CD/11/227165

Victorian Government Submission

Senate Standing Committees on Environment and Communications

Inquiry into the Capacity of Communications Networks and Emergency Warning Systems to deal with Emergencies and Natural Disasters

May 2011

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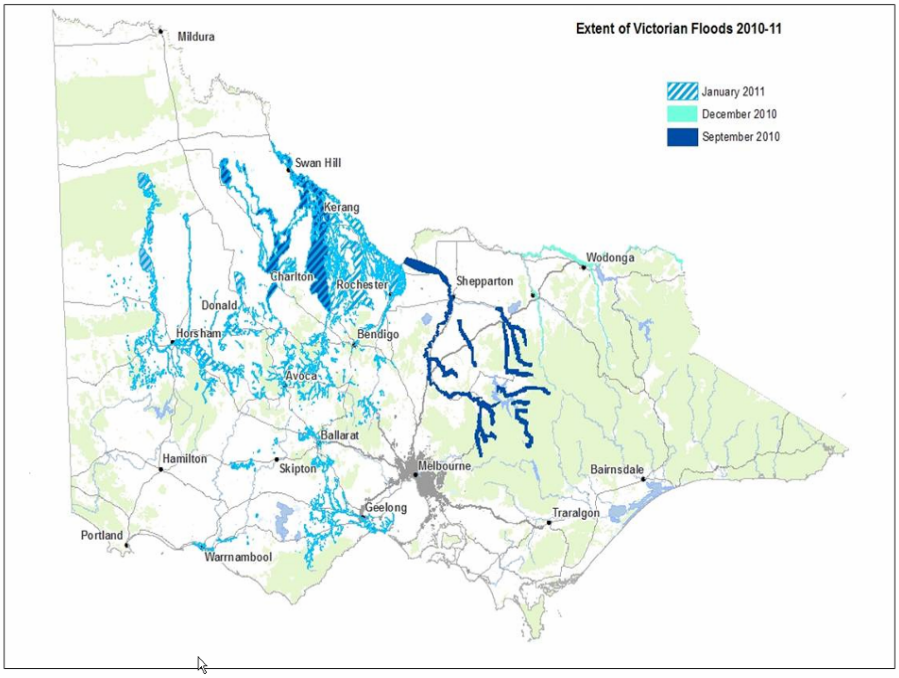
1.0 Executive Summary

During this summer the nation experienced natural disasters across every state, from storms, floods, and bushfires in Western Australia to the cyclones and floods that hit Queensland, Victoria and New South Wales. Australia has not been the only nation to be affected, with extreme natural disasters befalling our regional neighbours in New Zealand and Japan.

Victoria is acutely aware of the effect of natural disasters with the State being the most fire-prone jurisdiction in Australia, having recently endured the devastating 2009 bushfires, and is also regularly inundated by flooding in various areas of the State. Consequently, the Victorian Government has a strong interest in minimising the impact of emergencies on the community.



The recent prevalence of natural disasters has highlighted the importance of communications networks and warning systems in preparing for, responding to and recovering from emergency events. It is timely that the Senate Committee has chosen to undertake an Inquiry into the Capacity of Communications Networks and Emergency Warning Systems to Deal with Emergencies and Natural Disasters (Inquiry) given these recent natural events.

The focus of the State's Submission to the Senate Committee Inquiry is on matters that are either principally the responsibility of the Commonwealth Government, or would be open to it to take action to resolve. Key matters for the State include:

- the resolution of spectrum access and utilisation to meet the needs of emergency services organisations (a key step in enabling national interoperability) such that it does not give rise to adverse or sub-optimal operational or financial outcomes;
- initiatives, particularly in regional areas, aimed at improving mobile telephone coverage and capacity (i.e. eliminating 'black spots');
- encouraging the use of proven methods of communication and information dissemination that reduce our reliance on technology whilst exploiting the benefits that advances in

technology can provide to support emergency communications and public warnings; and

- continuing to develop resilient communities through a pragmatic approach that effectively balances investment between community awareness and education and infrastructure protection.

In making recommendations to the Inquiry, the State is very conscious of the need for a balanced view on the matter of public value. There are opportunities for all levels of government to make investments to improve emergency communication and warning systems, which may or may not be in the public interest. This is a complex debate and a number of factors are at play, including the overall cost of living impacts that may result from various solutions or interventions by government. Nevertheless, the State is of the view that there should be at all times a shared responsibility for community safety, involving not only government, but all facets of the community from individuals and families through to business and industry.

The State considers that the *National Strategy for Disaster Resilience* (Strategy) provides a strong base for the Senate Inquiry given that effective communication and communication capacity are a supporting foundation to all of the characteristics of resilient communities. This Strategy reinforces the need for an approach which consistently advocates for a shared responsibility for public safety, and seeks to educate all citizens of their personal responsibilities for individual and community safety. Emergency services and broad warning systems are just a component of overall public safety.

There are a number of enablers that would assist in delivering improvements to communications networks and emergency warning systems, including access to spectrum, access to telecommunications infrastructure and services, education and awareness, advances in technology, and information sharing.

The resolution of access to and ownership of spectrum is a critical enabler for the improved effectiveness of emergency communications and planning for future investment. The State considers that this is a key enabler for the enhancement of the effectiveness of communications networks (for example, inter-operability) and warning systems and that there is an opportunity for a collaborative approach to the resolution of this issue. The allocation of or access to spectrum for the use of emergency organisations has potentially significant impacts both operationally (e.g. nature, scope and diversity of applications) and financially (e.g. network infrastructure and radio handsets required, particularly if these are non-standard or not widely supported globally). The State considers that the Senate Inquiry should inform itself of the implications on emergency services organisations from the resolution of the allocation of and access to spectrum.

The reliance and use of mobile telephony and broadband is increasing. Therefore, coverage and capacity are seen as key enablers for effective communication and provision of public information and warnings. The State recommends the Commonwealth further considers how it can facilitate adequate coverage and capacity (e.g. elimination of ‘black spots’), taking into account both the capital expenditure and recurrent costs and the possible flow-on impacts on the cost of living.

The State sees the provision of a range of infrastructure and services as a foundation for public safety and effective emergency management; however, this must be accompanied by a co-

commitment from all citizens (communities, business and individuals) to actively participate in understanding their own risk, and taking steps to ensure their own personal safety. The State considers that community awareness raising, education and engagement is an effective mechanism for risk awareness, disaster mitigation and in building community resilience.

Emergency management requirements should be a mandatory element in the planning and implementation of any new communication technology, including the ongoing work of the National Broadband Network (NBN). The State recommends that the Inquiry give consideration to the mechanisms (e.g. standards, regulation) that could be developed to facilitate this requirement.

Communication and information sharing is an important element of managing a response and keeping the public informed of the status of an emergency event. Governments and other organisations have repositories of data and information that provide an important information overlay for the preparedness, response and recovery from emergency events. Access to and use of these data sources involves a mixture of formal and informal arrangements. The State considers that there is the opportunity to formalise, particularly with Commonwealth agencies, arrangements for access to data and resources that would greatly assist in the management of emergency events.

2.0 Introduction

The State of Victoria (the State) welcomes the opportunity to contribute to the inquiry into the capacity of communications networks and emergency warning systems to deal with emergencies and natural disasters (Inquiry). This document is the submission by the Victorian Government to the Inquiry. It incorporates input from the following Victorian Government agencies:

Ambulance Victoria (AV)
Country Fire Authority (CFA)
Department of Business and Innovation (DBI)
Department of Human Services (DHS)
Department of Justice (DoJ) • Emergency Services Policy and Support (ESP&S) • Fire Services Commissioner (FSC) • Office of the Emergency Services Commissioner (OESC) • Victorian Government Solicitor's Office (VGSO)
Department of Premier and Cabinet (DPC)
Department of Sustainability and Environment (DSE)
Department of Treasury and Finance (DTF)
Emergency Services Telecommunications Authority (ESTA)
Lifesaving Victoria (LSV)
Metropolitan Fire Brigade (MFB)
Victorian Floods Review
Victoria Police (VicPol)
Victoria State Emergency Services (VICSES or SES)

2.1 Submission Focus in Relation to the Inquiry's Terms of Reference

The Inquiry's Terms of Reference (ToR) are broadly drawn and cover a range of issues of concern to the Victorian Government and its agencies.

The scope of the ToR covers:

- Communications to and between the public
    - Warning systems
    - Broadcast media
    - Community based solutions
    - Social and other informal information networks
- Communications from the public
    - Call taking and dispatch (including computer aided dispatch)
    - Information gathering

- Communications with and between emergency services organisations (ESOs[1])
    - In-field mobile voice and data
    - Alerting communication facilities
    - Information management systems

The State has considered a range of matters within the scope of the ToR and determined to classify these matters so as to present issues of greatest value to the Inquiry, and for which the State seeks Commonwealth Government support, or further consideration. A number of other matters deemed as relevant to the ToR remain the principal responsibility of the State and should be dealt with as such. Further, the State has determined to place a greater emphasis on those matters which appear to have new opportunities or solutions for consideration, rather than simply present already known problems. This model is illustrated in Figure 1, below.

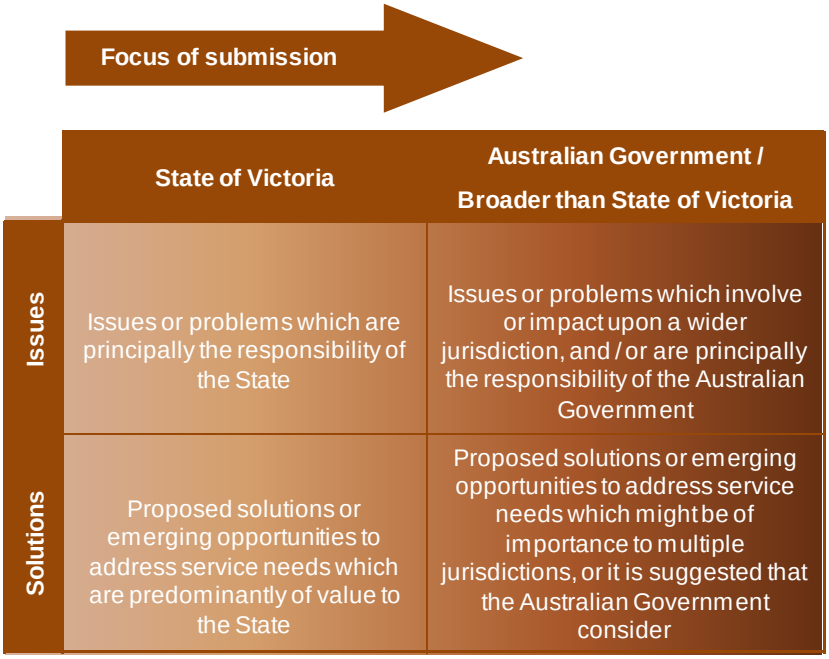


Figure 1: Illustration of how the State has considered the focus and value of its Submission

We consider it useful to highlight that we have considered a range of 'emergencies and natural disasters' in this submission. While natural disasters such as fire and flood immediately come to mind, we also include in this definition extreme weather events such as heatwave, large scale health emergencies including scenarios such as pandemic, complex multi-agency emergencies such as landslide or tsunami, and a range of other types of emergencies such as significant security threats, and hazardous chemical or industrial events.

[1] The Victorian Emergency Services Organisations include Ambulance Victoria (AV); Country Fire Authority (CFA); Department of Sustainability and Environment (DSE); Emergency Services Telecommunications Authority(ESTA); Lifesaving Victoria (LSV); Metropolitan Fire Brigade (MFB); Sheriff's Operations (SO); Victoria State Emergency Services (VicSES); and Victoria Police (VicPol). Note that some departments and agencies in scope are not 'Emergency Services Organisations' and do not provide such functions and services. This term is used in this document for convenience and brevity only.

3.0 Context

3.1 The State of Victoria's Emergency Communications Strategy

The State is a highly active participant in public policy for emergency prevention, preparedness, response and recovery and places high priority on communications networks and emergency warning systems as critical enablers of community and organisational resilience.

Over the last decade the Victorian Government has developed a multi-agency approach to emergency communication infrastructure and services valued in excess of $660 million. This investment has exploited the synergies of emergency services organisations to provide common robust infrastructure. The resultant infrastructure maximises value for money and supports improved coordinated state-wide operations to meet the expectations of the community.[2] The State is now perceived nationally and internationally as a leader in the field of public safety communications management. [3]

In 2010 the State released the *Emergency Services Communications Strategic Framework* and completed a High Level Technical Requirements Project[4] with the aim of building upon these investments, and the successful implementation of radio and data facilities for the emergency services. Rather than outline in detail this strategic vision and current communication arrangements in this Submission, we attach the *Emergency Services Communications Strategic Framework* (Appendix A) for your reference.

Key principles of future emergency communications outlined in these documents include:

- Capability meets future business needs and has sufficient capacity and flexibility to meet new requirements as they emerge;
- Have state-wide, cross-border coverage with ability to dynamically alter operating boundaries;
- Achieve parity between the communication capability of metropolitan and rural areas;
- Needs of all relevant agencies over time are met, including the need to cope with surge demand associated with major events/incidents; and
- Have public safety exclusivity, or provide the facility for all non-essential services to be excluded at time of need.

The State suggests that these principles are worthy of consideration for future emergency communications at a national level also.

3.2 The National Strategy for Disaster Resilience

The State regards the recent release by the Council of Australian Governments (COAG) of the *National Strategy for Disaster Resilience* as providing a strong base for this Inquiry, and that underpinning

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[2] http://www.justice.vic.gov.au/wps/wcm/connect/justlib/DOJ+Internet/Home/Community+Safety/Emergencies/Emergency+Communications/, accessed 29/04/2011.

[3] *Emergency Services Communication Strategic Framework*, pp. 7-8.

[4] Due to issues of commercial confidence this document has not been included with the submission; however an edited version is available online from the VBRC website.

principles outlined in this Strategy must not only apply here, but be further supported by the work of this Inquiry.

The Strategy sets out the characteristics of resilient communities as:

- Functioning well while under stress;
- Successful adaptation;
- Self-reliance; and
- Social capacity.[5]

It is the view of the State that effective communication and communication capacity are a supporting foundation to all of the above characteristics, and to achieving the goals of the Strategy more generally. To that end, our Submission supports the principles of this Strategy.

The ongoing development of disaster resilient communities is imperative. We must be highly aware of policies or 'systems' which are somewhat counter-intuitive to this. In keeping with this, the State is committed to an approach which consistently advocates for shared responsibility for public safety, and seeks to educate all citizens of their personal responsibilities for individual and community safety. Emergency services and broad warning systems are just one component of overall public safety.

The role of government as relevant to the ToR is delineated in the *National Strategy for Disaster Resilience* as:

- Having clear and effective education systems so people understand what options are available and what the best course of action is in responding to a hazard as it approaches;
- Supporting individuals and communities to prepare for extreme events; and
- Ensuring the most effective, well-coordinated response from our emergency services and volunteers when disaster hits.[6]

The State recommends that the Senate give due consideration to the *National Strategy for Disaster Resilience* in its Inquiry deliberations.

3.3 The Victorian Bushfires Royal Commission

The State is committed to implementing all of the Recommendations of the *Victorian Bushfires Royal Commission* (VBRC). A number of recommendations relate to communication, information, community safety and education, and warning systems. This Submission supports current activity focused on implementation of these Recommendations.[7]

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[5] *COAG National Strategy for Disaster Resilience*, p. 5.

[6] National Disaster Resilience Statement, *COAG National Strategy for Disaster Resilience* p. iii.

[7] Relevant VBRC recommendations include Recommendation 1: The State revise its bushfire safety policy...to enhance the role of warnings including providing timely and informative advice about the predicted passage of a fire and the actions to be taken by people in areas potentially in its path; Recommendation 22: The Country Fire Authority and the Department of Sustainability and Environment standardise their operating systems and information and communications technologies with the aim of achieving greater efficiency and interoperability between agencies; Recommendation 23: The Country Fire Authority review and improve its communications strategy as a matter of priority and develop a program for identifying and responding to black spots in radio coverage.

3.4 Victorian Floods Review

The findings of the Review of the 2010-11 Flood Warnings and Response (Victorian Floods Review) will help guide the government's response and planning to ensure Victoria is better equipped to deal with similarly severe flooding events in the future.

The Victorian Floods Review is led by Mr Neil Comrie AO APM, former Chief Commissioner of Victoria Police and current VBRC Implementation Monitor, who holds significant expertise and understanding of the State's emergency management arrangements.

The Victorian Floods Review may make recommendations that intersect with matters that are of relevance to the Senate Committee Inquiry and is due to issue its findings in December 2011. An interim report is due in June 2011 which may assist the Senate Committee Inquiry in its deliberations.

3.5 Consideration for Public Value

The State is conscious of the need for a balanced view on the matter of public value. There are opportunities for all governments to make further investments to improve emergency communication and warning systems which may or may not be in the broader public interest. This is a complex debate and a number of factors must be considered, including the overall cost of living which might be imposed by various solutions or interventions by governments.

The State's view is that there should be at all times a shared responsibility for community safety, involving not only government, but all facets of the community from individuals and families through to business and industry.

The State recommends that in identifying opportunities for the enhancement of emergency communication and warning systems that there is recognition that community safety is a shared responsibility, involving not only government, but all facets of the community from individuals and families through to business and industry.

3.6 Current technological landscape

Forecasts by the public safety sector indicate that their demand for broadband mobile data services will increase rapidly due to the need for business critical applications such as mission dispatch, status and location information, full motion video, high resolution imaging, mapping data and responder (and patient) biometrics information.

The proportion of the adult population in Australia without a fixed-line telephone service is growing in tandem with the percentage of wireless only homes.[8] Growth in mobile broadband usage is steep with 3G or data enabled phones now the most common form of internet subscription in Victoria compared to the other data categories.[9]

Currently it is the copper network that bears the brunt of emergency communications capability with mobile capacity continuing to grow rapidly and very limited fibre capacity. Any consideration of emergency communications networks needs to factor in the growing importance of mobile telephony and broadband.

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[8] Australian Communications and Media Authority (ACMA) Media Release 12th January 2010, http://www.acma.gov.au/WEB/STANDARD/pc=PC_312017, date accessed 29/04/2011.

[9] Australian Bureau Statistics, provided for this report by Department of Business and Innovation.

The State recommends that the enhancements and future development of emergency communications networks needs to factor in the growing importance of mobile telephony and broadband.

4.0 Fostering Resilience through Awareness, Education and Communication

4.1 Shared Responsibility

The provision of a range of infrastructure and services is seen by the State as a foundation for public safety and effective emergency management. It must be accompanied by a commitment from all citizens (communities, business and individuals) to actively participate in understanding their own risk, and taking steps to ensure their own personal safety. This is in keeping with an approach to developing disaster resilience at a national and a local level.

4.2 Risk Awareness, Community Education and Communication

Community awareness raising, education and engagement is an effective mechanism for risk awareness, disaster mitigation and in building community resilience. Access to information and community education empower communities and individuals to fulfil their responsibilities. It is vital that the provision of information and warnings is underpinned by education and awareness raising activities about how to act in response to the information and warnings they will receive (see also 4.5 The Use of Warnings).

The State recommends that consideration be given to how risk awareness, disaster mitigation and building community resilience can be enhanced.

4.3 Current Capacity for Information Provision

When providing information, the State aims to:

- Get information to the people who need it;
- Get the right information to the right people; and
- Make sure this information is timely, user-friendly, accurate, compatible and useful.[10]

Victoria is served by a range of existing services and hotlines available to reach the community and to provide useful information for emergency situations such as bushfires, floods, storms, accidents, explosions, gas leaks and urgent health matters. These services and hotlines offer assistance and information and include but are not limited to:

- One Source One Message (OSOM) is a single multi-agency portal for the dissemination of emergency warning information. OSOM involves the uploading of information through a standardised template to generate a message, which may include:
    - specific information including the size and direction of a fire, how quickly it is moving, its current location and the expected area and timing of impact;
    - advice about what action should be taken, any road closures and information about how to stay informed.

[10] Part 3, *Emergency Management Manual Victoria*, OESC, available online at http://www.justice.vic.gov.au/emanuals/EMMV/default.htm, accessed 29/04/11.

OSOM then allows an authorised message entered through a single portal (from the State Control Centre, an Area of Operations Centre, or an Incident Control Centre) to be sent concurrently to the CFA and DSE websites, the Victorian Bushfires Information Line, radio and television broadcasters and others.[11] OSOM is currently available for use by CFA, MFB and VICSES.

- Victorian Bushfire Information Line (VBIL) is a joint initiative between CFA and DSE to:
  - provide timely information to the community during significant incidents;
  - assist the community to prepare for wildfire risk; and
  - provide information regarding fire restrictions, Total Fire Bans and DSE prescribed burns.
- Emergency Alert, the national telephony warning system, was introduced on 1 December 2009. This system is capable of sending voice messages to landline phones in a geographic area and SMS messages to mobile phones based on the address information of the subscriber. It has been positively received by the Victorian public and Victorian ESOs and has been used nationally on 284 occasions and has issued in excess of 6.8 million messages.

  The proposed next stage of development is for Emergency Alert to be augmented to enable the delivery of warnings based on the location of the handset at the time of the emergency, a commitment which the Commonwealth Government has already made[12] (see 7.1 Requirements for New Communications Technology). A Location Based Solution (LBS) will require integration into Emergency Alert and WA's StateAlert, as LBS is not a standalone capability.

  The introduction of LBS would alleviate many of the concerns of the transient public and visitors during times of heightened risk and improve the effectiveness and reach of Emergency Alert. While the introduction of an LBS capability is technically and commercially challenging and extremely complicated, Governments collectively are committed to advancing the development of LBS to enhance existing telephone warning systems.

It should be noted a number of communities that have implemented their own small-scale locally based solutions for the delivery of emergency warnings and community preparedness, for example Community Fireguard groups.

There is scope to improve community awareness and education about the '000' service. The '000' emergency hotline and some emergency response organisations receive numerous calls from the public seeking 'information' regarding emergencies, rather than reporting emergencies or seeking emergency assistance. This can result in hotline congestion and diverts critical resources from the primary purpose of call-taking and dispatch in support of emergency events. The diversion valuable operator time from their intended purpose potentially risks lives. The State suggests consideration of the opportunity for the development of national approach to non-

[11] The Victorian Bushfires Royal Commission *Implementation Monitor Delivery Report*, March 2010, p. 19.

[12] http://www.emergencyalert.gov.au/frequently-asked-questions/how-will-it-work-on-mobile-phones.html, accessed 29/04/2011.

emergency information services and information sources to complement the '000' service.

The State considers there are opportunities to improve community awareness and understanding of the '000' services including consideration of the opportunity for a national approach to non-emergency information services and sources.

4.4 Informal Sources of Information

The State notes that communities are increasingly using a broad range of information services. While 'formal' communication and warnings remain important, individuals will increasingly draw information from broadcast media (television and radio news reporting) and social media (facebook, twitter, personal blogs, privately managed websites).

The sharing of 'informally' sourced information is not a new phenomenon; therefore the State believes accessibility of this information via public forums can be seen as an opportunity for ESOs to exploit and influence informal information channels. Informal sources such as social media may report valuable information before it is available through official channels, for example during the recent Northwest Victoria floods social media reports informed local communities of the imminent levee breaks well prior to any official information. Furthermore, ESOs would be best placed to identify, correct, and work against the dissemination of inaccurate information.

A recent example of a community owned and run emergency warnings website is *Bushfire Connect*, an online bushfire crisis service presenting real time information submitted by local community members and emergency agencies. The site aims to provide 'reliable', 'dynamic' and 'timely' information by empowering tens of thousands of people to contribute a human intelligence stream of content including text, images and video. This crowd-sourced incident data is layered with information from official sources.[13]

The State suggests further investigation into the best strategies for exploiting and managing social media and how this would be supported. It is vital that ESOs maintain currency and retain authority with regards to the provision of information and warnings to ensure potency against a noisy and complex backdrop of information.

The State recommends further investigation into the best strategies for ESOs to exploit and manage informal information sources for the provision of information and warnings and how this could be supported.

4.5 The Use of Warnings

The State notes the Victorian Bushfires Royal Commission's focus on community warnings. With community education and resilience as the driving force, and with the availability of the right technologies as an enabler, warnings are the cornerstone for emergency management.

Although there are nationally recognised principles to be followed in providing warnings to the community,[14] nationally we are yet to establish mature policy, practice and standards in this area. There should be further development of coordinated strategies to deliver

[13] http://bushfireconnect.org/page/index/1, accessed 29/04/2011.

[14] Part 3 Community Warning Principles, *Emergency Management Manual Victoria*, OESC, available online at http://www.justice.vic.gov.au/emanuals/EMMV/default.htm accessed 29/04/11.

warnings to communities, including further research and development to understand community response to these warnings.

With the proliferation of both official and unofficial information the State is concerned by possible trends including:

- the ability of the public to differentiate and take appropriate action in response to information received; and
- possible warning 'fatigue'.

The State believes that the strategy to improve warnings should be dual-pronged. There is a need both to:

- further adopt a nationally consistent approach to warnings and an accompanying national education program; and
- geographically and culturally target and 'localise' warnings.

Recent emergencies have seen a range of newer communication services used to disseminate warnings – we must learn more about how these warnings are received. There is also more to learn about how warnings during emergency support informed decision-making by communities which results in safe behaviour and risk reduction. While there is some research in this area (for example the Bushfire Cooperative Research Centre research programs associated with the communication of risk and threat), it has been hazard-specific to bushfires and these research programs should be broadened to all hazards.

The State draws attention to the fact that research and practice review notes that different communities will respond in different ways and require different services. We therefore need to consider the form and content of warnings for metropolitan and urban communities, regional and rural communities, 'peri-urban' communities (those urban fringe areas with increasing 'urban-minded' populations in rural settings). Across any of these areas are a number of diverse community groupings including our culturally and linguistically diverse (CALD) communities, vulnerable individuals, or those people with specialist needs and services, by way of example.

An example of a possible national approach for the development of a standard approach to warnings would be a standard for the use of sirens. This approach could become national doctrine rather than 'local knowledge', and could be included in broad education frameworks.

The State considers there should be further development of coordinated strategies to deliver warnings to communities, including further research and development to understand community response to these warnings.

4.6 Recognising the Limitations of Communications Technology

The State recognised at the start of this submission the delicate balance between the public good provided by emergency communications technology and the impact on the cost of living that the funding of newer technologies or greater capacity can have. The correct balance is not clear-cut, but it is clear that, wherever the line is drawn, education must go much of the way towards softening the shortcomings of emergency communications capacity. This includes adjusting the expectations of the public as to what communication services they can hope to receive in both best-case and worst-case scenarios and educating and empowering individuals and communities to take action in response to the range of technological environments they might find themselves in.

The *National Strategy for Disaster Resilience* reminds us that 'increasing complexity and interdependence of social, technical, and infrastructure systems are also playing a role in increasing our vulnerability to disasters.'[15] A holistic approach to risk awareness demands an understanding of this layer of complexity and interdependence. Such understanding will hopefully be accompanied by adjusted expectations and the 'peeling back' of complete reliance on specific technologies.

The State suggests a need to consider strategic power outage planning. The investment in education to cope with such situations is significantly less than the required investment in infrastructure to ensure 100% uptime. There is scope for better education of communities regarding the use of communications equipment and the likelihood of extended blackouts. The State suggests consideration by the Commonwealth of the possible need to expand its education campaign regarding such issues as:

- the need for those in areas vulnerable to blackouts have sufficient battery capacity (including the ability to power multiple devices);
- the limitation of mobile telephony coverage; and
- other tools and devices to receive information (e.g. battery powered radio).

The State considers there is scope for better education of communities regarding the use of communications equipment and the impacts of extended blackouts.

5.0 The Regulatory and Policy Environment

A review of the regulatory and policy environment presents an opportunity to consider the benefits, risks and economic value of current arrangements, and must inform our decisions based on overall public value and public good. There are of course a range of implications for commitments made and a balanced approach is required. The current regulatory environment is largely built upon traditional assumptions which may not apply in a dramatically altered technological landscape. The regulatory environment needs to be responsive and flexible to meet these emerging changes.

5.1 Core Infrastructure Redundancy and Continuity

The State has identified and prioritised its critical infrastructure for protection during emergencies.[16] There are however, clear limits to the State's capacity to prevent any emergency from impacting critical infrastructure and there are therefore dependencies on commercial and privatised providers to share responsibility for ensuring the safety and supply of core services. It is imperative that these expectations and responsibilities are clear for all parties through more formal mechanisms, rather than a reliance on 'good people' and 'good practice'.

The State acknowledges the Australian Government's *Critical Infrastructure Resilience Strategy* which seeks to enhance the resilience of our critical infrastructure to all hazards, with an emphasis on information sharing as key to effective business government partnerships.

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[15] *COAG National Strategy for Disaster Resilience*, p.2.

[16] 'Six strategic control priorities', Fire Services Commissioner, *Building New Foundations* p.12.

Current communications networks are not able to withstand weather and environmental extremes (fire, flood, etc). The problem of resilience of supply remains the key problem once geographic and technology ubiquity has been achieved. With due attention to economic impact and cost benefit, further consideration might be given to the redundancy and business continuity arrangements for core communications infrastructure. Scoping of options should take into account the various dependencies in play, including ensuring appropriate function of vital communications infrastructure in the absence of mains power.

'Hardening' to provide greater protection to network components in designated flood or fire prone areas could be seen as one part of the solution. Greater consideration could be given to requirements (e.g. minimum standards) for communications networks infrastructure according to the operating environment and degree of flood or fire risk. A level of financial investment may be required from the Commonwealth government to facilitate this investment and avoid increased consumer costs.

The State recommends that consideration could be given to requirements (e.g. minimum standards) for communications networks infrastructure according to the operating environment and notes that a level of financial investment may be required from the Commonwealth government to facilitate this investment and mitigate against increased consumer costs.

5.2 Requirements for New and Existing Congregation Areas

The State identifies an opportunity to improve requirements for the provision of public warning systems for any public gathering place, including both public and private assets. Large congregation areas (such as major shopping centres, sporting facilities or recreation areas) present particular challenges for emergency services, including the effective dissemination of warnings and advice.

Large congregational areas, such as shopping centres, also present challenges for operational communications between ESO personnel when responding to and managing emergency events.

The State recommends that further consideration be given to how enhancements could be made to facilitate effective dissemination of information and warnings to people in large congregation areas.

5.3 Spectrum

The State notes the current debate with regard to access to and ownership of spectrum into the future. Approaches to the digital dividend issue need to combine consideration of the public safety sector needs with the political, economic and public welfare benefits of the commercial use of that spectrum.

Resolution of spectrum access and utilisation to meet the needs of emergency services organisations is a critical enabler for the improved effectiveness of emergency communications and planning for future investment. The Commonwealth Government has responsibility for the regulation of spectrum allocation and licensing. Given the significant commercial value attached to frequency allocations, this tends to mask the critical need for guaranteed emergency services access to spectrum to support preparedness, response and recovery. The State considers that this is a key enabler for the enhancement of the effectiveness of communications networks (for example, inter-operability) and warning systems and that there is

an opportunity for a collaborative approach to the resolution of this issue.

The allocation of or access to spectrum for the use of emergency organisations has potentially significant impacts both operationally (e.g. nature, scope and diversity of applications) and financially (e.g. network infrastructure and radio handsets required, particularly if these are non-standard or not widely supported globally). The State considers that the Senate Inquiry should inform itself of the implications on emergency services organisations from the resolution of the allocation of and access to spectrum.

In any resolution consideration must be given to future requirements that will impact on the allocation of spectrum. For example, ESOs will require an increasing number of high bandwidth applications, such as video streaming, as they continually strive to improve their emergency management capabilities [17] that will enable relevant, timely and tailored messages to be distributed.

The State considers that the resolution of access to and ownership of spectrum is a critical enabler for the enhancement of the effectiveness of communications networks and warning systems and that there is an opportunity for a collaborative approach to the resolution of this issue. The State considers that the Senate Inquiry should inform itself of the operational and financial implications on emergency services organisations from the resolution of the allocation of and access to spectrum.

5.4 Access to Infrastructure for Emergency Communication Use

The currency of the Digital Dividend issue resulting from the phase out of analogue television and the establishment of the NBN provide an ideal juncture at which to consider the business models for effective public safety communications, which include:

- Dedicated public safety networks which utilise the same spectrum nationally, that are inter-operable and enable cross border capability;
- Commercial mobile carrier partnerships where public safety needs extend the reach and capacity of commercial networks which would be optimised or “hardened” to meet the stringent standards required by public safety organisations; and
- Priority service networks where there is a mix of dedicated and commercial networks. Public safety organisations take priority over parts of commercial networks when the need arises. Licence conditions mandating prioritisation of ESO and alerting traffic

Notwithstanding the likely challenges, the State would advocate for further consideration on how telecommunication networks (including the backhaul infrastructure) and their capacity might be prioritised for use in emergency services to support their voice and data requirements. Examples might be partitioning or priority traffic arrangements and prioritisation of cell capacity. Technology currently exists that would deliver this functionality and the State understands that the United Kingdom has arrangements for the prioritisation of emergency services traffic.

[17] *Emergency Services Communications Strategic Framework*, p. 23.

It is vital to strike a balance between appropriate and defined access to infrastructure by ESOs without crippling capacity for disseminating information to the public. The value of warnings and messages is diminished if the message is delayed or not able to be delivered (e.g. insufficient mobile coverage). There is the opportunity to improve the regulatory requirements and obligations on telecommunications service providers and broadcasters (both public and private to deliver messages in a timely manner and as directed).

The State considers there is an opportunity to improve the regulatory requirements and obligations on telecommunications service providers and broadcasters (both public and private to deliver messages in a timely manner and as directed) for the provision of information and warnings to the public during an emergency event.

5.5 Universal Service Obligation

The State understands that the arrangements for the provision of universal service obligations, including emergency call handling, will transfer to USO Co from 1 July 2012. While it is understood that Telstra will continue to be contracted to provide emergency call handling, a review of the current regulatory or contractual environments would be prudent to ensure continuation of the current service levels in line with community service expectations.

This has relevance for both genuine emergency calls and misdirected information calls which Telstra currently redirects (see also 4.3 Current Capacity for Information Provision).

The State recommends a review of the current regulatory and contractual environments for emergency call handling would be prudent to ensure continuation of the current service levels in line with community service expectations.

6.0 A collaborative and Partnership Approach

The State recognises the requirement in today's environment for government to form a number of partnerships with a range of partner organisations to deliver emergency services. The State is highly supportive of a collaborative approach. These partner organisations each have specific services and expertise that can be utilised in the preparation, response to, and recovery from an emergency event. Collaboration also enables the best use of available resources.

The State has a number of collaborative arrangements in place some of which have a high degree of formality and others of which are predominantly goodwill arrangements. These arrangements include public sector, private sector and third sector partnerships.

6.1 Public Sector Partnerships

The State's public sector partners include all levels of government from the Commonwealth, to other State and Territory governments, to local government and agencies.

We rely on a number of agreements to shape good practice or policy, share information during an emergency, leverage off existing agreements or systems in other states, and share the cost for investment in further research and development. During emergencies we also rely on the ability to rapidly exchange information and warn our interstate neighbouring communities.

6.2 The Commonwealth

There is the opportunity for the Commonwealth to formalise arrangements for access to data and resources which it controls that would greatly assist states in the management of emergencies. For example:

- satellite imagery held by the defence forces;
- Bureau of Meteorology services;
- Commonwealth government personnel and resources including Australian Federal Police (AFP) and Australian Defence Force (ADF); and
- community facing Commonwealth services which could be used to assist in education, community awareness, and service delivery as part of preparation, response and recovery, for example Australia Post, Centrelink.

It is vital that telecommunications infrastructure has appropriate geographic reach and penetration as well as robustness. The State considers the telecommunications regulation including mobile phone and broadband coverage to be a Commonwealth responsibility under the Universal Service Obligation. It has been estimated that there are some 50-100 extra towers required in Victoria to provide more comprehensive coverage in fire prone areas. It is expected that such concerns are not unique to Victoria. The State asks that the Commonwealth consider a program to ensure adequate coverage and capacity, which may also need to take account of both the capital expenditure and recurrent costs associated with providing this infrastructure.

The State recommends that there be further consideration to formalising arrangements with the Commonwealth for access to data and resources which it controls that would greatly assist States and Territories in the management of emergencies.

The State recommends further consideration by the Commonwealth to facilitate adequate coverage and capacity (e.g. elimination of ‘black spots’), giving due consideration to both the capital expenditure and recurrent costs.

6.3 Interoperability, Flexibility and Information Sharing

Emergencies do not fit neatly within state or even national boundaries. Interoperability, flexibility and information sharing between ESOs is largely a State issue where internal State ESOs are concerned but there is a strong argument to be made for the need to extend interoperability, flexibility and information sharing beyond state and even national borders. There is a need to consider governance and collaboration protocols for information sharing in tandem with strategies to address information silos and communication barriers.

The State values the Commonwealth’s role in furthering the interoperability of communications and information sharing networks. A recent example of successful intergovernmental partnership has been the adoption of the international Common Alerting Protocol (CAP) Standard within Australia to enable the effective exchange of information. For example the State urges consideration of:

- the need for national communication and information sharing interoperability between health agencies to cope with the

impact of natural disasters and health emergencies such as pandemics. Interoperability considerations should be expanded to allow for data capture around real-time clinical events which can be analysed to detect/identify emerging trends (flu, gas/chemical problems etc.). There is a need to achieve joined up health information to better identify trends and to enable provision of early warnings; and

- existing or new communication technologies for use to cater for changing or surging demand in an emergency. There is scope for agencies within and across state boundaries to support each other through the provision of redundancy capability (for example the introduction of the NBN may provide opportunity for better redundancy and surge capacity for call taking and dispatch which the Commonwealth could facilitate).

The State notes that Western Australia (WA) provided radios for Australian ESO personnel travelling to New Zealand (NZ) in the aftermath of the Christchurch earthquake because WA was the only Australian jurisdiction whose radio handsets were compatible with the NZ radio network. The global scale of emergencies and the spirit of international cooperation in responding to them require that we give consideration to international interoperability of systems and equipment.

Consideration of interoperability at an international level goes hand in hand with the need to consider the purchasing power of Australia as compared to the UK, USA and Asia-Pacific (for example). The State believes we need to consider the adoption of open standards and the same technology platforms as these larger scale countries, to ensure we can procure the appropriate 'tools' (i.e. radio, mobile data equipment). Recurrent costs for emergency services to be appropriately equipped to utilise these networks must be considered alongside capital expenditure. For instance, we should ensure that spectrum/broadband in Australia is consistent and compatible with communication devices available elsewhere. Australia does not have the buying power to force manufacturers of radio, data equipment etc to build products to meet our requirements, we must therefore leverage off those who do.

The State recommends consideration is given to the adoption of the technology platforms and procurement processes to facilitate improved inter-operability at a local, national and international level.

6.4 Private Sector Partnerships

The State relies upon private or commercial providers of critical infrastructure and communication technology and for building resilience, in particular those operating critical infrastructure for example telecommunications and utility providers.

We are currently reliant on corporate involvement through good will or private business strategy, where regulatory frameworks do not exist (two such examples may be telecommunication company support during emergencies, and in developing new emergency communication systems and large logistics companies lending their significant services and capacity in an emergency scenario). Commercial reality may diminish the extent to which goodwill can be relied upon. The Commonwealth may therefore wish to consider opportunities to foster or provide incentives to the private sector to commit in a more formal sense.

The support of a range of broadcast media provides an important element of the dissemination of warnings to the public. Traditionally,

this broadcast support has been provided by the Australian Broadcasting Corporation (ABC), however following the events of the 2009 bushfires, the Victorian Government entered into Memoranda of Understanding (MoU) with Commercial Radio Australia, SkyNews TV and five other community radio broadcasters for the broadcast of emergency information.

Commercial radio broadcasters have embraced and agreed to enter into the MoUs which complement the aspects of the *Commercial Radio Codes of Practice* and also set out processes governing the communication of information between the broadcasters and ESOs.

Since Victoria entered these arrangements, the commercial radio industry has now entered into similar MoUs in New South Wales, Queensland and South Australia, with negotiations underway in Tasmania.

There continues to be an opportunity for television broadcasters to provide warnings to the community similar to the radio broadcasters to further broaden the emergency broadcaster arrangements for the State.

Anecdotal evidence indicates that the MoUs were of assistance in the communication of emergency information during the recent floods in Victoria and Queensland.

While recent events have served to test the MoUs, there is not yet full national uptake of these arrangements with the commercial radio industry. The State proposes that, while these MoUs are in their formative stages of development and operation, the Inquiry may still wish to further consider the effectiveness of these arrangements in disseminating warning information to the community.

The State recommends that further consideration be given to opportunities to foster or provide incentives to the private sector to commit in a more formal sense in providing support in response to an emergency event.

The State proposes that, while these MoUs are in their formative stages of development and operation, the Inquiry may still wish to further consider the effectiveness of these arrangements in disseminating warning information to the community.

6.5 Third Sector Partnerships

The State has multiple partners in the not for profit and non-governmental sector who often provide communication capability and front line support in preparedness, response and recovery. These partners range from large NGOs such as the Red Cross and St John Ambulance to small, local organisations that may (for example) assist us in CALD communities. [18]These organisations rely heavily on government funding. There is interdependence between Government and these organisations – Government is reliant on their specific skills, expertise and resources and these organisations are very much dependent on Government for financial support. They must be given

[18] ESOs such as AV rely on NGO's to provide services in emergency situations. Ability to communication with them is crucial, and while access to similar 'tools' would be great at times of emergency generally they must rely on phones (landline and mobile). During bushfires St John's is deployed as first aid response to the public and to fire fighters but they simply cannot afford the systems that ESOs use.

full consideration in future planning around emergency management and community safety.

The State recommends that the role and arrangements with not-for-profit and non-government sector organisations are given consideration for the future planning and development of emergency communication and warnings systems.

7.0 Current and Emerging Technologies

Whilst the technological landscape is moving extremely rapidly, the messages we need to convey remain largely the same. Consideration must be given to the appropriate use of technology as an enabler rather than a driver for emergency communications and warnings.

7.1 Requirements for New Communications Technology

The State suggests that post-hoc fortification and adaptation are not cost-effective. Therefore, emergency management requirements should be a mandatory element in the planning and implementation of any new communication technology, including the ongoing work of the National Broadband Network (NBN). Implicit in such an arrangement would be the facilitation of some degree of information sharing and collaboration during the design and development phases of new technologies (both public and private). Please refer to Section 5.1 Core Infrastructure Redundancy and Continuity.

The ubiquity of the NBN would provide an opportunity, best in the design phase, to provide for emergency communications needs. With respect to this opportunity the State is concerned at the apparent:

- lack of transparency in network design;
- absence of any strong indication that the requirements of a communications network in a disaster are being considered;
- lack of consideration of battery backup for wireless and satellite users (see below); and
- lack of clarity regarding the arrangements for the USO in an NBN environment (see also 7.4 Legacy Systems).

There is a significant timeframe for the NBN to be completed (end 2020) therefore solutions need to be delivered in the interim.

Pertaining specifically to the NBN, the state believes that requirements for battery backup should be considered. The projected battery backup capacity for standard telephony devices in NBN fibre to the premises (fttp) areas is five hours depending on use. It might be useful to consider an argument that this should be greater in certain areas, or how an alternative communications method could be supported mobile network. In NBN areas to be served by wireless and satellite provision the State's understanding that battery backup will not be provided to end users by the NBN Co. Therefore it is assumed that these areas will be dependent on mobile coverage and/or legacy copper networks, which is of concern. This has implications on the issue of warnings and information to affected communities.

There is a community expectation that emergency warnings will be issued based on the location of the mobile handset at the time of the emergency. As outlined earlier in this submission, Governments remain committed to developing LBS and view the capability as a significant enhancement to the existing telephone warning systems.

The State considers that emergency management requirements should be a mandatory element in the planning and implementation of any new communication technology, including the ongoing work of the National Broadband Network (NBN) and the Inquiry give consideration to the mechanisms (e.g. standards, regulation) that could be developed to facilitate this requirement.

7.2 Transition and Policy considerations

We acknowledge that most technologies will have limitations in their effectiveness under stress. Mitigating or removing these limitations can be achieved at (generally) significant cost and so careful planning for those limitations of greatest issue should be completed. Limitations we consider in our planning include (but are not limited to) coverage, black outs and brown outs, redundancy, capacity and scalability. The State's position is a pragmatic one. Aiming for 100% 'up time' for all critical communications and power infrastructure is not a practical goal. All planning, education and communication about emergencies and natural disasters should stress this to communities and organisations.

It is important that the key principles of Emergency Management and its specific requirements are identified to ensure that these are built in at the outset, not added later, to all new and emerging technologies.

Consideration should be given to the range of legacy systems which emergency services and communities are currently dependent upon; their reliability, versus new systems and implications of ubiquitous coverage.

The State recommends that consideration should be given to the range of legacy systems which emergency services and communities are currently dependent upon; their reliability, versus new systems and the implications of ubiquitous coverage.

7.3 Maximisation of new technology

New technologies such as the NBN could provide a richer experience around community information and a much more dynamic and interactive delivery of information. There is vast potential for information gathering through the interlinking of sensors and other inputs to the point where it will be possible to see in real time what is happening. To optimise the value of this potential vast array of data sources, it needs to be supported by appropriate systems to gather, process, analyse and disseminate the information.

This is a best-picture scenario, however. Not only must there be an awareness of dependencies (such as power) but optimal exploitation of new technologies in such areas as Emergency Services requires investment in thinking power, research and development.

Location based capabilities are especially desirable for ESOs for such services as call-taking and dispatch and warnings. For example, the trend to mobile communications has had a major impact on emergency call-taking and dispatch as the shift away from landline phones has rapidly diminished the advantage of receiving the Calling Line Information (CLI). Mobile phones are not the only concern as similar concerns arise in relation to voice over internet protocol (VOIP) phones which have similar issue especially nomadic VOIP services. The uptake of these alternative communications methods is impinging on the ability of emergency services to effectively locate individuals and provide a timely dispatch.

The current telecommunications regulations do not require the telecommunications carriers to provide the location of the caller's

handset, but merely the billing address which in most cases is not where the caller or emergency is located. There is an opportunity to change the regulatory environment for standard telephone services to require all types of voice communications that operate as a standard telephone service to deliver accurate CLI data including the geographic location of the handset. The technology exists to enable this to be implemented.

Momentum is gathering in this area (for example, partnerships with telecommunications providers, working with local government through the placement of emergency markers), however, there is a need for an overarching and lasting approach with underlying principles that does not require new commercial agreements for each new provider or new technology.

The State considers that the adoption of new technology, such as enhancements to public warning systems, should adhere to general principles of being:

- non-discriminatory (e.g. support all mobile handsets);
- integrating / interfacing seamlessly with existing systems;
- granular and flexible;
- intrusive;
- protects the privacy of individuals;
- secure;
- future proof; and
- having vast reach.

The State considers that the Inquiry should consider options for the development of an overarching and lasting approach with underlying principles that does not require new commercial agreements for each new provider or new technology.

7.4 Legacy Systems

The key regulatory influences for the legacy copper network are the Universal Service Obligation (USO) and the Customer Service Guarantee (CSG). While the USO and CSG provide some basic protections to the consumer due to the mandated requirements on the provider of that service, other networks are best effort and at the discretion of suppliers. When the NBN is implemented then the USO provisions change. The USO provisions will apply to a standard telephony service delivered by fibre to the premises, but not through wireless and satellite.

To uphold the USO for those areas to be served under the NBN by wireless and satellite provision, legacy copper systems will be maintained until at least 2022.[19]

The State suggests a need for the Commonwealth to identify the service characteristics required, including for emergency

[19] *The Telecommunications Universal Service Obligation (Standard Telephone Service—Requirements and Circumstances) Determination (No. 1) 2011* available online at http://www.comlaw.gov.au/Details/F2011L00417,

accessed 29/04/2011 and *Implementation of Universal Service Policy for the transition to the National Broadband Network environment* - discussion paper October 2010, available online at http://www.dbcde.gov.au/__data/assets/pdf_file/0018/130716/Implementation_of_Universal_Service_Policy_for_the_transition_to_the_National_Broadband_Network_environment_discussion_paper.pdf , accessed 29/04/2011.

communications, and then work to achieve those characteristics mindful of, but not necessarily constrained by, parameters primarily attuned to legacy systems. The State believes services should be delivered by applying the best in technology and service delivery, and the growth in mobility solutions will mean that NBN would only be part of any solution particularly in non-fibre areas. To maintain a separate copper network risks disruption to ubiquity in service delivery capacity, reduction in competition and consequently significant extra cost burden to those in rural and remote areas.

Nevertheless, legacy systems should not be decommissioned until the capability of new systems and technologies, especially in an emergency management context, has been proven. This proven capability must also recognise the differing needs of diverse demographic groups, for example, not everyone has access to a mobile phone. It is also vital that in relying on technology we do not disregard the traditional and human elements of resilience (knowledge and skills) and the collective knowledge of local communities in coping with emergencies.

The State suggests a need for the Commonwealth to identify the service characteristics required, including for emergency communications, and then work to achieve those characteristics mindful of, but not necessarily constrained by, parameters primarily attuned to legacy systems and networks.

8.0 Summary of Recommendations

The following table summarises the State's recommendations outlined in the Submission.

	Recommendation / Issues for further consideration	Submission Section Reference	Senate Committee Inquiry ToR
1	The State considers that the *National Strategy for Disaster Resilience* (Strategy) provides a strong base for the Senate Inquiry given that effective communication and communication capacity are a supporting foundation to all of the characteristics of resilient communities. It is recommended that the Senate give due consideration to this Strategy in its deliberations.	3.2 National Strategy for Disaster Resilience	2, 4
2	The State recommends that in identifying opportunities for the enhancement of emergency communication and warning systems that there is recognition that community safety is a shared responsibility, involving not only government, but all facets of the community from individuals and families through to business and industry.	3.5 Consideration for Public Value	1, 2, 4
3	The State recommends that the enhancements and future development of emergency communications networks needs to factor in the growing importance of mobile telephony and broadband.	3.6 Current technological landscape	1
4	The State considers that community awareness raising education and engagement is an effective mechanism for risk awareness, disaster mitigation and in building community resilience. The State recommends that consideration be given to how risk awareness, disaster mitigation and building community resilience can be enhanced.	4.2 Risk Awareness, Community Education and Communication	4
5	The State considers there are opportunities to improve community awareness and understanding of the '000' services including consideration of the opportunity for a national approach to non-emergency information services and sources.	4.3 Current Capacity for Information Provision	4
6	The State notes that communities are increasingly using a broad range of information sources, both formal and informal. The State recommends further investigation into the best strategies for ESOs to exploit and manage informal information sources for the provision of information and warnings and how this could be supported.	4.4 Informal Sources of Information	3, 4

7	The State notes that nationally, progress has been made, but we are yet to establish a consistent and mature policy, practice and standards for community warnings. Further consideration needs to be given to the form and content of warnings for metropolitan and urban communities, regional and rural communities, 'peri-urban' communities (those urban fringe areas with increasing 'urban-minded' populations in rural settings). In addition, across any of these locations are a number of diverse community groupings including culturally and linguistically diverse (CALD) communities, or those people with specialist needs and services, to name just a few. The State considers there should be further development of coordinated strategies to deliver warnings to communities, including further research and development to understand community response to these warnings.	4.5 The Use of Warnings	1, 2, 3, 4
8	The *National Strategy for Disaster Resilience* reminds us that our reliance on the complex interdependence of social, technical and infrastructure systems is contributing to our vulnerability to emergency events and natural disasters. The State considers there is scope for better education of communities regarding the use of communications equipment and the likelihood of extended blackouts.	4.6 Recognising the Limitations of Communications Technology	2, 4
9	Recent natural disasters have demonstrated that communications networks are not always able to withstand weather and environmental extremes. The State recommends that consideration could be given to requirements (e.g. minimum standards) for communications networks infrastructure according to the operating environment. The State notes that a level of financial investment may be required from the Commonwealth government to facilitate this investment and mitigate against increased consumer costs.	5.1 Core Infrastructure Redundancy and Continuity	2
10	The State notes that there is an opportunity to improve requirements for emergency management provisions for any public gathering place, including both public and private assets. Large congregation areas (such as major shopping centres, sporting facilities or recreation areas) present particular challenges for emergency services, including the effective dissemination of warnings and advice to these people. The State recommends that further consideration be given to how enhancements could be made to facilitate effective dissemination of information and warnings to people in these congregation areas.	5.2 Requirements for New and Existing Congregation Areas	1

11	The State considers that the resolution of access to and ownership of spectrum is a critical enabler for the improved effectiveness of emergency communications and planning for future investment. The State considers that this is a key enabler for the enhancement of the effectiveness of communications networks and warning systems and that there is an opportunity for a collaborative approach to the resolution of this issue. The State considers that the Senate Inquiry should inform itself of the operational and financial implications on emergency services organisations from the resolution of the allocation of and access to spectrum.	5.3 Spectrum	1, 5
12	The State recommends that there be consideration on how access to and use of telecommunication infrastructure (public and private) might be prioritised for use by emergency services in responding to an emergency event or natural disaster.	5.4 Access to Infrastructure for Emergency Communication Use	1, 3, 5
13	The State considers there is an opportunity to improve the regulatory requirements and obligations on telecommunications service providers and broadcasters (both public and private to deliver messages in a timely manner and as directed) for the provision of information and warnings to the public during an emergency event.	5.4 Access to Infrastructure for Emergency Communication Use	1, 3, 5
14	The State notes that the arrangements for the provision of universal service obligations, including emergency call handling, will transfer to USO Co from 1 July 2012. While it is understood that Telstra will continue to be contracted to provide emergency call handling, the State recommends a review of the current regulatory or contractual environments would be prudent to ensure continuation of the current service levels in line with community service expectations.	5.5 Universal Service Obligation	1, 2, 3, 5
15	The State is aware of a number of data sources and resources at the disposal of the Commonwealth. The State recommends that there be further consideration to formalising arrangements with the Commonwealth for access to data and resources which it controls that would greatly assist States and Territories in the management of emergencies.	6.2 The Commonwealth	1, 3, 5
16	The State considers mobile telephony and broadband coverage and capacity as key enablers for effective communication and provision of public information and warnings. The State recommends further consideration by the Commonwealth to facilitate adequate coverage and capacity (e.g. elimination of 'black spots'), giving due consideration to both the capital expenditure and recurrent costs.	6.2 The Commonwealth	2, 3, 5
17	The State notes that inter-operability is a key enabler for information sharing and reducing communication barriers. The global scale of emergencies and the spirit of international co-operation in responding to them require that consideration be given to international inter-operability of systems and equipment. The State recommends consideration is given to the adoption of the technology platforms and procurement processes to facilitate improved inter-operability at a local, national and international level.	6.3 Interoperability, Flexibility and Information Sharing	1, 3, 5

18	Formal and informal relationships exist with the private sector for the provision of critical infrastructure, including the protection and rectification of this infrastructure during and after an emergency event. The informal relationships that exist are reliant on the corporate goodwill of private sector organisations, however commercial realities may impinge on the extent to which this goodwill can be relied upon. The State recommends that further consideration be given to opportunities to foster or provide incentives to the private sector to commit in a more formal sense in providing support in response to an emergency event.	6.4 Private Sector Partnerships	6
19	While recent events have served to test the MoUs, there is not yet full national uptake of these arrangements with the commercial radio industry. The State proposes that, while these MoUs are in their formative stages of development and operation, the Inquiry may still wish to further consider the effectiveness of these arrangements in disseminating warning information to the community.	6.4 Private Sector Partnerships	1, 4
20	The State has multiple partners in the not-for-profit and non-government sector which often provide communication capability and frontline support in preparedness, response and recovery from an emergency event. There is interdependence between Government and these organisations – Government is reliant on their specific skills, expertise and resources and these organisations are very much dependent on Government for financial support. The State recommends that the role and arrangements with not-for-profit and non-government sector organisations are given consideration for the future planning and development of emergency communication and warnings systems.	6.5 Third Sector Partnerships	1, 6
21	The State considers that emergency management requirements should be a mandatory element in the planning and implementation of any new communication technology, including the ongoing work of the National Broadband Network (NBN). The State recommends that the Inquiry give consideration to the mechanisms (e.g. standards, regulation) that could be developed to facilitate this requirement.	7.1 Requirements for New Communications Technology	3, 5
22	The State recommends that consideration should be given to the range of legacy systems which emergency services and communities are currently dependent upon; their reliability, versus new and the implications of ubiquitous coverage.	7.2 Transition and Policy considerations	1, 3, 5
23	The advancement of technology provides new opportunities to enhance approaches to communications networks and emergency warnings. The State considers that the Inquiry should consider options for the development of an overarching and lasting approach with underlying principles that does not require new commercial agreements for each new provider or new technology.	7.3 Maximisation of new technology	3, 5

24	The USO and customer service guarantee provide some basic protections to the consumer due to mandated requirements on the provider of that service, other networks are best effort and at the discretion of suppliers. The State suggests a need for the Commonwealth to identify the service characteristics required, including for emergency communications, and then work to achieve those characteristics mindful of, but not necessarily constrained by, parameters primarily attuned to legacy systems and networks.	7.4 Legacy Systems	1, 3, 5

Acronyms

ABC	Australian Broadcasting Corporation
ACMA	Australian Communications and Media Authority
ADF	Australian Defence Force
AFP	Australian Federal Police
AV	Ambulance Victoria
CAD	Computer Aided Dispatch
CALD	Culturally and Linguistically Diverse
CAP	Common Alerting Protocol
CSG	Customer Service Guarantee
CTD	Call Taking and Dispatch
DBI	Department of Business and Innovation
DHS	Department of Human Services
DoJ	Department of Justice
DPC	Department of Premier and Cabinet
DSE	Department of Sustainability and the Environment
DTF	Department of Treasury and Finance
EAS	Emergency Alerting System
ESO	Emergency Service Organisation (also referred to as agency)
ESP&S	Emergency Services Policy and Support
ESTA	Emergency Services Telecommunications Authority
FSC	Fire Services Commissioner

Fttp	fibre to the premises
LSV	Life Saving Victoria
MDN	Metropolitan Data Network
MMR	Metropolitan Mobile Radio
MoU	Memorandum of Understanding
NBN	National Broadband Network
NGO	Non Governmental Organisation
NZ	New Zealand
OESC	Office of the Emergency Services Commissioner
OSOM	One Source One Message
PPP	Public Private Partnership
SMR	StateNet Mobile Radio
UHF	Ultra High Frequency
USO	Universal Service Obligation
VBIL	Victorian Bushfire Information Line
VGSO	Victorian Government Solicitor’s Office
VHF	Very High Frequency
VICSES (or SES)	Victoria State Emergency Service
VicPol	Victoria Police
WA	Western Australia
WoVG	Whole of Victorian Government