDEM Groups. The Nelson Tasman CDEM Group consists of Nelson City Council and Tasman District Council. The awards were presented by the Minister of Civil Defence, John Carter.

Nelson Mayor, Kerry Marshall, says the recent first-ever assessment of civil defence capability in the region by MCDEM showed we are leading the way with a strong foundation.

"The Ministry noted the strength of our CDEM Group also lies in competent individuals in key roles, well established networks and a strong sense that members will be able to rely on each other for support if needed. Our volunteers fill an integral role and the length of service helps build and maintain those relationships" she says.



(left to right) Award recipients, Eric Humphrey, Ken Simpson, Minister of Civil Defence, John Carter, Ed Stevens

EM Collection online

The Department of Internal Affairs library houses the Emergency Management Collection, a specialist collection of books, reports and research journals intended to inform the work and professional development for those within the civil defence emergency management sector.

The EM Collection can now be accessed online with LibraryThing www.librarything.com/profile/emcollection.

This service allows anyone to browse the collection however, to request and borrow books you must be a registered user. A link to the registration page on the MCDEM website is provided on the LibraryThing website.

Once registered, users can request via email (Information@dia.govt.nz) to borrow books and reports, and receive requested copies of journal articles. Monthly information alerts of new listings and journal articles can also be provided to registered users.

For suggestions of useful additions to the collection or other enquiries contact Anita Komen on 04 495 6803.

New web resources support response teams

New Zealand Response Teams (NZ-RT) are staffed by volunteers who complete a wide array of tasks during an emergency from light rescue to first aid and welfare. NZ-RT provides qualified responders to support CDEM Groups and their communities during an emergency event. Team members work alongside and assist the emergency services and other responding agencies. Teams are located throughout New Zealand.

Following a review of team capabilities, MCDEM, New Zealand Fire Service and the New Zealand Urban Search and Rescue Advisory Board reached agreement on a new model to rationalise rescue arrangements for New Zealand.

The review looked at the current roles and responsibilities of the teams. Originally response teams were established with a focus on a rescue capability. However, many teams have not been used in this capacity, going on instead to develop an array of skills more appropriate to the needs within the communities they serve.

Teams have recognised that they needed to market these skills and their own identities. To help with this a series of web pages have been developed on the MCDEM website. Each team provides a team profile as well as their capabilities. To assist with volunteer recruiting, contact details are also provided for members of the public wishing to join a team.

A secure section has also been developed which can be accessed by team management. The secure section records team member contact details and the specific skills which are available to other CDEM Groups for operational purposes. The site also contains important reference documents required by all teams. It is intended that the web pages be a “go to” reference point for any and all teams working within CDEM.

Navigate to the NZ-RT webpages from the MCDEM homepage:

Home > For the CDEM Sector > NZ Response Teams ■



EXERCISE TANGAROA UPDATE

Planning is well underway for Exercise Tangaroa, a national, multi-agency exercise that will be held on 20 October 2010. The scenario for the exercise will be a distant source tsunami originating from South America.

The focus is on the national response and lead-up to a tsunami arrival, the exercise stopping shortly before the first waves are expected to reach the East Coast of New Zealand. While stopping short of wave arrival, the scenario will require careful consideration of the likely onshore impacts.

The exercise will be led by MCDEM, supported by the 16 CDEM Groups, central government departments, emergency services, lifeline utilities, and other agencies. Detailed information and updates about the exercise can be found on the Ministry website, www.civildefence.govt.nz, along with a variety of tsunami-related resources.

If you have any questions about the exercise please contact either Jo Guard on (04) 495 6818 or or Tane Woodley on (04) 495 6827. ■

Whangamata to test tsunami sirens

“Testing of the tsunami warning sirens at Whangamata later this month is part of local and regional preparedness for tsunami,” says Waikato Civil Defence and Emergency Management Group controller Scott Fowlds.

The three sirens, which were installed two years ago, will be activated at noon on Friday 24 September for no more than 30 seconds.

“Their installation by the Whangamata Emergency Services Group and Thames Coromandel District Council was part of long-term work to improve tsunami preparedness on the Waikato region’s east coast. Given the tsunami alerts we have had in the past year it’s important for the sirens to be tested regularly,” said Scott.

The siren test comes about a month before the national civil defence exercise; Exercise Tangaroa on 20 October which will test New Zealand’s all of nation arrangements for handling a major tsunami warning. ■





In 2009, 335 natural disasters (excluding biological) were reported worldwide. They killed 10,655 people, affected more than 119 million others and caused more than US\$40 billion economic damages.

Once again Asia experienced the largest share in reported natural disaster occurrence (40%), accounted for 89% of global reported natural disaster victims and 38% of total reported economic damages from natural disasters. The Americas accounted for 22% of total reported natural disaster occurrence and for 32% of total reported economic damages from natural disasters, but only for 4.8% of total reported natural disaster victims.

The highest number of reported deaths was due to the earthquake in Sumatra, Indonesia on September 30. This earthquake killed 1,117 people and affected more than 2.5 million others. The most affected by disaster were caused by floods in July in Southern and Central China, affecting 39.4 million people. Winter storm 'Klaus', which hit France, Spain and Italy in January 2009, caused the most important economic damages of the year (US\$ 5.1 billion). Of the 111 countries that were affected by natural disasters in 2009, 18 countries accounted for the majority of deaths, victims and economic damages. This reflects the unequal distribution of the burden that natural disasters bring upon human society.

The upward trend in disaster occurrence seen over previous years has stabilized in 2009. The number of reported natural disasters in 2009 dropped compared to 2008 (see the chart opposite), and also remained below the annual average

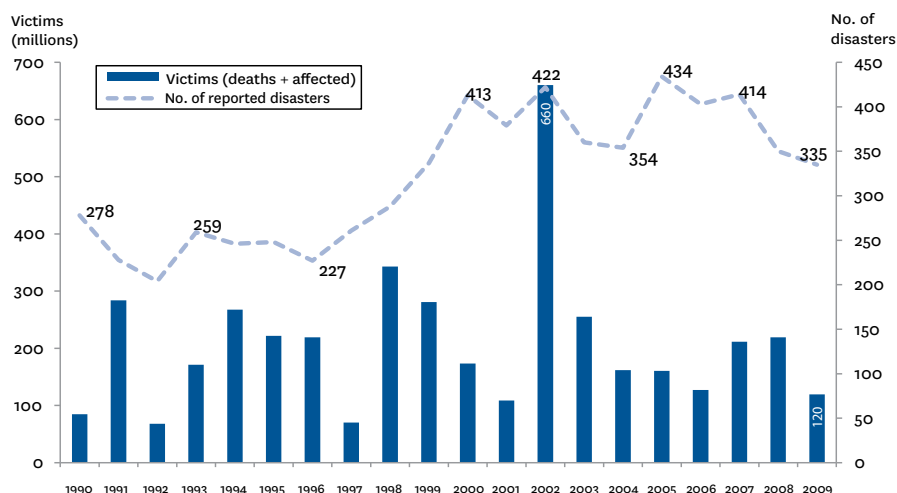
disaster occurrence of 392 disasters during the period 2000-2008. The decrease in reported natural disaster occurrence was mainly due to a lower number of reported meteorological disasters in 2009 (85) compared to the annual average number of 108 disasters from 2000 to 2008. A decrease also occurred for hydrological, geophysical and climatological disasters. All continents, except Africa, experienced a decrease in the number of reported natural disasters.

In general, a high variation exists in the reported number of deaths and victims from one year to the next. This is mostly due to single disaster events that cause a tremendous human impact, such as the drought in India in 2002 (300 million victims), the Indian Ocean tsunami in 2004

(226,408 deaths in 12 countries), or cyclone 'Nargis' in Myanmar in 2008 (138,366 deaths). Therefore, it is difficult to identify a clear trend over time.

Countries need to be better prepared for the destructive impact of natural disasters. Although the natural disaster impact on human society in 2009 was relatively small compared to previous years, the consequences were critical to many families. Underlying factors and preconditions that make human populations vulnerable to disasters need to be addressed in order to mitigate impacts and create resilient and sustainable societies. ■

Excerpt from the Executive Summary of the *Annual Disaster Statistical Review 2009* published by CRED, available at www.cred.be





Wellington's civil defence volunteers graduate

Wellington City recently celebrated the graduation of 63 civil defence volunteers representing people of all ages and from many walks of life.

In congratulating the 63 graduates (pictured) and presenting certificates, Mayor Prendergast said the event was an important milestone on the journey to strengthen and reorganise the capital city's civil defence capability.

The ceremony included friends and family of the volunteers, local MPs, councillors, representatives from the civil defence emergency management sector and from the emergency services.

The first intake on the new volunteer induction course trained one night a week at the Wellington Emergency Management Office (WEMO) over seven weeks. They were taught, among other things, personal readiness, information management, communications, emergency welfare and standard operating procedures for civil defence centres.

The training, compiled with help from the Canterbury CDEM Group and Napier EMO as well as MCDM, has been part of a significant transformation of emergency-management in the city following a reorganisation of WEMO in 2009.

The new courses run hand-in-hand with a reorganisation of the city's network of volunteer-run civil defence centres, which is continuing. The city's long-established network of 37 civil defence centres – many of which had no active volunteers and were virtually out of action – is being reorganised into a network of eight civil defence areas.

The City Council's Emergency Preparedness Manager, Fred McCoy, says the formalising of Wellington's volunteer network is essential if the city is to be able to respond quickly and properly to a major event or disaster.

All prospective CDEM volunteers are now required to undergo induction training and complete assessment before becoming authorised volunteers. They will be subject to Police checks and will have their details and contacts recorded on a central database. They will be issued with Council-endorsed identity cards.

The training doesn't stop at the induction. Under the new system, all volunteers will be asked to take

part in at least four 'qualifying' events to keep their skills up to scratch. They must also carry out regular monthly tasks – such as checking equipment. If they choose they can also move on to more challenging training involving NZQA unit standards.

Fred says the volunteers will also be expected to be mobile. "We're moving away from the traditional attachment of volunteers to their local neighbourhood. In a localised event – such as a large scrub fire or weather bomb – local volunteers and their families are likely to be caught up in the event so neighbouring volunteers, or even some from across town, will be needed to help out."

He adds that the volunteers will principally run the eight civil defence centres – acting as the local 'eyes and ears' for the Council and emergency services. "We're not expecting these people to be clearing rubble or fighting fires – we want them to be the grassroots intelligence and admin to help the bigger operation run smoothly."

Wellington's Civil Defence Controller, Mike Mendonca, says he is extremely pleased with the rapid way in which the new volunteer network and emergency structures are taking shape.

"Over the past 12 months the new team at WEMO has developed and implemented an excellent training programme and structure. There has been a surge in people signing up for the volunteer course and many more in the pipeline.

"The reason is partly because we have better defined the volunteers' role, made it less onerous, less lonely, but more achievable and the value they add to their community more apparent."

Mayor Prendergast referred to controversy last year – and continuing pockets of opposition – over the reforms underway at WEMO. "It's no secret that there are those who prefer things the way they used to be, and they haven't been shy about making their feelings known. But the protection of Wellington in an emergency is too important to be left to chance. 'Ad hoc' simply isn't good enough in a windswept capital city built on the coast, on a fault line." ■