

Wickepin LTE Project – DA Supporting Documentation

Cell West 1e_B

| | |
|-----------------------------------|--|
| Location | 117.3496746, -32.68833847 |
| Lot ID | P145182 446 Location ID-2035977 |
| Address | Townsend Rd., Townsendale |
| Nearest Intersection | Townsend Rd. and Kerruish Road |
| Proposed Equipment | 20m Self-supporting mast and Solar power array and small footprint equipment cabinet |
| EPBC Report Result | Report Generation ID: PMST-O86X23 No EME concerns have been identified. See attached report |
| Aboriginal Heritage Inquiry Check | No Heritage site impact |
| Location Description | Access from Townsend Rd., access track to upgraded prior to installation to ensure equipment can be delivered to site. |

Contents

- Description of Stirling to Coast Farm Project
- Site location from *WA Digital Infrastructure Atlas*, DPIRD ID Site Location
- Indicative site equipment & Layout Photo
- Site location - *Aboriginal Heritage Inquiry System Proximity* web page capture

Documents Attached

- Application for development approval, Schedule 6 Shire of Plantagenet.
 - o *Cell_West1e_B Cuballing Shire – Schedule 6 v1.0.PDF*
 - o *EPBC Report - PMST_OI5RJ5_ Wickepin Cell West.PDF*
 - o *Environmental EME Report*
 - o *MCF Fact Sheet - Mobile Base Stations and Health*
 - o *MCF Fact Sheet - Reading the Australian radiation protection and nuclear safety agency EME report*



Description of Stirling to Coast Farm Project

About Pivotel's ecoSphere

Pivotel will be providing its ecoSphere® solution designed for broadband data and Machine 2 Machine connections with a mix of LTE (4G) and satellite connectivity. The ecoSphere® solution offers broadband data, video, tracking and monitoring connections for on-site and remote assets and personnel to maximise safety and operational efficiency - saving time and money.

The ecosphere solution supports the Western Australia Department of Primary Industries and Regional Development digital farms initiative for the widespread adoption of digital farm technologies to help drive better digital connectivity for agricultural and pastoral businesses in regional Western Australia. The program will:

- Provide fast, reliable, affordable and scalable broadband to support digital farming practices.
- Enable agricultural businesses to use smart farming technologies such as cloud-based data sharing and decision-making resources, improving productivity and output.
- Enable farming businesses to gain access to productivity enhancing technology which is a key element in making businesses internationally competitive

The ecosphere solution will provide a distributed network of low powered micro LTE base stations (BTS) connected via microwave links back to a dedicated hub (EPC) linked to a high capacity internet connection. The radio base stations, or eNodeB, are a low powered version of a typical macro size mobile base station typically producing 5W output power.

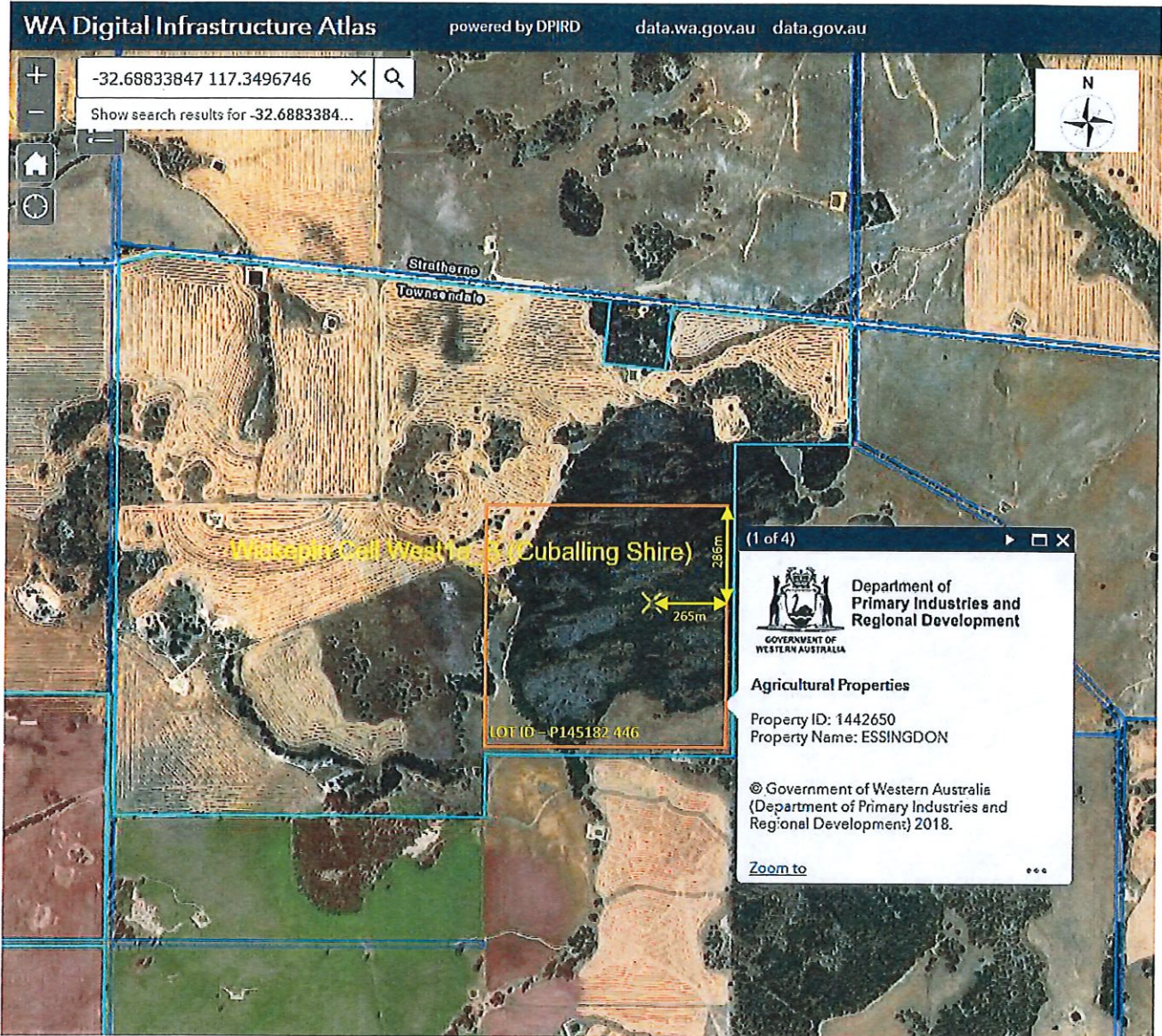
For the Pivotel project the micro base station will be typically installed on guyed mast sites at varying heights. As the Flexi Zone Micro BTS and consumes little power, installation and running costs are significantly reduced without compromising the quality of the delivery capacity. The Flexi Zone Micro BTS uses passive cooling and has no acoustic noise output.

By operating small cells at maximum signal strengths that are significantly below that safety standard, Pivotel will additionally apply a precautionary approach to the operation of its network, in keeping with the expectations of the Industry Code C564:2018, which defines a valid precautionary approach as follows:

- Minimising, as appropriate, RF exposure which is unnecessary or incidental to achievement of service objectives or process requirements, provided this can be readily achieved at reasonable expense. Any such precautionary measures will follow good engineering practice and relevant codes of practice.
- Pivotel understands the community want carriers to minimise their exposure to radio signals, and we advise that our low-powered, small cell network has been designed to operate according to this principle. Pivotel facilities will comply with safety standards by a considerable margin, even in their "worst case", and a precautionary approach has been applied to their design as per the safety Standard.

A typical radio site requires a limited set of equipment a BTS, antenna and microwave units installed at the top of a guyed mast without the need for any additional radio equipment shelter. The site is powered by a solar installation within a small enclosure at the base of the mast with batteries, regulator and solar panels. All site configurations will be finalised after the site has been confirmed and the radio design has been established as being able to provide an acceptable coverage level.

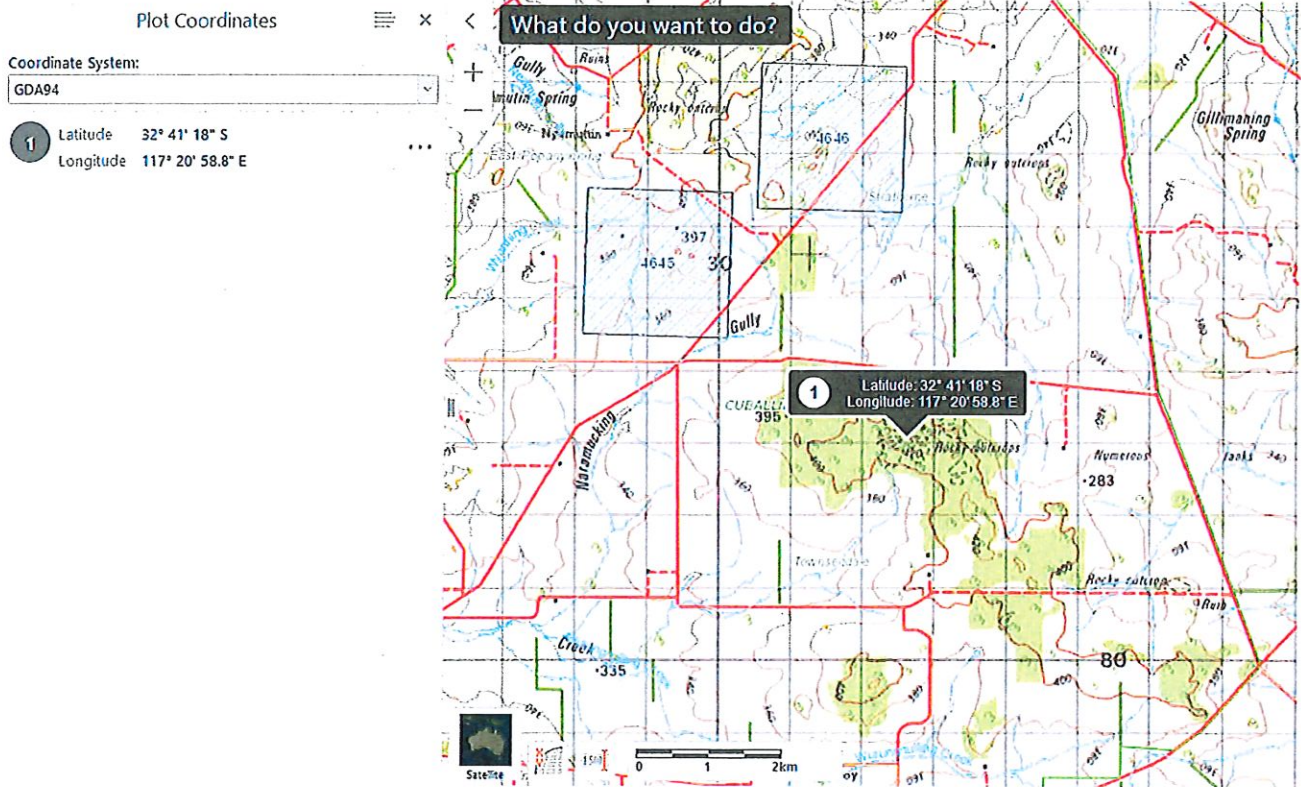
Site location from WA Digital Infrastructure Atlas, DPIRD ID Site Location



Indicative site equipment & Layout



Site location - Aboriginal Heritage Inquiry System Proximity – Web page



Pivotel Mobile Smart Farm Project

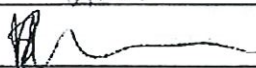

*Shire of Cuballing
Town Planning Scheme No. 2*

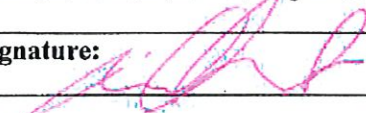
SCHEDULE SIX

FORM OF APPLICATION FOR PLANNING APPROVAL

**Shire of Cuballing
Town Planning Scheme No. 2**

Application for Planning Approval

| | | | |
|--|---------------------------|---|--|
| Owner details: | | | |
| Name: SPR + K. L. MACNAMARA. | | | |
| Address: 2474 BULLAMING Rd. EAST PINGELLY 6308 Postcode: | | | |
| Phone: | | FAX: | |
| Home: 08 9881 9011 | Work: 0427 815 275 | Email: s.l.macnamara@pivotel.com | |
| Mobile: | | | |
| Contact Person: SAM | | | |
| Signature:  | | Date: 30.3.2020 | |
| Signature:  | | Date: 30.3.2020 | |
| The signature of the owner(s) is required on all applications. This application will not proceed without that signature. | | | |

| | | | |
|--|--------------|--|--|
| Applicant details: | | | |
| Name: Nicholas Hart - Pivotel Mobile | | | |
| Address: 18 Kings Park Road, West Perth, WA Postcode: 6060 | | | |
| Phone: | | FAX: | |
| Home: | Work: | Email: nicholas.hart@pivotel.com.au | |
| Mobile: 0455 021 022 | | | |
| Contact Person for Correspondence: | | | |
| Signature:  | | Date: 30/3/2020 | |

*Shire of Cuballing
Town Planning Scheme No. 2*

Part 2

| | | |
|--|--------------------------------------|--------------------------------|
| Property details: | | |
| Lot No. 446 | House/Street No: | Location No: 2035977 |
| Diagram or Plan No: P145182 | Certificate of Title Vol. No: | Folio: |
| Diagram or Plan No: | Certificate of Title Vol. No: | Folio: |
| Title encumbrances (e.g. easements, restrictive covenants): | | |
| Street name: Townsend Road | | Suburb: Townsendale |
| Nearest Street Intersection: | | Townsend rd. and Kerruish Road |

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|---|
| Existing building/land use: |
| Description of proposed development and/or use: <small>Proposal to erect a 20m self-supporting mast on agricultural land as agreed with the landowner. Installed on the mast will be low power LTE radio equipment supplying data services to farmsteads, vehicles and farm equipment. Site will be powered by a solar array at the base of the mast.</small> |
| Nature of any existing buildings and/or use: <small>No existing buildings. Land use is agricultural</small> |
| Approximate cost of proposed development: <p style="text-align: right;">\$45,000</p> |
| Estimated time of completion: <p style="text-align: center;">June 2020</p> |

| | |
|---------------------------------------|-----------------------|
| Office Use Only | |
| <i>Acceptance Officer's initials:</i> | <i>Date Received:</i> |
| <i>Local Government Reference No:</i> | |

Mobile Base Stations and Health

For many of us, mobile phones are an essential part of everyday life. It's the most convenient way to stay connected to people and online information.

In order to work, our phones and wireless broadband devices connect to a network of mobile base stations. You can see antennas and base station equipment in many different places, including building rooftops, roadside poles, and at community facilities.

The mobile phone carriers (Telstra, Optus and Vodafone Hutchison Australia) are responsible for installing and upgrading their base station networks.

These are some of the answers to questions that are frequently asked about mobile networks and safety.

I have heard there's a new base station proposed in my suburb. Are they safe?

Like many other things, base stations are subject to a safety standard regulated by the Australian Federal Government. The regulations cover lots of radio services including AM and FM radio, police, fire and ambulance communications as well as mobile phones, wireless devices and mobile base stations. Mobile base stations must comply with these regulations and information on the compliance and emission levels can be found on the national site database at www.rfnsa.com.au for each site.

Who sets the safety standard?

A government organisation called ARPANSA (Australian Radiation Protection and Nuclear Safety Agency) set the safety standard after careful analysis of national and international scientific studies. The standard is based on guidelines recommended by the World Health Organization (WHO).

What about the increase in wireless laptops and other devices? Does that change the safety of a base station?

As technology evolves and equipment is updated, the fundamental safety regulations must still be met. So, as we saw analogue technology make way for 2G, 3G and now 4th Generation mobile technologies such as LTE (Long Term Evolution), and other high speed data technologies emerging, the safety requirements stay the same – the

Standard is relevant for the radio frequency range that phones and other devices use, regardless of the technology.

What about the effect on children?

The safety standard is set at a level that protects everyone, including children and the elderly.

What do the experts say?

The WHO has a number of fact sheets about mobile phones and health available on their website. In the "[Base Stations and Wireless Networks](#)" fact sheet, the WHO states "*Considering the very low exposure levels and research results collected to date, there is no convincing scientific evidence that the weak radio frequency (RF) signals from base stations and wireless networks cause adverse health effects*".

<http://www.who.int/mediacentre/factsheets/fs304/en/index.html>

Similarly ARPANSA's latest factsheet updated in 2012 "Mobile Telephone Communications Antennas and Health Effects" concludes that "*No adverse health effects are expected from continuous exposure to the RF radiation emitted by the antennas on mobile telephone base station towers*".

http://www.arpansa.gov.au/radiationprotection/factsheets/is_antenna.cfm

Where can I get more information?

Independent information can be obtained from:

- Australian Radiation Protection and Nuclear Safety Agency (ARPANSA)
Ph: 03 9433 2211
www.arpansa.gov.au
- World Health Organization:
<http://www.who.int/peh-emf/en/>

Additional information can be obtained from:

- Mobile Carriers Forum
Ph: (02) 6295 8191
www.mcf.amta.org.au
- EMF Explained web site
www.emfexplained.info

Reading the Australian radiation protection and nuclear safety agency EME report

The ARPANSA EME Report has been developed by the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) to ensure that information about wireless base stations and levels of electromagnetic energy (EME) are clearly provided to interested stakeholders.

An ARPANSA EME Report must be prepared for all new wireless base station installations and for upgrades of existing sites where the Mobile Phone Base Station Deployment Code 2011 requires an ARPANSA EME report. The ARPANSA EME Reports are prepared by the carrier or a consultant on the carrier's behalf. This report is publically accessible via the mobile carrier's national database of all mobile phone sites, the Radio Frequency National site Archive (RFNSA- see www.rfnsa.com.au).

Mobile phone networks operate by sending radio signals from wireless base station antennas placed in strategic locations to and from mobile phones. These antennas are radio transceivers that transmit and receive electromagnetic energy in a specific surrounding area, much like other two-way radio signals.

For more information on electromagnetic energy, please refer to the ARPANSA fact sheet "Electromagnetic energy and its effects" found at <http://www.arpansa.gov.au/eme/index.cfm>

EME is estimated using the mandated ARPANSA EME Report methodology. This methodology produces a predictive report based on site specific information and then adopting uniform assessment criteria. The report provides estimates based on the maximum predicted levels of EME.

The first two headings of the report provide introductory information about how the report is prepared and the EME regulations in relation to wireless base stations.

For more information about the EME exposure limits, please refer to the Australian Communications and Media Authority (ACMA) fact sheet "Mobile base stations and EME" found at http://www.acma.gov.au/WEB/STANDARD/pc=PC_1750

Existing Site Radio Systems

This section of the ARPANSA EME Report provides information about any existing mobile telephone or other known wireless systems already operating at the specific location. This would include other carriers' operating systems.

The ARPANSA EME Report predictions take in to account the EME levels of operating systems able to be identified by the carrier at that specific location, so that the EME information provided in the Table of Predicted EME Levels is cumulative information.

Table of Predicted EME Levels – Existing

This table shows the predicted levels of electromagnetic energy from the existing site. Information about the levels of EME are predicted from beneath the proposed antennas to distances of 500m from the site.

The left side of the table shows the levels calculated in circular "bands" from the site, i.e. from the base to 5m distance, 5m to 50 m distance and so on. For example, if you were interested in the maximum predicted level of EME at a distance of 90m from the site, you would refer to the level in the 50m – 100m band. The level reported in each band is the maximum level that will occur in that band.

The right side of the table provides information about the predicted levels of EME. The information is expressed as a percentage of the Australian Government's mandated ARPANSA Standard (RPS3). This Standard provides protection for all people (including children, the infirm and the elderly) for assumed exposure 24 hours a day, 7 days a week.

The levels are predicted at interval distances from the mobile phone base station at a height of 1.5m above the ground. This table assumes that the ground level is flat. Appendix A of the EME Report may provide further information if there is a significant variation in the ground level from the site.