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31 August 2021

The Panel
2021 Regional Telecommunications Review Secretariat
Department of Infrastructure, Transport, Regional Development and Communications
GPO Box 594
CANBERRA ACT 2601
Via email: secretariat@rtirc.gov.au

Dear Panel

Regional Telecommunications Review 2021 – Issues Paper July 2021

hank you for the opportunity to provide comment on the proposed round 5A Mobile Black Spot Program.

The Far North Queensland Regional Organisation of Councils (FNQROC) was established in the 1980's and represents 12 member councils in far north Queensland. The FNQROC region is the largest and fastest growing region in Northern Australia. It extends over 320,000 square kilometres with a population of approximately 278,000 and a gross regional product (GRP) of $16.33 billion (pre COVID-19).

The twelve councils have collectively focussed on five key areas: Transport networks, Respecting our environment, Water and Electricity equity, Social infrastructure equity and equitable communication.

For Far North QLD Regional Organisation of Councils (FNQROC) the challenge of growing the economy through traditional infrastructure is now being exacerbated by the need to also facilitate the delivery of digital infrastructure to meet the expectations of industry, residents, community and visitors or risk being left on the wrong side of the digital divide.

FNQROC engaged Digital Economy Group Consulting (DEGC) to undertake independent mobile coverage testing and prepare a report to support an advocacy program aimed to target additional investment in the region and reduce the mobile Black Spots that impact the safety, welfare and economic foundations of the region.

A link to this audit report and spatial data set can be found here:

- Mobile Testing Coverage report and
- spatial data set.

We were pleased to see the key design points within the discussion paper.

Adequacy

1. What telecommunications services are required in regional Australia to meet current and future needs? Are there any things regional communities and businesses need to do, but can't, on their existing services?
2. What changes in demand, barriers or challenges need to be addressed when it comes to telecommunications services in regional, rural and remote Australia?
3. How have the Government's policies and programs affected telecommunications service outcomes in regional, rural and remote Australia? How can these be improved?

Mobile:

Testing undertaken to inform our audit earlier covered over 5,100klms along the Regional Road Investment Strategy identified 14 Tourism and Heavy Vehicle routes. This included signal strength and network performance of both the 3G and 4G networks provided by Telstra, Optus and Vodafone (now TPG).

The results highlight the known user experience - FNQROC has extensive mobile Black Spots and where there is coverage it is not compatible to capital city locations due to distance to the core and lower network overlap. The contrasts are extreme. Both 3G and 4G areas where there is no signal strength for any of the three carriers sits at 3,550klms or almost 70% of the total distance covered. In capital cities this would be less than 1%.

The network performance tests simply confirm this user experience. Across the entire region Telstra had the lowest number of Black Spots with 67% and 76% for 3G and 4G respectively. Optus and Vodafone (TPG) were an equal second, a considerable gap behind Telstra. Again, the contrast with capital cities is stark.

So how can the significant digital divide of this region be addressed? In a simplistic sense the obvious question is to ask how many new mobile sites would it take to provide capital city comparative coverage? It would take hundreds if not thousands of new sites as testing was only completed along the key routes. The answer however is not that simple. Networks require local access (from the tower to the user) and connection to their core and the internet by backhaul. To improve from this current relatively low base there is an urgent need to unlock significant funding in new and improved sites together with network improvements by all three major carriers.

For regions like FNQROC, the challenge is to find ways to partner with the three privately owned carriers to reduce the extent of Black Spot coverage. A second challenge is having existing sites upgraded and coverage expanded with current generation technology.

For local government, managing the region in times of disaster or emergency, to providing a positive experience for visitors and delivering greater productivity for businesses is now a constant requirement for successful regions.

3G phones are no longer being sold and Telstra advises it will turn off its 3G in June 2024, 4G, 4GX and 5G are the current services, technology solutions are also rapidly changing so they should be able to upgrade to another solution during this time. It should be a requirement that during the operational period if services are turned off (like 3G) they are required to upgrade the solution to maintain operational usage.

You need to consider not only if 4G is available but the upload and download speeds as well.

Broadband:
The universal Services Guarantee (USG) is not widely known in regional and remote areas. Nor is the Regional Tech Hub which is available to assist those businesses in regional and remote Queensland to find the best solution. Many businesses have spent $10's of thousands of dollars purchasing a fix that just does not work (as was heard during the telecommunication roundtable in August).

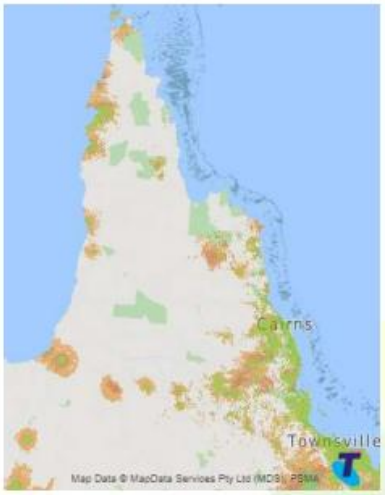
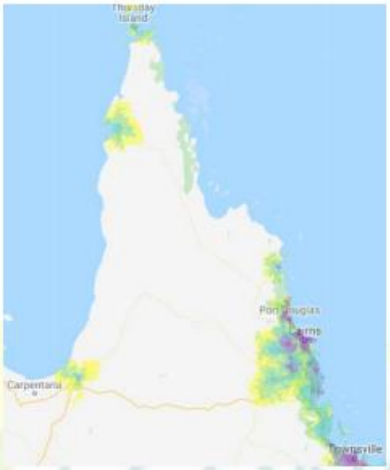
Service Reliability

1. How do service reliability issues impact on regional communities and businesses? How do outages, including in natural disasters, impact on communities and businesses?
2. How might such impacts be addressed to ensure greater reliability? How can the network resilience be addressed in regional areas?

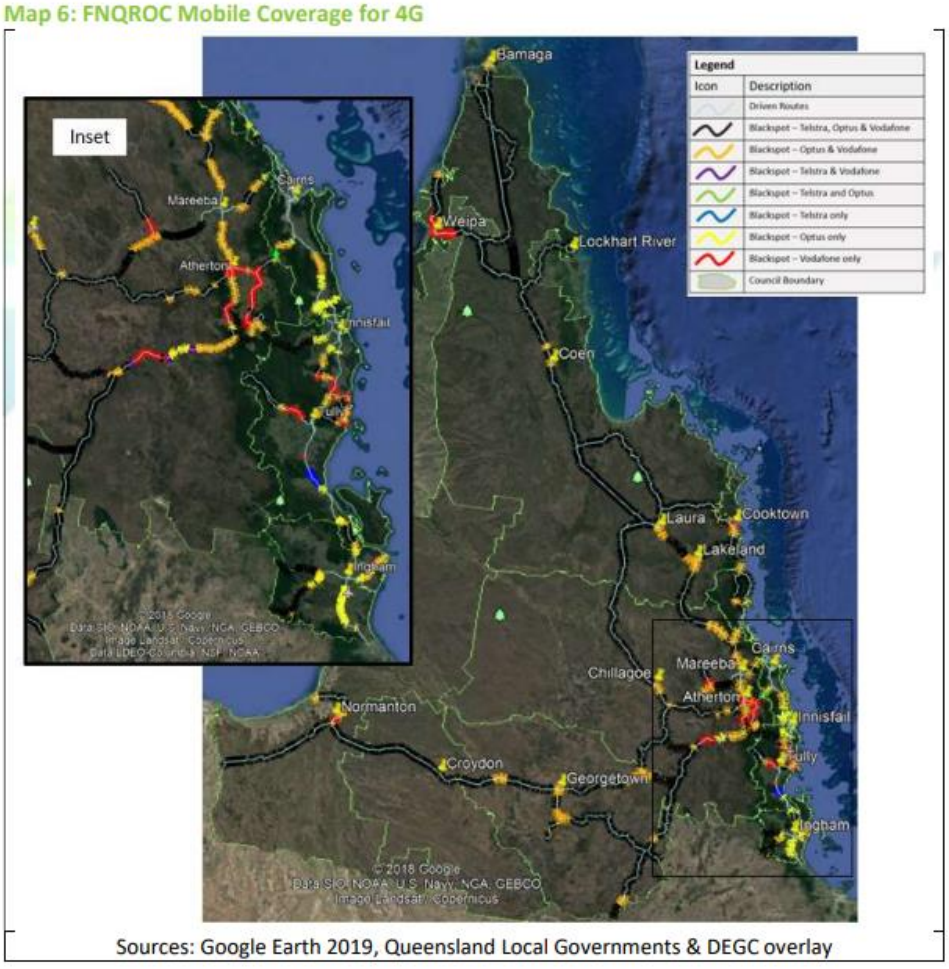
This is another hurdle to enticing population growths. How are you going to get people to move to regional, rural and remote areas with mediocre communication? Even Cairns still has some areas on 3G only (Trinity Beach).

As mentioned in the issues paper, published network coverage maps published by the service providers are predictive and uses a number of technical assumptions. Map 2 below shows the coverage maps published by Telstra, Optus and Vodafone (TPG). This is vastly different to the on ground audit undertaken in the region shown in Map 6.

Map 2: FNQROC Carrier Coverage Overview

Telstra	Optus	Vodafone
		
https://www.telstra.com.au/coverage-networks/our-coverage	https://www.optus.com.au/shop/mobile/network/coverage	https://www.vodafone.com.au/network/coverage-checker

Map 6: FNQROC Mobile Coverage for 4G



Sources: Google Earth 2019, Queensland Local Governments & DEGC overlay

Whilst map 6 shows the actual coverage, the network performance tests show variability as detailed below:

Legend:

	Hot spot	Exceptional results
	Very High	Typically, within range of 5G in an inner urban metro location
	High	Matched expectations set by coverage maps
	Acceptable	Largely consistent with coverage map expectations.
	Low	Connecting but occasional network drop out or longer waiting times for internet and content to load
	Very Low	Calls drop out or fade. Cloud business connections are unreliable and require repeated connections to complete tasks
	Blackspot	no internet connectivity or where latency test may work but the download or upload is unable to be completed

Attachment 2: Detailed Network Performance Test Scores by location including both 3G and 4G

Location	Telstra 3G			Telstra 4G			Optus 3G			Optus 4G			Vodafone 3G			Vodafone 4G		
	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload
Cairns Central	10	8	5	11	9	12	12	8	8	12	9	12	12	6	7	12	9	13
Edmonton	11	8	5	12	5	10	12	8	8	12	9	8	11	8	5	12	1	8
Goldsborough	10	8	7	11	8	10	0	0	0	0	0	0	0	0	0	0	0	0
Lake Eacham	11	6	5	12	8	5	0	0	0	0	0	0	12	3	4	12	9	5
Gordonvale	10	8	5	11	8	11	12	8	7	13	10	9	0	0	0	12	5	10
Fishery Falls	7	2	6	11	7	3	10	5	2	0	0	0	11	6	5	0	0	0
Babinda	10	3	5	10	3	7	12	8	7	12	5	5	12	8	7	13	10	11
Bramston Beach	10	10	11	10	10	11	0	0	0	0	0	0	12	8	7	13	10	12
Garradunga	10	5	4	11	5	7	0	0	0	11	4	5	12	7	3	12	10	7
Flying Fish Point	10	9	7	12	8	3	12	9	8	13	9	8	12	6	5	11	5	5
Bartle Frere	10	6	5	11	8	5	12	8	8	13	9	8	0	0	0	12	7	7
Innisfail	10	8	4	11	8	10	10	9	8	12	7	10	12	9	7	13	10	11
Mourilyan	10	8	6	11	9	9	12	8	6	12	9	7	12	8	5	13	9	4
Silkwood	10	5	3	8	2	2	11	8	3	0	0	0	12	8	7	13	9	7
Mission Beach	10	8	6	11	8	4	12	6	7	12	6	8	12	6	6	12	6	8
South Mission	12	7	3	10	7	5	12	8	7	12	10	12	12	8	7	13	10	12
Tully	10	8	5	11	8	4	12	9	8	12	9	9	13	9	7	13	10	12
Dingo Pocket	11	8	7	11	8	5	12	9	7	12	10	12	12	9	7	13	10	12
Upper Cardstone	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cardstone	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tully West	11	8	5	11	9	9	9	4	2	12	9	9	12	9	5	13	9	9
Kennedy	11	3	2	0	0	0	12	8	8	12	10	8	12	8	7	12	9	11
Cardwell1	10	2	1	11	8	9	10	9	5	12	9	9	12	8	7	12	9	10

Location	Telstra 3G			Telstra 4G			Optus 3G			Optus 4G			Vodafone 3G			Vodafone 4G		
	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload
Cardwell2	11	6	3	11	4	3	12	8	7	12	8	5	0	0	0	12	8	5
Rungo	11	8	4	10	8	4	11	8	1	0	0	0	0	0	0	12	8	6
Bemerside	12	4	3	12	4	3	12	8	8	13	9	8	12	8	5	13	10	12
Lucinda	12	8	7	12	4	5	0	0	0	0	0	0	0	0	0	0	0	0
Forrest Beach	11	4	2	11	4	2	10	4	2	10	4	2	12	8	6	13	10	8
Helens Hill Sth	11	3	7	11	9	9	12	8	8	13	8	6	9	3	1	12	8	1
Bambaro	12	9	12	12	9	12	12	8	7	13	10	10	12	8	7	13	10	11
Sth Boundary	11	8	5	12	8	5	12	8	6	13	8	5	12	5	4	12	6	7
Ingham	10	8	6	11	8	7	12	8	7	12	9	10	13	10	7	13	10	12
Peacock Siding	12	9	5	10	3	2	0	0	0	0	0	0	12	8	2	0	0	0
Ingham West (Trebonne)	10	5	1	12	9	8	0	0	0	10	8	6	0	0	0	0	0	0
Wallaman	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Upper Stone	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mountain Range	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mount Fox	11	6	3	10	7	5	0	0	0	0	0	0	0	0	0	0	0	0
Sth West Bdy	10	7	5	12	8	3	0	0	0	0	0	0	0	0	0	0	0	0
Birkalla Nth	11	3	7	11	9	12	0	0	0	0	0	0	0	0	0	13	9	11
Japoonvale	11	5	3	11	9	10	0	0	0	0	0	0	0	0	0	13	10	12
Mena Creek	12	8	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coorumba	11	8	4	12	10	8	0	0	0	0	0	0	0	0	0	0	0	0
East Palmerston	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Palmerston	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mungalli	9	4	5	11	8	7	0	0	0	0	0	0	10	5	2	13	9	7
Mid Milla Ravenshoe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Location	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload
	Telstra 3G			Telstra 4G			Optus 3G			Optus 4G			Vodafone 3G			Vodafone 4G		
Ravenshoe east	12	8	3	12	8	4	0	0	0	0	0	0	11	8	7	0	0	0
Milla Milla +10 to Atherton	11	5	5	11	8	11	0	0	0	0	0	0	12	8	7	12	10	11
Atherton	11	8	5	12	10	12	11	6	7	10	6	5	12	9	7	12	8	10
Herberton	8	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Watsonville	10	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Irvinebank East	11	8	7	11	9	12	0	0	0	0	0	0	0	0	0	0	0	0
Irvinebank West +10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Irvinebank West +17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Petford	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Almaden	0	0	0	6	10	12	0	0	0	0	0	0	0	0	0	0	0	0
Chillagoe Sth 15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chillagoe	11	8	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chllagoe +15 (Caves)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chilagoe 25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chillagoe +35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chillagoe +45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chillagoe +55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chillagoe +65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chillagoe +75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dixie Rd Turn off	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 to Dimbulah (West)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dimbulah	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 to Mt Mulligan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 to Mt Mulligan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Location	Telstra 3G			Telstra 4G			Optus 3G			Optus 4G			Vodafone 3G			Vodafone 4G		
	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload
Mt Mulligan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 to Mareeba	12	5	2	12	6	5	0	0	0	0	0	0	11	5	7	0	0	0
Mareeba	10	4	3	12	4	5	11	5	8	11	5	8	12	9	7	0	0	0
Mareeba + 15 Nth	11	7	3	11	8	7	0	0	0	0	0	0	10	4	4	12	8	6
Mount Molloy	11	7	6	10	9	9	0	0	0	0	0	0	12	6	7	0	0	0
Mount Molloy + 15 Nth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mount Carbine	11	8	5	11	8	5	0	0	0	0	0	0	0	0	0	0	0	0
Mount Carbine + 15 Nth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mount Carbine + 30 Nth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mount Carbine + 45 Nth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mount Carbine + 60 Nth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mount Carbine + 75 Nth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mount Carbine + 90 Nth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mount Carbine + 105 Nth	10	5	4	11	5	5	0	0	0	0	0	0	0	0	0	0	0	0
Lakeland	11	5	4	11	6	5	0	0	0	0	0	0	0	0	0	0	0	0
Lakeland +15 to Ctwn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lakeland +30 to Ctwn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lakeland +45 to Ctwn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bloomfield 25 Nth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bloomfield 15 Nth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bloomfield 10 Nth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bloomfield Airstrip	11	5	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bloomfield 7 Sth	0	0	0	11	9	7	0	0	0	0	0	0	0	0	0	0	0	0
Wujal Wujal	10	7	4	11	6	3	0	0	0	0	0	0	0	0	0	0	0	0

Location	Telstra 3G			Telstra 4G			Optus 3G			Optus 4G			Vodafone 3G			Vodafone 4G		
	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload
Bloomfield Track 10 Sth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bloomfield Track 20 Sth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bloomfield Track 25 Sth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cape Tribulation Sth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cow Bay Nth	11	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Daintree River Ferry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wonga Beach	10	8	3	10	8	10	0	0	0	0	0	0	11	8	5	12	10	9
Mossman	10	6	1	10	9	10	12	8	8	12	8	8	12	9	7	13	10	13
Julatten East	11	8	6	0	0	0	11	8	5	0	0	0	12	8	5	0	0	0
Port Douglas	11	9	6	11	8	10	12	6	7	12	9	11	12	9	7	12	10	13
Wangetti Nth	10	3	1	0	0	0	11	4	5	0	0	0	0	0	0	0	0	0
Clifton Beach	12	8	2	0	0	0	11	4	6	12	8	5	12	9	7	13	10	13
Smithfield	11	7	3	0	0	0	12	6	7	12	9	10	12	8	7	13	10	13
Manunda	10	6	7	0	0	0	12	6	7	12	8	6	11	5	5	12	1	3
10 to Kuranda mid-range	10	3	3	0	0	0	11	8	8	0	0	0	11	7	5	12	6	7
Speewah	11	5	5	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Mareeba 15 East	10	3	2	0	0	0	0	0	0	0	0	0	11	3	6	0	0	0
Mareeba 15 Sth	11	8	2	0	0	0	12	8	7	12	9	10	0	0	0	0	0	0
Atherton 12 Sth to Rhoe	10	5	4	10	6	5	11	6	6	12	6	9	0	0	0	0	0	0
Atherton 24 Sth to Rhoe	11	4	2	0	0	0	11	6	7	12	5	8	0	0	0	0	0	0
Atherton 36 Sth to Rhoe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ravenshoe	11	8	5	12	8	5	12	8	7	13	10	12	0	0	0	0	0	0
Ravenshoe 15 West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mt Garnet	11	7	4	11	6	4	12	9	7	13	9	8	0	0	0	0	0	0

Location	Telstra 3G			Telstra 4G			Optus 3G			Optus 4G			Vodafone 3G			Vodafone 4G		
	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload
Mt Garnet 12 SW	1	2	6	0	0	0	1	7		0	0	0	0	0	0	0	0	0
Munderra	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Munderra +15 West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
130 to Conjuboy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
115 to Conjuboy	11	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100 to Conjuboy	7	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
85 to Conjuboy	10	7	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
70 to Conjuboy	10	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
55 to Conjuboy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40 to Conjuboy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 to Conjuboy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 to Conjuboy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Conjuboy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Conjuboy +15 to Greenvale	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Conjuboy +10 towards Hughenden	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Conjuboy +35 towards Hughenden	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Conjuboy +70 towards Hughenden	0	0	0	6	10	11	0	0	0	0	0	0	0	0	0	0	0	0
Conjuboy +100 towards Hughenden	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cboy t+10 to Forsyth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cboy t+25 to Forsyth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Einasleigh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Einasleigh +15 to Forsyth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Forsyth	7	3	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Forsyth +15 to Cobbold Gorge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Location	Telstra 3G			Telstra 4G			Optus 3G			Optus 4G			Vodafone 3G			Vodafone 4G		
	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload
Forsyth +30 to Cobbold Gorge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cobbold Gorge	7	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Forsyth +15 to Georgetown	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Georgetown	11	6	4	11	5	4	10	9	11	0	0	0	0	0	0	0	0	0
120 to Croydon- East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100 to Croydon - East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
80 to Croydon - East	10	8	7	10	8	6	0	0	0	0	0	0	0	0	0	0	0	0
60 to Croydon - East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40 to Croydon - East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 to Croydon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Croydon	10	4	1	11	4	4	0	0	0	0	0	0	0	0	0	0	0	0
120 to Normonton - East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100 to Normonton - East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
80 to Normonton - East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
60 to Normonton - East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40 to Normonton - East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 to Normonton - East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Normonton	10	8	4	11	10	11	11	9	7	12	9	12	0	0	0	0	0	0
50 to Karumba - East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 to Karumba - East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 to Karumba - East	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Karumba	11	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
130 to Carpentaria border	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
110 to Carpentaria Border	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Location	Telstra 3G			Telstra 4G			Optus 3G			Optus 4G			Vodafone 3G			Vodafone 4G		
	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload
90 to Carpentatia border	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
70 to Carpentaria border	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50 to Carpentaria border	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 to Carpentaria Border	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 to Carpentaria border	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Carpentaria Boundary	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gtown +15 to Mt Surprise	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gtown +30 to Mt Surprise	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gtown + 55 to Mt Surprise	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gtown + 75 to Mt Surprise	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gtown to MrGarnet Rd +15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gtown to MrGarnet Rd +30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mt Surprise	11	6	4	11	6	4	0	0	0	0	0	0	0	0	0	0	0	0
Springfield	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fossilbrook - East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fossilbrook - East +15 towards Almaden	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fossilbrook - East +30 towards Almaden	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Barwidgi - Nth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lakeland +15 Nth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lakeland +30 Nth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lakeland +45 Nth	10	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Laura	10	8	5	10	8	5	0	0	0	0	0	0	0	0	0	0	0	0
Laura East 15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Location	Telstra 3G			Telstra 4G			Optus 3G			Optus 4G			Vodafone 3G			Vodafone 4G		
	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload
Laura East 26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Laura Nth 15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Palmerville Rd West 15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Palmerville Rd West 30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coen 220 Sth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coen 200 Sth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coen 180 Sth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coen 160 Sth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Musgrave Roadhouse	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coen 120 Sth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coen 100 Sth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coen 80 Sth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coen 60 Sth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coen 40 Sth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coen 20 Sth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coen	11	8	5	10	10	11	0	0	0	0	0	0	0	0	0	0	0	0
Coen Airport	11	7	7	10	9	7	0	0	0	0	0	0	0	0	0	0	0	0
Coen Nth 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coen Nth 40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coen Nth 60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Archer River	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coen Nth 100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
75 to Lockart River	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50 to Lockhart River	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Location	Telstra 3G			Telstra 4G			Optus 3G			Optus 4G			Vodafone 3G			Vodafone 4G		
	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload
25 to Lockhart River	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 To Lockhart River	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chilli Beach Lockhart River turn off	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chilli Beach	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Accom 10k to Lockhart River	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lloyd Bay Lockhart River	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Penn Dev Rd & Old telegraph Rd	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wiepa 130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wiepa 115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wiepa 110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wiepa 85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wiepa 70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wiepa 55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wiepa 40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mision River/RAAF Base	10	8	5	0	0	0	10	3	1	0	0	0	0	0	0	0	0	0
Nanum, Wiepa	5	6	1	10	6	2	11	8	7	12	9	7	0	0	0	0	0	0
65 to Mapoon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50 to Mapoon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35 to Mapoon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 to Mapoon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 to Mapoon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mapoon	8	2	1	6	3	1	0	0	0	0	0	0	0	0	0	0	0	0
Tunding, Wiepa	9	5	2	11	8	11	11	8	7	0	0	0	0	0	0	0	0	0
Batavia Downs 30 West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Location	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload
	Telstra 3G			Telstra 4G			Optus 3G			Optus 4G			Vodafone 3G			Vodafone 4G		
Batavia Downs 15 West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Batavia Downs/ Peninsular Dev Rd	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Batavia Downs Nth 15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Batavia Downs Nth 30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Batavia Downs Nth 45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Batavia Downs Nth 60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Batavia Downs Nth 75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Batavia Downs Nth 90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Batavia Downs Nth 105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Batavia Downs Nth 120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Batavia Downs Nth 135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Batavia Downs Nth 150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Batavia Downs Nth 165	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Batavia Downs Nth 180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Batavia Downs Nth 195	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Batavia Downs Nth 210	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Batavia Downs Nth 225	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Batavia Downs Nth 240	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jardine River Ferry	8	6	1	10	5	1	0	0	0	0	0	0	0	0	0	0	0	0
Jardine River Nth 15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Injinoo	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Siesia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bamaga Airport	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bamaga Fuel Airport Rd	11	6	5	11	10	12	0	0	0	0	0	0	0	0	0	0	0	0

Location	Telstra 3G			Telstra 4G			Optus 3G			Optus 4G			Vodafone 3G			Vodafone 4G		
	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload
Bamaga - Tip 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Punsand Turn off	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Somerset Turn off	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tip of Cape York	8	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Punsand	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Batavia Downs 10 Sth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Batavia Downs 20 Sth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Batavia Downs 30 Sth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Batavia Downs 40 Sth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lakefield/Cooktown 15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lakefield/Cooktown 30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lakefield/Cooktown 45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lakefield/Cooktown 60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lakefield/Cooktown 75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lakefield/Cooktown90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lakefield/Cooktown 105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lakefield/Cooktown 120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lakefield/Cooktown 135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Laura	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HopeVale Cooktown 150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HopeVale Cooktown 165	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HopeVale Cooktown 180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HopeVale Cooktown 195	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HopeVale Cooktown 210	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Location	Telstra 3G			Telstra 4G			Optus 3G			Optus 4G			Vodafone 3G			Vodafone 4G		
	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload
HopeVale Cooktown 225	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HopeVale Cooktown 240	0	0	0	11	5	7	0	0	0	0	0	0	0	0	0	0	0	0
HopeVale Cooktown 255	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HopeVale Cooktown 270	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cooktown	11	8	4	10	10	12	11	9	7	11	9	7	0	0	0	0	0	0
Lakeland to Cooktown -12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lakeland to Cooktown -24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 to Daintree East	0	0	0	0	0	0	10	5	6	0	0	0	0	0	0	0	0	0
Daintree	10	7	2	0	0	0	12	9	6	12	9	10	0	0	0	0	0	0
CREB first crossing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Barron River Nth CNS	10	9	2	12	9	7	12	8	8	13	10	9	11	8	7	13	8	11
CNS Sheridan Rd nth	10	7	7	10	4	5	12	8	8	13	8	10	12	9	7	13	5	13
CNS Marlin Pde	11	8	5	12	8	7	12	8	10	12	8	10	12	9	7	13	10	13
CREB Track 15 klm spacings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CREB Track 15 klm spacings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CREB Track 15 klm spacings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mt Musgrave to Palmerville Rd - klm spacings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mt Musgrave to Palmerville Rd - klm spacings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mt Musgrave to Palmerville Rd - klm spacings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mt Musgrave to Palmerville Rd - klm spacings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mt Musgrave to Palmerville Rd - klm spacings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Location	Telstra 3G			Telstra 4G			Optus 3G			Optus 4G			Vodafone 3G			Vodafone 4G		
	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload	Latency	Dload	Upload
Mt Musgrave to Palmerville Rd - klm spacings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mt Musgrave to Palmerville Rd - klm spacings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Old Telegraph Track - 15klm spacings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Old Telegraph Track - 15klm spacings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Old Telegraph Track - 15klm spacings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Old Telegraph Track - 15klm spacings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Old Telegraph Track - 15klm spacings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Old Telegraph Track - 15klm spacings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Old Telegraph Track - 15klm spacings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Indigenous Australia

7. What can be done to improve the access and affordability of telecommunications services in regional, rural and remote indigenous communities?

Indigenous communities (residents) are likely to be unaware of programs such as skymuster. If they were, the cost of such would be outside the ability of the residents. Looking at the SEIFA Disadvantage Index (2016) the index for our three Aboriginal Shire Councils are:

- Hope Vale Aboriginal Shire Council – 621
- Wujal Wujal Aboriginal Shire Council – 596
- Yarrabah Aboriginal Shire Council – 518

Living expenses are significantly higher in these communities with predominately government income. Mobile communication service providers are also limited and predominately Telstra.

Opportunity

8. How can investment in telecommunications infrastructure work with other programs and policies to encourage economic development in regional Australia?
9. What role could innovation, including new models, alternative investors or new ways of doing business, play to encourage investment in regional telecommunications infrastructure? What are the barriers?

The region is currently completing a study into these questions through Monsoon Category C funding. The lead applicant is the Northern Gulf NRM with the support of James Cook University and Queensland University of Technology. The final FNQ digital connectivity strategy is yet to be released.

Maximising Outcomes

12. How can different levels of Government, the telecommunications industry and regional communities better co-ordinate their efforts to improve telecommunications in regional Australia?
13. What changes to Government investment programs are required to ensure they continue to tb effective in delivering improved telecommunications.

Local governments are not resourced in either funds or expertise. Service providers are not likely to put forward a project which is not economically viable to them over the long term.

Whilst some councils have cofounded service provision, others unable to do so also question why councils in rural and remote areas should be funding a service which comes as a right to the majority of the population.

It was not mentioned in the issues paper but the issue of councils contributing to infrastructure costs have been continually raised in relation to mobile coverage. FNQROC member councils have considered this and find it unfair to fund infrastructure that provided 'as of right' in urban areas. These rural and remote area councils are the least resourced to make a contribution. The below table identifies each of the local governments within FNQROC, their population and SEIFA Disadvantage index.

Council	**Type**	**Population** (ERP2018)	**SEIFA Disadvantage Index** (2016)
Cairns	Regional	~165,000	980
Hope Vale Aboriginal Shire	Aboriginal	1,081	621
Wujal Wujal Aboriginal Shire	Aboriginal	306	596
Yarrabah Aboriginal Shire	Aboriginal	2,848	518
Cassowary Coast	Rural	29,689	931
Carpentaria	Remote	1,974	858
Cook	Remote	4,445	917
Croydon	Remote	288	884
Douglas	Rural	12,257	981
Etheridge	Remote	804	932
Hinchinbrook	Rural	10,805	960
Mareeba	Rural	22,517	936
Tablelands	Rural	25,541	949

Public information

15. To what extent is public information on connectivity options, including predictive coverage data and speeds, sufficient to help regional customers make informed decisions? What other information is needed?
16. What other maters should the Committee consider in its review and why are they important?

Taking into consideration what is being submitted under 'Service Provision' public information is poor when it comes to predictive coverage information and speeds.

Information is also missing when it comes to those 'sub' telecommunication providers. As an example Aldi sim cards use the Telstra network however these sim cards don't actually operate in all Telstra locations. For example, an Aldi sim card using Telstra will not work in Georgetown where a Telstra sim card will.

Telco's should know the performance of their network and should be able to spatially present this. If not, why not? For us to do an audit of 5,100 km of road it was $90,000 which is a small price to pay for a telco, but a large one for councils with low rate bases.

The same for fibre and fixed wireless footprints. Numerous residents in Cairns (under advice from the telcos) have spent a fortune on new modems, mesh wifi systems, wifi enhancers etc only to find out that they are so far from the node (via copper wire) that that they will never get good connection. It should not be the residents having to buy all these things (under advice from the telco) to find out the fault is on the connection from the node to the property or their distance from the fixed wifi point puts them on the boundary.

In addition to our above comments and evidence on the issues paper, Queensland councils have also passed a range of resolutions for the Local Government Association of Queensland (LGAQ) to action on our behalf to improve connectivity.

We would also like to reiterate our support for those resolutions.

1. **Mobile Roaming**

   Recommendation:

   That the government legislate to require telecommunication operators to provide access for competitors to their mobile infrastructure in regional areas to enable roaming.

   This is to support regional communities and improve safety for tourists travelling in remote areas. Roaming should be accessible as a minimum during emergencies such as floods and bushfires so communities can access local support, information and loved ones in times of emergency.

   Background:

   The Australian Competition and Consumer Commission (ACCC) has looked at the likely effects that declaring a domestic mobile roaming service would have. The ACCC looked at whether such declarations would promote competition, increase connectivity and encourage economically efficient use of, and investment in, infrastructure. Through these filters it did not recommend mobile roaming – in the 2017 report it stated that "*…many parts of regional, rural and remote Australia consumers and businesses cannot access adequate or continuous mobile services. This has social and economic implications".* It is now 2021 and the competitive forces that the report hoped would increase consumer choice for mobile carriers have failed to emerge.

   The LGAQ would like a re-examination of the ACCC recommendations to ascertain where the market has failed to emerge, and that the economic and social considerations of regional Australians are given priority.

2. **Digital connectivity in blackspots and areas with limited coverage.**

Recommendation:

That the government prioritise the funding of infrastructure in regional Queensland to enable access to reliable digital services. The government needs to ensure progress on coverage of non-commercially viable mobile black spots as a priority in regional digital infrastructure program funding.

Background:

All Queenslanders should have access to mobile phone coverage and reliable access to the internet through fixed wireless, satellite networks, or landlines.

The Federal Government has committed to the Mobile Black Spot Program (MBSP) in 2014 to invest in telecommunications infrastructure to improve mobile coverage and competition. The program has delivered more than 1,200 new base stations across Australia.

The program is supported by co-contributions from state and local governments, mobile network operators, businesses and local communities. The program combined with the Regional Connectivity Program has a focus on Northern Australia.

The LGAQ has lobbied the State Government to support Queensland communities impacted by digital connectivity gaps with more than 3,000 community-identified mobile black spot areas on the National Black Spot map. The LGAQ urges the Federal and State governments to move beyond co-funding models for infrastructure and lead the direction of infrastructure projects and connect the "patchwork quilt" of mobile coverage across regional and remote Queensland.

3. **Addressing the "digital divide".**

Recommendation:

That the "digital divide" experienced in regional and remote areas is addressed through:

- adequate funding for community-wide education programs to increase uptake of internet services in remote communities
- access to reliable and affordable internet service providers
- robust infrastructure with system redundancies to support continued access to broadband internet to remote areas during seasonal weather and landline disruption
- ensuring that there are community accessible facilities that can provide internet access in every community, such as libraries and Indigenous Knowledge Centres.

Ensure all Queenslanders have access to telehealth, mental health, education, banking and reasonable data limits to enjoy social benefits and digital Inclusion in a modern society.

Background:
The Australian Digital Inclusion Index rates the access, affordability and digital ability of Australian communities. This is not just the availability of high-speed internet but people's agency to use it – equipment, training and experience in how to engage in an increasingly digital world.

Older Australians, low-income households and remote communities continue to be rated lower in their use of available resources and services obtained via the internet, with Northwest Queensland (52.6) and Queensland Indigenous communities (48.8) being ranked as having some of the most significant barriers to accessing digital services in Australia.

4. Service repair times

Recommendation:
As part of the introduction of the Universal Service Guarantee (USG), a minimum repair time should be established for communities to ensure access to land lines and internet connectivity.

This can be achieved through an audit of what are reasonable repair times in regional/remote areas to establish a baseline for minimum repairing service timeframes for community telephone/digital infrastructure.

This minimum repair time guarantee should extend to whatever method (satellite, landline, microwave, wireless broadband) is the primary connection point for a community. There needs to be adequate planning on emergency repairs and infrastructure that has redundancies in place.

Background:
The new USG updates the long-standing Universal Service Obligation by providing all Australian homes and businesses with access to both broadband and voice services, regardless of their location.

The USG will use the National Broadband Network (NBN) to deliver broadband services and will continue to use Telstra's existing copper and wireless networks in rural and remote Australia for the provision of voice services in NBN fixed wireless and satellite areas.

Remote Queensland communities have singular points of access to mobile services and broadband internet. Communities such as Lockhart River continue to be cut off for extended periods due to weather or intermittent failures at a site outside of the

community. For areas in Southwest Queensland landlines are undependable and there is no reliable connection to emergency services.

5. Agriculture and the Internet of Things (IoT)

Recommendation:

That priority is given to forward planning for the use of 5G services in regional areas and the impact of the Internet of Things (IoT) for regional communities. Infrastructure needs to be designed to support long distance coverage for regional agriculture to enhance interconnectivity between farmers, livestock and machinery to enhance modern farming and make best use of emergent technologies. Regional communities will also benefit from access to real-time health monitoring for off-site health care, as well hazard management and emergency services coordination.

Background:

Real-time health data, personal security, communications and household connectivity will soon be part of every household. The IoT will have a massive impact on the way we water crops, track stock, monitor water supply, operate mines, receive data to and from security systems, monitor environmental factors and monitor chronic health conditions in real time.

The Australian Council of Learned Academies predicts there will be 29 billion connected devices in the world by 2022, and the Bureau of Communications and Arts Research has estimated that IoT activity in Australia increased by $10.5 billion or 16.5 percent from $63.8 billion in 2012–13 to $74.3 billion in 2016–17.

The IoT requires mobile coverage (including wireless, long-range low-powered, satellite, fixed wired) and very little bandwidth but the volume of devices likely to be using local digital infrastructure needs to be planned for.

6. Digital Planning

Recommendation:

The Federal and State governments need to support “digital planning” in regional councils through funding, expert advice and/or training programs to make access to the educational and social benefits of the digital economy achievable for regional and remote Queenslanders.

Support to plan, access funding streams and understand the processes of developing community infrastructure is needed to avoid the “digital divide” and increased burden on regions that do not enjoy the same level of access and services of larger communities. With support from the Federal Government, local government could play a leadership role in facilitating this planning work.

Background:
Communities often do not have the in-depth market knowledge to adequately invest in “future-proof” infrastructure and adequate service provision.

Before accessing schemes such as the NBN Co Regional Co-investment Fund, communities should have a clear idea of what they need now and into the future.

Councils need an understanding as to how to best make choices as to who to choose as the provider for community digital infrastructure and services, and what services will be needed.

This is especially important considering the introduction of the statutory infrastructure provider regime and the USG, where the provider will have an ongoing relationship with the council and the community.

Thank you again for the opportunity to provide our evidence into the Regional telecommunications review 2021.

Should you have any queries regarding this submission please do not hesitate to contact me on 0403 808 680.

Yours sincerely

Darlene Irvine
Executive Officer