



# impact

Volume 33 ▲ March 2009

The Great  
Southern California

## Shake Out

A New Zealand perspective p6



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Ministry of Civil Defence  
& Emergency Management

Impact is a quarterly magazine for the Civil Defence sector published, March, June, September and December. Previous issues can be found on the Ministry's website

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## EDITORIAL

# Storms on the horizon



John Hamilton, Director

**The forecast is not good and it is not the weather. It is the developing global financial situation and all the forecasts indicate that New Zealand is not immune from the impacts of the system on the horizon, even though there seems to be some lag between what is happening in Europe and the United States and effects here. But the forecast is that we will be impacted.**

The Government has signalled strongly to its departments and agencies that it expects them to live within their means, to avoid wastage and to ensure that all expenditure represents good value for money. Local government confronts the same problem.

Both central and local government will face reduced income and demands to do more with less. The expenditure on civil defence emergency management in both jurisdictions is not large. In central government Vote Emergency Management of \$11.0m represents just 0.019% of government expenditure but that does not provide us with an exemption from making savings and justifying every bit of expenditure.

To this end, I have cancelled the national CDEM conference that was scheduled to be held in Wellington in November 2009, and travel expenditure will be strictly controlled impacting those attending meetings in Wellington and Ministry staff travelling to the regions.

We who are involved in civil defence emergency management play an important part in safeguarding the lives and livelihoods of New Zealanders. We are expected to have mechanisms in place and to exhibit high degrees of readiness irrespective of the conditions or the forecast, be they meteorological or economic. The recent devastating bush fires in Victoria are a testament to that!

Despite the conditions, people expect us to be prepared and able to help them. Even as the economic conditions

## The CDEM foundations are in place; they are solid and well based – stick to them

get harder, financial constraints begin to bite deeper and communities come under increasing pressure, their hazards and risks do not disappear. Indeed it can be argued that community vulnerabilities are increased under these conditions and at a time when it will be harder for us to sustain high levels of awareness and readiness and it will be more difficult to fund new initiatives.

There is no simple answer for CDEM to the problems highlighted by the forecasts. But I encourage you all to consider these principles:

- The CDEM foundations are in place; they are solid and well based – stick to them. This is not a time to go off on a tangent and try something new.
- Expect to be constrained in what can be taken on but don't stop thinking. There are many inexpensive things that can be done for community preparedness and resilience – saying nothing of generating community spirit and buoyancy. Use your initiative and show some leadership in your community in preparedness and in response.
- We are fortunate to have a collective of committed and capable people in CDEM. Collaborate with all our stakeholders rather than retrench. You need to work with them.

The old adage applies: "When the going gets tough, the tough get going." ▲

# Auckland Group launches new website

The Auckland Region CDEM Group has recently relaunched its public website [www.aucklandcivildefence.org.nz](http://www.aucklandcivildefence.org.nz)

"We had a website which was out-of-date and difficult to keep current, which we knew we needed to re-develop. We also wanted to use new technology to improve public education about, and participation in, emergency management," said Ben Stallworthy, Executive Manager of the Auckland Region Emergency Management Office.

Derek Battersby, Chair of Auckland CDEM Group, says new web technology has provided an opportunity to improve communication with the public.

"The website gives the public a good overview of the effects of any emergency in Auckland, and allows us to advise the public of what we are doing, and what they should be doing, so we are all on the same page. This means we can get relevant and current information out to a wide cross-section of the community. The ability to communicate early is crucial in the lead up to an event or in small events where infrastructure is still intact, but people are looking for information and guidance".

The site has a number of innovative features. An emergency status page gives the public a snapshot of what is occurring in the Auckland region. It achieves this by incorporating a number of direct RSS feeds from local media, regional power providers, MetService, and the New Zealand Transport Agency.

The website also includes a password-protected emergency manager's section where people involved in emergency management in the Auckland region can access and share information. The emergency managers' area of the site also contains more day-to-day information such as standard operating procedures, upcoming activities, and a comprehensive contact database.



"The emergency manager's section has its own emergency status page, which allows any registered user to view the latest situation reports, plans and other relevant information from the Auckland Group and local authorities. This can be done from anywhere with an internet connection, which means they can access this from outside of an emergency operations centre if required. With the website being hosted outside of Auckland it provides redundancy in our data communications in case of local outages or damage to local servers," says Russell Croker, project manager and emergency management advisor.

For more information on the website, please contact either Russell Croker or Kiri Maxwell on 09 366 2000. ▲

## New topographic map series

A new 1:50,000 topographic printed map series, **Topo50**, will be launched by Land Information New Zealand (LINZ) in September 2009. Defence and emergency services have been working closely with LINZ to ensure their mapping systems are aligned with the new maps.

The Topo50 map series will replace LINZ's current NZMS260 series of maps, but will provide the same detailed and accurate information. Each of the 452 new Topo50 maps will cover a different area to the current NZMS260 series due to a change in printing paper size to A1 portrait format.

New datum and map projection are being used for the maps to conform to that used internationally and in modern navigational systems, such as Global Positioning Systems (GPS). This means that both the latitude and longitude, and grid coordinates will be different from NZMS260 maps.

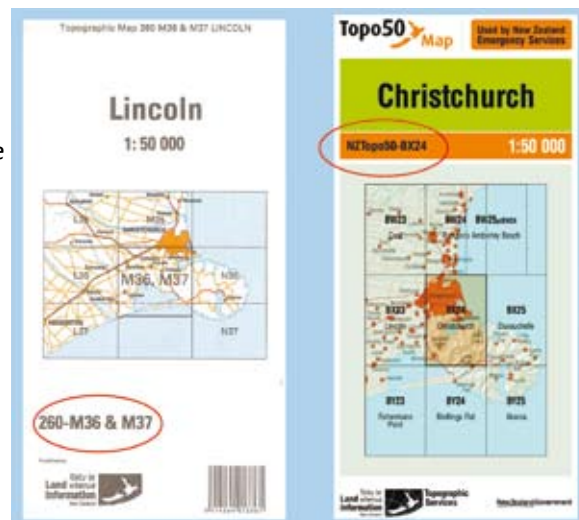
LINZ will also release a 1:250,000 topographic map series, **Topo250**.

Coordinate conversion tools are available on the LINZ website at [www.linz.govt.nz/](http://www.linz.govt.nz/) coordinateconversion along with more information about the Topo50 and Topo250 projects.

Rescue and emergency services will need to transfer to using the new maps once they are released. For the first time, LINZ will make digital images of maps in both series available in TIF format of the whole map including legend and index, and geo-referenced TIF format of the spatial data area only.

As part of a LINZ non-chargeable map policy, official emergency services organisations (including local government emergency management offices) may be eligible for maps at no cost if they are to be used exclusively for emergency services.

MCDEM is coordinating map orders



from local and regional emergency management offices on behalf of LINZ. If you think your organisation is eligible but are not currently receiving non-chargeable maps, please email [Tane.Woodley@dia.govt.nz](mailto:Tane.Woodley@dia.govt.nz) to discuss eligibility. ▲

# NATURAL DISASTERS: myths & facts

## Fact: Shelter under a solid object during an earthquake

John Hamilton, Director of Civil Defence says that in an earthquake the best advice is to **drop, cover and hold under** a table or desk, so as to protect against falling objects and debris.

A widely circulated email suggests incorrectly that, during an earthquake, people should shelter next to solid items to create a protective void, a 'triangle of life'.

Relying on information from unrecognised sources could put you, or your family in danger. Far better to go to [getthru.govt.nz](http://getthru.govt.nz) and [eq-iq.co.nz](http://eq-iq.co.nz) to get some good advice on how to be safe in an earthquake and how to make your home quake safe.

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New Zealand Government

## EQC launch new ads

The Earthquake Commission recently began a series of press and internet advertisements based on the theme "Natural disasters: myths and facts".

The ads are running fortnightly in provincial and national daily newspapers and on selected websites. They examine common myths about natural disasters and provide the facts, supported by a relevant expert. They also encourage people to take action to prevent natural disaster damage to their homes.

The press advertisement illustrated above debunks the 'triangle of life' myth and provides advice on what to do during an earthquake. This ad was supported by the Director of MCDEM, John Hamilton, and it encouraged people to visit both the EQC and Ministry of Civil Defence & Emergency Management preparedness websites.

## Waitakere City Council honours volunteers

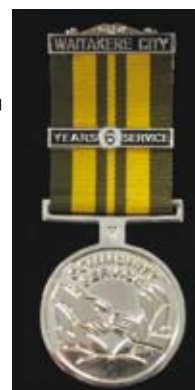
In 2007 Waitakere City Council first minted a service medal to honour its civil defence and rural fire volunteers.

The medal is recognition of five years continuous service by volunteers. In addition a two year bar is presented for each additional two years service. It is through the dedication of these volunteers, their commitment to ongoing training and on-call service that a high quality of response is provided to the community.

At a ceremony held in the Council Chambers and in the presence of friends, family and elected officials, 11 medals and 13 service bars were presented. In addition to the council service medals there were also presentations of United Fire Brigades service medals. A number of national certificates for vegetation fire fighting for both civil defence and rural fire personnel were also presented.

Volunteers are the life blood of both civil defence and rural fire and council has a responsibility to provide for both services within the city. The presentation of these medals is recognition of the efforts of these extraordinary people.

Waitakere City Principal Rural Fire Officer Peter Barber said "in a time when volunteering is becoming less popular the commitment of these volunteers is an inspiration." ▲



## Grocery industry continues plans for disasters

Maintaining food supply during an emergency is an absolutely essential requirement for community wellbeing.

The Grocery Industry Council of New Zealand recently convened a workshop in Auckland for companies within the Fast Moving Consumer Goods (FMCG) sector to reassess current pandemic plans and, with the assistance of MCDEM staff, to broaden their focus to include all hazards. Around 60 representatives from over 40 FMCG companies (including Foodstuffs, Progressive, Frucor Beverages, and Sanitarium) attended the half-day seminar.



Steve Newton, chair of the Australian Retailer Action Working Group and Metcash Limited's representative on the Australian Food Chain Infrastructure Assurance Advisory Group, presented on developments in FMCG pandemic planning in Australia, including significant changes to the emergency supply chain model. MCDEM Emergency Management Advisors Mark Constable and Ian Wilson outlined the New Zealand hazardscape and the expectations of government with regard to continuity of FMCG operations.

The seminar generated significant interest and self-reflection on the currency of organisational business continuity plans and the need to integrate across the FMCG sector as well as with regional CDEM Group Plans.

The draft *CDEM Support for Pandemic Response Contingency Plan* states that the FMCG sector is responsible for its own continuation of business and that the CDEM sector is to facilitate support of this. This support is comparable with the support Groups are expected to provide to lifeline utilities regardless of the hazard. Risk reduction, readiness, response and recovery activities undertaken by CDEM Groups should compliment, assist and support FMCG sector activities by capitalising on the sector's current planning and normal business arrangements.

MCDEM is engaged with an FMCG working group to develop a framework for CDEM Groups to engage with the FMCG sector at both regional and local levels. For more information, contact Mark Constable or Ian Wilson on 04-473 7363.

For information on the Australian Food Chain Infrastructure Assurance Advisory Group go to [www.tisn.gov.au](http://www.tisn.gov.au) and see Infrastructure Assurance Advisory Groups under About the TISN. For more information on New Zealand Lifeline Utilities see [www.civildefence.govt.nz](http://www.civildefence.govt.nz) and see Lifeline Utilities under Information for the CDEM Sector. ▲

# Exercise: Major alpine fault rupture tests Otago CDEM

An earthquake measuring 8.2 on the Richter scale shakes the Otago Region and much of the South Island; its epicentre, Paradise Valley at the head of Lake Wakatipu.

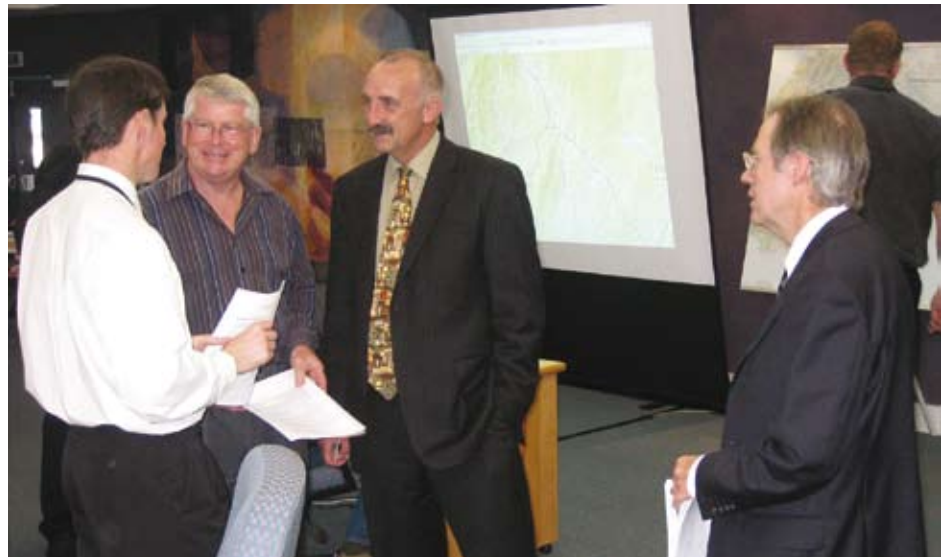
Civil defence staff are faced with managing a coordinated response to collapsed buildings, rapidly falling river levels, fires and closed transport routes. Communications are compromised as landlines, mobile networks and data infrastructures have been affected by the severity of the earthquake.

This was the scenario facing Otago CDEM Group during Exercise Paradise, a six-hour activation of Emergency Operations Centres (EOC) on Thursday February 19.

The key objectives of the exercise were:

- To test communications system with particular emphasis on back-up and alternate systems;
- To practice reporting systems and information flow between all agencies;
- To manage the prioritisation of resources across Otago;
- To test and practice operational procedures;
- To practice public information and media management systems and processes.

Clear direction on the conduct of the exercise was set by the Coordinating Executive Group and endorsed by the Group. MCDEM facilitated the exercise with John Lovell, Regional Emergency Management Advisor (EMA) and Jo Guard, EMA – National Operations developing the exercise and working in



close collaboration with Lamorna Cooper, Group Emergency Management Officer.

Personnel for the Queenstown Lakes District EOC were drawn mostly from Queenstown Lakes District Council with representatives from the Police, Fire Service, St Johns Ambulance, Public Health South, Lakes District Hospital as well as a number of volunteers also involved.

The Group EOC successfully tested Spiceworks software whilst Ministry of Health and both the Otago and Southland District Health Boards participated using WebEOC software. St John Ambulance, both nationally and regionally, used the exercise to test its ability to operate its EOC's as well as communications and incident action planning.

The Minister of Civil Defence John Carter,

*Above: Minister of Civil Defence John Carter (centre), discussing the exercise with officials.*

spent the day in Dunedin to take part and observe the activation of several EOCs and their work across the Group. This was the first time he had attended an exercise of this nature and he appreciated the differences between regional and national perspectives.

Each EOC was evaluated and debriefings were held immediately following the conclusion of the exercise. The Group will report on lessons learnt, what went well and the opportunities for improvement. Outcomes from this exercise will be incorporated into the Southland Group storm exercise planned for late July and also for the West Coast exercise in September where a similar alpine fault scenario will be utilised. ▲

## Otago launches new public initiative

A new public information booklet has been produced by the Otago CDEM Group to complement and reinforce the Get Ready, Get Thru messages. By incorporating images familiar to Otago residents it is hoped to drive home the reality of regional hazards such as flooding and earthquakes and the need to be prepared.

The booklet incorporates a middle pull-out section for residents to fill out household evacuation routes and a checklist for preparing an emergency survival kit. Local emergency management contact details have also been provided.

The booklet provides all of Otago's regional emergency management officers with a tool they can refer to and use as part of their public education initiatives. A generic Powerpoint show is hoped to be developed based on the booklet for emergency management officers to also use when they are presenting to schools and other public groups. ▲



# DISASTER AWARENESS WEEK 2009

## Mark your diary October 11-17

### GET READY GET THRU





# ShakeOut: Lessons for New Zealand

**On November 13, 2008 at 10am, individuals, schools, businesses, government offices and community organizations in southern California participated in the largest earthquake preparedness drill in U.S. history. Julia Baker, a Social Scientist with GNS Science, shares her observations.**

The drill was the heart of a public awareness event called the Great Southern California ShakeOut, a collaborative effort between earthquake professionals, emergency responders, business leaders, and community activists.

Several civil defence emergency management staff and one researcher attended to observe the drill and related activities and to evaluate its potential application for New Zealand.

## **What was ShakeOut?**

The foundation for ShakeOut was a detailed scientific report that focused on the hypothetical scenario of a magnitude 7.8 earthquake striking the San Andreas Fault. The ShakeOut scenario was developed by a team of over 300 scientists and engineers led by Dr. Lucy Jones, a seismologist with the U.S. Geological Survey (see [www.shakeout.org](http://www.shakeout.org)).

At 10am on November 13, people were expected to ‘drop cover and hold’ as if a real earthquake was occurring and respond accordingly afterwards.

As part of the ShakeOut, a website was launched where individuals could sign up and indicate their participation in the drill. At the time of the drill an astounding 5.2 million people had registered – 3.6 million of those were students.

## **How ShakeOut came about**

The concept of holding the ShakeOut drill evolved gradually over about two years. A number of factors contributed including:

- a desire to shift the culture about earthquakes in Southern California so that people would see they were ‘in this together’ and take greater responsibility for preparedness;
- a solid scientific research foundation which allowed a better understanding of earthquake hazards in the region and potential physical and social impacts;
- input from the US Geological Survey Multi-Hazards Demonstration Project as part of that foundation;
- demand from local authorities and emergency managers for scientific ‘products’ that were useful to them;

*Cajon Pass, California, illustrates the infrastructure implications of a major fault displacement. High pressure gas lines, high voltage power lines, rail lines, fibre optics, water lines, and Interstate 15 all run over the San Andreas Fault, which runs roughly left to right across the centre of this image. Credit: USGS*

- use of research findings from social science to ensure effective strategies for communication and motivating the public to prepare;
- strong leadership from individuals and other stakeholders to get the ShakeOut happening;
- buy-in from the wider community who wanted to contribute to and participate in the event.

While there was no official budget available to fund the ShakeOut, funding was provided through in-kind donations (both in terms of work content and time) and sponsorship. This was enough to ensure activities could take place.

## **Observations**

These observations are based on attending the event and informal interviews with several of the organisers.

### *A date to prepare around was useful*

Getting people to prepare for high impact, low frequency events such as earthquakes can be difficult as it’s not known when the next one will occur. Thus people tend to put off preparing thinking it might not happen within their lifetime. Having a set-date to participate in a drill is useful as it provides a target around which planning and preparedness can be done. While New Zealand has had emergency exercises around specific dates before, we have not had full participation from all sectors of community, which was the strength of ShakeOut. From a New Zealand perspective, the Y2K planning may be the closest example of planning around a set-date.

### *ShakeOut was evidence-based*

The organisers decided that every part of the ShakeOut scenario and drill should be based on established evidence. As a result, there were significant inputs from researchers involved in both physical and social science research. In terms of physical science, people found a scientific-based scenario easier to work with as they could determine with more accuracy what the impacts might be and what they might need to do to mitigate those impacts. It made the scenario more realistic and therefore believable and credible.

Social science research has found that people thinking and talking about hazards, interacting with each other, and seeing what others have done, will stimulate preparedness activities. Therefore the organisers' needed to get people thinking and talking about what they might need to do to prepare for an actual earthquake and then undertake preparedness actions.

*Good practice communication and community activities worked well*

Communications were focussed on three key areas designed to motivate people to prepare:

- Earthquake scenario and preparedness messages were presented to communities, repeatedly and consistently. Messages came from multiple sources.
- Organisers provided visual images of people preparing for earthquakes to show what others were doing and the specific actions they were undertaking.
- Organisers encouraged the 'milling' principle where people talk about the drill and preparedness while relating with others such with family, friends, workmates, or neighbours.

Information and communication resources were developed for the drill. Such resources included drill broadcasts (which could be run during the drill itself or before/after as required), the *Preparedness Now* movie, other videos about the ShakeOut, along with printed/printable information about how to prepare for an earthquake such as booklets, brochures and posters.

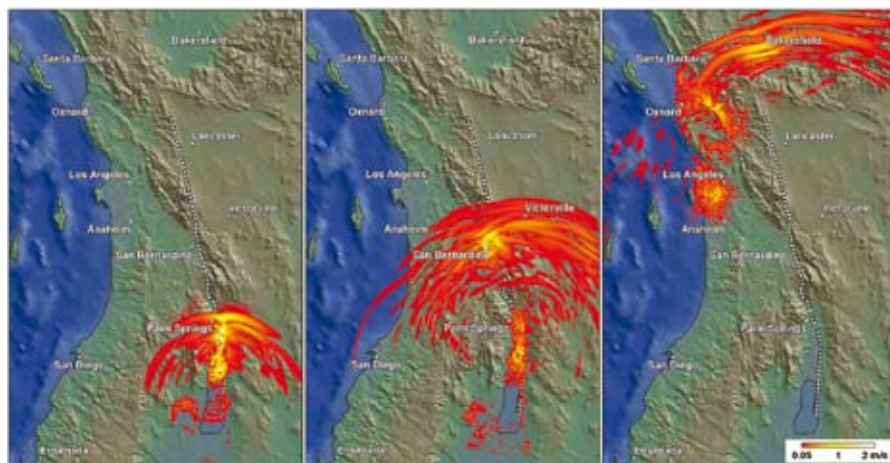
These resources were made available to the public through a variety of sources including websites; social media networks; print, radio and television media; emergency management activities; businesses; and schools and community groups. Information was provided in multiple languages so to reach as many people as possible.

Unlike the negative angle adopted by advertising campaigns designed to shock people into action (eg. drink driving campaigns), ShakeOut messages emphasised the positive things that people could do about earthquakes and empowered people to go ahead and do them. The *Preparedness Now* movie presents an earthquake scenario and potential impacts in a realistic way but also mentions that people can survive and recover if they prepare for such an event. Messages are specific so that people know exactly what action to take. For example, information is provided about what the appropriate response is during an earthquake (i.e. 'drop, cover, hold') and specific instructions are given on how to prepare your home for an earthquake.

*Community-based activities essential for preparedness*

While communications and associated activities got people thinking and talking about earthquakes, it is difficult to say what influence the ShakeOut had in terms of getting people to undertake household preparedness activities such as making emergency plans and storing food and water. A quantitative survey is required to accurately measure any changes and this will be undertaken as part of future research.

However anecdotal evidence suggests that the number of people undertaking actual preparedness activities seemed to be greatest when supported by community-based activities. For example, a neighbourhood group activity in Hermosa Beach already had raised preparedness levels in that community so ShakeOut helped motivating those still unprepared. Other research work also supports this and notes the importance



Powerful computer modelling was used to predict the velocity of ground motion and likely property damage. The three maps show wave propagation at 30, 60 and 120 seconds after the rupture.

of community-based programmes in influencing adjustment adoption (various research reports can be downloaded from <http://disasters.massey.ac.nz/pub-reports.htm>).

### Could a Shakeout be conducted in New Zealand?

An event such as ShakeOut could be run in New Zealand drawing upon experience from previous exercises and the ShakeOut drill. For the event to be a success, it would require leadership to drive it and collaboration with a variety of national, regional and local partners. This would include collaboration right down to community level, with businesses, schools and community members involved with activities related to the drill.

Such an exercise needs to be evidence-based both from a physical and social science perspective.

It must be noted, however, while that an exercise such as ShakeOut can act as a conduit for emergency response and preparedness activities, sustained household preparedness will still be most likely adopted when supported by community-based programmes. Therefore attention should be paid to developing and sustaining such programmes.

How such programmes are developed and run will depend on the context of the local environment, however, it is recommended that preparedness and resilience-building be linked with, and incorporated into, general community development initiatives. These initiatives will help build many of the attributes needed by a community in times of disaster (e.g. the ability to adapt, social networks, problem solving, etc). Preparedness and resilience-building can then be implemented as part of an integrated community development package. ▲



California Governor, Arnold Schwarzenegger, speaking at Providence Holy Cross Hospital during the Golden Guardian Exercise held for the ShakeOut, 13 November 2008.



# Southland remembers Black Friday 1984

## There but for the grace of God ...

Every time the Met Service issues another heavy weather warning for Northland, savvy people at the opposite end of the country think to themselves: “There but for the grace of God goes Southland!”

Although spared recent storms and foul weather, from the late 1960s to the 1980s it was Southlanders who suffered a succession of floods. A state of emergency was declared in the province 11 times between 1968 and 1988 and the popular notion of the “100 year flood” was repeated so often that it became a sour joke. But the most devastating flood of all was in January 1984, when record rainfall led to a region-wide disaster.

The statistics for the 1984 event are stark, yet they don’t convey the reality of the physical destruction, the social disruption or the personal misery that beset Southland.

The return period of that flood can’t be accurately calculated because records don’t go back far enough to give any certainty, though Environment Southland’s Hazard Mitigation specialist, Dallas Bradley, says 200 years has become accepted as a reasonable estimate, with variability ranging from 65 to 1000 years.

The odds of a repeat performance or an even heavier rainfall are certainly better than an individual’s chances of winning Lotto. Climate change predictions are alarming for hazard planners. Rainfall may increase up to 10 percent in the next 30 years and heavy rainstorms are expected to occur more often. Tropical storms may hit the south.

“We can’t just rely on data from the past to forecast the future in light of these predictions,” Dallas says. “The past is no longer necessarily a good indicator when we’re planning ahead.”

## Underground in Invercargill

Down an echoing flight of stairs, through narrow passages, around poorly lit corners and avoiding pipes hanging from walls and ceiling – a trip to the Invercargill civil defence headquarters in 1984 was often likened to the descent into the underworld.

Today the Invercargill Emergency Operations Centre (EOC) is located on the fourth floor of the city administration building

Above: Sandbagging operations at the pumphouse trying desperately to clear floodwaters from Invercargill airport.

## BLACK FRIDAY: KEY STATS

- 134mm of rain fell in 24 hours (the previous recorded maximum was 73mm)
- Rivers burst their banks and urban stormwater systems were overwhelmed
- 4000 people were evacuated from 1000 homes in Invercargill
- Two thirds of Otautau was flooded – 190 homes
- 37 homes were flooded in Tuatapere
- 450+ families were unable to reoccupy their homes for three months or more
- 12,000 sheep, 100 cattle, 334 pigs and 75 deer drowned
- 170km of fences and 52 farm bridges were destroyed
- Invercargill airport was flooded and out of action for three weeks
- Insurance companies paid out \$55 million in claims. Public infrastructure added another \$50 million.

but 25 years ago the EOC was in the basement and universally known as “the bunker”.

Several metres below ground, with no natural lighting there was nothing to distinguish night from day for those coordinating the immediate response to the floods. Many of the staff called in at 4am on January 27 remained on duty around the clock because there was no formal roster in place. In some cases, no trained personnel were available to relieve them so staff refused to relinquish their post.

Civil Defence Officer (CDO) Bill Earley, Controller Jim Brass (who turned 72 during the emergency) and Chief Welfare Officer Anne Stoddart were among those who endured three days without leaving the building. The EOC remained open around the clock for the first eleven days then scaled down to 8am-6pm operation.

The state of emergency was lifted for most of Southland after a week but was extended twice in Invercargill where 900 homes



Left: An aerial view of Prestonville and Grasmere flooded by the Waihopai River. Above: Kayaking proves to be the most effective way of travelling down Conon St, South Invercargill.

were flooded and the airport was out of commission for three weeks.

Three days into the emergency, Roy Baines Manager of the Ministry of Works in Invercargill, was appointed Disaster Recovery Coordinator for Southland – the first to hold such a position anywhere in New Zealand. His formal authority did not take effect until the state of emergency was lifted, which happened first in the Southland and Wallace Counties, but he worked alongside civil defence personnel from the start.

Welfare issues were the main focus once the first wave of evacuations and rescues were completed, and the Civil Defence Welfare Section coordinated the efforts of official agencies and the voluntary sector.

The Salvation Army and the Red Cross provided immediate aid; the light rescue unit set up a “pet patrol” feeding the cats and dogs that evacuees had to leave behind; workers and volunteers helped householders clear out belongings saturated with polluted floodwaters and a welfare centre was set up in the worst affected neighbourhood.

Meanwhile, staff from the Department of Social Welfare worked overtime to process applications for assistance, and insurance assessors were brought in from around the country to help measure the losses. Those who were underinsured or had no cover sought help from the Southland Flood Relief Fund.

Once emergency accommodation was arranged for displaced families, the search was widened to find them longer term housing. Two weeks after the floods, a survey found that 456 families were expected to be out of their homes for three months or more.

New Zealand Aluminium Smelters made surplus staff housing available at peppercorn rentals, while the public donated caravans and house buses so some families could camp alongside their stripped-out homes.

Anne Stoddart said the psychological impact of the floods lingered long after the last house was reinstated: from children afraid of the rain to broken marriages and suicides, the effect on some Southlanders was profound.

Yet at the other extreme, 25 years on many of those living in

Invercargill, Otautau and Tuatapere today have no idea that their homes were once flooded, or that they are still at risk of inundation.

The Southland CDEM Group and Environment Southland are using the anniversary of the 1984 floods to highlight the continuing hazard and also the need for communities to be prepared for all emergencies.

### Then and now – what’s changed?

The floods were the first major test for the new emergency readiness and response system set up under the Civil Defence Act 1983. Invercargill had a full-time CDO, Bill Earley, while the rest of his staff and all civil defence personnel in Southland’s other local authorities were drawn from council staff and community volunteers.

Although the state of emergency was declared over almost the whole of Southland, there was no regionally coordinated response to the floods. Each civil defence organisation operated independently. Today it would be different.

The Southland CDEM Group would coordinate many of the functions that were performed separately by each Council in 1984. Group Coordinator Neil Cruickshank says these include liaison with the emergency services, aspects of public information and infrastructure. “Our aim would be to lead a better response for the community and better prioritisation of scarce resources,” he says.

At the local level, Invercargill CDO Bill Obers says that given the same scenario as in 1984, the decision to declare a state of emergency would be made earlier with key personnel put on alert during the day.

The days of personnel staying on duty around the clock are also long gone, with 12 hours the maximum shift.

As a result of ongoing training, the Invercargill EOC would have at least three trained personnel to fill each key position, with five trained Controllers.

“This gives us the ability to have two Controllers rostered on at a time,” Bill says. ▲

# Science and CDEM – improving the linkages and coordination

**Science is fundamental to integrated, comprehensive, emergency management.**

Science helps us understand the hazards and risks we deal with and how people react before, during and after disasters. It can provide critical information, warnings and advice during disasters that assist emergency managers make decisions.

Science conducted within CDEM benefits both the CDEM sector (eg. supply of advice, warnings, planning information) and the scientific community (eg. operational experience, data collection, research opportunities).

The wide range of science disciplines and organisations involved in providing scientific information to emergency managers can result in confusing and sometimes conflicting advice and information.

The highly competitive environment that science organisations work in can also result in gaps or duplication of effort. Improved coordination of science activities across agencies and organisations has been identified as beneficial for both science and CDEM outcomes.

Exercise Ruaumoko provided an opportunity to develop and test operational arrangements for multi-agency science coordination. The Auckland Volcano Science Advisory Group

(AVSAG) established by the Auckland CDEM Group, involves experts from a number of disciplines and organisations.

The advice and information from the AVSAG during Exercise Ruaumoko was widely praised and opportunities for improvements have been identified. One such improvement is for better integration between local and national science capability, for example, bringing local university scientists with specialist knowledge together in support of a national agency such as GNS Science which has a mandated responsibility for providing warnings and advice.

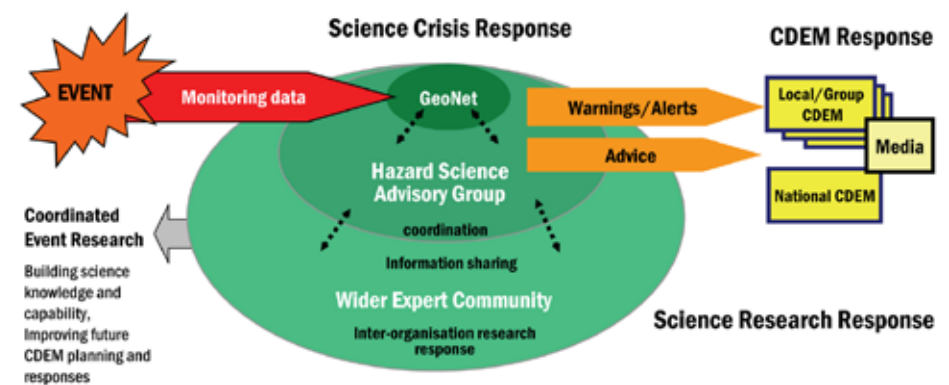
Coordination of science capability in this way recognises the small pool of scientific knowledge and limited resources likely available for any particular hazard in any one organisation or region, and that an effective science response (especially for large events) will require the planned,

coordinated action of the national pool of expertise. Such coordination is beneficial not just for the response, but in enabling more effective and efficient research investigations after an event.

Work is underway with science providers and CDEM to explore the opportunities and issues at local, regional and national levels, and to further develop the concepts that support full mobilisation of national science capability to meet local CDEM needs. Discussions at the moment have focused on volcano hazards, building from Exercise Ruaumoko. However, the principles will potentially be applied across other hazards.

Don't hesitate to contact Dr Richard Smith ([Richard.smith@dia.govt.nz](mailto:Richard.smith@dia.govt.nz)) with your views, or if you seek for further information. ▲

*Below: A potential coordination model*



## The 'Boulder Workshop' 2009

**Since 1975, the University of Colorado Natural Hazards Centre has hosted an annual Hazards Research and Applications Workshop.**

This workshop is renowned for the diversity of participation including emergency management officials, practitioners, researchers, physical and social scientists, engineers, and disaster consultants. Attendance is by invitation and typically involves around 400 people.

The 'Boulder Workshop' as it is sometimes known is unlike most hazards or emergency management conferences in that it is structured around a series of themed workshops. These are run as a panel discussion with no formal presentations, and involving lots of participation by the audience. Workshop participants are unanimous in their

praise of the benefits of this approach, which allows for productive dialogue and networking, and seeding of new ideas and approaches.

Themes for panel discussions in 2008 included: Warnings and Communication; Communities; Organizations and Resilience; Research to Policy to Practice; and Plenary sessions on climate change adaptation, recovery from major catastrophes, and the Southern California wildfires.

Summaries of each session of last year's workshop have recently been posted to the NHC website, [www.colorado.edu/hazards/workshop/archives/2008/](http://www.colorado.edu/hazards/workshop/archives/2008/).

The 2009 workshop is being held in Boulder 15-18 July. For more information contact [Diane.Smith@Colorado.edu](mailto:Diane.Smith@Colorado.edu) ▲

## NORTHLAND CDEM FORUM 2009

Northland CDEM Group is again hosting a half-day CDEM forum, Friday April 24 in Whangarei.

The programme this year includes speakers from GNS Science and MCDEM as well as specialists from Auckland and Northland. Programme topics include warning systems, evacuation plans, lifelines and welfare developments and urban search and rescue.

RSVP by April 10 to Dawn Underwood on 0800 920029. ▲

# MCDEM community resilience programme

**Resilience is the capacity of a community to draw upon its own individual, collective and institutional resources to cope with, adapt to, and prosper following the challenges and changes encountered during and after a significant adverse event.**

In 2006, in response to interest from CDEM Groups, the Ministry of Civil Defence & Emergency Management undertook to coordinate research into community resilience, resilience building strategies, development of practical toolkits, best practice case studies and other relevant resources in order to develop and implement community resilience-building programmes.

These programmes recognise that building resilience is complex involving components such as built environment, governance networks and social and economic structures.

Internationally, resilience-related activities have gained a high profile in recent years and are currently high on the New Zealand national agenda. MCDEM is keen to provide leadership and support for the sector to ensure relevant, timely and effective outcomes for the Groups. MCDEM recognises that building resilience requires holistically designed and implemented frameworks given its inherent complexities.

As a part of its long-term strategy towards building community resilience, MCDEM occasionally organises meetings and

workshops with targeted stakeholders from the social, economic, governance and infrastructure sectors. The purpose of these meetings is to inform development of the work programme, achieve agency buy-in and to influence and integrate with other MCDEM, CDEM sector and central government programmes.

The first workshop held in September 2008, focused on a presentation by members of the Resilient Organisations Research Group, a government-funded collaborative research project between University of Auckland, University of Canterbury, Unitec and the Kestrel Group and supported by MCDEM. Members had visited the earthquake affected area of Sichuan Province, China in July 2008. This presentation reported back their findings with particular focus on field work conducted to set up a base line survey in the disaster zone which will be used in future community disaster resilience research.

The second workshop, held on February 20 2009, focused on the joint endeavour between MCDEM, Auckland CDEM Group, University of Tasmania, Kestrel Group and GNS Science. This programme has taken international best practice knowledge in regard to resilience in communities to establish which individual, community and societal variables contribute to the make-up of a resilient community. It also examines how the CDEM Group could contribute to enhanced community resilience and how to measure this contribution, expressed as changes in

resilience over time.

The presentations and discussion focused on the next step – identifying concrete strategies for building community resilience and the creation of a nationally consistent approach as well as effective supporting resources and tools.

The workshop was attended by over thirty participants in Wellington with a video link to Christchurch and a teleconference with Auckland. Representatives of teams working on community resilience programmes from most groups throughout the country were present. OPUS International, Auckland and Canterbury Universities, Landcare, Victoria University, BEACON, NIWA, Massey University/GNS Science, Kestrel, and Canterbury, Auckland and Hawkes Bay CDEM Groups and MCDEM introduced their community resilience programmes and discussed future direction.

This was followed by small-group brainstorming identifying actions needed in the areas of: community resilience and integrated and urban planning; community resilience and risk reduction, including climate change adaptations; community resilience and welfare and recovery; and community resilience and infrastructure.

Notes from both workshops will be available on the MCDEM web site in April 2009 and through the monthly e-bulletin newsletter. For all enquiries contact Ljubica.Mamula-Seadon@dia.govt.nz ▲

## Risk, reduction and research news

The Hazards, Risks and Research Team welcomes its newest team member, **Anita Komen**, who took up the position of Emergency Management Research Advisor on March 9. Anita is a recent graduate of the Hazard and Disaster Management Masters programme at the University of Canterbury and has been involved as a volunteer in Christchurch CDEM for a number of years. The focus of Anita's role is supporting improvements to the accessibility and uptake of CDEM research.

### **How safe is that building? Draft guidelines for building safety evaluation during a declared state of emergency**

The New Zealand Society for Earthquake Engineering has updated its guideline on post-earthquake building safety evaluations, drawing upon the experiences from the Gisborne earthquake of 20 December 2007. Changes include: how buildings are classified, who directs the evaluations and references to relevant legislation. The draft Building Safety Evaluation Guidelines are available at [www.nzsee.org](http://www.nzsee.org). The Ministry of Civil Defence & Emergency Management and the Department of Building and Housing have supported the update. The draft was circulated widely for comment,

including to all city and district council chief executives and the 16 CDEM Groups. The details of completing the guidelines and supporting their implementation are currently being finalised.

### **New Zealand Society for Earthquake Engineering conference**

The theme of this year's conference is 'Why do we still tolerate buildings that are unsafe in earthquakes?' The conference runs from April 3-5 in Christchurch. For registration information call 04-565 3650.

### **Hazards research platform development**

The Foundation for Research, Science and Technology (FRST) reports they are making steady progress towards establishing a pilot research funding platform for natural hazards research. A 'platform' is an area of research deemed of national strategic value requiring a stable, long-term funding stream. Research platforms are to be managed by a lead science agency, with an end-user group providing advice on research objectives. The Foundation's Investment Strategy Group is leading this process. Details will be available soon on the Foundation's website [www.frst.govt.nz](http://www.frst.govt.nz). ▲

# CDEM professional development update

## CDEM Competency Framework

The framework sets out the skills and knowledge (competencies) required when undertaking prescribed activities in CDEM. Each competency also includes a list of indicators – what a person needs to be demonstrating in order to be assessed as competent.

A draft set of CDEM competencies was formulated in 2008 based on consultation with the CDEM sector through focus groups and intensive workshops. Provisional competencies were distributed for international and domestic peer review. An online survey for the sector was created to allow for comprehensive consultation. In the survey, CDEM stakeholders are asked to identify the competencies associated with the role/s they perform in CDEM, and the levels at which they are required to operate.

The CDEM Competency Framework Online Survey is still available on the MCDEM website but closes March 27. **If you play a role in CDEM, it's important that you fill out the survey in order to obtain a complete picture of the CDEM sector in New Zealand and the roles and functions within it.** As an added incentive, when you complete the survey

you'll go into the draw to win a prize package.

After the survey closes, the MCDEM Professional Development team will analyse the results with the aim of having the competencies available to the sector by June 2009. More information about the CDEM Competency Framework project is available on the MCDEM website.

## CDEM Competency Framework vs. CDEM Monitoring & Evaluation Programme

The CDEM Competency Framework assesses the capability of individuals whilst the CDEM Monitoring & Evaluation Framework assesses the capability of organisations.

For example, if the capability assessment tool (Monitoring & Evaluation) indicates that organisational professional development needs attention, the CDEM Competency Framework will help the organisation to address the capability of individual staff members. The increased capability of individuals then supports the organisation in increasing its capability.

## CDEM Monitoring & Evaluation Programme

The Ministry has been working with the CDEM sector to develop comprehensive

monitoring and evaluation tools. This includes a formal assessment tool, the 'CDEM Capability Assessment Tool', as well as cultivating a stronger monitoring and evaluation culture within the CDEM sector.

The CDEM Capability Assessment Tool would allow 'any time' self assessments for organisations to check their compliance with the CDEM Act and their performance. Alongside this there would be a mandatory reporting cycle, perhaps every two-five years, which would help develop a national picture of civil defence emergency management capability in New Zealand.

A comprehensive database of CDEM performance indicators is being developed. Performance assessments would draw off this database according to the type of organisation being assessed, and the type of assessment they want to do.

For further information on CDEM monitoring and evaluation contact Jo Horrocks, Team Leader National Planning, jo.horrocks@dia.govt.nz ▲

# Session aims to improve Pacific tsunami initiatives

**The 23rd session of the Intergovernmental Coordination Group of the Pacific Tsunami Warning System (ICG/PTWS) took place in Apia, Samoa last month. Twentyfour countries were represented including many Pacific Island nations.**

The ICG/PTWS is a subsidiary body of the Intergovernmental Oceanographic Commission (IOC) of the United Nations Educational, Scientific, and Cultural Organization (UNESCO). It has been in operation since 1965 and is currently comprised of 32 member states. The ICG/PTWS acts to coordinate international tsunami warning and mitigation activities including issuing warnings in the Pacific. It meets every second year.

The focus of this session was improving tsunami mitigation in the Southwest Pacific region. It agreed on several initiatives including seismic data exchange, improving tsunami detection capabilities, the exchange of guidance on tsunami response procedures and the enhancement of warning communications. The session also decided that the scenario for the

next international tsunami exercise, Exercise Pacific Wave to be held in the fourth quarter of 2010, will be a Tonga-Kermadec Trench event. This will enable countries in the Southwest Pacific to exercise local or regional source tsunami preparedness. A task team will be established to develop the exercise.

Other decisions included initiatives to enhance international tsunami warning products, for example, messages from the Pacific Tsunami Warning Centre (PTWC) in Hawaii and other regional warning centres. A new medium term strategy was adopted resulting in the formation of three technical working groups to focus on: risk assessment and reduction; detection, warning and dissemination and; awareness and response. These working groups are in addition to four existing working groups that focus on regional cooperation in the Southwest Pacific, Southeast Pacific, Central America and the South China Sea.

A positive outcome for the Southwest Pacific region is its representation on



*The New Zealand delegation at the ICG/PTWS: (left to right) David Coetzee (MCDEM), Kevin Alder (MetService), Nora Welch (GNS Science) and Ken Gledhill (GNS Science).*

PTWS structures during the next period. Philomena Nelson (Samoa) was elected as one of two vice chairs of the ICG/PTWS, David Coetzee (MCDEM) as chair of the Awareness and Response technical working group and Dr Ken Gledhill (GNS Science) as chair of the Southwest Pacific working group. These appointments automatically confer membership of the ICG/PTWS Steering Committee that oversees activities during the inter-session period.

For further information, contact David Coetzee, david.coetzee@dia.govt.nz ▲