Our Ref: 01219/11

Mr. Stephen Palethorpe
Secretary
Senate Environment and Communications References Committee
PO Box 6100 Parliament House
CANBERRA ACT 2600

Dear Mr. Palethorpe

Thank you for your letter dated 23 March 2011 regarding the Environment and Communications References Committee's (Senate Committee), Inquiry into Emergency Communications.

I note the specific matter referred to the Senate Committee is *"The capacity of communication networks and emergency warning systems to deal with emergencies and natural disasters"* and acknowledge the invitation for the Fire and Emergency Services Authority of Western Australia (FESA) to provide a submission.

FESA is pleased to have the opportunity to contribute to the Inquiry and I have attached for your consideration its comments in relation to the specific Terms of Reference.

I trust the attached information is of assistance however should you require clarification, and/or additional information please contact FESA's Executive Manager, Office of the CEO, Mr. Graham Wilks ·

Yours sincerely

FRANK PASQUALE
A/CHIEF EXECUTIVE OFFICER

21 April 2011

"The capacity of communication networks and emergency warning systems to deal with emergencies and natural disasters"

a. the effectiveness of communication networks, including radio, telephone, Internet and other alert systems (in particular drawing on the spate of emergencies and natural disasters of the 2010/2011 Australian summer):

> *(i) in warning of the imminent threat of an impending emergency*

For Emergency Services

Communication networks in Western Australia have largely proven unreliable and unresponsive to the needs of emergency services. Across WA issues relating to "communication black spots" are common in metropolitan and throughout regional areas. The transition to a de-regulated telecommunications industry and broadband telephone services can largely be characterised as unmanaged and without input from emergency services. This has impacted on triple zero (000) and caller line identification services critical to emergency services.

Telecommunication organisations need to improve resiliency and robustness of services in regional WA. On two occasions in the last three years, telecommunications have failed in the North West of the State leaving the public unable to contact triple zero (000) services and emergency services unable to communicate effectively with local emergency responders in the region. When telecommunications fail there are no alternatives for triple zero (000) - when using satellite phones the community cannot call triple zero (000). This is considered a serious impediment to the ability of emergency services to effectively identify, and then respond, to an event. Robust redundancy arrangements, such as solar power, and connectivity need to be provided within communication networks.

The use and reliance on mobile phone technology has concurrently also occurred without thought for the impact on emergency service requirements. For instance landline use is helpful when identifying origins of emergency calls and also for ensuring emergency messages get through.

There is a significant need for more robust systems and redundancies to be in place when these communication networks fail, to reduce restoration delay and downtime.

For Emergency Warning systems

During an emergency FESA will provide as much information as possible to communities affected through a number of different channels concurrently. This includes the FESA website, information line and call centre; news bulletins on radio and television, articles online and in print; ABC local radio emergency broadcasts; and *StateAlert* – WA Government's community emergency warning system. Alternative methods that do not rely on technology include emergency services personnel on the ground and community meetings.

In addition, the use of broadband and new digital telephony is reliant on mains power supplies, making these phones prone to disruption and/or unreliable for identification

purposes. Often during an emergency the impacted community will lose power or experience phone/web disruptions as a result of damage to infrastructure. This means the effectiveness of communication networks is limited where people do not have alternative communication resources such as a battery operated radio, fully charged laptops and mobile phones, or a standard non-powered telephone.

With regard to voice and SMS messages it is difficult to assess the technical effectiveness (capacity) of telephone networks as emergency services do not have transparency of such capacity.

From experience, FESA's use of *StateAlert* indicates that sufficient capacity exists within the networks to meet requirements for smaller warning campaigns (< 5000 voice recipients). Networks have proven effective in such situations. For larger message distributions (upwards of 10,000 voice recipients) FESA believes that networks lack capacity to deliver voice messages in an appropriate timeframe and may be less effective than media channels such as radio or TV.

The capability of location based broadcasting to mobile devices is lacking within current networks, which is a significant disadvantage to the effectiveness of use in emergency situations.

(ii) to function in a coordinated manner during an emergency

Reliability has been poor in many areas of the State during emergencies with significant disruptions occurring with optic fibre failure in the Kimberley in 2009 and again in 2011. It is apparent remedial works following the 2009 failure were inadequate given the similar problems that occurred in 2011. Emergency capacity in these instances was not available for some time. FESA is concerned that there is limited demonstrated and transparent contingency planning to cater for such events.

It is difficult for FESA to assess the capability of different network providers to function in a coordinated manner as this transparency does not exist in the marketplace (i.e. in areas where coordination has been lacking previously, it is not clear why or which party has not functioned appropriately).

(iii) to assist in recovery after an emergency

The external media and FESA's website, information line and call centre are all used to communicate recovery actions for the WA Natural Disaster Relief and Recovery Arrangements (WANDRRA). These have proved particularly effective. However, the additional face to face one-stop-shops at the local government level and FESA's partnership arrangement with local government in deploying Community Emergency Management Officer's (CEMO) provide strong support and advice to local recovery committees and communities. This face to face contact is vital in providing greater understanding of a community's needs, given the considerable variance of each emergency event.

Across WA FESA has been able to use the internet to great effect in providing the community with information where such technology is available. However, where communication systems have failed and services are disrupted then recovery is

significantly hampered; the recent Kimberley and Gascoyne floods are a good example of this. If communication networks are impacted during an emergency, access to information through the internet and telephone information services becomes redundant, often for a protracted period.

b.   the impact of extended power blackouts on warning systems for state emergency services, including country fire brigades and landholders or home owners

Power blackouts are an inevitable outcome of emergencies with a direct impact on communications. Mains powered home phones, lack of charging facilities for mobiles and laptops, or the loss of transmission are regular outcomes when power is out for extended periods. Several incidents in WA through 2010-11 have been affected in such a manner. This includes the Perth metropolitan and Northam storms, Kimberley and Gascoyne floods, metropolitan and regional fires. WA is often adversely affected with large rural and regional areas having no, or limited, mobile coverage and this further compounds the effectiveness of emergency warning systems.

c.   the impact of emergencies and natural disasters on, and implications for, future communication technologies such as the National Broadband Network

The National Broadband Network (NBN) when delivered should be a positive development. Greater speeds and coverage will result in more community members making internet information a first choice option during an emergency. Resilience with respect to power supply issues needs to be considered; where power supplies are unreliable the technology is virtually useless.

It is understood that in Tasmania the Broadband Network cables are above ground which creates problems in a bushfire, storms etc, highlighting the need for a reliable power source. As has been demonstrated in WA, above ground communications infrastructure is vulnerable in the event of a significant natural event. Whilst not immune from impact or failure, those assets that are purpose built for their operating environment, and having regard to the likely events that may impact upon that environment, will stand a greater chance of survivability.

As with previous comments, resilience and robustness must be designed into the NBN for it to be effective during emergencies.

d.   the scope for better educating people in high-risk regions about the use of communications equipment to prepare for and respond to a potential emergency or natural disaster

FESA contends that there is scope for better education of people in high risk areas about the use of communications equipment to enable them to prepare for and respond to potential emergencies. Increasing the community's level of knowledge and skills ultimately enhances its level of resilience (self reliance).

Community engagement programs in WA are aimed at increasing resilience by raising the awareness of the community to the risks they face and empowering and enabling them to undertake activities that reduce their exposure to this risk. FESA

firmly believes that education and awareness about the use of communications equipment is a gap that, if filled, will improve community safety.

For those community members that are hard to reach or vulnerable, the gap is even greater. WA is demographically and geographically challenged with culturally and linguistically diverse communities; the deaf or hard of hearing; and the aged (many not attuned to the more contemporary communication options) all experiencing some level of difficulty in effectively engaging technology opportunities.

Given these challenges, FESA contends that specific tailored programs that embrace a two-way process of education are required. This approach will enable a greater understanding of a given situation and the establishment of solutions (i.e. treatments) appropriate to the needs of particular individuals or groups within a specific risk environment or situation.

The concept of contingency planning is important and where communications are unreliable other means of receiving or sending information is paramount.

e.   new and emerging technologies including digital spectrum that could improve preparation for, responses to and recovery from, an emergency or natural disaster

FESA supports the work and intent of the National Council for the Coordination of Government Radiocommunications, in seeking to align the radio frequencies used by government, predominantly emergency service agencies, across the nation. The increasing scale and severity of natural disasters and emergencies that have been experienced nationally in recent times has resulted in interoperability being a key component of response, coordination and recovery as agencies across state boundaries, with different responsibilities and from differing industries must work together. Standardisation of frequency (and security protocols) allows the task of facilitating interoperability easier especially during the critical response and coordination stages of emergencies.

Likewise, FESA believes it is vitally important for telecommunication providers to establish the capability for location based broadcasting to mobile devices to meet public expectations around information during emergencies and natural disasters.

FESA also supports the proposal for spectrum to be set aside exclusively for emergency services. A continuing challenge for emergency service organisations in WA is to provide coverage across the State to areas where it is not commercially feasible to supply public telecommunication services. The allocation of spectrum from the Digital Dividend is an option to address this issue, directly, with emergency services managing the services operated within this spectrum.

In addition, FESA is currently investigating social networking technologies and will look at adopting them in the near future. However the information flow should be two-way reflecting the need to both disseminate and gather information. Users should be able to provide relevant information and not just rely on the receipt of public information. There are distinct advantages during an emergency if social media tools can be used to gather intelligence and kill rumours. It is also important that this is

provided from a credible source and that the affected community can verify the information with an authoritative source. Referencing to additional sources of information with reliable messaging enhances the community's sharing of knowledge and understanding of a natural event or emergency.

f.   any other relevant matters.

The coordination and development of technologies that would assist emergency services and the communities they serve would be better delivered through one carrier or a dedicated agency. The community good outweighs the need for competitive advantage in delivering these services.