

**COMMUNICATIONS
ALLIANCE LTD**



**RESPONSE ON FLOODING AND THE PLACEMENT OF
TELECOMMUNICATIONS FACILITIES**
COMMUNICATIONS ALLIANCE SUBMISSION
MAY 2013

TABLE OF CONTENTS

INTRODUCTION	2
1. COMMUNICATIONS ALLIANCE ENDORSEMENT	3
2. THE SITING OF FACILITIES	4
3. DOCUMENTED PROCESSES	6
4. RESPONSIBILITIES	7
5. ADDITIONAL REGULATION NOT REQUIRED	8
6. CONTINUITY OF POWER	9
APPENDIX – BACKGROUND	10

INTRODUCTION

Communications Alliance welcomes the opportunity to provide this submission in response to the Commonwealth response to Recommendation 10.22 of the *Queensland Floods Commission of Inquiry* dealing with the risk of flooding and the placement of telecommunications facilities on behalf of the telecommunications industry.

Summary

After reviewing recommendation 10.22 of the *Queensland Floods Commission of Inquiry*, Communications Alliance offers the following feedback:

- Communications Alliance endorses the Commonwealth position on recommendation 10.22 of the *Queensland Floods Commission of Inquiry*;
- the telecommunications industry has robust, documented processes that are relevant to the design, construction and maintenance of facilities;
- the telecommunications industry takes its responsibilities seriously when siting network infrastructure. On many occasions there is a need to strike a careful balance between the requirement to extend networks to reach populations that want access and coverage, while also seeking to ensure network resilience to environmental factors and the ability to offer continued service during emergency and disaster situations;
- unfortunately when towns and other population centres have been established in areas that are flood-prone, there will always be a heightened risk of damage to all forms of infrastructure in those areas – including to telecommunications infrastructure;
- Communications Alliance does not believe any additional 'regulation' is required in relation to the siting of telecommunications facilities; and
- operational experience from floods suggests the continuity of power and ready access to affected locations is crucial in service restoration.

About Communications Alliance

Communications Alliance is the primary telecommunications industry body in Australia. Its membership is drawn from a wide cross-section of the communications industry, including carriers, carriage and internet service providers, content providers, equipment vendors, IT companies, consultants and business groups.

Its vision is to provide a unified voice for the telecommunications industry and to lead it into the next generation of converging networks, technologies and services. The prime mission of Communications Alliance is to promote the growth of the Australian communications industry and the protection of consumer interests by fostering the highest standards of business ethics and behaviour through industry self-governance. For more details about Communications Alliance, see <http://www.commsalliance.com.au>.

1. COMMUNICATIONS ALLIANCE ENDORSEMENT

Communications Alliance endorses the statement in the Commonwealth position on Recommendation 10.22 in the final report of the Queensland Floods Commission of Inquiry (refer to the Appendix for more information) that:

"The placement of telecommunications facilities is primarily a matter for carriers, which have an inherent interest in mitigating the impact of floods and other disasters so as to maximise continuity of service. At the same time, carriers need to meet customer demand, which may mean that facilities need to be installed in flood prone areas."

2. THE SITING OF FACILITIES

The telecommunications industry takes seriously the siting of facilities. With a long history in managing sites and risks, and recognising the significant impact on its business from outages and replacement costs, the telecommunications industry gives serious consideration to a large number of factors in the siting of all telecommunications facilities, including the risk of flooding.

Standard processes to manage flood risk have existed for decades

Planning for floods has been factored into the siting of telecommunications facilities for many decades. For example, this covers a range of equipment shelters including regenerator (CEV) sites, Fibre Access Node (FAN), Radio Access Node (RAN) and hub sites.

One approach for equipment shelters is for a minimum finished site level of 300mm above the 1 in 100 year flood level. Where required the shelter would be installed on an elevated platform to achieve this height. This is standard practice worldwide and is aligned with standards or recommendations created by the International Telecommunications Union (ITU).

The ITU is a United Nations body whose Telecommunications sector publishes numerous 'recommendations' that are adopted globally by the telecommunications industry. For example, the 'L' series alone consists of approximately 100 ITU-T recommendations¹ and covers the construction, installation and protection of cables and other elements of outside plant.

The cost of telecommunications facilities motivates carriers to choose sites carefully but sometimes site choice is constrained

Telecommunications facilities are extremely expensive to replace and no sensible carrier is going to casually put them at risk e.g. a fairly simple and basic regenerator site will typically cost in excess of \$1M to replace.

It should also be noted the location of a regenerator site is often severely constrained by transmission requirements which often demand it is positioned within a specific window along the cable route. These windows, and surrounding conditions, often leave little room for a carrier to manoeuvre.

There are a range of measures to protect optical fibre along long haul routes

Network trunk or inter-capital optical fibre cable is normally installed by direct burial (plough) in rural areas. The cable will often pass through low lying flood prone land. When these areas are inundated there is usually no impact. The cable is specifically designed to accommodate such conditions.

A much greater risk exists at creeks, river crossings and steeply sloping terrain where installations may be subjected to damage by the scouring and debris accompanying flooding and washout events. To counteract the cable may be placed at greater depth.

If there is a significant risk the cable could be safeguarded by placing it in this conduit and if extreme conditions are anticipated a steel conduit would be considered. The cable would also be re routed around a particular area if this was considered the most appropriate way of minimising risk.

In urban areas the networks are designed to cope with the risk of flooding

In urban areas optical fibre is primarily deployed in the underground pit and conduit network and accordingly is designed to cope with flooding. The HFC network and those

¹ <http://www.itu.int/ITU-T/recommendations/index.aspx?ser=L>

limited parts of the fibre network delivered by overhead cables are also designed to cope with water however severe flood conditions which impact pole routes will impact these cables.

Carriers have expertise and experience in designing and managing their own assets

Communications Alliance believes decisions on how to manage the risks associated with flooding are best left to an individual carrier's engineering expertise and risk management processes rather than local government planners or regulators attempting to address specific situations with a generically imposed specification.

Where a proposed installation is subject to State or Territory planning laws, (i.e. it needs development approval or similar), then the approving authority typically includes flood risk in its assessment of the development application.

More importantly, carriers assess all mobile network base station proposals for flood risk, irrespective of whether it:

- requires a development application;
- is a 'low impact' facility; or
- is otherwise exempt from the need for approval from the local Council or other body.

Some sites cannot avoid a flood risk so are designed to address it

Water damage is not something telecommunications carriers wish to incur. Therefore they seek to ensure, where possible, that the equipment shelter in particular is clear of likely flood levels. However, this is not always possible and sometimes the most appropriate solution is in a flood-prone area.

Given the large scale of telecommunications networks there are a number of sites where this is the situation and therefore the equipment shelter has been constructed on stilts to elevate them above the 1 in 100 year flood level.

However, this does highlight the fact that some base stations, for a whole range of other reasons, (including customer demand, property owners' requirements and community expectations regarding siting), need to be located in flood-prone areas and sometimes the equipment shelter cannot be located clear of the risk. It becomes part of the general risk assessment telecommunications carriers undertake at every site.

Flood risk is given due consideration through methods such as:

- prudent engineering practice;
- the desire to maintain the integrity of carrier networks; and
- the need to minimise ongoing costs (which in turn benefits end customers).

3. DOCUMENTED PROCESSES

The telecommunications industry has robust, documented processes for the design, construction and maintenance of facilities. This industry history of considering many factors in the siting of telecommunications facilities has resulted in numerous industry documents which guide and reflect good practice in the telecommunications industry, including the siting of facilities. In addition to the global recommendations of the ITU mentioned above, examples of documents tailored to national conditions include:

- **Mobile Phone Base Station Deployment** Code (C564:2011²).
- **External Telecommunication Cable Networks** Code (C524:2004³).
- **Fibre Ready Pit and Pipe Specification for Real Estate Development Projects** Guideline (G645:2011⁴).
- Australian Standard **Siting of Radiocommunications Facilities** (AS 3516.2⁵)
- Australian/New Zealand Standard **Risk management - Principles and guidelines** (AS/NZS ISO 31000:2009⁶)
- Multiple internal carrier documents.

² <http://commsalliance.com.au/Documents/all/codes/c564>

³ <http://commsalliance.com.au/Documents/all/codes/c524>

⁴ <http://commsalliance.com.au/Documents/all/guidelines/g645>

⁵ <http://infostore.saiglobal.com/store/details.aspx?ProductID=295362>

⁶ <http://infostore.saiglobal.com/store/Details.aspx?productID=1378670>

4. RESPONSIBILITIES

The telecommunications industry always takes its responsibilities for the design, construction and maintenance of facilities seriously.

All carriers and similar entities that construct telecommunications facilities have processes in place for working with:

- All levels of government, especially local councils – for the planning and consultation processes before commencing construction.
- Emergency service organisations (i.e. police, fire and ambulance) – for supporting emergency and disaster situations as well as daily work to assist in life threatening situations.
- The community – both ahead of the construction of a facility and, if a disaster should affect services, during service restoration.

5. ADDITIONAL REGULATION NOT REQUIRED

As there are existing, proven processes and documentation within the telecommunications industry to manage risks associated with the siting of telecommunications facilities (including the risk of flooding), Communications Alliance does not believe any additional regulation is required.

Legislation would not add to a process of minimising flood risk, and indeed other natural disaster risks, which carriers already undertake in looking after the interests of their customers and as good business practice.

6. CONTINUITY OF POWER

The operational experience of carriers in addressing floods and other disasters suggests that the siting of facilities is an important consideration in ensuring the continuity of telecommunications services during disasters, however the continuity of power and ready access to locations are just as, if not more, important.

For example, the joint Communications Alliance-AMTA submission⁷ of May 2011 to the Senate Select Committee on Environment and Communications inquiry into *the capacity of communication networks and emergency warning systems to deal with emergencies and natural disasters*⁸, noted that:

Experience gained during the floods demonstrates that a key capability is deploying personnel into areas experiencing power failures to ensure, among other things, that mobile network base stations can continue to operate. During the Queensland floods it was at times difficult for industry personnel to get into some affected areas, due to restrictions on access and limited public resources to assist. For example, getting a seat on a military helicopter to deliver a technician carrying fuel for backup generators was often challenging. (section 3.7 of the submission)

The power supply is vital in ensuring this end-to-end connectivity. As mentioned in the example in section 4, even if the PSTN network is available, a homeowner may not be able to make an emergency call to Triple Zero or 106 in the event of a blackout if the homeowner has a device that relies on a supplementary power source (i.e. most cordless phones and teletypewriters (TTY)).

Similarly, while people may be able to access the internet via mobile devices and stay informed through social media such as Facebook, they will soon need to recharge their mobile device's battery. If there is no power source readily available this could leave mobile users cut off from vital communications. This can happen even when the mobile networks are up and running.

End-to-end connectivity therefore relies on a readily available power source and this is why extended power blackouts can have a significant effect on telecommunication networks and services. (sections 5.3 to 5.5 of the submission)

In another example, one carrier reported that Cyclone Yasi resulted in over 100 base stations for its mobile network being 'off the air' for a limited period of time. This was primarily due to a loss of power. Not one of the base stations had a broken antenna.

Instead of looking to increase the regulation of network infrastructure design choices to take flood matters into account, the continuity of telecommunications network services would be better served by ensuring the security of power supply from electricity distribution companies and utilities during abnormal events.

⁷ <http://commsalliance.com.au/Documents/Submissions>

⁸

http://www.aph.gov.au/Parliamentary_Business/Committees/Senate_Committees?url=ec_cte/completed_inquiries/2010-13/emergency_communications/index.htm

APPENDIX – Background

The Queensland Floods Commission of Inquiry presented its final report⁹ to the Premier of Queensland in March 2012. Recommendation 10.22 in the final report was that “Carriers, councils and the Australian Communications and Media Authority should take into account the risk of flooding when considering the placement of telecommunications facilities.”

The Commonwealth response¹⁰ to the final report was tabled in November 2012. With regard to Recommendation 10.22, the Commonwealth position was:

10.22 Carriers, councils and the Australian Communications and Media Authority should take into account the risk of flooding when considering the placement of telecommunications facilities.

Commonwealth position: The Commonwealth supports this recommendation in part.

The Commonwealth agrees that the risk of flooding should be taken into account when considering the placement of telecommunications facilities. However, this recommendation misinterprets the role of the Australian Communications and Media Authority (ACMA). The placement of telecommunications facilities is primarily a matter for carriers, which have an inherent interest in mitigating the impact of floods and other disasters so as to maximise continuity of service. At the same time, carriers need to meet customer demand, which may mean that facilities need to be installed in flood prone areas. Carriers generally operate in the context of planning policies established by state, territory and local governments. In many instances, however, carriers install facilities under powers and immunities granted by the Commonwealth or under approval exempt planning arrangements established by state and territory governments.

ACMA is a statutory authority within the federal government portfolio of Broadband, Communications and the Digital Economy. The ACMA is responsible for the regulation of telecommunications in accordance with the Telecommunications Act 1997. That Act does not provide for the ACMA to have a role in determining the placement of telecommunications facilities. To help give effect to this recommendation, the ACMA will refer it to Communications Alliance. Communications Alliance is the telecommunications industry peak body and is responsible for the development of codes relating to practice for the telecommunications industry.

In line with the Commonwealth position, ACMA referred Recommendation 10.22 of the Queensland Floods Commission of Inquiry to Communications Alliance for its consideration.

⁹ Available from <http://www.floodcommission.qld.gov.au/>

¹⁰

<http://www.ag.gov.au/Consultations/Pages/CommonwealthresponsetotheFinalReportoftheQueenslandFloodsCommissionofInquiry.aspx>



**Published by:
COMMUNICATIONS
ALLIANCE LTD**

**Level 9
32 Walker Street
North Sydney
NSW 2060 Australia**

**Correspondence
PO Box 444
Milsons Point
NSW 1565**

**T 61 2 9959 9111
F 61 2 9954 6136
E info@commsalliance.com.au
www.commsalliance.com.au
ABN 56 078 026 507**

Care should be taken to ensure the material used is from the current version of the Standard or Industry Code and that it is updated whenever the Standard or Code is amended or revised. The number and date of the Standard or Code should therefore be clearly identified. If in doubt please contact Communications Alliance