

18 August 2015

Assessment Manager
Douglas Shire Council

Dear Sir/Madam,

Proposed National Broadband Network Fixed Wireless Facility at Mowbray – 21 Spring Creek Road, Mowbray QLD 4877 (Lot 11 on SP212654).

We are writing to advise that NBN Co is proposing to establish a fixed wireless facility at 21 Spring Creek Road, Mowbray QLD 4877 (Lot 11 on SP212654).

The Mowbray Fixed Wireless Facility comprises a new 40 m monopole, accommodating three (3) panel antennas (1.077 m long) and one (1) parabolic dish antenna (1 x 1.2 m in diameter). Three (3) remote radio units (0.5 m long) will be positioned below the panel antennas. Associated equipment will be housed in two (2) new outdoor cabinets (base areas less than 7.5m²) located at the base of the facility.

The facility has been proposed as part of the rollout of the National Broadband Network (NBN), which is designed to provide Australians with access to fast, affordable and reliable fixed wireless services to the community of Mowbray.

About the NBN

The National Broadband Network (NBN) is an upgrade to Australia's existing telecommunications network. It is designed to provide Australians with access to fast, affordable and reliable internet services.

NBN Co plans to upgrade the current telecommunications network in the most cost-efficient way using best-fit technology and taking into account existing infrastructure. Use of Fixed Wireless and Satellite technologies is expected to result in improvements compared to services currently available to many Australians living in regional and remote communities.

As part of the Fixed Wireless component of the network, NBN Co is proposing to establish a series of Fixed Wireless facilities which are designed to provide access to high-speed Douglas Shire Council area.

While NBN Co's Fixed Wireless service is not a mobile service, it will use cellular technology to transmit signals to and from a small antenna fixed on the outside of a home or business, which is pointed directly towards the Fixed Wireless facility. NBN Co is designing each Fixed Wireless facility to serve a set number of homes and businesses, which should enable consistency in the speed and quality of services that can be delivered to each home and business receiving the Fixed Wireless service.

Consultation and Information Session

NBN Co regards the proposed telecommunication facility and ancillary equipment as Code Assessable Development under the *Douglas Shire Planning Scheme*. In the circumstances the proposed facility requires planning approval from Douglas Shire Council. Council has been notified of the proposal and their decision is pending.

NBN Co is undertaking voluntary consultation, by inviting the community to attend a Community Information Session to find out more and to ask any questions.

The Information Session will be held on **Thursday 3rd September 2015 from 3pm-6pm at the Port Douglas Community Hall, corner Mowbray Street and Mudlo Street, Port Douglas.**

No need to make an appointment, drop in at any time.

Making a Submission or Inquiry

Should you wish to provide comments in relation to this proposal; your comments are required to be submitted from by **Friday 11th September 2015.**

Submissions and comments can be directed to Kelly Pickering on (07) 3173 8353 or email at kelly.pickering@aurecongroup.com. Alternatively, please contact Kloe Robinson on (07) 3173 8611 or email at kloe.robinson@aurecongroup.com. Written correspondence can be directed to:

Att: Kelly Pickering or Kloe Robinson
Aurecon Australasia
Locked Bag 331
Brisbane QLD 4001

For all other general information call the NBN Co Solutions Centre on 1800 687 626, email info@nbnco.com.au or visit the NBN Co website at www.nbnco.com.au.

Further Information

The Proposal Plans and the relevant Environmental Electromagnetic Energy (EME) report are attached. The estimated radiofrequency signal strength, or Environmental Electromagnetic Energy (EME) levels from the proposed site are calculated in accordance with the ARPANSA prediction report methodology, and are represented as a percentage of the standard based on maximum cumulative levels.

You will note that the proposal is consistent with other like facilities that generally operate many hundreds and sometimes thousands of times below the allowable standard. If you would like further information on the topic of EME, we recommend you visit <http://www.who.int/peh-emf/en/> and <http://www.arpansa.gov.au/>.

Yours Sincerely,



Lisa Shields
Project Manager

Environmental EME Report

Mowbray 21 Spring Creek Road, MOWBRAY QLD 4877

This report provides a summary of Calculated RF EME Levels around the wireless base station

Date 15/7/2015

RFNSA Site No. 4877004

Introduction

The purpose of this report is to provide calculations of EME levels from the existing facilities at the site and any proposed additional facilities.

This report provides a summary of levels of radiofrequency (RF) electromagnetic energy (EME) around the wireless base station at Mowbray 21 Spring Creek Road MOWBRAY QLD 4877. These levels have been calculated by Ericsson using methodology developed by the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA).

The maximum EME level calculated for the proposed systems at this site is 0.09% of the public exposure limit.

The ARPANSA Standard

ARPANSA, an Australian Government agency in the Health and Ageing portfolio, has established a Radiation Protection Standard specifying limits for general public exposure to RF transmissions at frequencies used by wireless base stations. The Australian Communications and Media Authority (ACMA) mandates the exposure limits of the ARPANSA Standard.

How the EME is calculated in this report

The procedure used for these calculations is documented in the ARPANSA Technical Report "Radio Frequency EME Exposure Levels - Prediction Methodologies" which is available at <http://www.arpansa.gov.au>.

RF EME values are calculated at 1.5m above ground at various distances from the base station, assuming level ground.

The estimate is based on worst-case scenario, including:

- wireless base station transmitters for mobile and broadband data operating at maximum power
- simultaneous telephone calls and data transmission
- an unobstructed line of sight view to the antennas.

In practice, exposures are usually lower because:

- the presence of buildings, trees and other features of the environment reduces signal strength
- the base station automatically adjusts transmit power to the minimum required.

Maximum EME levels are estimated in 360° circular bands out to 500m from the base station.

These levels are cumulative and take into account emissions from all mobile phone antennas at this site.

The EME levels are presented in three different units:

- volts per metre (V/m) – the electric field component of the RF wave
- milliwatts per square metre (mW/m²) – the power density (or rate of flow of RF energy per unit area)
- percentage (%) of the ARPANSA Standard public exposure limit (the public exposure limit = 100%).

Results

The maximum EME level calculated for the proposed systems at this site is 1.84 V/m; equivalent to 8.98 mW/m² or 0.09% of the public exposure limit.

Radio Systems at the Site

There are currently no existing radio systems for this site.

It is proposed that this base station will have equipment for transmitting the following services:

Carrier	Radio Systems
NBN Co	LTE2300 (proposed)

Calculated EME Levels

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.

Distance from the antennas at Mowbray 21 Spring Creek Road in 360° circular bands	Maximum Cumulative EME Level – All carriers at this site					
	Existing Equipment			Proposed Equipment		
	Electric Field V/m	Power Density mW/m ²	% ARPANSA exposure limits	Electric Field V/m	Power Density mW/m ²	% ARPANSA exposure limits
0m to 50m				0.71	1.35	0.013%
50m to 100m				0.6	0.94	0.0094%
100m to 200m				1.55	6.38	0.064%
200m to 300m				1.84	8.98	0.09%
300m to 400m				1.74	8.069	0.081%
400m to 500m				1.36	4.92	0.049%
Maximum EME level				1.84	8.98	0.09
				253.13 m from the antennas at Mowbray 21 Spring Creek Road		

Calculated EME levels at other areas of interest

This table contains calculations of the maximum EME levels at selected areas of interest that have been identified through the consultation requirements of the Communications Alliance Ltd Deployment Code C564:2011 or via any other means. The calculations are performed over the indicated height range and include all existing and any proposed radio systems for this site.

Additional Locations	Height / Scan relative to location ground level	Maximum Cumulative EME Level All Carriers at this site Existing and Proposed Equipment		
		Electric Field V/m	Power Density mW/m ²	% of ARPANSA exposure limits
Residence 2 on Trezise Road	0m to 3m	0.44	0.51	0.0051%
Residence 1 on Spring Creek road	0m to 3m	1.37	5.0046	0.05%
Residence 1 On Trezise road	0m to 3m	1.036	2.85	0.028%
Residence 2 On Spring Creek road	0m to 3m	1.21	3.89	0.039%

RF EME Exposure Standard

The calculated EME levels in this report have been expressed as percentages of the ARPANSA RF Standard and this table shows the actual RF EME limits used for the frequency bands available. At frequencies below 2000 MHz the limits vary across the band and the limit has been determined at the Assessment Frequency indicated. The four exposure limit figures quoted are equivalent values expressed in different units – volts per metre (V/m), watts per square metre (W/m²), microwatts per square centimetre (μW/cm²) and milliwatts per square metre (mW/m²). Note: 1 W/m² = 100 μW/cm² = 1000 mW/m².

Radio Systems	Frequency Band	Assessment Frequency	ARPANSA Exposure Limit (100% of Standard)
LTE 700	758 – 803 MHz	750 MHz	37.6 V/m = 3.75 W/m ² = 375 μW/cm ² = 3750 mW/m ²
WCDMA850	870 – 890 MHz	900 MHz	41.1 V/m = 4.50 W/m ² = 450 μW/cm ² = 4500 mW/m ²
GSM900, LTE900, WCDMA900	935 – 960 MHz	900 MHz	41.1 V/m = 4.50 W/m ² = 450 μW/cm ² = 4500 mW/m ²
GSM1800, LTE1800	1805 – 1880 MHz	1800 MHz	58.1 V/m = 9.00 W/m ² = 900 μW/cm ² = 9000 mW/m ²
LTE2100, WCDMA2100	2110 – 2170 MHz	2100 MHz	61.4 V/m = 10.00 W/m ² = 1000 μW/cm ² = 10000 mW/m ²
LTE2300	2302 – 2400 MHz	2300 MHz	61.4 V/m = 10.00 W/m ² = 1000 μW/cm ² = 10000 mW/m ²
LTE2600	2620 – 2690 MHz	2600 MHz	61.4 V/m = 10.00 W/m ² = 1000 μW/cm ² = 10000 mW/m ²
LTE3500	3425 – 3575 MHz	3500 MHz	61.4 V/m = 10.00 W/m ² = 1000 μW/cm ² = 10000 mW/m ²

Further Information

The Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) is a Federal Government agency incorporated under the Health and Ageing portfolio. ARPANSA is charged with responsibility for protecting the health and safety of people, and the environment, from the harmful effects of radiation (ionising and non-ionising).

Information about RF EME can be accessed at the ARPANSA website, <http://www.arpansa.gov.au>, including:

- Further explanation of this report in the document “Understanding the ARPANSA Environmental EME Report”
- The procedure used for the calculations in this report is documented in the ARPANSA Technical Report; “Radio Frequency EME Exposure Levels - Prediction Methodologies”
- the current RF EME exposure standard
Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), 2002, ‘Radiation Protection Standard: Maximum Exposure Levels to Radiofrequency Fields — 3 kHz to 300 GHz’, Radiation Protection Series Publication No. 3, ARPANSA, Yallambie Australia.
[Printed version: ISBN 0-642-79400-6 ISSN 1445-9760] [Web version: ISBN 0-642-79402-2 ISSN 1445-9760]

The Australian Communications and Media Authority (ACMA) is responsible for the regulation of broadcasting, radiocommunications, telecommunications and online content. Information on EME is available at <http://emr.acma.gov.au>

The Communications Alliance Ltd Industry Code C564:2011 ‘Mobile Phone Base Station Deployment’ is available from the Communications Alliance Ltd website, <http://commsalliance.com.au>.

Contact details for the Carriers (mobile phone companies) present at this site and the most recent version of this document are available online at the Radio Frequency National Site Archive, <http://www.rfnsa.com.au>.

SITE LOCATION



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licence, the full licence of which can be accessed at <http://creativecommons.org/licenses/by-sa/2.0/legalcode>

SITE CO-ORDINATES	
MONOPOLE LOCATION	
DATUM: MGA (GDA94)	ZONE: 55
LATITUDE	-16.56446°
LONGITUDE	145.47917°
EASTING	337 732
NORTHING	8 168 011

LEGEND

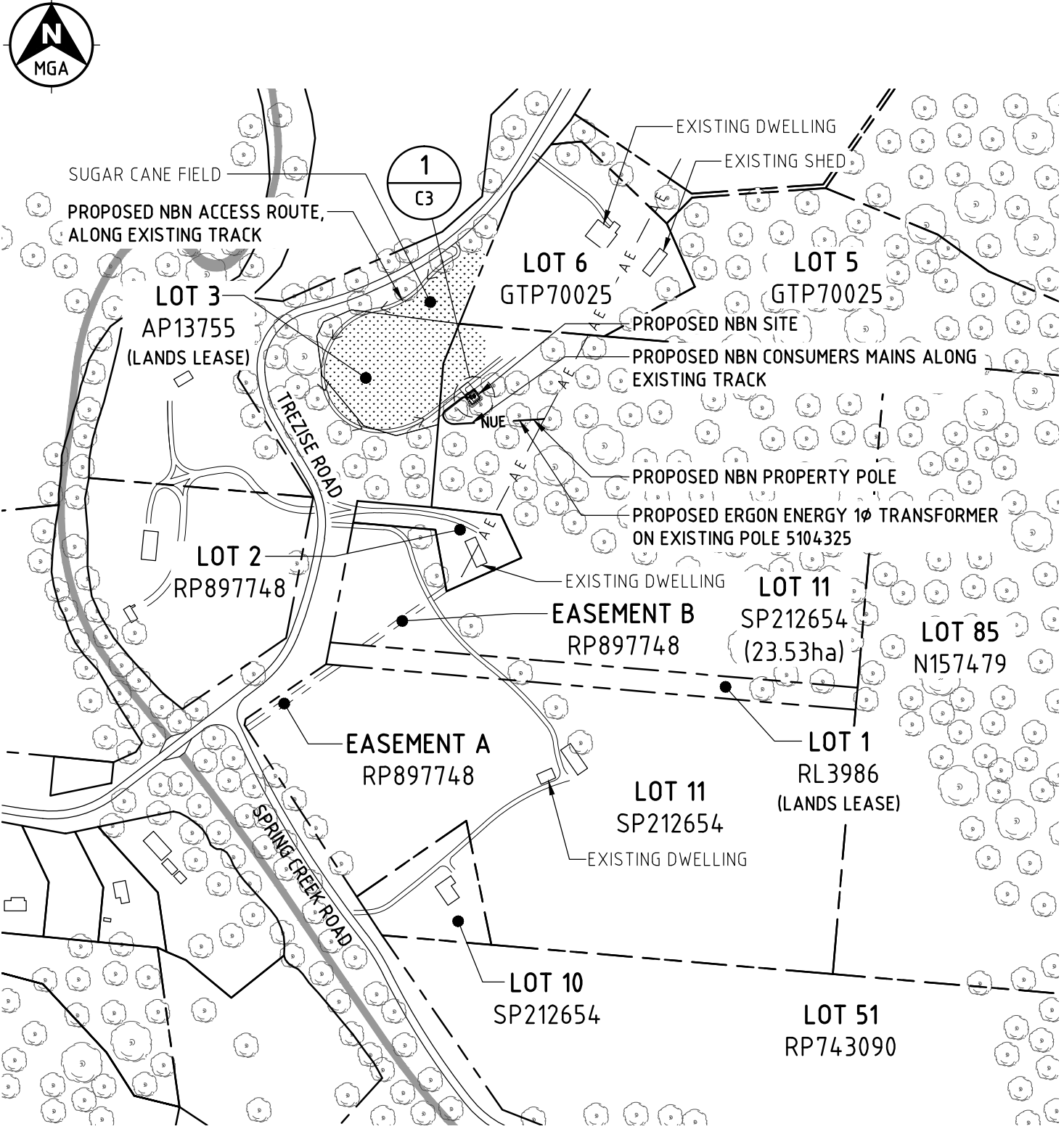
- NUE

NUE

NBN UNDERGROUND ELECTRICAL ROUTE
- A E

A E

EXISTING AERIAL ELECTRICAL ROUTE
- PROPERTY BOUNDARY



OVERALL SITE PLAN

SCALE 1:5000

NOTE:

THE NBN CONSUMER MAINS ROUTE SHOWN ON THE DRAWINGS IS INDICATIVE ONLY. ELECTRICAL CONTRACTOR TO DETERMINE EXACT ROUTE. ELECTRICAL CONTRACTOR TO LOCATE AND IDENTIFY EXISTING U/G SERVICES PRIOR TO COMMENCEMENT OF WORK.

Client:



Client:



Client:

Project:

NATIONAL BROADBAND
NETWORK
SITE No: 4MOS-51-09-MOWB
MOWBRAY
21 SPRING CREEK ROAD
MOWBRAY
QLD 4877

PRELIMINARY

01	03.08.15	PRELIMINARY ISSUE
Rev	Date	Revision Details



DESIGNED: MR
CHECKED: JR
APPROVED: LS

Drawing Title:
OVERALL
SITE PLAN

Drawing No.
4MOS-51-09-MOWB-C2

Revision
01

