Ref: I11/0574

Ms Sophie Dunstone
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Senate Standing Committee on Environment and Communications
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Parliament House
CANBERRA ACT 2600

Dear Ms Dunstone

We refer to your email of 10 August 2011 seeking further information for the consideration of the Senate inquiry into the capacity of communications networks and emergency warning systems to deal with emergencies and natural disasters. The NSW Government provides the following responses.

QUESTIONS ON NOTICE TO NSW, SOUTH AUSTRALIA AND THE NORTHERN TERRITORY

1. **In terms of intergovernmental cooperation, apart from the adoption of the Common Alerting Protocol (CAP) Standard within Australia, are there any plans to further enhance the level of cross border cooperation?**

    Intergovernmental cooperation occurs across a number of aspects of emergency management. However, noting the Committee's focus, we have limited our response to cross border cooperation on the development of compatible operation systems, as well as ongoing communication and planning across borders. Some examples are set out below.

    Operational Capability Cross Border Cooperation

    The Inter-CAD Emergency Messaging System (ICEMS) has been developed to facilitate the movement of information between different CAD (computer aided dispatch) systems.

    Previously, where a person reported an incident requiring a multi agency response via Triple Zero, the call was put through to one agency, which then had to contact other agencies. ICEMS allows the message stored in one CAD to be sent to the CADs of other agencies electronically. This avoids the time taken to make multiple phone calls and ensures that information is updated on the CADs of the agencies involved in the response. ICEMS can also be used to track messages related to an incident across multiple CADs.

    In addition, in the late 1980s, bush fire services introduced the Australasian Inter-Service Incident Management System (AIIMS), a derivation of a US method of coordinating multi-agency responses to emergency situations.

    AIIMS is primarily a system of incident control but has components dealing with training and documentation. It has been adopted by a number of fire and other emergency services across the nation. Its ongoing development has been coordinated through the Australasian Fire Authorities Council (AFAC but now renamed the Australasian Fire and Emergency Services Authorities Council).

    Further, the Integrated Command and Communications System (ICCS) is a variation on the approach taken by AIIMS and has been typically adopted by policing authorities.

Differences and similarities between the two are currently being examined on a national level through the National Emergency Management Committee and other groups. AFAC, for example, has held discussions with the Australia New Zealand Policing Advisory Agency and a merger of AIIMS and ICCS being considered.

Finally, the Australia New Zealand Land Information Council (ANZLIC) provides a coordinating role in the delivery of spatial information policy and operational matters and has been active since the September 11 attacks in the US in expanding the use of spatial information in emergency situations.

Innovative work on a Spatial and Information Mapping System (SIMS) by the NSW Government recently won a CeBIt Project Excellence Award and has attracted interest from other jurisdictions.

However, more work still needs to be done on the issue of coordinated information exchange.

Ongoing Communication and Planning

New South Wales participates in a number of national committees aimed at improving emergency and natural disaster communication and planning. The National Counter Terrorism Committee (NCTC), AFAC (which includes SES representation), the Confederation of Ambulance Authorities (CAA) and the National Emergency Management Committee (NEMC) are some of the national groups with a role in coordinating security and emergency related issues on a national basis, including information management (see Question 6 below).

In communications, telephony is a largely deregulated industry, oversighted by the Federal Government.

In mobile radio, the National Coordinating Committee for Government Radiocommunications (NCCGR) and the Law Enforcement and Security Radio Spectrum Committee (LESRSC) are two groups that provide a national focus on government and police and security spectrum requirements.

In 2008, the NCCGR began work on developing a National Framework to Improve Government Radiocommunications Interoperability (the Framework), which was adopted by COAG in December 2009 and aims to deliver national interoperability of government voice radio networks by 2020.

Such an outcome is now possible because the majority of jurisdictions operate the same radio technology in the same frequency band. NSW and the ACT Governments have already fully integrated their government radio networks.

Further, as a consequence of the Australian Communications and Media Authority's review into the 400MHz spectrum band, the national allocation of spectrum required to support the Framework has been provided to governments by the Authority.

NCCGR is currently developing the detail of the national spectrum plan and is also developing a national numbering plan that will allow networks to keep track of handsets as they move between networks. NSW has a lead role in both.

In alerting, a national approach has been adopted to the use and development of Emergency Alert. NSW is an active participant in this project.

Are you able to access commonwealth department (eg BOM alerts, satellite imagery (DOD) and/or resources (AFP) on a timely basis when an emergency situation arises?

NSW has access to publically available information from agencies such as the Bureau of Meteorology, while agencies with a security focus have arrangements with their Federal counterparts for access to information via agreed protocols.

Both the Bureau and the Department of Defence are members of the NSW State Emergency Management Committee which enables NSW to engage with these stakeholders on an ongoing basis prior to an emergency occurring.

2. **What education programmes do each of you have in place to ensure that relevant information is disseminated appropriately to the general population both before and during emergency events?**

All emergency services agencies focus on effectively engaging with the community and target vulnerable areas and vulnerable communities through a range of education programs and information, including multi-lingual information sheets on how to prepare and respond to disaster situations.

Every NSW agency is a member of one or more national groups and this assists agencies to ensures that the coordination and delivery of consistent messages across jurisdictions.

In relation to particular agencies, the NSW Fire and Rescue and the NSW Rural Fire Service (the Fire Services) have an annual fire prevention week. Both actively support the delivery of messages to replace smoke alarm batteries. Schools visits are a regular part of emergency service officers' activities. Fire and Rescue NSW staff also assists the elderly to replace smoke alarm batteries

The Fire Services target residents in bushfire vulnerable areas, through the "Prepare. Act. Survive" campaign, a key component of which is the development of a Bush Fire Survival Plan.

"Assist Inform Disabled and Elderly Residents" (AIDER) is a Rural Fire Service program to assist the elderly clear gutters and thin out vegetation around their homes.

The SES operates a number of community education programs, such as Flood Safe and Storm Safe, as well as a number of programs targeting school children such as Paddy Platypus' Corner and Little Larrikins, a joint services project involving AFAC.

National arrangements are in place for the coordination of messages as they relate to terrorism operations and these are extended to coordinating advice during emergency operations that involved cross border responses. Telephone hook-ups are widely used for these purposes.

In NSW, the Public Information Coordination Functional Area (PIFAC) provides the mechanism for coordinating messages across NSW agencies and across jurisdictions, according to the nature of the event.

3. **To what extent are portable generators used in disaster circumstances where power has been lost and battery packs have gone flat? If both battery packs and generators are used, what is the maximum period that services can be maintained before failing? What other alternative power sources are available?**

Generators and Batteries

Under emergency conditions, emergency power is required to operate radio control centres, operational coordination centres and forward command positions in the field. In this regard, NSW relies on a combination of permanently installed generators for some sites, with additional capacity obtained through hiring of additional generating capability, on a needs basis in emergency situations.

Permanently installed generators are in place for the main and backup control centres of the Government Radio Network (GRN), and other major radio network control centres.

For each of the 155 GRN sites, the equipment huts have a standard pin out so that generators can be installed without needing a licensed electrician.

In relation to command, control and coordination centres, the larger permanent centres also have permanent generator and battery back-up. Smaller sites have at least battery backup and deploy standby generators as required.

Generators can operate continuously if fuel supplies are available and can be delivered to the site. Larger standby generators can be expected to operate for between 24 and 48 hours before requiring refuelling, while smaller generators would need refuelling on a shorter rotation. Under state emergency management arrangements, the requirements for fuel can be centrally managed, if required.

Alternative Sources

The GRN has a few solar sites but, in general, the power requirements for sites in more densely populated areas exceed the capacity of direct solar power, although solar can be used to keep batteries charged.

What alternative information mechanisms could be used?

Because radio networks operate at a higher power than mobile telephone networks, fewer sites are required by comparison and maintaining services for extended periods using portable generators is a practical outcome.

Generally speaking, the mobile radio networks can be expected to operate for a longer period than mobile telephone networks.

In one recent outage, where mobile and landline telephones were seriously affected in local areas because of a cut line, emergency services strategically placed units in key locations. Each was equipped with mobile radio and satellite telephone capability, enabling the community to obtain emergency assistance despite the impact on Triple Zero.

In areas where mobile telephones and mobile radio services are down, messages can be broadcast via the internet or via broadcast radio or television.

While the internet generally proves resilient, a limiting factor can be power to run computers and handsets.

4. **What is the extent of private business sponsorship and other involvement in the emergency services provided in your State or Territory?**

Some agencies, such as the SES, have established partnership arrangements. It has a partnership arrangement with the NRMA in relation to the Storm Safe and Flood Safe programs. In both programs, having adequate insurance is a key message.

Fire and Rescue NSW have arrangements with McDonalds (Brigade Kids), GIO (home safety fire audit) and Brookes Fire Alarms (Smoke Alarm Battery Replacement for the Elderly or SABRE).

These target specific at risk groups and the selected partnerships are based on a profile that matches the aims of the company in terms of their community involvement with the targeted at risk group.

Establishing partnership and sponsorship arrangements between government and the private sector is an ongoing project in NSW.

5. **Have you entered into broadcast arrangements with broadcasters other than the ANC to ensure that additional coverage can be assessed by residents? eg pay TV operators and commercial radio broadcasters.**

The NSW Government has a memorandum of understanding with the Australian Broadcasting Corporation and the commercial radio broadcasters. It is working on a similar MOU with the televisions broadcasters.

NSW agencies have active social media programs including Facebook, Twitter, YouTube and websites which are used on a daily basis to increase the use of the technology in emergencies.

Under the NSW emergency management arrangements, the Public Information Functional Area Coordinator (PIFAC) assists agencies and the state to coordinate public information activity including safety and warning messages during emergencies which require a significant and co-ordinated response. PIFAC also monitors response agency media and public information activity during emergencies, and where required provides support.

6. **Do you consider that the provision of a uniform web-based technology platform across State and Territory borders will assist in productive information sharing and use of commonwealth and state resources (as required)? To what extent is information shared at present via a central database or web-based platform.**

It has only been in more recent years that web access delivered remotely into the field on mobile devices at speeds sufficient for useability has been available. That capacity can be expected to grow.

Web-based technologies will need to be considered in the context of regular information sharing between agencies and also in distributing information in particular emergencies.

Web services are delivered by commercial networks that run the risk of congesting in emergencies or failing for want of power and commercial services are harder to find in more remote areas. This highlights the need to focus on delivering a broadband capability for police and emergency services.

Security of sensitive information transfer is also a key issue.

Despite this, it is recognised that a multi-agency operational management system that provides a real time common operating picture on a shared platform would greatly enhance emergency services agencies' capability in the areas of planning, preparation, response, safety and community warning.

A number of agencies in Australia have adopted WebEOC, a US developed web based application that attempts to put the emergency operations centre online. WebEOC can be configured for multi-agency operations. Others have adopted OCA (Organise. Communicate. Act), an Australian developed operational management system. A number of agencies also have web enabled incident management systems that were developed in-house.

In NSW, the State Emergency Operations Centre has a web based system that was a forerunner to the OCA system. Access to it is available for all agencies involved in emergency activities via a user account and password. A number of the emergency services agencies have commercial or in-house developed web based systems. NSW agencies are also currently developing agreed criteria that an operational management system would be required to meet.

Settling on one common system may take time because of the accrued investment in existing systems.

7. **What steps have been taken arising from the two royal commissions and the commission of inquiry in the ACT in relation to recommendations on communications and warnings?**

NSW has implemented relevant recommendations from the Victorian Royal Commission and the ACT Commission of Inquiry.

The Victorian Royal Commission

The Commission made 66 recommendations, two of which, Recommendations 22 (standardised information and communications technologies, greater interoperability) and 23 (black spots in radio coverage) dealt with radio communications.

The issue of standardised information management systems is addressed in our response to question 6 and standard communications systems are discussed in our response to question 1.

The ACT Commission of Inquiry

It is understood that the reference is to the Coronial Inquiry into the 2003 Canberra bushfires.

Recommendation 48 states that "measures be taken to ensure that ACT and NSW Rural Fire Services' radio communications systems are integrated, so that ACT and NSW firefighting units can communicate with each other."

In 2005, the ACT and NSW Government Radio Networks were integrated and now operate as a single network. The Rural Fire Service, Fire and Rescue NSW, the State Emergency Service and the Ambulance Services and their equivalents in the ACT use this shared service.

The result is that units from each jurisdiction can move into the other jurisdiction and take their radio with them.

Further, the network provides for agency talk groups and shared talk groups so that these agencies can carry on their own internal communications yet still operate as a united group because the commanders from each agency can communicate via the shared talk groups.

8. Mr Gates, I am sure the police federation says that we should ask the New South Wales technical people about the benefits of 700 over 800MHz. You seem equivocal about it in terms of what is best. Can you take on notice and just give us some idea of any technical issues you see involved with 700MHz vs 800MHz.

The work to date on a harmonised spectrum in the 400MHz band primarily relates to voice and slow speed (i.e. low volume eg text) data communications.

The emerging need for a capability to move high volume data (e.g. video), which requires high transfer speeds and which is available for use by police and emergency services is well recognised. The community expects these agencies to be able to move data in emergency situations and to do so in a way that reflects modern capacities (the ability to move video, the capacity for facial recognition and so on). These communications need to be reliable and secure.

High speed data communications works better higher up the band in the 700+MHz band. Some 126 MHz (90 MHz useable) of 700 MHz spectrum is becoming available for use as a result of the move to digital television.
The Federal Government has stated its intention to allocate that spectrum via auction. As it is unlikely that Police and emergency services will be able to compete for 700MHz spectrum at auction, a national committee, the Public Safety Broadband Steering Committee (PSBSC) has been established to investigate alternative spectrum in the lower parts of the 800MHz band.

NSW officers are represented on the Committee through NCCGR and LESRSC.

It is noted that some of evidence put forward suggests that the 700MHz band is much more preferable to the 800 MHz band. However, this is a very complex issue that has technical, operational and financial elements.

Generally, networks using the higher frequencies are more costly to build because the shorter wavelengths mean that the transmitting and receiving antennas need to be closer together.

That said there appears to be a general agreement that the technical differences between 700 and 800MHz are not significant.

More relevant is that emerging data standard is Long-Term Evolution (LTE). It operates in a range of bands including 700, 850, 900, 1700, 1800, 1900, 2100, 2300, 2500 and 2600MHz.

As LTE is an emerging standard, initially the majority of new LTE networks will be constructed in some rather than all of these bands. 700MHz seems the most popular choice and it is therefore where equipment is likely to become most available in the short term.

But, while the availability of equipment capable of operating in 700MHz is all but assured, the availability of equipment capable of operating in the lower part of the 800MHz band is much less certain.

Much will depend on decisions yet to be made internationally and the take up of LTE by major users such as China.

Further, the 700MHz band will be unoccupied when it is auctioned, while 800 MHz is likely to take time, perhaps an extended time, to be cleared of current users.

It is this lack of certainty surrounding the 800MHz option that is driving the preference for 700MHz spectrum.

The complexity of the issue is why the NSW position on this matter remains open. Amidst the claims and counter claims, it is up to the PSBSC and its expert advisors, to assess the technical, operational and financial pros and cons of the various options and make a recommendation.

However, if it is determined that 800MHz can deliver the capability and the equipment in a cost effective manner and in a reasonable timeframe, such that 700MHz then offers no real advantage, then the original objective of police and emergency services access to spectrum that delivers on operational requirements and community objectives, will be met.

NSW will actively contribute to this process.

Yours sincerely,

Tony Gates
Director Operations

13 September 2011