



Electromagnetic Interference (EMI) Assessment

Macorna Wind Farm

Atmos MWV Pty Ltd

Prepared by:

SLR Consulting Australia

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Basis of Report

This report has been prepared by SLR Consulting Australia (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Atmos MWV Pty Ltd (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

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Executive Summary

SLR Consulting Australia Pty Ltd (SLR) has been engaged by Atmos MWV Pty Ltd (Atmos) to undertake the electromagnetic interference (EMI) assessment for the proposed Macorna Wind Farm, located in northern Victoria. The Project comprises up to 114 wind turbine generators (WTGs) with a total installed capacity of approximately 820.8 MW and is targeting commissioning in 2029.

This report builds on the findings of the preliminary EMI assessment, where it refers to the potential for WTGs to disrupt or degrade radiocommunications signals. The assessment has been prepared in accordance with the Victorian *Planning Guidelines for Development of Wind Energy Facilities* and *National Wind Farm Development Guidelines – Draft (EPHC 2010)*, relevant industry practice, and applicable guidance for wind farm radiocommunications coexistence.

The assessment focuses on identifying and mitigating potential interference between WTGs and existing radiocommunications infrastructure within and surrounding the Project area. This includes a review of all services licensed by the Australian Communications and Media Authority (ACMA), including point-to-point and point-to-multipoint radiocommunications links, broadcast television and radio. Meteorological radar operated by the Bureau of Meteorology (BoM) were also reviewed.

The assessment identified six point-to-point radiocommunications links that intersect with or pass near the Project area. These links are operated by multiple licensed service providers and represent the primary EMI risk associated with the proposed development. Each link was individually assessed to determine appropriate minimum turbine setback distances based on second Fresnel zone (SFZ) clearance requirements, with the aim of avoiding or minimising potential signal diffraction, reflection, or scattering effects caused by WTGs.

Recommended minimum WTG setback distances to avoid interference range from 114 m to 301 m, depending on the characteristics of each link. Where practicable, an additional 100 m compliance margin has been applied to these setback distances to further reduce residual EMI risk, provide conservatism appropriate for a large-scale wind energy facility, allow for design refinement and micro-siting as the project progresses.

The assessment concludes that, with implementation of the recommended setback distances and targeted micro-siting measures, the Macorna Wind Farm as proposed will avoid unacceptable EMI impacts to existing radiocommunications services. No significant residual EMI impacts have been identified that would impede development of the Project.

Stakeholder consultation for the EMI assessment has been undertaken, risk-based approach consistent with relevant guidance. Consultation focused on service providers associated with point-to-point radiocommunications links identified as having potential EMI risk, including Optus, NBN Co, Goulburn–Murray Water, AusNet and Bureau of Meteorology (BoM). Feedback received has been incorporated into the assessment, including identification of potential constraints and refinement of input data (e.g. updated site coordinates). The assessment reflects the final turbine layout, and no further consultation is considered necessary to support the EMI assessment.



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Acronyms and Abbreviations

ACMA	Australian Communications and Media Authority
ARQZWA	Australian Radio Quiet Zone, Western Australia
CSIRO	Commonwealth Scientific and Industrial Research Organisation
EMC	Electromagnetic Compatibility
EMF	Electromagnetic Field
EMI	Electromagnetic Interference
EPHC	Environment Protection and Heritage Council
IEC	International Electrotechnical Commission
RFNSA	Radio Frequency National Site Archive
SFZ	Second Fresnel Zone
SWIS	South West Interconnected System
UHK	Ultra High Frequency
VHF	Very High Frequency
WTG	Wind Turbine Generator
PTP	Point to point



1.0 Introduction

This report presents the findings of a detailed EMI assessment undertaken for the Macorna Wind Farm. The assessment supports the evaluation of potential interactions between proposed WTGs and existing radiocommunications infrastructure and informs mitigation measures to manage any identified risks.

The assessment considers potential EMI impacts arising from the proposed Project and evaluates the susceptibility of surrounding radiocommunications services to interference effects such as signal obstruction, reflection, diffraction, and scattering.

This assessment investigates the potential for the Project to cause EMI to existing radiocommunications services, including:

- fixed point-to-point radiocommunications links
- fixed point-to-multipoint radiocommunications services
- radiocommunications assets used by emergency services
- meteorological radar and related weather monitoring infrastructure
- broadcast radio and television services
- mobile telecommunications services
- wireless internet services
- satellite-based television and internet services
- citizen band (CB) radio and other local radio services

In this report, the term *radiocommunications* is used broadly to describe all services that rely on electromagnetic waves for the transmission of signals, including those listed above.

The assessment focuses on identifying existing radiocommunications infrastructure within and surrounding the Project area, evaluating potential EMI risks arising from the construction and operation of the proposed wind turbines, and defining appropriate mitigation measures such as turbine setback distances and micro-siting to avoid or minimise adverse impacts.



2.0 Project Description

2.1 Project Overview

The Macorna Wind Farm (MAWF) is a proposed utility-scale renewable energy development located in northern Victoria. The Project is being developed by Atmos Renewables, on behalf of Macorna SPV – Atmos MWV Pty Ltd as trustee for the Atmos MHV Trust.

The Project will comprise up to 114 wind turbine generators (WTGs) with a combined nameplate capacity of approximately 820.8 megawatts (MW). The turbines are anticipated to be Vestas V172–7.2 MW units, or similar, with a hub height of up to 166 m and a maximum blade tip height of approximately 252 m above ground level.

Electricity generated by the wind farm will be supplied into the National Electricity Market (NEM) via connection to the proposed VNI West Tragowel Terminal Station, which forms part of the Victoria–New South Wales Interconnector West transmission project.

The Project will contribute to Victoria's renewable energy transition and is expected to generate sufficient electricity to power approximately 590,000 homes annually, supporting State targets for renewable energy and emissions reduction.

2.2 Project Location

The Project is located at Faulkner Road, Tragowel (Victoria) within the Gannawarra and Loddon Shire local government areas, in the Loddon Mallee region of Victoria.

The Project Area covers approximately 23,000 hectares, across approximately 26 landholdings, within a broader 26,000 hectare study area originally investigated for development. The estimated temporary construction disturbance footprint is approximately 750 hectares, of which approximately 40% is expected to remain as operational infrastructure.

The Project Area encompasses land within or near the localities of:

- Macorna
- Macorna North
- Loddon Vale
- Tragowel
- Mincha West

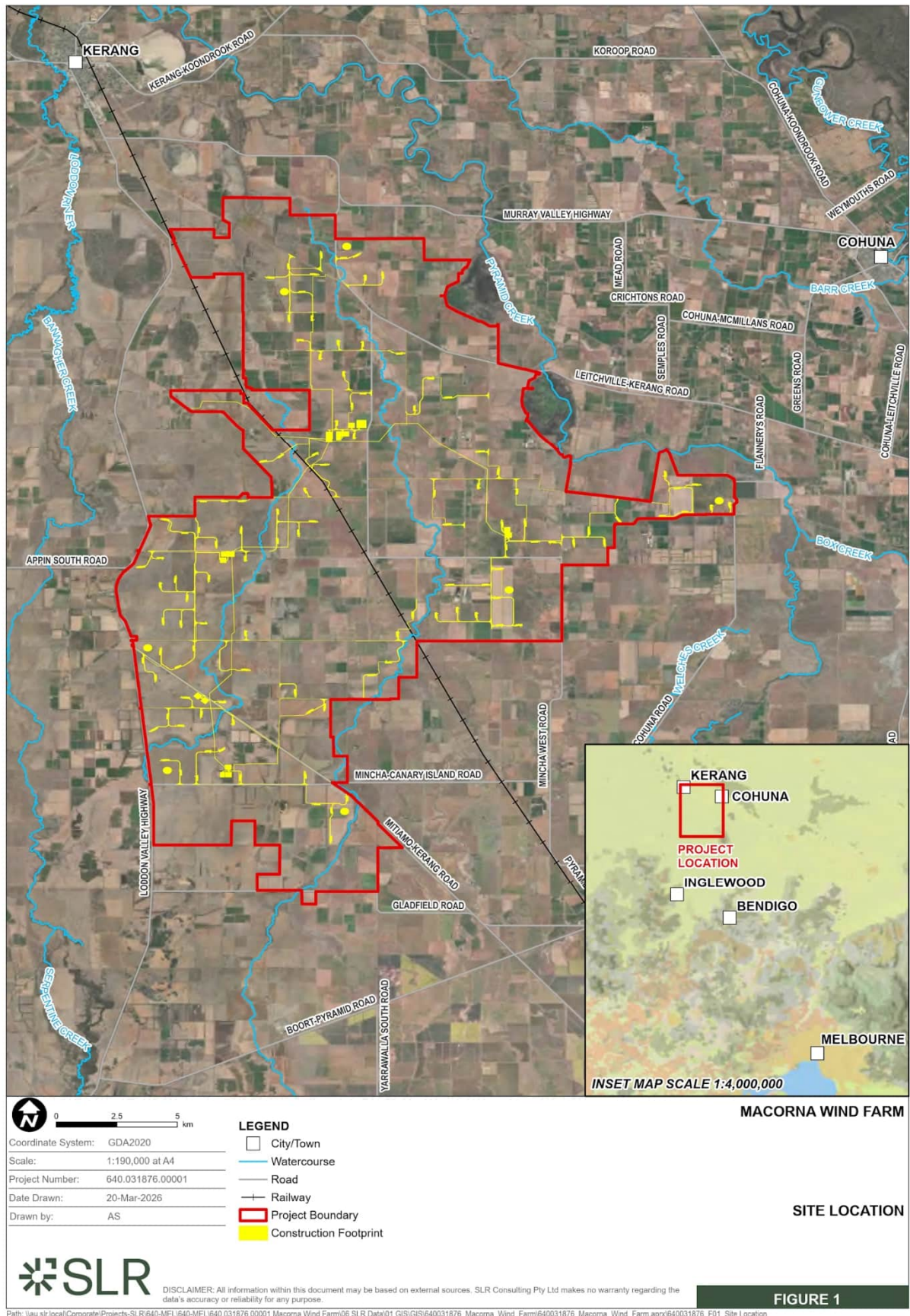
Nearby regional centres include Kerang and Pyramid Hill which are generally greater than 9km from proposed turbines. The landscape is generally flat and largely cleared of native vegetation, with small pockets of remnant vegetation remaining.

The Project Area is also located adjacent to the proposed VNI West Tragowel Terminal Station and within the draft North West Renewable Energy Zone (REZ) identified in the Victorian Transmission Plan.

The Project Area is shown in **Figure 1**.



Figure 1 Project Area Overview



2.3 Project Components

2.3.1 Wind Turbine Generator

The wind turbine generators (WTGs) nominally selected for the Macorna Wind Farm are the Vestas V172-7.2 MW model.

The platform represents Vestas' latest generation of utility-scale wind turbines and incorporates a modular nacelle design that enables multiple turbine variants to be produced from common base components, improving manufacturability, logistics efficiency, and lifecycle performance.

Key technical parameters of the representative WTGs relevant to electromagnetic interference (EMI) assessments are summarised below in Table 1:

Table 1 Representative WTG Details

Parameter	Representative Characteristics
WTGs model	Vestas V172-7.2
Rated power	7,200 kW
Hub height	166 m above ground level
Number of blades	3
Blade length	86 m
Rotor diameter	172 m
Rotor swept area	23,235 m ²
Maximum blade tip height	252 m
Cut-in wind speeds	3 m/s
Representative Rotor Speed	10 rpm
Rotor speed (dynamic operating range)	4.3 – 12.1 rpm
Wind class	IEC S Configuration

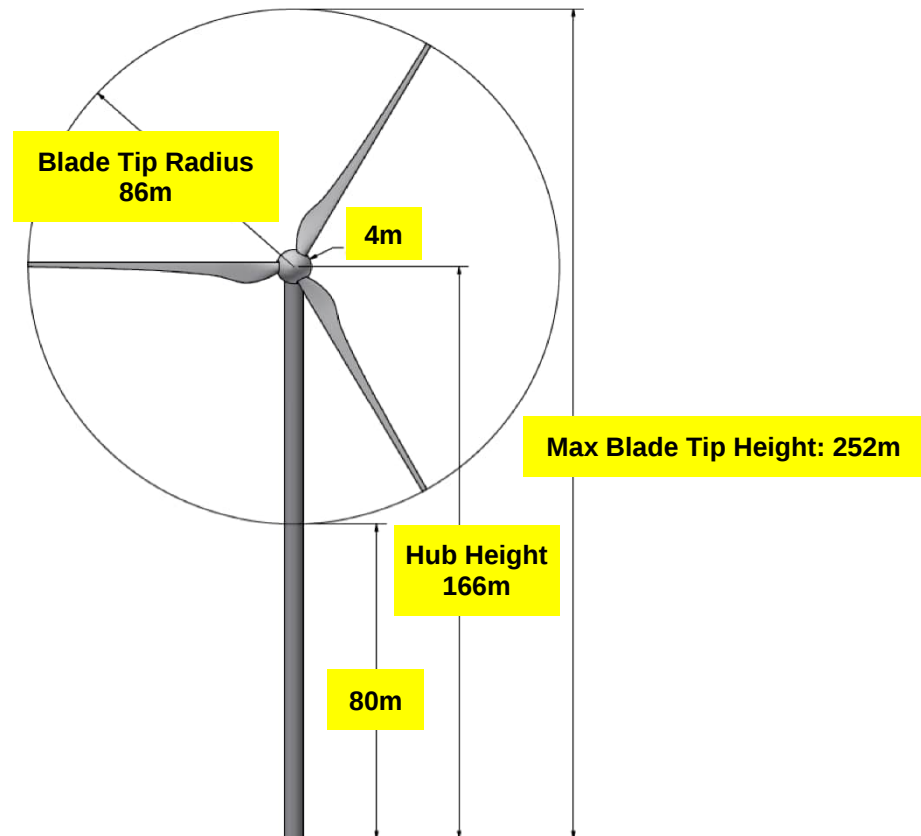
The turbine design includes comprehensive protection systems, including overspeed protection, lightning protection in accordance with IEC 61400-24, electromagnetic compatibility (EMC) compliance, and earthing systems integrated with the wind farm's medium-voltage network. These features are relevant to the assessment of potential EMI impacts on nearby radiocommunications infrastructure.

The Vestas V172-7.2 MW WTGs shown in **Figure 2** comprises the following:

- Foundation – in-ground mass concrete to support the WTG.
- Tower – a tapered steel support column.
- Rotor Hub and Nacelle – the nacelle houses the generator as well as other components and is attached to the rotor hub. The nacelle and hub can rotate to face the wind direction with the hub to the front and the nacelle to the rear.
- Blades – three blades attached to the rotor hub forming the rotor swept area.



Figure 2 Vestas V172-7.2 MW WTGs Geometry Parameters



2.3.1.1 Electromagnetic Emissions

The electromagnetic frequency energy emitted by the Vestas WTGs complies with all applicable European Union (EU) legislation and International Electrotechnical Commission (IEC) standards, which aligns with the equivalent standards, frameworks and guidelines used in Australia, including the ACMA-mandated Electromagnetic Compatibility (EMC) standards. The electromagnetic emission from the WTGs is sufficiently low to avoid interference with radiocommunications operated by third parties. The full list of electromagnetic compliance standards met by the proposed WTGs is provided below.

Electromagnetic Compatibility

Electromagnetic compatibility and compliance relate to the management of electromagnetic energy and how it may cause electromagnetic interference (EMI) or physical damage in the environment in which it operates.

The WTG and related equipment fulfil the EU Electromagnetic Compatibility (EMC) legislation: DIRECTIVE 2014/30/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility.



The EMC performance is based on fulfilment of the following standards:

- **Emission**
 - o IEC/CISPR 11 at wind turbine level
 - o IEC 61000-6-4 for telecommunications
- **Immunity**
 - o IEC 61000-6-2 for electronics installed
 - o IEC 61400-24 for lightning protection of electronics installed
 - o Further to DIRECTIVE 2014/30/EU, electronics related to the functional safety evaluation meets IEC 62061 Safety on machinery (Directive 2006/42/EU Machinery)
- **RED (Radio Equipment Directive)**
 - o Related radio equipment installed in the WTG fulfil the EU legislation: DIRECTIVE 2014/53/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 April 2014.

EMF (Electromagnetic Fields)

Electromagnetic fields in the WTG are controlled to ensure safe occupancy for personnel during design, production, operation and service. The following directive is the basis for ensuring minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents.

- DIRECTIVE 2013/35/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 26 June 2013.

2.3.2 Electrical Infrastructure

The Project will include a network of underground and overhead electrical infrastructure to connect the turbines to the electricity grid. This will include:

- Underground 33 kV electrical and communication cabling connecting turbines to substations
- Up to four collector substations located within the Project Area
- Internal overhead transmission lines connecting the collector substations to the grid connection point
- Connection to the VNI West Tragowel Terminal Station at 500 kV

A battery energy storage system (BESS) may also be incorporated at collector substations. Each BESS is anticipated to have a capacity of up to 150 MW / 600 MWh and would support grid stability by storing electricity during periods of high supply and discharging during peak demand.

2.3.3 Operations and Maintenance Facility

The Project will include an operations and maintenance (O&M) facility, comprising an office and workshop building along with external storage areas and associated infrastructure. The facility will support routine servicing and monitoring of the wind farm during its operational life.



2.3.4 Meteorological Monitoring

The Project will include up to seven permanent meteorological masts installed within the Project Area to monitor wind conditions and support operational forecasting and performance monitoring. Temporary wind monitoring masts may also be installed during the development phase.

2.3.5 Access Tracks and Civil Infrastructure

A network of internal access tracks will be constructed to support both construction and operational activities. These include:

- Internal access tracks typically 6.5 m wide for operational access
- 30–40 m wide corridors for oversize and overmass vehicle movements during construction. Additional civil infrastructure will include turbine foundations, crane hardstands, laydown areas and drainage works.

2.3.6 Temporary Construction Infrastructure

Temporary infrastructure required during construction may include:

- Construction compounds and laydown areas
- Concrete batching plants
- Turbine component storage areas
- Temporary offices and amenities
- Construction workforce accommodation facilities
- Temporary fencing, washdown areas and site access controls

These facilities will be progressively removed or rehabilitated following completion of construction.



3.0 Electromagnetic Interference from Wind Farms

Electromagnetic interference (EMI) is a recognised consideration in the planning and development of utility-scale wind energy facilities. The Victorian Planning Guidelines for the Development of Wind Energy Facilities acknowledge that wind farms have the potential to affect existing radiocommunications services and require proponents to assess and, where necessary, mitigate such impacts through appropriate siting, design, and consultation.

SLR Consulting has undertaken an EMI assessment for the **Macorna Wind Farm** to identify potential constraints on WTG siting associated with existing radiocommunications infrastructure in the vicinity of the Project. The assessment investigates the nature, location and use of licensed radiocommunications services that may be susceptible to interference resulting from the presence and operation of WTGs and associated electrical infrastructure.

EMI associated with wind farms may affect a range of radiocommunications systems, including broadcast radio and television, mobile communications, fixed microwave links, and radar-based services. Any obstruction introduced into the path between a radiocommunications transmitter and receiver has the potential to degrade signal quality. In addition, objects located near a signal path may cause reflection, diffraction, or refraction of electromagnetic waves, which can also adversely affect service performance.

Radiocommunications networks are generally designed to account for existing terrain, vegetation, and built features. However, the construction of wind turbines due to their height, rotor diameter, and moving components can introduce new obstructions or reflective surfaces that were not considered during original network design. Accordingly, new wind energy developments must assess potential EMI effects on existing services and implement mitigation measures where required.

In addition to physical obstruction effects, wind farms may introduce electromagnetic fields associated with electrical infrastructure. The principal potential sources of electromagnetic emissions associated with wind farm developments include:

- the grid interconnection transmission lines,
- wind turbine generators,
- electrical transformers and substations, and
- underground collector network cabling.

These sources are designed to operate within regulated safe limits and are not typically a dominant cause of interference. Nevertheless, where electromagnetic field strengths are sufficiently high or where sensitive services are present, these sources are considered as part of the overall EMI assessment framework.

As stated in the National Wind Farm Development Guidelines – Draft (EPHC 2010):

EMI caused by utility-scale wind farm projects may affect various radiocommunications systems, including broadcast radio and television, mobile phones and radar. Any obstructions between a transmitter and receiver will cause degradation to a radiocommunications signal. Obstructions in the vicinity of a radiocommunications service may also cause reflections or refraction which can degrade a radiocommunications signal, and signals from a transmitter located on a high point in the landscape are less likely to be obstructed. Radiocommunications services are designed to cater for any existing obstructions in the service area. However, the construction of a new wind farm can create new obstructions that may affect existing radiocommunications services.



3.1 Radiocommunications Services Potentially Affected

Wind farm related EMI may affect the following types of radiocommunications services:

- **Point-to-point links**, which rely on uninterrupted line-of-sight between transmitting and receiving antennas (typically microwave links used for telecommunications, utilities, and emergency services)
- **Point-to-multipoint services**, including mobile phone networks, fixed wireless broadband, and broadcast radio and television
- **Meteorological radar**, used for weather observation and forecasting
- **Aviation and other specialist radar systems**, where applicable.

The sensitivity of each service type to EMI varies depending on operating frequency, antenna configuration, path geometry, and tolerance to diffraction or scattering effects.

3.2 Sources of EMI Associated with Wind Farms

There are three primary sources of EMI that may be associated with wind farm developments:

- **Wind turbine towers** – which may act as physical obstructions within a signal path or create reflection and diffraction of electromagnetic waves
- **Wind turbine blades** – which may cause similar effects to towers, with the added complexity of rotation leading to scattering and Doppler-related impacts, particularly for line-of-sight microwave links and radar systems
- **Wind turbine generators and electrical systems** – which may emit electromagnetic noise, however, modern WTGs are designed to comply with applicable electromagnetic compatibility (EMC) standards, and emissions from generators are generally considered to be a lower risk compared to physical interference effects.

For most contemporary wind farms, including the Macorna Wind Farm, EMI risk is predominantly associated with physical interaction between turbine structures and radiocommunications signal paths, rather than electromagnetic emissions from turbine electrical components.

3.3 Assessment Approach

Consistent with Victorian planning guidance and industry best practice, the EMI assessment for the Macorna Wind Farm focuses on identifying existing radiocommunications infrastructure, assessing the proximity of WTGs to critical signal paths (particularly point-to-point links), and defining appropriate setback distances or micro-siting measures to avoid unacceptable interference. Where potential impacts are identified, consultation with relevant service operators is undertaken to inform mitigation and ensure continued reliable operation of affected services.



4.0 Regulatory Requirements

The development of wind energy facilities in Victoria is primarily governed by the Victorian Planning Provisions (VPPs) and the Planning Guidelines for the Development of Wind Energy Facilities (the Victorian Guidelines). These instruments establish the planning and assessment framework for wind farm proposals, including requirements to identify and manage potential impacts on surrounding land uses and infrastructure.

While the Victorian Guidelines do not prescribe specific quantitative criteria for electromagnetic interference (EMI), they require that wind energy facilities be designed and sited to avoid or minimise adverse impacts on existing infrastructure and services. This includes consideration of potential impacts on radiocommunications systems, such as telecommunications networks, broadcast services, radar, and emergency service communications.

In the absence of Victoria-specific technical standards for the assessment of EMI from wind farms, industry practice in Victoria commonly draws on guidance contained in the National Wind Farm Development Guidelines – Draft (EPHC 2010). The Draft National Guidelines provide a structured framework for identifying radiocommunications services that may be affected by wind farm development, assessing potential EMI risks, undertaking stakeholder consultation, and defining appropriate mitigation measures.

In relation to EMI, the Draft National Guidelines outline recommended approaches for:

- identifying radiocommunications infrastructure potentially affected by wind turbine structures
- assessing interference risks associated with turbine height, rotor swept area, and proximity to radiocommunications paths
- consulting with relevant radiocommunications licensees and service operators and
- implementing mitigation measures, such as turbine setbacks, micro-siting, or design refinement, to avoid or minimise interference.

The EMI assessment has also had regard to publicly available information from the Australian Communications and Media Authority (ACMA), including the Register of Radiocommunications Licences, and relevant consultation feedback received from various radiocommunications service providers within Australia. Together, these sources provide the regulatory and technical context for evaluating EMI risks and identifying appropriate mitigation measures for the Project.



5.0 Assessment Methodology

The assessment methodology applied by SLR to the assessment of EMI on the Project follows the workflow outlined in Appendix F of the National Wind Farm Development Guidelines – Draft (EPHC 2010). In accordance with these guidelines, the activities included for assessing the Project at its feasibility and planning (development) application stages is shown in Table 2 below. The assessment methodology included in this report is intended to support the Project's Development Application.

Table 2. EMI mitigation methodology at the feasibility and planning application stages (EPHC 2010)

Assessment Stage	Workflow of Activities by Project Proponent
Project Feasibility	Collect preliminary data
	Determine organisations for consultation
	Identify potential services affected
	Preliminary impact assessment
Planning (Development) Application	Collect data for validation
	Consult potentially affected parties
	Develop mitigation strategy
	Finalise mitigation strategy

The assessment methodology included in this report excludes the evaluation of EMI on aviation operations. It is included in the Project's Aviation Impact Assessment.

5.1 Data Collection

SLR conducted a search of the Australian Communications and Media Authority (ACMA) Register of Radiocommunications Licenses (Jan 2026) to develop a listing of all licensed services within 50 km of the proposed wind turbine locations forming the Project. Information on wireless base stations was also obtained from the Radio Frequency National Site Archive (RFNSA) website (<https://www.rfnsa.com.au>). These are listed in Appendix A. A geospatial overlay of these services across the Macorna Region of Victoria, including the Project development area, is shown in Figure B-2 (Appendix B).

The types of radiocommunications service considered in the EMI assessment include:

- Fixed point-to-point links
- Fixed point-to-area services / point to multi-point
- Mobile Phone Networks
- Meteorological radar services
- Citizens Band (CB) radio
- Emergency services
- Broadcast Television (TV)
- Broadcast Radio (AM/FM)



- Trigonometrical stations
- Wireless internet services
- Satellite services

5.1.1 Fixed Point-to-Point Links

Fixed point-to-point (PTP) radiocommunications links are generally the most sensitive service type to potential interference from wind farm developments. These services rely on a clear line-of-sight between a transmitting antenna and a receiving antenna, typically operating in the microwave frequency bands. Any obstruction or intrusion into the direct signal path or associated Fresnel zones such as wind turbine towers or rotor-swept areas may result in signal attenuation, diffraction, reflection or scattering, leading to reduced signal quality or reliability. As a result, the assessment of fixed point-to-point links forms a primary focus of the EMI assessment for the project.

For Macorna, six PTP radiocommunications links intersect or pass proximate to WTGs within the project area – refer **Table 3**.

Table 3 Six PTP Radiocommunications Links

Link ID	Site ID	Link Location / Direction	Client
1. Optus	Site 1: Optus Site Loddon Valley Hwy DURHAM OX (ID: 305693) Site 2: Optus Site Roney Property Weinberg St COHUNA (ID: 305692)	Approximately 37.3 km in a southeast–northwest direction, located in the Northwest Renewable Energy Zone	1. Optus 2. NBN Co Ltd 3. TPG Internet Pty Ltd
2. Optus to NBN Co	Site 1: Optus Lattice Tower, Gladfield Road, Pyramid Hill (ID: 9010834) Site 2: NBN Co Site – 2819 Loddon Valley Highway, Tragowel (ID: 9023021)	Approximately 25 km from southeast to northwest, crossing the eastern section of project area	1. Optus 2. NBN Co Ltd
3. Goulburn Murray Water Office to Commission Depot	Site 1: Goulburn Murray Water Office (ID: 9008244) Site 2: Commission Depot, Kerang (ID: 43299)	Approximately 40 km in a south-to-northwest direction, intersecting the western section of the project area	1. Community Two Way Radio Systems Pty Ltd (Bendigo Communications) 2. Goulburn-Murray Rural Water Corporation



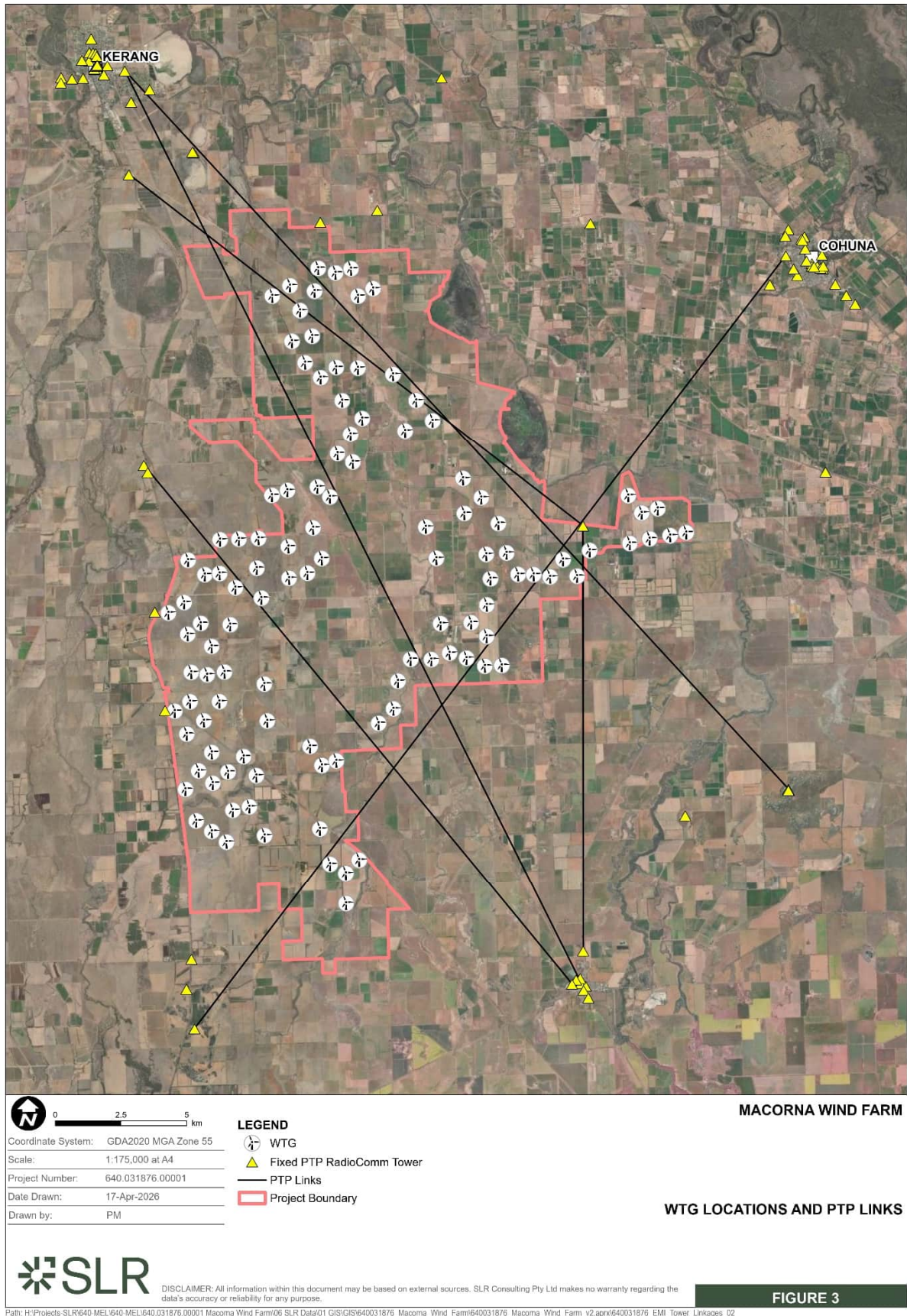
Link ID	Site ID	Link Location / Direction	Client
4. Pyramid Hill to Mincha West Radio	Site 1: Pyramid Hill Radio Site (ID: 10013290) Site 2: Mincha West Radio Site (ID: 10013289)	Approximately 16.2 km in a north–south direction across the central section of the project area	1. Ausnet Transmission Group Pty Ltd
5. Mt Hope to Kerang	Site 1: Goulburn Murray Water Site – Mt Hope (ID: 11879) Site 2: Commission Depot – Kerang (ID: 43299)	Approximately 37.6 km in a northwest–southeast alignment, traversing the central portion of the project area	1. Goulburn- Murray Rural Water Corporation 2. Community Two Way Radio Systems Pty Ltd (Bendigo Communications)
6. Mincha West to Kerang Terminal Station	Site 1: Mincha West Radio Site (ID: 10013289) Site 2: Kerang Terminal Station (ID: 10002229)	Approximately 22.5 km in a northwest–southeast alignment, traversing a portion of the Macorna Wind Farm development footprint	1. Ausnet Transmission Group Pty Ltd

These links are assessed using perpendicular clearance from each WTG to the link centreline and Fresnel zone buffer requirements. Detailed findings are provided in *Section 5.2.1.1*.

Figure 3 shows the six fixed PTP link over the project area



Figure 3 Six PTP Links Across the Project Area



5.1.2 Fixed Point-to-Area / Point-to-Multipoint Services

Point-to-area and point-to-multipoint services include broadcast radio, broadcast television, and mobile telecommunications networks (including 4G and 5G services). These services typically involve transmission from a single site to multiple receivers over a wide geographic area. Such services are generally less sensitive to wind farm developments than point-to-point links, as they are designed with redundancy, adaptive power control and overlapping coverage areas. However, in some circumstances, wind turbines may cause localised signal degradation, particularly in areas already subject to marginal reception.

For the Macorna Wind Farm, these services have been assessed by reviewing the proximity of WTGs to known transmission sites and points of reception and considering the potential for near-field or reflection effects. Where interference cannot be reliably predicted at the planning stage, a mitigation framework is proposed to address any verified impacts should they arise during operation.

5.1.3 Mobile Phone Networks

Mobile phone networks form a subset of point-to-multipoint services and include infrastructure operated by major carriers (Telstra, Optus, Vodafone). These networks are generally resilient to turbine-related interference due to network design, sectorised antennas and overlapping cell coverage.

A review of mobile telecommunications infrastructure in the vicinity of the Macorna Wind Farm indicates that the nearest base stations are located at sufficient distances such that no material interference is anticipated. As with other point-to-area services, any unforeseen operational impacts would be managed through established mitigation processes. Refer to Appendix B-Figure 1,2 & 3 for the Mobile phone network coverage (4G & 5G) across the project development area.

5.1.4 Meteorological Radar Services (BoM)

Meteorological radar systems operate by transmitting electromagnetic pulses and analysing reflected signals to detect precipitation and atmospheric conditions. Large structures such as wind turbines can, in some circumstances, create radar clutter or Doppler contamination when located within close proximity to radar installations.

The Bureau of Meteorology (BoM) operates a network of weather radars across Australia. The nearest BoM radar installations to the Macorna Wind Farm are located at substantial distances from the Project area.

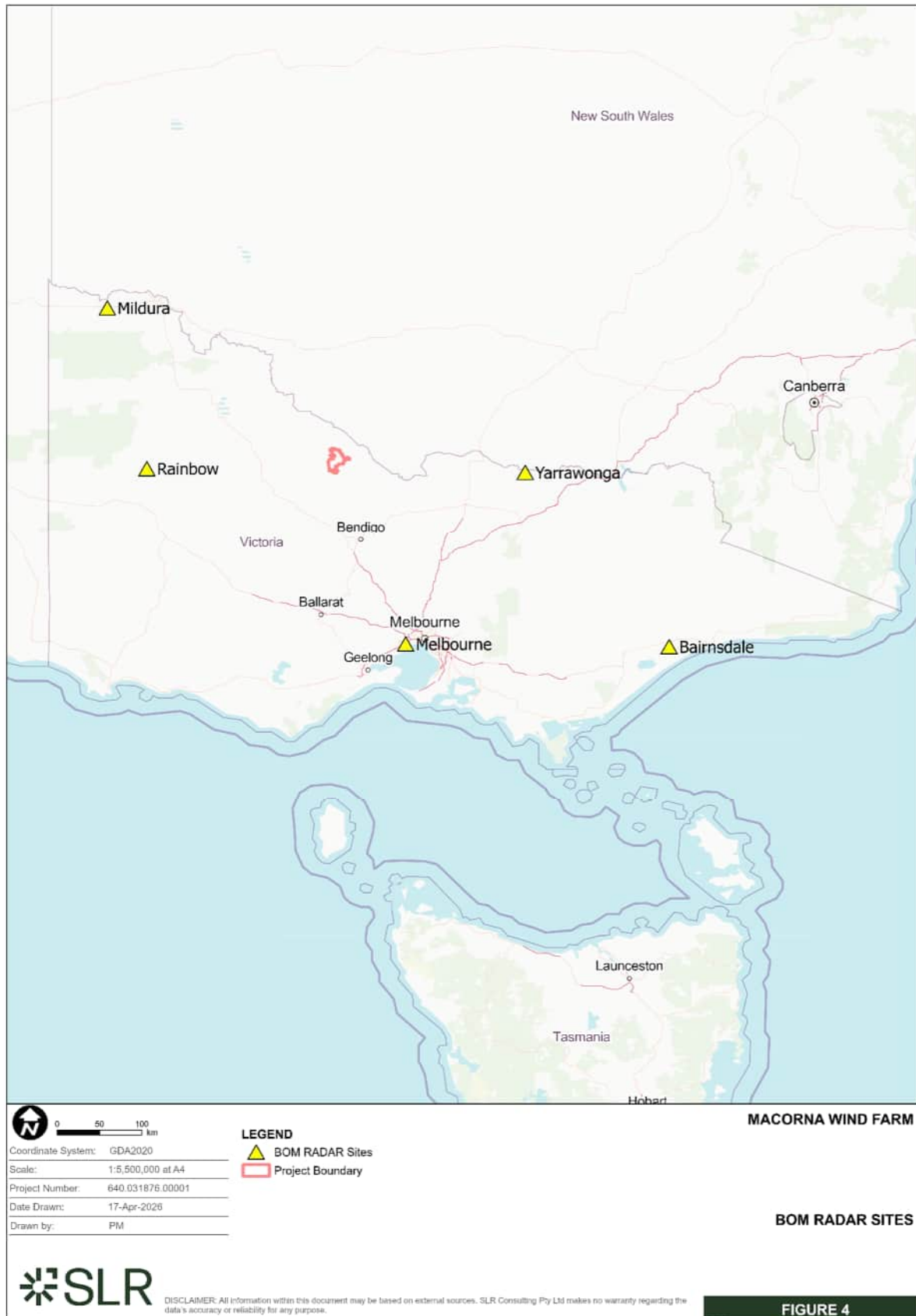
BoM radars (approx. distance to nearest Macorna WTG):

- Rainbow Weather Radar (C-band, Doppler & Dual-Pol) — 175 km
- Yarrawonga Weather Radar (C-band) — 165 km
- Mildura (Cullulleraine) Weather Radar (C-band Doppler & Dual-Pol) — 280 km
- Melbourne (Broadmeadows) Weather Radar (S-band Doppler) — 205 km
- Laverton Weather Radar (Doppler) – 215 km

At these distances, the Project is not expected to result in adverse impacts on radar performance. **Figure 4** shows the BoM radars and the project location. Meteorological radar services have been considered at a screening level as part of the EMI assessment. Consultation with the BoM has been undertaken, with the corresponding communication provided in Appendix C, confirming concurrence with SLR's findings. Aviation radar is not discussed in this report. Refer to the Project's Aviation Impact Assessment.



Figure 4 BoM Radar Stations



5.1.5 Citizens' Band (CB) Radio

Citizen band (CB) radio is used for voice communications over short distances. CB radios may only be used on designated channels in the follow narrow frequency bands (ACMA 2026):

- HF – 26.965 MHz to 27.405 MHz (inclusive)
- UHF – 476.4125 MHz to 477.4125 MHz (inclusive)

Given their relatively short-range application, CB Radio operations are generally not affected by wind farm operations. It should also be noted that the use of CB Radio does not require an ACMA licence and therefore the extent of its use in the vicinity of the Project development area is difficult to quantify.

5.1.6 Emergency & Essential Services

Emergency services and utility operators rely on a range of radiocommunications services, including fixed microwave links and mobile radio systems to support critical operations. Some of the fixed point-to-point links assessed for the Macorna Wind Farm support essential services such as electricity and water management. These services have been captured within the point-to-point link assessment framework. Given their operational importance, conservative setback distances and micro-siting measures have been applied where required to ensure the ongoing reliability of these services.

5.1.7 Broadcast Television (TV)

Broadcast television services operate as point-to-area transmissions from high-power transmitters to wide service areas. Wind turbines may cause localised interference to television reception in areas with weak or marginal signal strength.

Consistent with EMI assessments for wind farms in Victoria, and in alignment with the *Draft National Wind Farm Development Guidelines (EPHC, 2010)*, broadcast (television and radio) transmission sites located within a 75 km radius of the wind farm have been considered in this assessment. Only **five identified broadcast TV transmission sites** fall within this 75 km radius and have therefore been included in the assessment.

The nearest TV transmission sites identified near the Macorna WTG layout (distance to nearest WTG) – refer to **Table 4**.

Table 4 Broadcast TV Sites

No.	Site	Site ID	Distance from nearest WTG
1	Cohuna Site	305692	10 km
2	Koondrook (Sports Ground Penglase St Koondrook)	139376	20 km
3	Murray Valley transmitter (Broadcast Australia Site Ultima)	11885	60 km
4	Wycheproof site (Broadcast Site Grain Silo)	139427	65 km
5	Charlton Site (Water Tank View Street)	139388	58 km

The presence of multiple broadcast transmission sites surrounding the project area reduces the likelihood of widespread or persistent interference.



In particular, receivers within the region may obtain signals from more than one transmission site, often from different orientations. This overlapping coverage provides redundancy in signal reception, meaning that if a turbine were to cause localised disruption to one signal path, alternative signal paths from other transmitters may remain available.

Furthermore, given the relatively large separation distances between the wind turbines and the identified transmission sites (≥ 10 km), any potential impacts are expected to be limited to highly localised conditions, primarily in areas already experiencing marginal reception.

Interference cannot be reliably predicted at the planning stage. Therefore, a mitigation framework is proposed to address any verified impacts should they arise during operation.

5.1.8 Broadcast radio (AM/FM)

AM and FM radio services are also point-to-area services and are generally robust to interference from wind turbine infrastructure. These services operate at relatively low frequencies (longer wavelengths), which are less susceptible to scattering and diffraction effects from wind turbine structures, and therefore have a lower likelihood of interference compared to higher frequency services. Potential impacts are typically limited to areas of weak or marginal reception and are difficult to predict prior to construction. **Table 5** shows the nearest AM/FM transmitter sites identified near the Macorna WTG layout.

Table 5 Broadcast Radio Sites

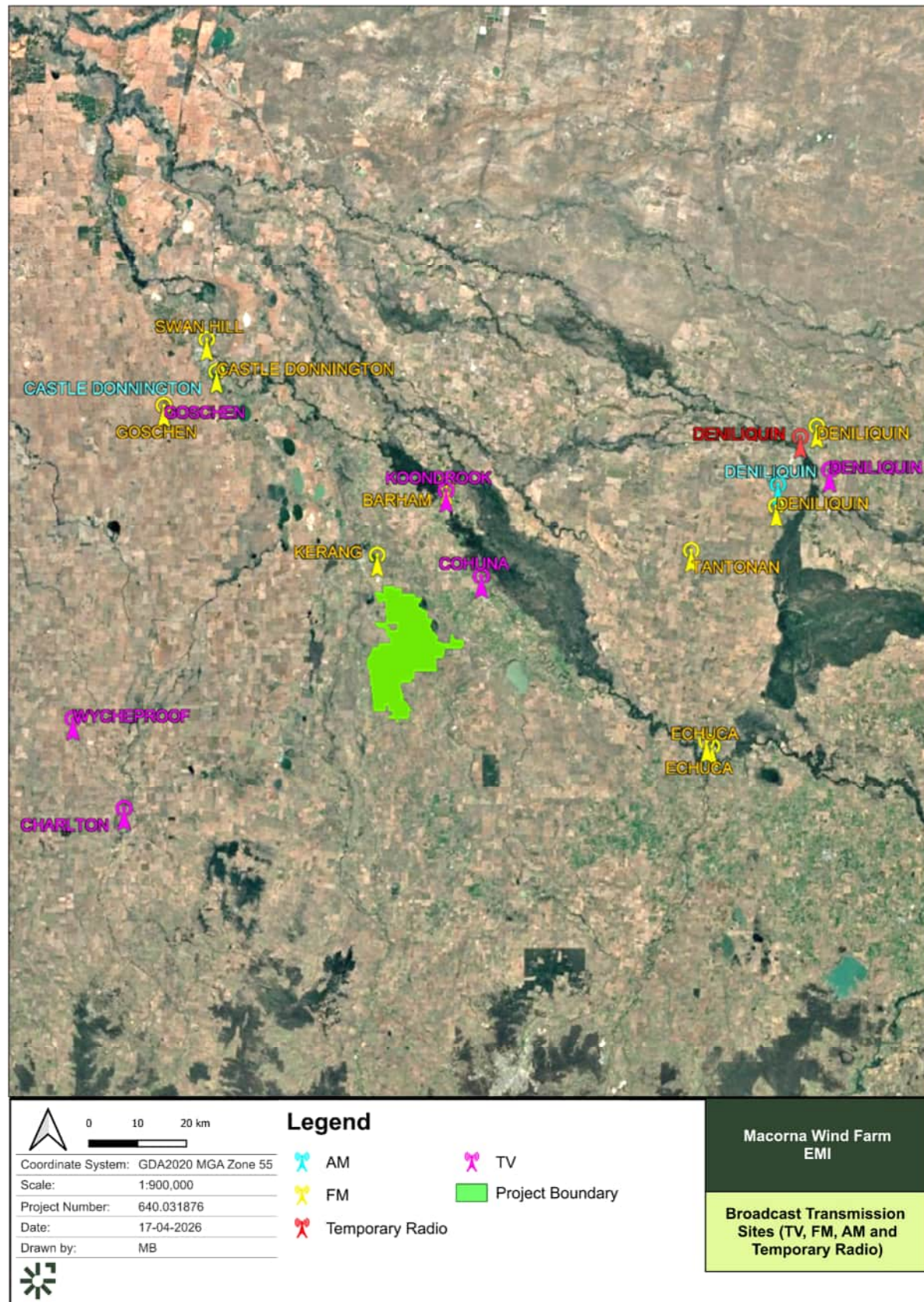
No.	Site	Station	Radio Frequency	Distance from nearest WTG
1	Kerang	3SHI	98.7 MHz	7 km
2	Barham	HPON	94.9 MHz	20 km
3	Tantonan	8SAT	93.9 MHz	50 km
4	Echuca	2QN & 2MOR	102.9 MHz 103.9 MHz	59.90 km
5	Echuca	3GRR	104.7 MHz	60 km
6	Deniliquin	2MOR & 2QN	102.5 MHz 106.1 MHz	74 km
7	Swan Hill	3SFM	99.1 MHz	65 km
8	Castle Donnington	3SHI	106.9 MHz 107.7 MHz	60 km
9	Goschen	3PNN 3MIL 3ABCFM & 3JJJ	95.9 MHz 102.1 MHz 103.7 MHz & 105.3 MHz	62 km

Interference cannot be reliably predicted at the planning stage. Therefore, a mitigation framework is proposed to address any verified impacts should they arise during operation.

Figure 5 shows the Broadcast TV and Radio (AM/FM) sites within the 75 km radius of the project boundary.



Figure 5 Broadcast Transmission Sites around the Project Area



5.1.9 Trigonometrical Stations

Trigonometrical stations are used to support geospatial surveying and positioning and do not rely on active radio-frequency transmissions for their operation. While some stations may be co-located with communications infrastructure, trigonometrical stations themselves are not susceptible to electromagnetic interference from wind turbines. Trigonometrical stations have therefore been considered at a screening level only, and no impacts are anticipated.

5.1.10 Wireless Internet Services

Wireless internet services may operate using fixed wireless or point-to-multipoint technologies similar to other telecommunications services. These systems are generally resilient and have been considered within the broader point-to-multipoint assessment framework. No material impacts on wireless internet services are anticipated as a result of the Project.

5.1.11 Satellite Services

Satellite television and satellite internet services rely on signals transmitted from geostationary satellites to receiving dishes. Interference from wind turbines may occur only in highly specific geometric alignments between the satellite, the receiving dish and turbine structures. Based on the turbine layout and distances involved, interference with satellite services is considered unlikely. Satellite services have therefore been assessed at a screening level.

5.2 Identification of Services Potentially Affected

Having determined the licensed radiocommunications services in the vicinity of the Project and reviewed any known exclusion zones defined by the organisations listed above, SLR determined which services may be affected by the Project. A mitigation strategy using broad screening-type avoidance measures was first considered. This identified the WTG locations that required greater scrutiny using analytical methods.

5.2.1 Recommended Criteria to Mitigate EMI using Avoidance Measures

The National Wind Farm Development Guidelines – Draft (EPHC 2010) includes general recommendations for where WTGs should avoid being sited:

- **within the maximum second Fresnel zone of a point-to-point link.** Several WTG locations with respect to their nearest point-to-point radio link have required second Fresnel zone calculations to verify the potential for EMI. This has also triggered a requirement for stakeholder consultation.
- **within 2 km of a radiocommunications site or a receiver.** Twenty (20) WTGs proposed on the Project are sited closer than 2 km from the nearest radiocommunications site. This has also triggered a requirement for stakeholder consultation.
- **within 250 nm of Aeronautical and Weather Radar operations.** The Project is within this range of the nearest weather radar station, as discussed further below. This has also triggered a requirement for stakeholder consultation.

Further details on setting an appropriate avoidance criteria for specific types of services is provided as follows.

5.2.1.1 Point-to-Point Services – Obstruction to Line-of-Sight Path

When the location of a WTG causes point-to-point radiocommunications signals to be partially or fully obstructed, it can result in a reduction or loss of signal.

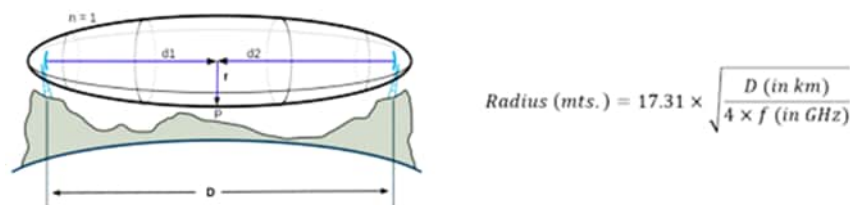


From prior consultation with radiocommunications operators on other recent wind farm projects, it is generally accepted that effects from obstruction by wind turbines can be avoided by placing the turbines, including their blade swept area, outside the Second Fresnel Zone (SFZ) of the path of a point-to-point radio link.

Additional conservatism is often requested by service operators with the inclusion of a margin of error in the calculations, typically in the order of 100m buffer where practicable, to account for factors such as the geospatial tolerance on licensed radiocommunications sites registered with ACMA.

- The SFZ is calculated using the frequency of the signal and the length of the path. The maximum SFZ radial extent of a link (worst case for detecting potential interference) occurs at the mid-point along the path. The SFZ clearance is equal to 141.4% of the first Fresnel Zone radius (i.e., $\sqrt{2} \times r_1$), as shown in Figure 6

Figure 6 Fresnel Zone radius & calculation



where,

D = distance between point-to-point antenna locations (km)

f = transmitted signal frequency (GHz)

There are six point-to-point radio links within the Project development area transmitting to/from six sites, as listed above. The licensees (project stakeholders) were identified as requiring consultation on the Project based on their proximity to the proposed WTGs listed in the further section of the report.

To prevent electromagnetic interference, it is recommended that all wind turbine generators (WTGs), including the full rotor-swept area, be located outside the Second Fresnel Zone (SFZ) of point-to-point (PTP) radiocommunications links. The SFZ is an ellipsoidal volume in airspace, which is at its largest in vertical cross-sectional area at the midpoint between each transmitter and receiver. The SFZ radius, as shown in Table 6, is the perpendicular distance between the centreline of the link and the SFZ's mid-point extremity.

Table 6 Summary for the six PTP links of interest and their calculated Second Fresnel Zone Radius at the links' mid points

Link No	Site ID 1	Site ID 2	Distance D (km)	Min Frequency f (GHz)	1st Fresnel Zone Radius (m)	2nd Fresnel Zone Radius (m)
<u>1</u>	305692	305693	39.804	5.960025	22.367	31.632
<u>2</u>	9010834	9023021	27.496	6.58	17.692	25.021
<u>3</u>	9008244	43299	42.371	5.9452	23.106	32.676



Link No	Site ID 1	Site ID 2	Distance D (km)	Min Frequency f (GHz)	1st Fresnel Zone Radius (m)	2nd Fresnel Zone Radius (m)
<u>4</u>	10013290	10013289	17.388	7.7477	12.966	18.337
<u>5</u>	11879	43299	39.987	0.450625	81.530	115.301
<u>6</u>	10013289	10002229	21.842	7.807	14.477	20.473

The recommended setback distance in plan view, measured from the WTG tower centreline, is calculated as the sum of the SFZ radius, the WTG rotor radius and the site precision tolerance. Table 7 shows the Recommended minimum WTG Setback distance.

Table 7 Recommended minimum WTG Setback distance

Link No	ACMA Site Precision (tolerance in m)	Recommended Min. WTG Setback Distance (m) Approx.
1	100.00	218
2	10.00	121
3	100.00	219
4	10.00	114
5	100.00	301
6	10.00	116

Figure 7 & 8 shows the PTP link with Fresnel Zone Across the Project Area



Figure 7 Fresnel Zone

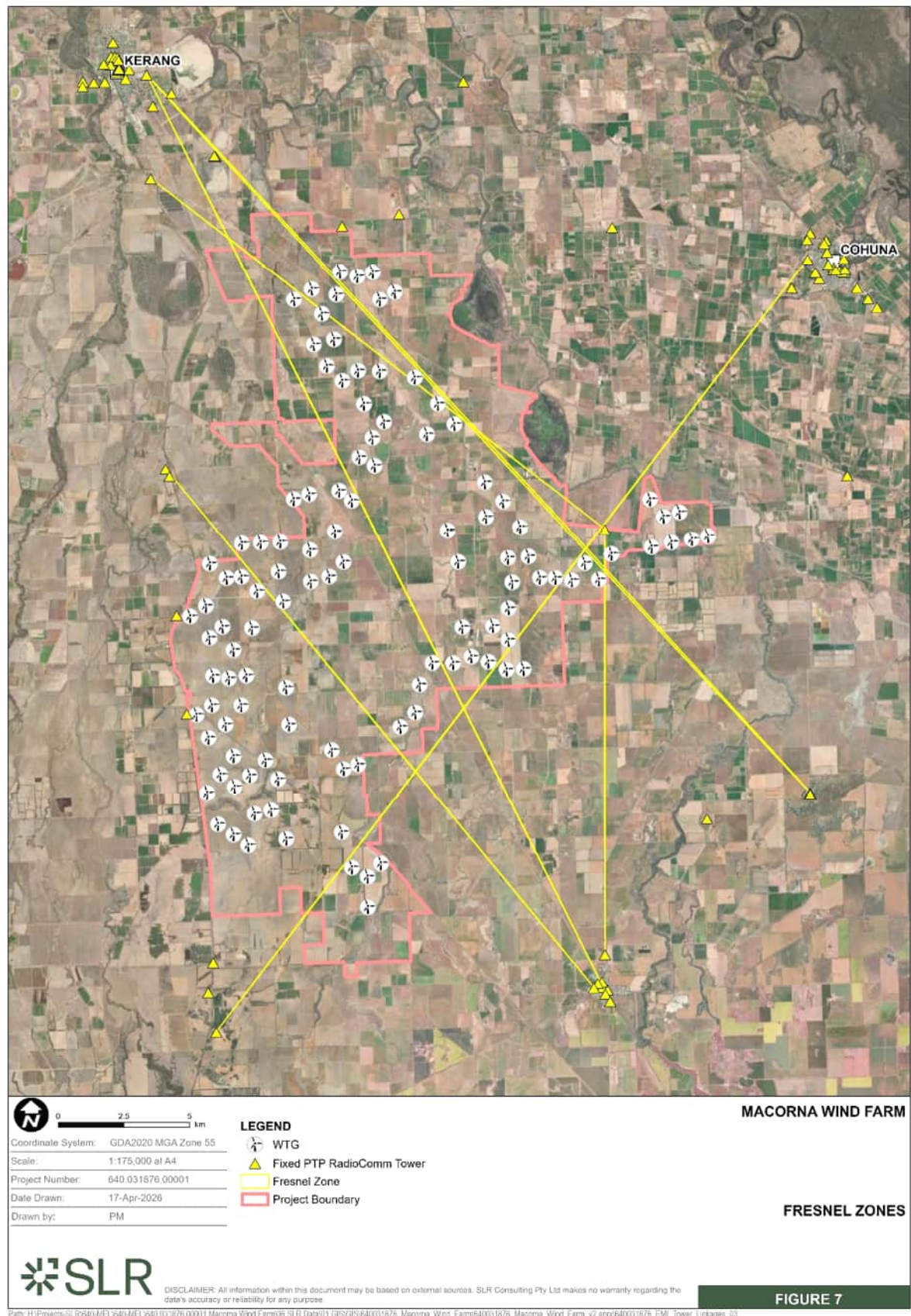


Figure 8 Zoomed in maps with WTG & Fresnel Zone

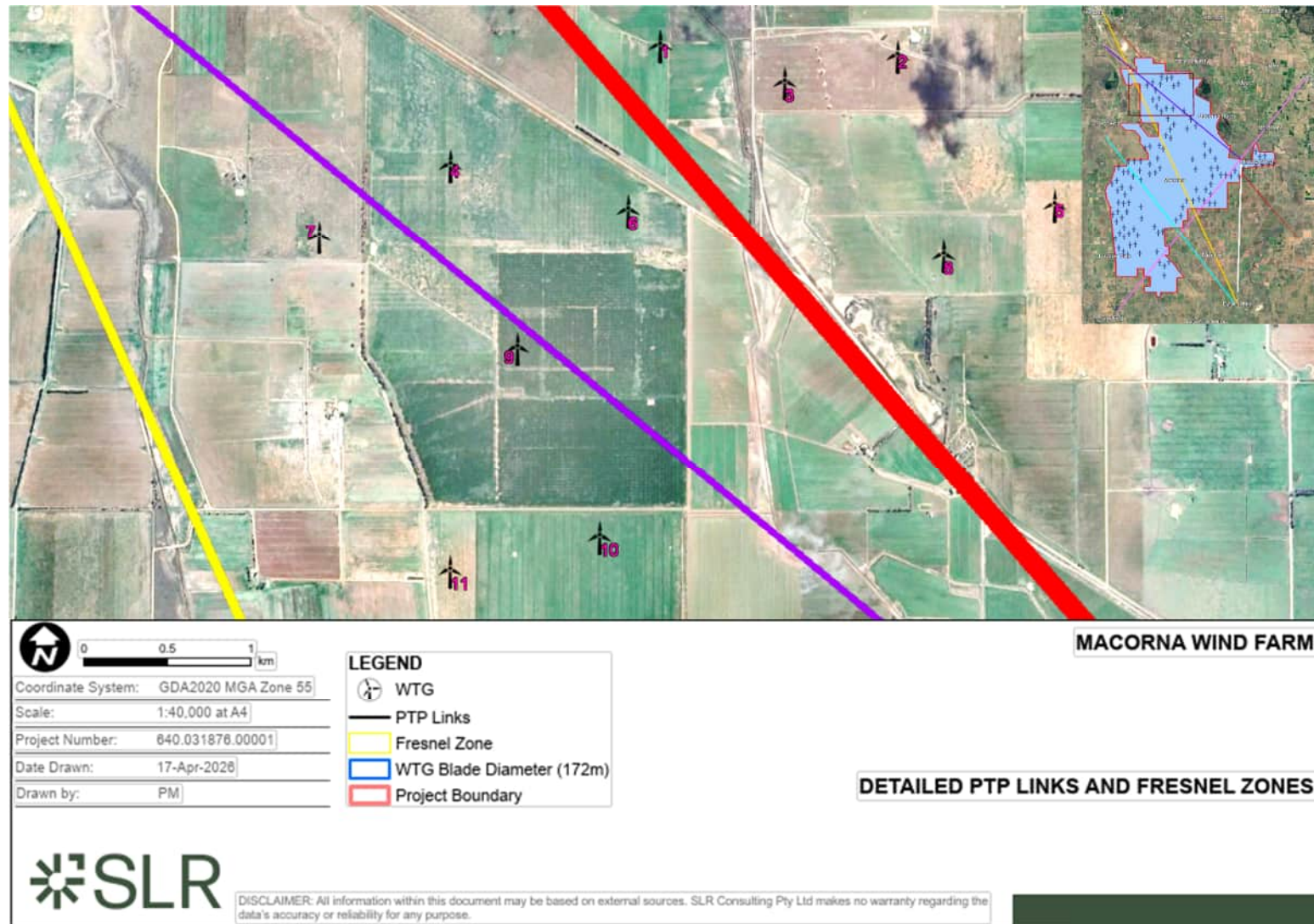


Figure 8 (cont.)

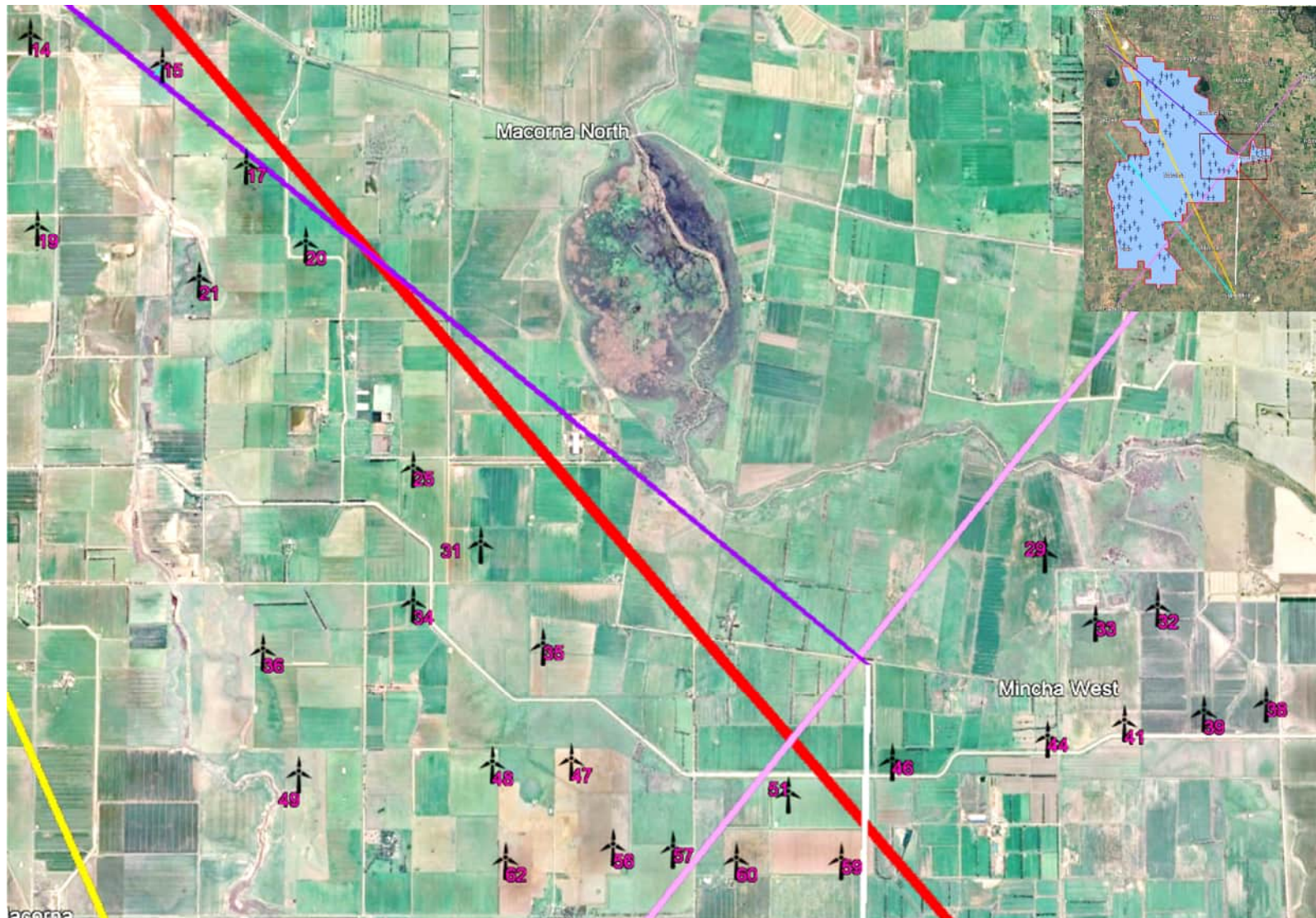


Figure 8 (cont.)

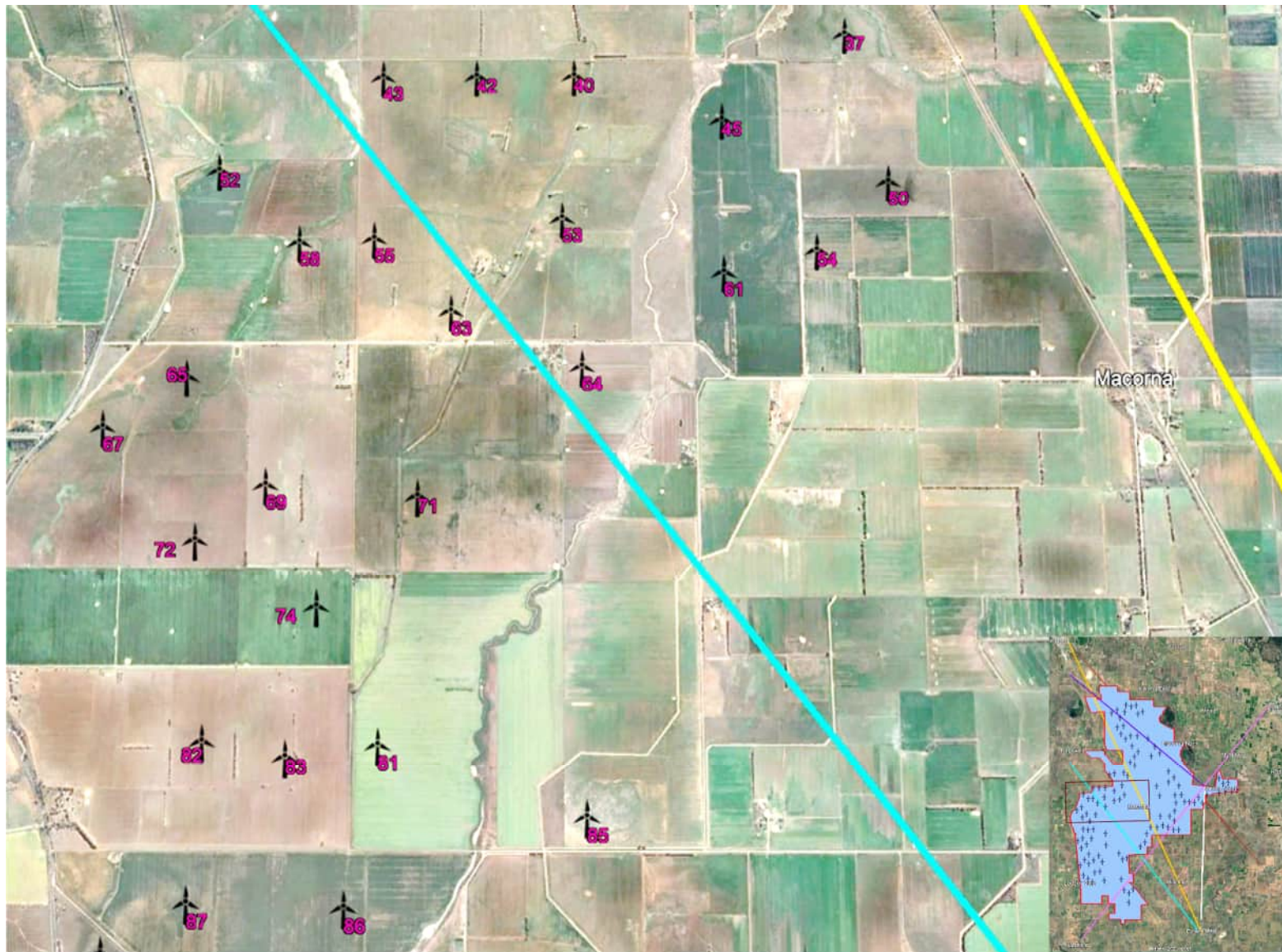
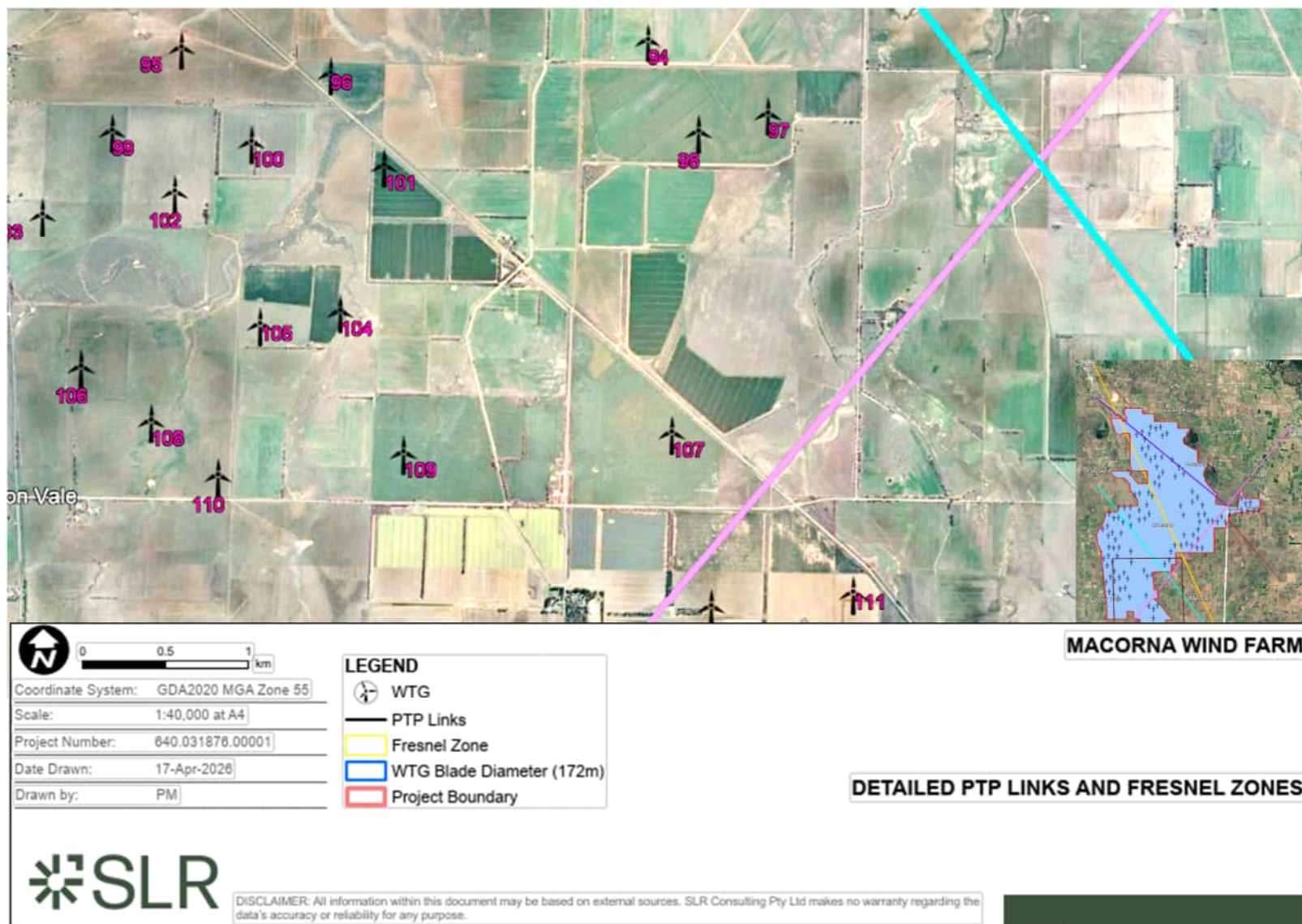


Figure 8 (cont.)



Figure 8 (cont.)



5.2.1.2 Locations of Radiocommunication tower within 2km

A review of the Australian Communications and Media Authority (ACMA) database identified 258 radiocommunication towers within a nominal 50 km radius of the Macorna Wind Farm Project boundary (Appendix Figure B-1). Of these, four radiocommunication towers are located within 2 km of proposed wind turbine generators (WTGs). (Appendix Figure B-2)

The consultation zones incorporate the turbine rotor radius for turbines with a 172 m rotor diameter, together with an additional buffer to account for uncertainties in recorded tower locations. Uncertainty buffers were derived from discrepancies between tower coordinates listed in the ACMA database and apparent locations identified from aerial or satellite imagery.

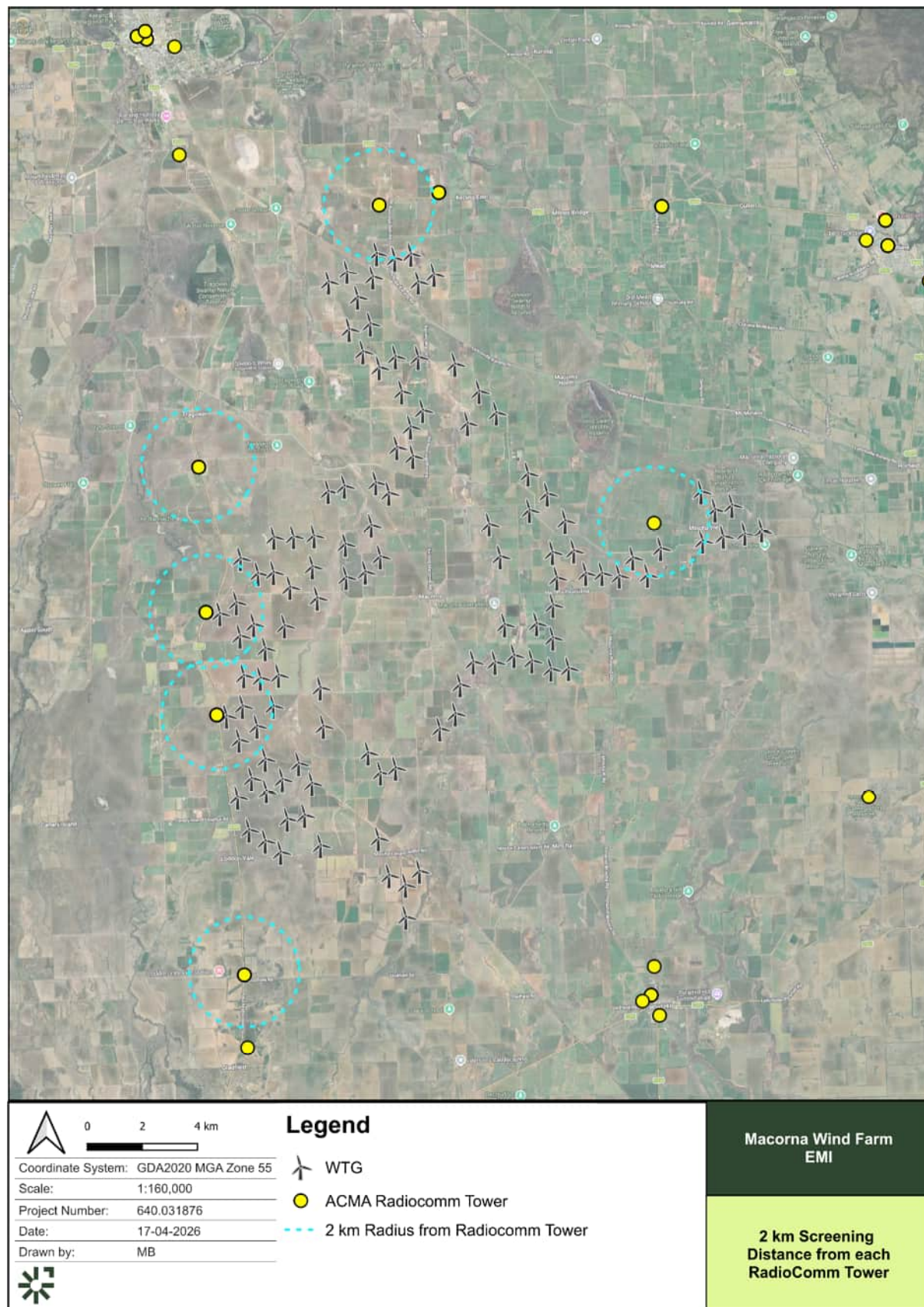
The licences associated with these radiocommunication towers include point-to-point, point-to-multipoint, and point-to-area services, comprising land mobile licences used for private mobile telephony and spectrum licences used for commercial public mobile phone networks. **Table 8** shows the Twenty (20) WTGs Located within 2 km of Radiocommunication Towers and the service category. Figure 9 shows the 2km screening radius from the radiocommunications tower within and around the project area.

Table 8 WTGs within 2 km of Radiocommunication Towers

Site ID	Site Name / Location	Latitude & Longitude	Network / Service Type	WTGs within 2 km	Approx. WTGS Distance from RadioComm . Tower	Service Category
10040922	Kinross Farm, 8511 Murray Valley Hwy, Kerang East, VIC	35°47'23.0" S 144°00'46.0" E	Land mobile / private mobile telephony	T1, T2, T3	1.80 km 1.95 km 1.90 km	Point-to-point
9018457	Lattice Tower, Lot 1 Appin South Rd, Macorna, VIC 3579	35°55'17.6" S 143°56'17.1" E	Point-to-point / point-to-multipoint	T69, T71, T51, T75, T76	1.15 km 0.50 km 2.00 km 1.70 km 1.25 km	Point-to-multipoint
9914009	Mobile Spectrum Licensing Site, Loddon Valley Hwy, VIC 3579	35°57'19.1" S 143°56'28.0" E	Commercial public mobile network (spectrum licence)	T83, T85, T89, T90, T92, T94, T95	1.75 km 1.80 km 1.95 km 1.00 km 0.35 km 1.50 km 1.25 km	Point-to-area
10013289	Mincha West Radio Site, Mincha Rd, Mincha West, VIC	35°53'47.6" S 144°07'09.9" E	Land mobile / private mobile telephony	T50, T47, T44, T29, T66	1.50 km 0.95 km 1.85 km 1.95 km 1.90 km	Commercial public mobile phone networks



Figure 9 2km Screening distance from each RadioComm tower



5.2.1.3 Radar Services – Obstruction to Line-of-Sight Path

Meteorological radar services may be affected by wind turbines where turbines are located within the operating range and line-of-sight of a radar system. Wind turbines can act as large reflective structures, producing clutter, scattering, or Doppler effects that may reduce radar data quality if located sufficiently close to a radar beam.

The BoM operates a national network of Weather Watch radars used for meteorological monitoring and severe weather detection. The nearest BoM weather radar stations to the Macorna Wind Farm are:

- **Rainbow Weather Radar** (lat. 35.90° S, long. 142.36° E)
- **Yarrawonga Weather Radar** (lat. 36.01° S, long. 146.00° E)
- **Mildura (Cullulleraine) Weather Radar** (lat. 34.23° S, long. 141.31° E)
- **Melbourne (Laverton) Weather Radar** (lat. 37.86° S, long. 144.75° E)
- **Melbourne (Broadmeadows) Weather Radar** (lat. 37.691° S, long 144.946° E)

These radars are located at distances in excess of approximately 165 km from the nearest proposed wind turbine generators (WTGs) within the Macorna Wind Farm layout.

As outlined by the BoM, Weather Watch radars are capable of detecting large-scale weather systems at distances of up to approximately 250 km, however, at these ranges the radar beam is sampling the upper atmosphere rather than near-surface conditions. Potential interference effects from wind turbines such as clutter or anomalous propagation are typically only of concern where turbines are located significantly closer to the radar, particularly within the lower elevation angles of the radar beam.

Given the substantial separation distances between the Macorna Wind Farm and the nearest BoM radar installations, material impacts on radar performance are not anticipated. Consistent with Victorian Planning Provisions Clause 52.32 and the consultation framework set out in the National Wind Farm Development Guidelines – Draft (EPHC 2010), consultation with the BoM has been undertaken.

Based on this consultation, the BoM has confirmed that the potential impacts are manageable and has raised no objections to the proposed development.

5.2.1.4 Near-field Zone of Interference

Radiocommunications antennas exhibit a near-field region in close proximity to the transmitting or receiving antenna, within which electromagnetic fields are predominantly reactive rather than radiative. Within this zone, the electric and magnetic fields store energy and do not propagate freely. Any conductive or absorptive object located within this region such as a wind turbine tower or rotor has the potential to alter antenna impedance, radiation patterns, or overall system performance.

Near-field interference is therefore a specific consideration where WTGs are located in close proximity to radiocommunications sites, particularly for fixed microwave links and other directional antenna systems.

The spatial extent of the near-field region depends on the wavelength (λ) of the radiocommunications signal and the physical dimensions (D) of the antenna. Two near-field sub-regions are generally recognised:

- **Reactive Near-Field Region** - For electrically small antennas (i.e. antennas whose maximum dimension is small relative to the signal wavelength), the extent of the reactive near-field region is defined by:



$$R = \frac{\lambda}{2\pi} \text{ (eqn. 5.2.1.4a)}$$

where:

- o R = reactive near-field distance (m)
- o λ = wavelength of the radiocommunications signal (m)

Within this region, electromagnetic energy is largely stored rather than radiated, and antenna performance may be sensitive to nearby obstructions.

- **Radiating Near-Field (Fresnel) Region** - For electrically large antennas, a radiating near-field region—also referred to as the Fresnel region—exists beyond the reactive near-field. The outer extent of this region can be approximated by:

$$R = 0.5 \frac{D^2}{\lambda} \text{ (eqn. 5.2.1.4b)}$$

where:

- o R = near-field distance (m)
- o D = largest physical dimension of the antenna (m)
- o λ = wavelength of the radiocommunications signal (m)

This near-field distance is also known the Fraunhofer distance, which defines the transition from the near-field to the far-field region for physically large antennas.

For conservatism, and consistent with SLR's assessment methodology, the near-field zone is treated as a spherical volume extending from the antenna, representing the maximum potential zone of influence.

- **Application to the Macorna Wind Farm** - Based on radiocommunications data obtained from the ACMA Register of Radiocommunications Licences, the maximum Fraunhofer distance was found to be approx. 700 m. There are no WTGs located within this distance. Therefore, no near field impacts are expected.

5.3 Consultation

Stakeholder consultation is a necessary component of the EMI assessment process due to the inherent positional tolerance and spatial uncertainty associated with radiocommunications licence data held by the Australian Communications and Media Authority (ACMA). While the ACMA Register provides authoritative information on licensed services, confirmation of technical parameters, operational sensitivity and service criticality from the relevant licence holders is required to support a robust EMI assessment.

Based on this review, radiocommunications services with fixed point-to-point links passing through or near the Project area were identified as representing the highest EMI risk pathway and were therefore prioritised for targeted consultation as part of the final stage of the assessment. These stakeholders include operators of critical telecommunications and utility infrastructure whose services rely on line-of-sight microwave links.

The stakeholders identified with point-to-point radiocommunications links intersecting or traversing the Project area include:

- Goulburn-Murray Rural Water Corporation
- Optus Mobile Pty Limited
- NBN Co Limited



- AusNet Transmission Group Pty Ltd

In addition, the BoM was consulted in relation to meteorological radar services. Correspondence with the above entities were undertaken as part of the detailed EMI assessment process.

Other radiocommunications licensees identified within a 50 km radius of the Project Area are listed below. Based on the outcomes of the EMI assessment, these services are not considered to be at risk of interference from the Project and do not require targeted consultation. These are listed as follows for information only:

- Victoria Police
- Ambulance Victoria
- Royal Flying Doctor Service
- Country Fire Authority of Victoria
- Bureau of Meteorology (BoM)
- Telstra Group Limited
- Vodafone Hutchison Australia Pty Limited
- TPG Internet Pty Ltd
- Ace Radio Broadcasters Pty Ltd
- Department of Justice and Community Safety
- Department of Environment, Land, Water and Planning

Consultation has been undertaken through formal written correspondence, including provision of relevant Project information and geospatial data demonstrating the Project boundary and proposed WTGs locations to support stakeholder review.

Feedback has been received from a number of stakeholders and has been considered as part of the assessment, appended in the Appendix B. Where relevant, stakeholder comments, including identification of potential constraints and recommended actions, have been incorporated into the assessment outcomes. Additional responses remain pending at the time of reporting and will be addressed, where required, as part of ongoing due diligence and any subsequent updates to the assessment.

5.4 Mitigation Strategy

The wind turbine generator (WTG) setbacks and clearance requirements identified through this Electromagnetic Interference (EMI) assessment have been incorporated into the Macorna Wind Farm layout to obtain planning approval. These setbacks are based on link-specific Fresnel zone clearance requirements and conservative micro-siting tolerances and are intended to avoid or minimise interference with existing radiocommunications services.

The preferred mitigation approach for the Project is avoidance, achieved through micro-siting and, where necessary, relocation or removal of WTGs relative to affected radiocommunications infrastructure. This approach has been applied in the development of the Project layout to minimise EMI risk while also avoiding additional environmental or planning impacts, including disturbance to remnant vegetation, water infrastructure, and other sensitive land uses.



Where relocation or further micro-siting of WTGs is not practicable due to competing constraints (such as landholder agreements, environmental considerations, or access and constructability requirements), affected radiocommunications stakeholders and licence holders will be consulted to identify mutually acceptable mitigation solutions, tailored to the specific service type and operational requirements.

Depending on the nature of the affected service, potential mitigation measures may include, but are not limited to:

- Adjustment of WTG micro-siting to increase separation from affected signal paths where practicable
- Selection of turbine tower, nacelle and blade materials and finishes that minimise reflective or scattering effects, where available within manufacturer specifications
- Replacement or modification of affected radiocommunications equipment with alternative technologies less susceptible to interference (e.g. increase signal strength, add a relay point)
- Relocation of impacted transmitter or receiver equipment to an alternative existing site, or to a new purpose-built site where required (noting that such infrastructure may also support wind farm operational communications)
- Use of underground or overhead optical fibre in place of radiocommunications links, where feasible, thereby eliminating EMI risk
- Installation of enhanced filtering or signal processing equipment to mitigate spurious reflections or Doppler effects associated with wind turbine operation

Where EMI effects cannot be fully quantified prior to construction, additional mitigation measures may be implemented as part of an adaptive management approach, including:

- Baseline signal testing prior to construction to characterise existing service performance where relevant
- Post-construction monitoring and validation to confirm actual operational impacts and
- Implementation of retrofit measures where required, which may include:
 - o Re-orientation or optimisation of receiving antennas,
 - o Installation of higher-gain or more directional antennas,
 - o Relocation of antennas to less affected positions,
 - o Installation of amplifiers or signal conditioning equipment,
 - o Provision of alternative broadcast solutions (e.g. digital TV translators or satellite services).

Through application of this mitigation framework, and in consultation with affected stakeholders, the Macorna Wind Farm can be developed in a manner that maintains the reliable operation of existing radiocommunications services while meeting planning and regulatory requirements.



6.0 Key Findings

Application of the *National Wind Farm Development Guidelines – Draft (EPHC, 2010)*, as adopted in this EMI assessment, indicates that no significant EMI impacts are anticipated from the Macorna Wind Farm. No WTGs are located within the radiating near-field of existing radiocommunications infrastructure. In addition, all WTGs are located outside the recommended setback distances and maintain appropriate separation from identified point-to-point links and meteorological radar and flood warning services. These findings are informed by the assessment and feedback received from consulted stakeholders, with refinements incorporated where required.

Stakeholder consultation has been undertaken as part of the assessment to verify radiocommunications infrastructure and service characteristics. Feedback received to date has been incorporated into the assessment, including identification of potential constraints and refinement of input data (e.g. updated site coordinates). Additional responses remain pending and will be considered, where relevant, as part of ongoing due diligence and any subsequent updates. The mitigation strategy outlined in Section 5.4 will be applied to support ongoing consultation and ensure compliance with radiocommunications clearance requirements.



7.0 Recommendation

The Macorna Wind Farm is currently targeting commissioning in 2029. Given the dynamic nature of radiocommunications infrastructure and the potential for new services to be licensed or constructed between the time of planning approval and construction, SLR recommends that a final pre-construction EMI screening check be undertaken prior to commencement of works.

Specifically, SLR recommends that, prior to construction, the Project proponent:

- Undertake an updated search of the Australian Communications and Media Authority (ACMA) Register of Radiocommunications Licences to confirm whether any new radiocommunications towers, links, or licensed services have been established within or intersecting the Project Area since completion of this assessment
- Verify that no new point-to-point or point-to-area radiocommunications links traverse the Project Area or introduce additional EMI risk to the approved WTG layout
- Where any new or modified radiocommunications infrastructure is identified, undertake a targeted EMI screening assessment to confirm that the approved turbine layout continues to comply with recommended clearance and mitigation criteria and
- Obtain a construction-stage EMI clearance or confirmation, documenting that no additional EMI risks have been introduced since the final assessment, or that any newly identified risks have been appropriately mitigated.

Implementation of this recommendation will ensure that the Project remains compliant with applicable planning requirements and industry best practice, and will minimise the risk of unforeseen electromagnetic interference impacts arising from changes to radiocommunications infrastructure prior to construction.



8.0 Closure

This report provides an assessment of the potential for electro-magnetic interference created by the proposed development of the Macorna Wind Farm. This assessment is designed to support the Project's Development Application lodgement with the relevant authorities.

Sincerely,

SLR Consulting Australia



Ashley Gibson, CPEng
Technical Director
Sector Lead – Power & Renewables



Ashiqur Rahaman M. Rafi
Project Consultant
CFD, Wind & Energy



Appendix A ACMA Registered Radiocommunications Facilities within 50km

Electromagnetic Interference (EMI) Assessment

Macorna Wind Farm

Atmos MWV Pty Ltd

SLR Project No.: 640.031876.00005

20 April 2026



Table A-1:ACMA & RFNSA Registered Sites within 50 km of Macorna Wind Farm

SITE ID	LAT. (°)	LONG. (°)	NAME	POST CODE	#ASSIGNMENT
11879	-35.9887	144.2026	Goulburn Murray Water Site MT HOPE	3575	8
11880	-35.9892	144.2029	Ambulance Site MT HOPE	3575	2
11881	-35.7331	143.9214	Telstra Exchange 18 Albert Street KERANG	3579	73
11882	-35.7467	143.9348	Airport KERANG	3579	16
34819	-35.6292	144.1302	32 Neimur St BARHAM	2732	1
35590	-35.5585	144.1912	Comm Site Moulamein Rd BARHAM	2732	36
35593	-35.594	144.1469	Zone Substation BARHAM	2732	2
35893	-35.6277	144.1292	Police Station 51 Noorong St BARHAM	2732	6
36239	-35.7321	143.9177	Telstra Tower Albert St KERANG	3579	34
36777	-35.841	143.5088	Telstra Radio Terminal QUAMBATOOK	3540	0
36792	-35.8388	143.506	Telstra Radio Terminal QUAMBATOOK	3540	12
38973	-35.6269	144.127	18 Mellool St BARHAM	2732	0
39097	-35.6307	144.1191	Punt Rd BARHAM	3580	0
39975	-35.5139	144.0572	Swan Hill Rd BARHAM	2732	0
41912	-35.7318	143.9147	Cnr Maxwell & Wyndham Sts KERANG	3579	0
41914	-35.9712	143.6197	Grain Silo GREDGWIN	3537	0
42175	-35.9891	144.2027	NRE Site MT HOPE	3575	6
42260	-35.6257	143.7536	Fire Management Site LAKE CHARM	3579	0
42351	-35.9044	144.3009	King Albert Ave LEITCHVILLE	3567	0
42352	-35.8098	144.2211	23 King Edward Street COHUNA	3568	0
42373	-35.8156	144.201	Water Tower COHUNA	3568	0
42703	-35.7292	143.918	Water Tower cnr Vaughan & Nolan Streets KERANG	3579	29
42706	-35.7245	143.9189	Burgoyne St KERANG	3579	0
43299	-35.7359	143.9326	Commission Depot KERANG	3579	8
43310	-36.1159	143.7178	Holloway Street BOORT	3537	4
43379	-35.971	143.6205	BCV-8 Tower GREDGWIN	3537	0
43636	-35.7335	143.9214	Railway Station KERANG	3579	0
43637	-36.0533	144.1127	Railway Station PYRAMID HILL	3575	0
45729	-36.0248	143.7214	CFA Site Station St BOORT	3537	6



SITE ID	LAT. (°)	LONG. (°)	NAME	POST CODE	#ASSIGNMENT
45731	-35.8088	144.2189	CFA Site Sampson/King Edward St COHUNA	3568	6
45734	-35.9574	144.3722	Fire Station Cnr Murray Valley Hwy & Weir Street GUNBOWER	3566	8
45736	-35.6083	143.801	Roadhouse GPO LAKE CHARM	3579	0
45737	-35.9063	144.3019	CFA Site King Albert St LEITCHVILLE	3567	6
45739	-36.051	143.9464	CFA Site Gladville Park LODDON VALE	3537	0
45741	-36.0542	144.1149	Fire Station Kelly St PYRAMID HILL	3575	6
45748	-35.737	143.9238	CFA Site 3 Canonsgate Ave KERANG	3579	0
46235	-35.6427	144.1308	CFA Site KOONDROOK	3580	6
46439	-35.8097	144.2189	King George St COHUNA	3568	0
48288	-35.7969	144.2094	Murray Valley Hwy COHUNA	3568	0
49948	-35.8107	144.2233	King Edward St COHUNA	3568	0
51172	-35.9967	144.1589	SEC Site MANGATE HILL	3575	41
52188	-35.8127	144.2127	Cnr Channel Cohuna and Lietch COHUNA	3568	1
52238	-35.7381	143.9103	Cnr Murry Valley/Nolan KERANG	3579	0
52423	-36.1545	144.199	Alongside Rd 2km East of MOLOGA	3573	6
53418	-35.6255	144.1248	14 Noorong Street BARHAM	2732	0
100895	-35.6138	144.1376	Two State Community Radio Studio BARHAM	2732	0
100899	-35.9466	144.5409	Perricoota Forest Road (Deniboota Canal) WOMBOOTA	2731	2
101171	-36.024	144.4921	Murray Valley Highway TORRUMBARRY	3562	0
130867	-35.6666	144.3056	Murramarang Resort SOUTH DURRAS	2732	0
131709	-35.82	144.233	Telstra Site cnr Brady`s Rd & Murray Valley Hwy COHUNA	3568	64
131742	-36.1263	143.9171	Telstra Exchange cnr Loddon Hwy & Boort - Pyramid Hill Rd DURHAM OX	3576	12
131829	-36.0141	144.4575	Telstra Exchange cnr Murray Valley Hwy & Torrumbarry Weir Rd PATHO	3562	41
131851	-35.6344	144.123	Telstra Site 12a View Street KOONDROOK	3580	60
131903	-36.211	144.2288	Telstra Site Glossop Street MITIAMO	3573	12
131923	-36.1123	143.7259	Telstra Site next to Coliban water tank off Coutts St BOORT	3537	738



SITE ID	LAT. (°)	LONG. (°)	NAME	POST CODE	#ASSIGNMENT
132502	-36.0515	144.1126	Telstra Site Kelly St PYRAMID HILL	3575	6
132601	-35.9065	144.297	Telstra Site Rec Reserve Cohuna-Leitchville Rd LEITCHVILLE	3567	4
133876	-35.5323	143.9523	Broadcast Site Recreation Reserve & Golf Course MURRABIT	3579	0
133877	-35.806	144.2232	Broadcast Site Recreation Reserves Cohuna Island Rd COHUNA	3568	0
135795	-36.0114	144.4471	Optus Site Patho Murray Valley Highway PATHO	3562	258
136819	-35.9083	144.3019	72 Leitchville Road LEITCHVILLE	3567	1
137165	-36.0556	144.1139	18 Victoria Street PYRAMID HILL	3575	0
137514	-35.8105	144.2224	13-15 Market Street COHUNA	3568	1
137703	-35.7343	143.9201	28 Victoria Street KERANG	3579	0
138067	-35.7991	144.2081	DSE Office 5 Tisdall Road COHUNA	3568	4
138711	-36.1163	143.7234	93 Godfrey Street BOORT	3537	1
139376	-35.6386	144.1245	Sports Ground Penglase Street KOONDROOK	3579	5
139535	-35.8504	143.5206	24 Guthrie Street QUAMBATOOK	3540	0
140470	-35.7461	143.7778	1131 Quambatook-Kerang Rd WANDELLA	3579	6
141091	-35.9998	144.5138	Fire Station 288 Headworks Rd TORRUMBURRY	3562	6
142627	-36.1187	143.7221	55 Lake View Street BOORT	3537	0
150276	-35.63	144.1269	13-15 Murray St BARHAM	2732	0
152264	-35.6096	144.1383	Murray River Council / NSWRF 60m Guyed Mast Barham Golf Complex, off Moulamien Rd BARHAM	2732	11
152656	-35.6283	144.1303	Nominal Planning site Wakool St BARHAM	2732	0
152880	-35.7646	143.9604	Nominal Planning Site Murray Valley Hwy 5km SE of KERANG	3579	0
153032	-35.625	144.1254	2KY Broadcast site Barham Hotel 34 Murray St BARHAM	2732	1
153496	-35.8161	144.2285	Gannawarra Shire Works Depot Murray Valley Hwy COHUNA	3568	0
200591	-35.6477	144.1293	SES Barham Wakool Shire Council 23 Noorong Street BARHAM	3580	0
201496	-35.5944	144.153	Barham RFS Brigade Station BARHAM	2732	4
300853	-36.3293	143.9725	Piggery Loddon Valley Hwy BEARS LAGOON	3517	0



SITE ID	LAT. (°)	LONG. (°)	NAME	POST CODE	#ASSIGNMENT
300871	-35.8105	144.2111	Western Rd COHUNA	3568	0
301231	-35.9059	144.3053	Treatment Plant King Albert Ave LEITCHVILLE	3567	6
301233	-35.9068	144.3451	Pump Station Murray Valley Hwy LEITCHVILLE	3566	2
301255	-36.0289	144.5152	Goulburn Murray Water Site TORRUMBARRY	3562	2
302127	-35.7346	143.9207	AAPT Site Shop 23 45-47 Victoria St KERANG	3579	0
302128	-35.6407	144.1307	AAPT Site Primary School 9 Punt Rd KOONDROOK	3580	0
302499	-35.9079	144.3024	AAPT Site Primary School Hawken St LEITCHVILLE	3567	0
302500	-35.9568	144.3774	AAPT Site Primary School School Rd GUNBOWER	3566	0
302631	-35.9084	144.301	Kraft foods King Albert st LEITCHVILLE	3567	0
302636	-35.8003	144.2148	Cohuna District Hospital King George st COHUNA	3568	0
302739	-36.1116	143.7271	Hospital cnr Kiniry & Coult Streets BOORT	3537	0
303115	-36.1395	143.6183	Grandview Boort-Charlton Rd BOORT	3537	0
303293	-35.5725	143.7545	Kangaroo Lake Road MYSTIC PARK	3579	0
303438	-35.7469	143.7329	Powercor Radio Site SANDHILL LAKE	3579	2
303686	-36.0371	144.5605	Telstra Customer Lot 20 Bailieu Road TORRUMBARRY	3562	2
304540	-35.7259	143.8593	Quambatook Rd KERANG	3579	0
305147	-35.8097	144.2236	Water Tower King George St COHUNA	3568	14
305149	-36.052	144.1108	Pyramid Hill Water Tower off Victoria street PYRAMID HILL	3575	6
305150	-36.1266	143.7263	Boort water tower off Andrews Street BOORT	3537	8
305151	-36.2712	143.9717	Jarklin Water tower Jarklin East Road JARKLIN	3517	2
305647	-35.6103	144.1331	Barham Golf Club Moulamein Rd BARHAM	2732	2
305692	-35.8059	144.208	Optus Site Roney Property Weinberg St COHUNA	3568	989
305693	-36.0647	143.9493	Optus Site Loddon Valley Hwy DURHAM OX	3575	78



SITE ID	LAT. (°)	LONG. (°)	NAME	POST CODE	#ASSIGNMENT
305694	-35.6253	144.0677	Optus Site Sunnyside Property 62 Loop Rd KOONDROOK	3579	218
305780	-35.9586	144.3715	Water tower Murry Valley Hwy GUNBOWER	3566	8
305953	-35.9084	144.3008	64 King Albert Avenue LEITCHVILLE	3567	0
461588	-35.7294	143.9195	CFA 56 Fitzroy St KERANG	3579	10
461589	-35.7296	143.9206	CFA Fitzroy & Wyndham Sts KERANG	3579	6
9001671	-36.1785	144.2382	EAS Tower Leechs Road MITIAMO	3575	2
9001677	-35.7645	143.9605	Ace Bcasters Site Murray Valley Highway 5km SE of KERANG	3579	3
9007482	-35.5872	143.7556	Telstra Site 42 Scantleton Rd MYSTIC PARK	3579	54
9008244	-36.0582	144.1158	Goulburn Murray Water Office 24 Barber Street PYRAMID HILL	3575	4
9009198	-35.6315	144.1307	2 Forest St BARHAM	2732	2
9009463	-35.7996	144.216	Telstra RBS Site 144 - 158 King George St COHUNA	3568	4
9009872	-35.5251	143.9392	Telstra Site Lot 2 Murrabit West Rd MURRABIT	3579	18
9010578	-35.8991	144.3156	Channel Pump off Murray Valley Highway LEITCHVILLE	3567	2
9010834	-36.0534	144.1091	Optus Lattice Tower Football Ground Gladfield Road PYRAMID HILL	3575	646
9010838	-36.2127	144.2376	Optus Lattice Tower Football Oval Glossop St MITIAMO	3573	46
9011469	-35.8519	143.6809	1010 Meran Road QUAMBATOOK	3579	0
9011676	-36.1089	143.7349	Boort Mcmillans Rd BOORT VIC 3537	3537	34
9011970	-35.8436	143.5134	Optus Lattice Tower Dumosa - Quambatook Road QUAMBATOOK	3579	48
9012003	-35.5322	143.9584	Water Treatment Plant Near Forbes Street MURRABIT	3579	2
9012004	-35.5159	143.9636	Raw Water Pump Station Junction of Edgar and Murray Roads MURRABIT	3579	2
9016567	-35.7955	143.8183	305 Connelly Road DINGWALL	3579	0
9017869	-36.2844	144.2381	DGPS Site Tonkins Road 550 m East of Bendigo-Pyramid Road Intersection PRAIRIE	3572	2
9018375	-35.7339	143.9254	VHA Monopole Kerang-Koondrook Road KERANG	3579	0
9018376	-35.6093	144.1379	Barham Golf Country Club Moulamein Road BARHAM	2732	0



SITE ID	LAT. (°)	LONG. (°)	NAME	POST CODE	#ASSIGNMENT
9018456	-36.1078	143.7229	Lattice Tower Lot 6 LP 136947, Tip Road BOORT	3537	0
9018457	-35.9216	143.9381	Lattice Tower Lot 1 Appin South Road MACORNA	3579	6
9018510	-36.1153	143.9276	Lattice Tower 91 Loddon Valley Highway DURHAM OX	3537	0
9018582	-35.6893	143.77	Radcliffe Base Station Fairley Road, 1.9 km E of McDonald Road FAIRLEY	3579	2
9018775	-36.011	144.4458	Lattice Tower 3269 Murray Valley Highway PATHO	3562	0
9018776	-35.9038	144.2991	Monopole 17 King George Street LEITCHVILLE	3567	0
9020195	-35.5215	143.8276	1093 Lake Charm Road BENJEROOP	3579	2
9020391	-35.9849	143.6042	RTK Base 47 Cnr Woods & Hoskings Roads GREDGWIN	3537	2
9023021	-35.8712	143.9354	NBN Co Site 2819 Loddon Valley Highway TRAGOWEL	3579	312
9023022	-35.7375	143.9058	NBN Co Site 91 Murray Valley Highway KERANG	3579	1062
9023023	-36.2106	144.1312	NBN Co Site 858 North Boundary Road CALIVIL	3572	0
9023024	-35.7416	144.0655	NBN Co Site 827 Koroop Road KOROOP	3579	242
9023031	-35.9038	144.2956	NBN Co Site 205 Kerang-Leitchville Road LEITCHVILLE	3567	488
9023032	-35.9528	144.363	NBN Co Site Walkers Road GUNBOWER	3566	790
9023421	-35.8229	144.5525	Garden Reserve Road BUNNALOO	2731	2
9023694	-35.7392	143.9056	NBN Co Test Trailer (CW_Vic_P3_2) Within 15 km of, 91 Murray Valley Highway KERANG	3579	0
9026563	-36.1798	143.637	Whittingtons PIU Wychitella Bus Route Rd BOORT	3537	4
9026564	-36.1389	143.6201	Bains PIU E Parkers Rd BOORT	3537	6
9900239	-35.7306	143.921	Mobile Spectrum Licensing Site KERANG	3579	0
9900240	-35.8079	144.2167	Mobile Spectrum Licensing Site COHUNA	3568	0
9913915	-35.6188	143.8031	Mobile Spectrum Licensing Site MURRAY VALLEY HIGHWAY	3579	0
9913967	-35.7862	144.0369	Mobile Spectrum Licensing Site MURRAY VALLEY HIGHWAY	3579	0



SITE ID	LAT. (°)	LONG. (°)	NAME	POST CODE	#ASSIGNMENT
9913976	-35.7929	144.1263	Mobile Spectrum Licensing Site MURRAY VALLEY HIGHWAY	3568	0
9913993	-35.8661	144.3007	Mobile Spectrum Licensing Site MURRAY VALLEY HIGHWAY	3568	0
9913999	-35.8737	143.937	Mobile Spectrum Licensing Site LODDON VALLEY HWY	3579	0
9914009	-35.9553	143.9411	Mobile Spectrum Licensing Site LODDON VALLEY HWY	3579	0
9914024	-35.9613	144.3751	Mobile Spectrum Licensing Site MURRAY VALLEY HIGHWAY	3566	0
9914056	-36.0408	143.9489	Mobile Spectrum Licensing Site LODDON VALLEY HIGHWAY	3537	0
9914057	-36.0151	144.4594	Mobile Spectrum Licensing Site MURRAY VALLEY HIGHWAY	3562	0
9914068	-36.0386	144.5454	Mobile Spectrum Licensing Site MURRAY VALLEY HIGHWAY	3562	0
9914089	-36.1243	143.9223	Mobile Spectrum Licensing Site LODDON VALLEY HIGHWAY	3576	0
9914131	-36.2055	143.9564	Mobile Spectrum Licensing Site LODDON VALLEY HIGHWAY	3517	0
9914158	-36.2897	143.9729	Mobile Spectrum Licensing Site LODDON VALLEY HIGHWAY	3517	0
10001646	-36.1272	143.6284	903 Boort-Charlton Rd Boort	null	2
10002185	-35.728	143.7608	Gannawarra Solar Farm 1.7km NW cnr Lalbert-Kerang Rd and Denyer Rd BAELE BAELE	null	2
10002229	-35.7713	143.9331	Kerang Terminal Station 4121 Loddon Valley Hwy KERANG	null	6
10002752	-35.7643	143.96	EAS Tower Murray Valley Hwy 5km SE of KERANG	null	0
10002937	-35.8653	144.5663	Tamar Road 800m N of Holschier Road Intersection Womboota	null	4
10003005	-35.6343	144.1229	BARHAM Telstra monopole 12 View St., Koondrook BARHAM	null	53
10003105	-35.7426	143.9428	KERANG EAST optus monopole Kerang Golf Club, 193 Kerang-Koondrook Rd., Kerang KERANG EAST	null	53
10003959	-36.1122	143.7308	21 Armstrong Street BOORT	null	1
10004730	-35.7348	143.9198	Target 16 Victoria St KERANG	null	0
10007045	-35.7339	143.9207	Kerang Court Victoria Street Kerang	null	2
10007867	-35.6309	144.1291	Site 6-8 Niemur St BARHAM	null	0



SITE ID	LAT. (°)	LONG. (°)	NAME	POST CODE	#ASSIGNMENT
10009055	-36.1236	143.6731	Mathews Pump Site Lot 36 Boort-Charlton Road, 5 km W of BOORT	null	2
10009056	-36.1529	143.6762	Arthurs Pump Site Lot 90 Pinks Road BOORT	null	2
10009437	-35.8748	143.7909	Lake Meran Boort-Kerang Road Lake Meran	null	26
10013288	-36.1849	144.2264	Mitiamo Radio Site Sylvaterra-Tims Lake Road Mitiamo	null	8
10013289	-35.8966	144.1194	Mincha West Radio Site Mincha Road Mincha West	null	8
10013290	-36.0422	144.1142	Pyramid Hill Radio Site Pyramid-Cohuna Road Pyramid Hill	null	8
10013877	-35.738	143.915	Kerang Water Treatment Plant Riverwood Drive Kerang	null	4
10016654	-35.5538	143.762	Node 54000, Mystic Park East Rd Kangaroo Lake	null	2
10017806	-35.8805	144.2221	935 Leitchville-Kerang Road HORFIELD	null	0
10018181	-35.7715	143.7019	Telstra Site, 5 Brady Lane Sandhill Lake	null	4
10024333	-35.8099	144.2197	ViaSat Earth Station, 1G Cullen Street Cohuna	null	5
10024440	-35.588	143.7544	ViaSat Earth Station, Intersection of Kangaroo Lake Road & Scantleton Road Mystic park	null	5
10024462	-35.9976	143.7608	ViaSat Earth Station, Intersection of Boort-Kerang Road & Jacksons Road Minmindie	null	5
10024520	-35.7337	143.9213	ViaSat Earth Station, 18 Albert Street Kerang	null	5
10024758	-36.014	144.4574	ViaSat Earth Station, Intersection of Murray Valley Highway & Glenn Road Patho	null	5
10025045	-36.0252	144.5001	Starlink Earth Station Murray Valley Highway TORRUMBARRY	null	10
10025117	-36.0126	143.5889	DGPS Barraport Barraport West Rd Barraport	null	2
10025588	-35.8037	144.2163	141 King George Street COHUNA	null	2
10025589	-35.8231	144.2366	Gibbins Drive COHUNA	null	2
10026192	-35.7337	143.9211	ViaSat Earth Station, 18 Albert Street Kerang	null	5
10027512	-35.6268	144.1266	50 Mellool Street BARHAM	null	1
10029406	-35.944	144.4648	Torrumbarry Weir Road Patho	null	2



SITE ID	LAT. (°)	LONG. (°)	NAME	POST CODE	#ASSIGNMENT
10029578	-35.6151	144.1432	NSWTA 70m Tower off Lilford Ln BARHAM	null	14
10036479	-36.0376	144.4389	Patho Landfill Facility Davis Rd PATHO	null	0
10036490	-36.0263	144.5038	Quasar Ground Station Murray Valley Hwy Torrumbarry	null	0
10037709	-35.8006	144.2152	Rooftop, SE wing of Cohuna District Hospital (Cohuna Community Nursing Home) Cohuna	null	2
10038393	-36.1728	143.6778	Fitzpatricks Pump Shed, 903 Boort- Charlton Road Boort	null	2
10040922	-35.7897	144.0128	Kinross Farm 8511 Murray Valley Hwy KERANG EAST	null	2



Appendix B Mobile Network Coverage Figures

Electromagnetic Interference (EMI) Assessment

Macorna Wind Farm

Atmos MWV Pty Ltd

SLR Project No.: 640.031876.00005

20 April 2026



Figure B - 1 Telstra Mobile Coverage 5G & 4G

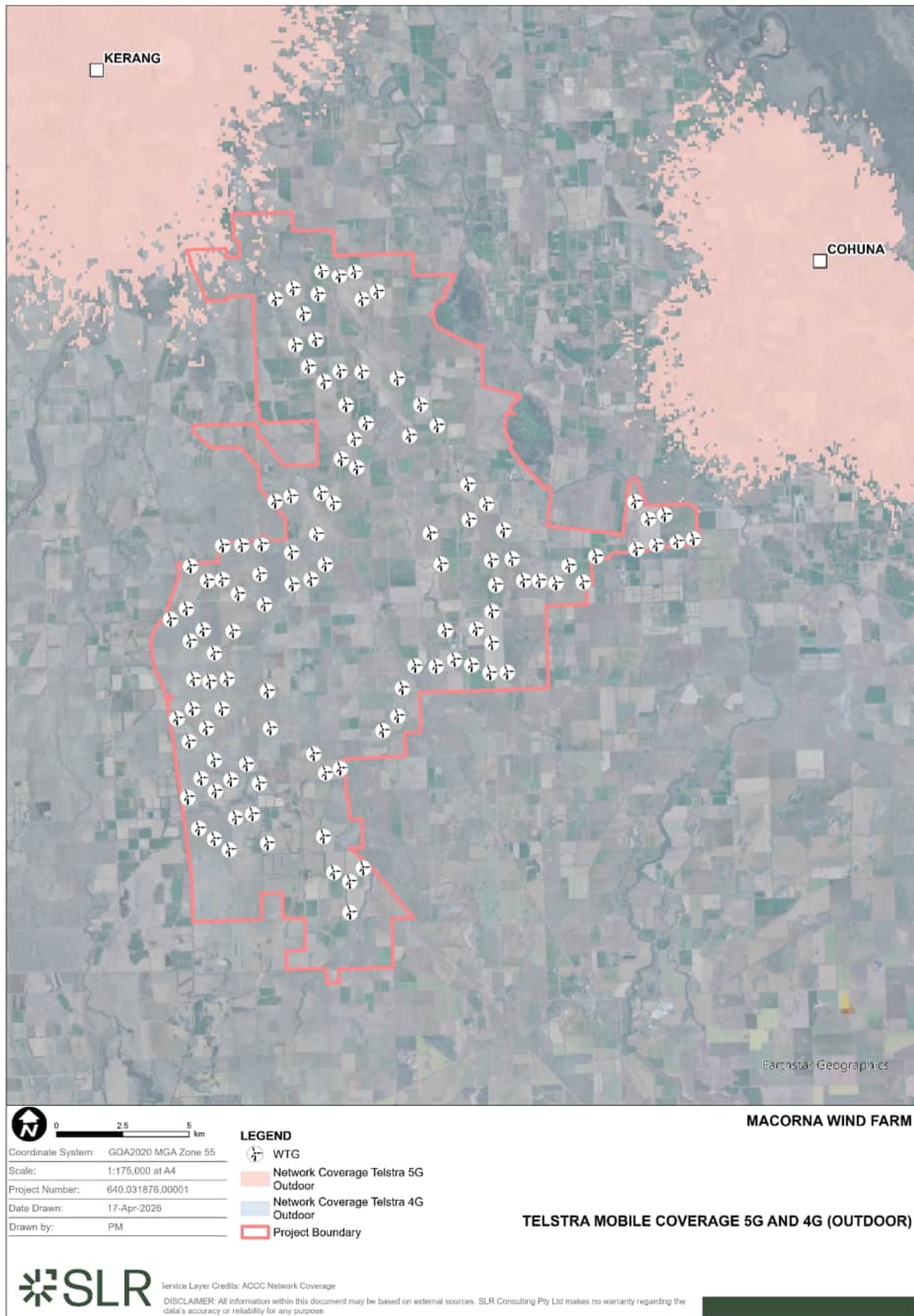


Figure B - 2 Optus Mobile Coverage 4G

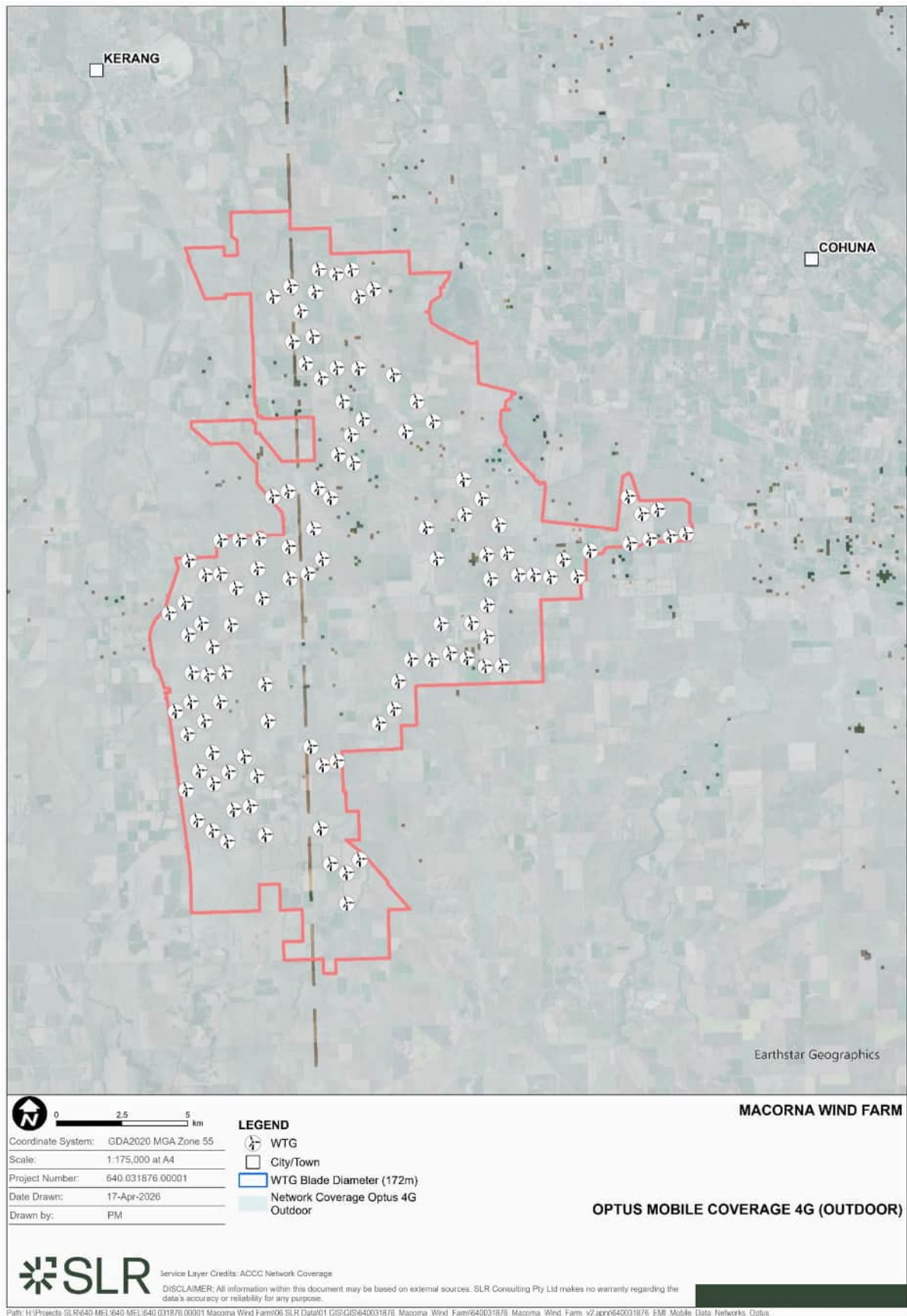
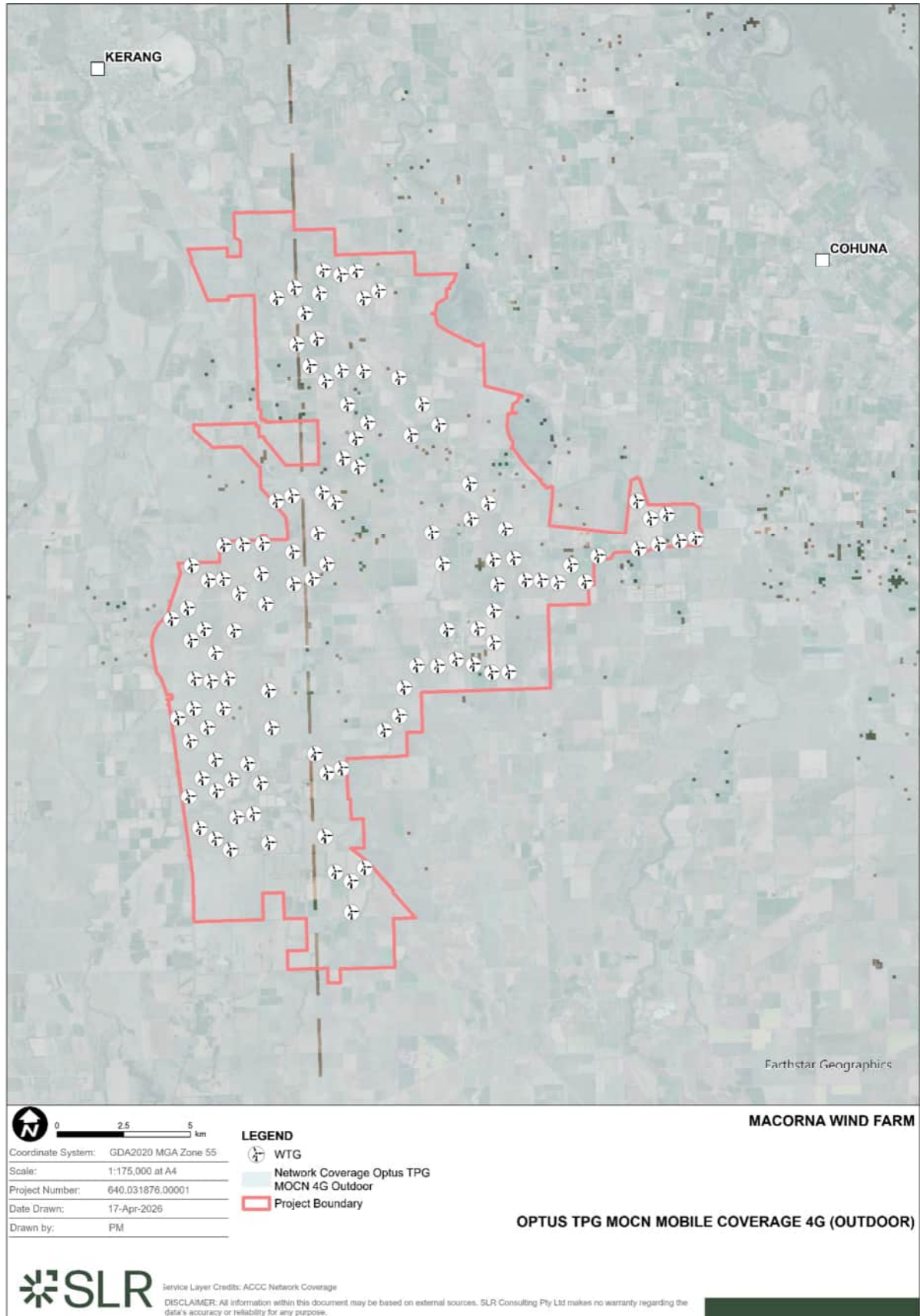


Figure B - 3 OPTUS TPG MOCN MOBILE COVERAGE 4G (OUTDOOR)



Appendix C Stakeholder Consultation Summary

Electromagnetic Interference (EMI) Assessment

Macorna Wind Farm

Atmos MWV Pty Ltd

SLR Project No.: 640.031876.00005

20 April 2026



Stakeholder Name	Initial Contact Date	Format	Project Information Provided	Stakeholder Response	Project Development Next Steps
Optus (Wind Farm Enquiries)	22/02/26	Email	Project information letter requesting feedback. Native format geospatial data showing the Project's wind turbine (revised) layout.	There are no expected impacts / no interference issues with Optus equipment due to this wind farm based on the turbine locations provided. Based on the turbine locations provided, two of the Optus network radio links are identified: Link 1 – Optus - Site 1: Optus Site Loddon Valley Hwy DURHAM OX (ID: 305693) - Site 2: Optus Site Roney Property Weinberg St COHUNA (ID: 305692) Link 2 – Optus to NBN Co - Site 1: Optus Lattice Tower, Gladfield Road, Pyramid Hill (ID: 9010834) - Site 2: NBN Co Site – 2819 Loddon Valley	No further action required.



Stakeholder Name	Initial Contact Date	Format	Project Information Provided	Stakeholder Response	Project Development Next Steps
				Highway, Tragowel (ID: 9023021)	
AusNet	22/02/26	Email	Project information letter requesting feedback. Native format geospatial data showing the Project's wind turbine layout.	During our review, we have identified that the coordinates used for Kerang Terminal Station do not match our current registered location for this site. As the microwave path geometry and Second Fresnel Zone calculations are sensitive to the exact site coordinates, this discrepancy may affect the setback distances and the conclusions drawn for the Kerang–Mincha West link, particularly in relation to wind turbines 7, 14, and 17 (previously), currently 9, 15 & 17. Can we please request that you revise the assessment using the correct Kerang Terminal Station (KGTS) coordinates (as per below) and re-issue the EMI report, including refreshed SFZ calculations, setback distances and any implications for the current turbine layout?	Following revision of the assessment and updated SFZ calculations, WTGs 9, 15 and 17 are confirmed to be located outside the recommended setback distances, maintaining adequate clearance from the identified point-to-point radiocommunications links.



Stakeholder Name	Initial Contact Date	Format	Project Information Provided	Stakeholder Response	Project Development Next Steps
Bureau of Meteorology	22/02/26	Email	Project information letter requesting feedback. Native format geospatial data showing the Project's wind turbine layout.	BoM assessment of the current Macorna Wind Farm proposal has determined that, under normal atmospheric conditions, it poses a manageable risk to Bureau radar and radiocommunication assets. As a result, the Bureau has no objections to the proposed development proceeding, as detailed in the documentation provided for assessment.	Incorporate BoM's feedback into the Project's detailed design specifications. Any Modifications to the wind farms parameters, including layout designs, turbine locations, or heights, will require a new assessment.
NBN Co Ltd	22/02/26	Email	Project information letter requesting feedback. Native format geospatial data showing the Project's wind turbine layout.	NBN has completed the analysis and there is no obstruction or impact on the Fresnel zone of the nearby MW link due to this wind farm.	No further action required.
Goulburn-Murray Rural Water Corporation	22/02/26	Email	Project information letter requesting feedback. Native format geospatial data showing the Project's wind turbine layout.	No Feedback received	



Appendix D References

Electromagnetic Interference (EMI) Assessment

Macorna Wind Farm

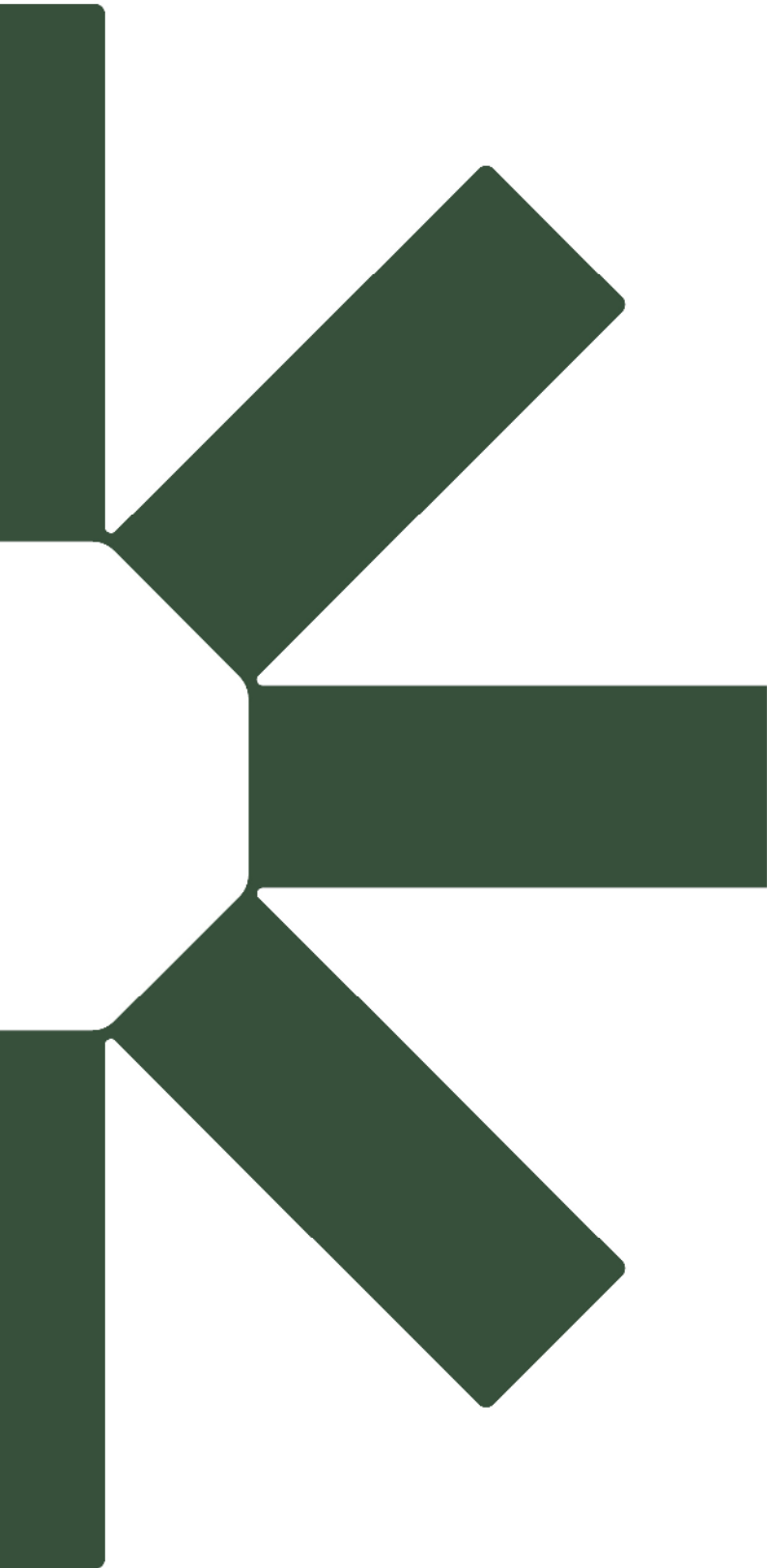
Atmos MWV Pty Ltd

SLR Project No.: 640.031876.00005

20 April 2026

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- Planning guidelines for development of wind energy facilities
<https://www.planning.vic.gov.au/guides-and-resources/guides/all-guides/renewable-energy-facilities/wind-energy-facilities>



Making Sustainability Happen