Preliminary Visual Impact Assessment

Kerrs Creek Wind Farm

Prepared for: ERM

Project No: 2233 Issue: REVISION G Date: 31st August 2023

moir
landscape architecture

DOCUMENT HISTORY AND STATUS

Project No: 2233

Project Name: Kerrs Creek Wind Farm | Preliminary Visual Impact Assessment (PVIA)

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Contents

1.0 Introduction

1.1 Introduction

Moir Landscape Architecture have been commissioned by ERM to prepare a Preliminary Visual Impact Assessment (PVIA) for the proposed Kerrs Creek Wind Farm (the Project). The purpose of this PVIA is to provide a preliminary assessment of the potential visual impacts of the proposed Kerrs Creek Wind Farm (KCWF).

The Project is State Significant Development (SSD) and requires consent under Division 4.7 of Part 4 of the Environmental Planning & Assessment Act 1979 (EP&A Act). This PVIA is to be submitted in conjunction with the Scoping Report to the Secretary of the Department of Planning, Industry & Environment (DPIE) in support of the development application for the Project.

The Scoping Report will support the Secretary in issuing the Secretary's Environmental Assessment Requirements (SEARs) that will guide the Environmental Impact Statement (EIS) as part of the development application for the Project.

1.2 Relevant Experience

The Bulletin states: *the proponent is expected to engage professionals from relevant natural resource management and design professions (for example environmental planners, geographers, landscape architects, or other visual resource specialists), with demonstrated experience and capabilities in visual assessment to carry out a wind energy project visual assessment.*

Moir Landscape Architecture Pty Ltd is a professional design practice and consultancy specialising in the areas of Landscape Architecture, Landscape Planning and Landscape and Visual Impact. Our team has extensive experience in undertaking Landscape and Visual Impact Assessments for large-scale infrastructure projects, including the mining industry, sustainable energy sector and commercial developments in visually sensitive areas. In the context of our experience and with guidance from the Visual Assessment Bulletin we have developed methodologies to ensure a comprehensive quantitative and qualitative assessment of the Project.

Relevant experience includes the preparation of Landscape and Visual Impact Assessments for the following Wind Energy Projects:

- *Crudine Ridge Wind Farm LVIA (Crudine, New South Wales)*
- *Valley of the Winds Wind Farm LVIA (Coolah, NSW)*
- *Capital II Wind Farm (Bungendore, New South Wales)*
- *Uungula Wind Farm LVIA (Wellington, New South Wales)*
- *Hills of Gold Wind Farm LVIA (Nundle, New South Wales)*
- *Barneys Reef Wind Farm PVIA (Gulgong, New South Wales)*
- *Paling Yards Wind Farm PVIA (Paling Yards, NSW)*

1.0 Introduction

1.3 Overview of Preliminary Visual Impact Assessment

The purpose of this Preliminary Visual Impact Assessment (PVIA) is to provide a preliminary assessment of the potential visual impacts of the Project and has been prepared in accordance with the Bulletin.

The visual assessment process is broken into two main stages (see **Figure 1**):

Phase 1: Preliminary Environmental Assessment and
Phase 2: Environmental Impact Statement

This PVIA forms apart of *Phase 1: Preliminary Environmental Assessment* to be submitted to DPIE together with the Scoping Report for the request for SEARs.

The requirements of Stage 1: Preliminary Environmental Assessment are as follows:

At the Preliminary Environmental Assessment stage, a process consisting of community consultation regarding key landscape values and application of preliminary assessment tools has been developed.
The tools include consideration of the potential impact of the proposals on dwellings and key public viewpoints.

The preliminary assessment tools have been designed to assist proponents to drive better outcomes.
They will assist in identifying early in the process the locations where wind turbines may have impacts that warrant further consideration. This in turn provides an opportunity to refine the proposed wind turbine layout to avoid or minimise impacts, or justify the proposed design prior to lodgement of the application.

Proponents will be required to submit, with the request for SEARs, a Preliminary Environmental Assessment that includes a map with key information, results of community consultation and the application of the preliminary assessment tools. This will form the basis for the issue of the SEARs that will identify the matters that must be addressed in the EIS.

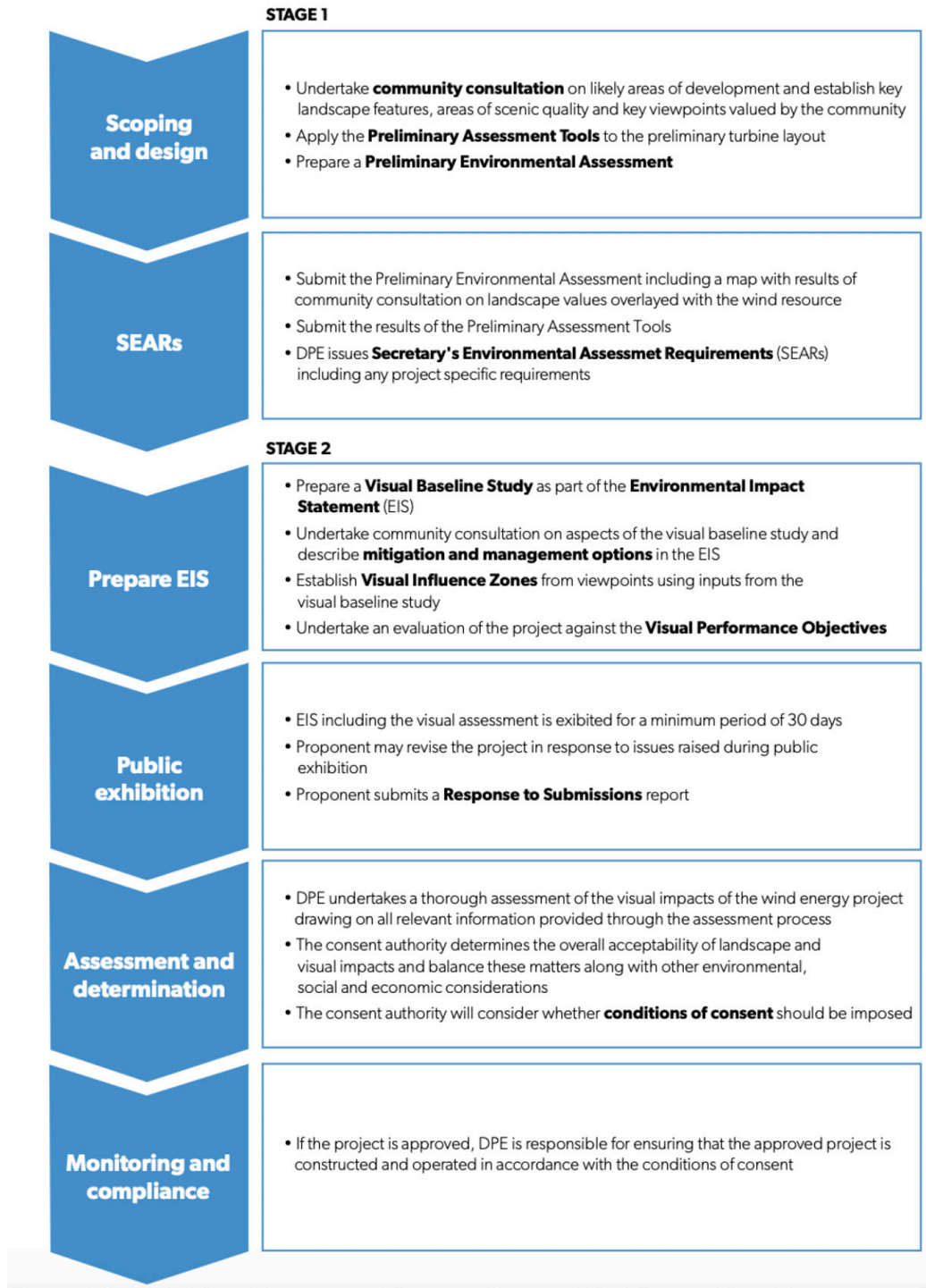
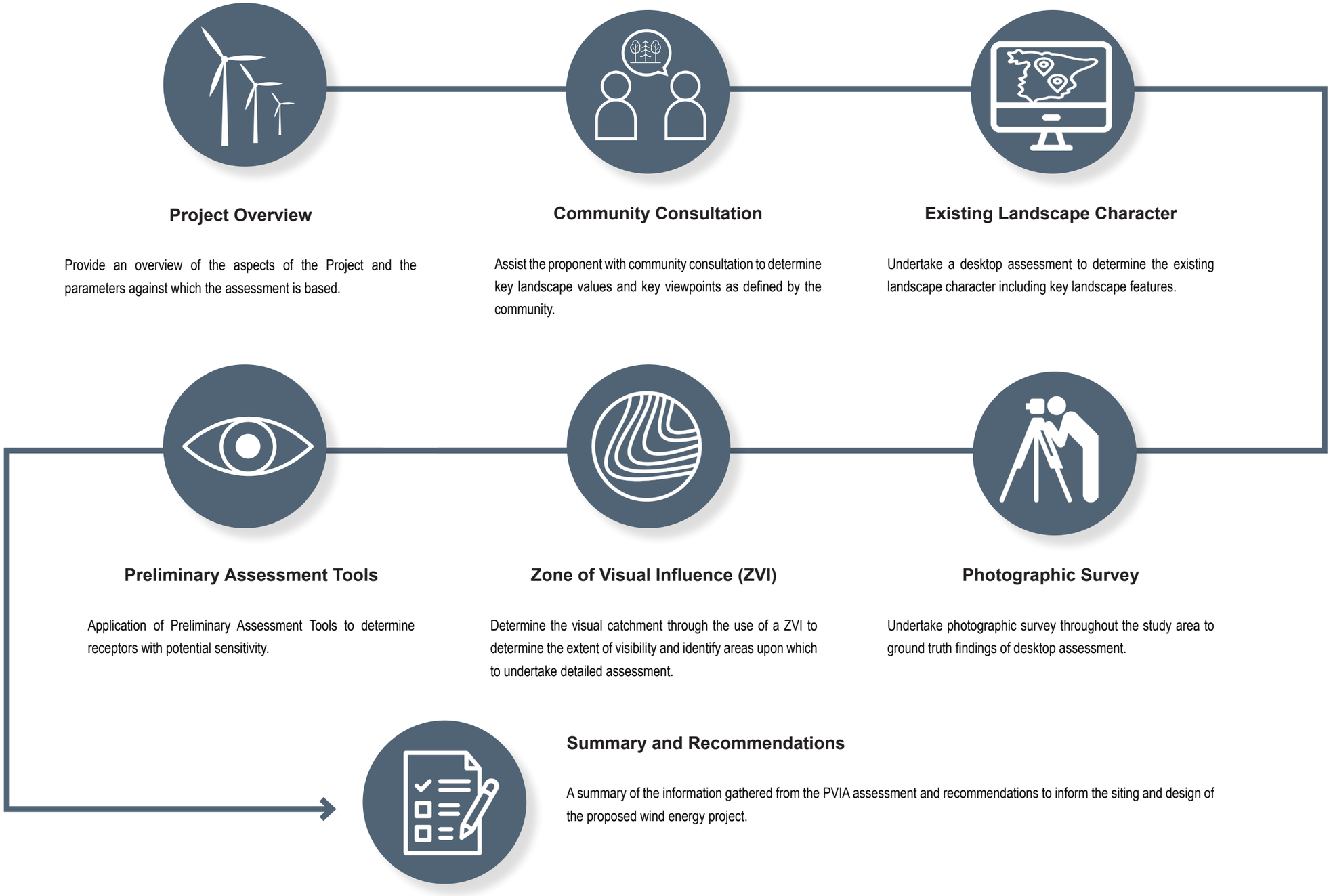


Figure 1 Steps in Visual Assessment Process (Source: Wind Energy Visual Assessment Bulletin, 2016)

2.0 Study Method

2.1 Study Method

The following has been undertaken to develop the PVIA:



2.0 Study Method

2.1 Study Method

The following has been undertaken to develop the PVIA:

Desktop Assessment:

- Application of Preliminary Assessment Tools to determine receptors with potential sensitivity.
- Preparation of a preliminary Zone of Visual Influence (ZVI) to establish a theoretical zone of visibility of the Project.
- Identification of key viewpoints and landscape features using available mapping and background documents.

Site Inspection:

Photographic survey work for the assessment was undertaken in June of 2020 to carry out a preliminary assessment of the existing landscape character from publicly accessible land within the Study Area (as defined in Section 3.3). The findings of the site inspection have been included in the PVIA and will form the basis for discussion with the community in the EIS Phase of the Project.

Community Consultation:

Community consultation has been undertaken through the scoping phase of the Project. Results of the community consultation documented in previous studies have also been utilised to gain perspective on the landscape values held by the community to inform the PVIA.

Community consultation will be continued through the EIS phase of the Project.

2.2 Report Structure

The following table provides an overview of the requirements of the Bulletin and where these have been addressed in the PVIA:

Preliminary Visual Impact Assessment Report Structure:	
Bulletin Requirements:	**Addressed in report:**
• *Undertake community consultation to establish key landscape features valued by the community, key viewpoints in the area (both public and private) along with information about the relative scenic quality of the area.*	**Refer to Section 4.0:** **Community Consultation**
• *Production of a map detailing key landscape features (informed by community consultation and any ground-truthing undertaken), the preliminary wind turbine layout, the location of dwellings and key public viewpoints, and an overlay of the wind resource.*	**Refer to Section 5.0 :** **Existing Landscape Character**
• *Results of the preliminary assessment tools for both the visual magnitude and multiple wind turbine parameters.*	**Refer to Section 6.0:** **Preliminary Assessment Tools**
• *The use of Geographic Information Systems (GIS) to facilitate the application of the tools will streamline the evaluation phase of a project during the pre-lodgement stage. Most GIS systems can establish the theoretical 'zone of visual influence' of the proposal (the area from which the proposal is theoretically visible or the 'visual catchment').*	**Refer to Section 7.0:** **Preliminary Zone of Visual Influence**
• *The visual assessment will involve the combination of desktop and field evaluations of the proposed wind energy project and its various components, turbines and ancillary facilities. The visual performance objectives form the principal framework and guide for assessing the proposed wind energy project when applied to individual viewpoints. All individual dwellings within the visual catchment should be identified and assessed.*	**Refer to Section 8.0:** **Preliminary Dwelling Assessment**
• *Address potential cumulative impacts of wind energy projects in the region (the proposed wind energy project, as well as existing and approved projects)*	**Refer to Section 9.0:** **Cumulative Visual Impacts**
Summary and Recommendations - Section 10.0	

Table 1 Overview of Report Structure

3.0 The Project

3.1 Regional Context

The Project is located on the boundary of the South Eastern Highland and South West Slopes Regions in NSW, North of Orange and approximately 70km South East of Dubbo.

The Project is located approximately 26 kilometres (km) north of Orange near the towns of Kerrs Creek and Euchareena and spans across both the Cabonne Council and Dubbo Regional Council local government areas (LGAs) (refer to **Figure 2**).

Land within and surrounding the Project Area has been subject to extensive vegetation clearing associated with historic agricultural land uses and is predominately utilised for grazing activities. Land use surrounding the Project Area is predominately agriculture, used primarily for grazing.

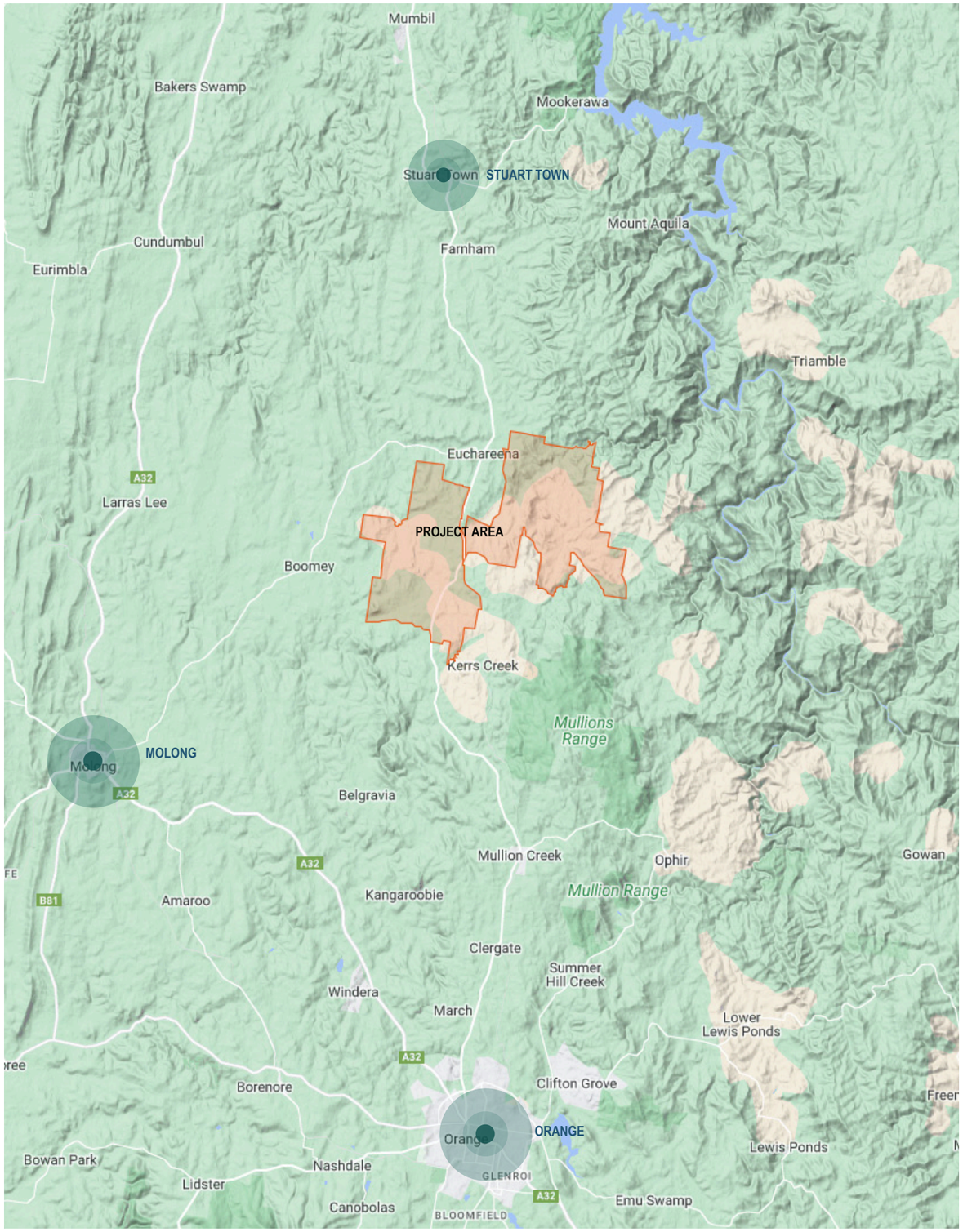


Figure 2 The Project Area - Regional Context

3.0 The Project

3.2 The Project Area

The Project Area encompasses the land as presented **Figure 3**. These properties are primarily utilised for agricultural grazing and are characterised by cleared hills. The preliminary layout for the Project (refer to **Figure 4**) will be subject to further review and refinement as the environmental and social impact assessment progresses.

3.3 The Study Area

Referred to in this report, the Study Area is generally defined as the Project Area and surrounding land which requires assessment. The Study Area is generally defined as the land up to 8,000 m from the nearest turbine, including Euchareena, Boomey and Kerrs Creek as shown in **Figure 3**.

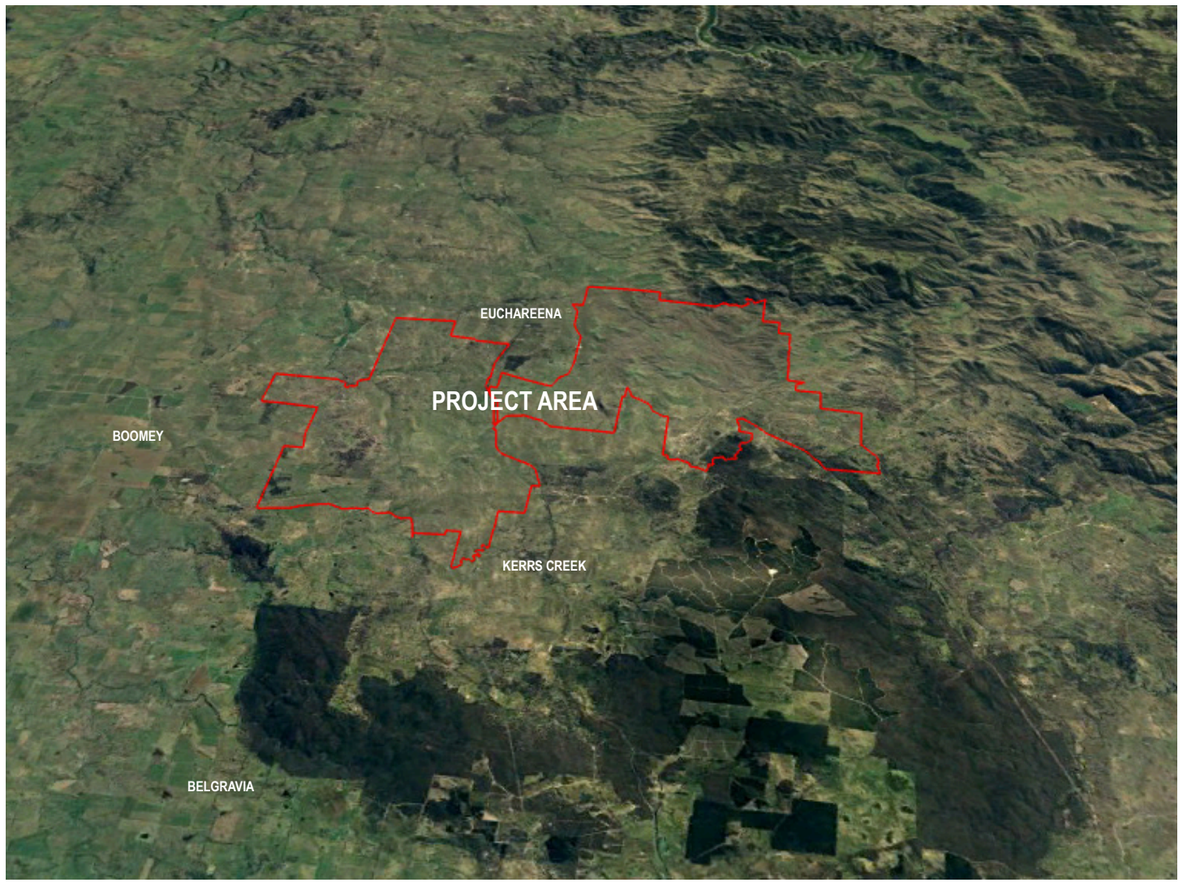


Figure 3 Birds Eye View - Study Area (Source: Google Earth)

3.4 The Project

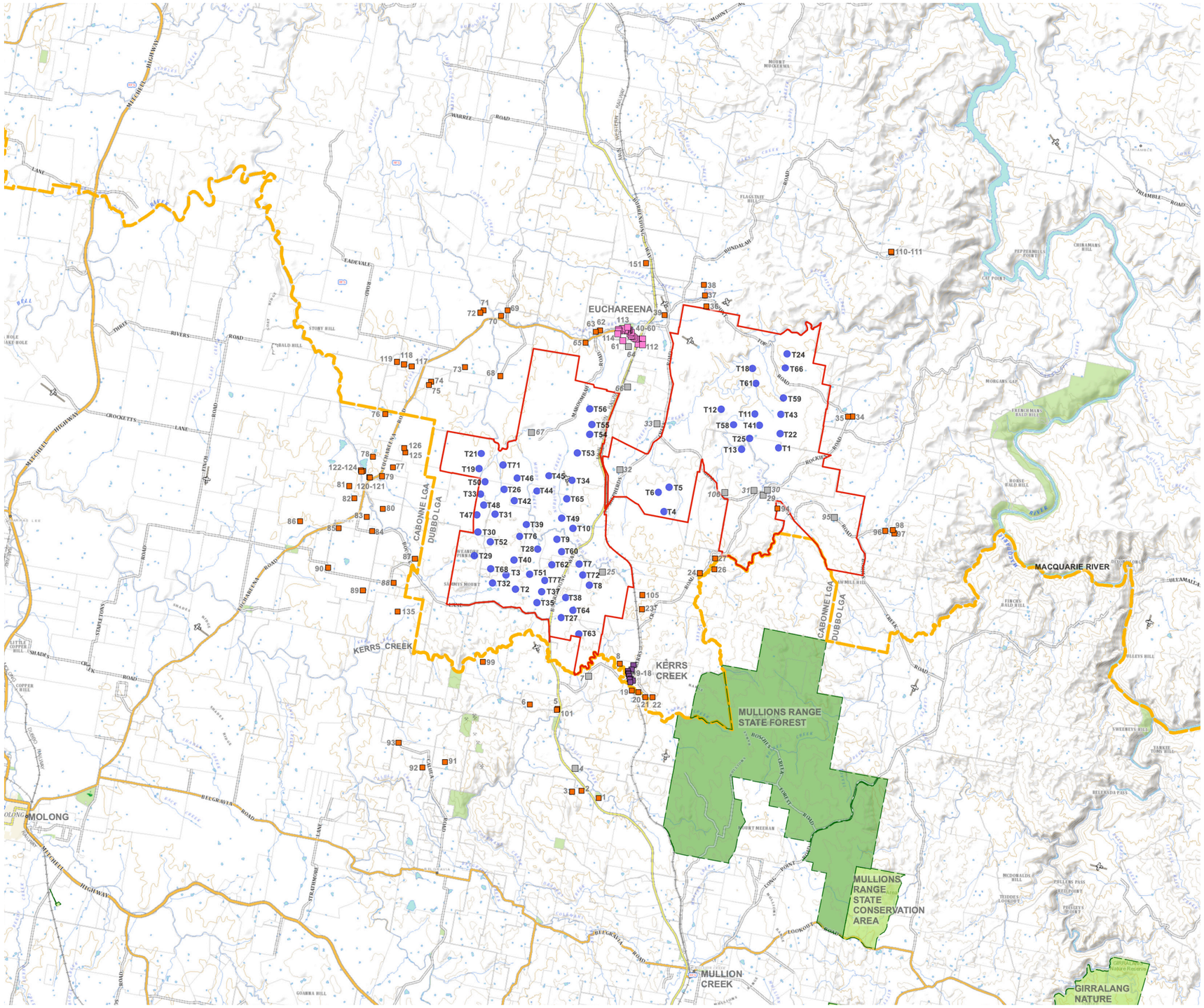
The proposed Kerrs Creek Wind Farm (the Project) will consist of approximately 63 wind turbines and have a capacity of approximately 441 megawatts (MW). The Project will involve the construction and operation of the wind turbines and ancillary infrastructure including turbine foundations, electrical transformers and inverters, electrical cabling, telecommunication equipment, electrical control enclosures, battery storage, operations and maintenance buildings, internal access roads and temporary construction buildings.

The wind turbines will be connected to cable marshalling points and the onsite transformer through underground and some overhead cabling. The Project is assumed to use turbines with a height to blade tip of up to 280 metres (m) above the base of the wind turbine tower. The turbines will be of the horizontal axis type, with a rotor consisting of three blades with an assumed rotor diameter up to 195m.

Generated electricity will feed into Wellington-Mt Piper 330kV electricity transmission network owned by TransGrid on the eastern boundary of the site. Electricity generated will be converted from Direct Current (DC) to Alternating Current (AC) using in field inverters and Step up Transformers will be used to increase the voltage to the transmission line rating. A mix of underground reticulated system and overhead conductors will be used to connect 33kV power to a transformer station onsite before connecting into a switchyard via high voltage overhead cables. The switchyard will be the point of connection into the transmission line and overhead cables will be of sufficient height to allow for site vehicles to pass beneath.

The Project will be managed from a control building, located adjacent to the switchyard which will include formalised staff and visitor parking, accessed off the adjacent public road. This compound will also house an electrical switchroom. All lighting will be directed downward to minimise the potential for glare or spill-over onto adjacent properties. Lighting is proposed to be used from dusk to dawn once the facility is operational. Appropriate landscaping may be provided around the proposed infrastructure where landscape is significantly disturbed, or where technical assessment finds merit in its provision.

The Project will be designed, where possible, to minimise the extent of civil works required to occur on the site. All existing overland drainage flow paths are intended to be maintained where practical so as to minimise the impact on the surrounding land uses. Formal internal roads will be required, with the level of pavement sealing required has been kept to a minimum. Accordingly, it is intended that the KCWF will have minimal impact when decommissioned as the development components do not require substantial disturbance to the landscape.



Preliminary Project Layout

Proposed Kerrs Creek Wind Farm

LEGEND

- Project Boundary
- Proposed 280 m Turbine Location
- Involved Dwelling
- Non-involved Dwelling
- Non-involved Dwelling (Kerrs Creek)
- Non-involved Dwelling (Euchareena)
- Main Road
- Minor Road
- Nature Reserve / SCA
- State Forest
- LGA Boundary

Figure 4 Preliminary Project Layout

4.0 Community Consultation

4.1 Community Consultation Process

The Visual Assessment Bulletin states: *community consultation at this early stage may be broad, but should include discussions about the proposed project area, likely corridors of development, or preliminary turbine layouts and must involve people from the visual catchment. The purpose of community consultation is to establish key landscape features, areas of scenic quality and key public viewpoints valued by that community*.

The purpose of community consultation is to:

- Establish key landscape features
- Defined areas of scenic quality and
- Identify key public viewpoints valued by that community.

In accordance with the Bulletin, ongoing community consultation has been undertaken by the proponent through face to face meetings and a questionnaire which was made available online.

Two Community information sessions were undertaken, one in Molong on Friday 19th March 2021, 4pm - 7pm and one at Euchareena Soldiers Memorial Hall on Saturday 20th March 2021, 9am - 12pm.

David Moir (Director of Moir Landscape Architecture) was present at both community information sessions to facilitate discussion around landscape values and answer questions about the Visual Assessment process. A copy of the material presented at the from the community information day to prompt discussion around landscape values has been included in **Appendix C.1.**

Community members were encouraged to provide feedback on the material and complete a detailed questionnaire (presented in **Appendix C.2**). RES received five (5) responses to the questionnaire. Information received has been incorporated into the PVIA where possible. All respondents identified Euchareena as the best description of where they live.

Community engagement will continue through the Project and provide the community with further opportunities to provide input into the Visual Baseline Study of the LVIA.

4.2 Results of Community Consultation

Understanding of the community perception towards the proposed development is an intrinsic component of the Landscape and Visual Impact Assessment process. A CSIRO study published in 2012: Exploring community acceptance of rural wind farms in Australia provides a snapshot of community acceptance levels regarding Australian wind farms from a variety of stakeholder perspectives. It found levels of acceptance among the public are highly subjective and can differ depending on location, local context and place attachment.

4.2.1 Landscape Values

Landscape values are highly subjective and can differ depending on location, local context and place attachment. The results of specific questions assisted in the identifying key areas of concern and ensuring the LVIA provided comprehensive assessment taking into account landscape values held by the community. The responses to the questionnaire have been considered in the PVIA and further detail through the Visual Baseline Study in the EIS Phase.

In response to the question *'what do you value most about your local area?'*, the majority of respondents (80%) identified farming as highly valued by the community. Following this, Community / Family and were identified as highly valued by the community. See graph (**Figure 5**).

4.2.2 Community Perception

Based on the current understanding of the Project, 80% of respondents identified clean energy and road upgrades as a positive benefit of the Project. 40% of respondents appreciated the investment in the local community and 20% saw job creation as a benefit. See graph (**Figure 6**).

Further comments were provided by respondents regarding main concerns of the Project. These included:

The serenity and natural surroundings (including views) is why we choose to live here - wind turbines were not a consideration. I have concerns this project will both devalue our property and our quality of life.

Longterm valuation of land possible degradation of property value. Landowners who have turbines will stand to gain regardless. More turbines most revenue. Landowners who may be impacted by visual and noise an possible devaluations of land get no revenue earnings.

Question 2: What do you value most about your local area?

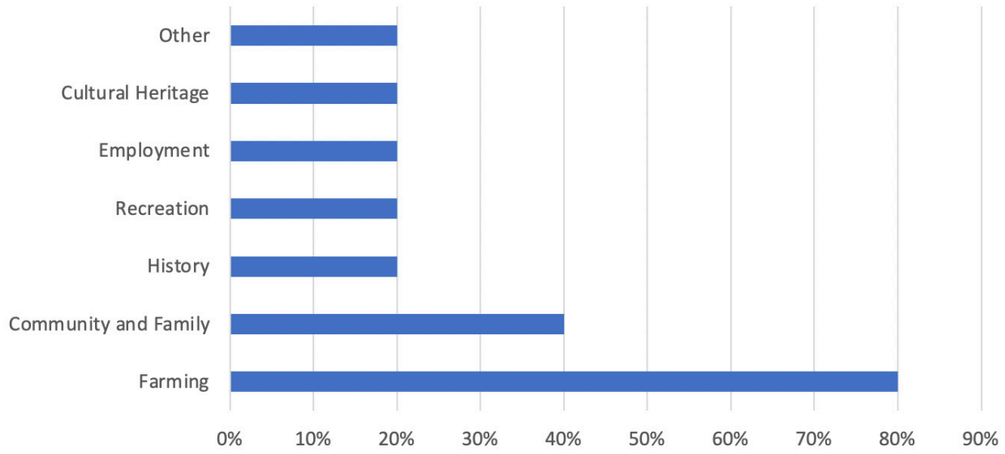


Figure 5 Results of Landscape Values Questionnaire Question 2

4.2.3 Key Landscape Features & Viewpoints

In addition to a review of existing landscape maps and detailed field work undertaken by Moir LA (see Section 5.0) the community consultation questionnaire asked respondents to identify key landscape features of importance to them. The following three broad responses were provided:

- *Views*
- *Unfettered view of the landscape including hills, creek + big sky. A natural view with no man made structures.*
- *Relatively safe farming grazing production. Can be very picturesque rolling hills.*

Three responses were provided identifying key viewpoints for further assessment. These included:

- *Flagstaff Hill, (Note: Approximately 8 km north east of Euchareena)*
- *Two respondents identified locations on private properties.*

These locations will be assessed in further detail in the EIS Phase of the Project.

5.0 Existing Landscape Character

5.1 Overview of Bioregion

The Project Area is situated within two Bioregions of NSW being, the South Western Slopes Bioregion and the South Eastern Highlands Bioregion (refer to **Figure 6)**. Located at the foothills of the Great Dividing Range, it also consists of isolated ranges and inland slopes.

The South Western Slopes Bioregion's topography, especially around the north and eastern region of the Project Area is characterised by steep, rocky granite slopes with inland streams, creeks and rivers that are confined to valleys with terraces and local sedimentation areas. Overall, the soils are shallow and stony, and found on the tops of ridges and hills. Soil profiles around the Project Area showcase limited abilities to adapt to different uses and the soil inherently has very low fertility.

Hilly terrains towards the north and the east are dominated by open woodlands of Grey Box *(Eucalyptus microcarpa)* and White Cypress Pine *(Callitris glaucophylla)*. Vegetation communities around valley flats and stream / river banks includes Rough-Barked Apple *(Angophora floribunda)* and River Oak *(Casuarina cunninghammia)*. The bioregion supports a vast number and varieties of threatened flora species, of which 13 are endangered, 22 are vulnerable and one is extinct. An endangered plant called the *Swainsona recta* is also supported by Lake Burrendong. In terms of fauna species, the NSW South Western Slopes Bioregion around Lake Burrendong Reservoir especially, hosts a variety of waterbirds that are rare, endangered and vulnerable

The South Eastern Highland Bioregion's topography is generally characterised by *plateau remnants, granite basins with prominent ridges formed on contact metamorphic rocks and the western ramp grading to the South Western Slopes* (NPWS, 2003). Vegetation and soils vary across the bioregion due to altitude, temperature and rainfall. Diverse vegetation communities include Yellow Box *(Eucalyptus melliodora)*, Red Box *(E. polyanthemos)* and Blakely's red gum *(Eucalyptus blakelyi)*. The bioregion supports a vast number and varieties of threatened flora species, of which 36 are endangered, 50 are vulnerable and two are considered extinct.

Images 1-3 illustrate the typical character of the landscape within the Study Area.

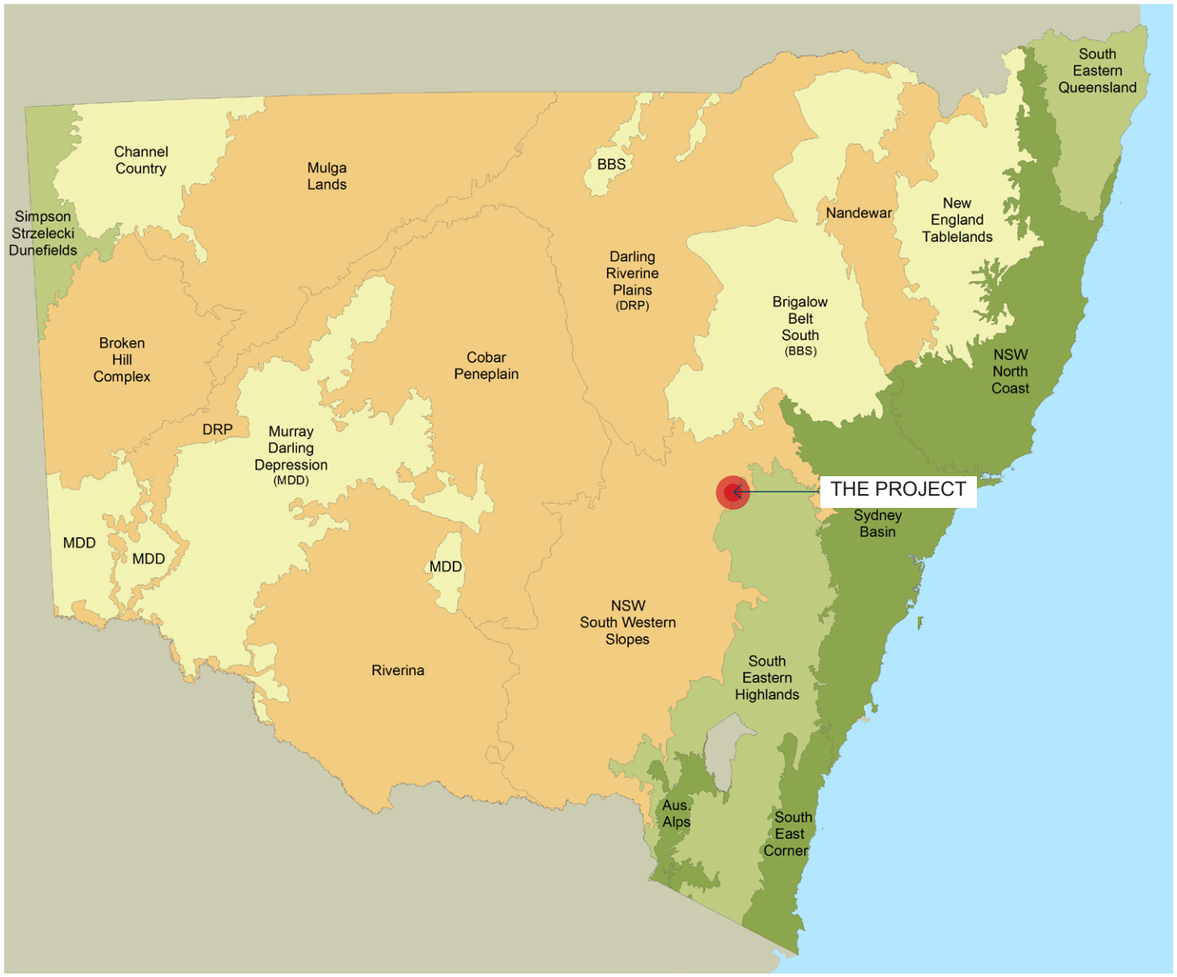


Figure 6 Bioregions of New South Wales (Source: NPWS)

Image 1 Cleared hills

Image 2 Vegetated Hills and improved pastures

Image 3 Vegetated ranges

5.0 Existing Landscape Character

5.2 Land Use Zoning

The Project spans across both the Cabonne Council and Dubbo Regional Council local government areas (LGAs). The following land use zoning is located within the broader landscape:

RU1 - Primary Production
RU3 - Forestry
E1 - Natural Parks and Nature Reserves
E3 - Environmental Management
SP2 - Infrastructure
B2 - Local Centre
R1 - General Residential
R2 - Low Density Residential
R5 - Large Lot Residential

The following provides an overview of the main land use zoning within the Study Area and its immediate surrounds ***(Figure 7)***.

RU1 - Primary Production

The Project and surrounding land is predominantly zoned RU1 - Primary Production. This covers land used for most kinds of commercial primary industry production. There are currently no objectives of the RU1 zoning relevant to the visual impact within the Dubbo and Cabonne v.

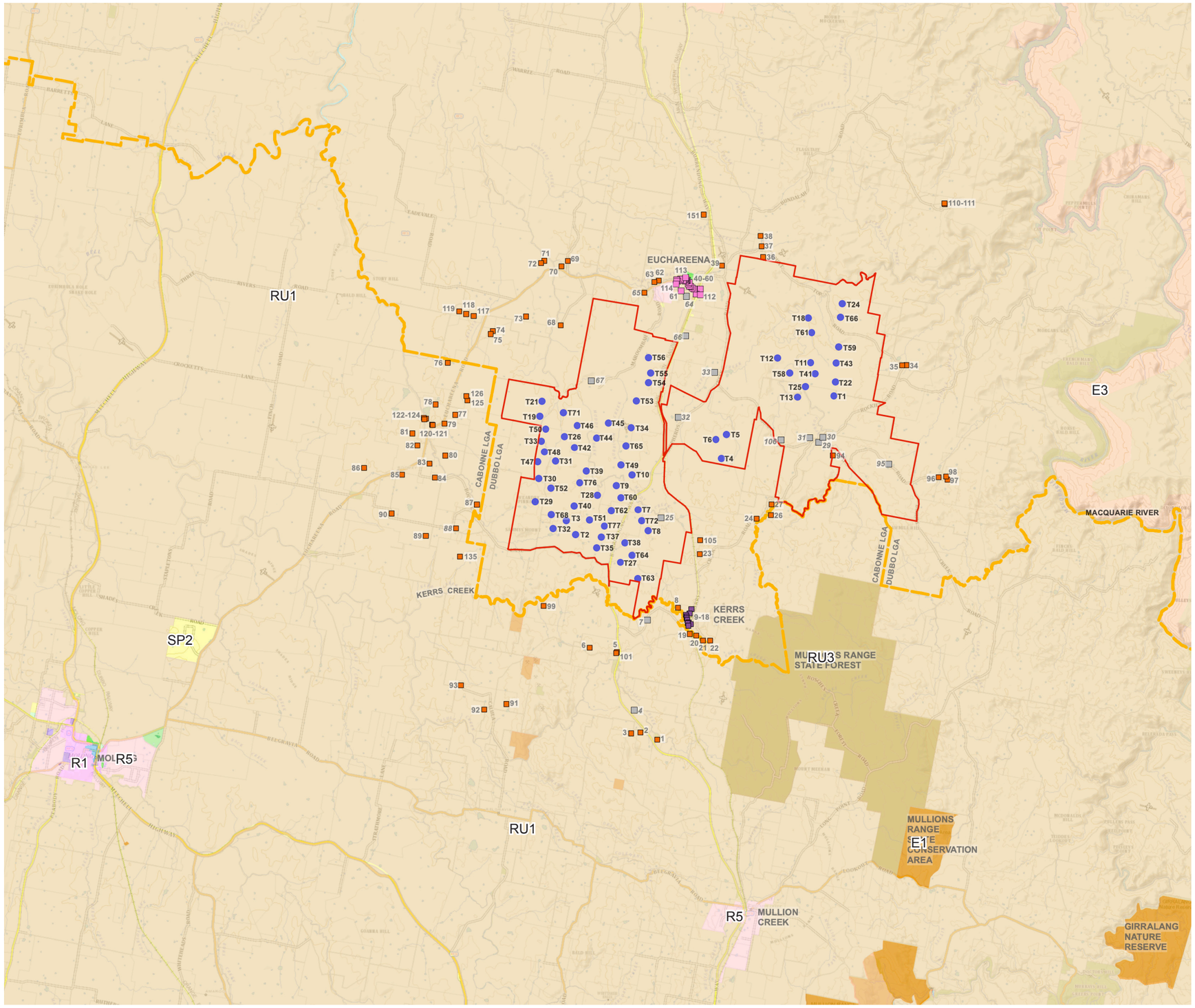
RU3 - Forestry

The Mullions Range State Forest is located approximately 5km to the southeast of the Project Area. It is zoned RU3 Forestry to enable development for forestry purposes and other development that is compatible with forestry land uses.

E2 Environmental Conservation

Areas of land to the south, east and west of the Project Area have been zoned E2 - Environmental Conservation. This zoning is intended to protect land that has high conservation values outside the national parks and nature reserve system.

5.0 Existing Landscape Character



Land Zoning

LEGEND

- RU1 - Primary Production
- RU3 - Forestry
- E1 - Natural Parks and Nature Reserves
- E3 - Environmental Management
- SP2 - Infrastructure
- B2 - Local Centre
- R1- General Residential
- R2 - Low Density Residential
- R5 - Large Lot Residential
- RE1- Public Recreation
- WTG locations
- Site Boundary

0 2 4 6 8 10km

N

Figure 7 Land Use Zoning

5.0 Existing Landscape Character

5.3 Key Landscape Features & Viewpoints

The Bulletin states proponents must identify key landscape features, dwelling locations and key public viewpoints. The following section provides an overview of the key features identified. A variety of key landscape features exist within the Study Area and help to define the specific landscape character areas (refer to **Figure 8**).

Topography

Topography in the Project Area is undulating. The land form is gently undulating to the south and flat to the west towards Molong. Steep vegetated hills surround the Macquarie River to the east of the Project Area.

Rivers and Creeks

The Project Area is located between the Bell River (to the west) and the Macquarie River (to the east). A number of tributaries of the rivers run through the Project Area including: Bell River, Kerrs Creek, Shepherds Creek and Muddy Creek.

State Forest and State Conservation Area

Mullion Range State Forest is located to the south east of the Project Area.

Mullion Range State Conservation Area (SCA) is to the south east of Mullion Range State Forest. Mullion Range SCA has walking trails, a picnic area and The Falls Water Falls.

Nearby Towns:

Kerrs Creek

Kerrs Creek is a small village located within the Dubbo Regional Council local government area and has a population of approximately 45 people. It is situated 22km from Molong and 26km from the city of Orange.

Euchareena

Euchareena is a small rural town with just a few houses surrounded by a vast area of farmland producing wheat, sheep, cattle and canola. The town has a current population of approximately 197 and is within Dubbo Regional Council local government area.

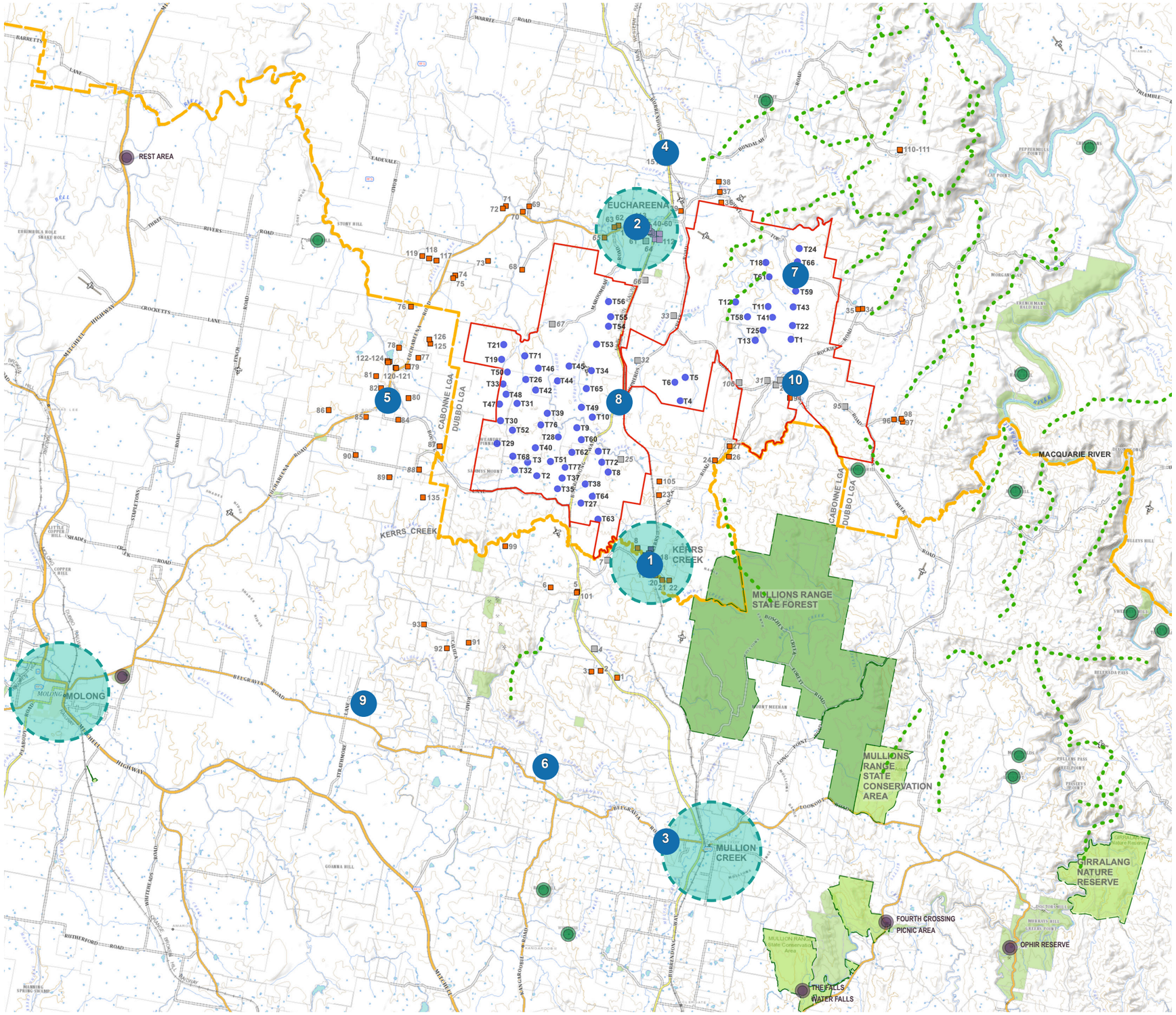
Mullion Creek

Mullion Creek is a small town in the Central West region of New South Wales and is located approximately 16km north of the city of Orange. The town currently has a population of approximately 557 and is within Cabonne Shire Council local government area.

Molong

Molong is situated on the Mitchell Highway and about 30km from the city of Orange. The town currently has a population of 2,577 and is within Cabonne Shire Council. Still known for its wool, wheat and wine, Molong began as a government stockyard in 1845.

5.0 Existing Landscape Character



Landscape Features & Key Viewpoints

Proposed Kerrs Creek Wind Farm

LEGEND

- Project Area
- Proposed 280 m Turbine Location
- Main Road
- Minor Road
- 8000 m from turbine

Landscape Features:

- Rivers
- Creekline
- State Forest
- National Park / SCA
- High Point
- Ridgeline

Key Landmark / Viewing Locations

- Bridge
- Church / Cemetery
- Park / Picnic Area / Lookout
- Town
- 6 Preliminary Viewpoint Assessment Location

Refer to Appendix A

0 2 4 6 8 10km

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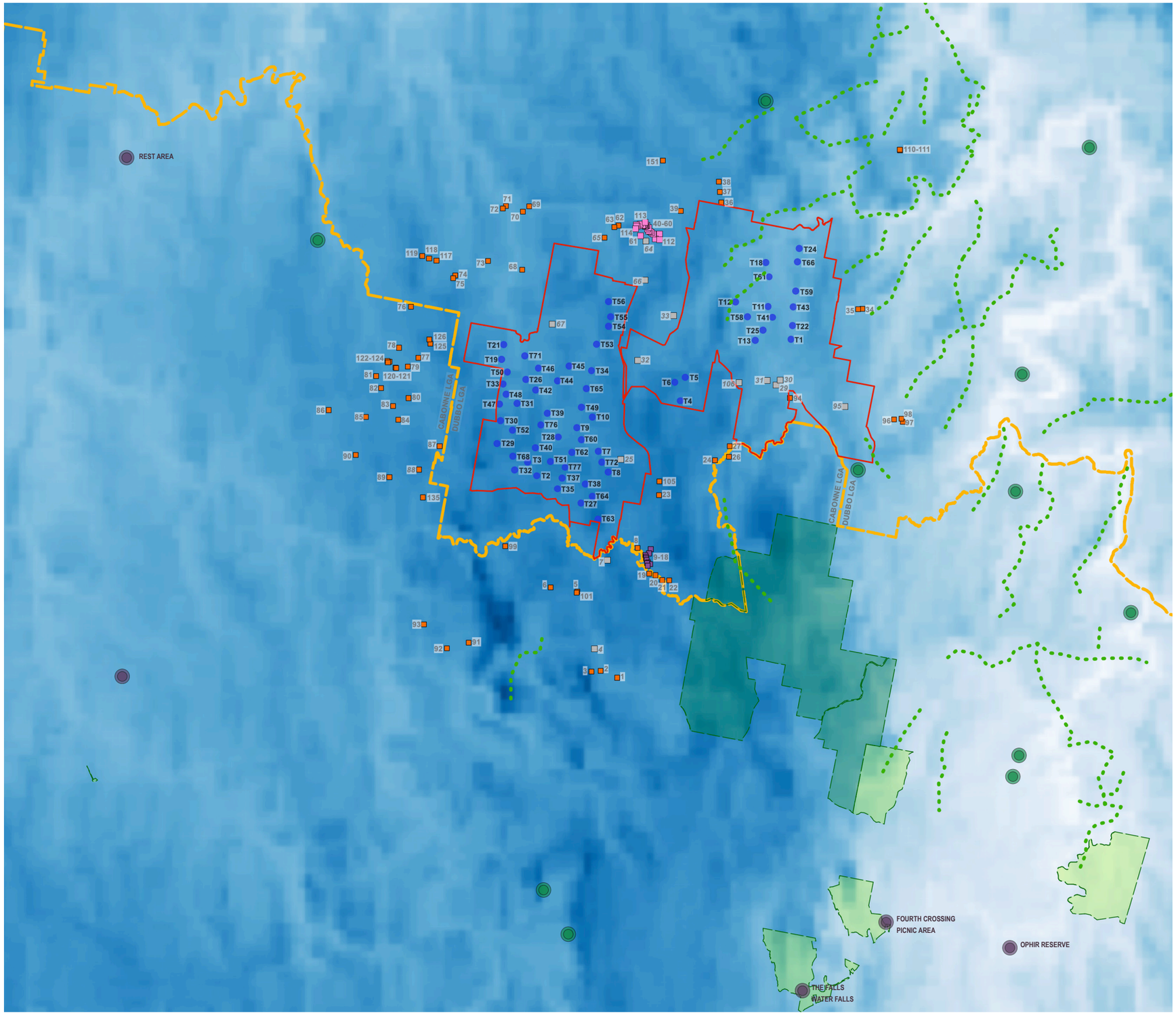
Figure 8 *Key Landscape Features and Viewpoints*

5.0 Existing Landscape Character



Wind Resource Map

Proposed Kerrs Creek Wind Farm

LEGEND

- Project Area
- Proposed 280 m Turbine Location
- Main Road
- Minor Road
- 8000 m from turbine

Landscape Features:

- Rivers
- Creekline
- State Forest
- National Park / SCA
- High Point
- Ridgeline

Key Landmark / Viewing Locations

- Bridge
- Church / Cemetery
- Park / Picnic Area / Lookout

Relative ranges of Average Wind strength in m/s at a height of 150 m

- 3.7064
- 4.4313
- 5.1563
- 5.8813
- 6.6063
- 7.3313
- 8.0563
- 8.7255
- 9.2832

0 2 4 6 8 10km

N

Figure 9 Wind Resource

5.0 Existing Landscape Character

5.4 Preliminary Landscape Character Units and Scenic Quality Rating

The Bulletin states: *the baseline study inputs, including key landscape features and sensitive land use designations, should lead to the identification of Scenic Quality Classes. Scenic quality refers to the relative scenic or aesthetic value of the landscape based on the relative presence or absence of key landscape features known to be associated with community perceptions of high, moderate or low scenic quality. It is both a subjective and complex process undertaken by experts in visual impact assessment, taking into account community values identified in early community consultation.*

In accordance with the Bulletin, a Scenic Quality 'frame of reference' has been formulated by Moir Landscape Architecture (**Table 2**) utilising *An approach to landscape sensitivity assessment* by Natural England. The preliminary frame of reference developed for the Project is in keeping with the example frame of reference provided in the Bulletin.

Each category of the 'frame of reference' has been quantified for each Landscape Character Unit to determine a Scenic Quality Rating of **low**, **moderate** or **high**. The resulting Scenic Quality Rating is used during the EIS phase to assist in defining the Visual Influence Zones in accordance with the Bulletin.

SCENIC QUALITY RATING		
Description	**LOW** ⟷ **MODERATE** ⟷ **HIGH**	
Landform	- Flat Topography - Absence of Landscape Features - Open, broad extents of spaces	- Diversity in Topographical Range - Unique Landscape Features - Intimate spaces
Waterforms	- Absence of Water	- Presence of Water - Visually prominent lakes, reservoirs, rivers streams and swamps.
Vegetation	- Absence of vegetation - Lack of diversity - Land cleared of endemic vegetation - Low level of connection between vegetation and landscape / topography	- Abundant vegetation - High diversity - High retention of endemic vegetation. - High level of connectivity between natural landscape and landforms.
Human Influence	- High population. - High density in settlement - High presence of Infrastructure - High levels of landscape modification	- Low / dispersed population - No settlement - Absence of infrastructure - Landscape in natural state
Activity	- High levels of traffic movement - Presence of freight and passenger transport networks - Presence of production or industry.	- Low traffic movement - Absence of freight and passenger transport - Absence of production or industry
Rarity	- Typical landscape within a local and regional context	- Unique combination of landscape features in a local and regional context
Relationship with Adjoining Landscapes	- Low visible connection with adjoining landscapes - Low variability between adjoining landscapes. - Landscape features do not contribute to amenity from adjoining landscapes	- High visibility with adjoining landscapes. - High variability and contrast with adjoining landscapes - Landscape features contribute significantly to amenity of adjoining landscapes

Table 2 Scenic Quality Class Frame of Reference

5.0 Existing Landscape Character

5.5 Preliminary Landscape Character Unit Assessment

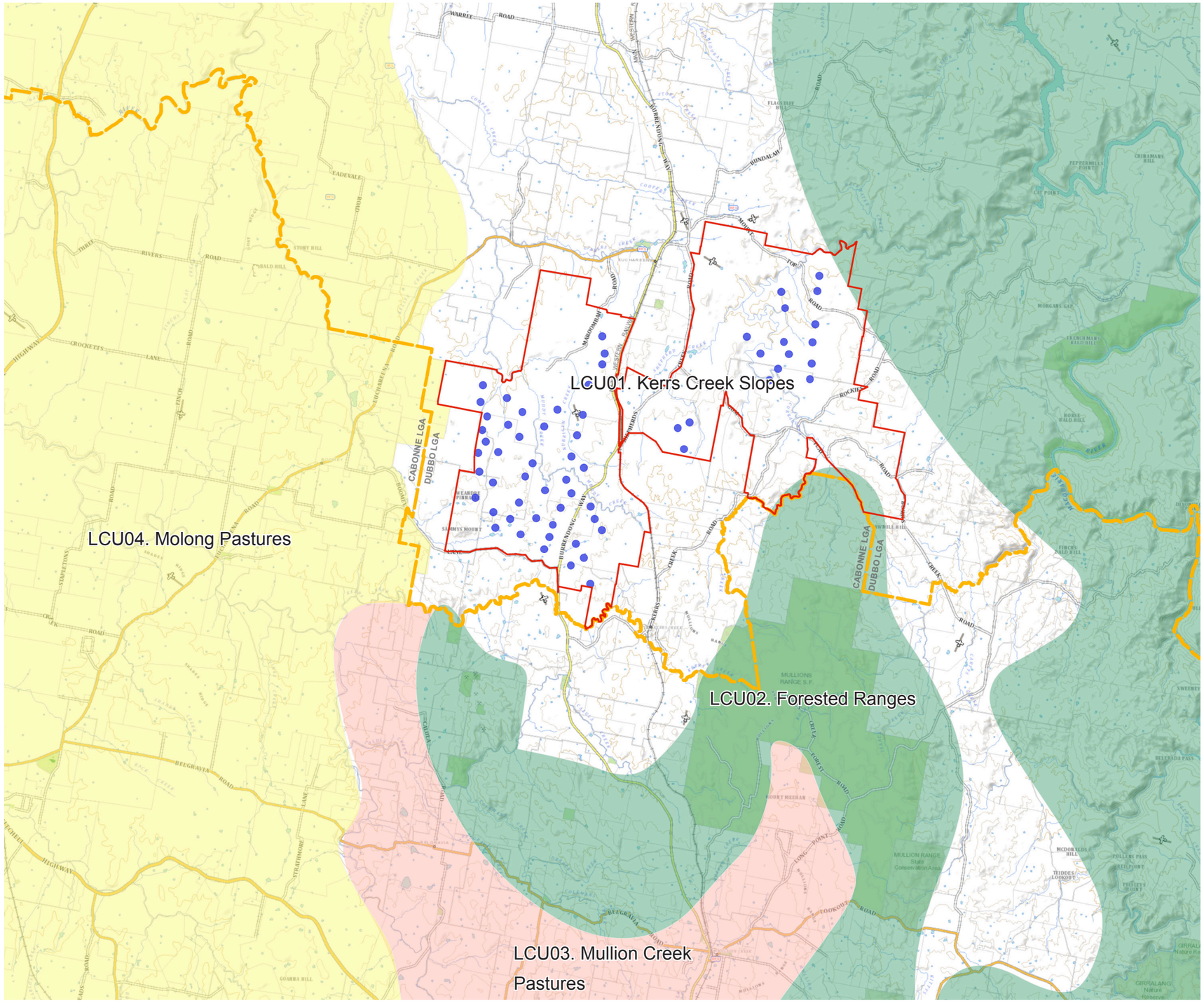
A number of Landscape Character typologies exist within the Study Area (refer to **Figure 10**). As apart of the Preliminary Landscape Character Assessment, a total of four (4) key landscape typologies referred to hereafter as Landscape Character Units (LCU) have been identified.

Table 3 provides an overview of the LCUs and preliminary Scenic Quality Ratings applied. The LCU figure was presented at the community consultation day. The LCUs and Scenic Quality Ratings will be refined in the EIS Phase of the Project to reflect input provided by the community during ongoing consultation.

Table 4 provides a brief overview of the potential visibility of the Project from each of the LCUs .

Landscape Character Units			
LCU:	**Name:**	**General Character:**	**Preliminary Scenic Quality Rating:**
LCU01	**Kerrs Creek Slopes**	Undulating low hills making up the Kerrs Creek villlage area. Land is mostly cleared grazing pastures.	**Low - Moderate**
LCU02	**Forested Ranges**	Generally uncleared, densely forested conservation areas with steep to sloping topography. Vegetation is a mix of plantation forestry, production forestry and nature conservation.	**Moderate**
LCU03	**Mullion Creek Pastures**	Undulating low hills and mostly cleared land for grazing and some dryland cropping.	**Low - Moderate**
LCU04	**Molong Pastures**	Molong Pastures is characterised as the flat, cleared pasture land to the west of the Project Area.	**Low - Moderate**

Table 3 Overview of Preliminary Landscape Character Units



Preliminary Landscape Character Units

Proposed Kerrs Creek Wind Farm

Project Boundary

Main Road

Minor Road

LGA Boundary

Landscape Features:

Rivers

Creek line

Preliminary Landscape Character Units:

LCU01. Kerrs Creek Slopes

LCU02. Forested Ranges

LCU03. Mullion Creek Pastures

LCU04. Molong Pastures

Figure 10 Preliminary Landscape Character Units

5.0 Existing Landscape Character

LCU01: Kerrs Creek Slopes

Kerrs Creek Slopes are generally the cleared undulating pastures between Kerrs Creek and Euchareena.

(Refer to **Image 4**)

Image 4 - Kerrs Creek Slopes

LCU02: Forested Ranges

Vegetated hills that characterise the Mullion Forested Ranges.

(Refer to **Image 5**)

Image 5 - Mullion Forested Ranges

5.0 Existing Landscape Character

LCU03: Mullion Creek Pastures

Mullion Creek Pastures LCU is generally defined by the mostly cleared, gently undulating pasture land to the south of the Project Area.

(Refer to **Image 6**)

Image 6 - Mullion Creek Pastures

LCU04: Molong Pastures

Molong Pastures is characterised as the flat, cleared pasture land to the west of the Project Area.

(Refer to **Image 7**)

Image 7 - Molong Pastures

5.0 Existing Landscape Character

5.6 Preliminary Viewpoint Assessments

Appendix A provides preliminary assessments from Public Viewpoints representative of the varying distances and perspectives throughout the Study Area. A total of ten (10) preliminary viewpoints have been selected to illustrate the varying landscape character typologies throughout the Study Area and provide a preliminary assessment of the potential visibility of the Project (as shown on **Figure 8**).

5.7 Overview of Impact on Preliminary LCUs

An overview of the potential visual impact from each preliminary LCU has been provided in **Table 4.**
Further detailed assessment will be undertaken in the EIS Phase in accordance with the Bulletin.

Landscape Character Units		
LCU:	**Name:**	**Preliminary Visual Impact Assessment**
LCU01	**Kerrs Creek Slopes**	The Project Area is located across the land characterised as the Kerrs Creek Slopes. The Project is expected to be a prominent element in the landscape when views from land associated with the Kerrs Creek Slopes LCU.
LCU02	**Forested Ranges**	Land associated with the area defined as the Forested Ranges is largely uninhabited and inaccessible and views to the Project are expected to be limited.
LCU03	**Mullion Creek Pastures**	Views to the Project from the Mullion Creek Pastures (to the south of the Project Area) are likely to be limited due to intervening topography to the north.
LCU04	**Molong**	Views to the Project are expected to be available from the land to the west of the Project Area.

Table 4 Overview of Preliminary Visual Impact Assessment of LCUs

6.0 Preliminary Assessment Tools

6.1 Overview of Preliminary Assessment Tools

To assist in defining the visual catchment, preliminary assessment tools have been developed in the Bulletin. In accordance with the Bulletin, the purpose of the preliminary assessment tools are: *to provide an early indication of where turbines require careful consideration because of potential visual impacts. The tools apply to both dwellings and key public viewpoints in the study area. The tools provide an early indication of where placement of turbines will require further assessment and justification, and where consultation with potentially affected landowners needs to be focused – including discussions for landholder agreements.*

The preliminary assessment tools involve analysis of two key visual parameters:

1. Visual Magnitude (**Refer to Section 6.2**)
2. Multiple Wind Turbine Tool (**Refer to Section 6.4**)

The Bulletin states: *Further assessment and justification for placement of turbines located in these sensitive areas in the EIS will be required, along with a description of mitigation and management measures being employed to reduce impacts. This assessment may identify that factors such as topography, relative distance and existing vegetation may minimise or eliminate the impacts of the project.*

Dwellings identified through the application of the Preliminary Assessment tools have been assessed in detail in **Appendix B** and **Appendix D** of this LVIA.

6.2 Preliminary Assessment Tool 1: Visual Magnitude

The Visual Magnitude Threshold is based on the height of the proposed wind turbines to the tip of the blade and distance from dwellings or key public viewpoints as shown in **Figure 11.**

In accordance with the Bulletin: ***proposed turbines below the black line must be identified along with the dwellings or key public viewpoints as part of the request for SEARs.*** The proposed wind turbines are based on a worst case scenario with a tip height of *280 metres*. The 'black line' intersects at a distance of *3,750 metres* and the 'blue line' intersects at *5,500 metres*.

For the purpose of the Preliminary Assessment, the Visual Magnitude thresholds are based on a 2D assessment of the Project alone. Further assessment indicates factors such as topography, relative distance and existing vegetation may minimise or eliminate the impacts of the Project from residences.

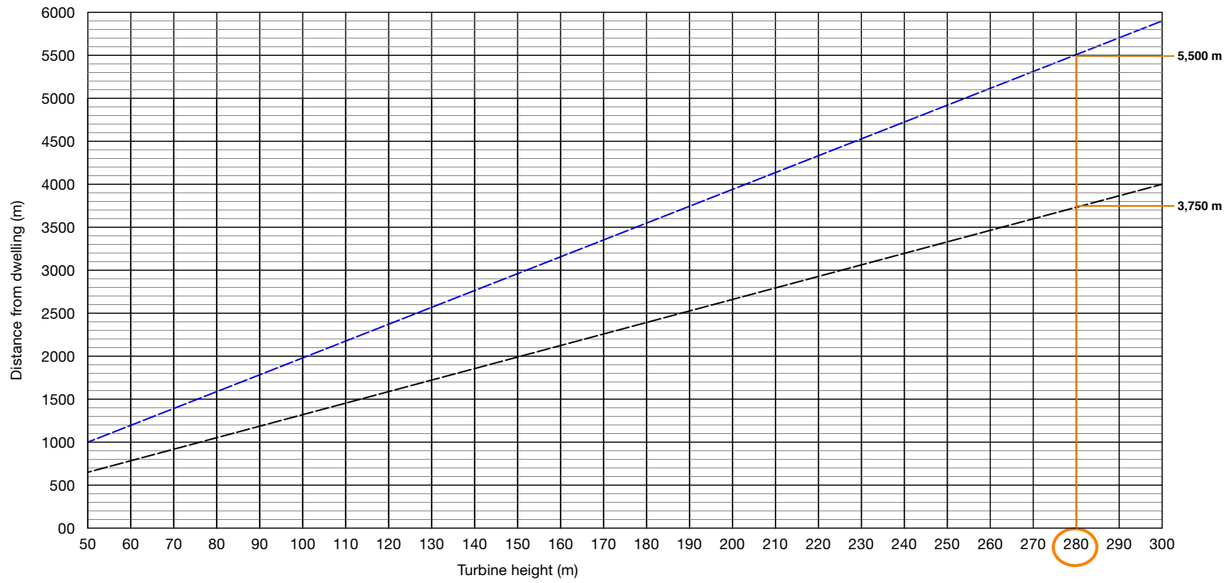
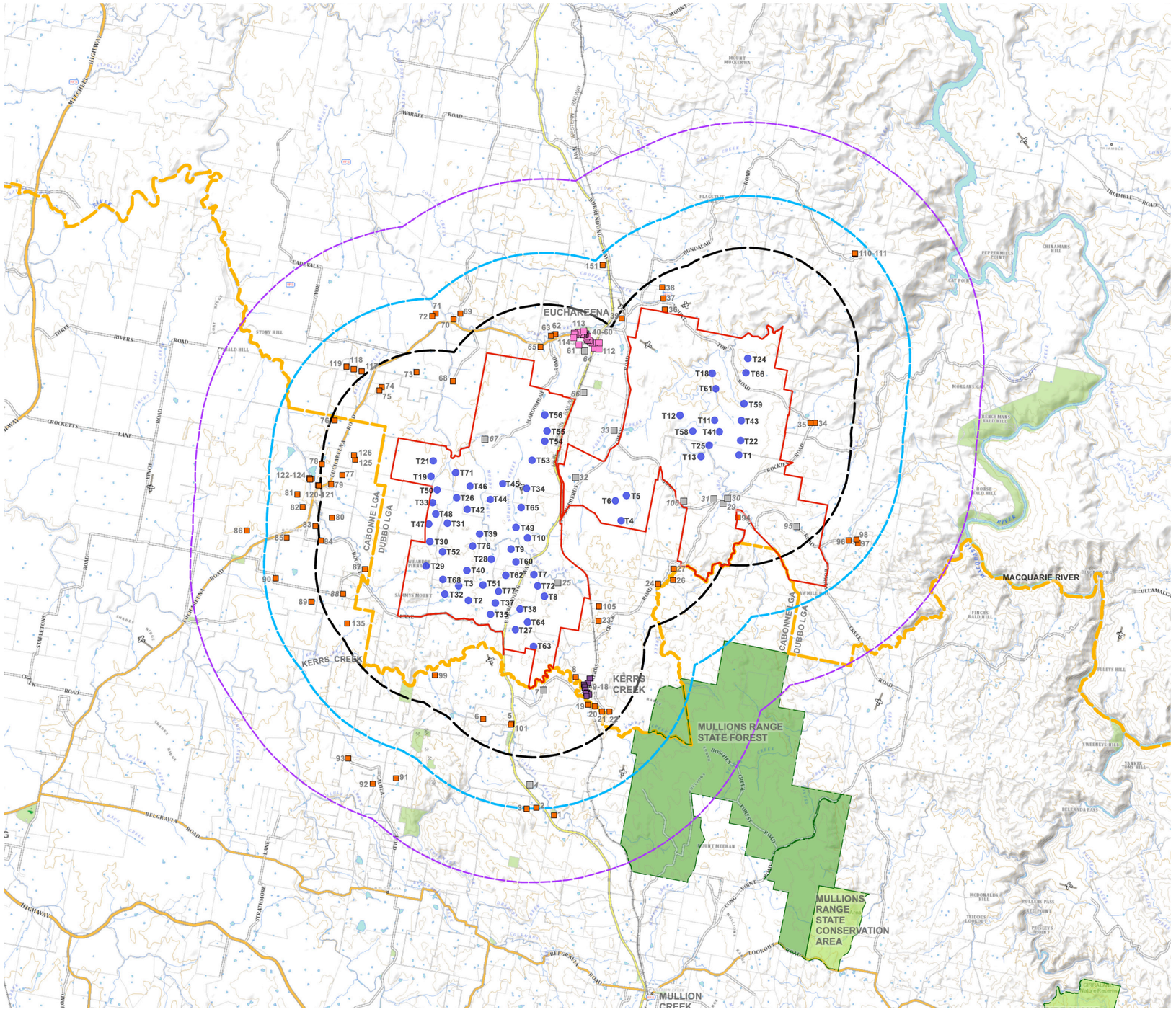


Figure 11 Visual Magnitude thresholds for Kerrs Creek Wind Farm Project Layout (Source: Adapted from Visual Assessment Bulletin)



Preliminary Visual Magnitude

Proposed Kerrs Creek Wind Farm

LEGEND

- Project Boundary
- Proposed Turbine Location
- Involved Dwelling
- Non-involved Dwelling
- Non-involved Dwelling (Kerrs Creek)
- Non-involved Dwelling (Euchareena)
- 3,750 m from turbine
- 5,500 m from turbine
- 8,000 m from turbine
- Main Road
- Minor Road
- National Park / Nature Reserve
- State Forest
- LGA Boundary

Note:

Preliminary Assessment Tool 1: Visual Magnitude is based on a 2D Assessment alone and does not take into account topography, vegetation or other screening factors which may reduce the potential for viewing turbines.

Figure 12 Preliminary Visual Magnitude Kerrs Creek Wind Farm

6.0 Preliminary Assessment Tools

6.3 Results of Preliminary Assessment Tool 1: Visual Magnitude

Application of the Preliminary Assessment Tools to the Kerrs Creek Wind Farm Project identified dwellings which require further assessment in accordance with the Bulletin. Non-involved dwellings identified within 3,750 metres (black line of visual magnitude) and between 3,750 - 5,500 metres (blue line of visual magnitude) of the nearest proposed turbine are shown on **Figure 12**.

Black Line of Visual Magnitude (3,750 m):

- 74 non-involved dwellings have been identified within 3,750 metres of a proposed wind turbine location (within the black line of visual magnitude).
- 10 non-involved dwellings within the black line of visual magnitude are associated with Kerrs Creek
- 25 non-involved dwellings within the black line of visual magnitude are associated with Euchareena.

Blue Line of Visual Magnitude (5,500 m):

- 26 non-involved dwellings are located within 3,750 - 5,500 metres of a proposed wind turbine (within the blue line of visual magnitude).
- The majority of non-involved dwellings within 3,750 - 5,500 m are located to the west of the Project associated with Boomey.

6.0 Preliminary Assessment Tools

6.4 Preliminary Assessment Tool 2: Multiple Wind Turbine Tool

The Multiple Wind Turbine Tool provides a preliminary indication of potential cumulative impacts arising from the proposed wind energy project. To establish whether the degree to which dwellings or key public viewpoints may be impacted by multiple wind turbines, the proponent must map into six sectors of 60° any proposed turbines, and any existing or approved turbines within eight kilometres of each dwelling or key public viewpoint. **Figure 13** below provides examples of where a dwelling or key public viewpoint may have views to turbines in multiple 60° sectors.

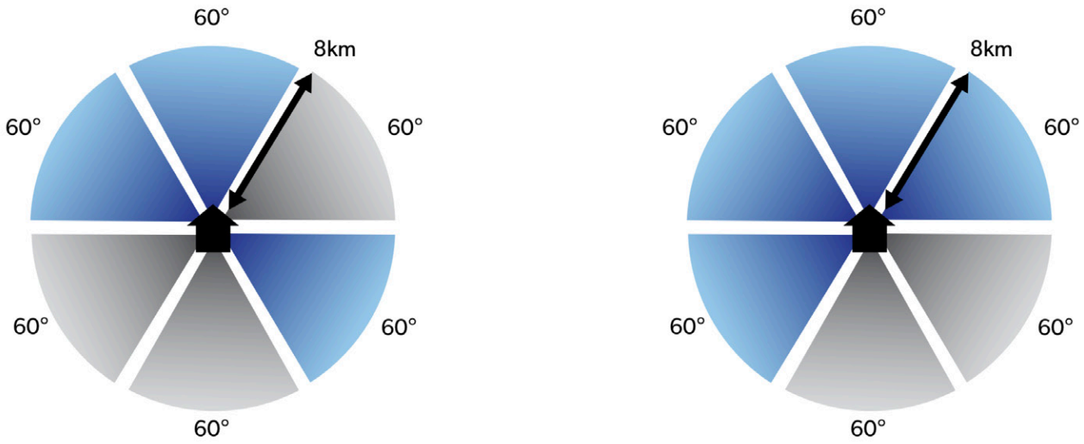


Figure 13 Preliminary Assessment Tool: Multiple Wind Turbines
(Source: Visual Assessment Bulletin)

In accordance with the Bulletin *Where wind turbines are visible within the horizontal views of the dwelling or key public viewpoints in three or more 60° sectors, the proponents must identify the turbines, relative dwelling and key public viewpoint, along with the relative distance and submit these to the Department as part of the request for SEARs.* These turbines will become a focus for assessment in the EIS.

Figure 14 provides an overview of the number of 60º sectors visible from each of the dwellings identified within 8,000 m.

6.5 Overview of Preliminary Multiple Wind Turbine Tool Assessment

When applied to the Project, the 2D Multiple Wind Turbine Tool identified 37 non-involved dwellings with more than two (2) sectors of turbines (see **Figure 14**). There were no public viewpoints identified within 8,000 m of the nearest turbine. Of the 37 non-involved dwellings identified:

- 9 non-involved dwellings have turbines in three (3) 60º sectors (up to 180º).
- 28 non-involved dwellings have turbines located in four (4) 60º sectors (up to 240º).

The Multiple Wind Turbine Tool is a preliminary assessment tool based on a 2D assessment of the Project. Further assessment of these dwellings using 3D topographic mapping has identified land form is likely to reduce the number of 60 degree sectors with turbines visible from a large percentage of the identified dwellings.

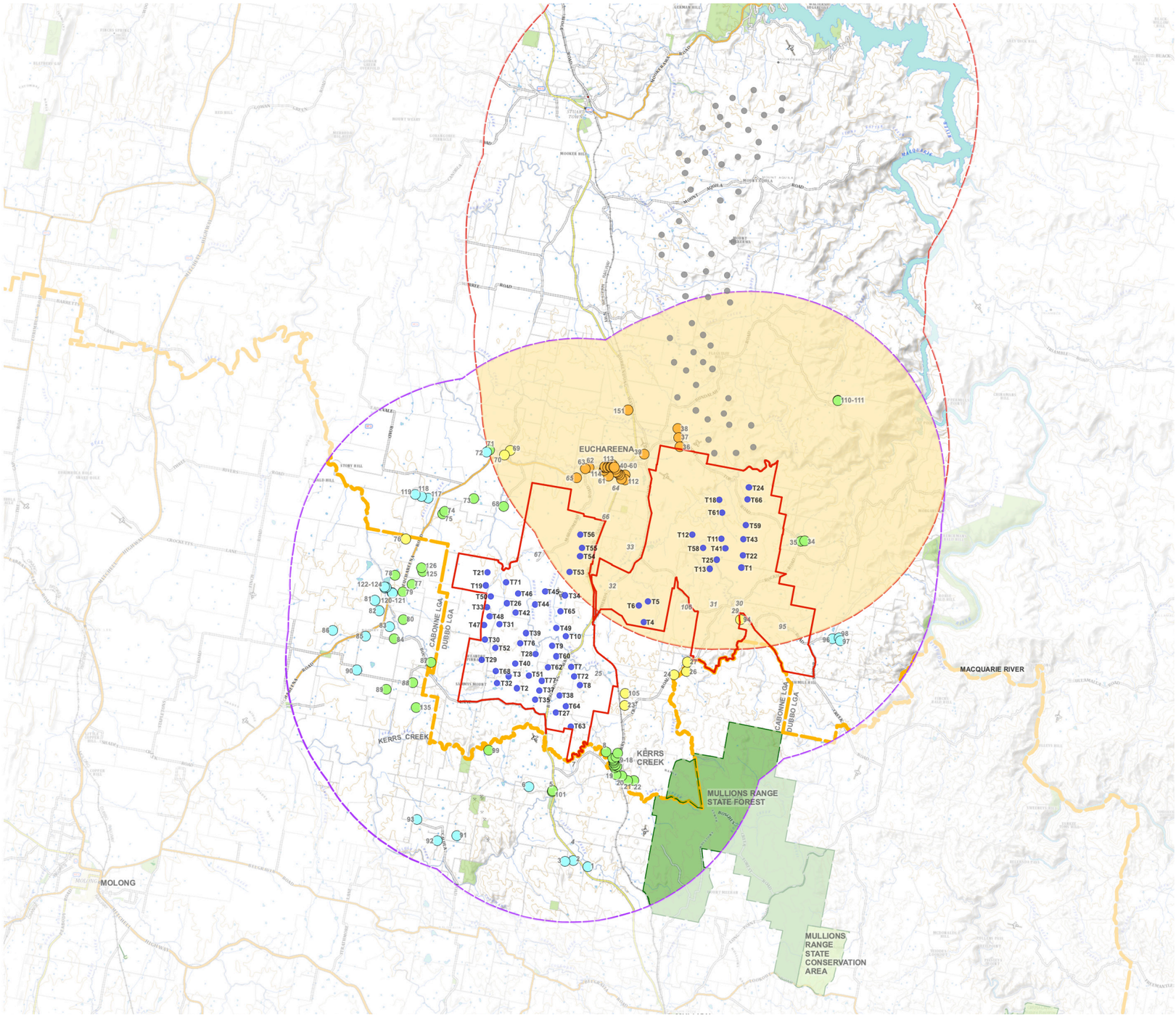
In particular, topography is likely to reduce the number of turbines visible from the 25 non-involved dwellings associated with Euchareena. Vegetation is to reduce potential visibility of turbines from dwelling associated with Kerrs Creek and it is expected the number of 60 degree sectors with turbines would be reduced for a number of these dwellings.

Dwellings located on the northern side of the Study Area have the potential to view turbines associated with the Project and the Aquila Wind (AW). AW is a proposed wind farm, located directly north of the Project. A preliminary assessment of the cumulative impacts of these projects has been discussed in **Section 9.0** of this report. Figure 14 shows a total of 36 non-involved dwellings that were identified within 8,000 m of both these wind farms. Of these, five (5) non-involved dwellings were assessed to have views in up to two (2) 60 degree sectors which is deemed acceptable. The remaining 31 non involved dwellings are assessed to have views in up to three (3) or more 60 degree sectors.

Next Steps:

Further assessment and justification for placement of turbines in multiple sectors will need to be detailed in the EIS, along with a description of the mitigation and management measures being employed to reduce impacts. Such further assessment may identify that factors such as topography, relative distance and existing vegetation may minimise the impacts of the project.

6.0 Preliminary Assessment Tools



Preliminary Multiple Wind Turbine Tool

Kerrs Creek Wind Farm

LEGEND

- Project Boundary
- Proposed Kerrs Creek Turbine Location
- Proposed Aquila Turbine Location
  (Indicative Turbine Layout obtained from Aquila Wind Project website as of December 2022)
- 8,000 m from proposed Kerrs Creek turbine
- 8000 m from proposed Aquila turbines
- Main Road
- Minor Road
- National Park / Nature Reserve
- State Forest
- Area and dwellings within 8,000m of Kerrs Creek Wind Farm and Aquila Wind turbines
- LGA Boundary

NUMBER OF SECTORS (Within 8kms):

- One 60º Sector (60º)
- Up to 2 60º Sectors (120º)
- Up to 3 60º Sectors (180º)
- Up to 4 60º Sectors (240º)

Note:

Preliminary Assessment Tool 2: Multiple Wind Turbine Tool is based on a 2D Assessment alone and does not take into account topography, vegetation or other screening factors which may reduce the potential for viewing multiple turbines.

N

Figure 14 Multiple Wind Turbine Tool: Kerrs Creek Wind Farm

7.0 Preliminary Zone of Visual Influence

7.1 Preliminary Zone of Visual Influence

The Bulletin states *'the use of Geographic Information Systems (GIS) to facilitate the application of the tools will streamline the evaluation phase of a project during the pre-lodgement stage. This can also assist in refining the number of turbines and viewpoints that will ultimately need more detailed assessment.'*

A preliminary Zone of Visual Influence (ZVI) has been prepared for Kerrs Creek Wind Farm to illustrate the theoretical visibility of the proposed Project (based on the preliminary layout). A wind turbine height of 280 metres has been used to provide a worst case scenario.

The Zone of Visual Influence (ZVI) represents the area over which a development can theoretically be seen, and is based on a Digital Terrain Model (DTM). The ZVI usually presents a bare ground scenario - ie. A landscape without screening, structures or vegetation, and is usually presented on a base map. It is also referred to as a zone of theoretical visibility (The Landscape Institute and the institute of Environmental Management and Assessment, 2002).

The ZVI has been determined through the use of digital topographic information and 3D modelling software *WindPro*. The ZVI has been assessed to approximately 20 km from the Project. Although it is possible for the development to be visible from further than 20 km away, it is generally accepted that beyond 10km visibility is greatly diminished.

A preliminary ZVI figure has been prepared by Moir LA to assess the Kerrs Creek Wind Farm. **Figure 15** depicts the areas of land from which the proposed development may be visible and provides an indicative number of visible wind turbines.

7.2 Summary of Preliminary Zone of Visual Influence

The following provides a brief summary of the Preliminary Zone of Visual Influence map:

- Due to the undulating topography that characterises the landscape, topography is likely to screen views from many low lying areas.
- Generally, the surrounding townships and villages (Molong, Mullion Creek, Belgravia, Euchareena and Kangaroobie) are situated on lower elevations associated with creeklines. Topography surrounding these settlements is likely to assist in screening the Project.
- Views from Euchareena are likely to be limited to a very small number of turbines due to the rise in topography to the south of the village.
- Topography is likely to limit the extent of visibility from large areas of land to the east of the Project Area.
- Views to the Project would be limited from the south of the Project (Mullion Creek) due to ridgeline that follows Burrendong Way.
- Views to the Project are likely to be extensive from residences associated with Euchareena Road to the west of the Project.

It is important to reiterate that this preliminary ZVI is based on a worst case scenario assessment with no vegetation or structures.

7.0 Preliminary Zone of Visual Influence

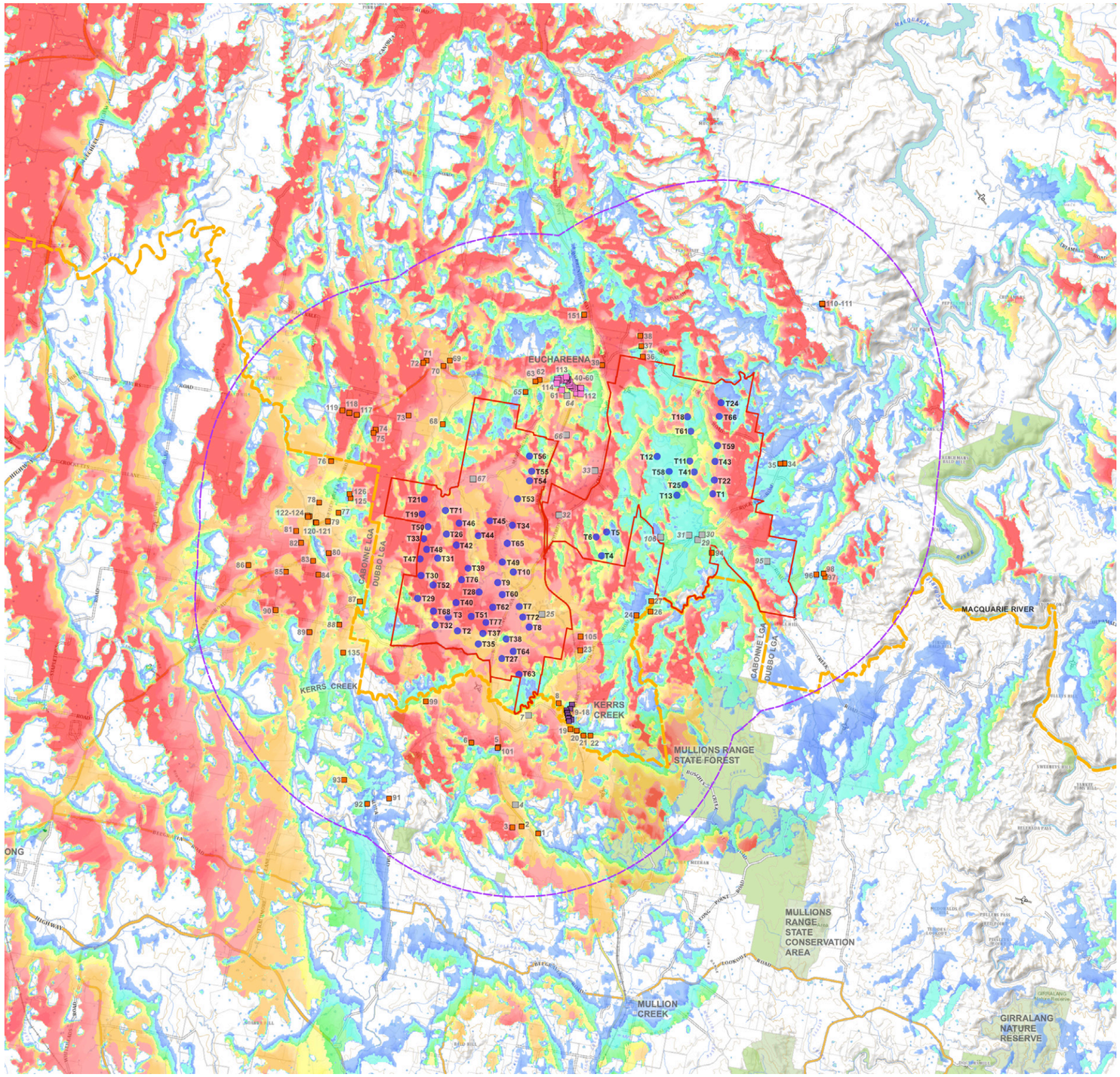


Figure 15 Preliminary Zone of Visual Influence (ZVI) Based on Tip Height of 280 m

0 2 4 6 8 10km

Zone of Visual Influence

Proposed Kerrs Creek Wind Farm

LEGEND

- Project Boundary
- Proposed Turbine Location
- Involved Dwelling
- Non-involved Dwelling
- Non-involved Dwelling (Kerrs Creek)
- Non-involved Dwelling (Euchareena)
- 8,000 m from turbine

ZVI:

- 0
- 1 - 10
- 10 - 20
- 20 - 30
- 30 - 40
- 40 - 50
- 50 - 63

Note:

The ZVI is a preliminary assessment tool that represents a bare ground scenario - ie. a landscape without screening, structures or vegetation. As accurate information on the height and coverage of vegetation and buildings is unavailable, it is important to note the ZVI is based solely on topographic information. Therefore this form of mapping should be acknowledged as representing the worst case scenario.

N

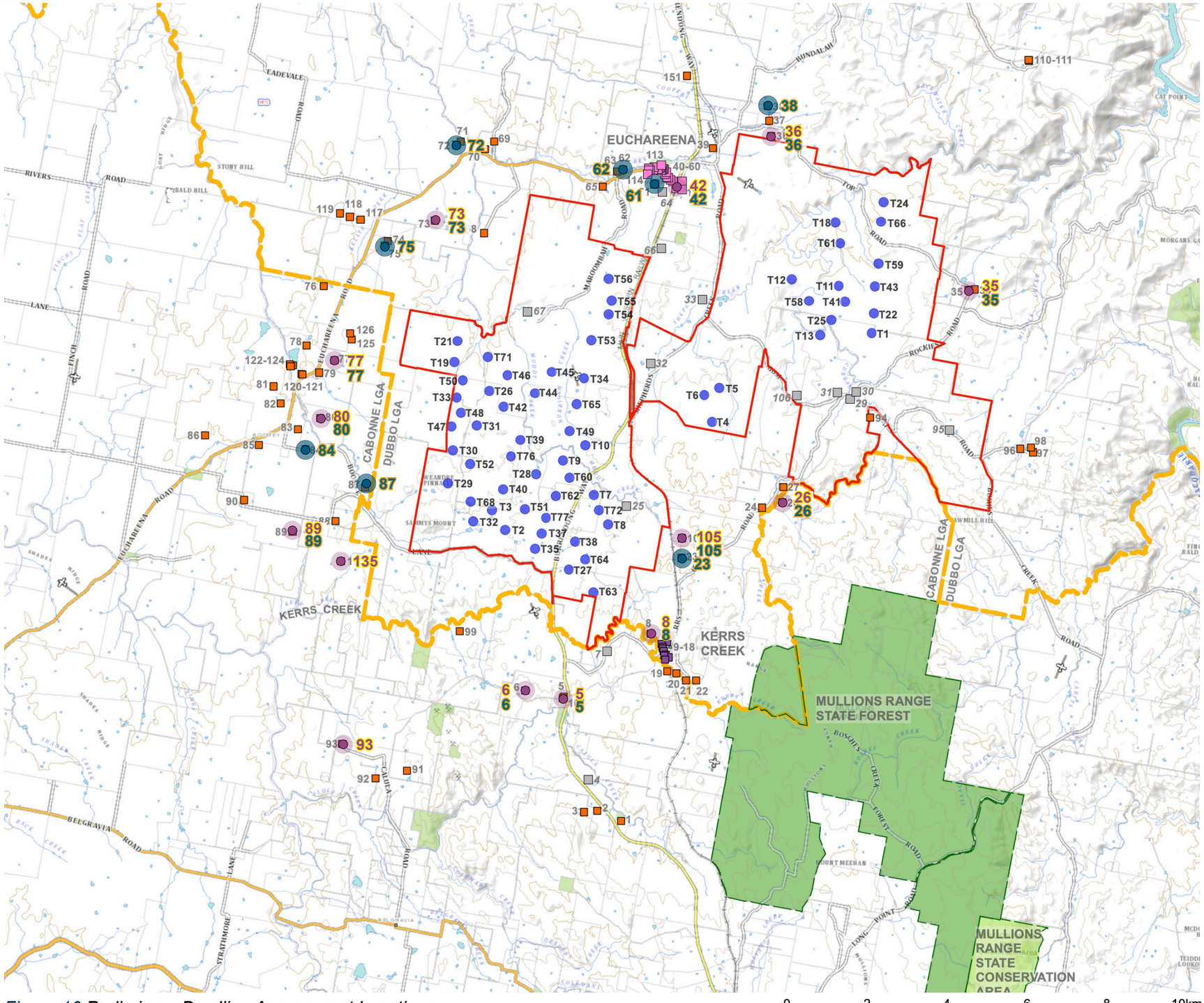
8.0 Preliminary Dwelling Assessments

8.1 Preliminary Assessment of Dwellings

Examples of the preliminary assessment tools applied to 14 representative non-involved dwellings (as shown on **Figure 16**) within 3,750 m of the nearest turbine have been included in **Appendix B** and **Appendix D**.

The preliminary assessment identifies existing vegetation surrounding many of the dwellings which would reduce the potential visual impacts identified by the preliminary assessment tools and Zone of Visual Influence.

8.0 Preliminary Dwelling Assessments



Preliminary Dwelling Assessment Locations

Proposed Kerrs Creek Wind Farm

LEGEND

- Project Boundary
- Proposed Turbine Location
- Involved Dwelling
- Non-involved Dwelling
- Non-involved Dwelling (Kerrs Creek)
- Non-involved Dwelling (Euchareena)
- Representative Dwelling Assessment Location (Refer to **Appendix B**)
- Representative Dwelling Assessment Location (Refer to **Appendix D**)

Figure 16 Preliminary Dwelling Assessment Locations

9.0 Cumulative Visual Impact Assessment

9.1 Overview of Cumulative Visual Impacts

The Project is located within the southern portion of the CWO REZ. The CWO REZ has been identified by the NSW Governments Electricity Strategy (refer **Figure 17**). The CWO REZ is expected to play a vital role in delivery of affordable energy to the community across NSW (Energy NSW, 2021).

The existing landscape character of the region allows for optimum harvest of wind energy due to the undulating terrain and vast expanses of rural landholdings. These characteristics are beneficial to the output of wind energy and as such, it is highly likely that over time this will be utilised for the development of wind farm projects. **Figure 17** shows the wind farms that are currently proposed within the extents of the CWO REZ. The majority of these projects are located in the southern parts of the REZ near the towns of Wellington, Orange and Mudgee.

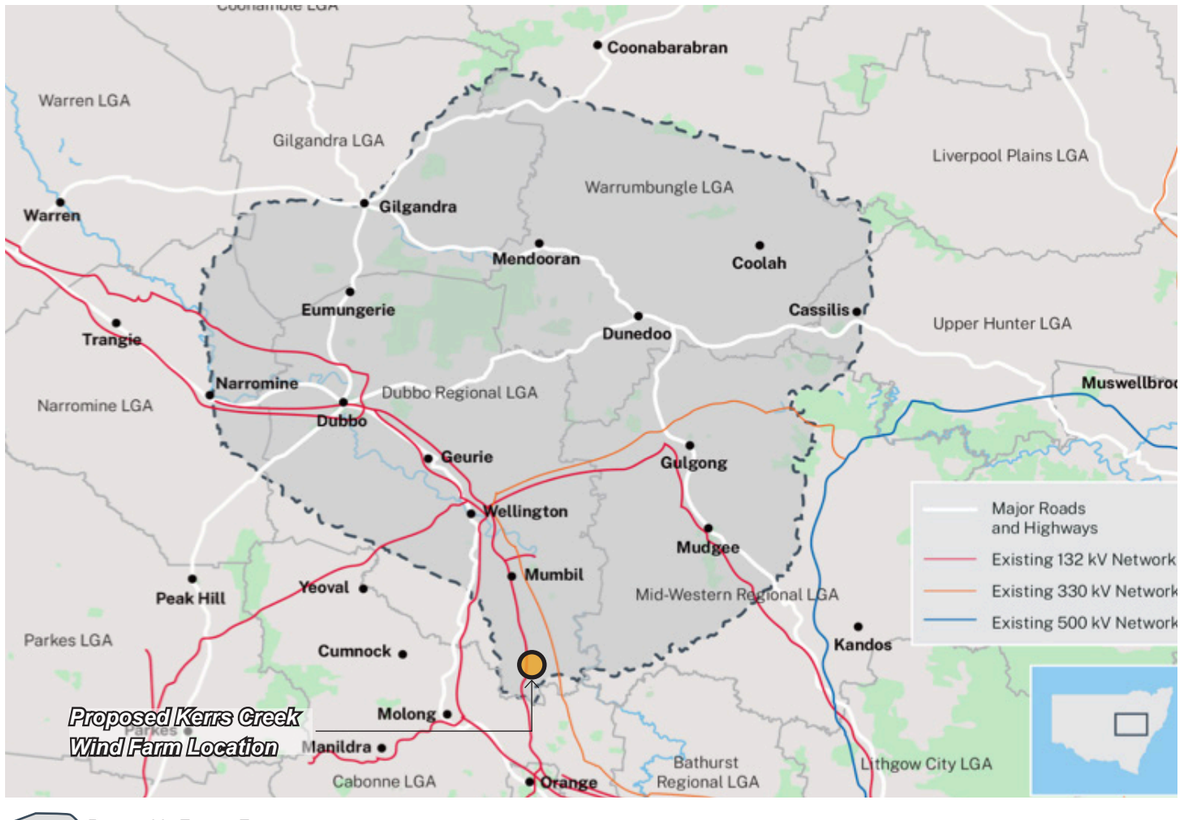


Figure 17 Wind Farms in Central-West Orana Energy Zone

9.2 Nearby Wind Farm Projects

Currently, eight other wind farm projects have been proposed in the CWO REZ area (refer ***Figure 18***):

- Aquila Wind
- Barneys Reef Wind Farm
- Bodangora Wind Farm
- Burrendong Wind Farm
- Crudine Ridge Wind Farm
- Liverpool Range Wind Farm
- Uungula Wind Farm
- Valley of the Winds Wind Farm
- Spicers Creek Wind Farm

Aquila Wind:

Aquila Wind's preliminary layout comprises of 60 turbines spread across an area of approximately 7,000 ha. The proposed Project is located to the north of Kerrs Creek Wind Farm (KCWF). The nearest Aquila Wind turbine is located approximately 1.5 km from the nearest AW turbine. SEARs is yet to be issued for the Aquila Wind Project, however, the Preliminary Layout is available via the *Aquila Wind* website (accessed on 7th December 2022). There is potential to view AW and the Project simultaneously and this will be assessed in detail during the EIS Phase.

Barneys Reef Wind Farm:

Barneys Reef Wind Farm's preliminary layout comprises of 63 turbines spread across an area of approximately 7,548 ha. The proposed Project is located to the northeast of Aquila Wind (AW). SEARs were issued for the Barneys Reef Wind Farm Project in September 2021.

Bodangora Wind Farm:

Bodangora Wind Farm is a constructed and operating wind farm located to the north of the Project. The Project consists of 27 turbines and spans an area of 8,469 ha. The Bodangora Wind Farm Project was approved in December 2017.

Burrendong Wind Farm:

The proposed Burrendong Wind Farm is located to the north of the Project and preliminary layout comprises of up to 105 turbines. SEARs were issued for the Burrendong Wind Farm Project in September 2022.

Crudine Ridge Wind Farm:

Crudine Ridge Wind Farm is a constructed and operating wind farm located to the north east of the Project. The Project consists of 77 turbines and spans an area of 5,972 ha. The Crudine Ridge Wind Farm Project was approved in May 2016.

Liverpool Range Wind Farm:

The proposed Liverpool Range Wind Farm is located to the north east of the Project and consists of 267 turbines. The Liverpool Range Wind Farm Project was approved in March 2018.

Uungula Wind Farm:

Uungula Wind Farm is an approved wind farm located north of the proposed KCWF. The Project consists of 105 turbines and was approved in May 2021. It is yet to commence construction.

Valley of the Winds Wind Farm:

The proposed Valley of the Winds Wind Farm (VoW) is located to the northeast of the KCWF Project. The Project consists of 148 turbines in three clusters. SEARs were issued for the VoW Wind Farm Project in June 2020.

Spicers Creek Wind Farm:

The proposed Spicers Creek Wind Farm is located to the north of the KCWF Project. The Project consists of 117 turbines and covers an area of 17,937 ha. SEARs were issued for the Spicers Creek Wind Farm Project in May 2022.

9.3 Cumulative Impact on Broader Landscape Character

The re-occurrence of wind farms within a region has the potential to alter the perception of the overall landscape character irrespective of being viewed in a single viewshed. It is important to determine whether the effect of multiple wind farms and other major infrastructure within the region would combine to become the dominant visual element, altering the perception of the general landscape character.

The Project is located on predominantly undulating terrain and is surrounded by scattered rural dwellings. Due to the open and gently undulating lands of the region and lack of obtrusive elements, it is likely that there will be areas from which both Projects will be visible simultaneously. Further assessment of the cumulative visual impact will be detailed in the EIS, along with a description of the mitigation and management measures being employed to reduce impacts.

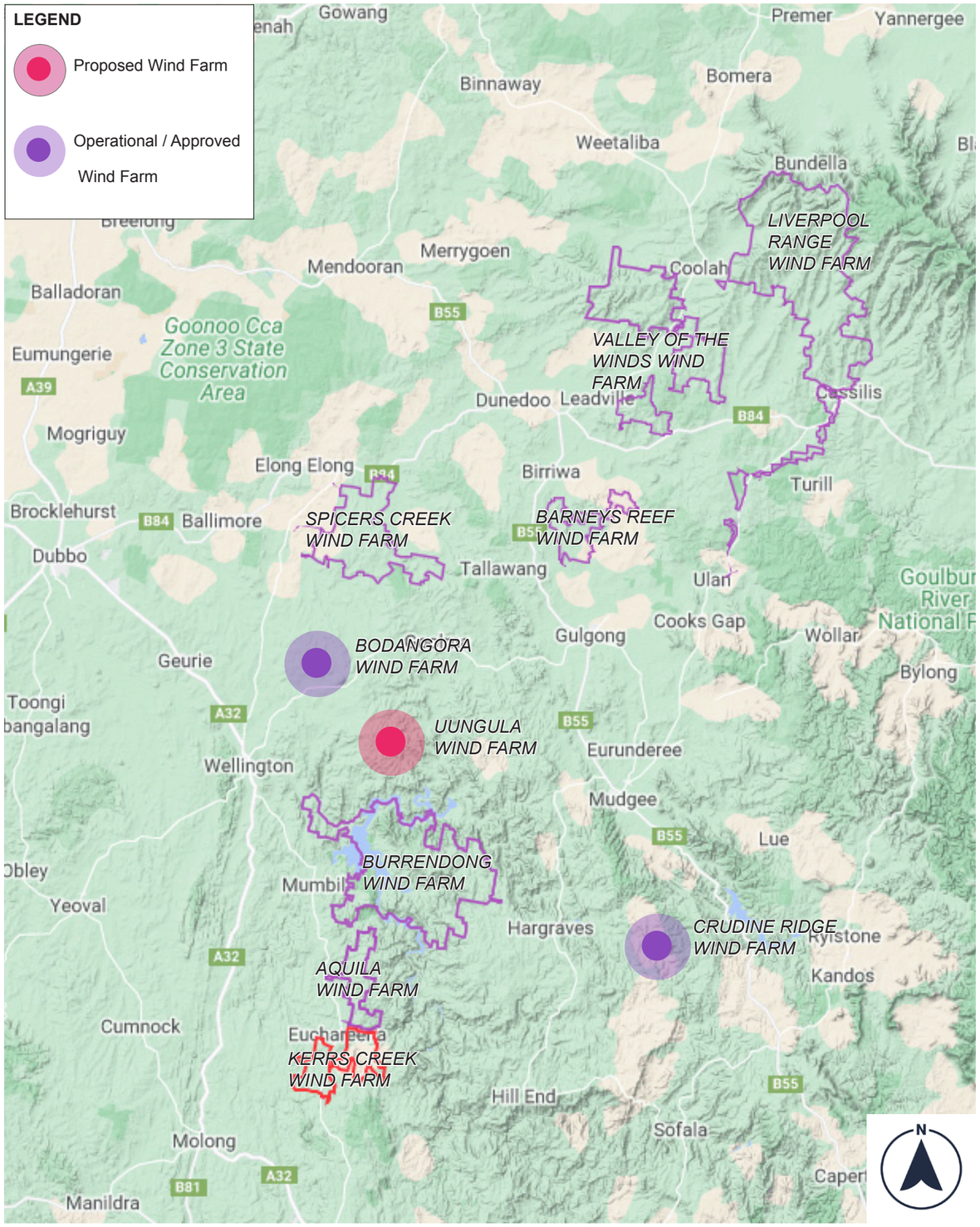


Figure 18 Nearby Wind Farm Projects (Map Source: Google Maps)

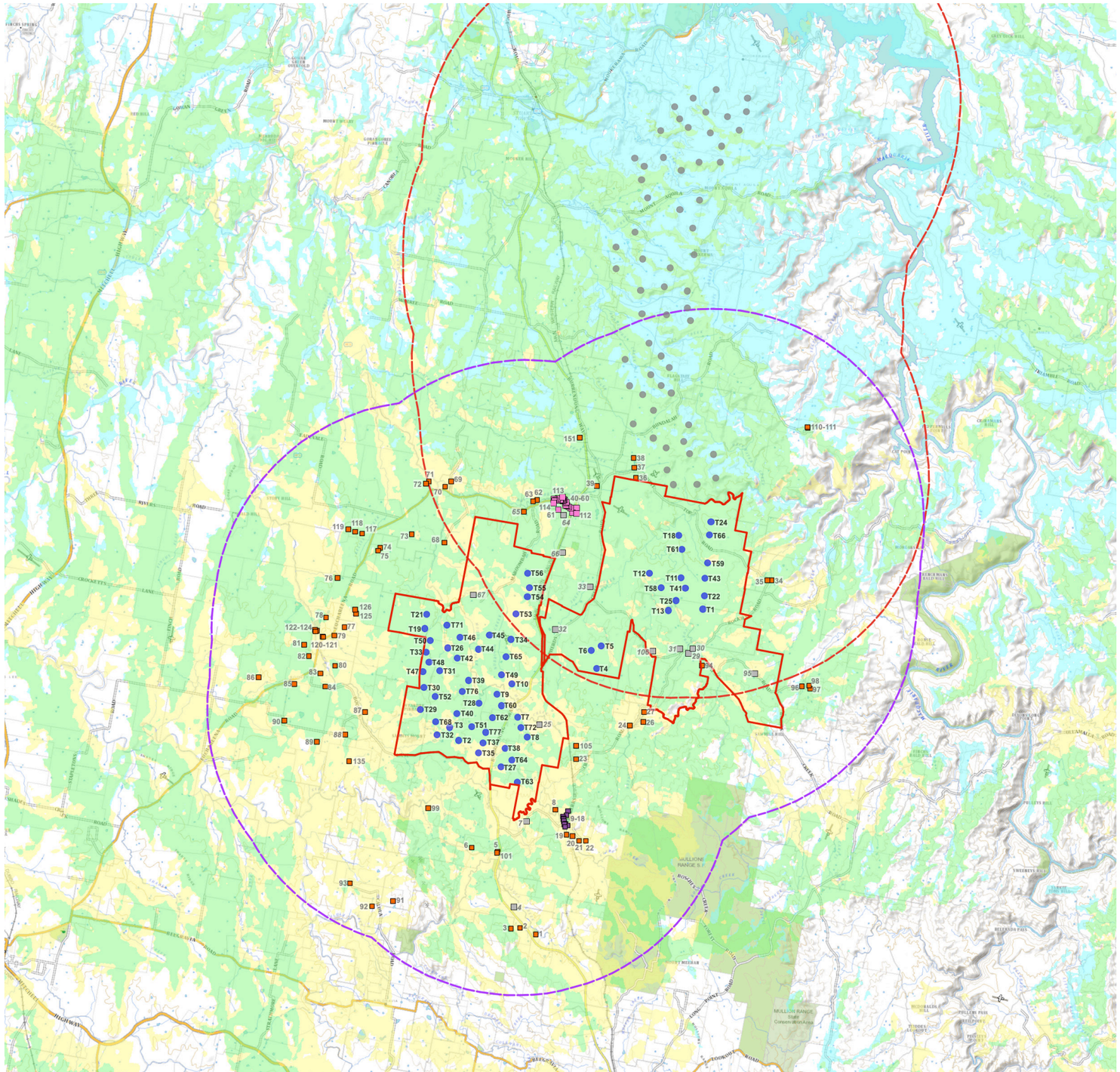


Figure 19 Cumulative Zone of Visual Influence (Aquila)

0 2 4 6 8 10km

N

Zone of Visual Influence Cumulative - Aquila Wind

Proposed Kerrs Creek Wind Farm

LEGEND

- Project Boundary
- Proposed Kerrs Creek Turbine Location
- Proposed Aquila Turbine Location
  (Indicative Turbine Layout obtained from Aquila Wind Project website as of December 2022)
- Involved Dwelling
- Non-involved Dwelling
- Non-involved Dwelling (Kerrs Creek)
- Non-involved Dwelling (Euchareena)
- 8000 m from proposed Kerrs Creek turbine
- 8000 m from proposed Aquila turbine

ZVI:

- No turbine visible
- Turbine associated with Kerrs Creek
- Turbine associated with Aquila Visible
- Turbine associated with both Kerrs Creek & Aquila

Note:

The ZVI is a preliminary assessment tool that represents a bare ground scenario - ie. a landscape without screening, structures or vegetation. As accurate information on the height and coverage of vegetation and buildings is unavailable, it is important to note the ZVI is based solely on topographic information. Therefore this form of mapping should be acknowledged as representing the worst case scenario.

10.0 Summary

10.1 Summary of Preliminary Visual Impact Assessment

This PVIA report has been undertaken in accordance with the Visual Assessment Bulletin, and will be submitted with the Scoping Report in the request for Secretary's Environmental Assessment Requirements SEARs. The following provides a brief summary of the PVIA and outlines the steps that will be undertaken in the Landscape and Visual Impact Assessment (LVIA) which will be undertaken during the EIS Phase of the Project.

Community Consultation

The report outlined the findings of community consultation to date which assisted in establishing the following:

- Key landscape features
- Defined areas of scenic quality and
- Identify key public viewpoints valued by that community.

Next Steps:

Community consultation will be ongoing through the Project. Ongoing input from the community will assist the preparation of the LVIA.

Existing Landscape Character

This PVIA provided a detailed assessment of the existing landscape character of the Study Area through the following:

- Identified land uses, key landscape features and key viewpoints,
- Categorisation of four (4) preliminary Landscape Character Units (LCUs),
- Application of preliminary scenic quality ratings to each of the LCUs ranging from Low - Moderate,
- A brief preliminary overview of the potential visual impacts has been provided for each LCU.

Next Steps:

- Utilise the landscape character assessment to prepare a detailed Visual Baseline Study.
- Identify any additional key features, key viewpoints valued by the community through consultation.
- Refine the Landscape Character Units and allow the community to provide feedback on the relative scenic quality ratings of LCUs.
- Determine the Visual Influence Zone of key viewpoints and assess against the objectives outlined in the Visual Assessment Bulletin.

Application of the Preliminary Assessment Tools:

The purpose of the Preliminary Assessment Tools in the PVIA is to identify 'sensitive receptors' for further assessment in the EIS Phase of the Project.

- The Visual Magnitude Tool identified a total of 74 non-involved dwellings within the black line of visual magnitude (3,750 m) and 26 non-involved dwellings within the blue line of visual magnitude (3,750 - 5,500 m).
- The Multiple Wind Turbine Tool (MWTT) was applied to all dwellings within 8000 m of the nearest proposed turbine.
- The MWTT identified 37 dwellings with turbines in more than two (2) 60 degree sectors. There were no public viewpoints identified within 8,000 m of the nearest turbine.

Next Steps:

- Ground truthing of all identified non-involved dwellings.
- Undertake site inspection and detailed dwelling assessment at sensitive non-involved dwellings.
- The LVIA will assess each 'sensitive receptor' in detail to take into account topography, vegetation and other screening factors.
- Determine the potential visual impact of each sensitive receptor and provide mitigation methods to reduce potential visual impacts.

Zone of Visual Influence

A Zone of Visual Influence (ZVI) has been prepared to illustrate the theoretical visibility of the Project and to assist in defining the visual catchment based on a blade tip height of 280 m to illustrate areas which have potential visibility of the Project.

Next Steps:

- The LVIA will require further detailed assessment from areas identified as having potential visibility in the Preliminary ZVIs.
- Graphic representations of the Project using GIS technology including wire frame diagrams and photomontages will be provided in the EIS phase.

10.0 Summary

Cumulative Visual Impacts of Surrounding Wind Farms

The Project is located within the NSW Central West - Orana REZ and is potentially located in proximity to other wind farms (Aquila Wind, Barneys Reef Wind Farm, Bodangora Wind Farm, Burrendong Wind Farm, Crudine Ridge Wind Farm, Spicers Creek Wind Farm, Liverpool Range Wind Farm, Uungula Wind Farm and Valley of the Winds Wind Farm. As of November 2022, SEARs have been issued for Spicers Creek Wind Farm and Barneys Reef Wind Farm and they are currently in the EIS phase. Valley Of The Winds Wind Farm is currently on public exhibition. It is important that the Project considers potential cumulative effects of surrounding renewable energy projects on the immediate and broader regional context, within the EIS.

Next Steps:

Further assessment and justification for placement of turbines in multiple sectors will need to be detailed in the EIS, along with a description of the mitigation and management measures being employed to reduce impacts. Such further assessment may identify that factors such as topography, relative distance and existing vegetation may minimise the impacts of the project. Further assessment of the cumulative visual impact will be detailed in the EIS, along with a description of the mitigation and management measures being employed to reduce impacts.

References

References:

NSW Planning and Environment, *Wind Energy: Visual Assessment Bulletin For State significant wind energy development*, December 2016.

NSW Department of Planning, Industry and Environment, *New South Wales National Parks and Wildlife Services, Developments adjacent to National Parks and Wildlife Service lands: Guidelines for consent and planning authorities*, 2020.

Aquila Wind (2022). [online] www.aquilawind.com.au
[Accessed 07 Dec. 2022].

NPWS (2003). The South Western Slopes Bioregion. In: The Bioregions of New South Wales – their biodiversity, conservation and history. NSW National Parks and Wildlife Service.

Scottish Natural Heritage (2017). *Visual Representation of Wind Farms Guidance*. Scottish Natural Heritage, Scotland's Nature Agency.

EnergyCo NSW (2021). Central-West Orana Renewable Energy Zone. [online] Energy NSW. Available at:https://www.energyco.nsw.gov.au/renewable-energy-zones/centralwest-orana-renewable-energyzone

Maps:

NSW Government Land and Property Information, Spatial Information Exchange SIX Maps, Accessed at: <http://maps.six.nsw.gov.au/> [Accessed between June 2020 – August 2021]

Google Earth Pro 2021 [Viewed March 2020 - August 2021] www.google.com/earth/index.html

Aquila Wind [Viewed December 2022] https://aquilawind.com.au/documents/157/050922-_Project_Plan.pdf

Viewpoint 01. Kerrs Creek

Indicative direction of potentially visible turbines

Existing Landscape Character

View from Kerrs Creek village on Nubrigyn Street.

Topography consists mostly of rolling hills with some steep rocky slopes and vegetation is scattered.

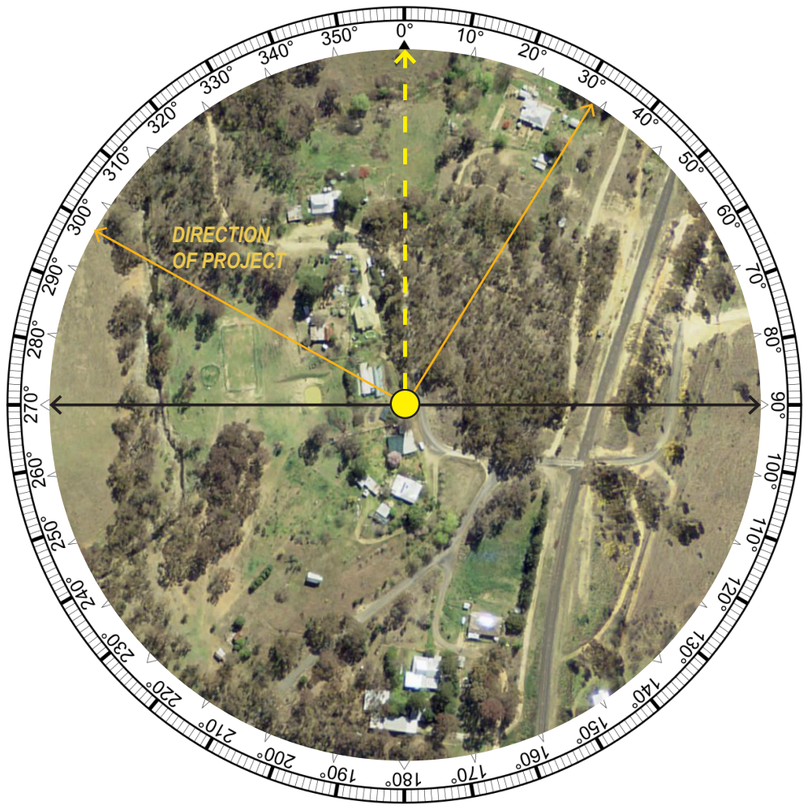
There are a number of rural residential dwellings in close proximity within the village. Land use surrounding the village is predominantly used for agricultural purposes, specifically cattle and sheep grazing.

Potential impacts

The nearest turbine is approximately 2.24 km from this location.

This viewpoint illustrates vegetation to the north of Nubrigyn Street is expected to limit visibility towards the Project.

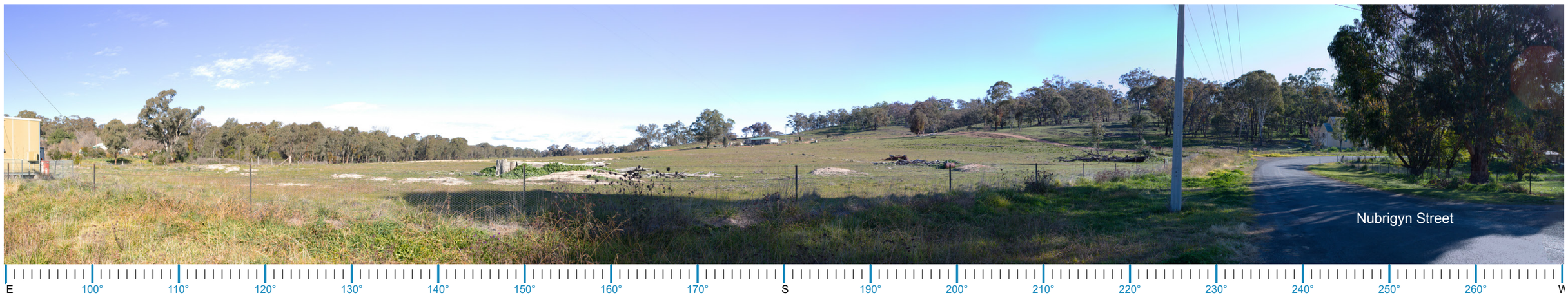
The Project will be visible to the north west.



Aerial Image Viewpoint 01 (Aerial Image Source: Six Maps)

Viewpoint 02. Euchareena

Indicative direction of potentially visible turbines



Existing Landscape Character

View from Euchareena village on Nubrigyn Street.

Topography consists of low undulating hills and vegetation is scattered in this location.

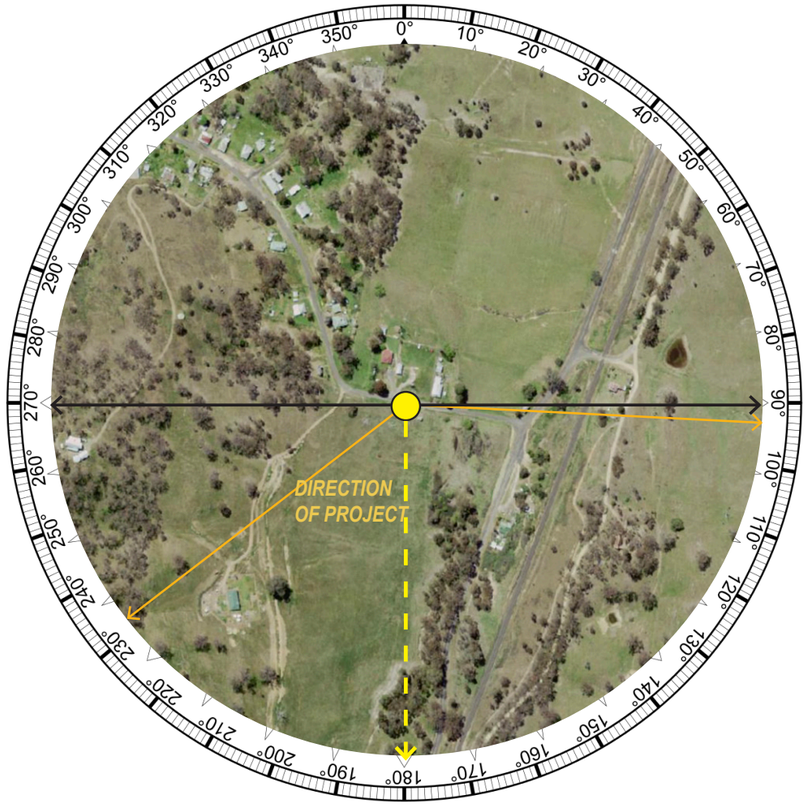
There is a mix of smaller village zoned dwellings and large lot residential dwellings within the village. The surrounding land is predominantly used for grazing and some occasional cropping.

Potential impacts

The nearest turbine is located 2.87 kms south east of this location.

This viewpoint illustrates views are contained from Nubrigyn Street towards the south west and south east by topography and vegetation.

It is expected that the Project will be visible to the south and east above existing vegetation.



Aerial Image Viewpoint 02 (Aerial Image Source: Six Maps)

Viewpoint 03. Mullion Creek

Existing Landscape Character

View from the intersection of Belgravia Road and Lyndale Road.

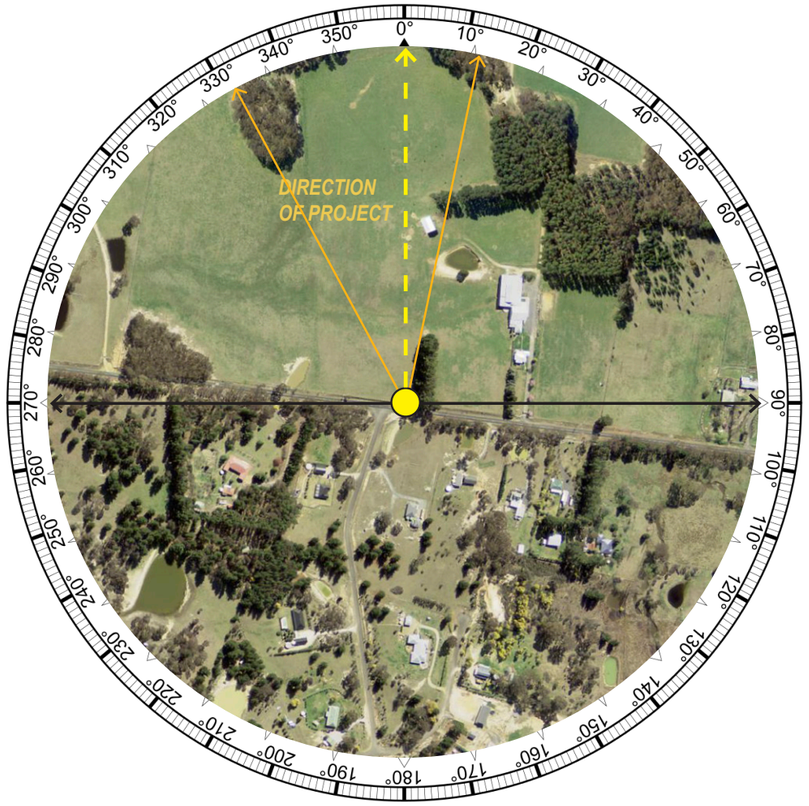
Topography consists mostly of undulating low hills and vegetation is scattered.

There is a cluster of large lot residential dwellings south and scattered rural residential dwellings to the north. Land is predominantly used for grazing and some occasional cropping.

Potential impacts

The nearest turbine is located approximately 12.02 km to the north of Mullion Creek.

This viewpoint illustrates contained views from Belgravia Road with scattered vegetation hindering views in pockets. The Project will be screened by the topography from Mullion Creek.



Aerial Image Viewpoint 03 (Aerial Image Source: Six Maps)

Viewpoint 04. Burrendong Way

Indicative direction of potentially visible turbines

Existing Landscape Character

View from the intersection of Burrendong Way and Overshot Road adjacent to a rail bridge crossing.

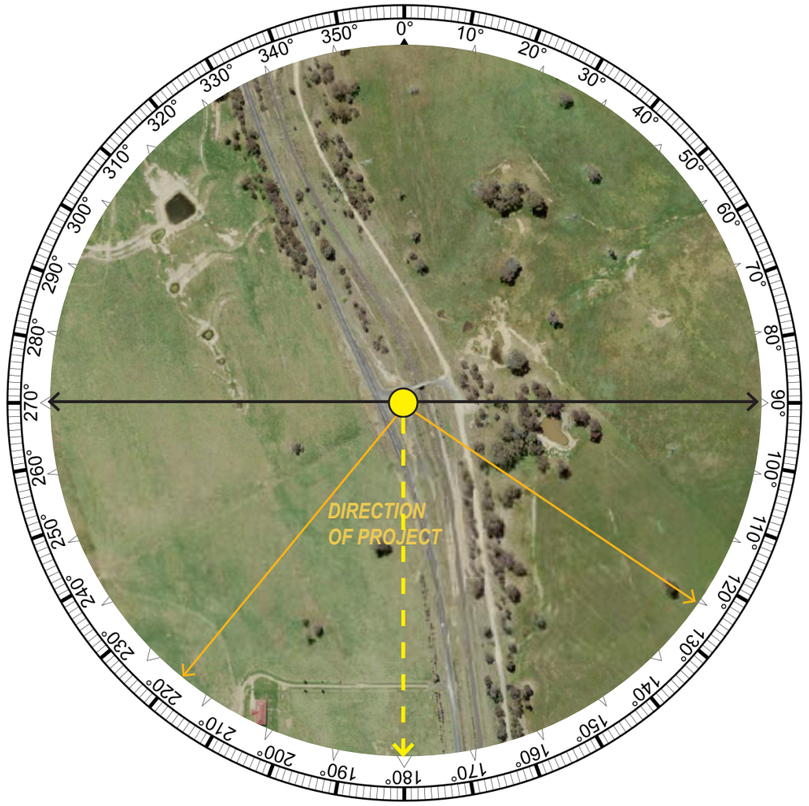
Topography consists mostly of undulating low hills and vegetation includes tree lined roads and boundaries. Land is extensively cleared otherwise.

Land is predominantly used for grazing and some occasional cropping.

Potential impacts

The nearest turbine is located 5.43 km to the south of this viewpoint.

This viewpoint illustrates expansive views from Burrendong Way to the south. Views extend toward the Project and distant ridgelines within the Project. It is anticipated that the Project will be visible from this location.



Aerial Image Viewpoint 04 (Aerial Image Source: Six Maps)

Viewpoint 05. Euchareena Road

Indicative direction of potentially visible turbines

Existing Landscape Character

View from Euchareena Road close to the existing Anglican Church building.

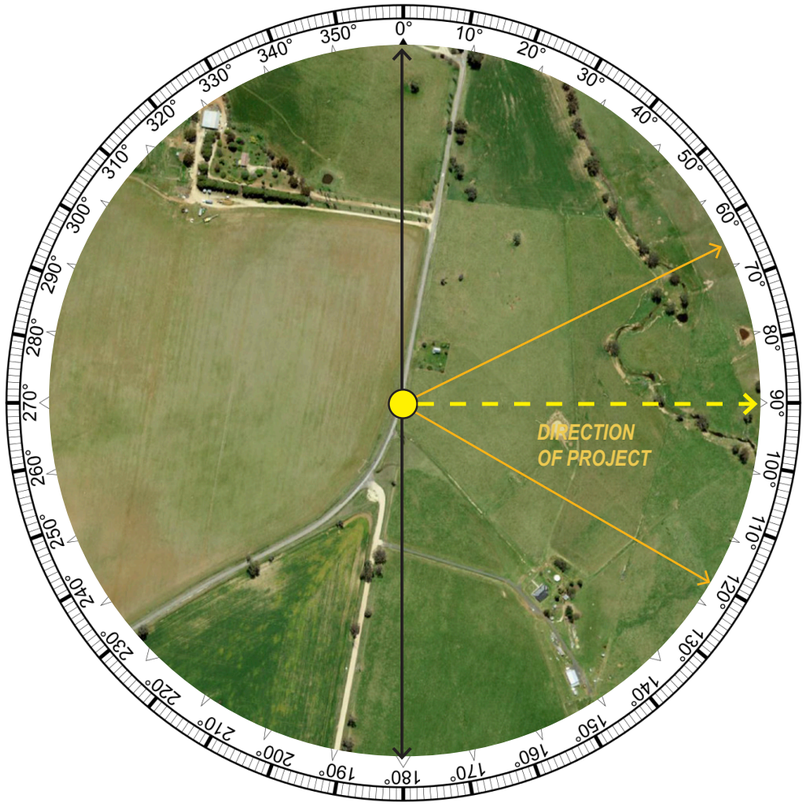
Topography consists of undulating to rolling low hills with some stony crests and land is extensively cleared.

Scattered rural residential dwellings are located along Euchareena Road and Boomey Lane. Land is predominantly used for grazing.

Potential impacts

The nearest turbine is located 4.05 km to the east of this viewpoint.

Views to the Project will be available along the ridgeline in the distance.



Viewpoint 06. Kangaroobie Road

Existing Landscape Character

View from properties along Kangaroobie Road.

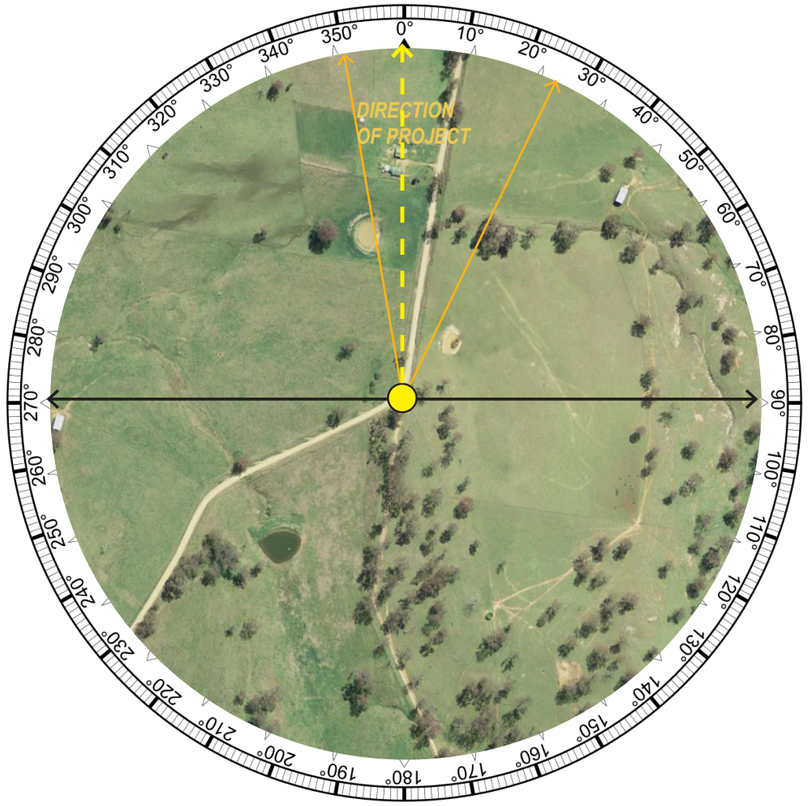
Topography consists of low, gently undulating hills and land is extensively cleared with small pockets of trees.

Rural residential dwellings are located along Kangaroobie Road. Land is predominantly used for agricultural purposes, specifically cattle and cropping.

Potential impacts

The nearest turbine is approximately 11.67 km to the north of this viewpoint.

This viewpoint illustrates open views from Kangaroobie Road. Views of the Project are largely contained by undulating topography and it is expected that there will be some views of distant turbines beyond the vegetated ridgeline to the north.



Aerial Image Viewpoint 06 (Aerial Image Source: Six Maps)

Viewpoint 07a. Mount Top Road

Indicative direction of potentially visible turbines

Existing Landscape Character

View from Mount Top Road which runs through the Project Site.

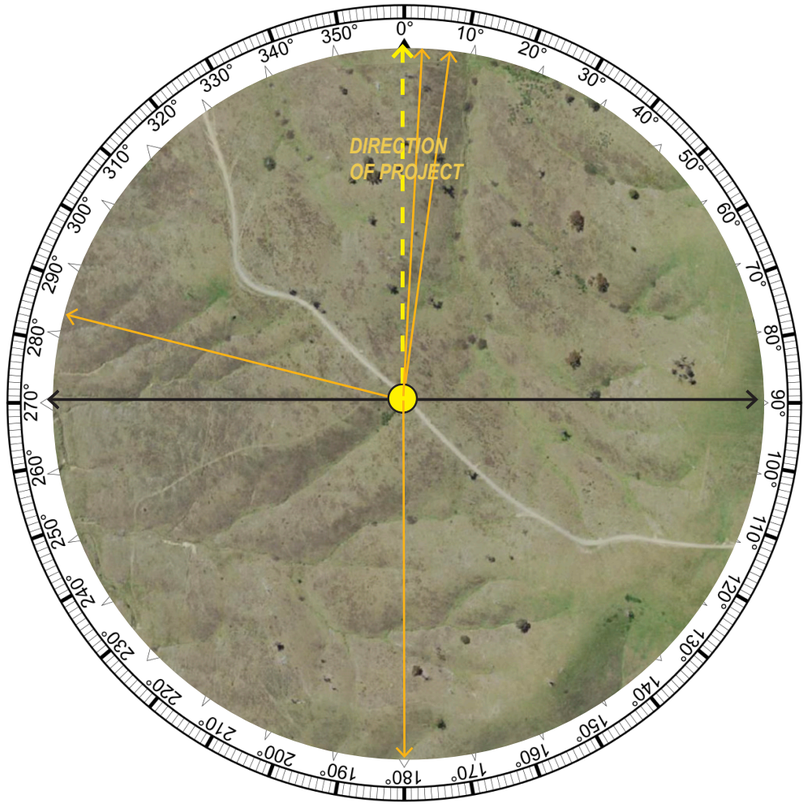
Topography consists of undulating to rolling hills with extensively cleared land.

A small number of rural residential dwellings are located along Mount Top Road. Land is predominantly used for agricultural purposes.

Potential impacts

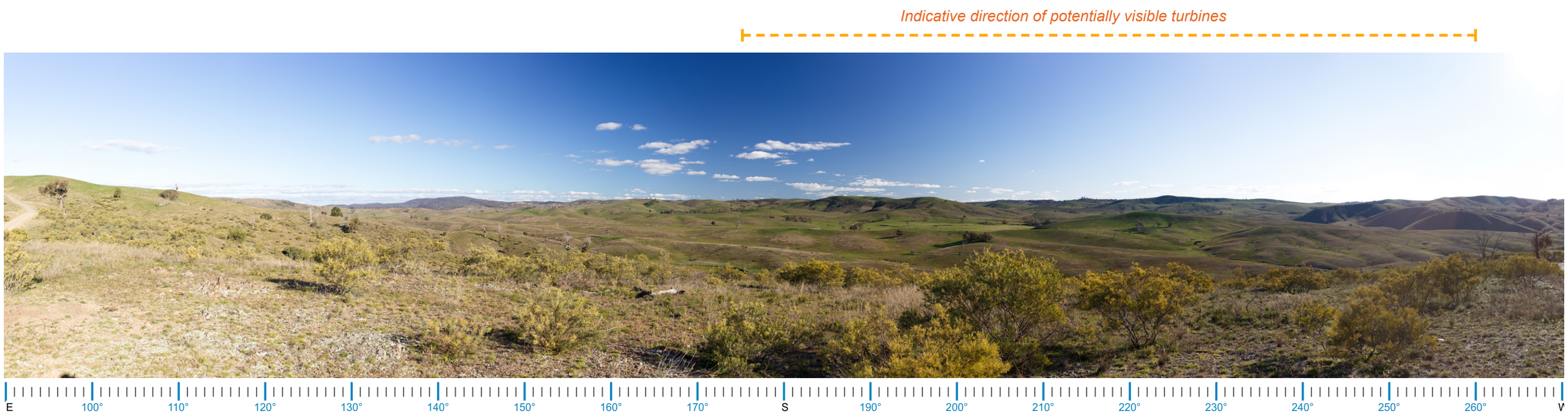
This viewpoint is located approximately 0.38 km south of the nearest turbine.

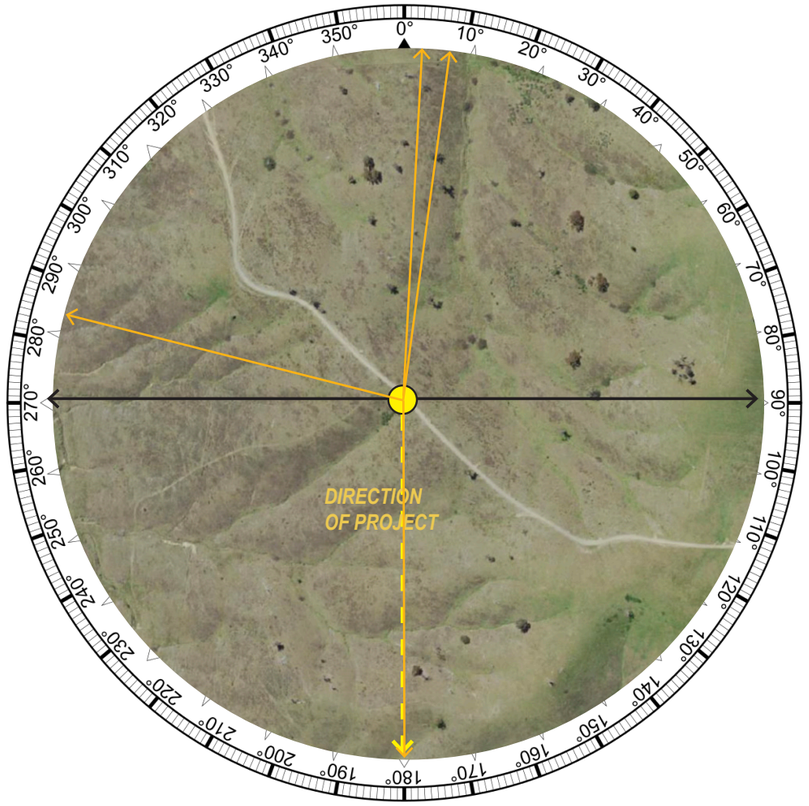
This viewpoint illustrates expansive views from Mount Top Road. Views of the Project Site are expected to be prominent from this location in most directions.



Aerial Image Viewpoint 07 (Aerial Image Source: Six Maps)

Viewpoint 07b. Mount Top Road





Aerial Image Viewpoint 07 (Aerial Image Source: Six Maps)

Viewpoint 08a. Shepherds Creek Road

Indicative direction of potentially visible turbines

Existing Landscape Character

View from the intersection of Shepherds Creek Road and Burrendong Way adjacent to existing rail crossing.

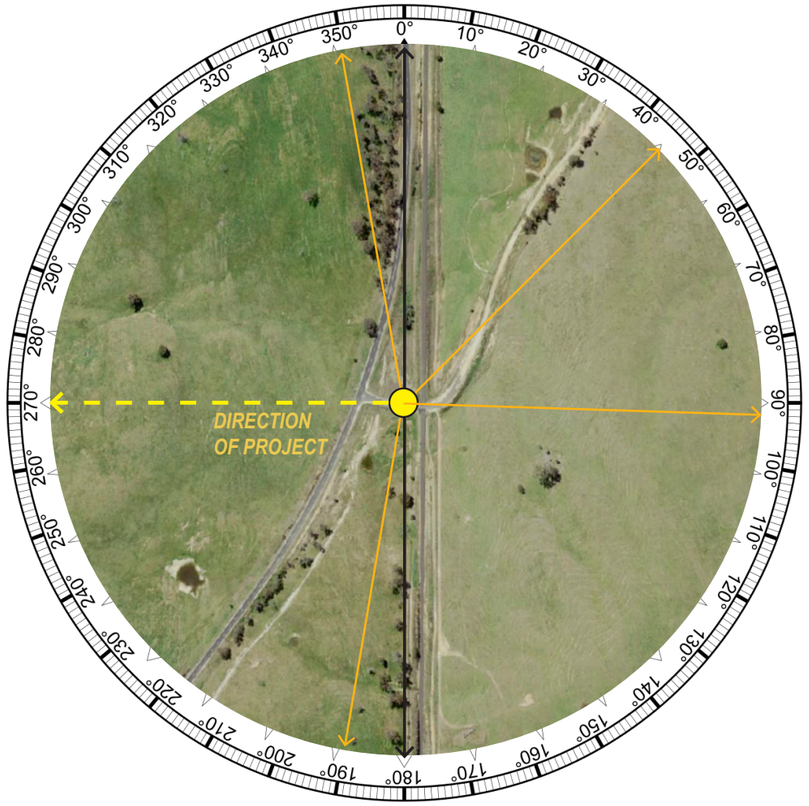
Topography consists of undulating to rolling low hills with extensively cleared land.

A small number of rural residential dwellings are located along Burrendong Way and Shepherds Creek Road. Land is predominantly used for agricultural purposes, specifically sheep and cattle.

Potential impacts

The nearest turbine is located 1.34 km to the southwest of this location.

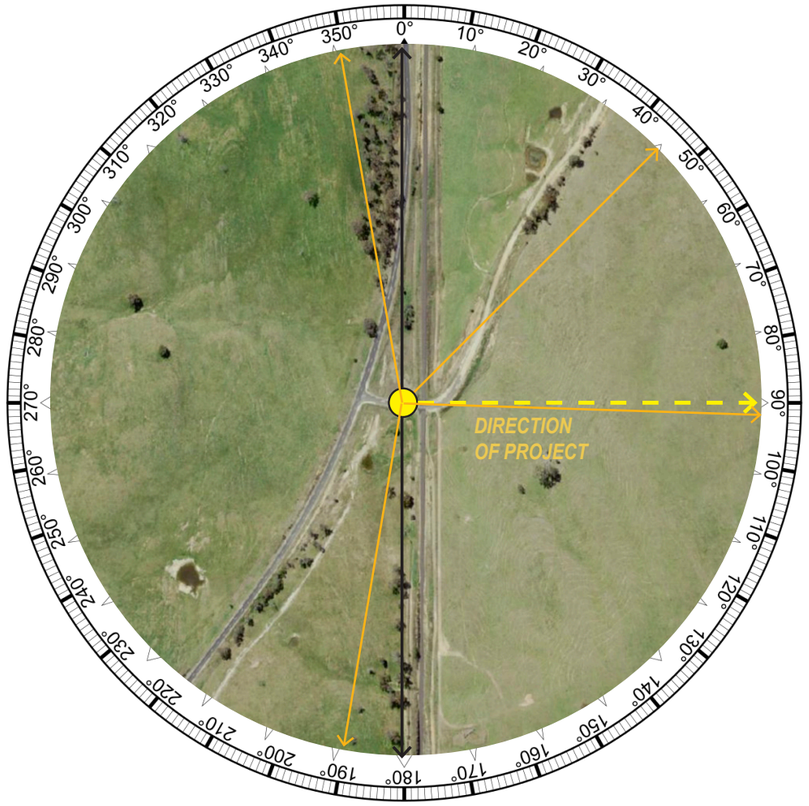
This viewpoint illustrates expansive views from Shepherds Creek Road. Views of the Project are expected to be prominent in most directions given its location within the Project and lack of screening vegetation.



Aerial Image Viewpoint 08 (Aerial Image Source: Six Maps)

Viewpoint 08b. Shepherds Creek Road

Indicative direction of potentially visible turbines



Aerial Image Viewpoint 08 (Aerial Image Source: Six Maps)

Viewpoint 09. Strathmore Lane

Existing Landscape Character

View from properties along Strathmore Lane.

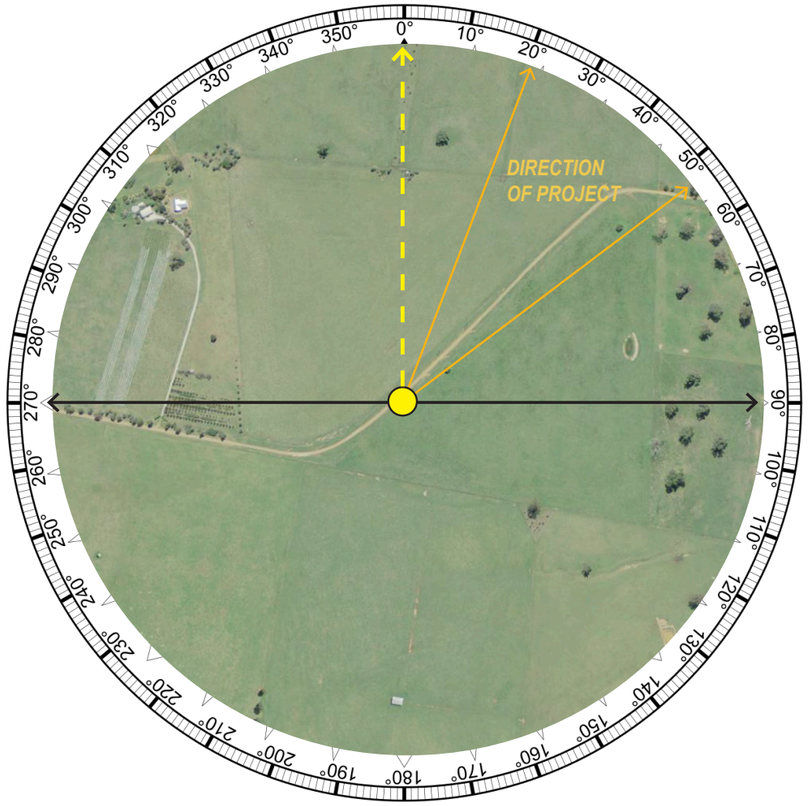
Topography consists of undulating to rolling low hills and mostly cleared land with scattered trees.

A small cluster of rural residential dwellings are located along Strathmore Lane and land is predominantly used for grazing and some occasional cropping.

Potential impacts

The nearest turbine is approximately 9.80 km to the north east of this location.

This viewpoint illustrates expansive views from Strathmore Lane. Views of the Project are expected to be visible to the north east from this location to the north east given the unobstructed views to the ridgeline associated with the Project.



Aerial Image Viewpoint 09 (Aerial Image Source: Six Maps)

Viewpoint 10. Rockies Road

Indicative direction of potentially visible turbines

Existing Landscape Character

View from properties along Rockies Road.

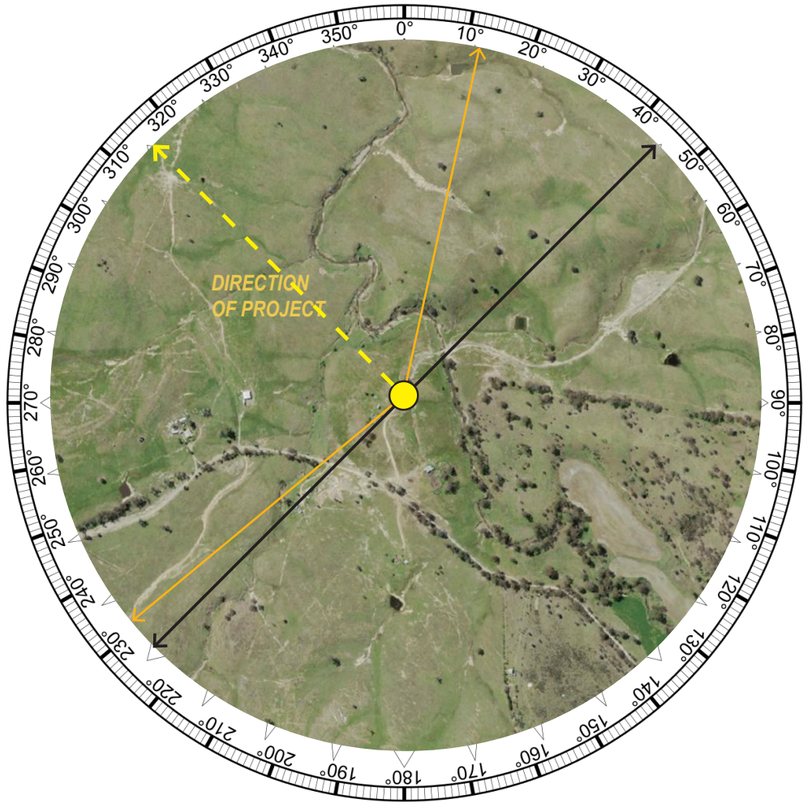
Topography consists of undulating to rolling low hills and extensively cleared land.

There are a small number of rural residential dwellings in this location and land is predominantly used for agricultural purposes.

Potential impacts

The nearest turbine is approximately 1.46 km to the north of this location.

This viewpoint illustrates open views from Rockies Road. Views of the Project are expected to be visible to the west beyond the sloping terrain in the foreground.

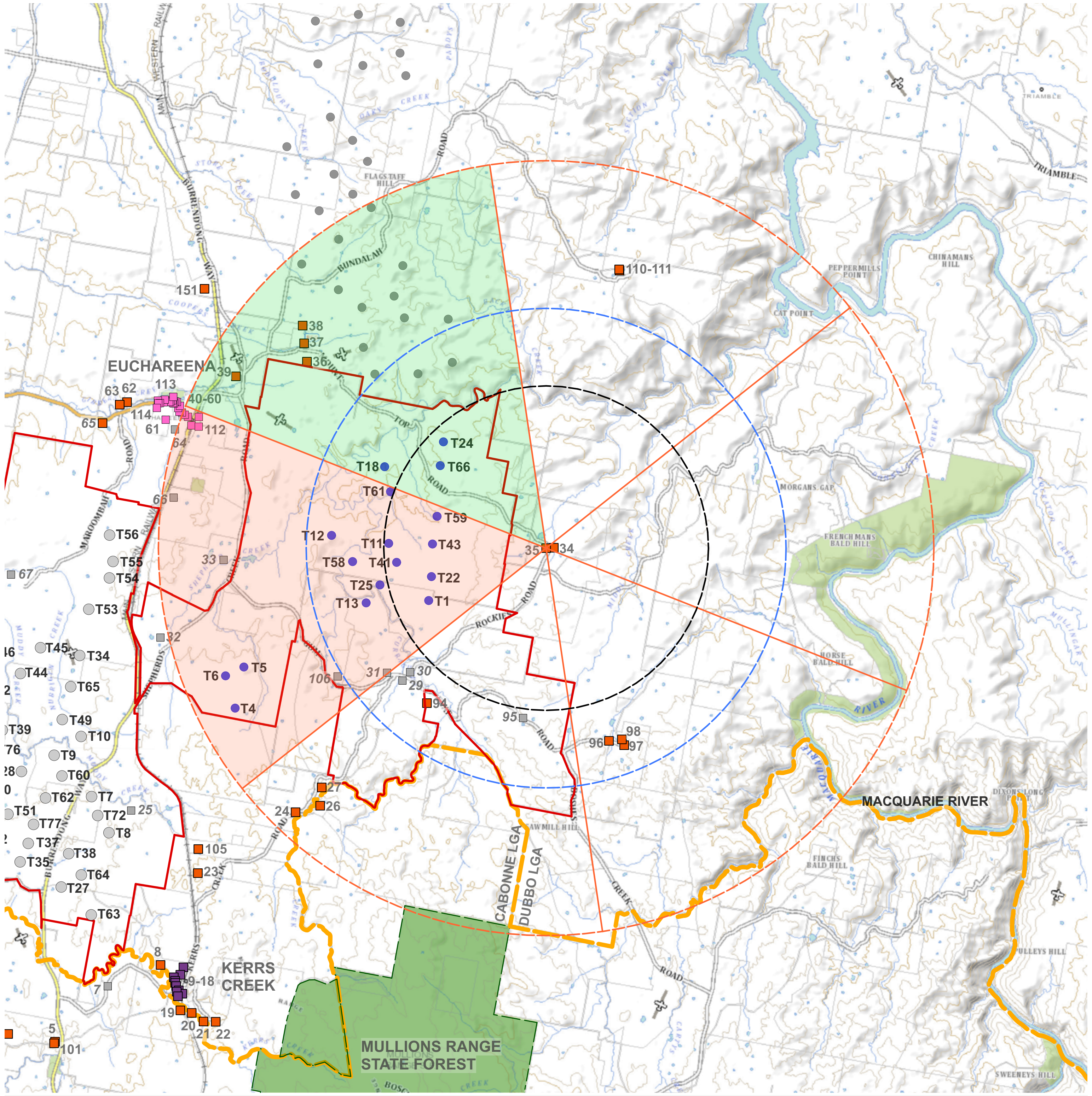


Aerial Image Viewpoint 10 (Aerial Image Source: Six Maps)

Appendix B

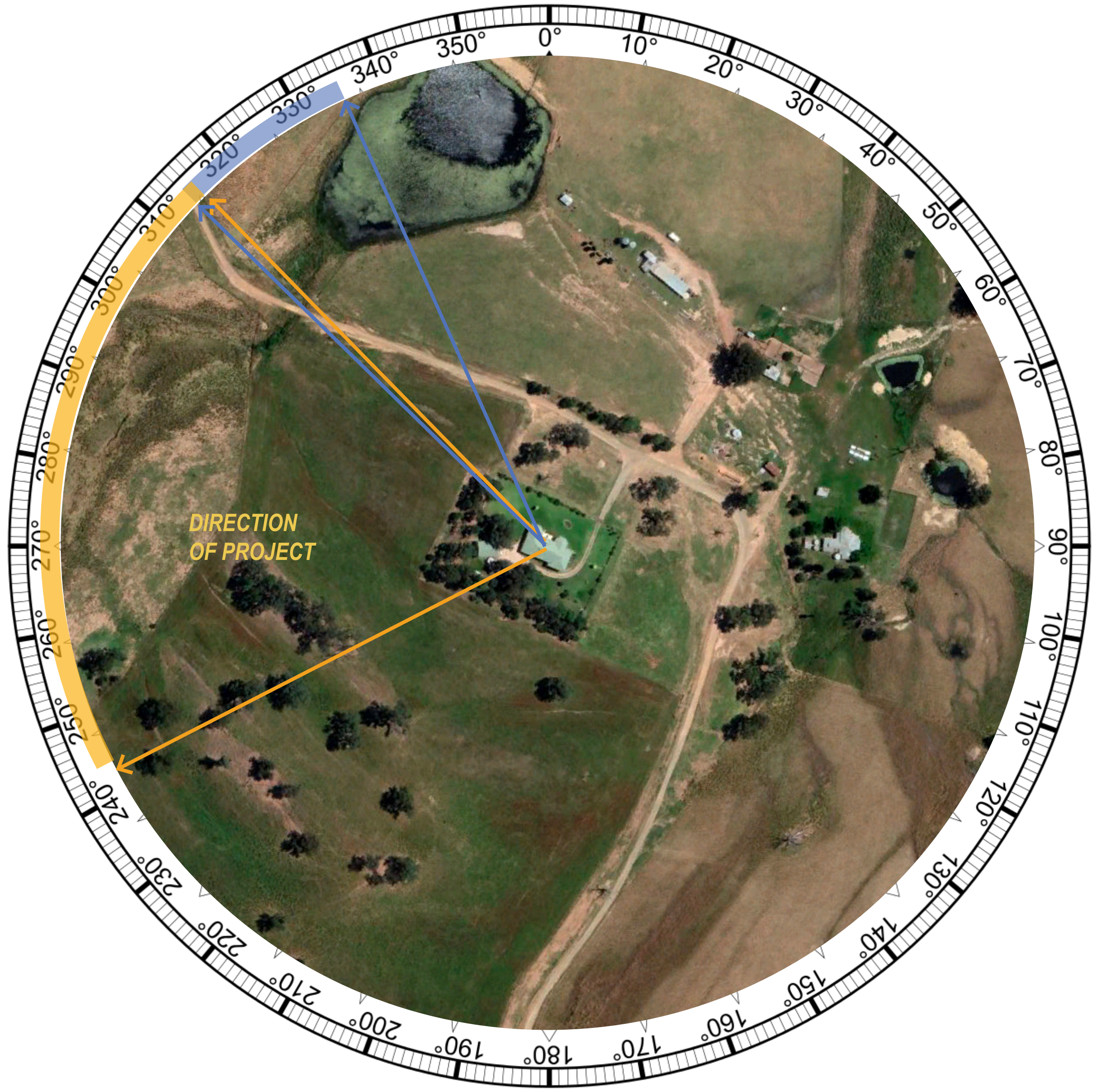
Preliminary Dwelling Assessment

Dwelling 35 Preliminary Assessment Tools



LEGEND

Project Boundary	Involved Dwelling
Proposed Turbine Location (Kerrs Creek)	Non-involved Dwelling
Proposed Turbine Location in excess of 8000 m from dwelling (Kerrs Creek)	Non-involved Dwelling (Kerrs Creek)
Proposed Turbine (Aquila Wind)	Non-involved Dwelling (Euchareena)
3,750 m from nearest turbine (Black Line)	60º sector
5,500 m from nearest turbine (Blue Line)	60º sector with Kerrs Creek Wind Farm turbines
8,000 m from nearest turbine	60º sector with Aquila Wind turbines
	60º sector with Kerrs Creek Wind Farm and Aquila Wind turbines



LEGEND

Direction of visible Aquila Wind turbines (within 8000 m)

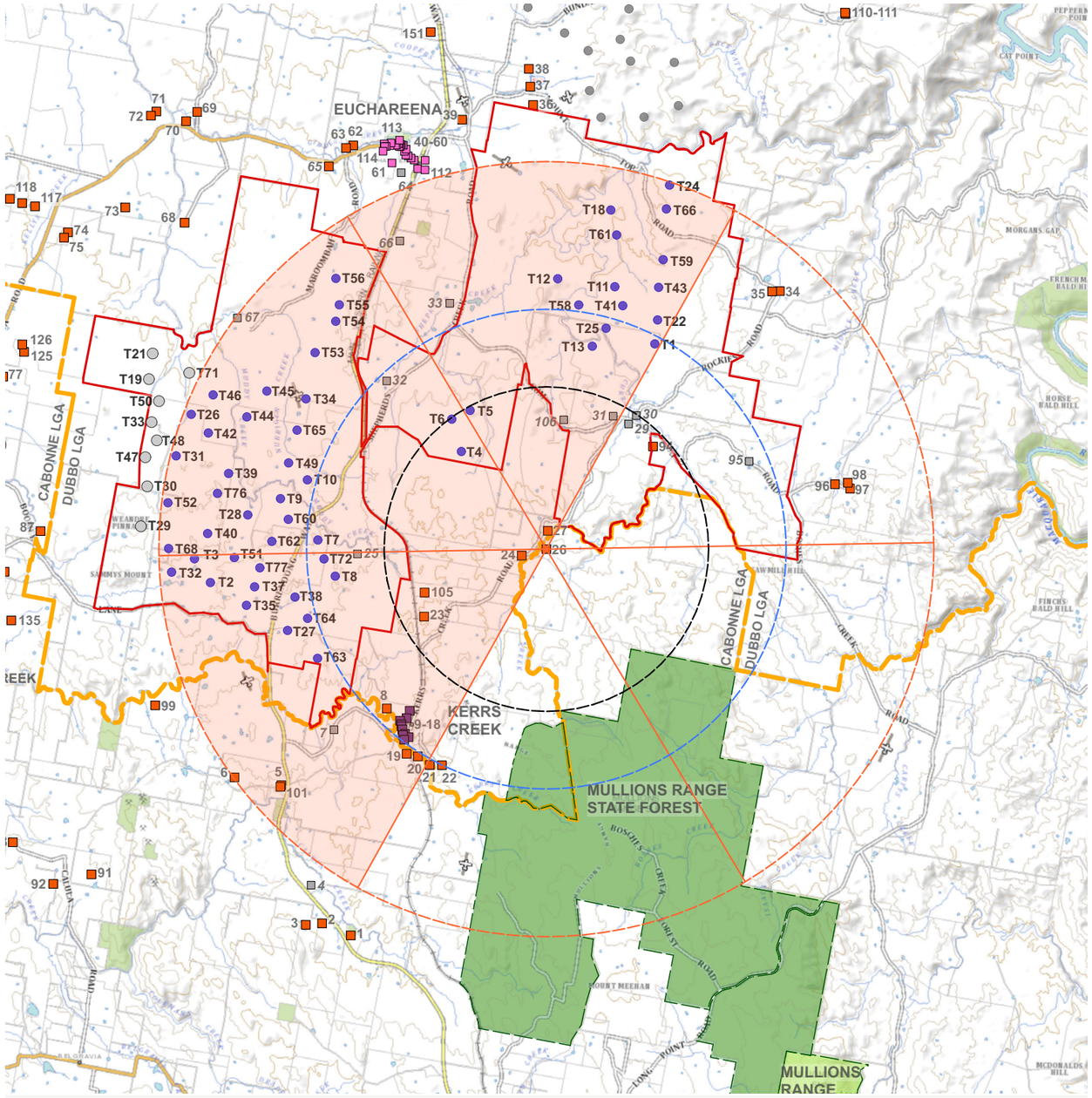
Extent of visible Aquila Wind turbines (within 8000 m)

Direction of visible Kerrs Creek Wind turbines (within 8000 m)

Extent of visible Kerrs Creek Wind turbines (within 8000 m)

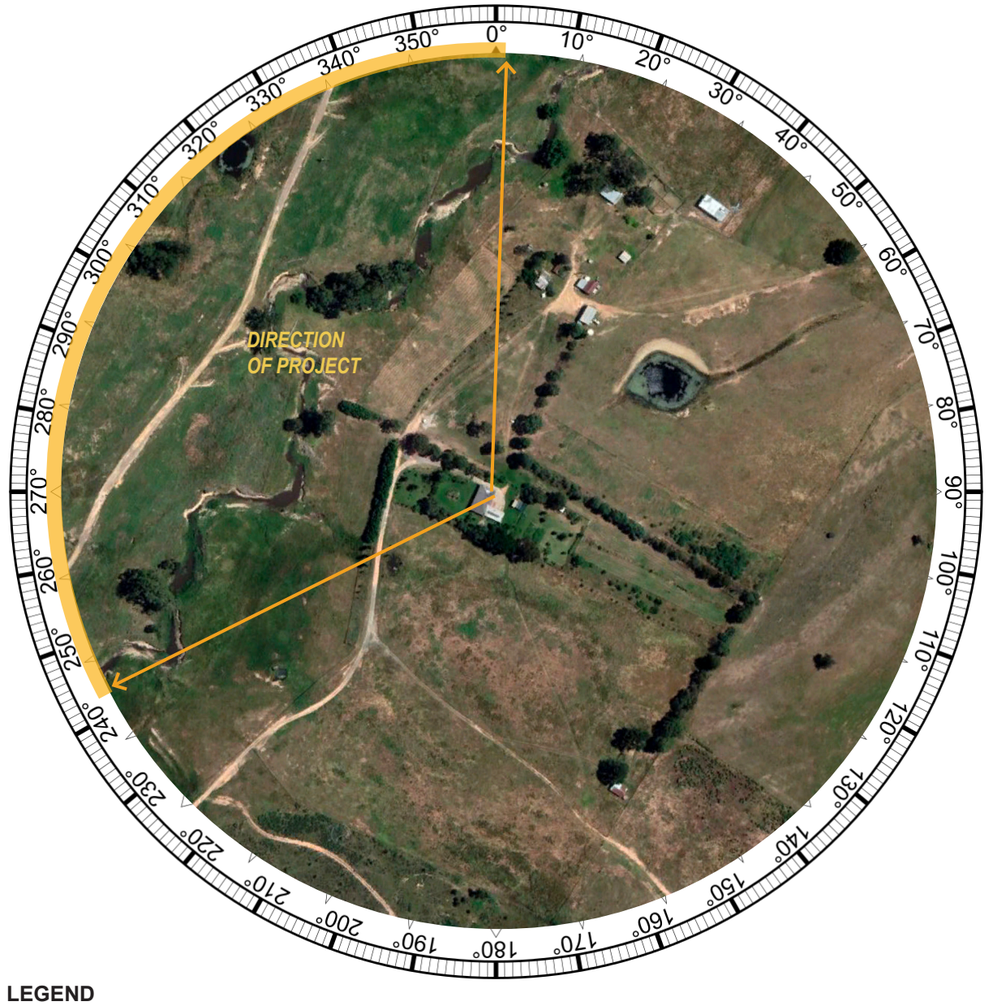
Summary of Preliminary Assessment Tools:	
Distance to Nearest Turbine: (Kerrs Creek)	**2.32 km (T43)**
Number of proposed turbines within Black Line (3,750 m):	**8**
Number of theoretical 60º sectors (Based on 2D assessment):	**One (1) Sector [Kerrs Creek Wind Farm]** **One (1) Sector [Kerrs Creek and Aquila Wind]**
Number of potentially visible turbines: (Based on Topography alone)	**15 [Kerrs Creek Wind Farm]** **9 [Aquila Wind]**

Dwelling 26 Preliminary Assessment Tools



LEGEND

- Project Boundary
- Proposed Turbine Location (Kerrs Creek)
- Proposed Turbine Location in excess of 8000 m from dwelling (Kerrs Creek)
- Proposed Turbine (Aquila Wind)
- 3,750 m from nearest turbine (Black Line)
- 5,500 m from nearest turbine (Blue Line)
- 8,000 m from nearest turbine
- Involved Dwelling
- Non-involved Dwelling
- Non-involved Dwelling (Kerrs Creek)
- Non-involved Dwelling (Euchareena)
- 60° sector
- 60° sector with Kerrs Creek Wind Farm turbines
- 60° sector with Aquila Wind turbines
- 60° sector with Kerrs Creek Wind Farm and Aquila Wind turbines

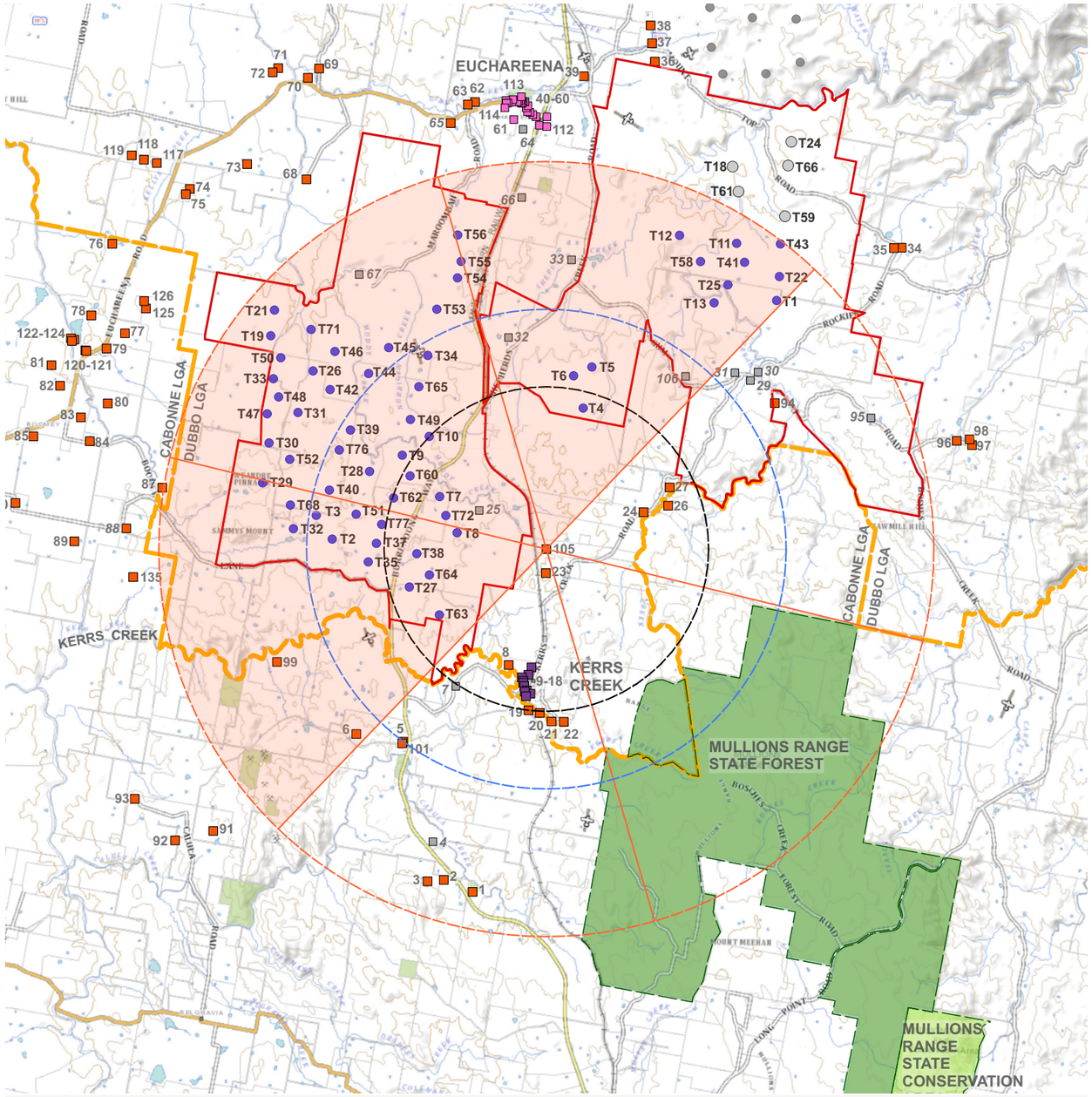


LEGEND

- Direction of visible Aquila Wind turbines (within 8000 m)
- Extent of visible Aquila Wind turbines (within 8000 m)
- Direction of visible Kerrs Creek Wind turbines (within 8000 m)
- Extent of visible Kerrs Creek Wind turbines (within 8000 m)

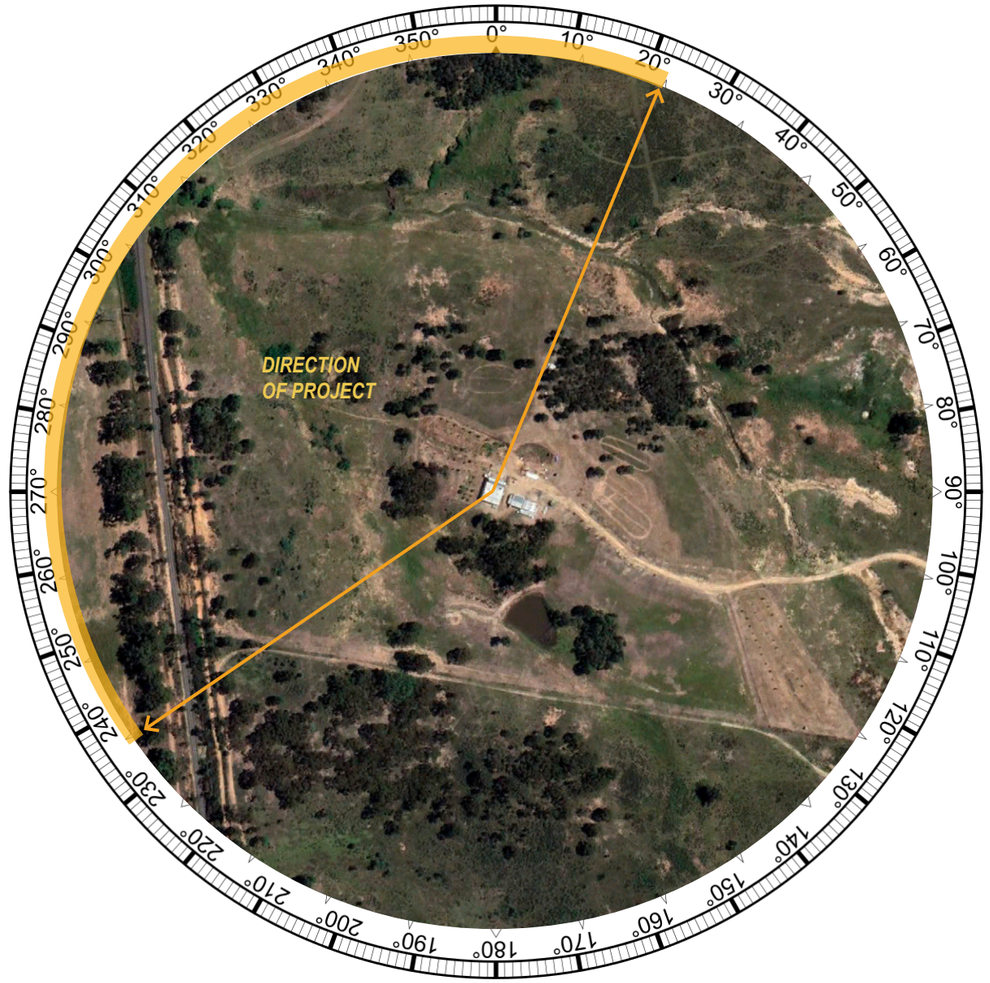
Summary of Preliminary Assessment Tools:	
Distance to Nearest Turbine: (Kerrs Creek)	**2.67 km (T4)**
Number of proposed turbines within Black Line (3,750 m):	**3**
Number of theoretical 60º sectors (Based on 2D assessment):	**Three (3) Sectors**
Number of potentially visible turbines: (Based on Topography alone)	**23 Turbine 6 at Hub 17 at Blade Tip**

Dwelling 105 Preliminary Assessment Tools



LEGEND

- Project Boundary
- Proposed Turbine Location (Kerrs Creek)
- Proposed Turbine Location in excess of 8000 m from dwelling (Kerrs Creek)
- Proposed Turbine (Aquila Wind)
- 3,750 m from nearest turbine (Black Line)
- 5,500 m from nearest turbine (Blue Line)
- 8,000 m from nearest turbine
- Involved Dwelling
- Non-involved Dwelling
- Non-involved Dwelling (Kerrs Creek)
- Non-involved Dwelling (Euchareena)
- 60° sector
- 60° sector with Kerrs Creek Wind Farm turbines
- 60° sector with Aquila Wind turbines
- 60° sector with Kerrs Creek Wind Farm and Aquila Wind turbines

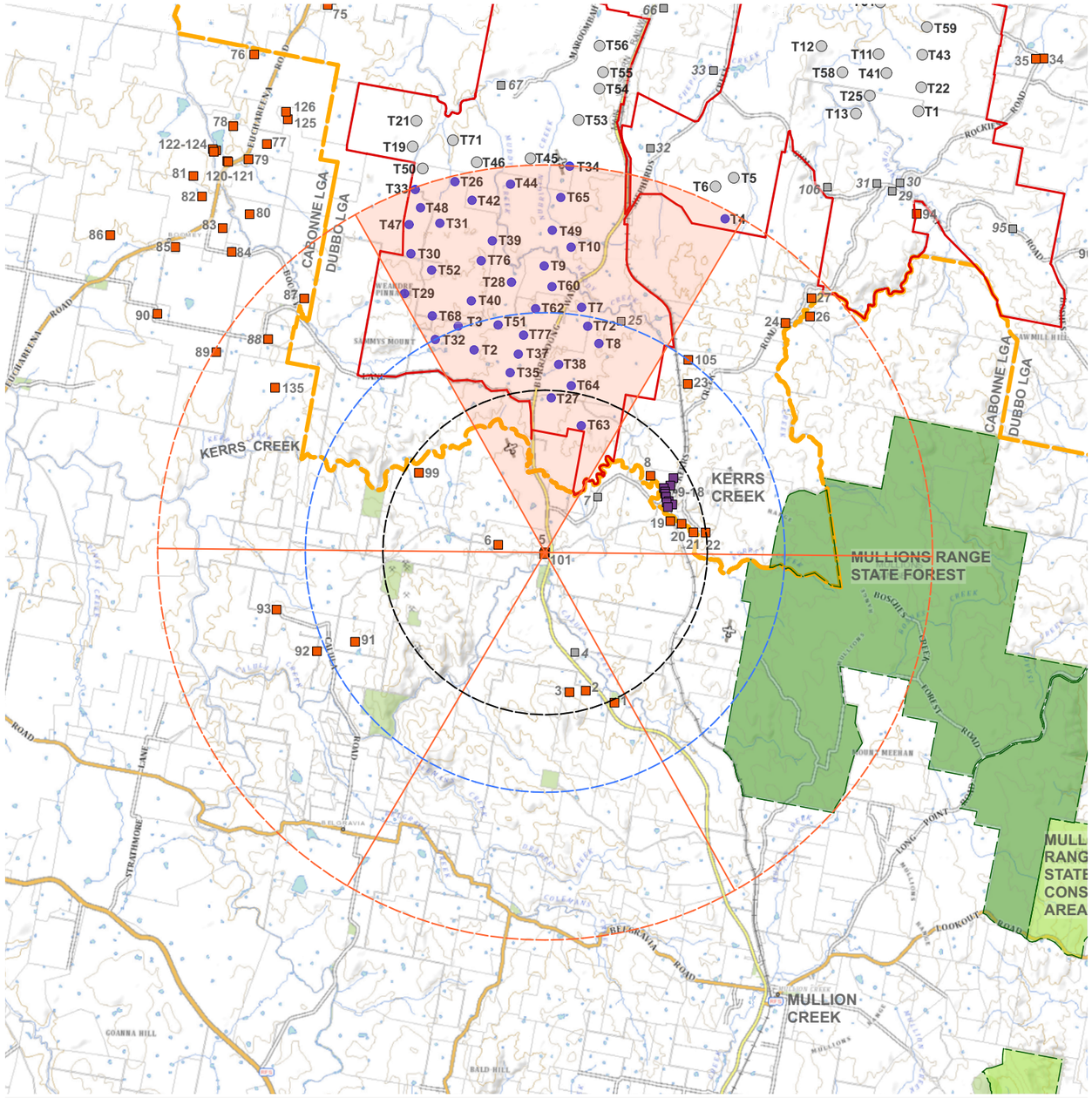


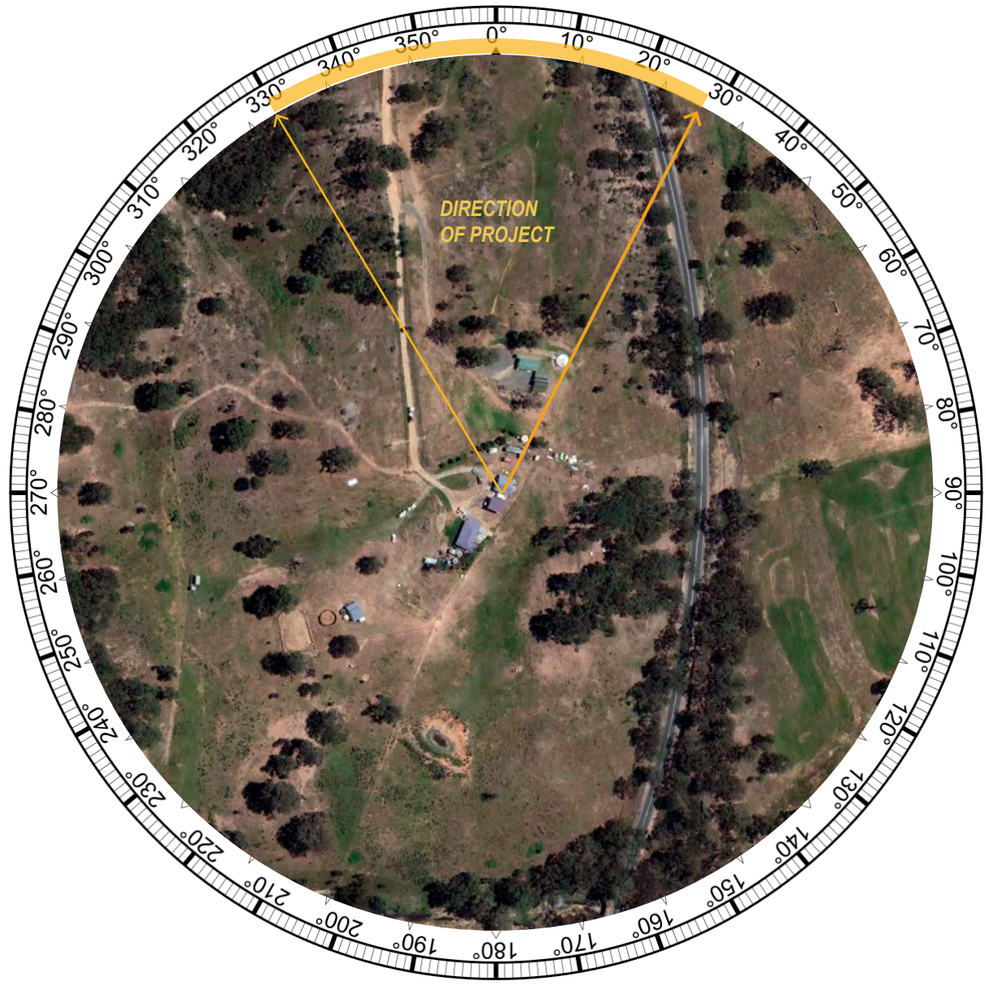
LEGEND

- Direction of visible Aquila Wind turbines (within 8000 m)
- Extent of visible Aquila Wind turbines (within 8000 m)
- Direction of visible Kerrs Creek Wind turbines (within 8000 m)
- Extent of visible Kerrs Creek Wind turbines (within 8000 m)

Summary of Preliminary Assessment Tools:	
Distance to Nearest Turbine: (Kerrs Creek)	**1.87 km (T8)**
Number of proposed turbines within Black Line (3,750 m):	**10**
Number of theoretical 60º sectors (Based on 2D assessment):	**Three (3) Sectors**
Number of potentially visible turbines: (Based on Topography alone)	**52 Turbine 49 at Hub 3 at Blade Tip**

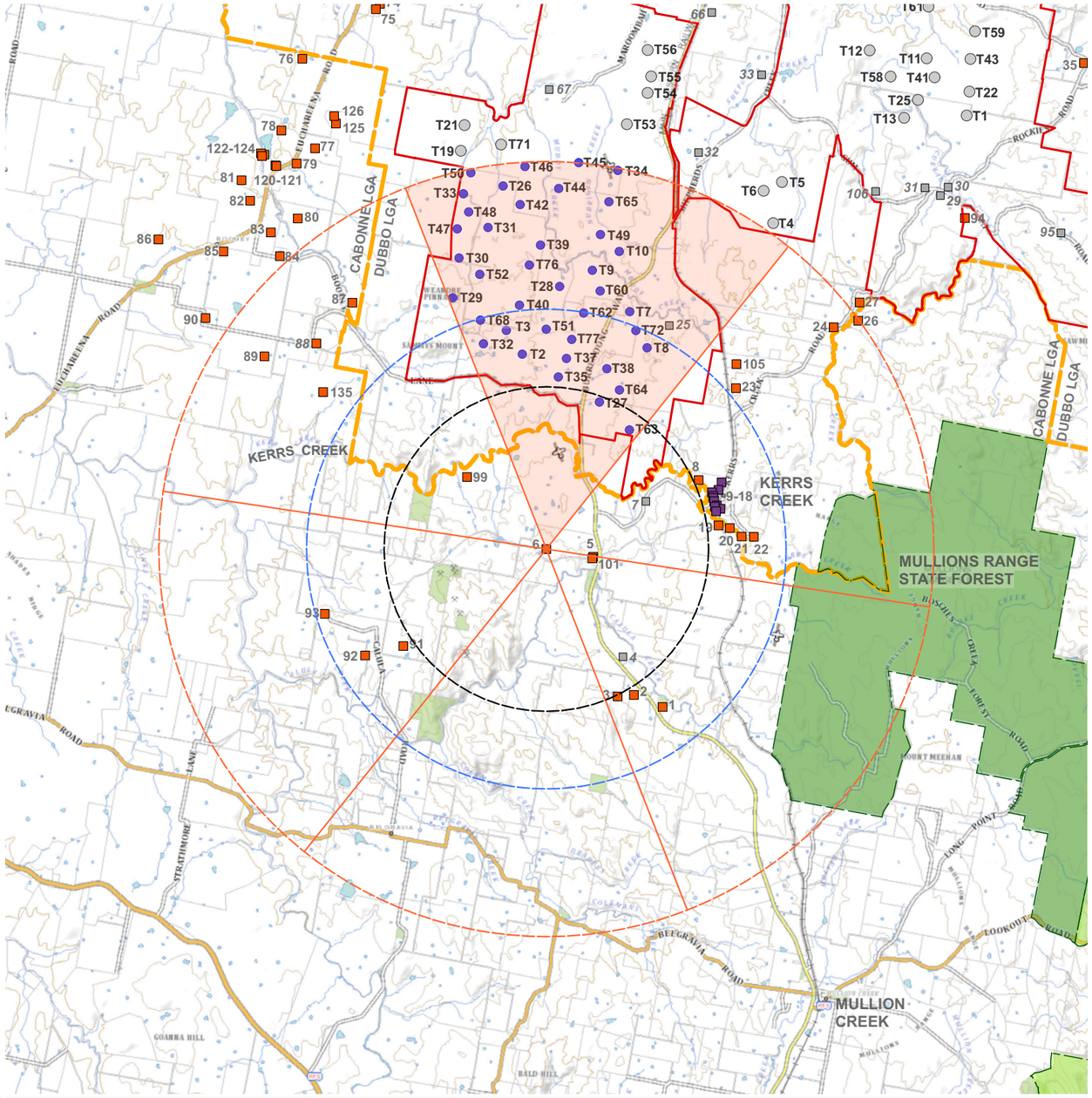
Dwelling 5 Preliminary Assessment Tools





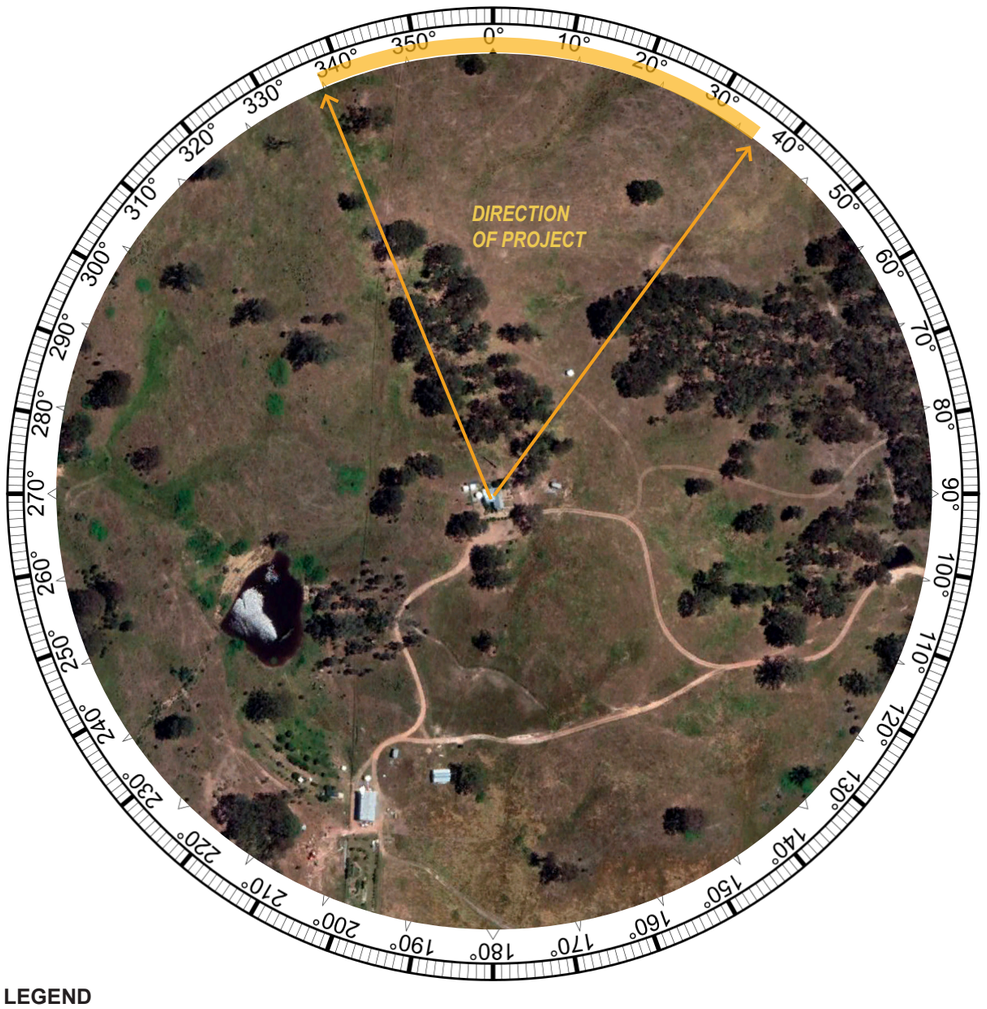
Summary of Preliminary Assessment Tools:	
Distance to Nearest Turbine: (Kerrs Creek)	**2.73 km (T63)**
Number of proposed turbines within Black Line (3,750 m):	**2**
Number of theoretical 60º sectors (Based on 2D assessment):	**One (1) Sector**
Number of potentially visible turbines: (Based on Topography alone)	**36 Turbine All at Hub**

Dwelling 6 Preliminary Assessment Tools



LEGEND

- Project Boundary
- Proposed Turbine Location (Kerrs Creek)
- Proposed Turbine Location in excess of 8000 m from dwelling (Kerrs Creek)
- Proposed Turbine (Aquila Wind)
- 3,750 m from nearest turbine (Black Line)
- 5,500 m from nearest turbine (Blue Line)
- 8,000 m from nearest turbine
- Involved Dwelling
- Non-involved Dwelling
- Non-involved Dwelling (Kerrs Creek)
- Non-involved Dwelling (Euchareena)
- 60° sector
- 60° sector with Kerrs Creek Wind Farm turbines
- 60° sector with Aquila Wind turbines
- 60° sector with Kerrs Creek Wind Farm and Aquila Wind turbines

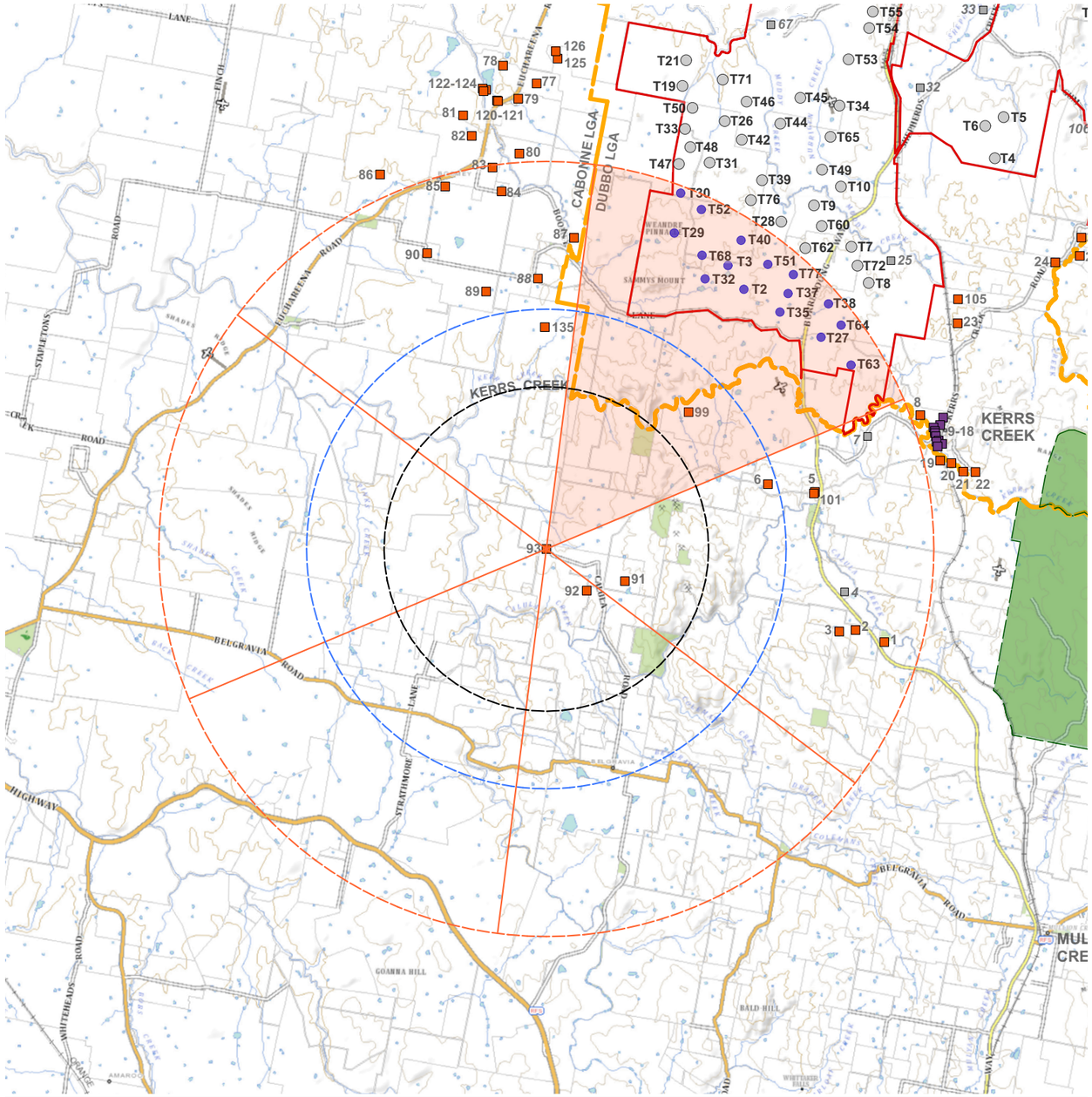


LEGEND

- Direction of visible Aquila Wind turbines (within 8000 m)
- Extent of visible Aquila Wind turbines (within 8000 m)
- Direction of visible Kerrs Creek Wind turbines (within 8000 m)
- Extent of visible Kerrs Creek Wind turbines (within 8000 m)

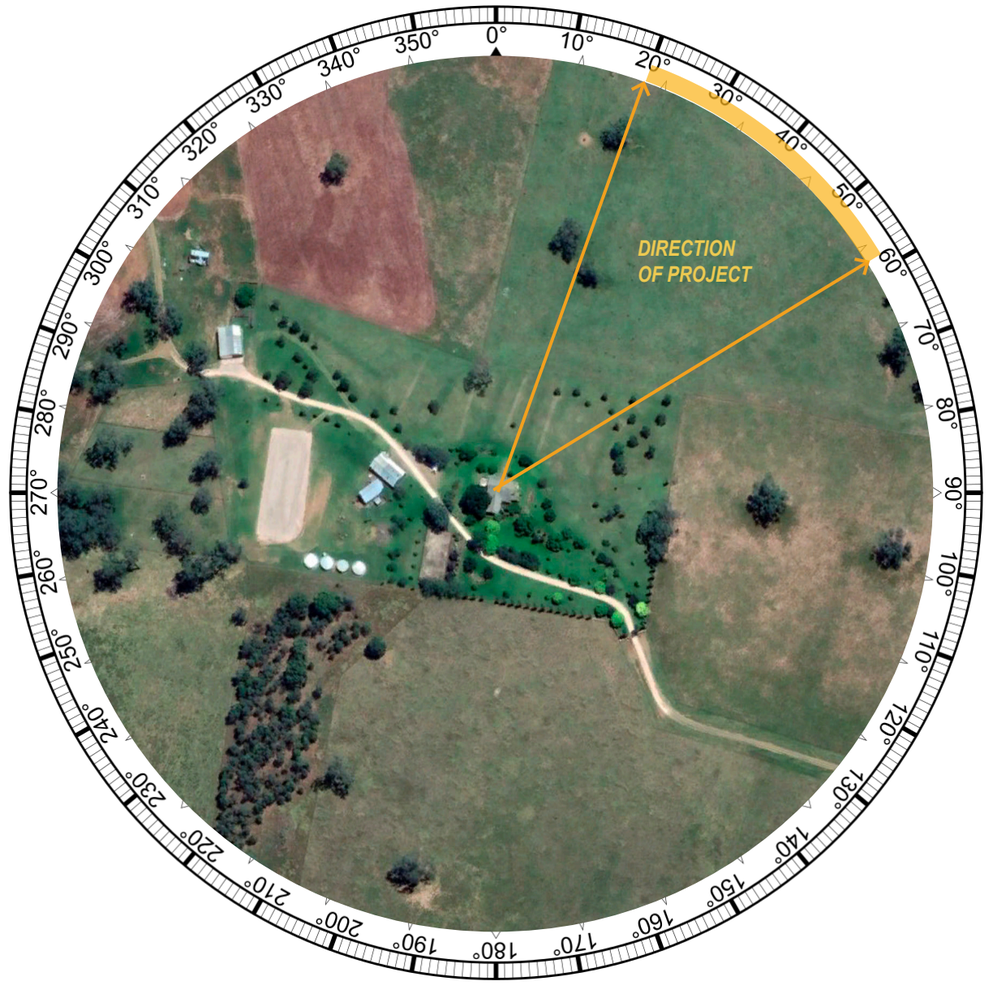
Summary of Preliminary Assessment Tools:	
Distance to Nearest Turbine: (Kerrs Creek)	**3.00 km (T63)**
Number of proposed turbines within Black Line (3,750 m):	**2**
Number of theoretical 60º sectors (Based on 2D assessment):	**One (1) Sector**
Number of potentially visible turbines: (Based on Topography alone)	**38 Turbine All at hub**

Dwelling 93 Preliminary Assessment Tools



LEGEND

- Project Boundary
- Proposed Turbine Location (Kerrs Creek)
- Proposed Turbine Location in excess of 8000 m from dwelling (Kerrs Creek)
- Proposed Turbine (Aquila Wind)
- 3,750 m from nearest turbine (Black Line)
- 5,500 m from nearest turbine (Blue Line)
- 8,000 m from nearest turbine
- Involved Dwelling
- Non-involved Dwelling
- Non-involved Dwelling (Kerrs Creek)
- Non-involved Dwelling (Euchareena)
- 60° sector
- 60° sector with Kerrs Creek Wind Farm turbines
- 60° sector with Aquila Wind turbines
- 60° sector with Kerrs Creek Wind Farm and Aquila Wind turbines

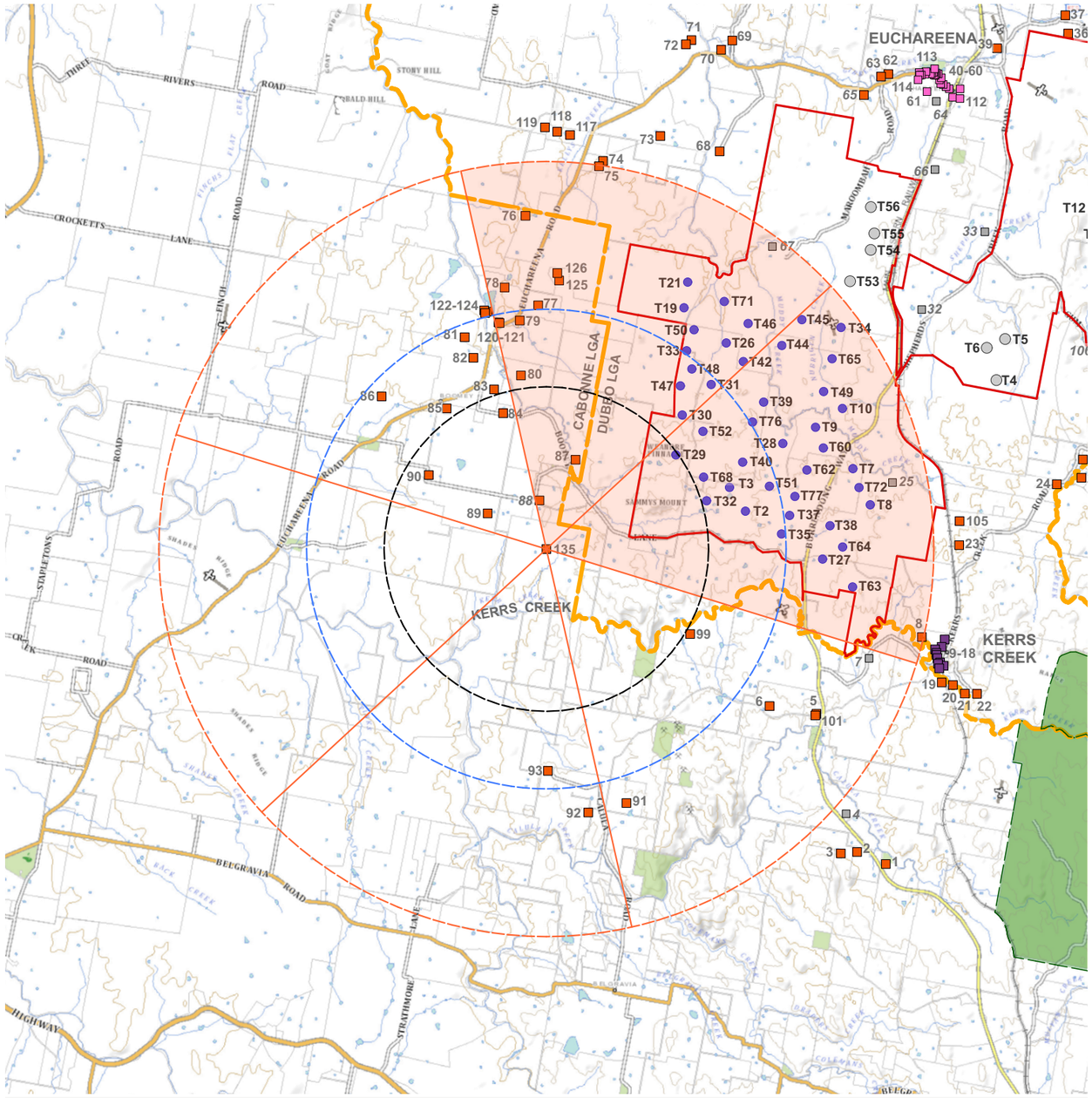


LEGEND

- Direction of visible Aquila Wind turbines (within 8000 m)
- Extent of visible Aquila Wind turbines (within 8000 m)
- Direction of visible Kerrs Creek Wind turbines (within 8000 m)
- Extent of visible Kerrs Creek Wind turbines (within 8000 m)

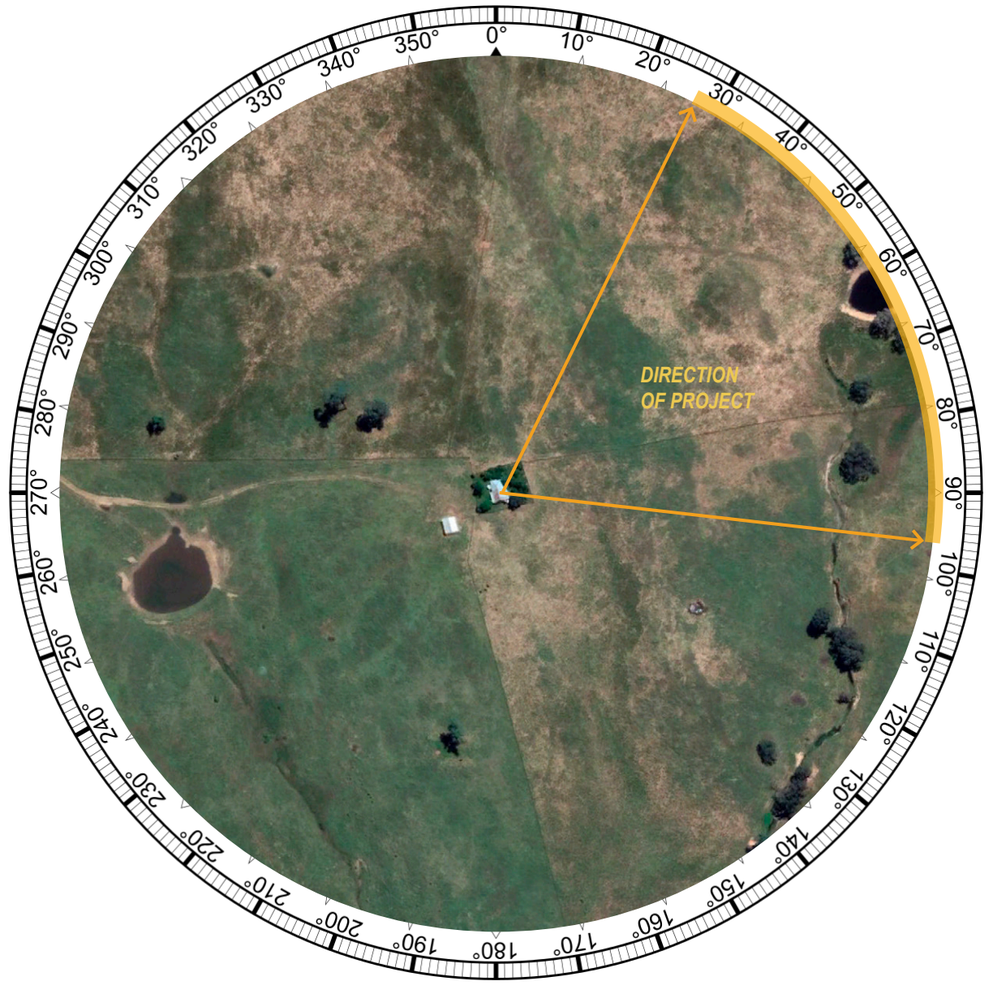
Summary of Preliminary Assessment Tools:	
Distance to Nearest Turbine: (Kerrs Creek)	**6.48 km (T32)**
Number of proposed turbines within Black Line (3,750 m):	**0**
Number of theoretical 60º sectors (Based on 2D assessment):	**One (1) Sector**
Number of potentially visible turbines: (Based on Topography alone)	**16 Turbine 12 at Hub 4 at Blade Tip**

Dwelling 135 Preliminary Assessment Tools



LEGEND

- Project Boundary
- Proposed Turbine Location (Kerrs Creek)
- Proposed Turbine Location in excess of 8000 m from dwelling (Kerrs Creek)
- Proposed Turbine (Aquila Wind)
- 3,750 m from nearest turbine (Black Line)
- 5,500 m from nearest turbine (Blue Line)
- 8,000 m from nearest turbine
- Involved Dwelling
- Non-involved Dwelling
- Non-involved Dwelling (Kerrs Creek)
- Non-involved Dwelling (Euchareena)
- 60° sector
- 60° sector with Kerrs Creek Wind Farm turbines
- 60° sector with Aquila Wind turbines
- 60° sector with Kerrs Creek Wind Farm and Aquila Wind turbines

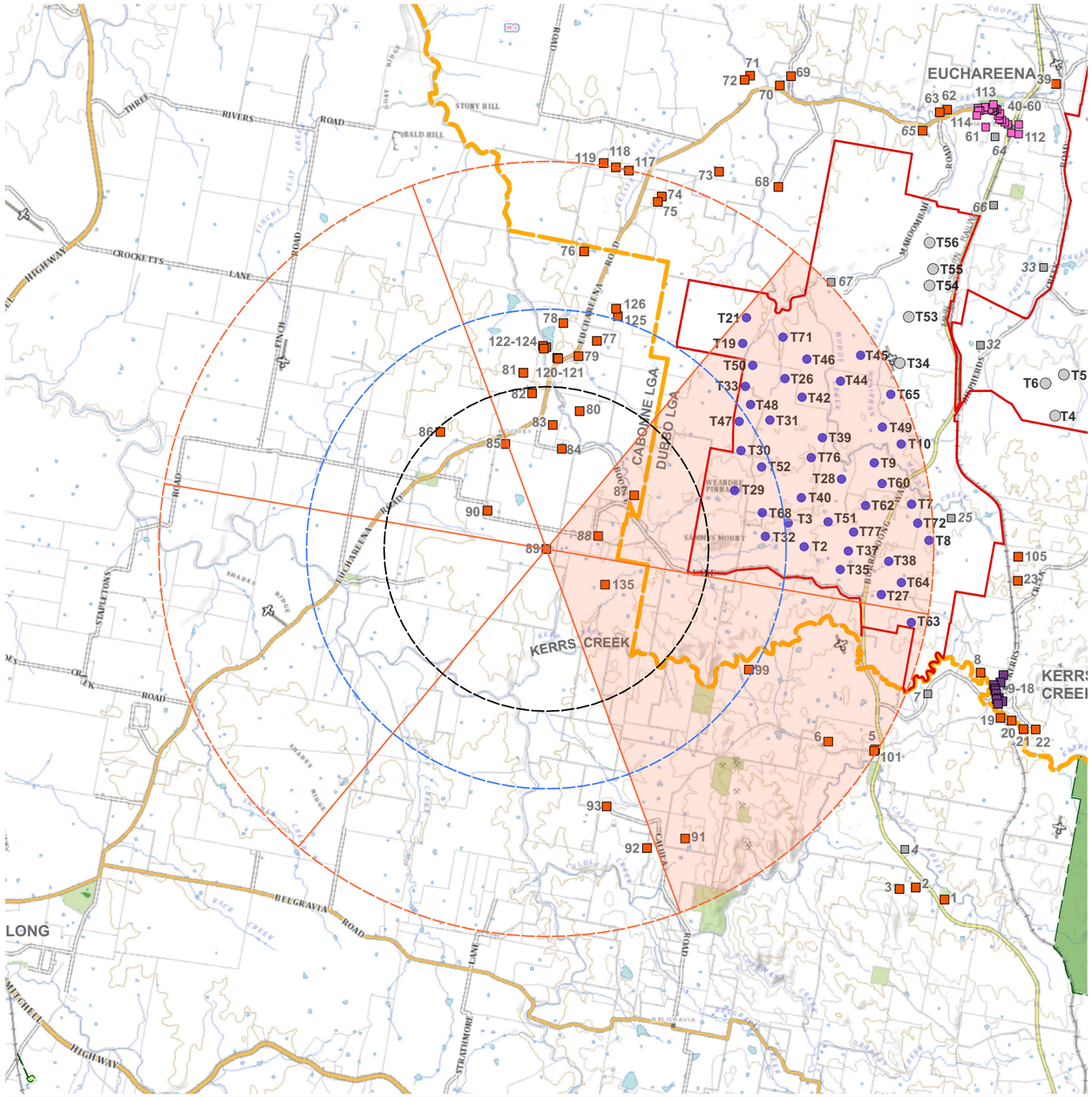


LEGEND

- Direction of visible Aquila Wind turbines (within 8000 m)
- Extent of visible Aquila Wind turbines (within 8000 m)
- Direction of visible Kerrs Creek Wind turbines (within 8000 m)
- Extent of visible Kerrs Creek Wind turbines (within 8000 m)

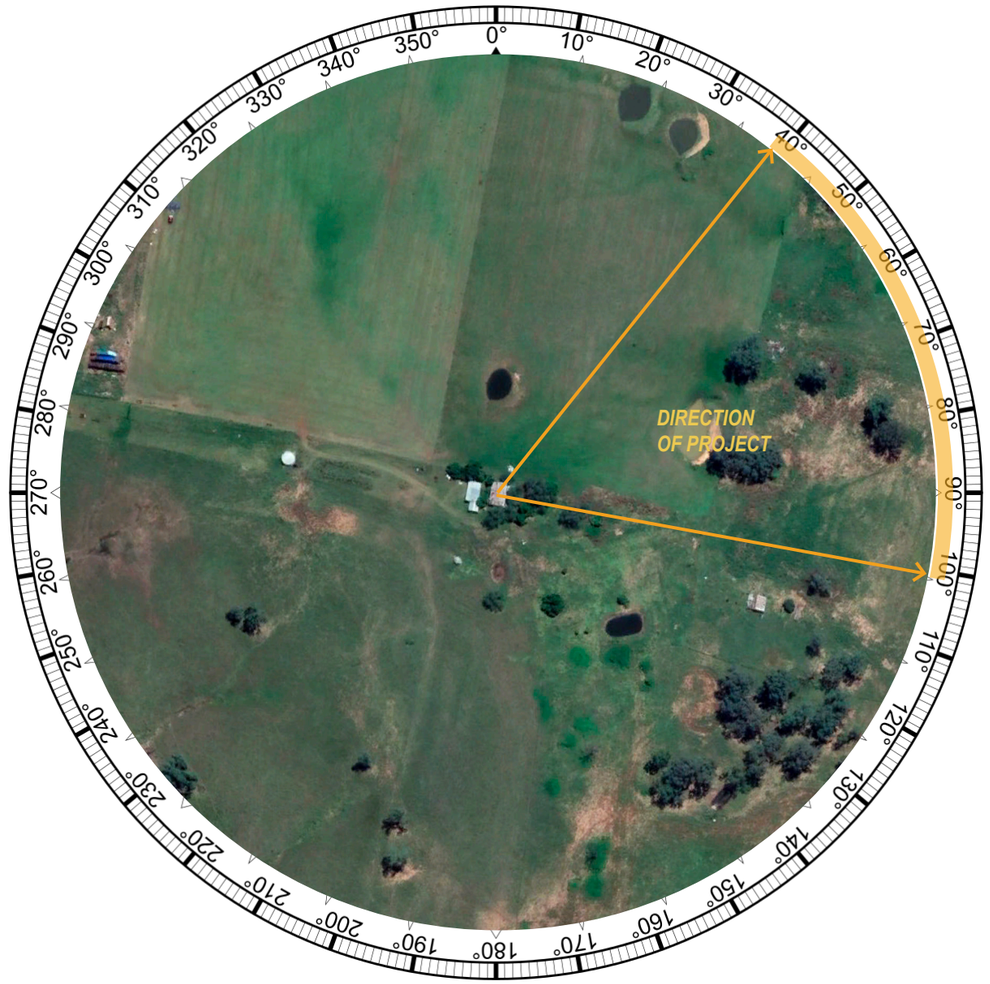
Summary of Preliminary Assessment Tools:	
Distance to Nearest Turbine: (Kerrs Creek)	**3.30 km (T29)**
Number of proposed turbines within Black Line (3,750 m):	**1**
Number of theoretical 60º sectors (Based on 2D assessment):	**Two (2) Sectors**
Number of potentially visible turbines: (Based on Topography alone)	**42 Turbine 33 at Hub 9 at Blade Tip**

Dwelling 89 Preliminary Assessment Tools



LEGEND

- Project Boundary
- Proposed Turbine Location (Kerrs Creek)
- Proposed Turbine Location in excess of 8000 m from dwelling (Kerrs Creek)
- Proposed Turbine (Aquila Wind)
- 3,750 m from nearest turbine (Black Line)
- 5,500 m from nearest turbine (Blue Line)
- 8,000 m from nearest turbine
- Involved Dwelling
- Non-involved Dwelling
- Non-involved Dwelling (Kerrs Creek)
- Non-involved Dwelling (Euchareena)
- 60° sector
- 60° sector with Kerrs Creek Wind Farm turbines
- 60° sector with Aquila Wind turbines
- 60° sector with Kerrs Creek Wind Farm and Aquila Wind turbines

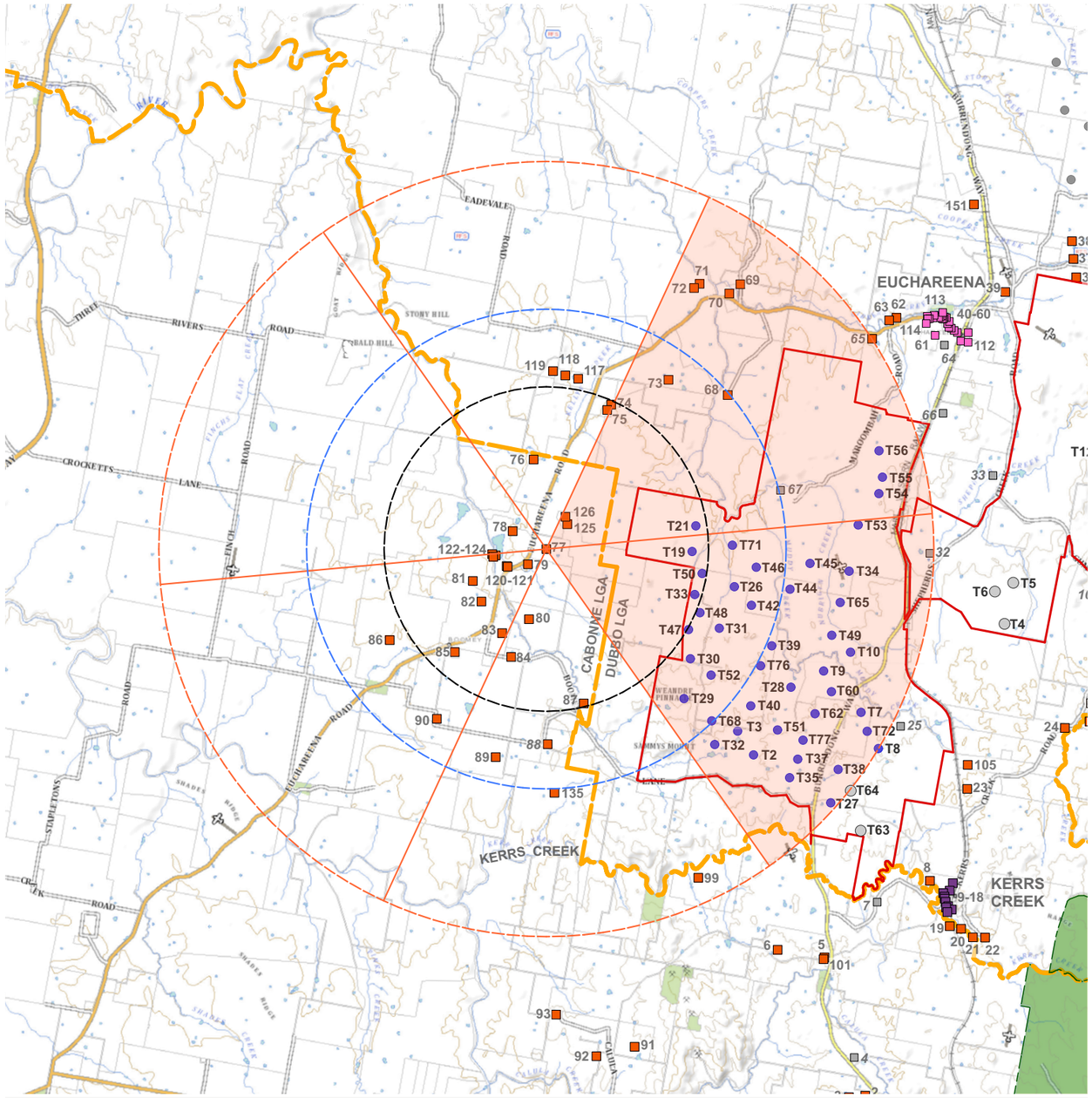


LEGEND

- Direction of visible Aquila Wind turbines (within 8000 m)
- Extent of visible Aquila Wind turbines (within 8000 m)
- Direction of visible Kerrs Creek Wind turbines (within 8000 m)
- Extent of visible Kerrs Creek Wind turbines (within 8000 m)

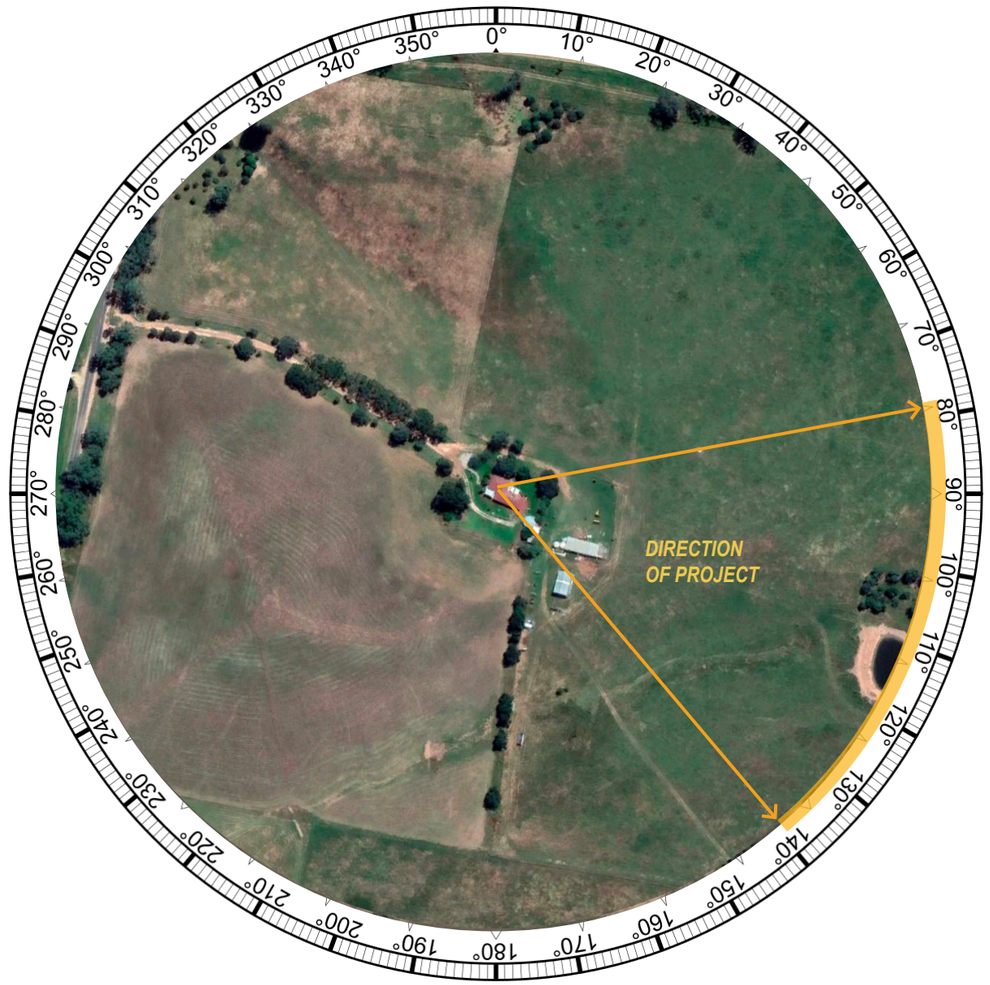
Summary of Preliminary Assessment Tools:	
Distance to Nearest Turbine: (Kerrs Creek)	**4.07 km (T29)**
Number of proposed turbines within Black Line (3,750 m):	**0**
Number of theoretical 60º sectors (Based on 2D assessment):	**Two (2) Sectors**
Number of potentially visible turbines: (Based on Topography alone)	**41 Turbine All at hub**

Dwelling 77 Preliminary Assessment Tools



LEGEND

- Project Boundary
- Proposed Turbine Location (Kerrs Creek)
- Proposed Turbine Location in excess of 8000 m from dwelling (Kerrs Creek)
- Proposed Turbine (Aquila Wind)
- 3,750 m from nearest turbine (Black Line)
- 5,500 m from nearest turbine (Blue Line)
- 8,000 m from nearest turbine
- Involved Dwelling
- Non-involved Dwelling
- Non-involved Dwelling (Kerrs Creek)
- Non-involved Dwelling (Euchareena)
- 60° sector
- 60° sector with Kerrs Creek Wind Farm turbines
- 60° sector with Aquila Wind turbines
- 60° sector with Kerrs Creek Wind Farm and Aquila Wind turbines

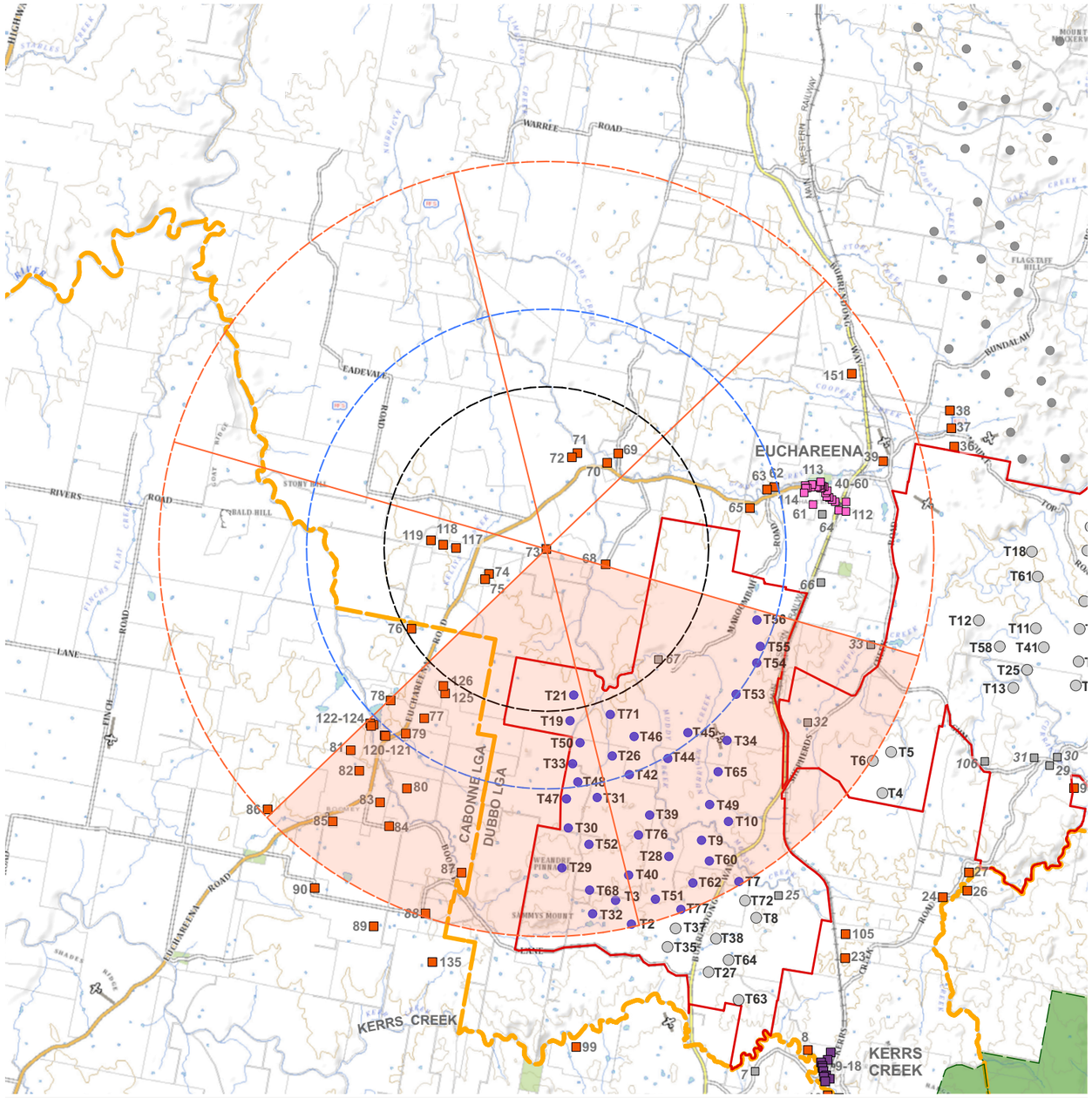


LEGEND

- Direction of visible Aquila Wind turbines (within 8000 m)
- Extent of visible Aquila Wind turbines (within 8000 m)
- Direction of visible Kerrs Creek Wind turbines (within 8000 m)
- Extent of visible Kerrs Creek Wind turbines (within 8000 m)

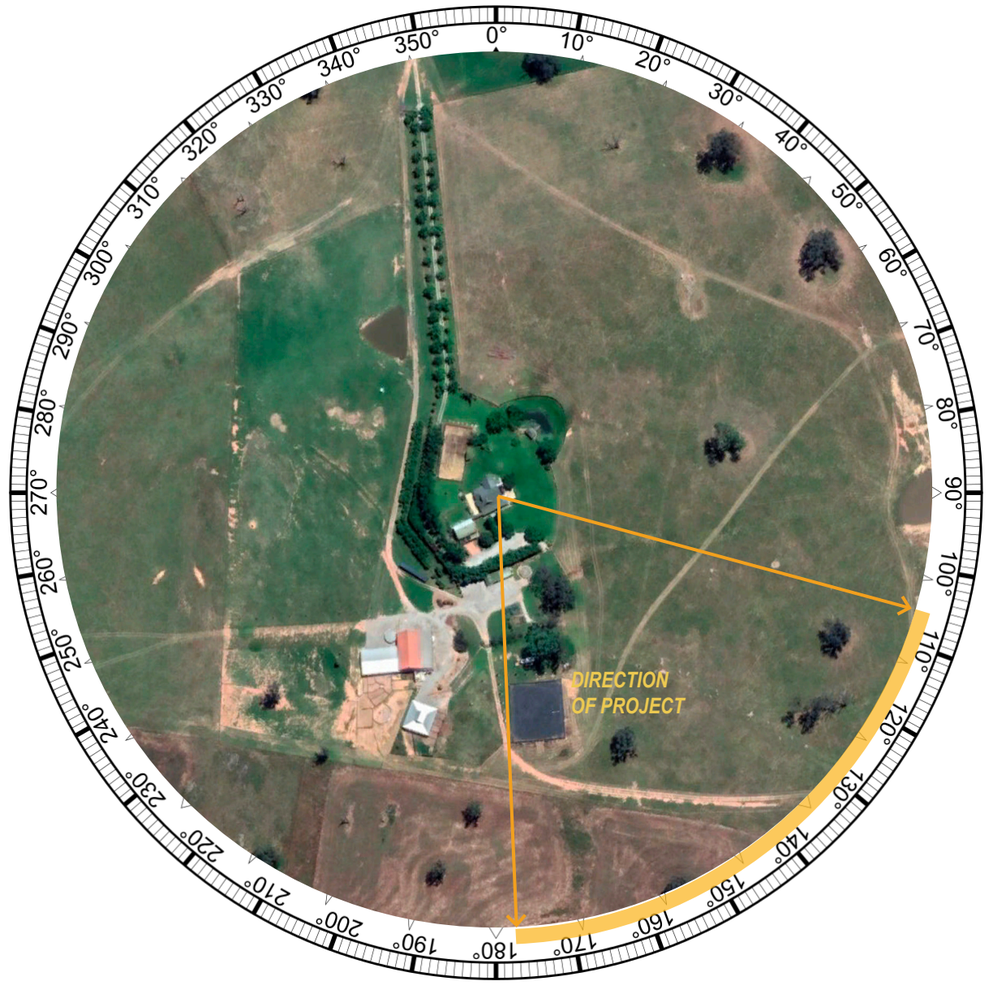
Summary of Preliminary Assessment Tools:	
Distance to Nearest Turbine: (Kerrs Creek)	**3.00 km (T19)**
Number of proposed turbines within Black Line (3,750 m):	**4**
Number of theoretical 60º sectors (Based on 2D assessment):	**Two (2) Sectors**
Number of potentially visible turbines: (Based on Topography alone)	**37 Turbine 23 at Hub 14 at Blade Tip**

Dwelling 73 Preliminary Assessment Tools



LEGEND

- Project Boundary
- Proposed Turbine Location (Kerrs Creek)
- Proposed Turbine Location in excess of 8000 m from dwelling (Kerrs Creek)
- Proposed Turbine (Aquila Wind)
- 3,750 m from nearest turbine (Black Line)
- 5,500 m from nearest turbine (Blue Line)
- 8,000 m from nearest turbine
- Involved Dwelling
- Non-involved Dwelling
- Non-involved Dwelling (Kerrs Creek)
- Non-involved Dwelling (Euchareena)
- 60° sector
- 60° sector with Kerrs Creek Wind Farm turbines
- 60° sector with Aquila Wind turbines
- 60° sector with Kerrs Creek Wind Farm and Aquila Wind turbines

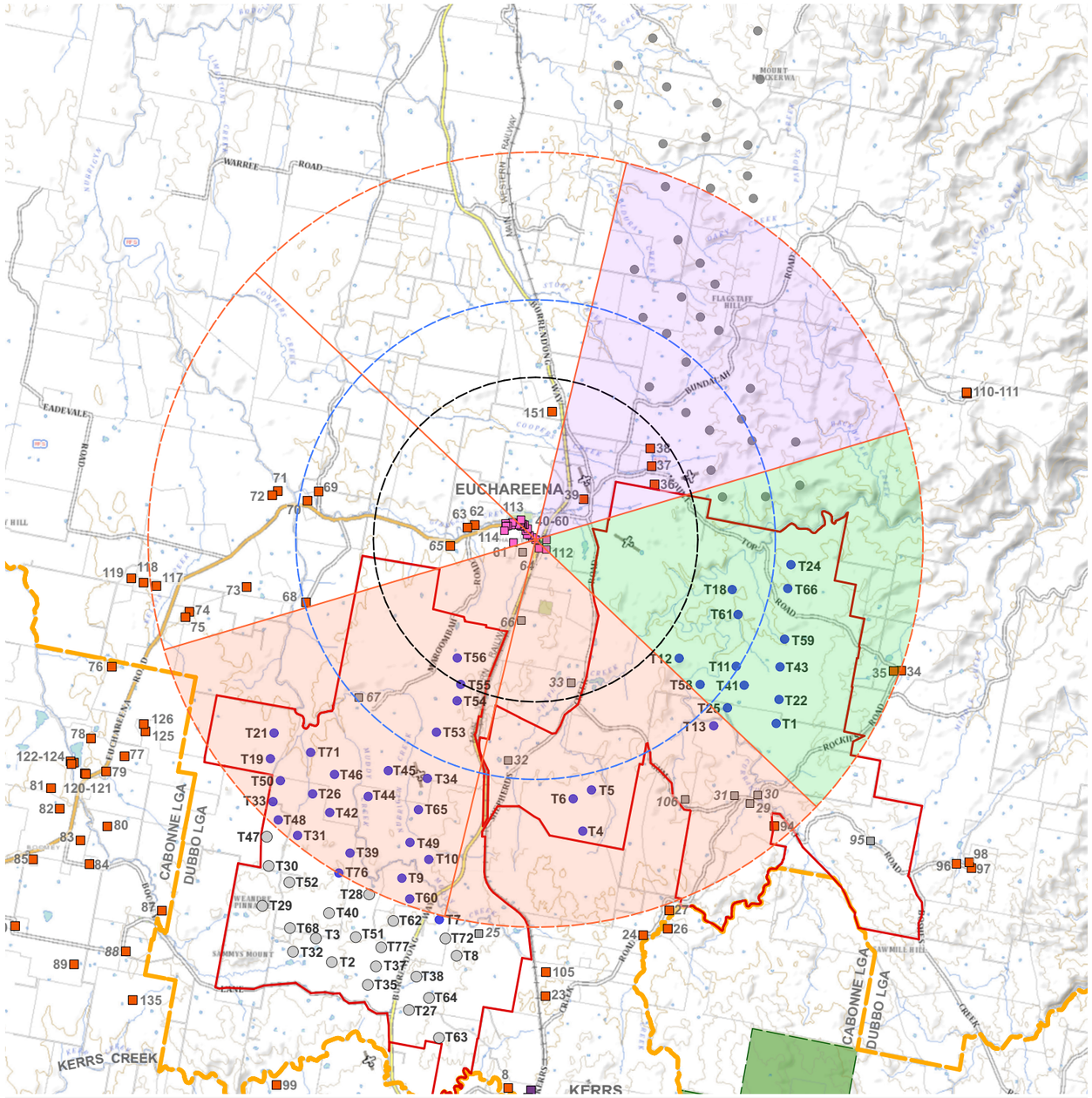


LEGEND

- Direction of visible Aquila Wind turbines (within 8000 m)
- Extent of visible Aquila Wind turbines (within 8000 m)
- Direction of visible Kerrs Creek Wind turbines (within 8000 m)
- Extent of visible Kerrs Creek Wind turbines (within 8000 m)

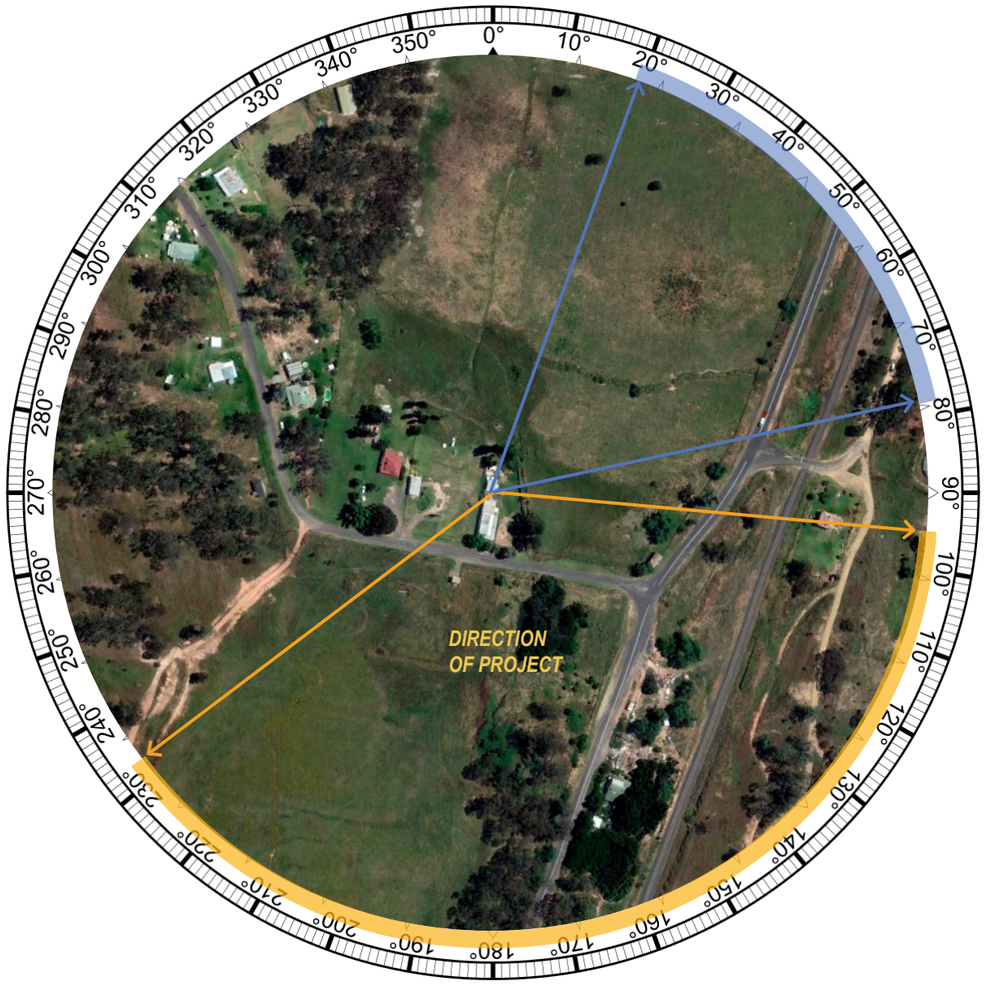
Summary of Preliminary Assessment Tools:	
Distance to Nearest Turbine: (Kerrs Creek)	**3.08 km (T21)**
Number of proposed turbines within Black Line (3,750 m):	**1**
Number of theoretical 60º sectors (Based on 2D assessment):	**Two (2) Sectors**
Number of potentially visible turbines: (Based on Topography alone)	**38 Turbine All at hub**

Dwelling 42 Preliminary Assessment Tools



LEGEND

- Project Boundary
- Proposed Turbine Location (Kerrs Creek)
- Proposed Turbine Location in excess of 8000 m from dwelling (Kerrs Creek)
- Proposed Turbine (Aquila Wind)
- 3,750 m from nearest turbine (Black Line)
- 5,500 m from nearest turbine (Blue Line)
- 8,000 m from nearest turbine
- Involved Dwelling
- Non-involved Dwelling
- Non-involved Dwelling (Kerrs Creek)
- Non-involved Dwelling (Euchareena)
- 60° sector
- 60° sector with Kerrs Creek Wind Farm turbines
- 60° sector with Aquila Wind turbines
- 60° sector with Kerrs Creek Wind Farm and Aquila Wind turbines

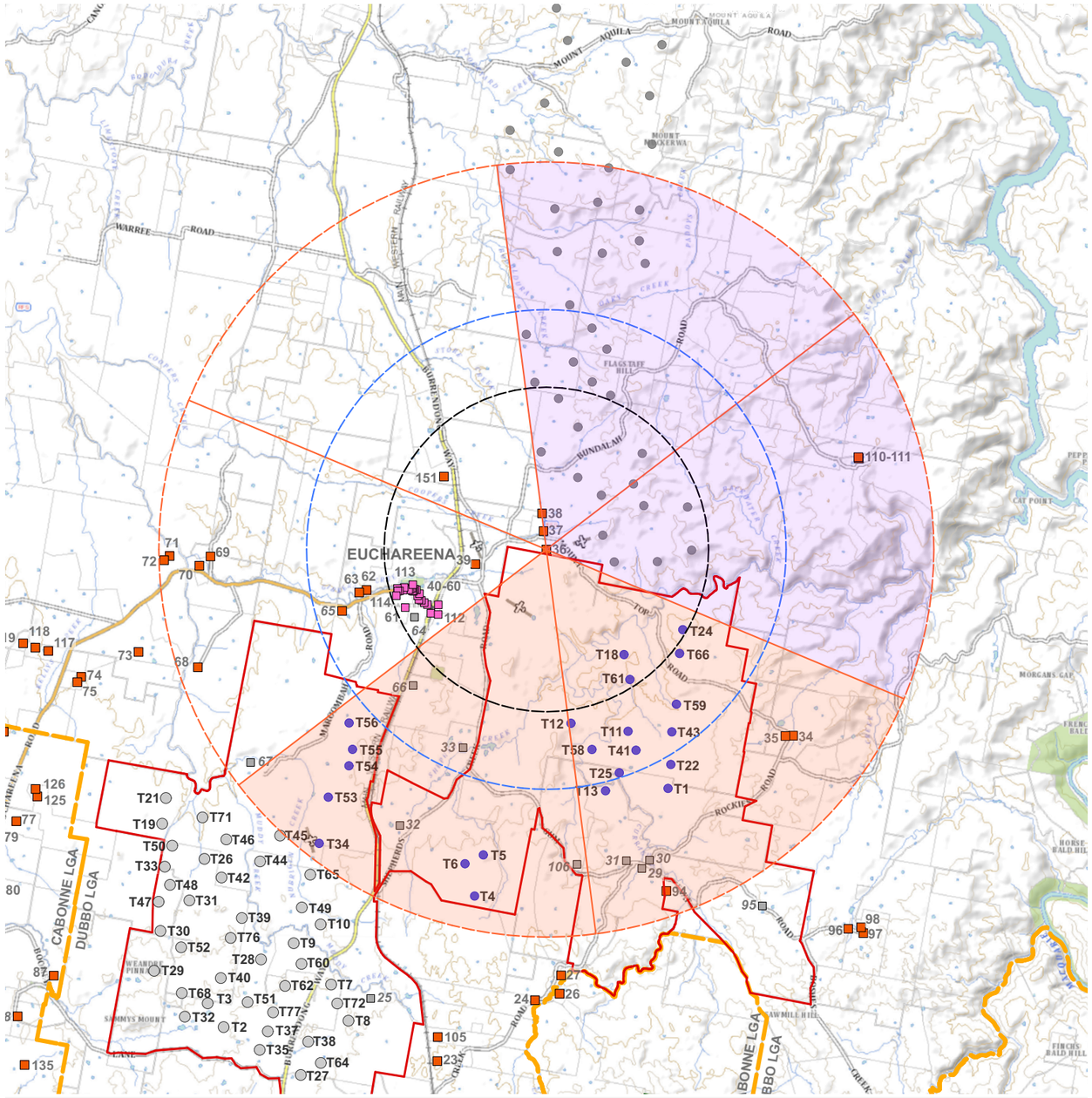


LEGEND

- Direction of visible Aquila Wind turbines (within 8000 m)
- Extent of visible Aquila Wind turbines (within 8000 m)
- Direction of visible Kerrs Creek Wind turbines (within 8000 m)
- Extent of visible Kerrs Creek Wind turbines (within 8000 m)

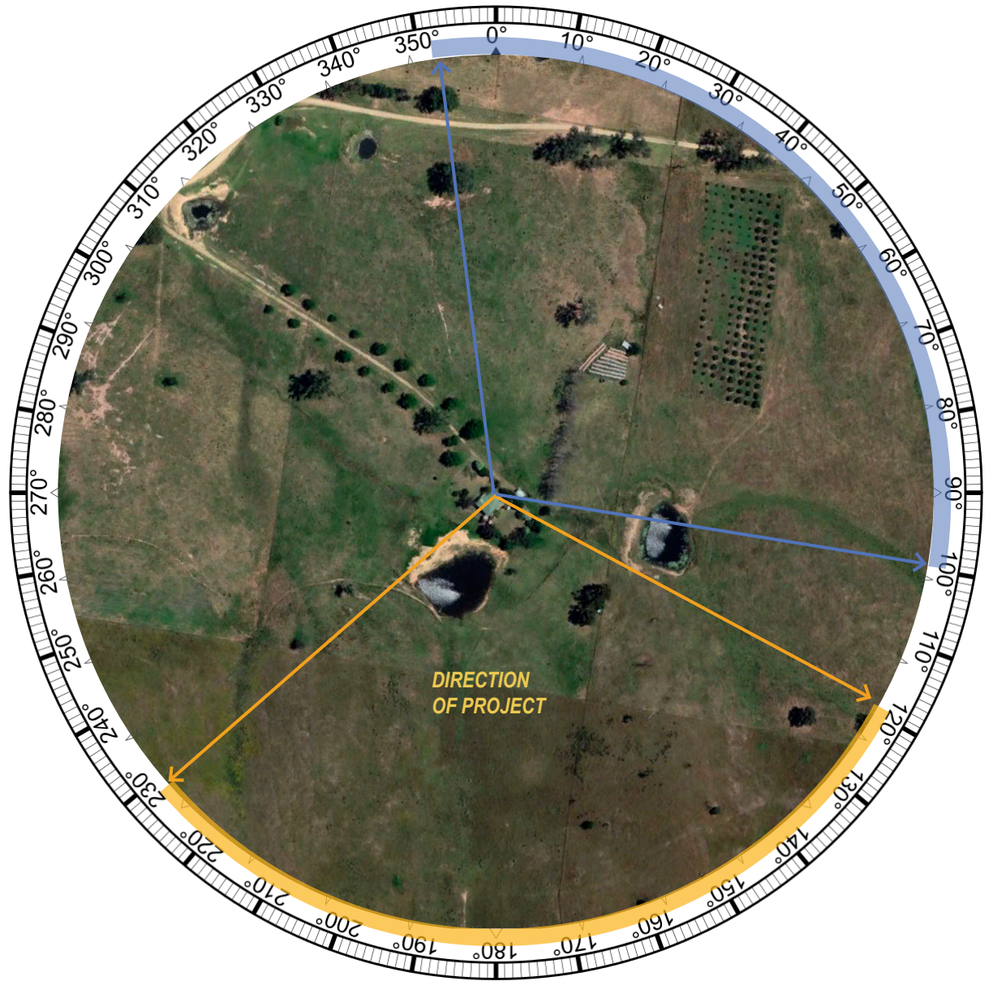
Summary of Preliminary Assessment Tools:	
Distance to Nearest Turbine: (Kerrs Creek)	**2.89 km (T56)**
Number of proposed turbines within Black Line (3,750 m):	**2**
Number of theoretical 60º sectors (Based on 2D assessment):	**Two (2) Sectors [Kerrs Creek Wind Farm] One (1) Sector [Aquila Wind] One (1) Sector [Kerrs Creek and Aquila Wind]**
Number of potentially visible turbines: (Based on Topography alone)	**22 [Kerrs Creek Wind Farm] 21 [Aquila Wind]**

Dwelling 36 Preliminary Assessment Tools



LEGEND

- Project Boundary
- Proposed Turbine Location (Kerrs Creek)
- Proposed Turbine Location in excess of 8000 m from dwelling (Kerrs Creek)
- Proposed Turbine (Aquila Wind)
- 3,750 m from nearest turbine (Black Line)
- 5,500 m from nearest turbine (Blue Line)
- 8,000 m from nearest turbine
- Involved Dwelling
- Non-involved Dwelling
- Non-involved Dwelling (Kerrs Creek)
- Non-involved Dwelling (Euchareena)
- 60° sector
- 60° sector with Kerrs Creek Wind Farm turbines
- 60° sector with Aquila Wind turbines
- 60° sector with Kerrs Creek Wind Farm and Aquila Wind turbines

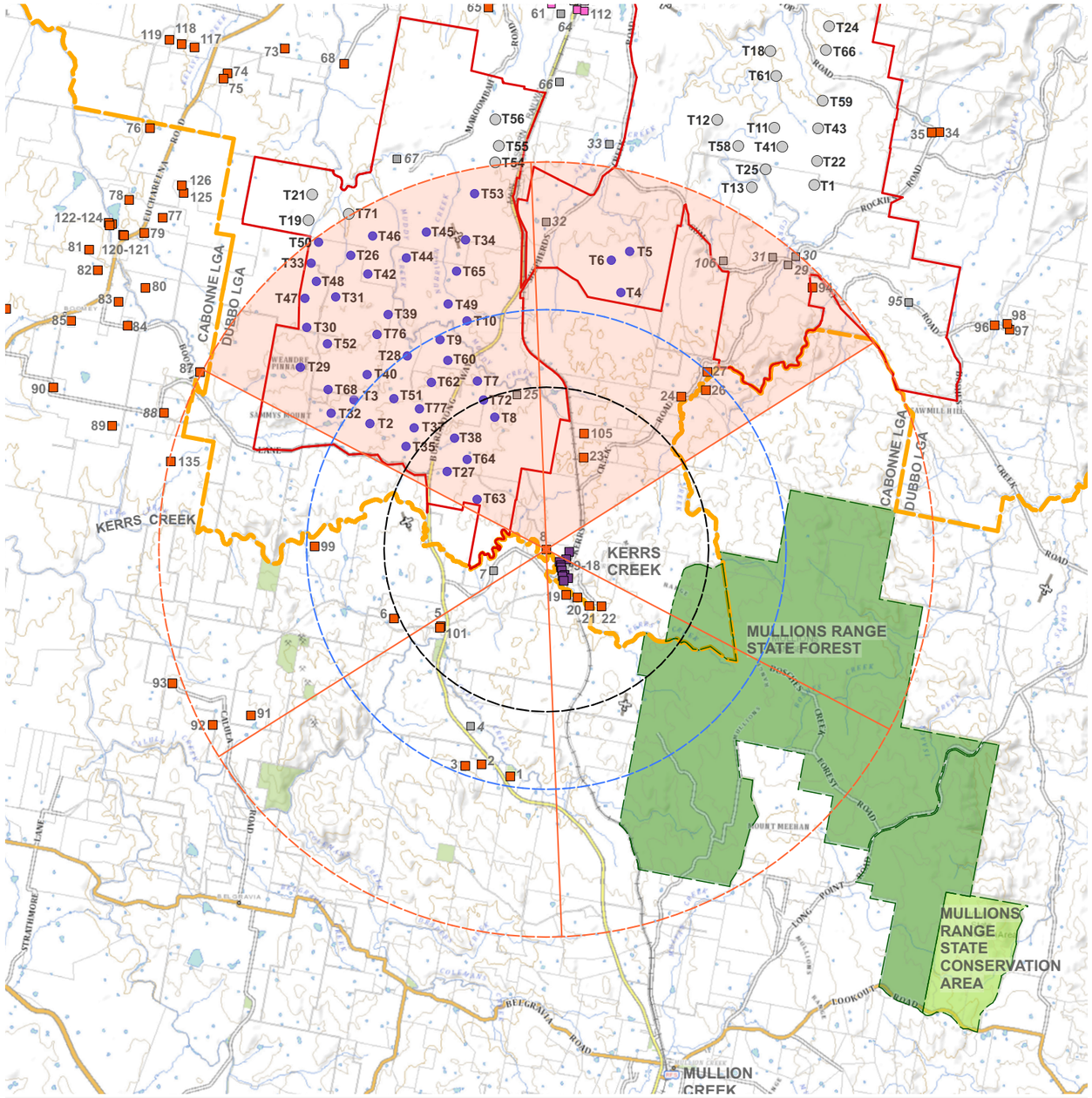


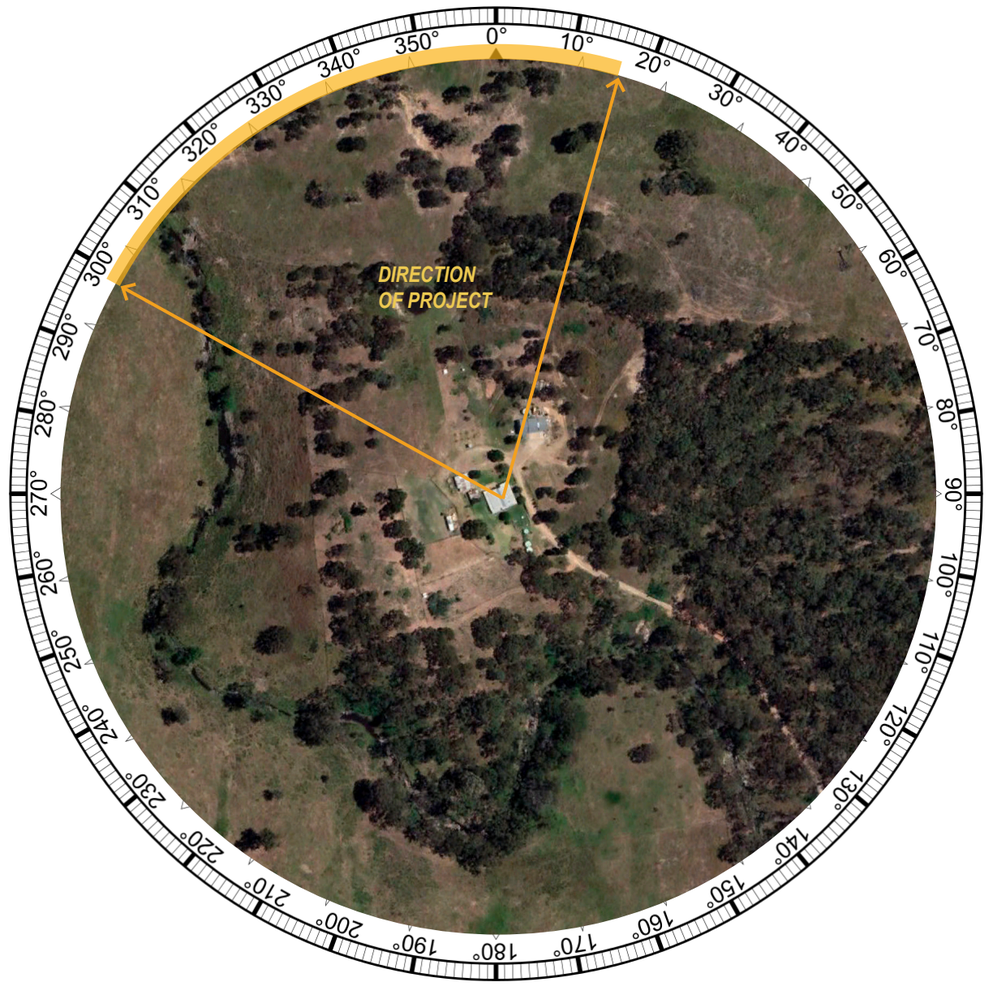
LEGEND

- Direction of visible Aquila Wind turbines (within 8000 m)
- Extent of visible Aquila Wind turbines (within 8000 m)
- Direction of visible Kerrs Creek Wind turbines (within 8000 m)
- Extent of visible Kerrs Creek Wind turbines (within 8000 m)

Summary of Preliminary Assessment Tools:	
Distance to Nearest Turbine: (Kerrs Creek)	**2.70 km (T18)**
Number of proposed turbines within Black Line (3,750 m):	**3**
Number of theoretical 60º sectors (Based on 2D assessment):	**Two (2) Sector [Kerrs Creek Wind Farm]** **Two (2) Sector [Aquila Wind]**
Number of potentially visible turbines: (Based on Topography alone)	**20 [Kerrs Creek Wind Farm]** **29 [Aquila Wind]**

Dwelling 8 Preliminary Assessment Tools



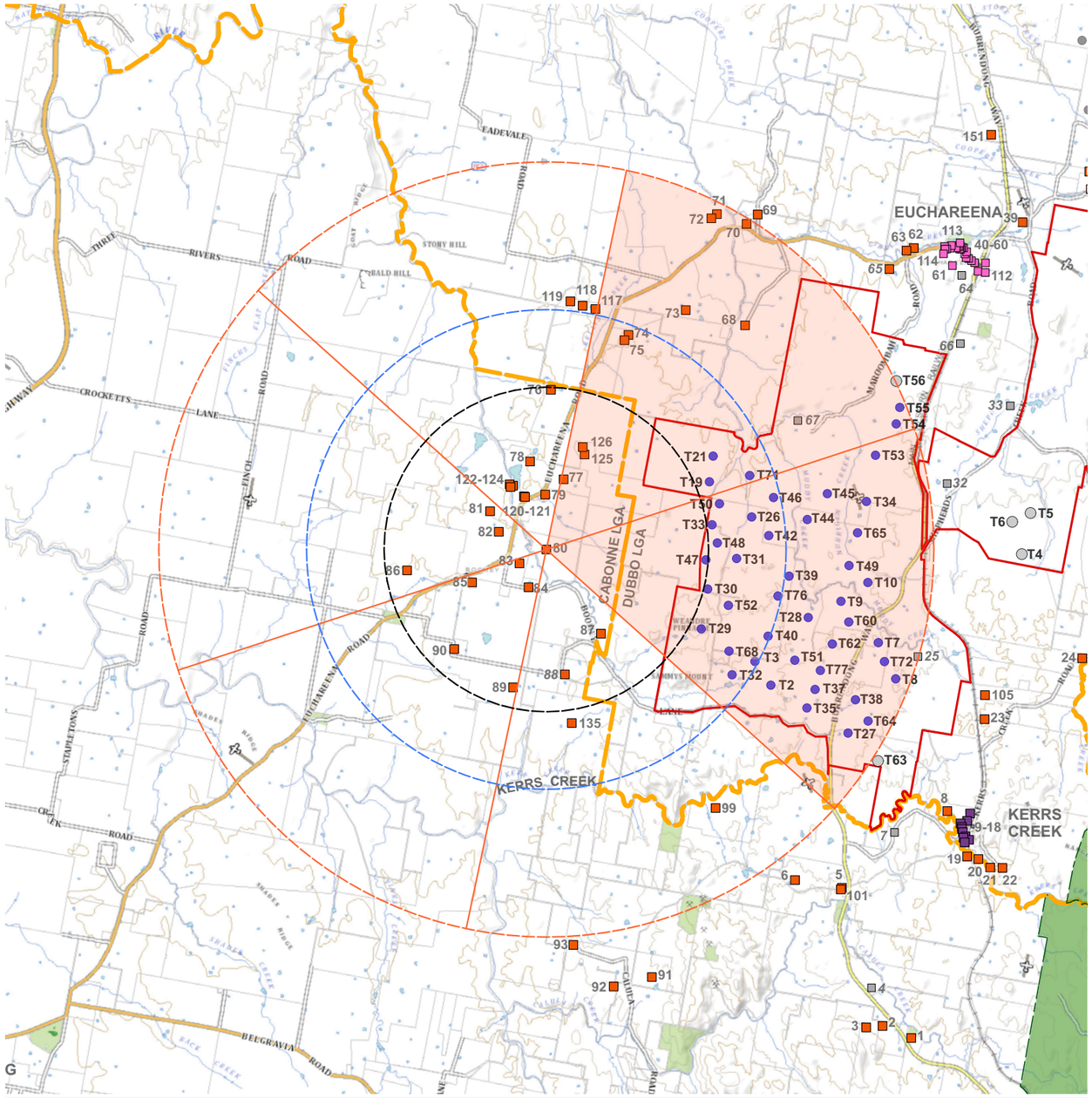


LEGEND

- Direction of visible Aquila Wind turbines (within 8000 m)
- Extent of visible Aquila Wind turbines (within 8000 m)
- Direction of visible Kerrs Creek Wind turbines (within 8000 m)
- Extent of visible Kerrs Creek Wind turbines (within 8000 m)

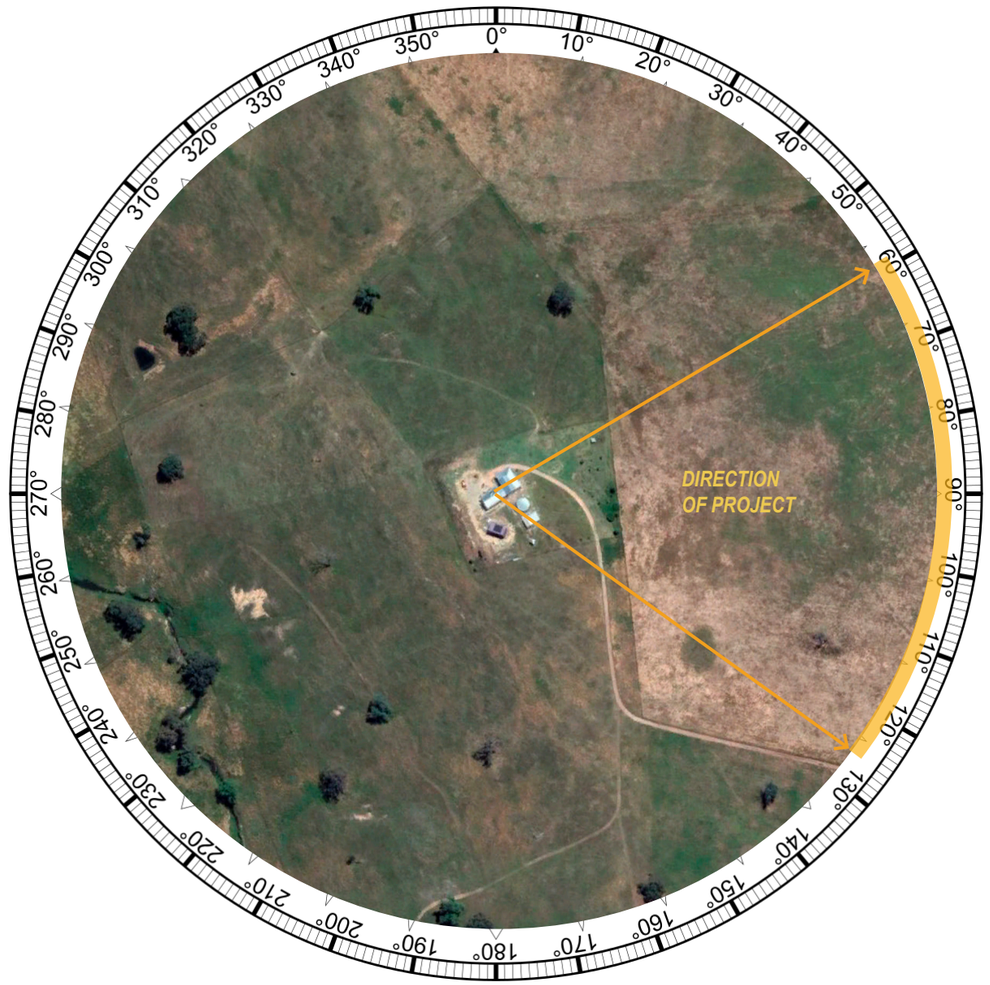
Summary of Preliminary Assessment Tools:	
Distance to Nearest Turbine: (Kerrs Creek)	**1.76 km (T63)**
Number of proposed turbines within Black Line (3,750 m):	**6**
Number of theoretical 60º sectors (Based on 2D assessment):	**Two (2) Sectors**
Number of potentially visible turbines: (Based on Topography alone)	**43 Turbine** **37 at Hub** **6 at Blade Tip**

Dwelling 80 Preliminary Assessment Tools



LEGEND

- Project Boundary
- Proposed Turbine Location (Kerrs Creek)
- Proposed Turbine Location in excess of 8000 m from dwelling (Kerrs Creek)
- Proposed Turbine (Aquila Wind)
- 3,750 m from nearest turbine (Black Line)
- 5,500 m from nearest turbine (Blue Line)
- 8,000 m from nearest turbine
- Involved Dwelling
- Non-involved Dwelling
- Non-involved Dwelling (Kerrs Creek)
- Non-involved Dwelling (Euchareena)
- 60° sector
- 60° sector with Kerrs Creek Wind Farm turbines
- 60° sector with Aquila Wind turbines
- 60° sector with Kerrs Creek Wind Farm and Aquila Wind turbines



LEGEND

- Direction of visible Aquila Wind turbines (within 8000 m)
- Extent of visible Aquila Wind turbines (within 8000 m)
- Direction of visible Kerrs Creek Wind turbines (within 8000 m)
- Extent of visible Kerrs Creek Wind turbines (within 8000 m)

Summary of Preliminary Assessment Tools:	
Distance to Nearest Turbine: (Kerrs Creek)	**3.29 km (T47)**
Number of proposed turbines within Black Line (3,750 m):	**1**
Number of theoretical 60º sectors (Based on 2D assessment):	**Two (2) Sectors**
Number of potentially visible turbines: (Based on Topography alone)	**44 Turbine All at hub**

Appendix C

Community Consultation Material

C.1 Preliminary Landscape Character Assessment

KERRS CREEK WIND FARM | PRELIMINARY LANDSCAPE CHARACTER ASSESSMENT

LEGEND:

SITE INVESTIGATION AREA

LANDSCAPE FEATURES:

TOWN / VILLAGE

RIVER / CREEK

STATE FOREST

CONSERVATION AREA

VIEWPOINTS:

RECREATION

CULTURAL HERITAGE

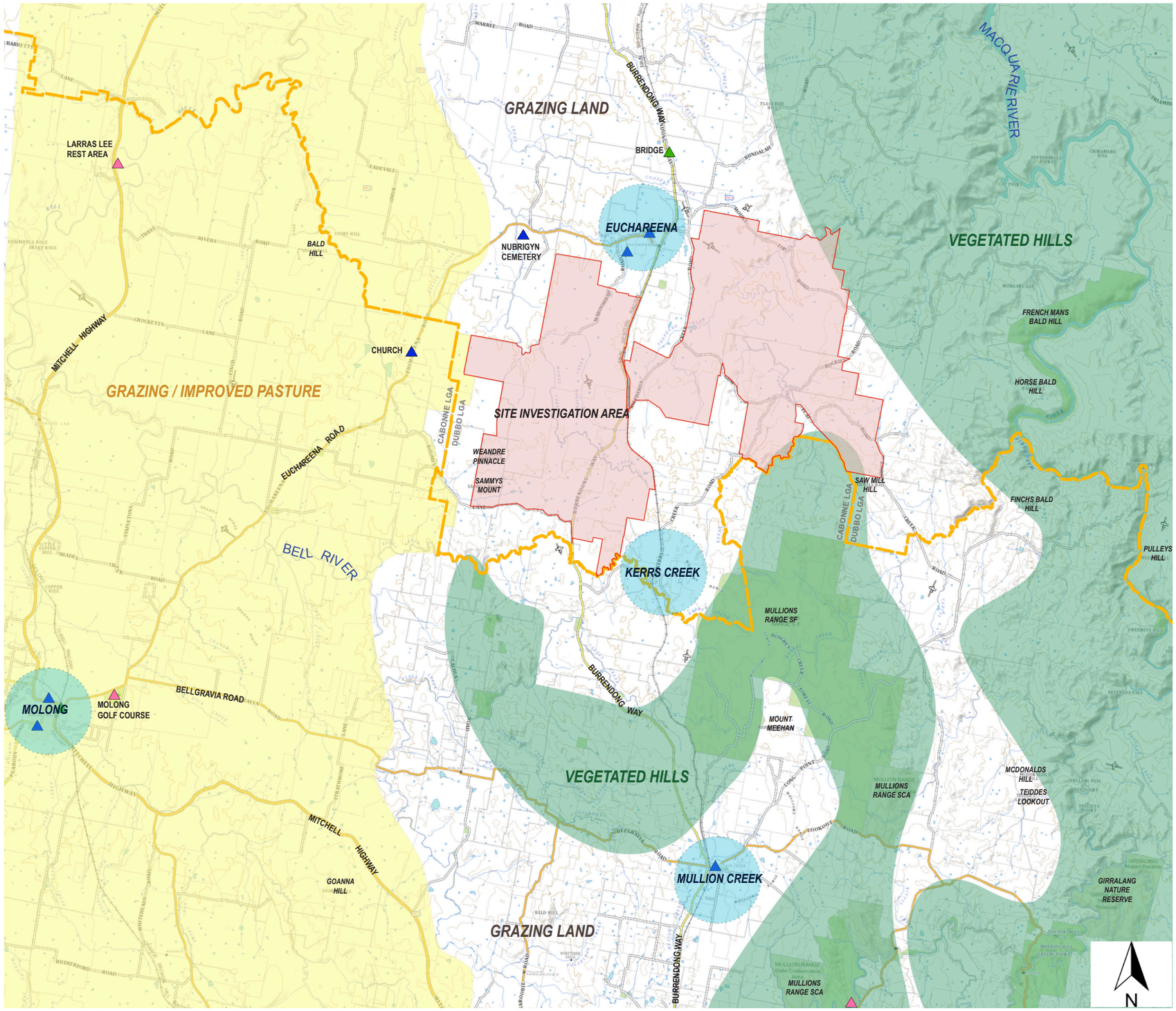
LANDMARK

LANDSCAPE CHARACTER TYPES:

VEGETATED HILLS

GRAZING / IMPROVED PASTURE

GRAZING LAND



C.2 Landscape Values Questionnaire

Kerrs Creek Wind Farm
Landscape Values Questions for Community Consultation

1. Which of the following best describes where you live:

- ○ Kerrs Creek
- ○ Euchareena
- ○ Molong
- ○ Mullion Creek
- ○ Orange
- ○ Outside of Central Tablelands
- ○ Other (Please specify) _____

2. What do you value most about your local area? *(Please select one or more)*

- ○ Local history
- ○ Farming
- ○ Recreation opportunities
- ○ Employment opportunities
- ○ Community / Family
- ○ Cultural Heritage
- ○ Other (Please specify) _____

3. Based on your current understanding of renewable energy, what do you believe are the most positive benefits of the project? *(Please select one or more)*

- ○ Job creation
- ○ Investment in the local community
- ○ Land use diversification
- ○ Clean energy
- ○ Increase in tourism
- ○ Road upgrades
- ○ Visual appeal
- ○ Other (Please specify) _____

4. Based on your current understanding of renewable energy and the project, what are your main concerns? *(Please select one or more)*

- ○ Noise
- ○ Traffic
- ○ Visual
- ○ Effects on land use
- ○ Effects on flora and fauna
- ○ No concerns
- ○ Other (Please specify) _____

5. In your opinion what are the key landscape features in the area?

(Note these can include natural features such as a distinct mountain peak or cultural features such as an iconic church)

_____

_____

_____

_____

6. What are the best lookouts / public viewing locations within the study area and its surrounds?
(If you have a visitor, where do you take them to showcase your local area?)

_____

_____

_____

7. Please rate the scenic value of the following landscape features:

(The high = most valued)

Feature	Low	Moderate	High
Grazing Land	○	○	○
Bushland Areas	○	○	○
Rivers / Creeks	○	○	○
Vegetation	○	○	○
Hills	○	○	○
Ridgelines	○	○	○
Townships	○	○	○