



28th September 2020

The General Manager
Byron Shire Council

Issued by email: council@byron.nsw.gov.au

Dear Sir/Madam

Upgrade works to mobile phone base station at 8 ACACIA STREET, BYRON BAY NSW 2481

I am writing on behalf of Telstra to inform you of an upgrade to the mobile phone base station at the above address. This proposal does not require Development Approval and consultation is being undertaken in accordance with the requirements of Section 7 of the *Mobile Phone Base Station Deployment Code 2018*.



Site Location



The scope of the subject proposal includes:

- The proposed upgrade consists of reconfiguring and reusing existing panel antennas, removing three (3) existing panel antennas, and installing three (3) new 5G panel antennas measuring 810mm(h) x 400mm(w) x 200(d), on existing and new mounts on the existing monopole to improve Telstra's mobile phone network (including 5G);
- The replacement and reconfiguration of existing Remote Radio Units (RRU's) and the installation of new Remote Radio Units (RRU's) to be installed within the existing facility;
- The proposed installation works will also include the upgrading of equipment within the existing equipment shelter or room; and
- The installation of ancillary equipment such as transceivers, amplifiers, antenna mounts, cable trays, feeders, cabling, combiners, diplexers, splitters, couplers, jumpers, filters, electrical equipment, security fencing, handrails, kick plates, signage, bollards and other associated equipment.

The purpose of this installation is to install 5G and upgrade 4G technologies at the existing facility at the above address.

We invite you to provide us with your feedback about this proposal. You can do this by contacting us by letter, email or by calling the contact number outlined below. We will accept comments on the proposal until **5pm on Thursday 15th October 2020**.

We trust that you will find the information about this proposal informative. We are happy to provide you with more details.

Yours sincerely

Matt Wood
Wireless Senior Town Planner
Downer
T 0437 600 895
E Matthew.Wood2@downergroup.com

Attachments:

1. ARPANSA Environmental EMR Report
2. 5G Fact Sheet



Frequently Asked Questions

Where is it being installed?	Telstra proposes to install 5G technology and reconfigure existing technology at 8 ACACIA STREET, BYRON BAY NSW 2481 .
What is being installed and how big will it be?	The proposed upgrade and maintenance of the facility comprises of: • The proposed upgrade consists of reconfiguring and reusing existing panel antennas, removing three (3) existing panel antennas, and installing three (3) new 5G panel antennas measuring 810mm(h) x 400mm(w) x 200(d), on existing and new mounts on the existing monopole to improve Telstra's mobile phone network (including 5G); • The replacement and reconfiguration of existing Remote Radio Units (RRU's) and the installation of new Remote Radio Units (RRU's) to be installed within the existing facility; • The proposed installation works will also include the upgrading of equipment within the existing equipment shelter or room; and • The installation of ancillary equipment such as transceivers, amplifiers, antenna mounts, cable trays, feeders, cabling, combiners, diplexers, splitters, couplers, jumpers, filters, electrical equipment, security fencing, handrails, kick plates, signage, bollards and other associated equipment.
Does it require Council approval?	This installation is exempt from Local & State Government approval in accordance with Telecommunications (Low impact Facilities) Determination 2018, Part 1 - Radio Facilities, Item 4 (Panel Antenna), Part 3 - Above Ground Housing, Item 5 (Equipment Shelter), and Part 3 Low impact facilities, 3.1 Facilities, Clause 4 (Ancillary Facilities), or NSW State Environmental Planning Policy (Infrastructure) 2007, Part 1 – Exempt Development, Item 2 (Panel Antennas), Item 10 (Above Ground Housing) and Item 18 (Ancillary Equipment), and community notification is being undertaken in accordance with Section 7 of Mobile Phone Base Station Deployment Code C564:2018.
Does it comply with	The facility will comply with Australian government regulations



Australian Standards for Electromagnetic Energy (EME)?	in relation to emission of electromagnetic energy (EME), this specifically being Australian Standard Radiation Protection Standard – Maximum Exposure Levels to Radiofrequency Fields –3 kHz to 300 GHz, published by the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) in 2002. Further information is available at www.rfnsa.com.au
How can I find out where the base stations are in my area?	A database of all existing and proposed mobile phone base stations in Australia is available to the public at www.rfnsa.com.au Site specific information can be found at: www.rfnsa.com.au/2481014
Where can I find out more information?	Support information about mobile phone base stations, the <i>Mobile Base Station Deployment Code (C564:2018)</i> , your rights, health, and low impact facilities, is available from this website: https://www.commsalliance.com.au/popular-links/mobile-phone-tower-information
How can I provide feedback on the proposal or find out more information? Information about this proposal is available in other languages. Available on request from contact details provided.	Name: Matt Wood Address: Level 2, Building B, 480 Victoria Road, Gladesville NSW 2111 Email: Matthew.Wood2@downergroup.com Phone: 0437 600 895 Comments Closing date: Thursday 15th October 2020

Environmental EME Report

Location	8 Acacia Street, BYRON BAY NSW 2481		
Date	28/09/2020	RFNSA No.	2481014

How does this report work?

This report provides a summary of levels of radiofrequency (RF) electromagnetic energy (EME) around the wireless base station at 8 Acacia Street, BYRON BAY NSW 2481. These levels have been calculated by Downer Group using methodology developed by the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA).

A document describing how to interpret this report is available at ARPANSA's website:

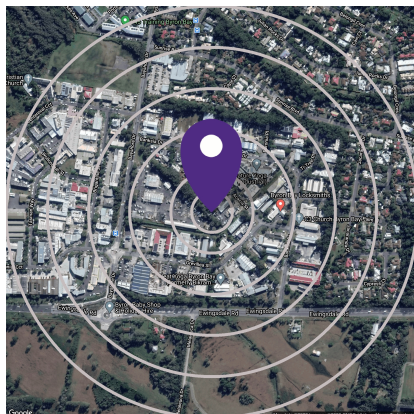
[A Guide to the Environmental Report.](#)

A snapshot of calculated EME levels at this site

The maximum EME level calculated for the **existing** systems at this site is

1.33%

out of 100% of the public exposure limit, 134 m from the location.



The maximum EME level calculated for the **proposed** changes at this site is

4.13%

out of 100% of the public exposure limit, 47 m from the location.

EME levels with the proposed changes

Distance from the site	Percentage of the public exposure limit
0-50 m	4.13%
50-100 m	3.99%
100-200 m	2.55%
200-300 m	1.32%
300-400 m	0.59%
400-500 m	0.33%

For additional information please refer to the EME ARPANSA Report annexure for this site which can be found at <http://www.rfnsa.com.au/2481014>.

Radio systems at the site

This base station currently has equipment for transmitting the services listed under the existing configuration. The proposal would modify the base station to include all the services listed under the proposed configuration.

Carrier	Existing		Proposed	
	Systems	Configuration	Systems	Configuration
Telstra	3G, 4G	WCDMA850, LTE1800, LTE700	3G, 4G, 5G	LTE700, NR850 (proposed), WCDMA850, LTE1800, LTE2100 (proposed), NR3500 (proposed)

An in-depth look at calculated EME levels at this site

This table provides calculations of RF EME at different distances from the base station for emissions from existing equipment alone and for emissions from existing equipment and proposed equipment combined. All EME levels are relative to 1.5 m above ground and all distances from the site are in 360° circular bands.

Distance from the site	Existing configuration			Proposed configuration		
	Electric field (V/m)	Power density (mW/m ²)	Percentage of the public exposure limit	Electric field (V/m)	Power density (mW/m ²)	Percentage of the public exposure limit
0-50m	2.068	11.35	0.14%	12.38	406.58	4.13%
50-100m	3.83	38.88	0.69%	12.2	394.92	3.99%
100-200m	5.45	78.91	1.33%	8.88	208.94	2.55%
200-300m	4.37	50.67	0.87%	5.97	94.7	1.32%
300-400m	3.0037	23.93	0.41%	3.99	42.29	0.59%
400-500m	2.26	13.54	0.23%	2.98	23.62	0.33%

Calculated EME levels at other areas of interest

This table contains calculations of the maximum EME levels at selected areas of interest, identified through consultation requirements of the [Communications Alliance Ltd Deployment Code C564:2018](#) or other means. Calculations are performed over the indicated height range and include all existing and any proposed radio systems for this site.

Maximum cumulative EME level for the proposed configuration

Location	Height range	Electric field (V/m)	Power density (mW/m ²)	Percentage of the public exposure limit
Byron Busy Kids Day Care	0-3 m	4.38	50.89	0.67%
Byron Bay Kids World Play Centre	0-6 m	3.81	38.6	0.48%

What is 5G?

AMTA

Australian Mobile
Telecommunications
Association



5G is the 5th generation of mobile networks, a significant evolution of today's 4G networks.

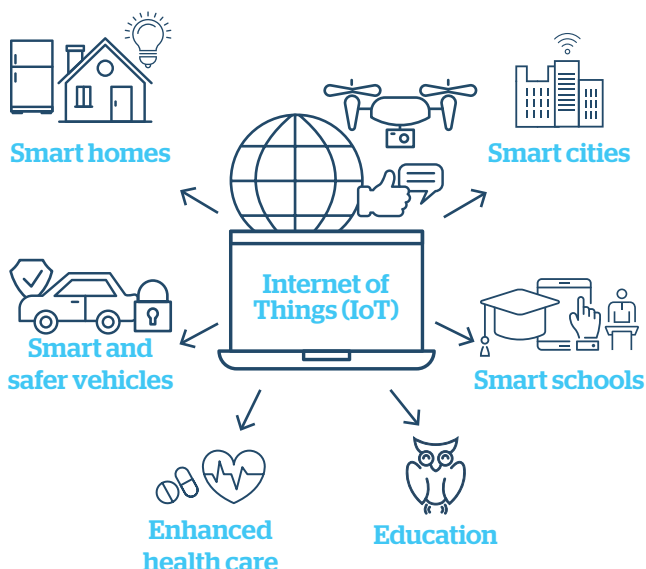
5G is designed to meet the very large growth in data and connectivity of today's modern society, the internet of things with billions of connected devices, and tomorrow's innovations.

5G will initially operate in conjunction with existing 4G networks before evolving to fully standalone networks. The rollout of 5G will help meet Australians' growing demand for more data, with the Australian Communications and Media Authority (ACMA) reporting that the volume of data downloaded on mobiles has increased by 41% from June 2017 to June 2018, and this is set to continue.

What will 5G enable?

5G will enable enhanced mobile broadband, instantaneous connectivity to billions of devices, the Internet of Things (IoT) and a truly connected world.

For communities, 5G will enable real-time connection of billions of devices to provide a safer and more efficient place to live by enabling things like:



For businesses and industry, 5G and IoT will provide a wealth of data allowing them to gain insights into their operations like never before.

Business will increasingly operate and make key decisions driven by data (e.g. parcel tracking), and innovate in different application areas including agriculture, smart farms and manufacturing. All of these will pave the way for cost savings, better customer experience and long-term growth.


**5G enabled
mobile technology**
IS SET TO DELIVER A
**\$65 billion bigger
Australian economy**
BY 2023

What is 5G?

What will be the first applications for 5G?

5G-enabled products such as wireless broadband, mobile devices and IoT will be the first applications using 5G.



What will 5G devices offer?

The prime benefits of 5G devices will be significantly faster speeds in data access, downloading and streaming content.

In addition, 5G devices will have increased computing power and make use of faster connectivity, meaning that the devices will enjoy virtually instantaneous connections to the network, as well as greater connectivity when on the move. 5G will enable applications such as remote monitoring, automation of production, medical monitoring and even remote surgery.



How does 5G work?

5G will deliver faster speeds, better response times and greater capacity. 5G networks are designed to work in conjunction with 4G networks using a range of macro cells, small cells and dedicated in-building systems.

Small cells will be a feature of 5G networks and will evolve to include the use of millimetre wave (mmWave) frequencies.

Small cells are mini base stations designed for very localised coverage typically from 10 metres to a few hundred metres providing in-fill for the larger macro network. Small cells will be essential for the 5G networks.

5G devices will have increased computing power and make use of faster connectivity, meaning that the devices will enjoy virtually instantaneous connections to the network, as well as greater connectivity when on the move.



5G and EME Safety

Are there safety limits for 5G?

Yes. Comprehensive international guidelines exist governing exposure to radio waves including the frequencies proposed for 5G. The limits have been established by independent scientific organisations, such as the International Commission on Non-Ionizing Radiation Protection (ICNIRP), and include substantial margins of safety to protect all people including children and the elderly at all times.

These guidelines have been widely adopted in standards around the world, including in Australia by the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) and are endorsed by the World Health Organization (WHO).

WHAT DO THE EXPERTS SAY ABOUT 5G AND HEALTH?

In relation to radio frequency exposures and wireless technology and health, including frequencies used for 5G, the World Health Organization (WHO) states:

“Despite extensive research, to date there is no evidence to conclude that exposure to low level electromagnetic fields is harmful to human health.”

In relation to 5G frequencies, Dr Sarah Loughran, Director of the Australian Centre for Electromagnetic Bioeffects Research at the University of Wollongong states:

“The higher frequencies [of 5G] actually means that the energy doesn’t penetrate as deeply into the body than previous fourth generation and other generation technologies have.”

In relation to 5G and health, ARPANSA states:

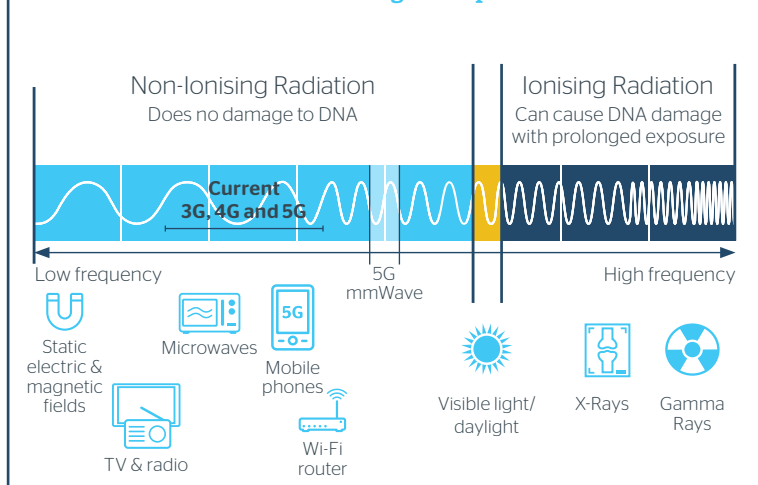
“There are no established health effects from the radio waves that the 5G network uses.”

What research into health effects has been done on 5G?



The electromagnetic frequencies used for 5G are part of the radio frequency spectrum which has been extensively researched in terms of health impacts for decades.

Where 5G fits in the electromagnetic spectrum



5G operates at a higher frequency than previous 4G networks so it can carry more data but can't travel as far. This means it will have less impact on the human body than any previous network.



Over 50 years of scientific research has already been conducted into the possible health effects of the radio signals used for mobile phones, base stations and other wireless services including frequencies planned for 5G and mmWave exposures.

ARPANSA states:

“This network currently runs on radio waves similar to those used in the current 4G network, and in the future will use radio waves with higher frequencies. It is important to note that higher frequencies does not mean higher or more intense exposure. Higher frequency radio waves are already used in security screening units at airports, police radar guns to check speed, remote sensors and in medicine and these uses have been thoroughly tested and found to have no negative impacts on human health.”

5G and EME Safety

Testing on Australian 5G networks with commercial devices in real-world settings shows levels similar to 3G, 4G and Wi-Fi, and in many cases around 1,000 times below the safety limits.



Does 5G mean higher power and higher exposure levels?

No – 5G networks are designed to be more efficient and will use less power than current networks for similar services.

The Australian Centre for Electromagnetic Bioeffects Research (ACEBR) states:

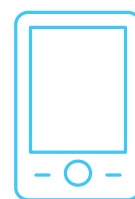
“In addition, while more antennas may be required to service areas where demand for the new service is high, users are closer to the mobile phone base station and therefore their devices can operate at a reduced power, reducing their exposure from their personal device.”

Dr Sarah Loughran, Director of the Australian Centre for Electromagnetic Bioeffects Research at the University of Wollongong, states:

“Based on the improvements in technology, the level of exposure is expected to be lower [with 5G] than what it has been in previous technologies.”

How will 5G be regulated?

All base stations including 5G equipment and devices, must comply with standards set by ARPANSA.



Where can I get more information on 5G?

Australian Communications and Media Authority (ACMA)

1300 850 115

<https://www.acma.gov.au/theACMA/a-guide-to-small-cells>

Australian Radiation Protection and Nuclear Safety Agency (ARPANSA)

(03) 9433 2211

www.arpansa.gov.au

EMF Explained web site

www.emfexplained.info

Mobile Nation 2019 - the 5G future report

<https://amta.org.au/new-mobile-nation-report-the-5g-future/>

Mobile Carriers Forum

<http://amta.org.au/mcf>



**Australian Mobile
Telecommunications
Association**

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