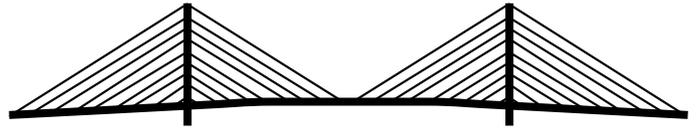


**David C. Jones**  
Consulting Civil and Structural Engineers



"Bridging the Gap between Cost Effectiveness and Excellence"  
**Servicing Inverell and District Since 1974**  
Flood Forecasting for Inverell SES as a Free Community Service Since 1976

13th July 2015

Secretariat,  
Regional Telecommunications Independent Review Committee,  
GPO Box 2154, CANBERRA ACT 2601R

Email: [secretariat@rtirc.gov.au](mailto:secretariat@rtirc.gov.au)

Dear Sir/Madam,

## **Powered Telecommunications Towers to Improve Mobile Phone Reception Within and Adjacent to Inverell Shire**

This is an upgrade to previous submissions prepared by me for Inverell Shire Council. Estimated 3G/4G mobile phone coverage for each site is shown in the Appendix A map with existing coverage shown as brown and proposed coverage shown in green and pink. Annual agricultural production is shown herein.

While I have no authority to represent adjoining shires, I have included sites in adjoining shires on the Appendix A map.

## **Pitfalls of the Current Tendering Process for Mobile Phone Sites**

In the recent announcements for mobile phone blackspot funding, we had the situation occur along the Gwydir Highway between Inverell and Glen Innes, that Vodafone won the contract for 2 sites. To my knowledge Vodafone presently has only 1 transmitter in Inverell Shire and that is in Inverell. Telstra has 8 transmitters in Inverell Shire and Optus has 5 transmitters.

Most mobile phone customers in regional Australia have a Telstra mobile service purely and simply because Telstra has had the most extensive coverage. While other networks are improving their coverage, most serious business mobile phone customers still choose the provider who gives them the most extensive coverage in the areas which they frequent in their daily lives.

This makes the Federal Government's policy of requiring competitive tenders from Telcos for individual mobile phone tower sites a farce.

The net effect of Vodafone being awarded 2 sites between Inverell and Glen Innes is that the vast majority of business mobile phone users will have no benefit from those 2 new Vodafone sites, and will have negligible mobile phone coverage between Inverell and Glen Innes.

I appreciate that the Government doesn't want to be seen to favouring one network over another.

Until recent years, most individual customer's mobile phones only had the frequency of the Telco they were contracted to, in their mobile phone. More recently, especially with smart phones, phone manufacturers have every possible frequency used by all the Telcos within their phones.

## **A Smart Solution to the Problem**

If the government wishes to continue with the process of competitive tendering for the provision of all new mobile phone tower sites, the government should force all Telcos to permit roaming between their networks. This was done in parts of Tasmania some years ago between Telstra and Vodafone. This works by Retail Service Provider (hereafter RSP) of the customer who needs to roam onto a third party tower paying a wholesale charge to the RSP who owns the transmitter which is being roamed onto, a process which is transparent to, and at no additional cost to the roaming customer, but their phone works where it would otherwise be in a blackspot.

Telstra will probably object strongly to this as they have so many more towers in regional Australia than their competitors. However, there are advantages for all the RSPs as well. Instead of the RSPs

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each having a tower and individual transmitter at each site, it will be much more economical to provide mobile phone services in regional Australia, and the federal government will also save a great deal of money in providing powered towers, because less will be required, and the voters will be very pleased because their mobile phone will work very well, irrespective of who their RSP is, which might force more competitive mobile call and data rates.

I propose the following new mobile phone transmitters within and surrounding Inverell Shire.

## Coverage for Gilgai Township and Lake Copeton Foreshores

### Fig Tree Hill Site

Proposed tower site is 151°04'40"E, 29°55'45"S. Power is available at 151°06'35"E, 29°56'15"S.

This site will serve the Inverell to Bundarra Road from a point 7km south of Inverell to a point 27km south of Inverell uninterrupted, the Gilgai to Tingha Road and will serve the townships of Tingha, Gilgai and Stannifer, and the whole of the foreshores of Lake Copeton, an estimated total population of 2,200 plus the 100,000 annual visitors at Lake Copeton. Lake Copeton is in a blind spot from all installed mobile phone transmitters, being located in a valley with a rim of high ground all around it. The estimated coverage is shown on the Appendix A map of the Inverell area. Existing 3G/4G mobile phone transmitters are shown as yellow.

Fig Tree Hill (934m)(GR 875144 on the Inverell 9138 1:100,000 map and on the Tingha 9138-III-S 1:25,000 map) is located 17km south of Inverell and 3km west of the Inverell to Bundarra Road and will serve the townships of Tingha, Gilgai and Stannifer, and the whole of the foreshores of Lake Copeton, the Inverell to Bundarra Road from a point 7km south of Inverell to a point 27km south of Inverell uninterrupted, and the Gilgai to Tingha Road. While there is an element of blindness for Stannifer, I believe that Fig Tree Hill, White Rock Mountain and Inverell will provide reasonable car kit coverage.

As well as covering the township and environs of Gilgai, Fig Tree Hill will cover the foreshores of Lake Copeton uninterrupted. Annually 100,000 people visit Lake Copeton.

**There were 10,000 visitors at Lake Copeton over Christmas-New Year 2014-2015.**

**Annual agricultural production in the proposed coverage area is valued at \$50 million.**

I estimate the budget costs as follows:

Element	Length	Cost per Unit	\$
Electricity	3.3km	Estimate	\$ 200,000
Tower Height	30m	Estimate	\$ 80,000
Road Access	1km	Estimate	\$ 40,000
		<b>TOTAL</b>	<b>\$ 320,000</b>

In addition, there is probably justification of a **dedicated mobile phone transmitter in the village of Gilgai which has a population of 600 both within the village and in the rural residential lots east and west of the village** in the same catchment which is presently serviced by an NBN Wireless transmitter located on a 40 metre pole on Schwenkes Lane.

## Coverage for Gwydir Highway between Inverell and Glen Innes

### White Rock Mountain Site

Proposed tower site is 151°32'40"E, 29°48'45"S. Power is presently available at 151°34'55"E, 29°48'30"S.

This site will serve the Gwydir Highway from a point 23km east of Inverell to a point 53km east of Inverell (14km west of Glen Innes) uninterrupted, and will serve the township of Wellingrove (hand-held coverage)(Severn Shire), the villages/localities of Sapphire, Kings Plains, Kingsland, Elsmore, the Danthonia Bruderhof community, and the Swanbrook and Kings Creek and Wellingrove Creek in Severn Shire (including Ilparran and Matheson), and Tingha to Guyra Road, and Maybole area, an estimated population of 1,600.

White Rock Mountain (1,168m)(GR 594011 on the Inverell 9138 1:100,000 map and on the

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Elsmore 9138-II-N 1:25,000 map) is located 41km east of Inverell and 7km south of the Gwydir Highway and will serve the Gwydir Highway from a point 23km east of Inverell (where coverage from Inverell ceases) to a point 53km east of Inverell (14km west of Glen Innes where the Glen Innes, Hogues Mountain and Mt Magistrate transmitters provide uninterrupted coverage into Glen Innes, and will serve the townships of Nullamanna, and Wellingrove (Glen Innes Severn Shire) and the localities of Sapphire, Kings Plains, Elsmore and the Danthonia Bruderhof community, and the Swanbrook and Kings Creek valleys in Inverell Shire, and Wellingrove Creek (including Ilparan, Matheson and Maybole) in Glen Innes Severn Shire, and along part of the Tingha to Guyra Road.

A large windfarm consisting of 117 towers is planned for this area. There may be future economies in providing electricity, road access and fibre.

**Current annual agricultural production in the proposed coverage area is valued at \$55 million.**

I estimate the budget costs as follows prior to the construction of the wind farm:

<b>Element</b>	<b>Length</b>	<b>Cost per Unit</b>	<b>\$</b>
Electricity	3.6km	Estimate	\$ 220,000
Tower Height	40m	\$ 150,000	\$ 150,000
Road Access	4km	\$ 50,000	\$ 50,000
		<b>TOTAL</b>	<b>\$ 420,000</b>

## **Coverage North and North East of Inverell for Nullamanna and Bukkulla Areas**

### **Gagan Mountain Site**

Proposed tower site is 151°12'35"E, 29°35'20"S. Power is presently available at 151°11'50"E, 29°35'20"S.

This site will serve the Inverell to Emmavile Road from a point 10km north of Inverell to a point 50km north east of Inverell, including the village of Nullamanna, presently a black spot. It will also cover the Inverell to Ashford Road from a point 20km north of Inverell to 45km north of Inverell including the village of Bukkulla, the Bukkulla to Pindaroi Road, being an area with an estimated population of 350. This area has little or no existing coverage.

**Current annual agricultural production in the proposed coverage area is \$48 million.**

I estimate the budget costs as follows:

<b>Element</b>	<b>Length</b>	<b>Cost per Unit</b>	<b>Total</b>
Electricity	1.3km	Estimate	\$ 100,000
Tower Height	20m pole	\$ 80,000	\$ 80,000
Road Access	1.5km	\$ 40,000	\$ 40,000
		<b>TOTAL</b>	<b>\$ 220,000</b>

### **Graman**

An existing radio transmission Telstra tower exists in the Graman village. Power passes right past the site.

This site will serve the immediate Graman district but is blind to the north west. This area has little or no existing Telstra mobile coverage, although Optus has a site nearby with a 60 metre tower on which the NBN Co is intending to install a fixed wireless transmitter.

**Current annual agricultural production in the proposed coverage area is valued at \$50 million.**

I estimate the budget costs as follows:

<b>Element</b>	<b>Length</b>	<b>Cost per Unit</b>	<b>Total</b>
Electricity		Estimate	\$ Nil
Tower Height		Existing	\$ Nil
Road Access		Existing	\$ Nil
		<b>TOTAL</b>	<b>\$ NIL</b>

# David C. Jones: 13th July 2015: Submission to RTIRC: Powered Telecommunications Towers for Inverell Shire cont

## The Pines Site

Proposed tower site is 151°15'30"E, 29°20'55"S. Power passes right past the site.

This site will serve the Pindari Dam with an estimated 30,000 visitors annually, the area north of the dam serviced by the Ashford to Emmaville Road, the Severn River valley west of Pindari Dam and surrounding areas, being an area with an estimated population of 200 plus visitors to Pindari Dam recreation area. In addition this site will cover Emu Gully, a bushcraft camp for city teenagers with accommodation for 120. This area has little or no existing coverage.

Current annual agricultural production in the proposed coverage area is valued at \$30 million.

I estimate the budget costs as follows:

Element	Length	Cost per Unit	Total
Electricity	Transformer	Estimate	\$ 50,000
Tower Height	20m pole	\$ 80,000	\$ 80,000
Road Access	1km	\$ 30,000	\$ 30,000
		<b>TOTAL</b>	<b>\$ 160,000</b>

## Safety Considerations

All rural properties have a safety problem. Many landowners work alone and in the case of an accident, a mobile phone which has reception can be a life saving device.

## Conclusion

**I recommend that Fig Tree Hill (with an optional additional transmitter on the NBN Wireless tower for Gilgai village), White Rock Mountain, Gagan Mountain, Graman and Pindari Dam powered telecommunications towers be approved for funding, with priority order being the order listed.**

The General Manager of Inverell Shire Council is aware of this submission.

Estimated 3G/4G mobile phone coverage for each site is shown in the Appendix A map with existing coverage shown as green and proposed coverage shown in red. Annual agricultural production is shown thereon.

While I have no authority to represent adjoining shires, I have included sites in adjoining shires on the Appendix A map.

The estimates in this submission excludes the costs to Telcos of providing transmitters, antennas etc. The whole purpose is to provide powered telecommunications towers for the use of any telco or other potential users such as federal and state agencies who might require the use of the facility under IPART arrangements.

If you have any queries, please do not hesitate to contact the undersigned.

Yours faithfully,



David C. Jones

Chartered Professional Engineer

for and on behalf of David C. Jones (Consulting Engineers) Pty Ltd ACN 001 816 039

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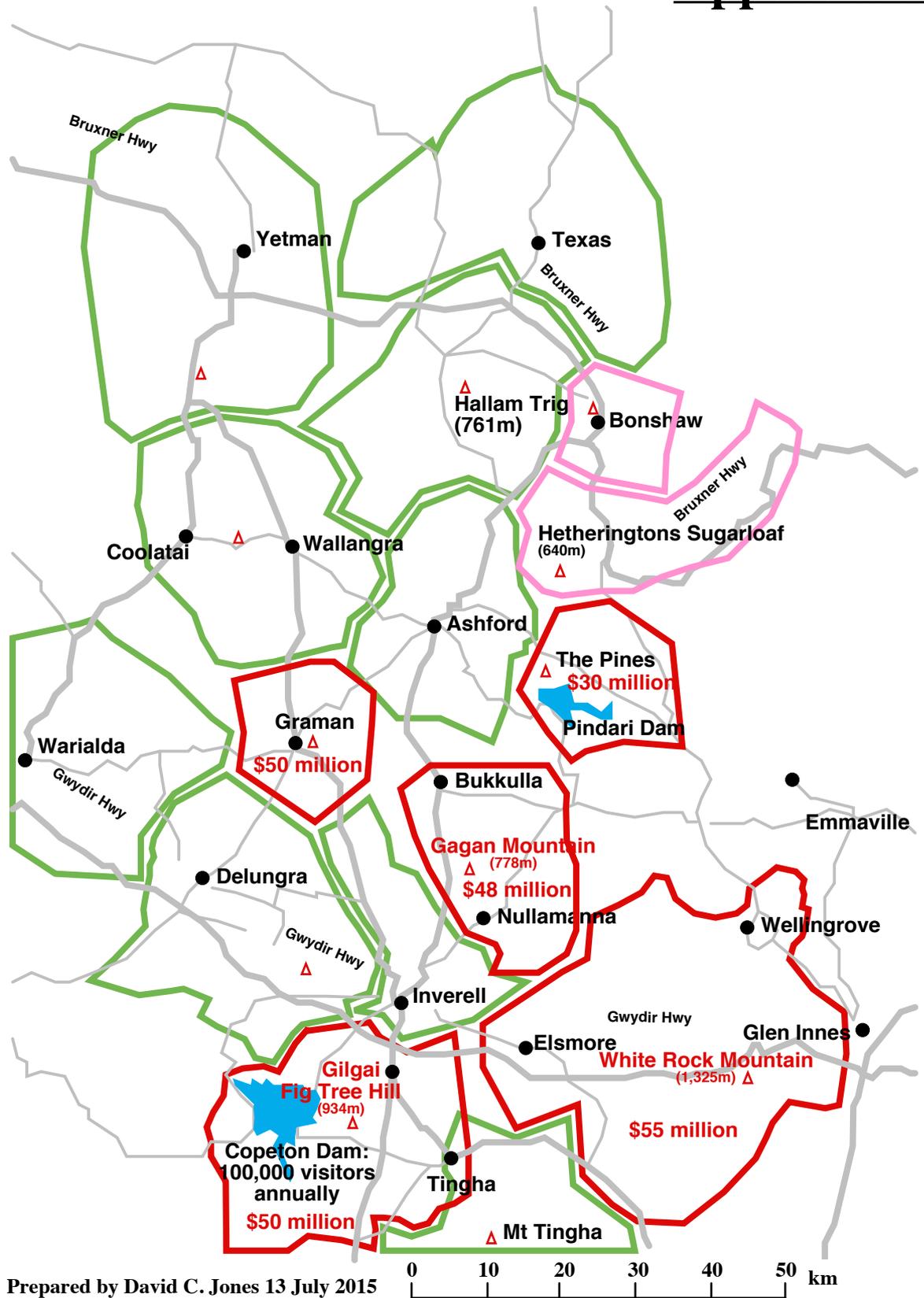
Email david@dcjones.com

and Deputy Local Controller - Flood Intelligence - Inverell State Emergency Service

and Inverell Shire Councillor

with the Portfolio Responsibility of Telecommunication and the Digital Economy

**Appendix A**



Prepared by David C. Jones 13 July 2015

**ESTIMATED MOBILE PHONE COVERAGE FOR VARIOUS SITES  
INCLUDING VALUE OF ANNUAL AGRICULTURAL PRODUCTION**

**Green Coverage is existing**

**Red Coverage is proposed**

**Coverage announced in first round of Blackspot funding**