

# **Independent external review of the Civil Defence Emergency Management response to the tsunami threat from the Samoan earthquake on 30 September 2009**

## **Introduction**

1. An earthquake of magnitude 8.0 occurred at 0648 NZDT on 30 September 2009, in the Pacific Ocean just south of Samoa. A significant tsunami was triggered by the earthquake which caused considerable damage and loss of life in Samoa, Tonga and American Samoa. The earthquake resulted in an automatic warning of tsunami threat being issued by the Pacific Tsunami Warning Centre in Hawaii for New Zealand.
2. On 9 October 2009, the Minister of Civil Defence, Hon John Carter, established that an independent review was to be undertaken of the Civil Defence Emergency Management response to the Samoan earthquake and tsunami.
3. The terms of reference of the review are attached as Appendix A. A list of people interviewed for the review is attached as Appendix B, and a timeline as Appendix C.

## **Purpose**

4. The purpose of this report is to provide the findings of the external reviewer.

## **Findings**

5. The Public Information Management (PIM) function of the Ministry of Civil Defence and Emergency Management (MCDEM) underperformed on 30 September. Specifically, it delivered too little authoritative public messaging in the first two hours of the MCDEM-led response to the tsunami warning from the Pacific Tsunami Warning Centre (PTWC) in Hawaii, which was automatically sent to New Zealand at about 7.00 am. This was before the National Crisis Management Centre (NCMC), located in the Beehive basement, became operational.
6. There is no single reason for its underperformance. But it is reasonable to suggest that had there been an early decision to trigger the agreed emergency broadcasting arrangements (the Memoranda of Understanding with Radio New Zealand and the Radio Broadcasters Association, and television network broadcasters, Television New Zealand and TV3), a justifiably strong demand for authoritative information could have been better supplied, and the public interest better served.

7. The several factors, major and minor, which contributed to the PIM function underperformance have been well exposed in the formal Internal Review undertaken by the Director of MCDEM; such reviews are in the nature of an audit and follow a standard procedure to ensure comprehensiveness in the feedback; objectivity in the diagnostic and focus in pinpointing the remedies to shortcomings. This Internal Review does not, as far as I could ascertain, "duck" any issues.
8. The *modus operandi* of most emergency services systems is a chain-of-command with devolved functions and responsibilities delineated in Standard Operating Procedures (SOPs) which apply to individuals, teams and sectors. MCDEM, a relatively small organisation, is very dependent on well-designed SOPs covering tasks to be directly executed by its staff; by outsourced contracts (such as that with the New Zealand Fire Service Northern Communications Centre, a new — and until 30 September untested — arrangement to provide 24/7 watch-and-warn); and by the extended Civil Defence network at regional and local level. Under real-time pressures the whole system relies upon well-trained personnel, working internally and externally to roles they understand, generated by their SOPs. The PIM function has its own SOPs and MCDEM has a whole-of-organisation SOP for activations. With hindsight it appears that on 30 September, some elements of these SOPs either were unworkable for individuals or were not followed.
9. The Internal Review looks at each link of the SOP "chain" separately, and its recommendations identify (paragraph 192) the correctives needed. But it also provides an aggregated picture, rightly emphasising (paragraph 177) the importance of situation awareness, and measures to ensure it. The risks of "fog-of-war" are countered by maintaining, despite the pressures of fast moving events, a common operating picture. The rapid setting up of the NCMC is, of course, expressly aimed at achieving this. On 30 September, a National Warning was being issued for the first time, and some new procedures and practices similarly "battle-tested". Situation awareness measures initiated before NCMC setup and at a level which more fully encompassed the activation phase would have enabled the PIM function's particular difficulties to be more quickly grasped and remedied.
10. Besides some of its systems and operating procedures, which were intended to enable it to become quickly effective, proving unreliable, the PIM function was beset by random circumstantial constraints (such as staff on leave, and IT gremlins) which had a cumulative damaging effect. There may also have been a pre-existing organisational miscalculation of the capability quantum for a National Warning situation of this kind (that is, an impending tsunami), which, in practice, caused the efforts of PIMs duty staff to become totally consumed in "triage" aspects of media servicing, to the detriment of the more important task of delivering authoritative public messaging, in a coherent manner, with all responsible urgency. In particular the vital tight synchronisation between MCDEM's core status updates to the CDEM frontline (the official warnings/advisories) and its formal public information (its media

releases) unravelled, and the coherence of the system's "public voice" was put at risk.

11. The authoritativeness of the MCDEM-led public messaging in the early stages of a National (tsunami) Warning derives in part from the input of institutionalised scientific expertise, which progressively adds certainty to the inherently uncertain business of predicting the path and impact of a tsunami. Scientific data builds up the risk picture by layers. There is a necessary "early lag" before it can responsibly be interpreted to guide the CDEM network or to inform the public. This may not be as well or widely understood — notwithstanding a significant recent effort by MCDEM and the Institute of Geological and Nuclear Sciences — as it needs to be, in the context of realistic public/media expectations.
12. The various ways in which the PIM function underperformed had a cumulative effect on media coverage of the response. Frustration about process begat scepticism, first about coherence and then about competence — an impression reinforced by the arrival of pictures of the Samoan devastation before New Zealand authorities felt able to confirm it officially. The system's credibility was undermined because it was not delivering authoritative messages coherently. PIM was not able to be proactive in explaining what the system was doing, or not (yet) doing, and why.
13. The PIM function did recover, once the activation of the NCMC was substantially accomplished (about 9.00 am). Its performance thereafter was largely satisfactory, both at central level, and in the provision of the information base from which the CDEM network, at regional and local level, communicates to the public about the "front line" operational matters which are its devolved responsibilities.
14. Given that the national media were not asked to operate as emergency public broadcasters (that is, for them the response was treated as a news story and therefore subject to normal editorial discretion), the coverage provided in the early hours of 30 September seems to have reflected, accurately and fairly overall, the formal public information which MCDEM/PIM did create (and its interview-conveyed information).
15. Some of the credit for the successful activation of the CDEM network and local operational readiness (paragraphs 185 and 191 of the Internal Review Report) has to go to the way in which national media morning news coverage helped create public awareness about impending civil defence activity, especially in coastal New Zealand. But if a National Warning (for a possibly disastrous tsunami) is to be issued it would be better to plan to trigger the emergency broadcasting MOU in the same decision space.
16. The Director (paragraphs 190-191) is clearly seized of the functional synergies between a well-informed community and successful front-line CDEM operations. Forewarned is forearmed, even at the margins. Where the worst-case impacts of a tsunami disaster may be mitigated by rapid self-helping responses from a "tuned in" community, especially in high risk areas, the early activation and attainment of effectiveness of

MCDEM's PIM function becomes critical — a first order priority. It should therefore be the subject of a specific customised contingency plan which fully addresses the "surge" requirement of the period before the NCMC is substantially activated.

17. The matter of coordination with other government departments and agencies is also addressed in the Internal Review. As far as the PIM function is concerned, one of its most critical interagency connections is to the Department of Internal Affairs, with which it is legally and structurally connected. (The Manager of the Department of Internal Affairs Strategic Communications Unit both employs and performance manages the MCDEM PIM staff, even as they are under the day in, day out operational command of the Director). Whatever its other merits, this would be an impossible arrangement if the two leaders were in any doubt about role or authorisation boundaries during an emergency. I was reassured this is not the case, notwithstanding one unfortunate glitch (paragraphs 143-144) early on 30 September. In fact the DIA/MCDEM structural interface can and should be a means of addressing one of the longer-standing weaknesses of the PIM function; its relationship to the wider MCDEM duty system. And it is very much part of the "surge" capacity solution for the pre-NCMC phase of an activation when the dangers of overload on the PIM function are highest.
18. I had the opportunity to speak at length with Radio New Zealand about the way its executives have interpreted the MOU for emergency broadcasting. Their internal procedures seem very robust; they have set up a straightforward means of going into the emergency broadcast mode quickly. A key aspect is the use of a dedicated ("red") telephone in the newsroom and the broadcast studio. I would expect the other parties to the MOU to have given consideration to similar internal guidelines and practices. During civil defence exercises these arrangements may or may not be tested; it would be helpful if MCDEM took the initiative, outside the context of exercises, to meet at senior level with current MOU partners (and others such as Maori Television) for purposes of updating respective SOPs and just "putting faces to names" so that the factors at play (which are ethically and commercially significant) in triggering the MOU became better understood by the respective professional cultures. When the MOU are not triggered (and this may be the norm) there is still much valuable "public good" information which news media can convey and MCDEM, via the PIM function, can supply.
19. The Internal Review details the communications with Ministers both before the activation of the NCMC and subsequently. My only observation is that Ministers, sensing that there may be a (media-led) faltering of public confidence in a vital area of public service delivery, must and will act decisively to establish coherence and to restore confidence. The more so if the emergency at hand is a potentially devastating tidal wave. Provided Ministers receive high quality situational awareness reporting from MCDEM, and can see order being brought to these "sudden onset events" they will also be guided by the established convention about leaving operational command with those

whose statutory duties require them to make independent decisions in life-and-death situations.

20. Eight days after the Samoan tsunami, MCDEM was back in action. At 1117 NZT on 8 October, another alert relevant to New Zealand was received from the Pacific Tsunami Warning Centre; tsunamigenic seismic events in the Vanuatu/Solomon Islands sector of the "rim of fire". This alert was at the lower "watch" level, and MCDEM correspondingly moved to issue a Potential Threat Advisory, which was eventually lifted later in the afternoon. The emergency broadcast arrangements under the MOU were triggered, and the NCMC activated. The Director, in his Internal Review, and publicly at the time, noted that in several critical respects the system responded more effectively than it had a week earlier in the Samoan case. The PIM function in particular was quicker into its stride, and able to initiate its end of the procedures for emergency broadcast, as well as to manage the requirements to provide authoritative content for news programming, including interviews and other visuals which the Minister himself fronted. It was considerably easier to ascertain what MCDEM knew; and what it was doing and when. Synchronisation of official messages and media releases was sustained and coherence was more apparent to the CDEM network and the public, both. Whilst not without glitches, it was — as it needed to be — altogether a more satisfactory performance
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## Appendix A – Terms of Reference

### INDEPENDENT EXTERNAL REVIEW OF THE CIVIL DEFENCE EMERGENCY MANAGEMENT RESPONSE TO THE TSUNAMI THREAT FROM THE SAMOAN EARTHQUAKE ON 30 SEPTEMBER 2009

#### TERMS OF REFERENCE

##### *Background.*

1. An earthquake exceeding magnitude 8.0 occurred in the Pacific Ocean south of Samoa early on the morning of 30 September 2009 (NZDT) and generated a tsunami that caused considerable damage to Samoa, American Samoa and remote islands in the Tonga group
2. Civil defence emergency management (CDEM) authorities in New Zealand were alerted to the earthquake and the potential for a tsunami to strike parts of the New Zealand coastline. The National Crisis Management Centre (NCMC) was activated at 0725 on 30 September to manage the situation. The NCMC was stood down by 1700 that day

##### *Purpose*

3. The external review will identify the key issues in the public information management undertaken during the response operation, in order to identify those aspects that worked well and the areas that may need improvement

##### *Focus of the external review.*

4. The external review is to report on the appropriateness and effectiveness of the public information component of the New Zealand response to the event, in terms of:
  - The development and distribution of public information messages by the NCMC.
  - Clarity, timeliness and content of warnings, advisories and messages.
  - Use of information and distribution of warnings, advisories and messages at the local level.
  - Distribution of the public information messages by the media
  - Responding and managing requests for media information and the timeliness of media engagement.

- Communications with Ministers and other Government agencies.
  - The source of the expert advice relied upon by CDEM authorities
  - Any other issues the external reviewer considers to be relevant to the handling of public information during the event.
5. The external review will identify lessons to be learned, good practices to be reinforced, and arrangements and processes that can be improved, including any capability investments that may be required.

*Reviewers.*

6. The review is to be undertaken by an independent external reviewer appointed by the Minister of Civil Defence.
7. The external review will draw on the internal report completed by the Director of CDEM, input from the Ministry of Civil Defence & Emergency Management, other business groups of the Department of Internal Affairs, Government agencies, the CDEM sector and media organisations.

*Deliverables.*

8. A report is to be provided to the Minister of Civil Defence that includes advice, options and supporting background material, including a timeline to show the sequence of the response operation.

*Timeline.*

9. Throughout the external review process, the Director of CDEM will update the Minister of Civil Defence on the progress of the work as required.
10. The timeline for the external review will be determined following the appointment of the external reviewer.

**Hon John Carter**  
**Minister of Civil Defence**  
/ / 2009

## Appendix B – Contributors to the review

<b>People interviewed</b>	
<b>Office of Minister of Civil Defence</b>	
Hon John Carter	Minister of Civil Defence
Felicity Cuzens	Senior Private Secretary
Josh Mitchell	Private Secretary (Civil Defence)
Tony de Jong	Media Adviser
<b>Ministry of Civil Defence and Emergency Management</b>	
John Hamilton	Director
David Coetzee	Manager Operations, National Controller
Tane Woodley	Emergency Management Adviser – National Planning
Ljubica Mamula-Seadon	Emergency Management Adviser – Sector Support (Team Leader)
<b>Department of Internal Affairs</b>	
Colin Feslier	Manager Strategic Communications
Vince Cholewa	National Public Information Manager (MCDEM)
Adrian Prowse	Senior Communications Adviser (MCDEM)
Chandrika Kumaran	Manager Public Education (MCDEM)
Paul Houliston	Manager, Civil Defence Emergency Management Policy
<b>Department of the Prime Minister and Cabinet</b>	
Maarten Wevers	Chief Executive
Steve Long	Director, Domestic and External Security Group
David Hill	Former Director, Domestic and External Security Group
Pat Helm	Adviser, Domestic and External Security Group
<b>Ministry of Research, Science and Technology</b>	
Dr Helen Anderson	Chief Executive
<b>Institute of Geological and Nuclear Sciences</b>	
Dr Terry Webb	General Manager, Natural Hazards
<b>Land Information New Zealand</b>	
Colin MacDonald	Chief Executive
<b>Radio New Zealand</b>	
Peter Cavanagh	Chief Executive
John Barr	Communications Manager
Don Rood	Managing Editor, News
<b>Radio Broadcasters Association</b>	
David Innes	Executive Director



<b>Television New Zealand</b>	
Cliff Joiner	National Bureau Chief
Katie Chapman	News Desk Manager
<b>Mediaworks (TV3)</b>	
Kris Johnson	Broadcast Manager

<b>Other contributors</b>	
The National Foundation for the Deaf Incorporated	
John Coburn	
Di Sinclair and Dan Goldsberry	
Waikato Civil Defence Emergency Management Coordinating Executive Group	

**Additional note:** Individuals who contacted the interviewer to request input into the review, but whose input was considered to be out of scope of its terms of reference, were referred to appropriate alternative contacts where possible.

## Appendix C – Timeline of response operation

(selective extracts from media log)

Time	Event
0648	Earthquake
0655 approx	Tsunami hits Samoa
0709	First radio news reference to earthquake in Samoa
0713	First radio news references to tsunami warning by Pacific Tsunami Warning Centre (PTWC)
0718	First MCDEM response to media calls
0719	First TV news reference to PTWC warning
0735	National Warning #1 issued to CDEM network
0735	Voice interview with Minister of Civil Defence, Hon John Carter, on Television New Zealand, TV1
0740	Radio Live interview with PTWC
0743	GNS records Samoan tsunami
0745	Radio New Zealand reports "no warning issued by MCDEM – keeping an eye on things"
0755	MCDEM website updated (includes reference to Warning #1)
0756	PTWC issues revised magnitude and depth data for earthquake
0800	Radio and TV news stories (including interview with GNS – Sherburn)
0802	MCDEM Media Release #1
0750 - 0807	NCMC (Beehive basement) activated - skeleton staff sufficient
0809	First on-record MCDEM interview, John Hamilton, Director, on Radio New Zealand; also covers the Media Release #1
0810	Media Release #1 read out on "B Sport" Radio Live reports MCDEM is "playing down" the risk and has doubts about PTWC information
0813	Newstalk ZB Auckland reports that impact on New Zealand "may not mean widespread destruction"
0814	Radio New Zealand interview from East Coast Samoan villages
0817	Second on-record MCDEM interview – National Controller on Radio New Zealand (includes reminder on how to prepare for an evacuation) Unable to confirm "rumours" of Samoan disaster
0824	Newstalk ZB Auckland reports on tsunami impact on Samoa
0825	Radio Live speculates on impact of tsunami on New Zealand

0830 - 0835	First MCDEM Public Information Management (PIM) staff members arrive at NCMC
0835	Third MCDEM interview – DIA Manager (voice only on TV1's Breakfast) – see paragraphs 143-144 of Internal Review Report
0838	Radio New Zealand reads Media Release #1 Interview on Radio New Zealand with GNS - Fry
0843	National Warning #2 issued to CDEM network
0845	"Detailed" GNS advice (detailing coastal impact) first received by MCDEM
0855	MCDEM Media Release #2 (with wave map and predicted wave heights)
0900	Radio New Zealand states that there is a "warning issued for all of coastal New Zealand" Newstalk ZB Auckland states that "MCDEM expects up to 1 metre wave to reach New Zealand" Newstalk ZB Wellington states that "Civil Defence thinks the aftermath of Samoan tsunami will be minimal for New Zealand"
0903	Radio Live interview with Minister of Civil Defence
0905 – 0915	Local CDEM warnings issued (via press statements/media releases carried on scoop.co.nz)
0910 approx	DIA communications staff join MCDEM PIM staff at the NCMC (media operation)
0920 – 0930	First official reports (eg US Parks Service) of tsunami impact on Samoa, Tonga and American Samoa
0957	CDEM manager reported on scoop.co.nz "MCDEM warning lifted"
0958	National Warning #3 issued (specific to East Coast of the North Island, 1 metre waves; small boats and beaches unsafe; strong currents)
1025	National Warning #4 issued, downgrades to "Potential Threat Advisory" (strong currents, stay vigilant)
1036	MCDEM Media Release #3 (confirms Potential Threat Advisory)
1056	TVNZ announces schedule amendment (half hour bulletins)
1100	Radio New Zealand reports that "National Warning" cancelled
1111	Warning (ie Potential Threat Advisory) #5 – advice of risk of further waves (PTWC cancellation of its advisory for New Zealand)
1116 – 1139	Local CDEM Groups issue own statements/releases about the "downgrade" (carried via scoop.co.nz)
1216	Warning (ie Potential Threat Advisory) #6 – wave levels at East Cape and North Cape less than 1 metre
1218	MCDEM Media Release #4 – Potential Threat Advisory remains in place
1252	Statement by Minister ("the initial tsunami has not caused damage for New Zealand but Civil Defence remains on alert")