

# Burrendong Wind Farm Amendment Report

## **APPENDIX D**

Landscape and Visual Impact Assessment (LVIA)  
Addendum Report





**moir** STUDIO

**Burrendong Wind Farm**  
Response to Submissions:  
Landscape and Visual Impact Assessment

# Burrendong Wind Farm

## Response to Submissions:

## Landscape and Visual Impact Assessment

Prepared for  
Eco Logical Australia

Issue  
H

Date  
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Project Number  
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**Appendix A: Additional Dwelling & Building Assessments**

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**Appendix D: Revised Table - Dwellings within Black and Blue Line of Visual Magnitude**

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# 1.0 Introduction

## 1.1 Purpose of this Report

The purpose of this Addendum report is to provide additional information relevant to the Landscape and Visual Impact Assessment (LVIA) prepared by Moir Landscape Architecture Pty Ltd (Moir Studio) for the Burrendong Wind Farm Project (SSD-10471) referred to hereafter as ‘the Project’.

The LVIA was prepared for the Project by Moir Studio, forming part of the Environmental Impact Statement (EIS) lodged in October 2023. The EIS was on public exhibition for 34 days (from Thursday 16th November 2023 until Wednesday 20th December 2023).

This Addendum report provides an overview of changes made to the Project since EIS exhibition, responses to submissions made during the public exhibition phase. Since the EIS submission, changes have been made to the status of two (2) dwellings and three (3) additional dwellings were identified. An overview of these dwellings and updates to the findings of the preliminary assessment tools are provided in **Section 2.0**.

Overview of Submissions	
Submission	Response
<b>Cumulative Visual Impacts with Piambong Wind Farm</b>	At the time of submission, the Piambong Wind Farm had not lodged a scoping report and a cumulative impacts were not considered. An assessment has been provided in <b>Section 3.0</b> . It is noted that due to the timing of the EIS lodgement, the Piambong Wind Farm will require detailed assessment of cumulative visual impacts.
<b>Aviation Hazard Lighting</b>	At the time of EIS lodgement Aviation Hazard Lighting was deemed unnecessary by the Aviation Consultant. The Civil Aviation Safety Authority (CASA) have reviewed the Project during the exhibition phase and provided recommendations for Aviation Hazard Lighting. Commentary on the proposed requirements have been included in <b>Section 4.0</b> .
<b>Public Submissions</b>	<p>Additional information and responses to public submissions have been provided in this report. The general themes of the submissions have been outlined below and addressed in <b>Section 5.0</b>.</p> <p><b>LVIA Methodology:</b> A number of submissions were made regarding the methodology used to complete the Landscape and Visual Impact Assessment. These include questions relating to:</p> <ul style="list-style-type: none"> <li>- Landscape Character Assessment process</li> <li>- Photomontage Preparation methodology</li> </ul> <p><b>Worlds End:</b> A number of submissions were made regarding the visual impact on dwellings associated with Worlds End Road. Additional information has been provided to demonstrate how the project layout was refined to reduce visual impacts on dwellings associated with the Worlds End Road area. Multiple references were made regarding Dwelling U8-1.</p> <p><b>Dwelling Definitions:</b> Submission were received with concern dwellings being omitted from the LVIA report. Moir LA prepared the LVIA with dwelling data received from Ark Energy.</p>
<b>Assessment of Dwelling X20-2</b>	One (1) additional non-involved dwelling (X20-2) was identified by a landowner. A detailed assessment of X20-2 has been provided as <b>Appendix A</b> . The Assessment has been undertaken in accordance with the Visual Assessment Bulletin (2016) and demonstrates the Project meets the visual performance objectives from this dwelling. The landowner and a number of other submissions communicated specific concern regarding the visual impact resulting from WTGs 67, 68, 69 and 70 from this property. It is noted these turbines will be screened by a combination of topography and vegetation from this dwelling.
<b>Assessment of Dwelling X18-2, T23-1 &amp; U24-1</b>	Three (3) non-involved dwellings that were not previously assessed have been assessed in this Addendum.

**Table 1 Overview of Submissions relevant to the Landscape and Visual Impact Assessment**

# 2.0 Updates to Dwelling Status

## 2.1 Overview of Updates to Dwelling Status

Since the EIS submission, two (2) previously non-involved dwellings have agreements and their status has changed to 'involved' (Dwelling Q13-1 and Dwelling R14-1). Two (2) previously involved dwellings have had agreements terminated and their status has changed to non-involved (Dwelling P23-1 and Q23-1), an assessment of P23-1 and Q23-1 can be found in Appendix A.

Four (4) additional non-involved dwellings (X18-2, X20-2, U24-1 and T23-1) were identified. An overview of the revised outcomes is presented in **Table 2**. An assessment of the additional non-involved dwellings have been provided in **Appendix A**.

Amendments to Dwelling Status		
Dwelling:	Revised Status:	Notes:
Q13-1	Involved	Previously non-involved and within black line of visual magnitude. Agreement with landowner since lodgement of EIS.
R14-1	Involved	Previously non-involved and within black line of visual magnitude. Agreement with landowner since lodgement of EIS.
X20-2	Non-involved	Additional dwelling identified by landowner post EIS submission. <b>Refer to Appendix A.</b>
X18-2	Non-involved	Additional dwelling identified by landowner post EIS submission. <b>Refer to Appendix A.</b>
T23-1	Non-involved	Additional dwelling previously not assessed due to being in an uninhabitable state and considered a ruin. <b>Refer to Appendix A.</b>
U24-1	Non-involved	Additional dwelling not previously assessed. <b>Refer to Appendix A.</b>
P23-1	Non-involved	Previously involved, since the EIS the agreement with Landholder has been terminated due to no longer hosting turbines proposed in the early scoping of the project. <b>Refer to Appendix A.</b>
Q23-1	Non-involved	Previously involved, since the EIS the agreement with Landholder has been terminated due to no longer hosting turbines proposed in the early scoping of the project. <b>Refer to Appendix A.</b>

Table 2 Revised Dwelling Status

Appendix D provides an updated overview of non-involved dwellings located within the black and blue line of visual magnitude to reflect the amendments to dwelling status.

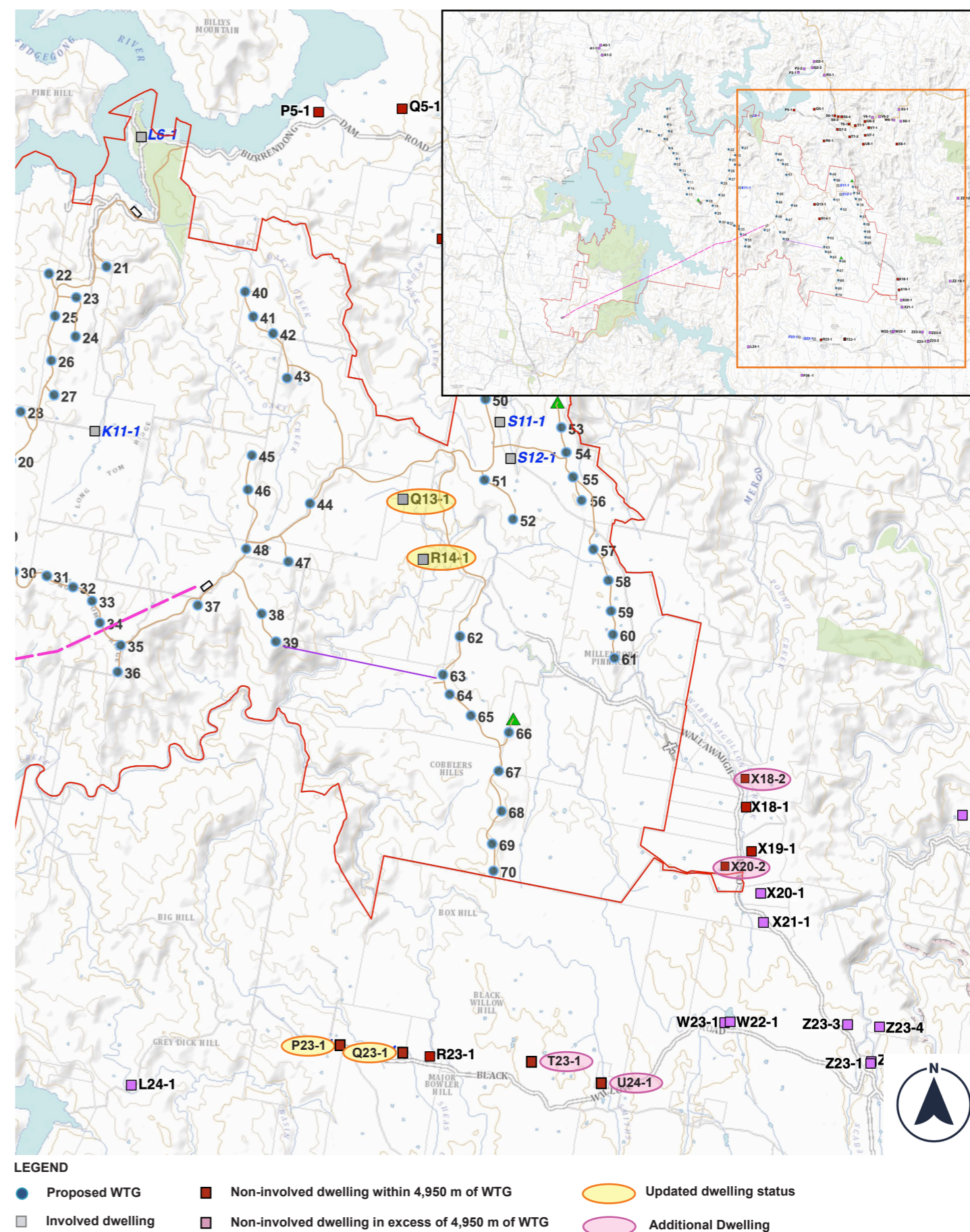


Figure 1 Revised Dwelling Status

## 2.2 Overview of Preliminary Assessment Tools

As a result of the updates dwelling statuses, the outcomes of the results of the preliminary assessment tools have been revised. The following tables provide an overview of the revised assessments.

### 2.2.1 Updated Visual Magnitude Tool Results

The application of the visual magnitude tool is based on a worst case scenario WTG tip height of 250 m. The 'black line' intersects at a distance of 3,350 metres, and the 'blue line' intersects at 4,950 metres on the visual magnitude graph (refer to Figure 5 in the Visual Assessment Bulletin).

As a result of the updates to dwelling status, there has been a reduction of the number of non-involved dwellings within the black line of visual magnitude (3,350 m). This is due to two (2) non-involved dwellings entering agreements (Dwelling R14-1 and Dwelling Q13-1) and the addition of X18-2.

There has been an increase of five (5) non-involved dwellings located within the blue line of visual magnitude (X20-2, T23-1, U24-1, P23-1 & Q23-1). Refer to **Table 3**.

Results of Revised Application of Visual Magnitude Tool			
Distance from the nearest turbine:	EIS Submission (2023):	Post EIS Submission (2026):	Variation:
Number of non-involved dwellings:			
Within Black Line of Visual Magnitude: 3,350 m	Four (4)	Three (3)	Reduction by one (1) non-involved dwellings
Between Black and Blue Line of Visual Magnitude: 3,350 - 4,950 m	16	21	Increase by five (5) non-involved dwellings

**Table 3. Results of Revised Visual Magnitude Tool**

### 2.2.2 Updated Multiple Wind Turbine Tool Results

The revised dwelling status results in the reduction of the number of non-involved dwellings with turbines located within multiple 60 degree sectors. **Table 4** below provides an overview of the reduction of the number of non-involved dwellings with turbines located in multiple 60 degree sectors.

Results of Revised Application of Multiple Wind Turbine Tool			
Number of 60 Degree Sectors with Turbines:	EIS Submission (2023):	Post EIS Submission (2026):	Variation:
Number of non-involved dwellings:			
Three (3) 60 Degree Sectors	3	3	No variation. Note: these results take into account 60 degree sectors associated with Uungula Wind Farm.
Five (5) 60 Degree Sectors	2	Nil	Reduction of two (2) non-involved dwellings

**Table 4. Results of Revised Multiple Wind Turbine Tool**

# 3.0 Cumulative Visual Impacts

## 3.1 Piambong Wind Farm

### 3.1.1 Overview of Piambong Wind Farm

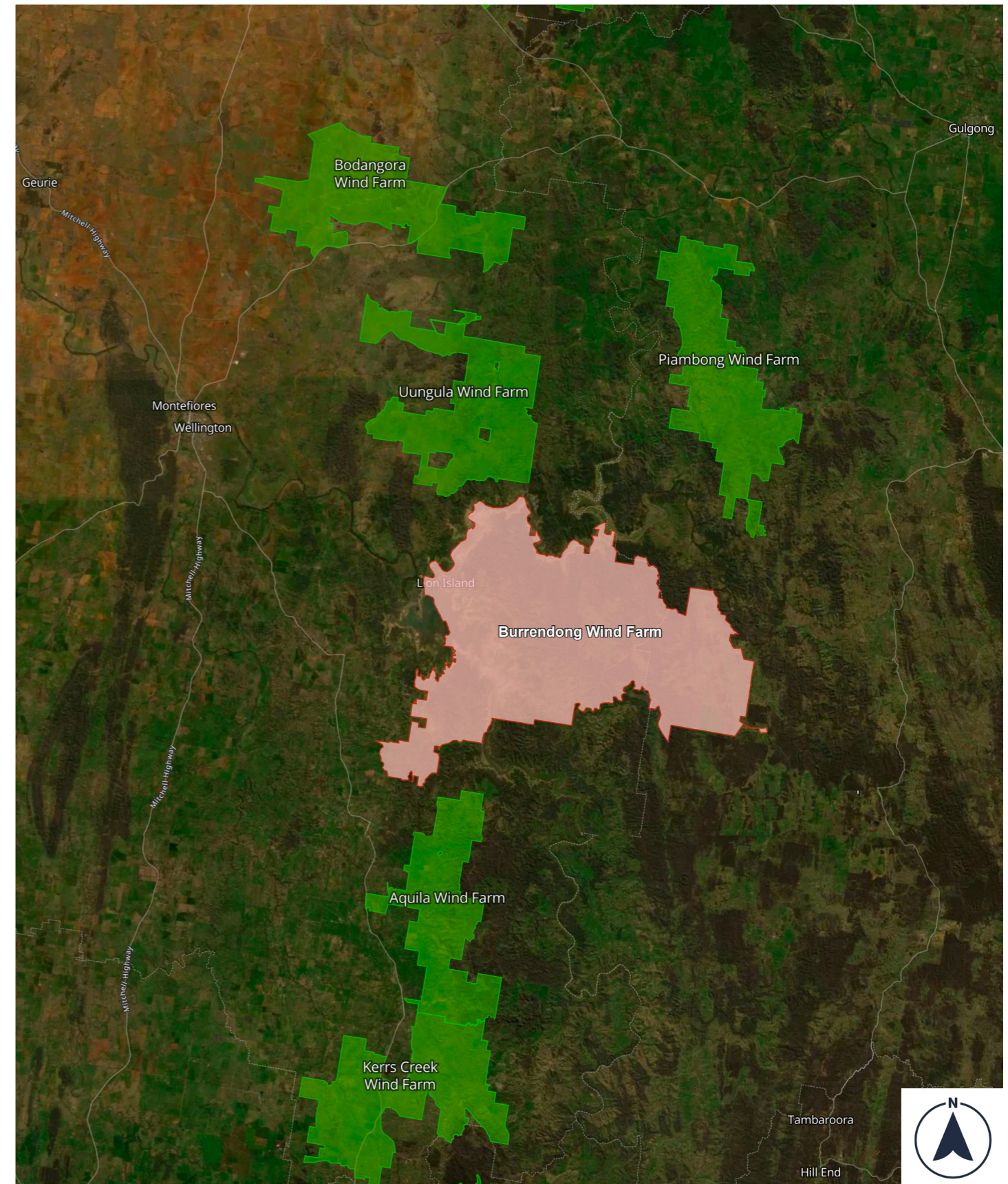
The proposed Piambong Wind Farm is located to the north east of the Project, to the north of Yarrabin Road and east of Twelve Mile Road (refer to **Figure 2**).

At the time of EIS submission for the Project, details regarding the turbine layout for Piambong Wind Farm were not publicly available. SEARs were issued for the Piambong Wind Farm on the 12th of December 2023. It is noted the Project was not considered in the Preliminary landscape and visual impact assessment prepared for the Scoping Report issued for the Piambong Wind Farm.

The proposal for the Piambong Wind Farm includes:

- the construction, operation and decommissioning of a wind farm with an estimated capacity of 551 megawatts (MW), up to 81 turbines and a maximum height of 230 metres (to blade tip);
- battery energy storage system up to 100 MW / 200 MWh; and
- ancillary infrastructure including access tracks, operational facilities, underground and overhead electricity cabling, substations, transmission line and grid connection to the transmission network (Source: Department of Planning and Environment, Planning Secretary's Environmental Assessment Requirements, 2023)

The cumulative visual impact assessment of the Piambong Wind Farm and the Project will be a requirement of the EIS Submission for the Piambong Wind Farm. Submissions were made regarding the assessment, this Addendum provides a high level overview of the potential cumulative impacts associated with the Project and Piambong Wind Farm.



**Figure 2** Location of Piambong Wind Farm (Source: RenewMap 2024)

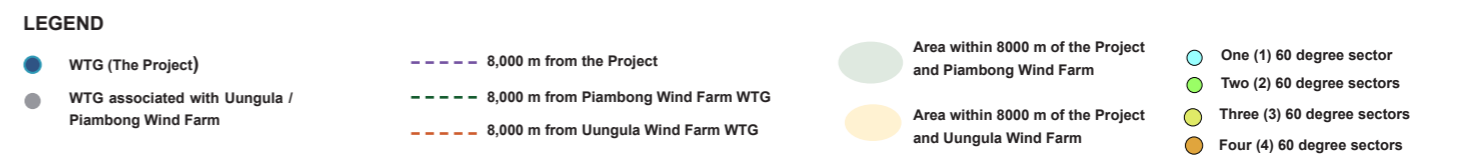
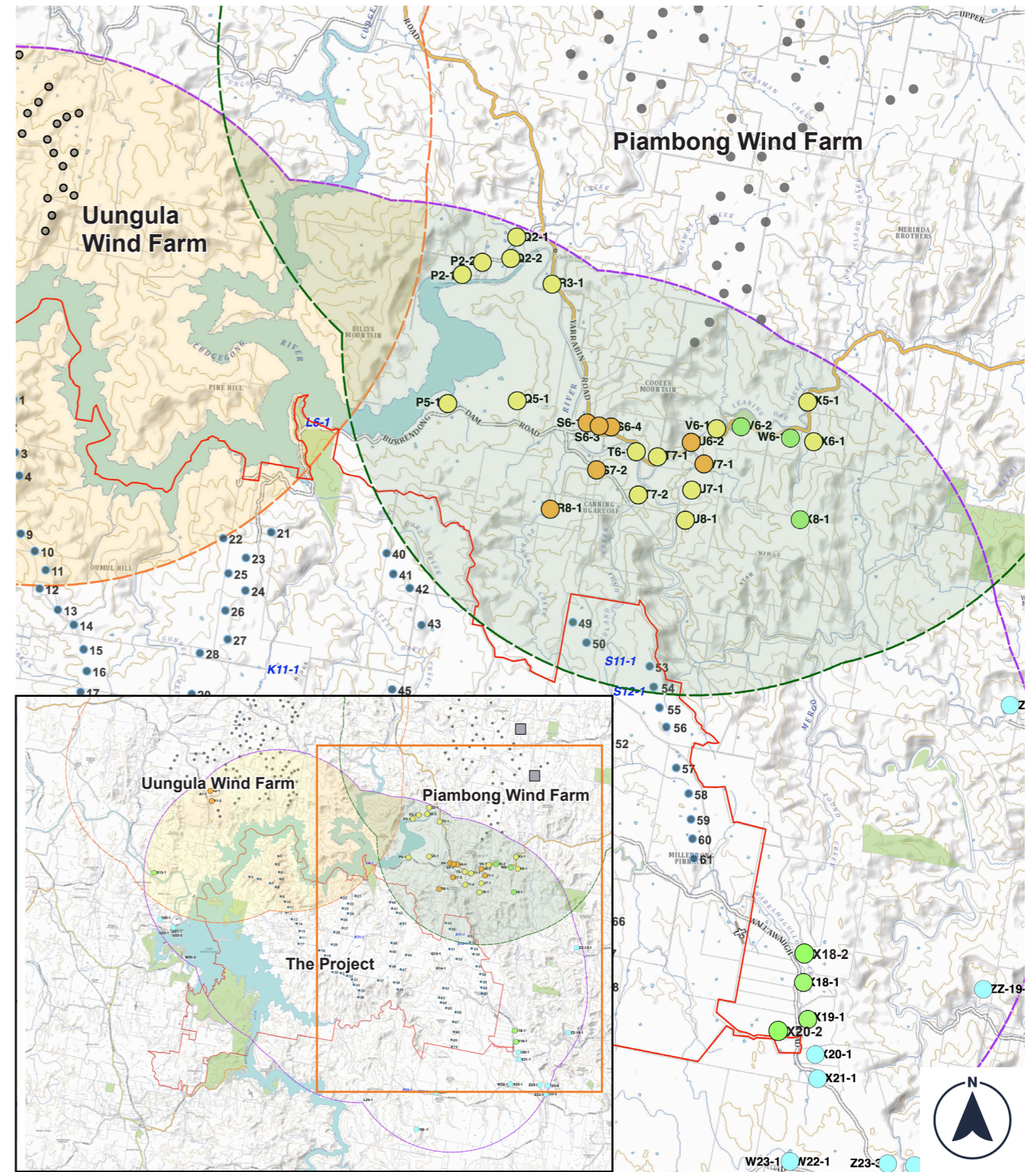
### 3.1.2 Application of MWTT to the Project and Piambong Wind Farm

The MWTT is applied to all non-involved dwellings within 8,000 m of the nearest WTG associated with each proposed wind energy project. 25 non-involved dwellings are located between the Project and Piambong Wind Farm. Of these 25 non-involved dwellings, nine (9) had one (1) 60 degree sector occupied, 16 had up to two (2) 60 degree sectors occupied.

When considering turbines associated with the Piambong Wind Farm, the Multiple Wind Turbine Tool (MWTT) results in an increased number of dwellings with WTGs occupying more than two (2) 60 degree sectors. There are no non-involved dwellings within 8,000 m of all three wind farm projects (the Project, Ungula Wind Farm and Piambong). Further assessment of the 25 non-involved dwellings identified will be undertaken in the Piambong Wind Farm EIS submission.

Results of Revised MWTT with Piambong Wind Farm WTGs						
Number of 60 degree sectors occupied by WTGs:	EIS Submission (2023):			Post EIS Submission (2024):	Variation:	
One (1) 60 Degree Sector	P2-1	Q2-2	X5-1	Nil	Reduction of 9 dwellings	
	P2-2	W6-1	X6-1			
	Q2-1	R3-1	V6-2			
Two (2) 60 Degree Sectors	P5-1	S7-2	V6-1	X8-1	Reduction of 11 dwellings	
	Q5-1	T6-1	V7-1			
	R8-1	T7-1	U7-1			
	S6-1	T7-2	U8-1			
	S6-3	U6-2	X8-1			
	S6-4					
Three (3) 60 Degree Sectors	Nil			P2-1 P5-1 V6-1	Increase of 15 dwellings	
						P2-2 Q5-1 U7-1
						Q2-1 T6-1 U8-1
						Q2-2 T7-1 X5-1
						R3-1 T7-2 X6-1
Four (4) 60 Degree Sectors	Nil			R8-1 S6-3 S7-2	Increase of 7 dwellings	
						S6-1 S6-4 U6-2
						V7-1

**Table 5. MWTT applied with Piambong Wind Farm** (Source: RenewMap 2024)



**Figure 3. MWTT considering the Project and Piambong Wind Farm** (Map Source: Six Maps 2024)

### 3.1.3 Overview of Cumulative Zone of Visual Influence

Aside from the application of the MWTT the Bulletin does not provide a methodology for further consideration of the cumulative visual impacts on the broader landscape. To assist in the cumulative visual impact assessment, assessment has been undertaken using viewshed mapping - also referred to as a Zone of Visual Influence (ZVI) figure. Two (2) ZVI figures has been prepared to illustrate areas from which there is the potential to view the Project and Piambong Wind Farm (refer to **Figure 4**) and areas that all three projects (the Project, Ungula Wind Farm and Piambong Wind Farm) would be visible (refer to **Figure 5**).

The ZVI has been determined through the use of digital topographic information and 3D modelling software WindPro. The ZVI has been assessed to approximately 10 km.

#### **The Project and Piambong Wind Farm:**

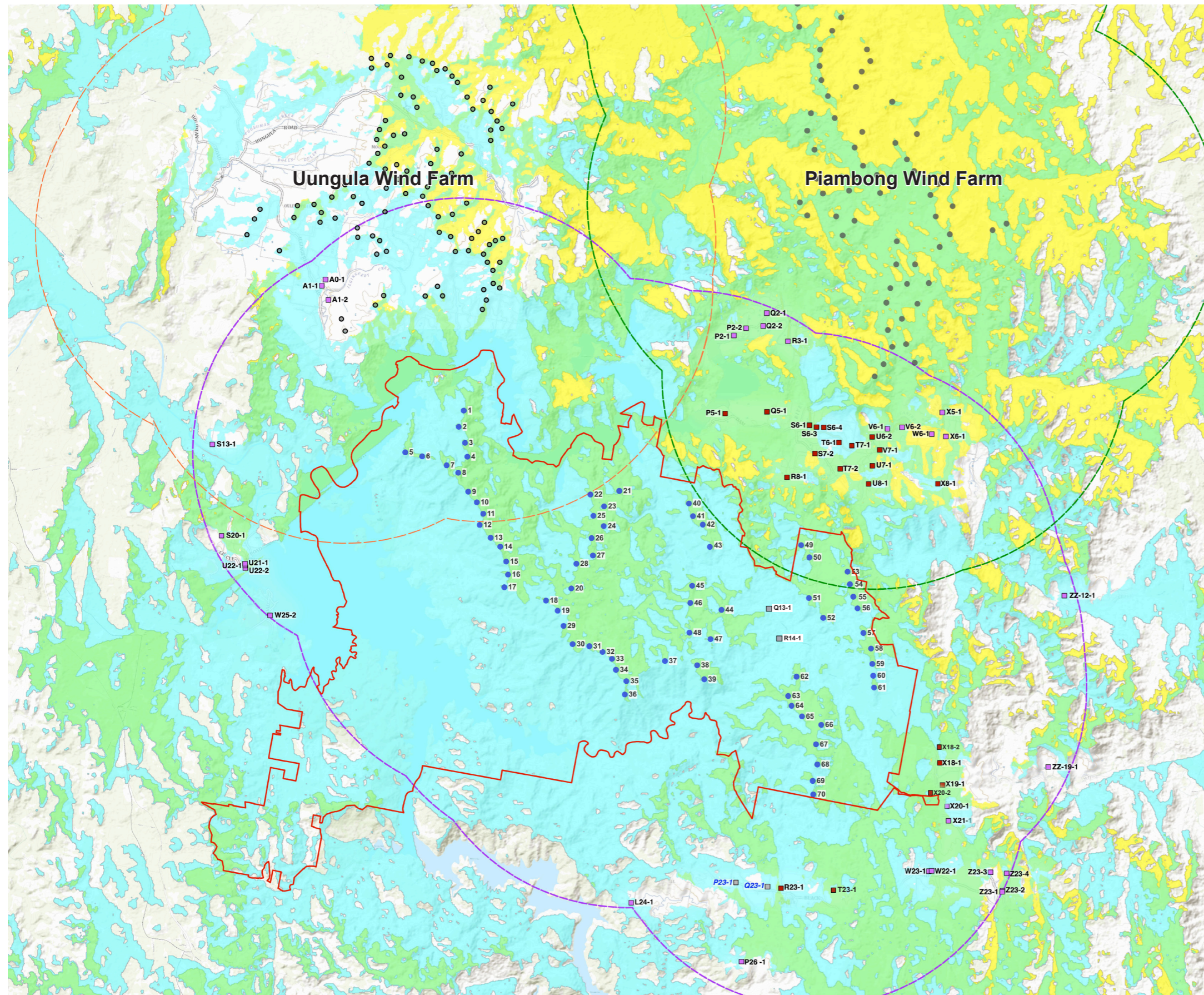
The WTG locations and height (230 m) for the Piambong Wind Farm have been determined by the Scoping Report as available on the Major Projects Website (December 2023). Due to topography, the ZVI figures illustrate variations in the extent of visibility of each Project. Opportunities to view the Project and Piambong Wind Farm simultaneously are generally limited to land between the two Projects, elevated positions to the far south of the Project and within the Project boundary. As presented in **Figure 3**, there are 25 non-involved dwellings located within 8,000 m of the Project and the proposed Piambong Wind Farm. Of the 25 non-involved dwellings, the ZVI indicates 17 have the potential to view both Projects. The extent of visibility and resulting cumulative visual impact from these dwellings is anticipated to be low as visibility of the Project is limited by topography and intervening vegetation. A detailed cumulative visual impact assessment will be prepared in the EIS for Piambong Wind Farm.

#### **The Project, Piambong Wind Farm and Ungula Wind Farm:**

The ZVI prepared for all three (3) projects (**Figure 5**) has illustrated limited visibility of all three projects simultaneously. Opportunities to view all three projects at the same time are limited to land associated with the Project area associated with the Project and the project area associated with Piambong Wind Farm. Additionally, the ZVI identifies some areas of elevated land to the south of the Project have the potential to view all three projects at the same time, however these views would be distant. There are no non-involved dwellings identified within 8,000 m of all three (3) projects.

# Cumulative ZVI

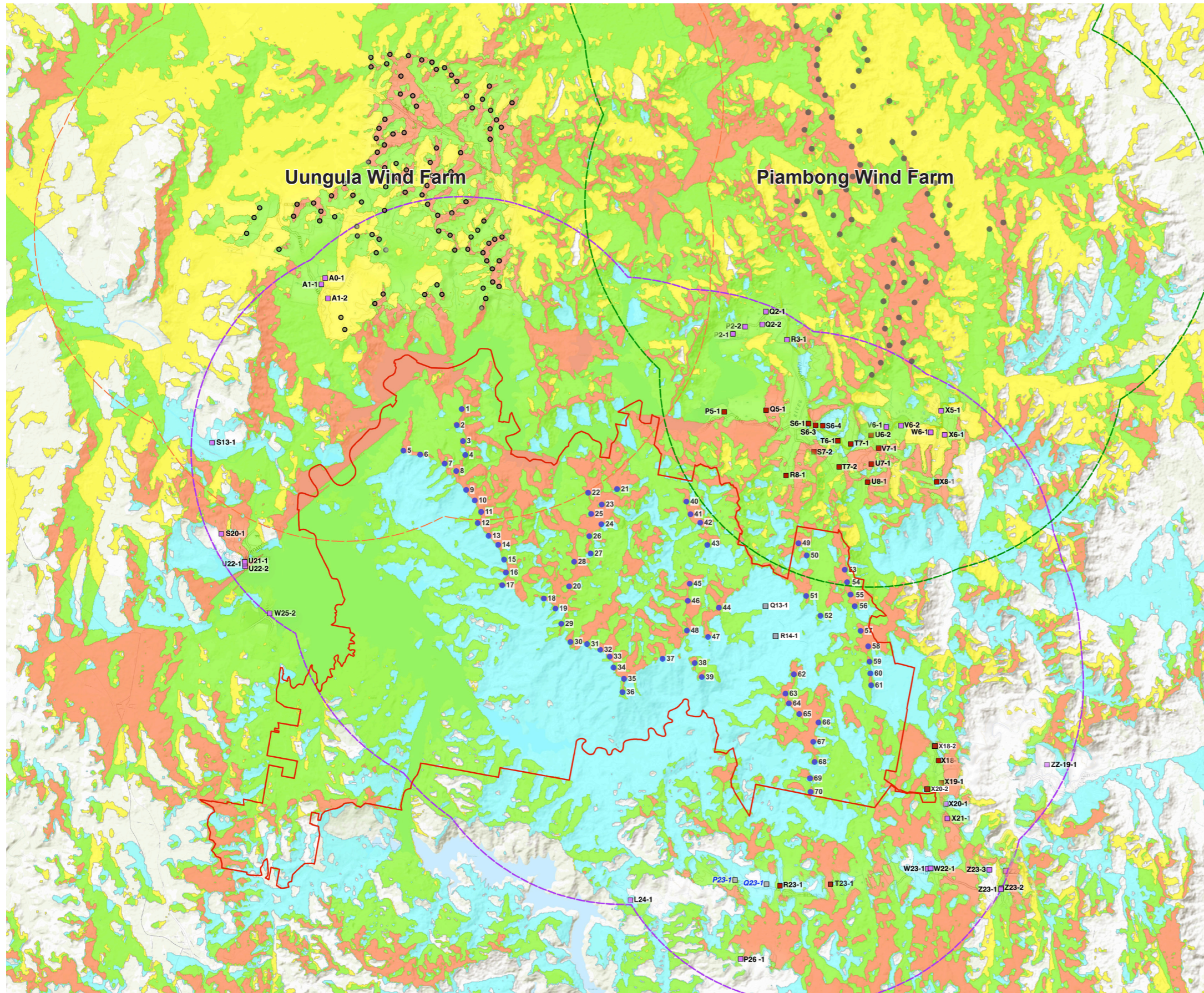
## The Project & Piambong Wind Farm



**LEGEND**

- Project Boundary
- Involved dwelling
- Non-involved dwelling within 4,950 m of WTG
- Non-involved dwelling in excess of 4,950 m of WTG
- WTG (The Project)
- WTG associated with Uungula / Piambong Wind Farm
- 8,000 m from the Project
- 8,000 m from Piambong Wind Farm WTG
- 8,000 m from Uungula Wind Farm WTG
- WTGs associated with the Project visible (based on topography alone)
- WTGs associated with Piambong WF visible (Based on topography alone).
- WTGs associated with both Projects visible (Based on topography alone).

Figure 4 Cumulative Zone of Visual Influence with Piambong Wind Farm (Map Source: Six Maps, 2024)



# Cumulative ZVI

## The Project, Uungula Wind Farm and Piambong Wind Farm

### LEGEND

- Project Boundary
- Involved dwelling
- Non-involved dwelling within 4,950 m of WTG
- Non-involved dwelling in excess of 4,950 m of WTG
- WTG (The Project)
- WTG associated with Uungula / Piambong Wind Farm
- - - 8,000 m from the Project
- - - 8,000 m from Piambong Wind Farm WTG
- - - 8,000 m from Uungula Wind Farm WTG
- WTGs associated with the Project visible (based on topography alone)
- WTGs associated with Piambong WF visible (Based on topography alone).
- WTGs associated with the Projects and Piambong or Uungula visible
- WTGs associated with all three (3) Projects visible (Based on topography alone).



Figure 5 Cumulative Zone of Visual Influence with Piambong Wind Farm and Uungula Wind Farm (Map Source: Six Maps, 2024)

# 4.0 Aviation Hazard Lighting

## 4.1 Overview of Aviation Hazard Lighting Requirements

At the time the LVIA was prepared, it was understood Aviation Hazard Lighting was not a requirement (as per the Aviation report prepared by Aviation Projects, August 2023). The Civil Aviation Safety Authority (CASA) reviewed the Project during the exhibition phase and have recommended Aviation Hazard Lighting is installed to WTGs. The following excerpt is from the submission:

*CASA considers the proposed wind farm will be a hazard to aviation safety and recommends that the wind farm is obstacle lit with steady medium-low intensity red obstacle lighting in accordance with the National Airports Safeguarding Framework Guideline D 'Managing the Risk of Wind Turbine Farms as Physical Obstacles to Air Navigation'.*

*International standards require, and the NASF guideline recommends, 2,000 candela lighting intensity. CASA recommends that 200 candela as a minimum intensity lighting would suffice. The obstacle lighting should be monitored (preferably remotely) to alert the wind farm operator of any outage.*

*As the Aviation Safety regulator, CASA does not consider the visual impact of obstacle lighting on neighbours / homesteads. However, there are mitigations for visual impact such as baffling or shielding in downward directions and intensity control (as described in the Aviation Impact Assessment Table 13 'Effect of obstacle lighting on neighbours').*

**Table 6** taken from the *CASA ADVISORY CIRCULAR AC 139.E-05 v1.1: Obstacles (including wind farms) outside the vicinity of a CASA certified aerodrome (October 2022)* indicates that a 2,000 candela light is visible at 4,900 m from the source. A 200 candela light would be visible from an even lower distance.

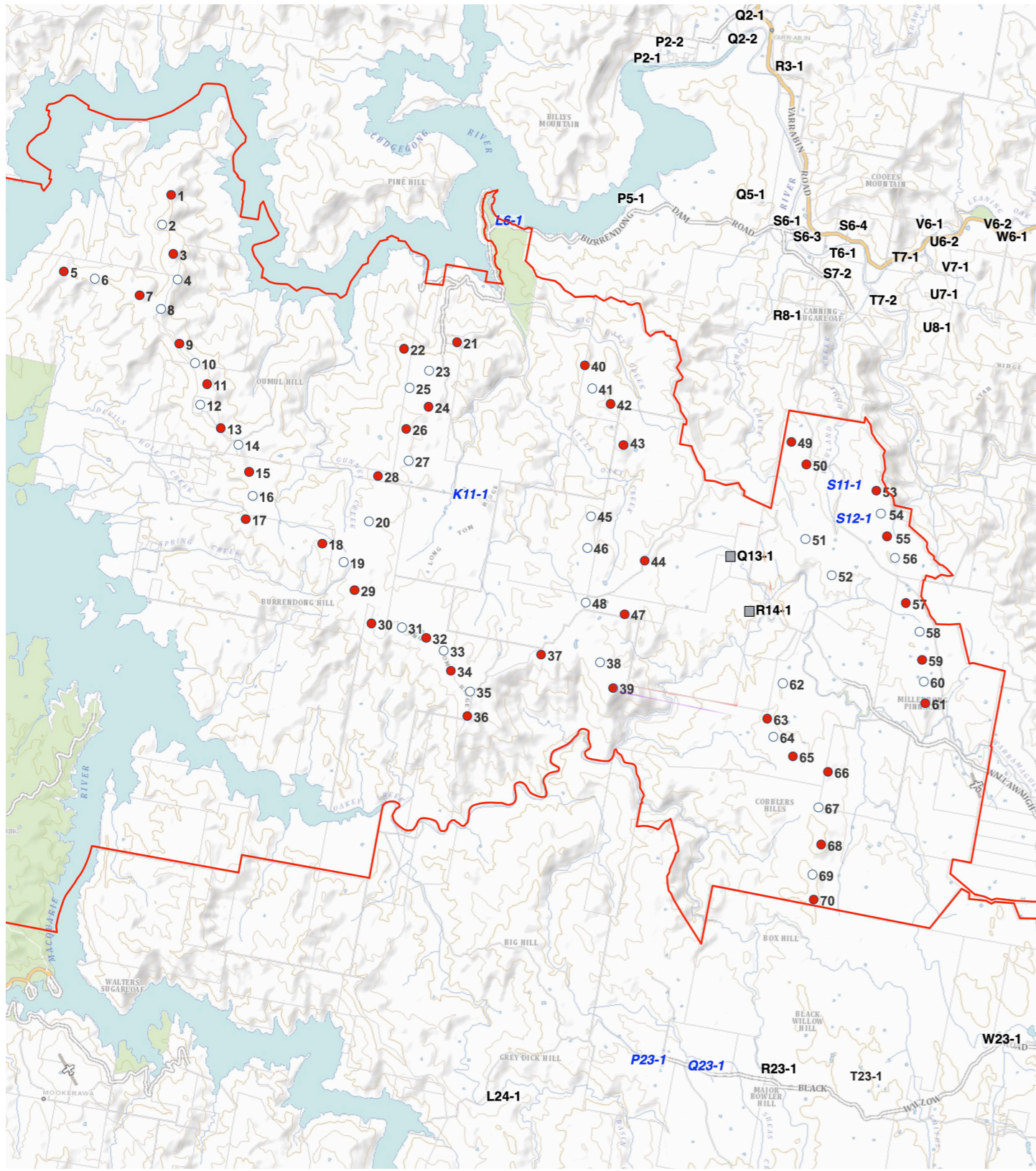
An AHL plan has been prepared by Aviation Projects. **Figure 6** illustrates 39 of the proposed WTGs identified to be lit with AHL at the hub.

Considering the distance of 4,900 m as a worst case scenario for AHL visibility, it is noted there are limited opportunities to view WTGs with AHL from publicly accessible land. Considering the reduction of lighting strength to 200 candela, existing topography and vegetation, it is determined that the visual impact resulting from AHL is negligible.

In regards to the potential visual impact on nearby dwellings, the Visual Assessment Bulletin states the proponent must "Shield all AHL within two kilometres from any dwellings. Avoid strobe lighting." There are no dwellings within two kilometres of a WTG. The nearest dwelling with visibility of a WTG hub is dwelling T7-2, located 3.25 km from the nearest WTG and therefore the AHL presents limited opportunities for visual impacts on surrounding dwellings.

Time Period	Meteorological Visibility (m)	Distance (m)	Intensity (Candelas)
Night	4800	4700	1,500 (+/- 25%)
		4900	2,000 (+/- 25%) (ICAO medium intensity light)
		2200	32

**Table 6. Light Visible Distances** (Source: CASA, 2022)



- LEGEND
- WTG proposed to have AHL installed
  - WTG with no lighting



Figure 6 Turbines with AHL proposed at hub height (Map Source: Six Maps, 2024)

# 5.0 Response to Submissions

## 5.1 LVIA Methodology

A number of submissions were made regarding the methodology applied to the Landscape and Visual Impact Assessment. The LVIA was prepared in accordance with the Visual Assessment Bulletin and with regards to best practice guidelines for the preparation of Landscape and Visual Impact Assessments.

### Landscape Character Assessment Methodology

Submissions were made regarding the outcomes of the scenic quality rating, specifically regarding Worlds End. An example of a submission is as follows:

*The LCU07 – Worlds End, fails to mention the high visual landscape significance of the Worlds End Ridgeline. It appears to provide an intentionally deceptive assessment for LCU07. It should be rated as 'HIGH' but it is only rated having as moderate landscape significance.*

Moir LA applied a quantifiable methodology to determine the moderate visual impact rating of the Worlds End LCU. The methodology is outlined in Section 5.8 and the application of the methodology is provided in Appendix B.7.

### Photomontage Preparation Methodology

Submissions received regarding the methodology of photomontages prepared for the Project. An example of a submission is as follows:

*After seeing these completely unrealistic, and topographically inaccurate montages I feel sickened to the core....*

Moir LA prepare photomontages utilising WindPro software which is specifically tailored for the preparation of wind farm project visualisations. The methodology for the preparation of photomontages is provided in Section 9.3 of the LVIA. Photomontages are prepared in accordance with the *Scottish Natural Heritage Guidelines: Visual Representation of Wind Farms, Version 2.2 February 2017* (as per the requirements of the Visual Assessment Bulletin).

Whilst effort is made to undertake base photography in clear blue sky conditions, access to private properties does not always align with good weather conditions. To provide context and illustrate the placement and scale of WTGs, a wire frame diagram is prepared and accompanies each photomontage to aid the assessment.

## 5.2 Dwelling Definitions

A number of submissions were made regarding the omission of dwellings from the LVIA report. An example of the submissions:

*Over 30 dwellings within 5km of turbines and more out to 8km have wrongly been excluded from the EIS maps and impact assessments based on a dwelling that has no statutory basis.*

Ark Energy consulted with Dubbo Regional and Mid-Western Regional Council to determine dwellings with development approval and these were included in the LVIA. Mid Western Regional Council confirmed that consent for dwellings has been required since 24th November 1967 (the date of commencement of the Cudgegong Interim Development Order).

A number of existing structures located within the Study Area do not have records of approval and therefore detailed assessments are not required to be undertaken. Whilst it is noted the Visual Assessment Bulletin does not provide a definition of a dwelling. The following excerpt is from the Department of Planning and Environment's *Draft Wind Energy: Technical Supplement for Landscape and Visual Impact Assessment* (November 2023):

*For the purpose of this document, a dwelling has the same meaning as the Standard Instrument - Local Environmental Plan (Standard Instrument) (a room or suite of rooms occupied or used as a separate domicile) and also includes any of the following:*

- *dwellings that have development consent, but have yet to commence or complete construction*
- *proposed dwellings that are subject to a development application that has been lodged prior the wind energy development application but is yet to be determined.*

*For the avoidance of doubt, a dwelling does not include:*

- *moveable dwellings as defined in the Standard Instrument including tents, caravans, or other portable devices used for human habitation*
- *any dwelling that been built illegally (as confirmed by the relevant council)*
- *a derelict dwelling (that is officially declared by the relevant council).*

At the request of DPHI, Moir Studio have undertaken assessments for twenty (19) additional buildings. These have been included in **Appendix A. Figure 7** provides an overview of the buildings that have been included in the assessment.

### 5.3 Dwelling U8-1 (167 Rockford Lane, Yarrabin)

A large number of submissions were made specifically regarding the visual impact to Dwelling U8-1 (167 Rockford Lane, Yarrabin).

Some examples of the submissions relating to Dwelling U8-1 are as follows:

*If these wind turbines are put on the worlds end ridge line it will destroy the whole purpose of this property and house.*

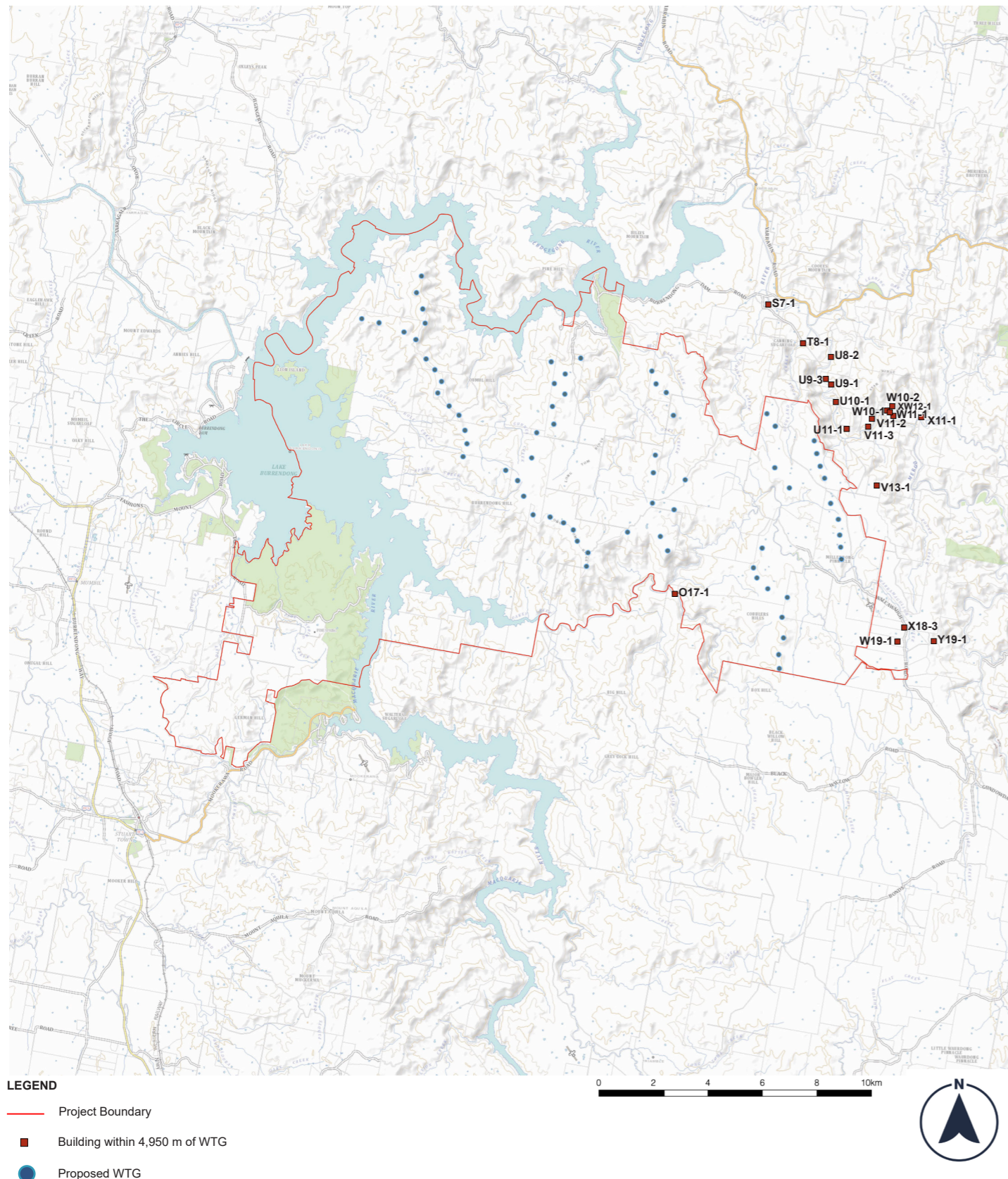
*The thought of this view being ruined by the inclusion of wind turbines is just unbearable.*

*The introduction of a wind farm would bring with it the intrusion of artificial lights, noise pollution, and the unsightly presence of towering turbines on World's End Ridgeline. This would undoubtedly detract from the picturesque landscape that currently defines the area.*

Multiple design iterations were undertaken and consideration was given to the location of turbines in proximity to non-involved dwelling U8-1. Moir LA recommended the removal of turbines from within the black line of visual magnitude, a recommendation that was actioned by Ark Energy to reduce the potential visual impact from the dwelling.

The detailed assessment of U8-1 determined the Project meets the visual performance objectives as per the Visual Assessment Bulletin from this dwelling (refer to Appendix D.5 of the LVIA report). The detailed assessment determined five (5) WTGs would be visible to the south of the dwelling. The turbines occupy 15 degrees of the horizontal field of view. No turbines are located within the black line of visual magnitude.

**Appendix B** provides an overview of the design iterations undertaken by Ark Energy with the advice from Moir Studio to reduce visual impacts from Dwelling U8-1.



**Figure 7** Locations of Buildings from which Detailed Assessments have been prepared - See Appendix A (Map Source: Six Maps, 2024)

## 5.4 Worlds End

A number of submissions were made specifically addressing concerns on the visual impacts to Worlds End. Some example of submissions are as follows:

*The World's End Ridgeline will lose it's value as a scenic feature of the region*

*As the owner of a property at worlds end rd, Worlds end nsw 2850 I object to the wind farm proposal due to the visual impact and property value decrease as I would see 4 of the windmills from my property and destroy the peaceful tranquillity of my valley and the habitat of numerous wildlife*

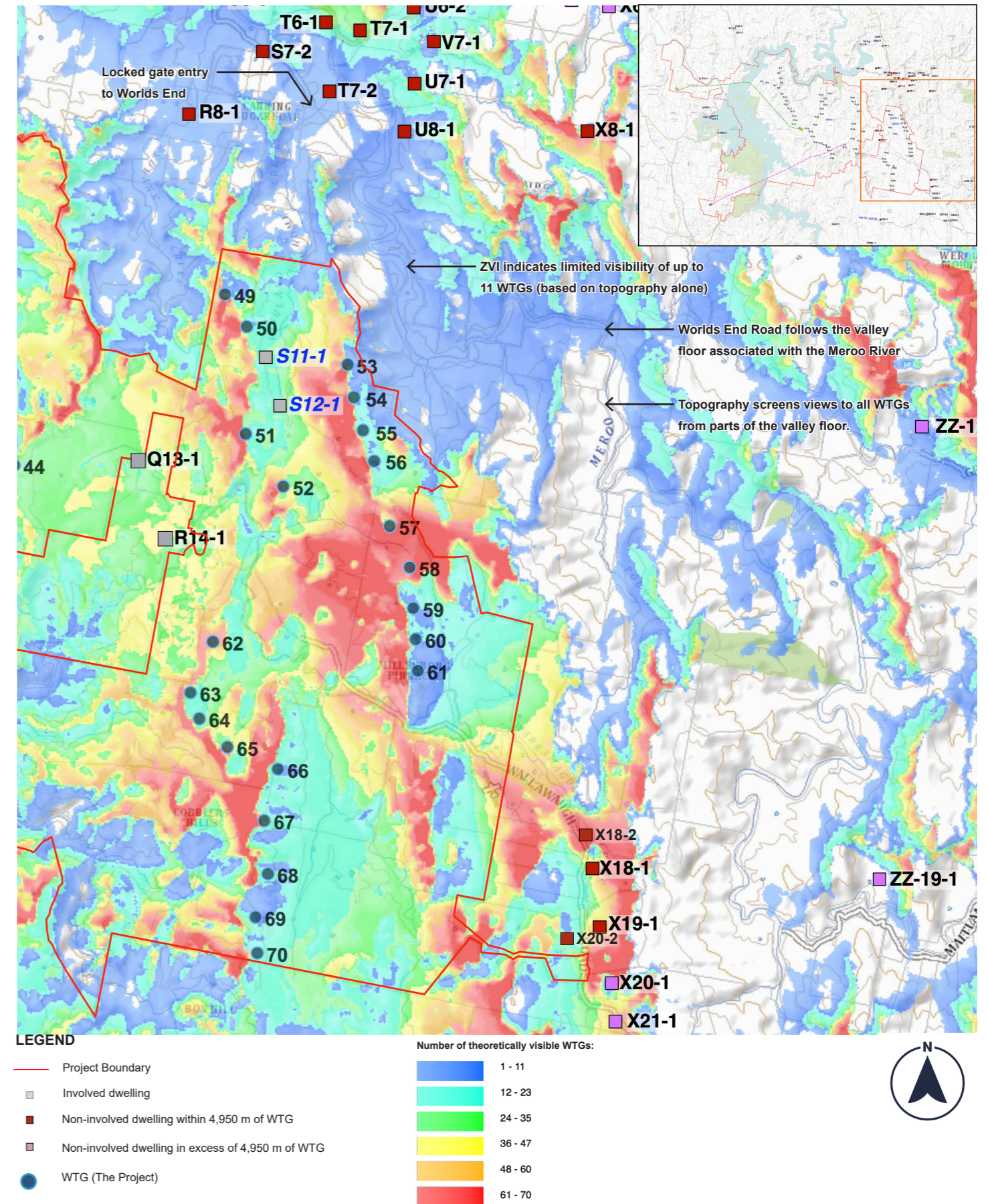
*I request the removal of the specified turbines from the proposal to preserve the scenic quality of the Worlds End Ridgeline, shielding the highest density of dwellings from adverse visual impacts from the project.*

*The project will have a detrimental impact to the scenic features of the World's End Ridgeline*

*I strongly object to the Burrendong Wind Farm because it will destroy the scenic quality of the World's End Ridgeline*

Worlds End Road is inaccessible to the public, due to a locked gate. Moir LA were granted access to undertake site inspections to assist with the preparation of the LVIA and representative assessments were undertaken (included in the EIS submission as Appendix C: Viewpoint Analysis from BWF07 and BWF15).

Assessment undertaken for the LCU including the ZVI mapping indicates that the Project will be a visible element from Worlds End, with up to 11 WTGs visible on the valley floor (based on topography alone). Field work indicated intervening vegetation and topography limits views to the Project from Worlds End. The key landscape features of this LCU are the steep vegetated hills to the west of the Meroo River (associated with Canning Sugarloaf). An extract of the ZVI figure has been provided as **Figure 8** to illustrate the low level of visibility of the Project along the valley floor associated with Worlds End Road and Meroo River. The figure is based on a worst case scenario without consideration of vegetation that is typical of the area.



**Figure 8 Results of ZVI for Worlds End Road (Map Source: Six Maps, 2024)**

# 6.0 DPHI Request for Information

## 6.1 Request for Information - Farm Stay Accommodation

DPHI issued a Request for Information to Ark Energy on Wednesday, 3 April 2024 relating to the approved farm stay development at Lot 27 DP756887. Relevant to visual impact was the following request: *“any consideration of mitigation measures, potential re-siting options for the approved farm stay within the lot or potential re-siting the relevant wind turbines to meet the performance objectives in the Wind Energy Guideline (2016).”*

Mid-Western Regional Council granted approval to a Farm Stay Accommodation on 18th of January 2024. The Farm Stay Accommodation is sited adjacent to the northern boundary of the Lot, 217 metres south of the proposed WTG 70 (see **Figure 9**).

Moir LA attended the site of the proposed Farm Stay location in May 2024. A photomontage has been prepared from the site and detailed assessment has been undertaken. The assessment conducted by Moir LA determined the existing site would not meet the performance objectives as outlined in the Bulletin.

In accordance with the request from DPHI, a site analysis of the Lot has been conducted to identify alternative locations suitable for the Farm Stay. A large area of land has been identified for consideration of re-siting the Farm Stay Accommodation. This area of land meets the visual performance objectives set out in the Bulletin. **Table 7** below provides an overview of the evaluation of performance objectives for the approved farm stay location and alternate area identified by Moir LA.

Performance Objective:	Visual Magnitude:	Multiple Wind Turbine Tool:	Landscape Scenic Integrity:	Key Feature Disruption:	Shadow Flicker:
<b>Approved Farm Stay Accommodation Location (VIZ1):</b>					
Meets Performance Objective?:	No	Yes	No	Yes	No
	No WTGs within black line.	Meets objectives	Turbines would be a major element.	Meets objectives	Shadow flicker exceeds 30 hours per year.
<b>Alternate Farm Stay Accommodation Location (VIZ2):</b>					
	Yes	Yes	Yes	Yes	Yes
	No WTGs within black line.	Turbines occupying one (1) 60 degree sector.	Turbines would not modify the visual catchment.	Turbines would not alter key landscape features.	No shadow flicker hours.

**Table 7 Comparison of Performance Objectives at Approved & Alternate Farm Stay Accommodation Sites**



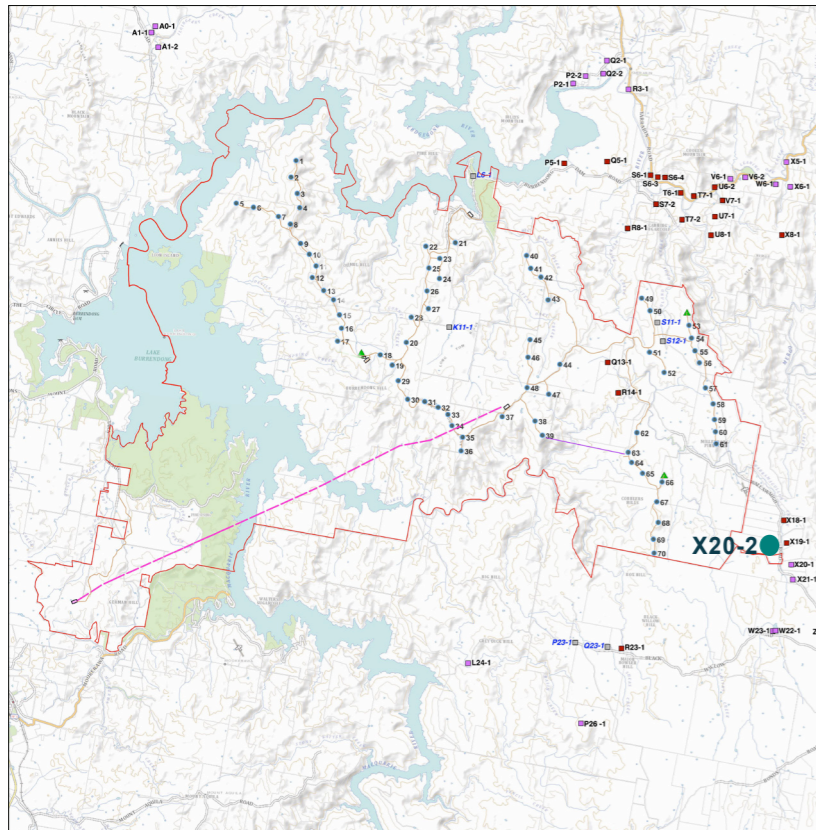
**Figure 9 Proposed Farm Stay Location** (Map Source: Google Earth, 2024)

## **Appendix A**

# **Additional Detailed Dwelling & Building Assessments**

# Detailed Assessment Dwelling X20-2

Residence X20-2	
Nearest WTG and distance:	4.59 km (WTG 61)
WTGs within Black Line (3,350 m):	Nil
Number of 60° Sectors with visible WTGs:	Nil
Visibility Distance Zone:	Far Middleground (FM)
Viewer Sensitivity Level:	Level 2 Rural Residence
Landscape Character Unit:	LCU02: Yarrabin / Hargrave Farmlands
Scenic Quality Rating:	Low - Moderate
Visual Influence Zone (VIZ):	VIZ2
Visual Impact Rating:	Negligible



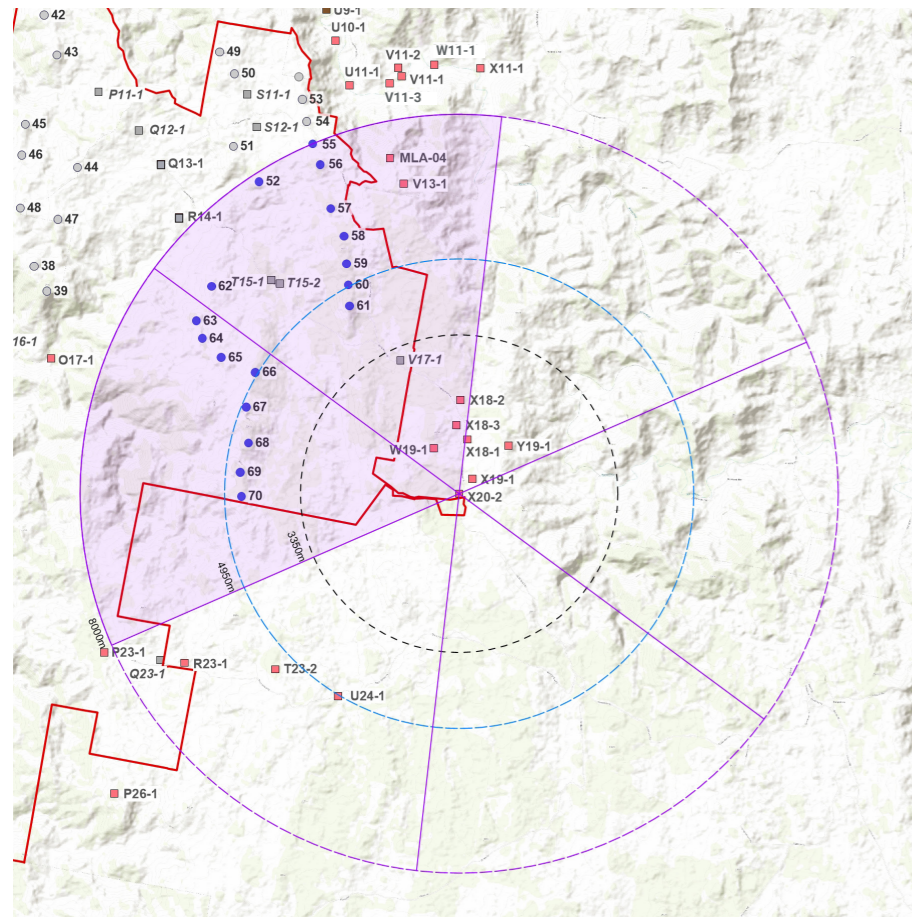
Dwelling X20-2 Location

**Assessment Notes:**  
 Dwelling X20-2 is located at Wallawaugh Road, Hargraves. Moir LA attended the property in March, 2023 and a representative viewpoint was taken adjacent to the residence. A photomontage and Wire Frame Diagram has been prepared from this location.

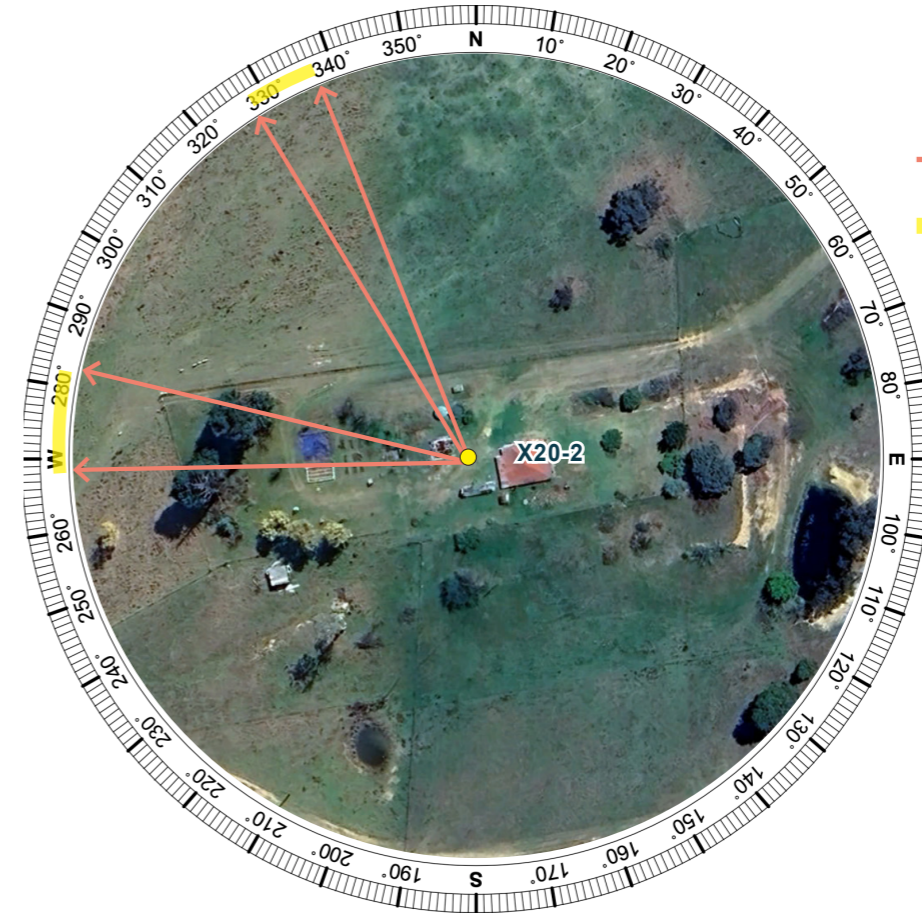
**Visual Impact Summary:**  
 Dwelling X20-2 is located to the east of the Project, 4.59 km from the nearest WTG (WTG 61). The western side of the dwelling is considered to be a secondary view. A number of sheds and structures (fire wood storage and water tank) are located in the yard to the west of the dwelling. Existing band of vegetation contains most views to the west. A wire frame diagram prepared from the residence illustrates topography screens a large portion of the Project, and the photomontage demonstrates how the intervening vegetation further reduces visibility of the Project.

Evaluation of Visual Performance Objectives (VIZ2):					
Performance Objective:	Visual Magnitude	Multiple Wind Turbine Tool	Landscape Scenic Integrity	Key Feature Disruption	Shadow Flicker
Meets Objective?:	Yes	Yes	Yes	Yes	Yes
Discussion:	No WTGs are located within the black line of visual magnitude. Five (5) WTGs are located between the black and blue line of visual magnitude (3,350 - 4,950 m) however intervening vegetation will screen views to these WTGs.	WTGs within 8,000 m of the residence will be visible in up to two (2) 60 degree sectors which is deemed acceptable. Further assessment determined WTGs would be screened by vegetation.	Views towards WTGs will be screened by the existing intervening vegetation and built structures. As a result the WTGs will not impact the landscape scenic integrity.	The Project will not disrupt views to key features from this residence.	Shadow Flicker does not exceed 30 hours at this residence.
Recommendation:	N/A	N/A	N/A	N/A	N/A

# Detailed Assessment Dwelling X20-2



- LEGEND**
- 250 m WTG within 8,000 m
  - WTG located in excess of 8,000 m from Residence
  - Non-associated Dwelling
  - Associated Dwelling
  - 3,350 m from nearest turbine (Black Line)
  - 4,950 m from nearest turbine (Blue Line)
  - 8,000 m from nearest turbine
  - 60° sector
  - 60° sector with turbines



- LEGEND**
- Representative photomontage location
  - Direction of visible turbines based on topography
  - Extent of visible turbines based on topography

Preliminary Assessment Tools applied to Dwelling X20-2

Aerial Image of Dwelling X20-2

Aerial image source: Google Earth 2024



Image of western Side of Dwelling X20-2

# Detailed Assessment Dwelling X20-2

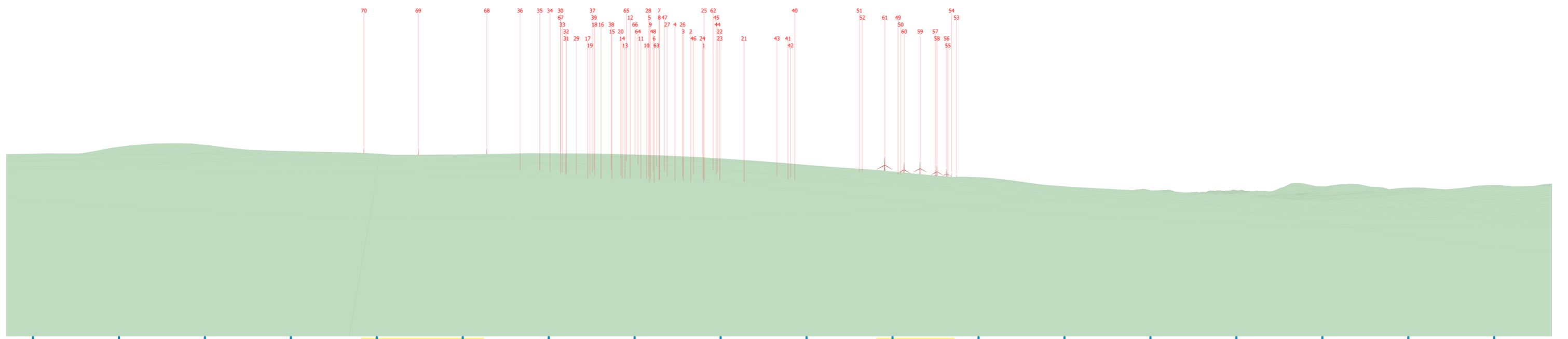
## Proposed View - 180 degree field of view



Vegetation screens views to blade tips of WTG 68, 69 & 70

Topography screens views to WTGs

Vegetation screens views to WTGs 53 - 61.

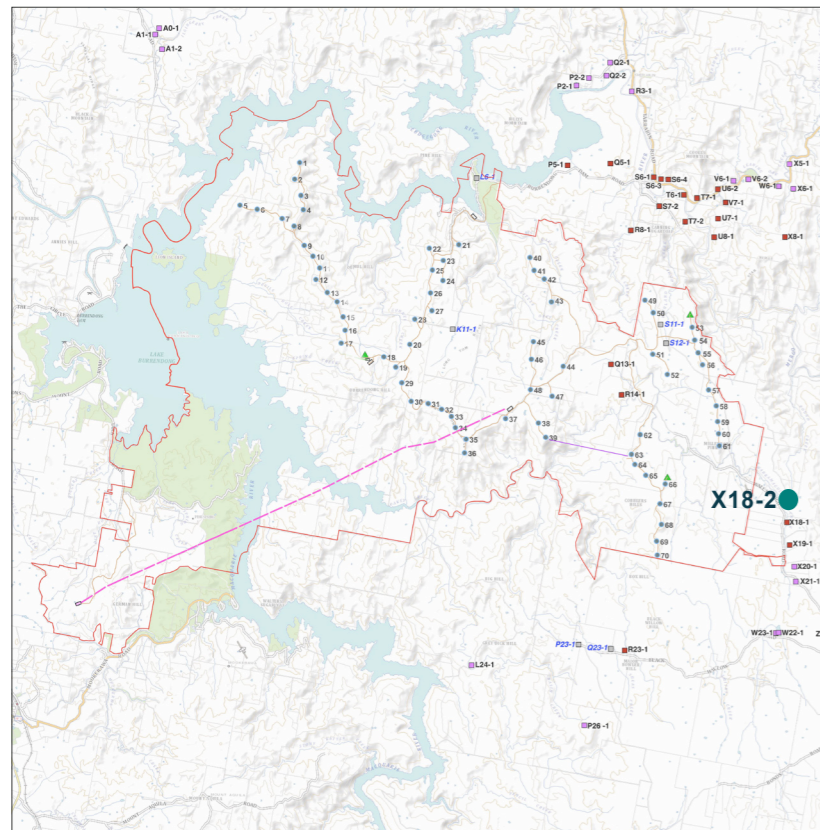


## Proposed Wire Frame Diagram - 180 degree field of view

# Detailed Assessment Dwelling X18-2

## Residence X18-2

<b>Nearest WTG and distance:</b>	3.07 km (WTG 61)
<b>WTGs within Black Line (3,350 m):</b>	One (1)
<b>Number of 60° Sectors with visible WTGs:</b>	Two (2)
<b>Visibility Distance Zone:</b>	Far Middleground (FM)
<b>Viewer Sensitivity Level:</b>	Level 2 Rural Residence
<b>Landscape Character Unit:</b>	LCU02: Yarrabin / Hargrave Farmlands
<b>Scenic Quality Rating:</b>	Low - Moderate
<b>Visual Influence Zone (VIZ):</b>	VIZ2
<b>Visual Impact Rating:</b>	Low



Dwelling X18-2 Location

## Assessment Notes:

Dwelling X18-2 is located at Wallawaugh Road, Hargraves. Moir LA attended the property in May, 2024 and a representative viewpoint was taken adjacent to the residence. A photomontage and Wire Frame Diagram has been prepared from this location.

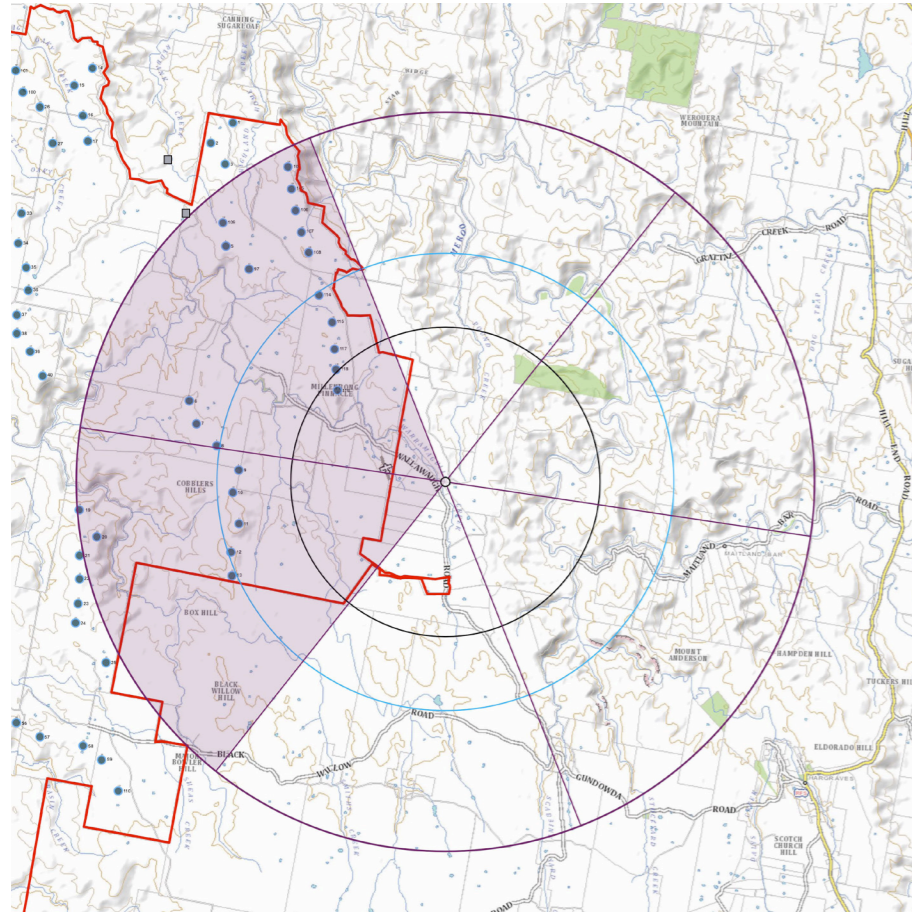
## Visual Impact Summary:

Dwelling X18-2 is located to the east of the Project, 3.07 km from the nearest WTG (WTG 61). The Project is located to the west of the dwelling. The western side of the dwelling is considered to be a secondary view. Existing vegetation contains most views to the west. Photomontage has been prepared from the yard to the west of the residence demonstrating how the intervening vegetation further reduces visibility of the Project.

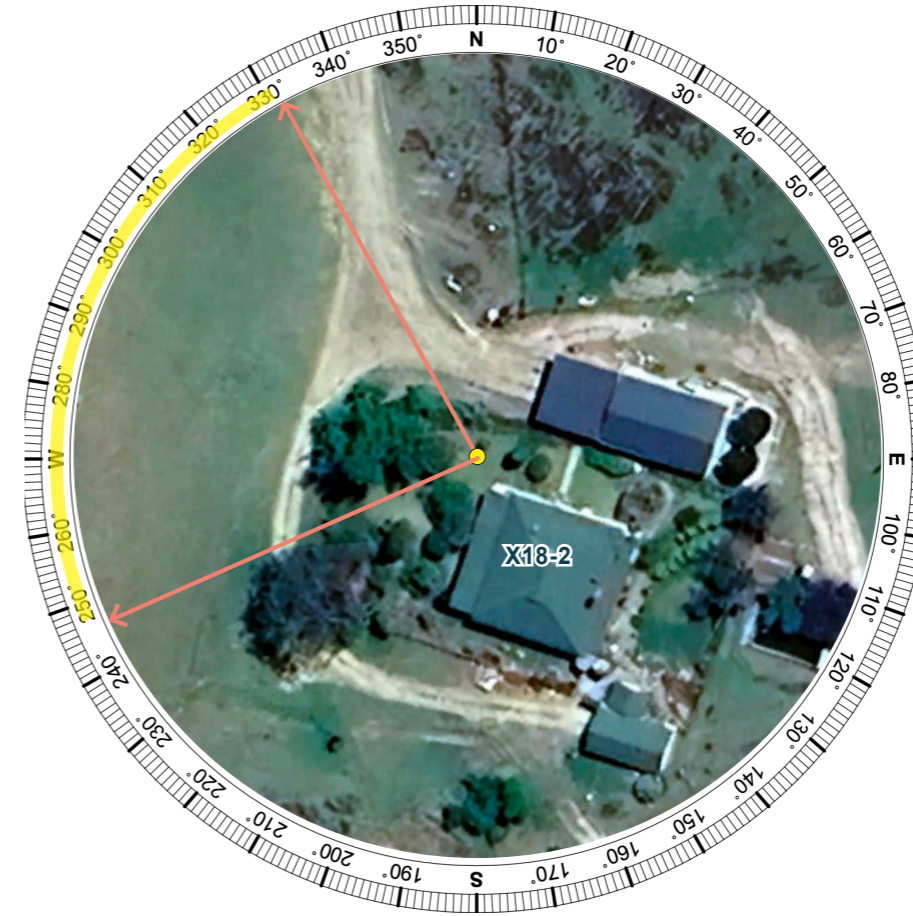
## Evaluation of Visual Performance Objectives (VIZ2):

Performance Objective:	Visual Magnitude	Multiple Wind Turbine Tool	Landscape Scenic Integrity	Key Feature Disruption	Shadow Flicker
<b>Meets Objective?:</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
<b>Discussion:</b>	One (1) WTG (WTG 61) is located within the black line of visual magnitude, however it is anticipated views to WTG 61 will be screened by vegetation from the residence.	WTGs within 8,000 m of the residence will be visible in up to two (2) 60 degree sectors which is deemed acceptable. Further assessment determined WTGs would be screened by vegetation and available in up to one (1) 60 degree sector.	Views towards WTGs will be limited due to the existing intervening vegetation. As a result the Project will not impact the landscape scenic integrity.	The Project will not disrupt views to key features from this residence.	Shadow Flicker does not exceed 30 hours at this residence.
<b>Recommendation:</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>

# Detailed Assessment Dwelling X18-2



Preliminary Assessment Tools applied to Dwelling X18-2



Aerial Image of Dwelling X18-2

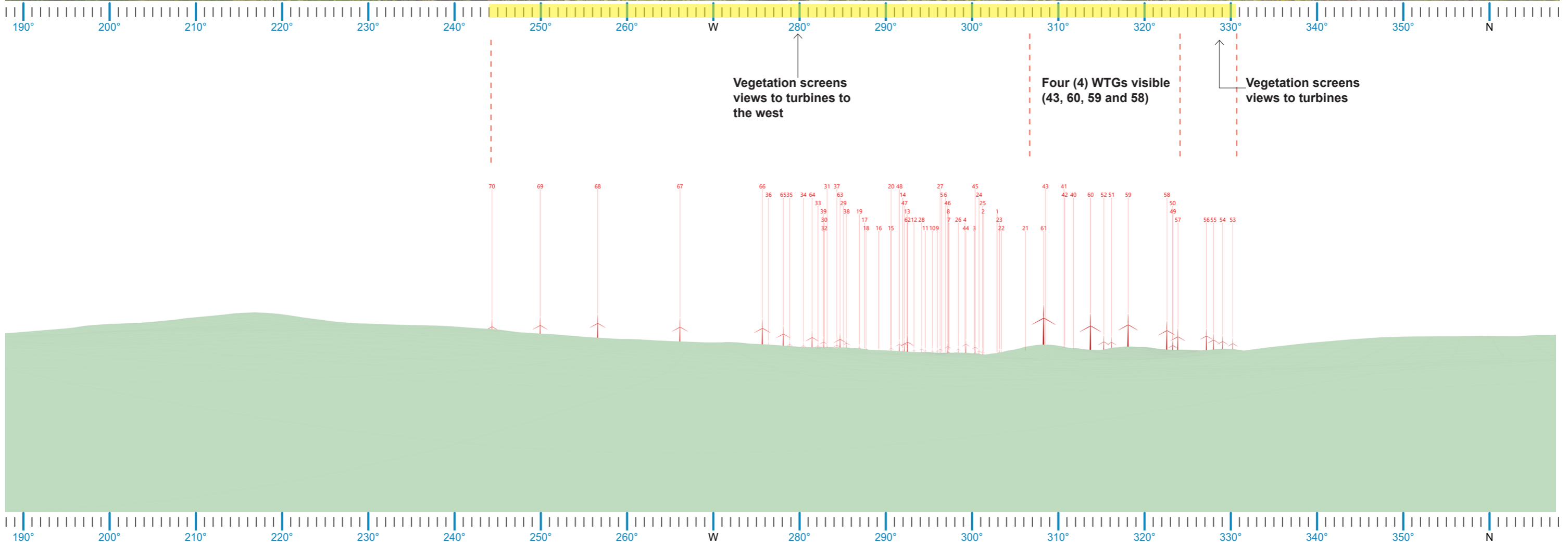
Aerial image source: Google Earth 2024



Image of western Side of Dwelling X18-2

# Detailed Assessment Dwelling X18-2

## Proposed View - 180 degree field of view

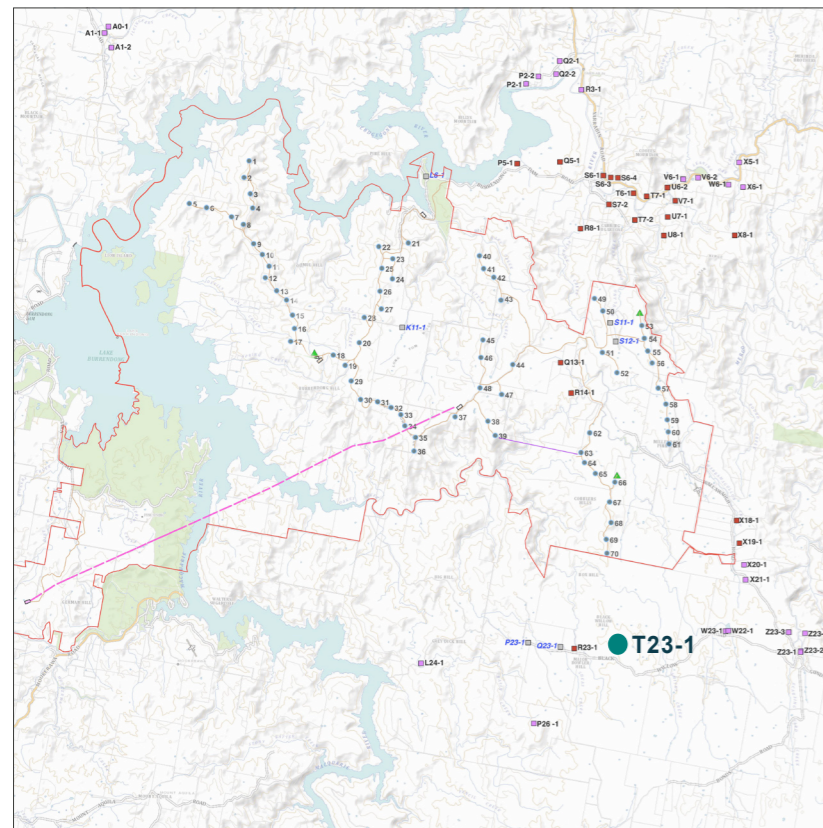


## Proposed Wire Frame Diagram - 180 degree field of view

# Detailed Assessment Dwelling T23-1 (Wanda Vale)

## Residence T23-1

<b>Nearest WTG and distance:</b>	3.78 km
<b>WTGs within Black Line (3,350 m):</b>	Nil
<b>Number of 60° Sectors with visible WTGs:</b>	One (1)
<b>Visibility Distance Zone:</b>	Near Middleground (NM)
<b>Viewer Sensitivity Level:</b>	Level 2 Rural Residence
<b>Landscape Character Unit:</b>	LCU01: Yarrabin / Hargrave Hills
<b>Scenic Quality Rating:</b>	Moderate
<b>Visual Influence Zone (VIZ):</b>	VIZ2
<b>Visual Impact Rating:</b>	Low



Dwelling T23-1 Location

## Assessment Notes:

Dwelling T23-1 is located Black Willow, Hargraves. Moir LA attended the property in March, 2021 and a representative viewpoint was taken adjacent to the dwelling. A photomontage and Wire Frame Diagram has been prepared from this location. At the time of visiting the property, the dwelling was uninhabited.

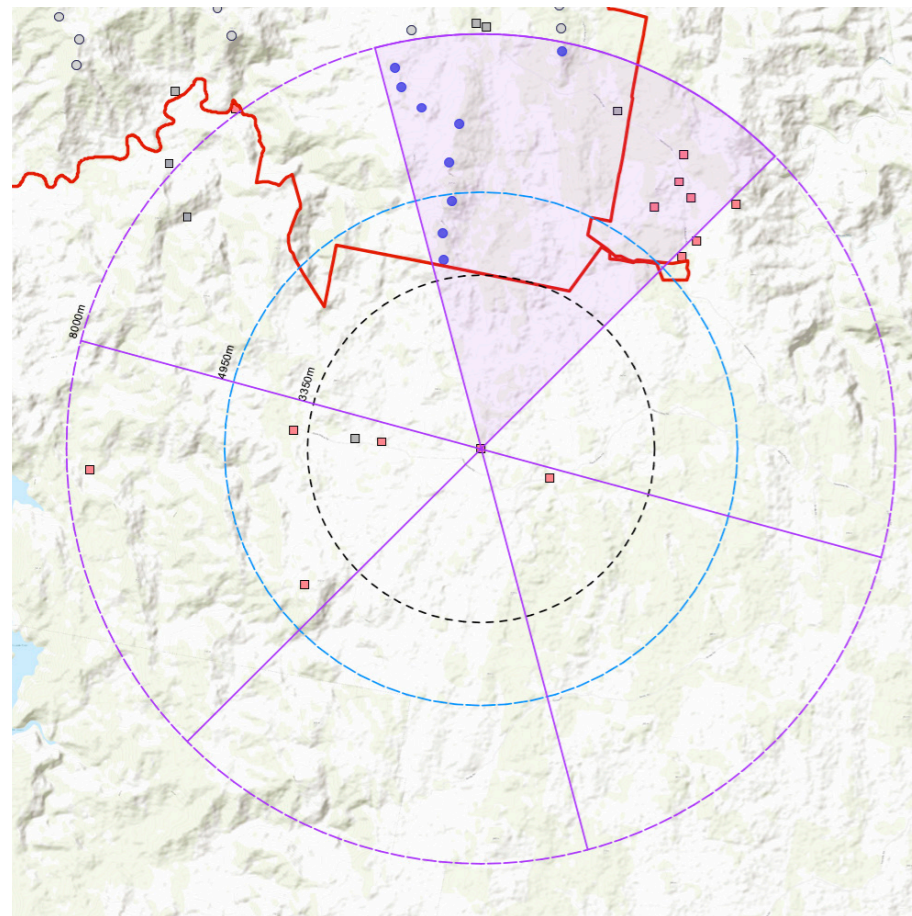
## Visual Impact Summary:

Dwelling T23-1 is located to the south of the Project, 3.78 km from the nearest WTG (WTG 70). The dwelling appears to be orientated to the north, with a verandah orientated to the west with views across vegetated ranges. A photomontage has been prepared from the yard to the west of the residence demonstrating how the intervening vegetation further reduces visibility of the Project.

## Evaluation of Visual Performance Objectives (VIZ2):

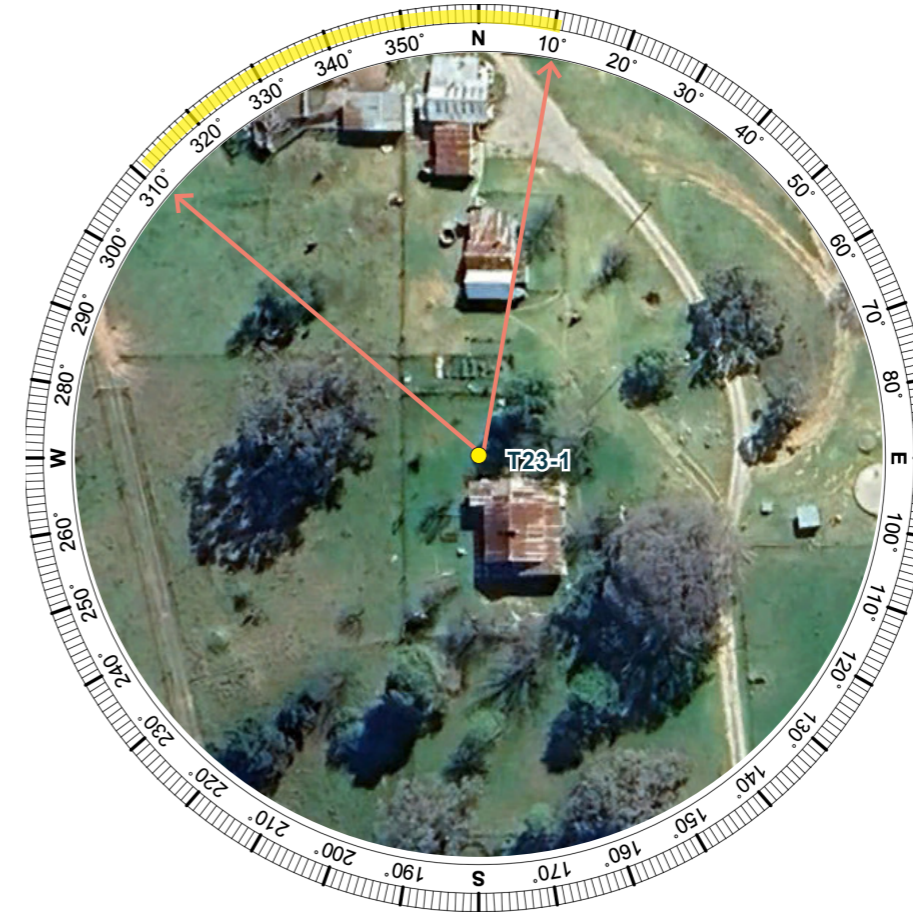
Performance Objective:	Visual Magnitude	Multiple Wind Turbine Tool	Landscape Scenic Integrity	Key Feature Disruption	Shadow Flicker
<b>Meets Objective?:</b>	Yes	Yes	Yes	Yes	Yes
<b>Discussion:</b>	No turbines are located within the black line of visual magnitude.	WTGs within 8,000 m of the residence will be visible in up to one (1) 60 degree sectors which is deemed acceptable.	Views towards WTGs will be limited due to the existing intervening vegetation. As a result the Project will not impact the landscape scenic integrity.	The Project will not disrupt views to key features from this residence.	No shadow flicker will be experienced at this dwelling.
<b>Recommendation:</b>	N/A	N/A	N/A	N/A	N/A

# Detailed Assessment Dwelling T23-1 (Wanda Vale)



- LEGEND**
- 250 m WTG within 8,000 m
  - WTG located in excess of 8,000 m from Residence
  - Non-associated Dwelling
  - Associated Dwelling
  - - - 3,350 m from nearest turbine (Black Line)
  - - - 4,950 m from nearest turbine (Blue Line)
  - - - 8,000 m from nearest turbine
  - 60° sector
  - 60° sector with turbines

Preliminary Assessment Tools applied to Dwelling T23-1



- LEGEND**
- Representative photomontage location
  - Direction of visible turbines based on topography
  - Extent of visible turbines based on topography

Aerial Image of Dwelling T23-1

Aerial image source: Google Earth 2024



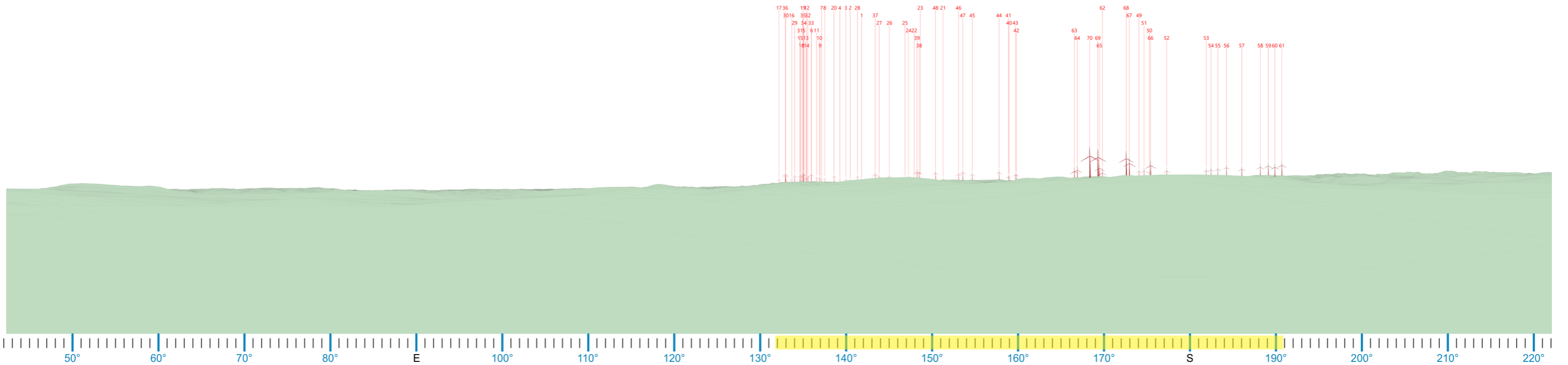
Image of northern Side of Dwelling T23-1

# Detailed Assessment Dwelling T23-1

## Proposed View - 180 degree field of view



Vegetation and existing structures screen views to most turbines. Some views are available through gaps in vegetation.



## Proposed Wire Frame Diagram - 180 degree field of view

# Dwelling Assessment Dwelling U24-1

## DWELLING U24-1

Nearest proposed turbine (km):	4.68 km	Viewer Sensitivity:	Level 2 (Moderate)
Number of proposed turbines within 8,000m of the dwelling:	6	Scenic Quality Rating:	Low - Moderate
Number of potentially visible turbines (Based on topography alone)	22 All at hub height	Landscape Character Unit:	LCU02: Yarrabin / Hargrave Farmlands
Number of 60° sectors occupied by visible turbines (based on 3D assessment):	One (1)	Visual Influence Zone:	VIZ2

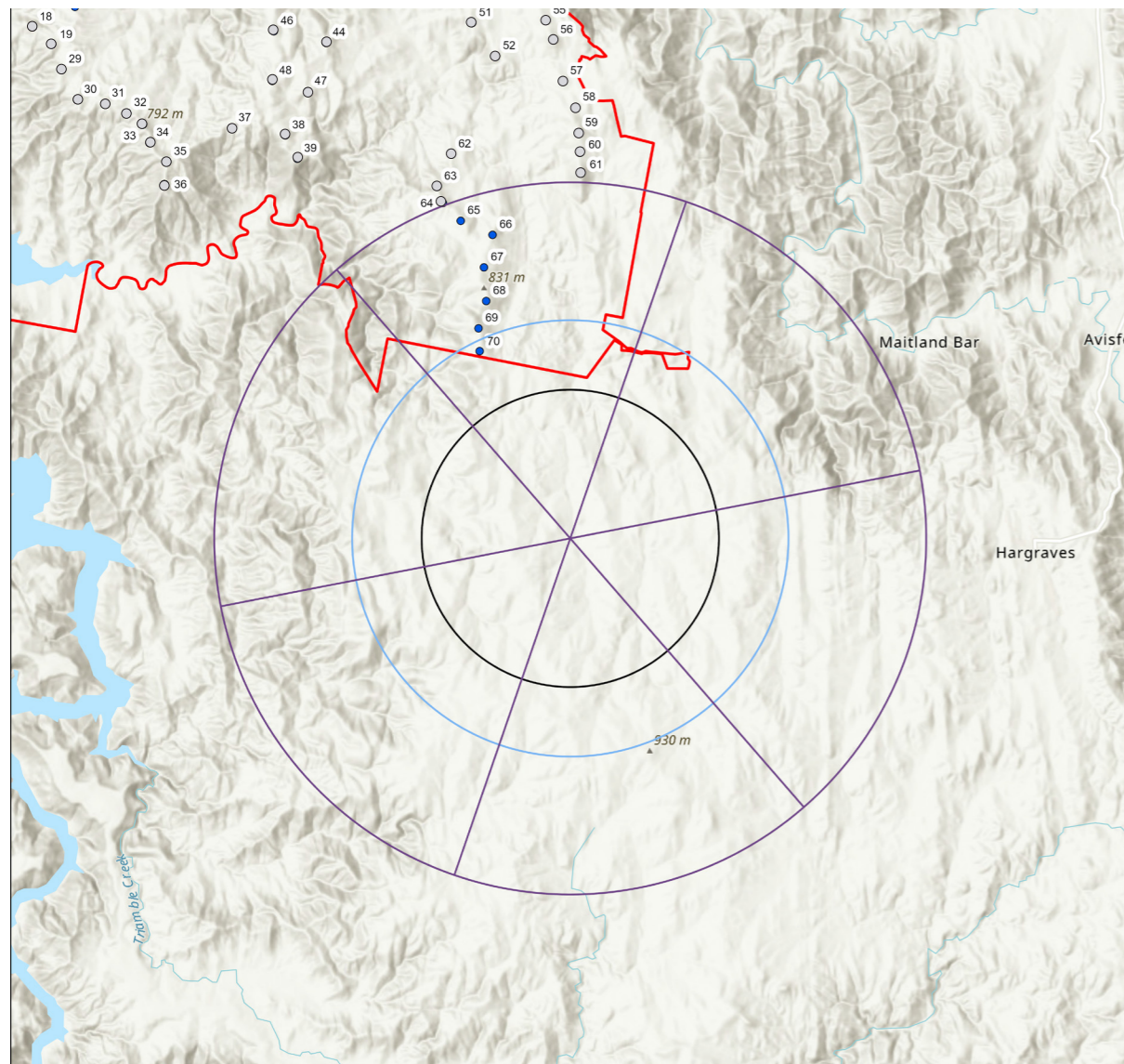
### Assessment Notes:

Moir have prepared a wireframe diagram from the dwelling to assist with the visual impact assessment. The dwelling is located on Black Willow Road. The wireframe diagram indicates up to 22 turbines would be visible (however only 6 of these are located within the 8km Study Area). The nearest turbine is located approximately 4.88 km NNW of the dwelling. Aerial imagery indicates vegetation to the north of the dwelling would assist in fragmenting views in the direction of the turbines. The vegetation is anticipated to screen views to the Project and as a result the visual impact rating is 'nil'.

### Visual Performance Objectives

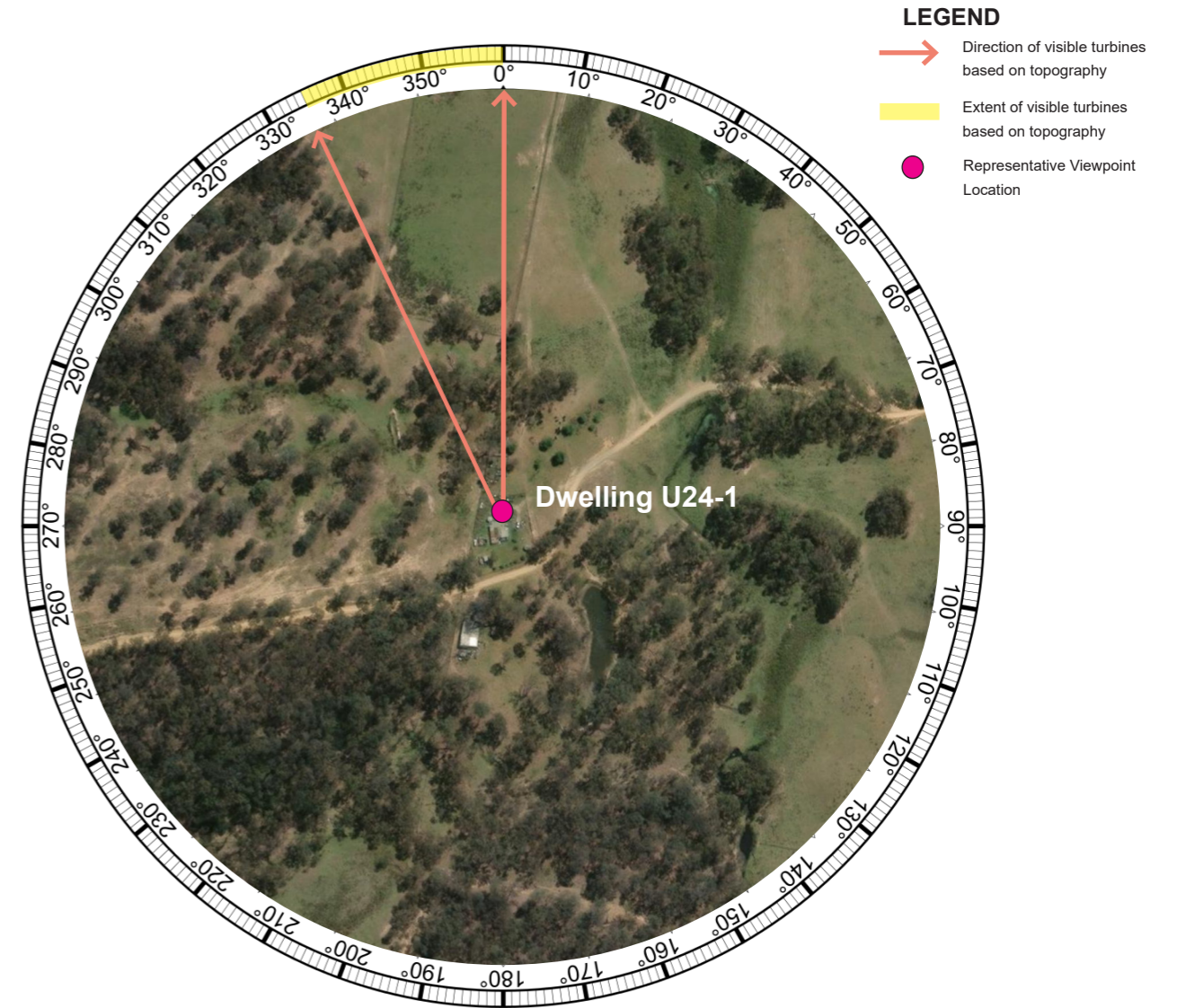
**Visual Magnitude:** No turbines are located within the black line of visual magnitude. One (1) turbine is located within the blue line of visual magnitude, however vegetation will screen this turbine.  
**Multiple Wind Turbine Effect:** The project has turbine within in up to one (1) 60 degree sector, which is deemed acceptable for a receptor with Level 2 Sensitivity (Rural Dwelling).  
**Landscape Scenic Integrity:** The proposed turbines would be an indiscernible element in the landscape, the scenic integrity will remain intact.  
**Key Feature Disruption:** The turbines would be an indiscernible element and will not disrupt views of the key features in the landscape from this location.

Visual Impact Rating: Nil



### LEGEND

- Turbine within 8,000 m
- Turbine out of 8,000 m Study Area
- 3,350m from nearest turbine (Black Line)
- 4,950m from nearest turbine (Blue Line)
- 8,000 m from nearest turbine
- 60° Sector



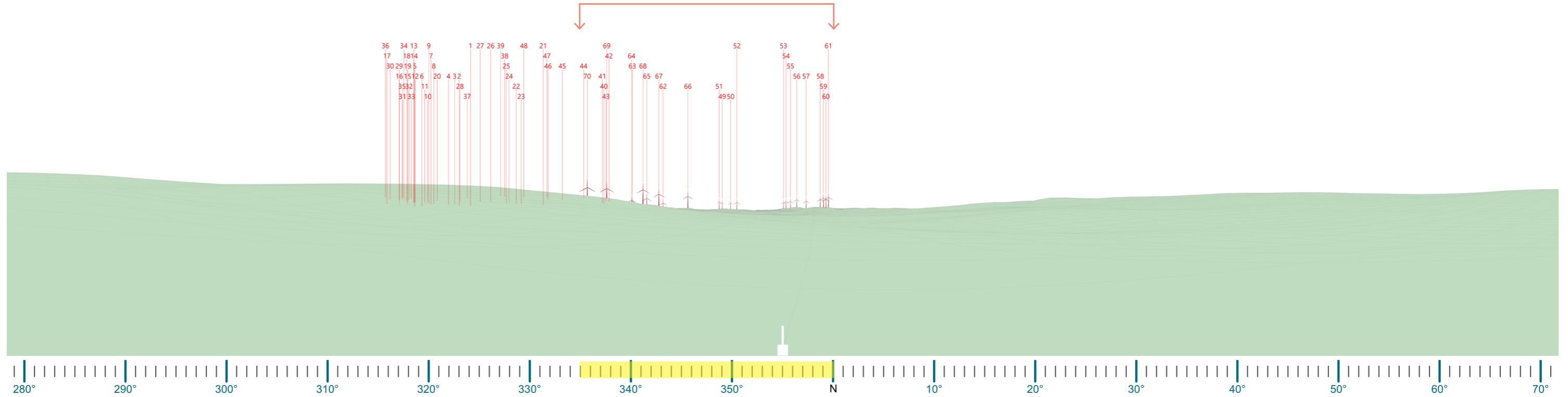
Aerial Image Source: Google Earth (November 2021)

# Dwelling Assessment Dwelling U24-1

Proposed Wire Frame Diagram - 180 degree field of view

Wireframe Diagram indicates 22 turbines at hub height are visible.

Only six (6) turbines are located within the 8km Study Area.



**Note:**

No access to Site was available.

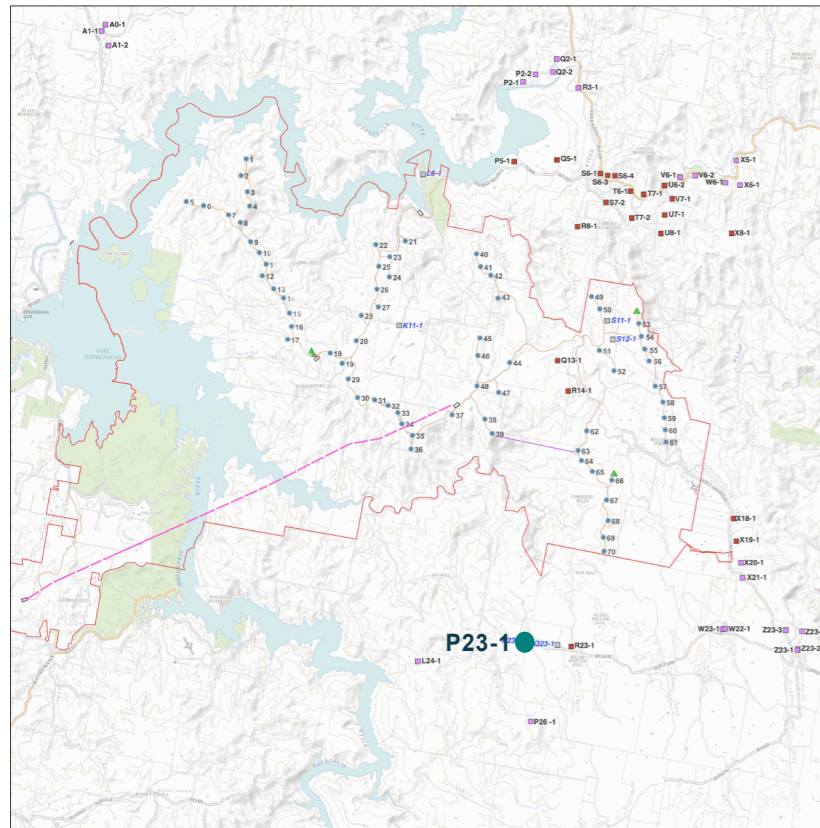
The wire frame diagram is a preliminary assessment tool that represents a bare ground scenario - ie. a landscape without screening, structures or vegetation. As accurate information on the height and coverage of vegetation and buildings is unavailable, it is important to note the wire frame diagram is based solely on topographic information.

Therefore this should be acknowledged as representing the absolute worst case scenario.

# Detailed Assessment Dwelling P23-1

## Residence P23-1

<b>Nearest WTG and distance:</b>	4.38 km
<b>WTGs within Black Line (3,350 m):</b>	Nil
<b>Number of 60° Sectors with visible WTGs:</b>	One (1)
<b>Visibility Distance Zone:</b>	Near Middleground (NM)
<b>Viewer Sensitivity Level:</b>	Level 2 Rural Residence
<b>Landscape Character Unit:</b>	LCU01: Yarrabin / Hargrave Hills
<b>Scenic Quality Rating:</b>	Moderate
<b>Visual Influence Zone (VIZ):</b>	VIZ2
<b>Visual Impact Rating:</b>	Low



Dwelling P23-1 Location

## Assessment Notes:

Dwelling P23-1 is located to the south of the Project approximately 4.38 km from the nearest turbine. A Wire Frame Diagram has been prepared from this location.

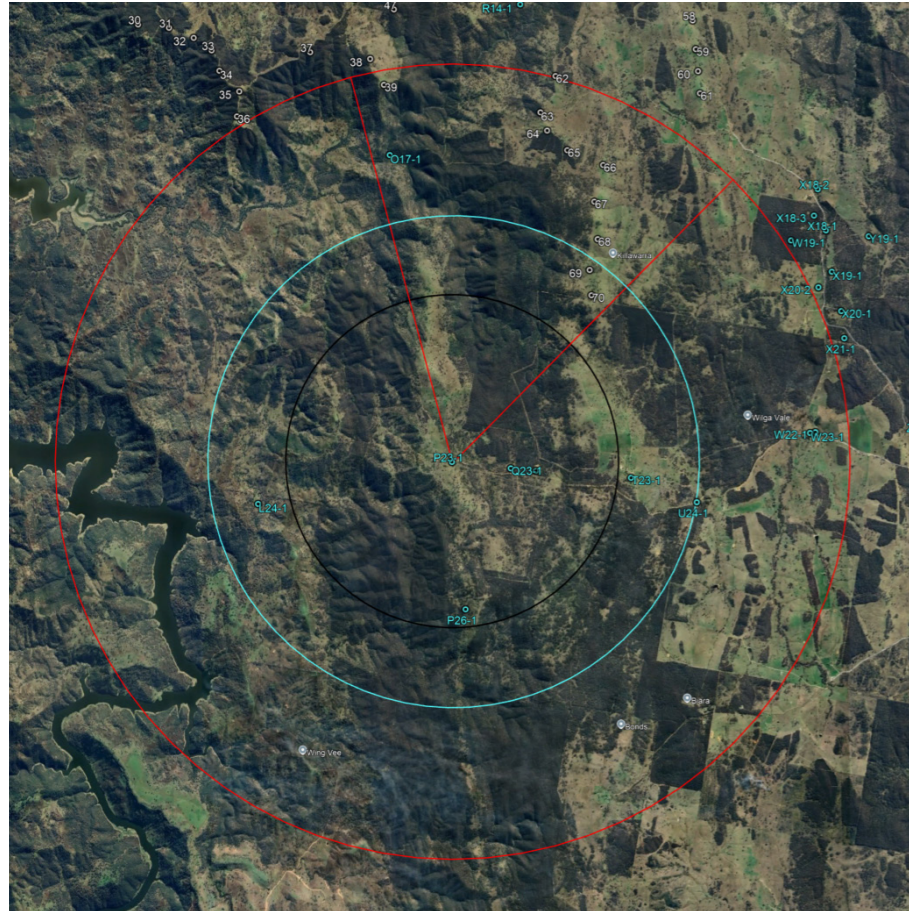
## Visual Impact Summary:

Dwelling P23-1 is located to the south of the Project, 4.38 km from the nearest WTG (WTG 70). The dwelling appears to have intervening vegetation to the north in the foreground associated with Black Willow Road which is likely to screen / fragment views to the turbines from the dwelling.

## Evaluation of Visual Performance Objectives (VIZ2):

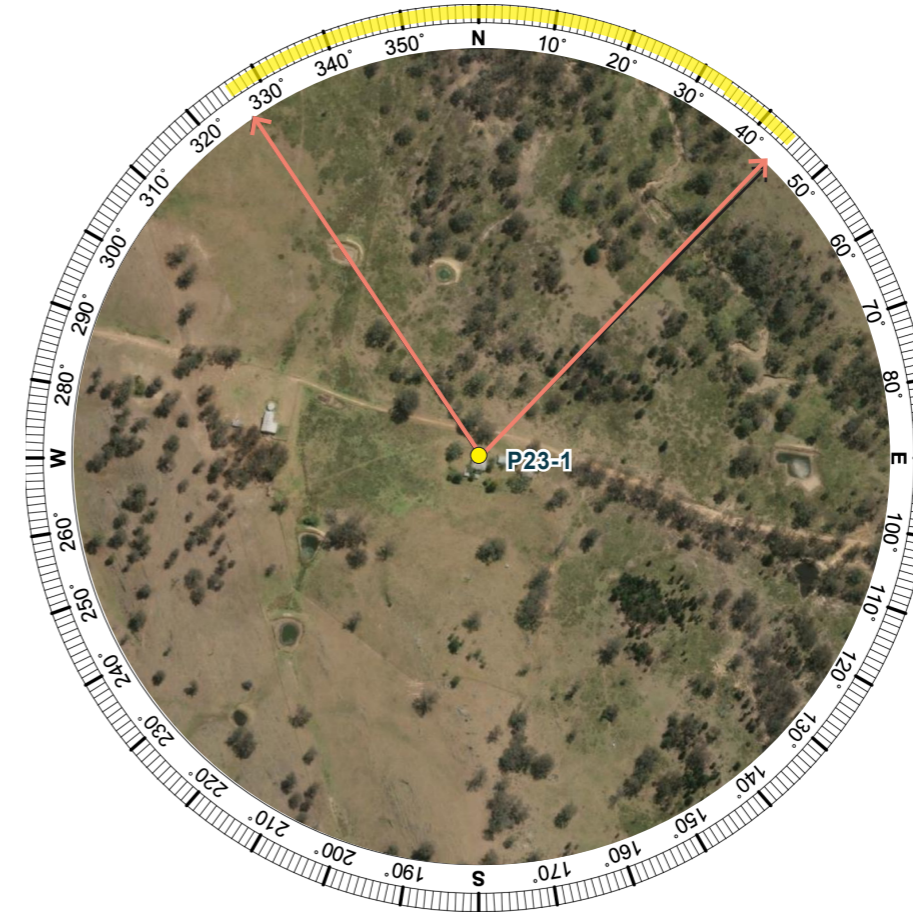
Performance Objective:	Visual Magnitude	Multiple Wind Turbine Tool	Landscape Scenic Integrity	Key Feature Disruption	Shadow Flicker
<b>Meets Objective?:</b>	Yes	Yes	Yes	Yes	Yes
<b>Discussion:</b>	No turbines are located within the black line of visual magnitude.	Turbines occupy up to one (1) 60 degree sector which is deemed acceptable in accordance with the Bulletin.	The turbines will be a minor element in the landscape. The scenic integrity will remain intact.	The Project will not disrupt views to key features from this residence.	No shadow flicker will be experienced at this dwelling.
<b>Recommendation:</b>	N/A	N/A	N/A	N/A	N/A

# Detailed Assessment Dwelling P23-1



- LEGEND**
- 250 m WTG
  - 250 m WTG
  - 3,350 m from nearest turbine (Black Line)
  - 4,950 m from nearest turbine (Blue Line)
  - 8,000 m from nearest turbine
  - 60° sector with Turbines

Preliminary Assessment Tools applied to Dwelling P23-1



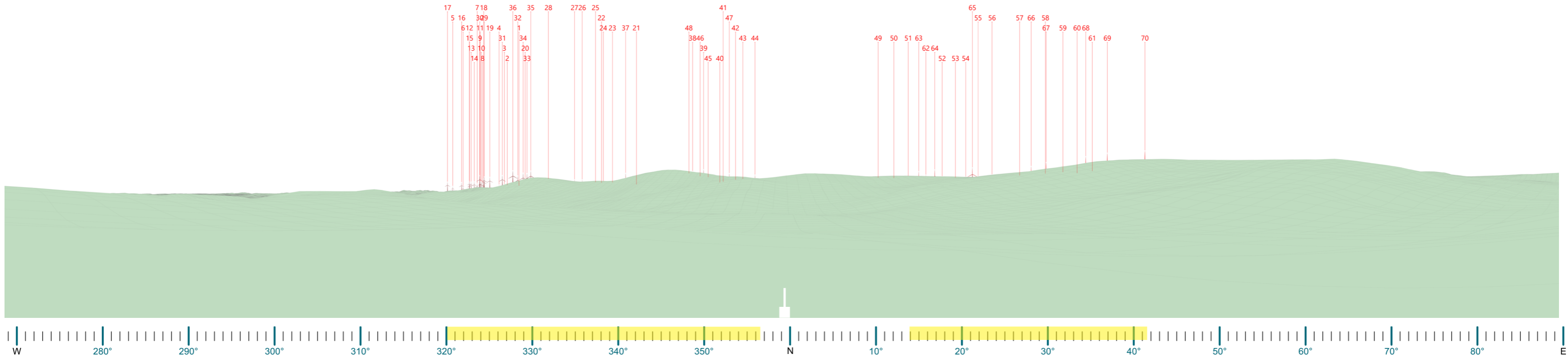
- LEGEND**
- Representative assessment location
  - Direction of visible turbines based on topography
  - Extent of visible turbines based on topography

Aerial Image of Dwelling P23-1

Aerial image source: Google Earth 2024

# Detailed Assessment Dwelling P23-1

## Proposed Wire Frame Diagram - 180 degree field of view



# Detailed Assessment Dwelling Q23-1

## Residence Q23-1

**Nearest WTG and distance:** 3.85 km

**WTGs within Black Line (3,350 m):** Nil

**Number of 60° Sectors with visible WTGs:** Two (2)

**Visibility Distance Zone:** Near Middleground (NM)

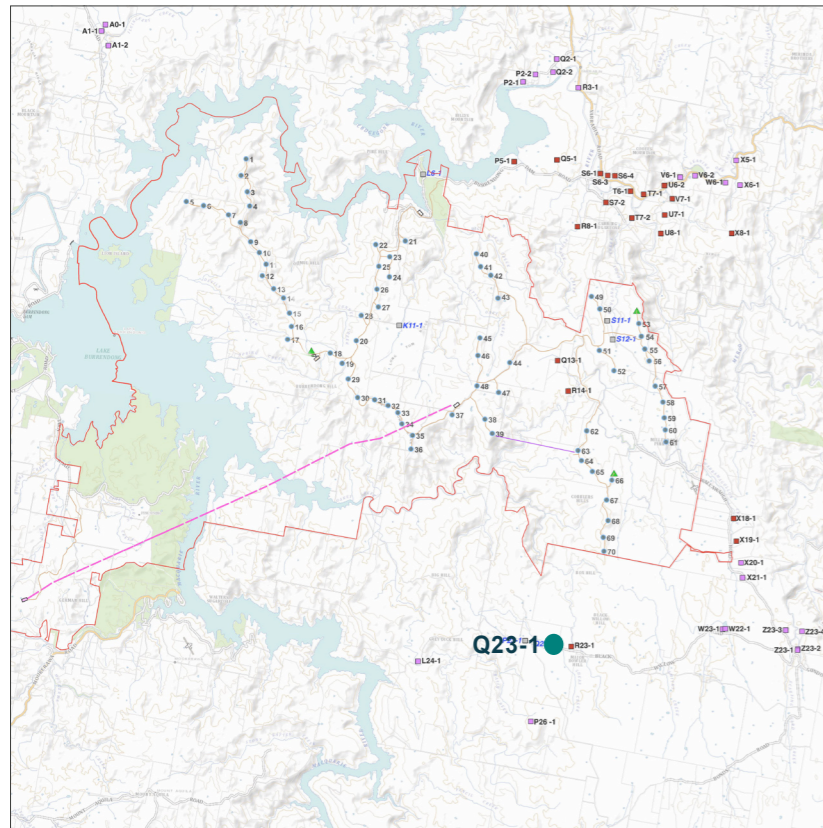
**Viewer Sensitivity Level:** Level 2  
Rural Residence

**Landscape Character Unit:** LCU01: Yarrabin / Hargrave Hills

**Scenic Quality Rating:** Moderate

**Visual Influence Zone (VIZ):** VIZ2

**Visual Impact Rating:** Nil



Dwelling Q23-1 Location

## Assessment Notes:

Dwelling Q23-1 is located to the south of the Project approximately 3.85 km from the nearest turbine. A Wire Frame Diagram has been prepared from this location.

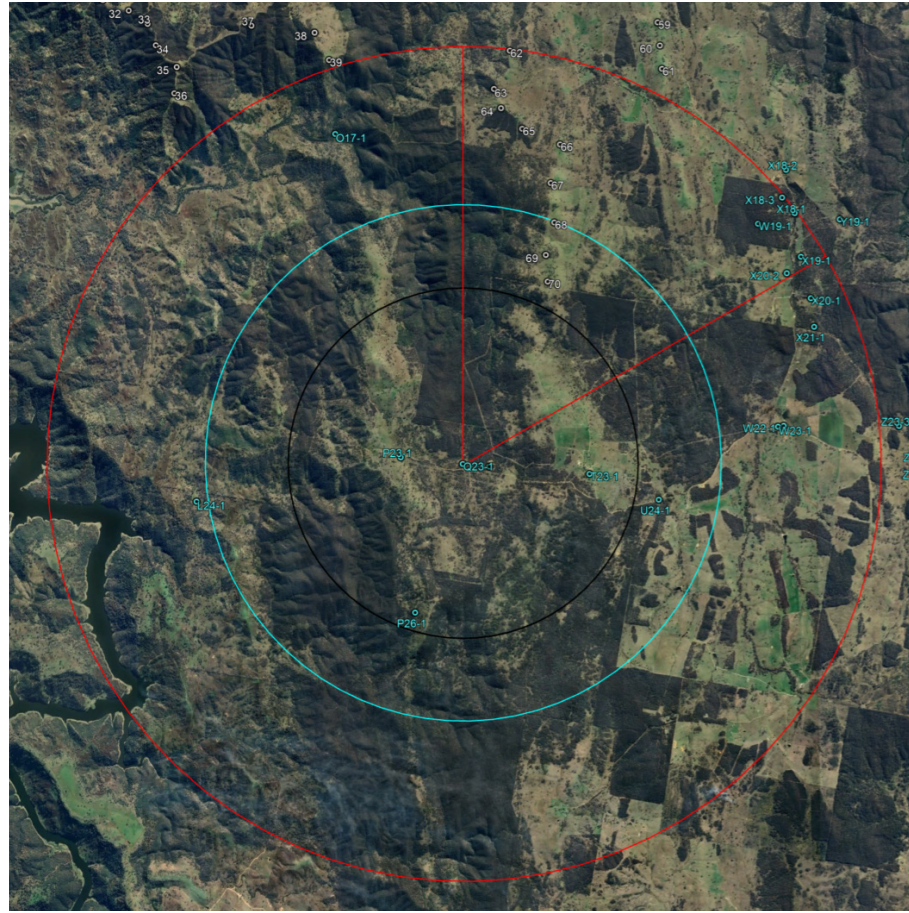
## Visual Impact Summary:

Dwelling P23-1 is located to the south of the Project, 3.85 km from the nearest WTG (WTG 70). The dwelling appears to be surrounded by vegetation. Views to the Project will not be available from this dwelling.

## Evaluation of Visual Performance Objectives (VIZ2):

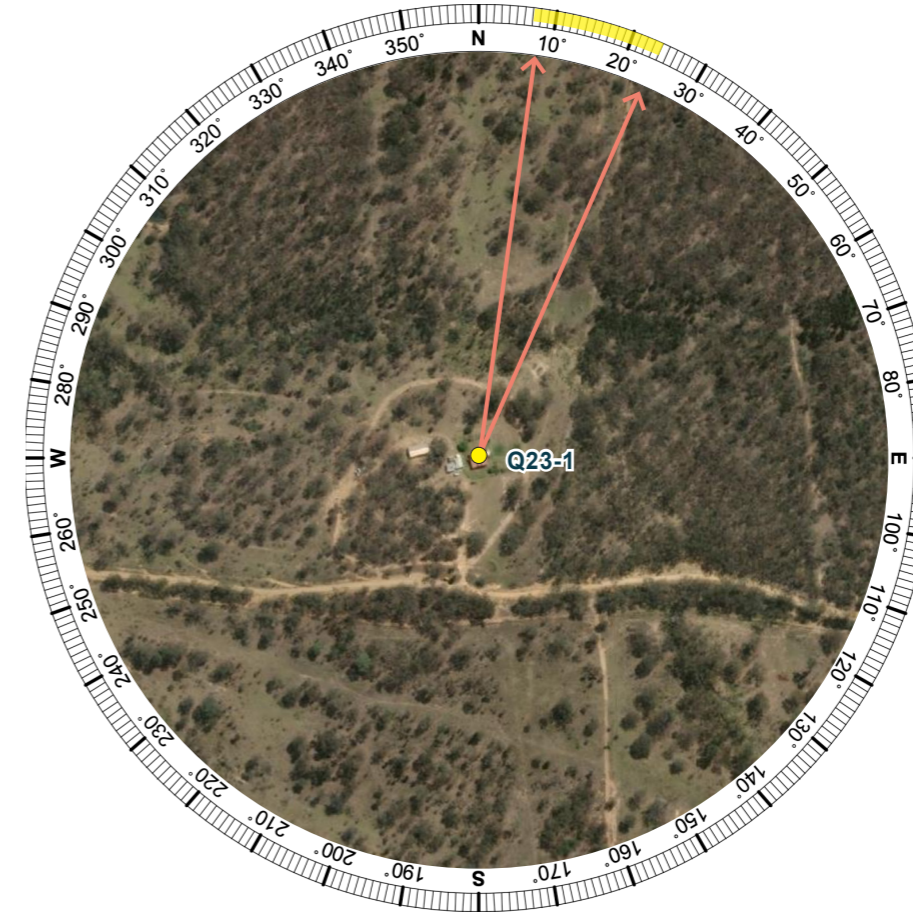
Performance Objective:	Visual Magnitude	Multiple Wind Turbine Tool	Landscape Scenic Integrity	Key Feature Disruption	Shadow Flicker
<b>Meets Objective?:</b>	Yes	Yes	Yes	Yes	Yes
<b>Discussion:</b>	No turbines are located within the black line of visual magnitude.	Turbines occupy up to one (1) 60 degree sector which is deemed acceptable in accordance with the Bulletin.	The turbines will be screened by vegetation and will not alter the scenic integrity.	The Project will not disrupt views to key features from this residence.	No shadow flicker will be experienced at this dwelling.
<b>Recommendation:</b>	N/A	N/A	N/A	N/A	N/A

# Detailed Assessment Dwelling Q23-1



- LEGEND**
- 250 m WTG
  - 250 m WTG
  - 3,350 m from nearest turbine (Black Line)
  - 4,950 m from nearest turbine (Blue Line)
  - 8,000 m from nearest turbine
  - 60° sector with Turbines

Preliminary Assessment Tools applied to Dwelling Q23-1



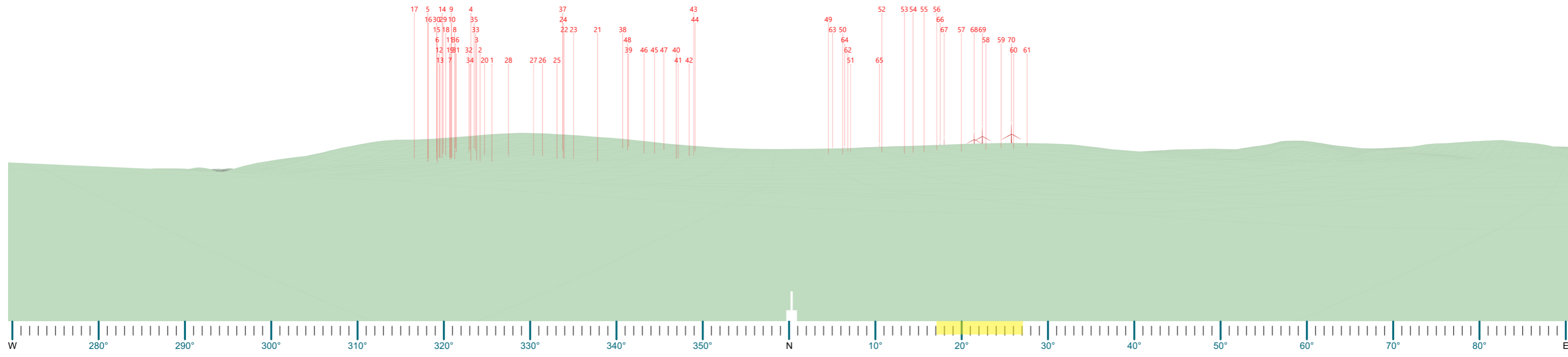
- LEGEND**
- Representative assessment location
  - Direction of visible turbines based on topography
  - Extent of visible turbines based on topography

Aerial Image of Dwelling Q23-1

*Aerial image source: Google Earth 2024*

# Detailed Assessment Dwelling Q23-1

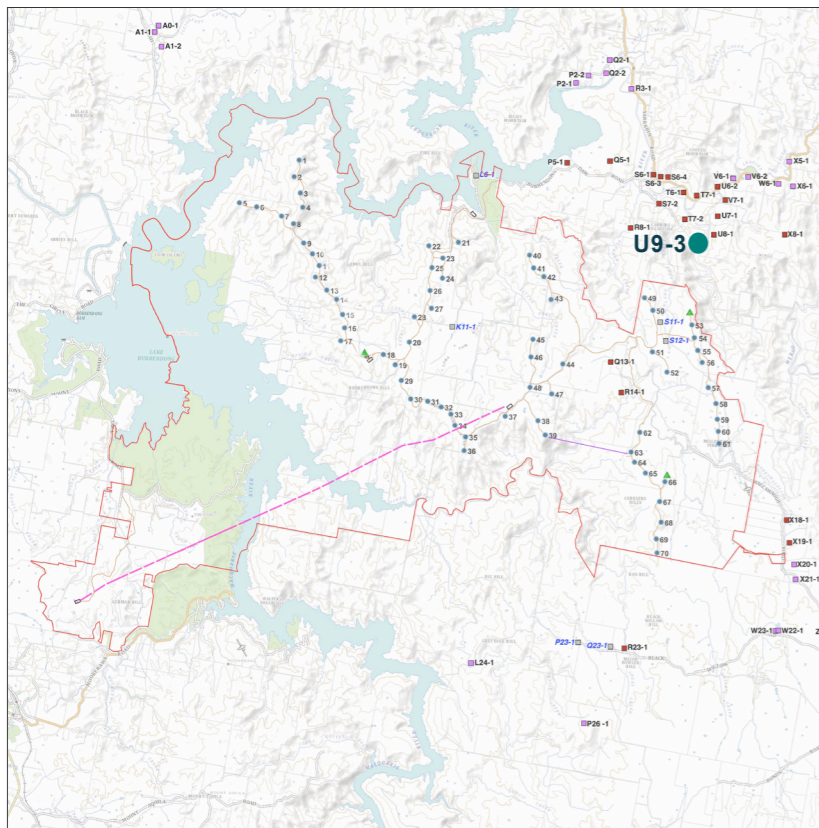
## Proposed Wire Frame Diagram - 180 degree field of view



# Detailed Assessment Building U9-3

## BUILDING U9-3

<b>Nearest WTG and distance:</b>	2.497 km (WTG 53)
<b>WTGs within Black Line (3,350 m):</b>	Six (6)
<b>Number of 60° Sectors with visible WTGs:</b>	Nil
<b>Visibility Distance Zone:</b>	Far Foreground
<b>Viewer Sensitivity Level:</b>	Level 2 Rural Residence
<b>Landscape Character Unit:</b>	LCU07: Worlds End
<b>Scenic Quality Rating:</b>	Moderate
<b>Visual Influence Zone (VIZ):</b>	VIZ2
<b>Visual Impact Rating:</b>	Nil



Dwelling U9-3 Location

## Assessment Notes:

The location is accessed via a locked gate which is inaccessible to the public. Representatives from Moir LA undertook a site inspection during March 2023 to determine the site conditions. It is noted the dwelling was constructed with no Development Approval post 1967. A representative photograph was taken from the deck of the existing structure.

## Visual Impact Summary:

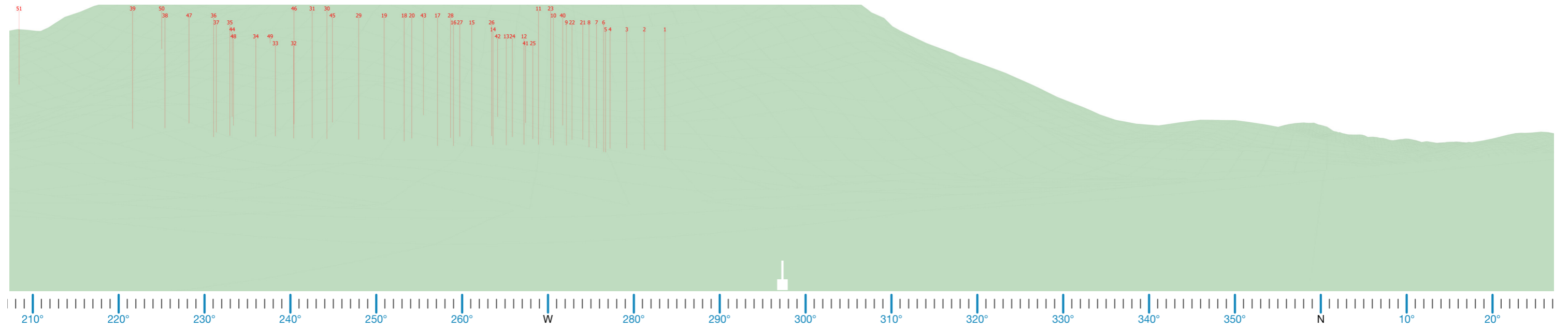
A wire frame diagram has been prepared from the photograph location. The wire frame diagram indicates topography screens views to the Project from this location. The visual impact rating has been assessed as nil from this location.

## Evaluation of Visual Performance Objectives (VIZ2):

Performance Objective:	Visual Magnitude	Multiple Wind Turbine Tool	Landscape Scenic Integrity	Key Feature Disruption	Shadow Flicker
<b>Meets Objective?:</b>	Yes	Yes	Yes	Yes	Yes
<b>Discussion:</b>	The Project will not be visible due to topography.	The Project will not be visible due to topography.	The Project will not be visible due to topography.	The Project will not be visible due to topography..	No shadow flicker will be experienced at this dwelling.
<b>Recommendation:</b>	N/A	N/A	N/A	N/A	N/A

# Detailed Assessment **Building U9-3**

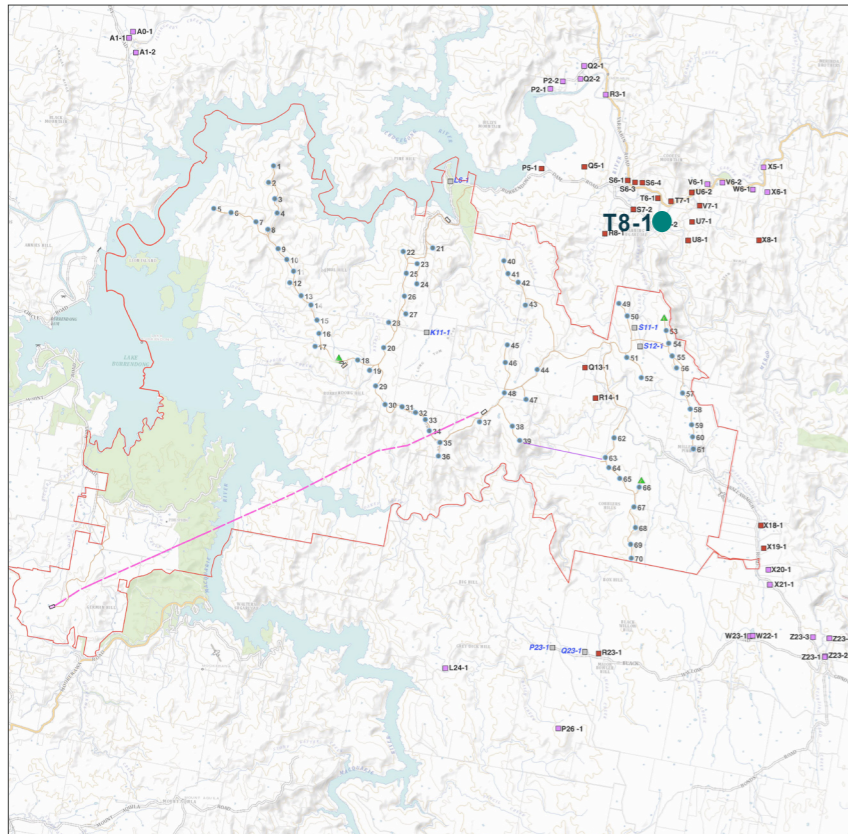
## Proposed Wire Frame Diagram - 180 degree field of view



# Detailed Assessment Building T8-1

## BUILDING T8-1

<b>Nearest WTG and distance:</b>	3.22 km
<b>WTGs within Black Line (3,350 m):</b>	Two (2)
<b>Number of 60° Sectors with visible WTGs:</b>	One (1)
<b>Visibility Distance Zone:</b>	Near Middleground (NM)
<b>Viewer Sensitivity Level:</b>	Level 2 Rural Residence
<b>Landscape Character Unit:</b>	LCU07: Worlds End
<b>Scenic Quality Rating:</b>	Moderate
<b>Visual Influence Zone (VIZ):</b>	VIZ2
<b>Visual Impact Rating:</b>	Nil



Dwelling T8-1 Location

## Assessment Notes:

Moir LA undertook a wire frame diagram from the dwelling. A photomontage was prepared from the public road adjacent to the dwelling. It is noted the dwelling was constructed with no Development Approval post 1967.

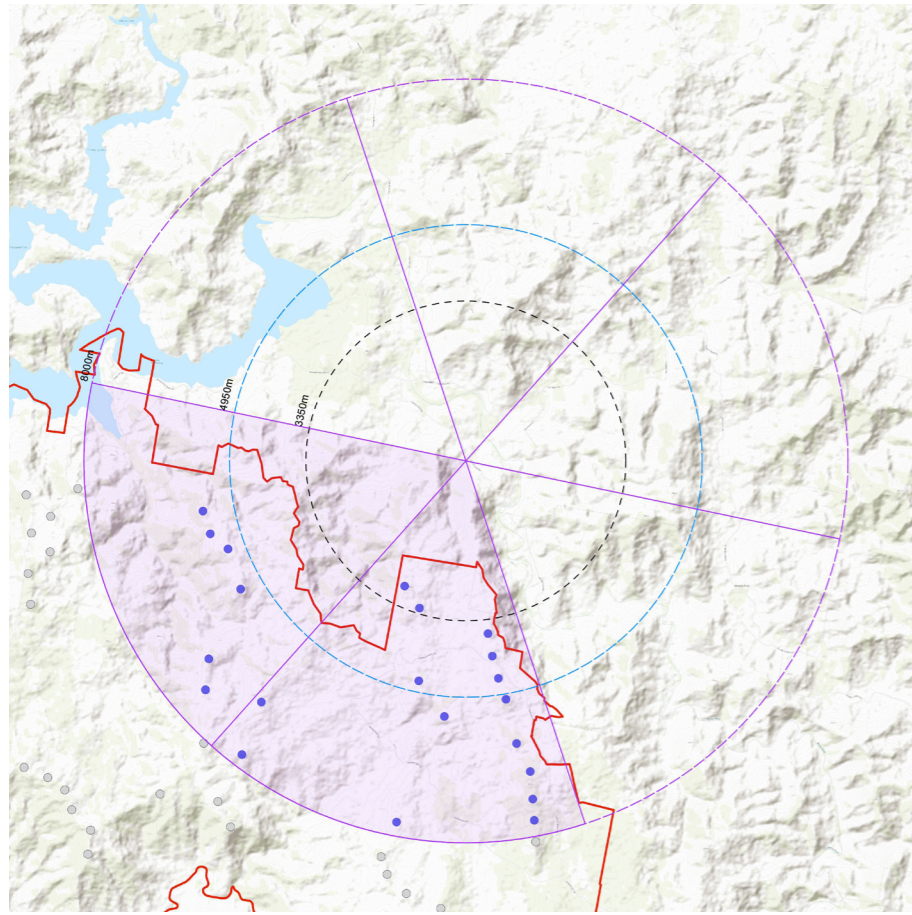
## Visual Impact Summary:

The wire frame diagram prepared from the dwelling indicates two (2) WTGs are visible to the south of the dwelling. Intervening vegetation to the south of the dwelling is anticipated to screen views to the WTGs from the dwelling. Therefore the visual impact rating has been assessed as nil from this dwelling.

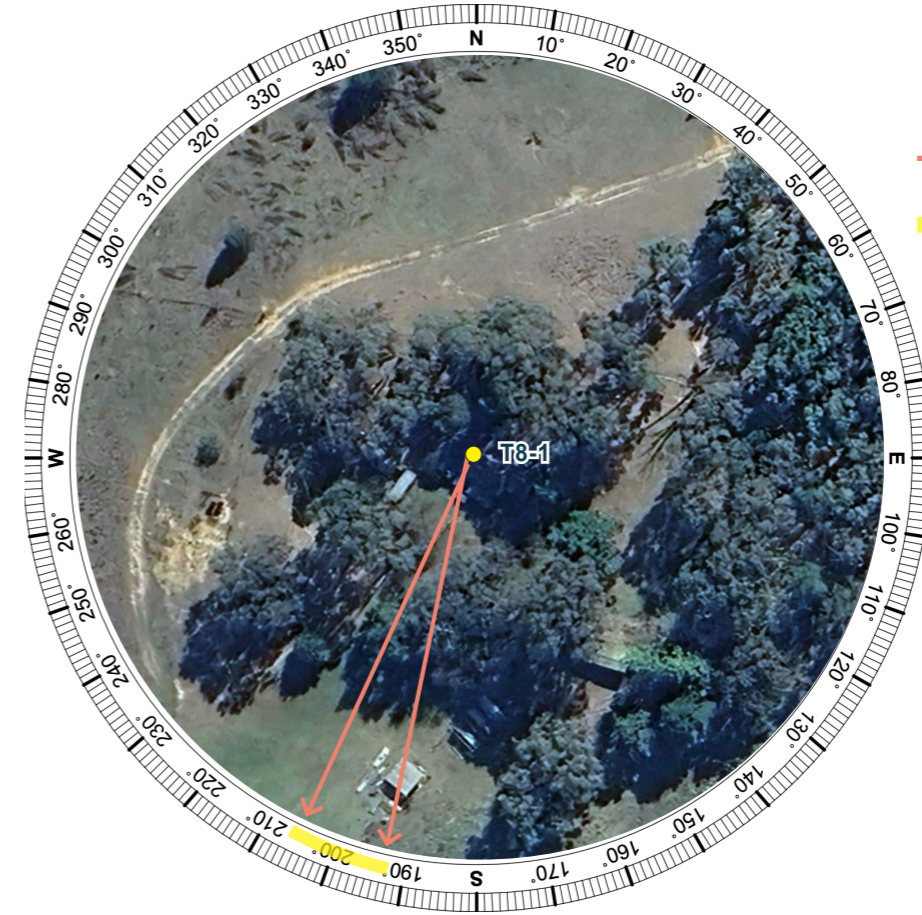
## Evaluation of Visual Performance Objectives (VIZ2):

Performance Objective:	Visual Magnitude	Multiple Wind Turbine Tool	Landscape Scenic Integrity	Key Feature Disruption	Shadow Flicker
<b>Meets Objective?:</b>	Yes	Yes	Yes	Yes	Yes
<b>Discussion:</b>	Two (2) WTGs are located within the black line of visual magnitude located to the south of the dwelling. Existing intervening vegetation is likely to fragment views to these turbines.	WTGs occupy one (1) 60 degree sector of turbines, which is deemed acceptable.	The Project will not be visible due to intervening vegetation.	The Project will not be visible due to intervening vegetation.	No shadow flicker will be experienced at this dwelling.
<b>Recommendation:</b>	N/A	N/A	N/A	N/A	N/A

# Detailed Assessment Building T8-1



- LEGEND**
- 250 m WTG within 8,000 m
  - WTG located in excess of 8,000 m from Residence
  - Non-associated Dwelling
  - Associated Dwelling
  - - - 3,350 m from nearest turbine (Black Line)
  - - - 4,950 m from nearest turbine (Blue Line)
  - - - 8,000 m from nearest turbine
  - 60° sector
  - 60° sector with turbines

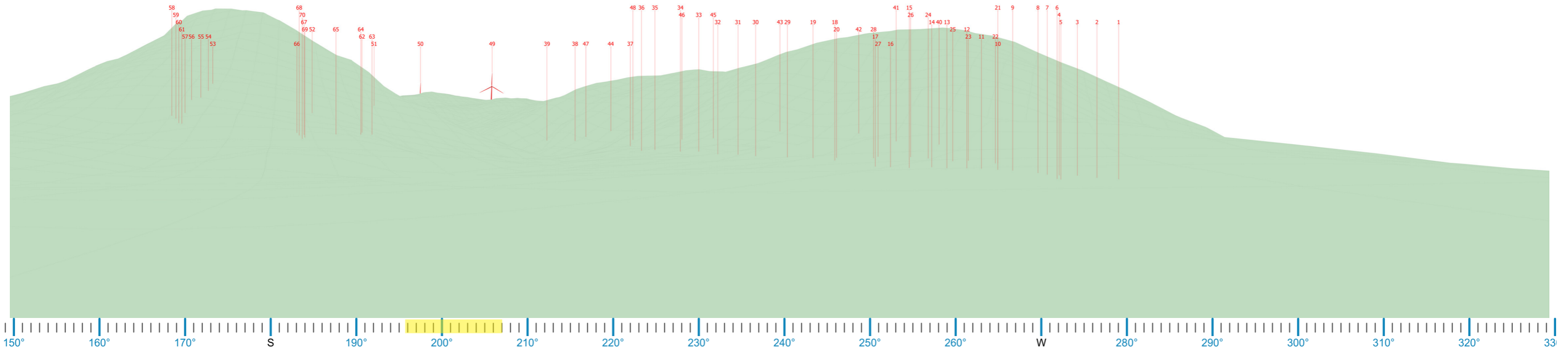


- LEGEND**
- Representative wire frame diagram location
  - Direction of visible turbines based on topography
  - Extent of visible turbines based on topography

Preliminary Assessment Tools applied to Dwelling T8-1

Aerial Image of Dwelling T8-1

Aerial image source: Google Earth 2024



Proposed Wire Frame Diagram - 180 degree field of view

# Detailed Assessment Building X18-3

## BUILDING X18-3

<b>Nearest WTG and distance:</b>	3.379 km
<b>WTGs within Black Line (3,350 m):</b>	One (1)
<b>Number of 60° Sectors with visible WTGs:</b>	One (1)
<b>Visibility Distance Zone:</b>	Near Middleground (NM)
<b>Viewer Sensitivity Level:</b>	Level 2 Rural Residence
<b>Landscape Character Unit:</b>	LCU02: Yarrabin / Hargrave Farmlands
<b>Scenic Quality Rating:</b>	Moderate
<b>Visual Influence Zone (VIZ):</b>	VIZ2
<b>Visual Impact Rating:</b>	Nil

## Assessment Notes:

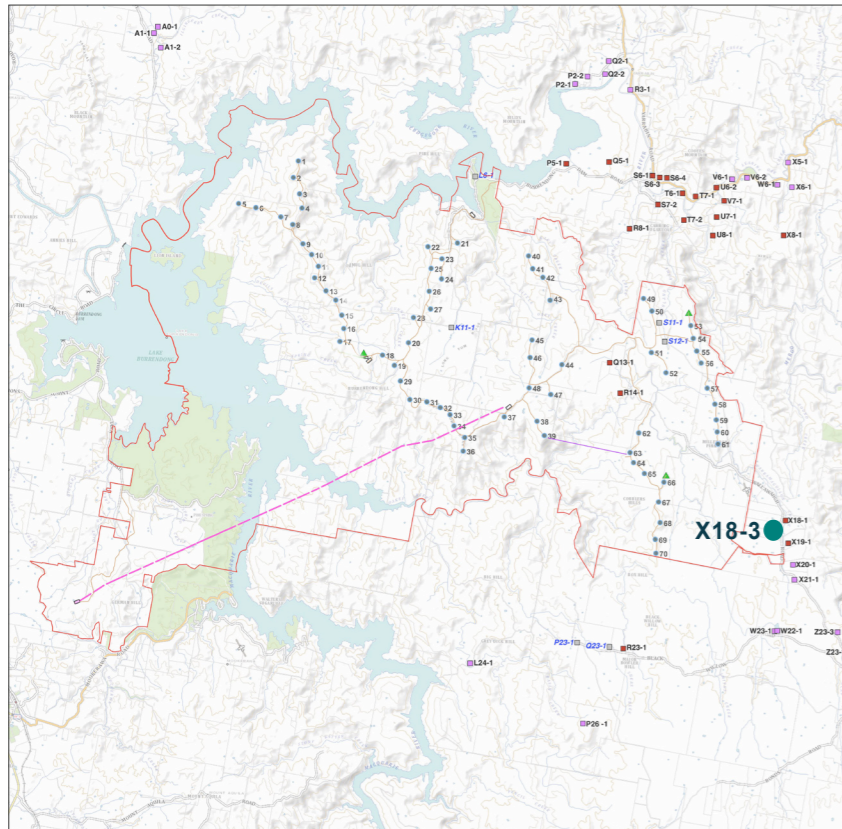
Moir LA undertook a wire frame diagram from the dwelling. It is noted the dwelling was constructed with no Development Approval post 1967.

## Visual Impact Summary:

The wire frame diagram prepared from the dwelling indicates 13 WTGs are visible to the north west of the dwelling. Intervening vegetation is anticipated to screen views to the WTGs from the dwelling. Therefore the visual impact rating has been assessed as nil from this dwelling.

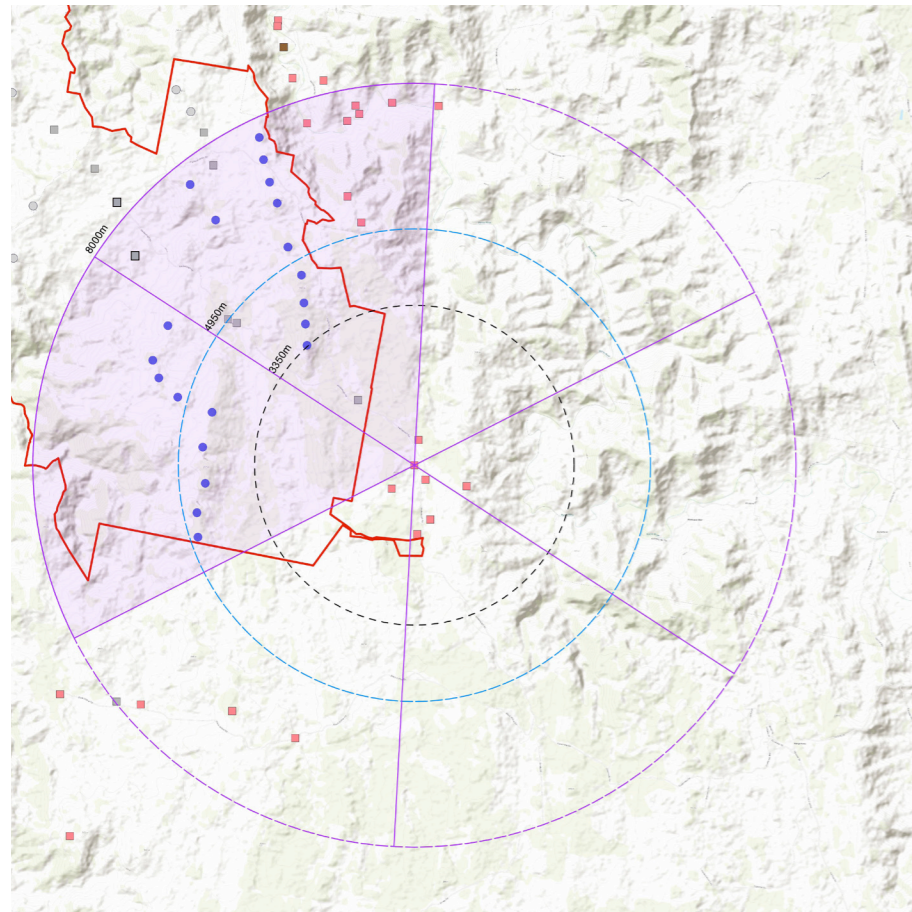
## Evaluation of Visual Performance Objectives (VIZ2):

Performance Objective:	Visual Magnitude	Multiple Wind Turbine Tool	Landscape Scenic Integrity	Key Feature Disruption	Shadow Flicker
<b>Meets Objective?:</b>	Yes	Yes	Yes	Yes	Yes
<b>Discussion:</b>	Two (2) WTGs are located within the black line of visual magnitude located to the south of the dwelling. Existing intervening vegetation is likely to fragment views to these turbines.	WTGs occupy one (1) 60 degree sector of turbines, which is deemed acceptable.	The Project will not be visible due to intervening vegetation.	The Project will not be visible due to intervening vegetation.	No shadow flicker will be experienced at this dwelling.
<b>Recommendation:</b>	N/A	N/A	N/A	N/A	N/A



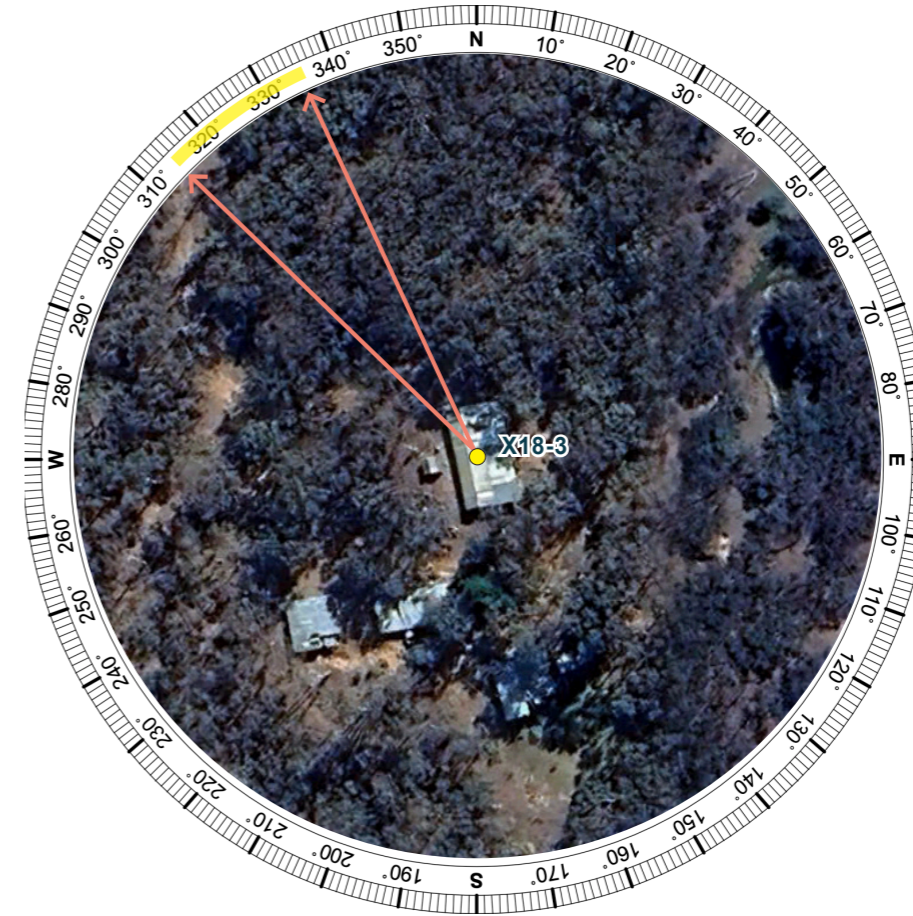
Dwelling X18-3 Location

# Detailed Assessment Building X18-3



- LEGEND**
- 250 m WTG within 8,000 m
  - WTG located in excess of 8,000 m from Residence
  - Non-associated Dwelling
  - Associated Dwelling
  - - - 3,350 m from nearest turbine (Black Line)
  - - - 4,950 m from nearest turbine (Blue Line)
  - - - 8,000 m from nearest turbine
  - 60° sector
  - 60° sector with turbines

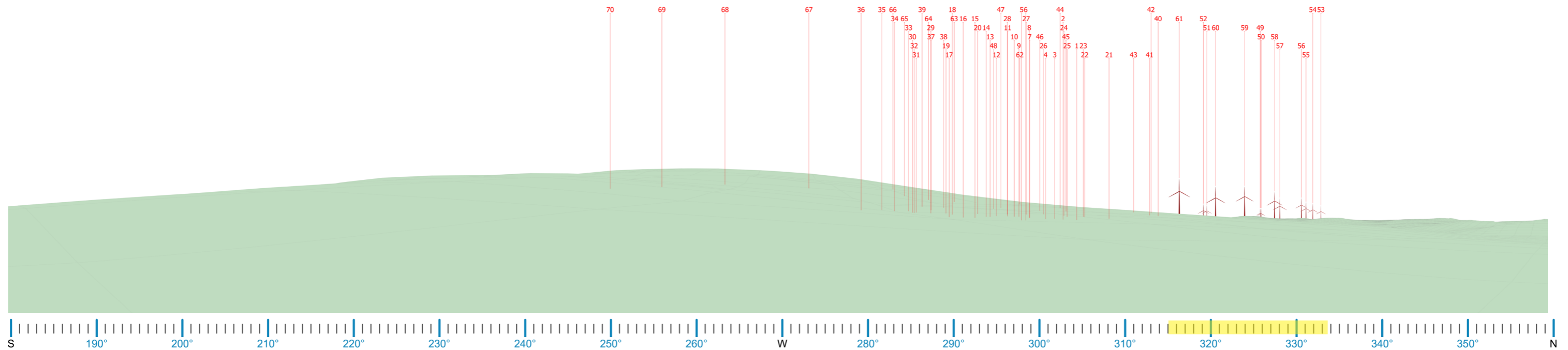
Preliminary Assessment Tools applied to Dwelling X18-3



- LEGEND**
- Representative wire frame location
  - Direction of visible turbines based on topography
  - Extent of visible turbines based on topography

Aerial Image of Dwelling X18-3

Aerial image source: Google Earth 2024



Proposed Wire Frame Diagram - 180 degree field of view

# Detailed Assessment Building W19-1

## BUILDING W19-1

<b>Nearest WTG and distance:</b>	3.50 km (WTG 61)
<b>WTGs within Black Line (3,350 m):</b>	Nil
<b>Number of 60° Sectors with visible WTGs:</b>	One (1)
<b>Visibility Distance Zone:</b>	Near Middleground (NM)
<b>Viewer Sensitivity Level:</b>	Level 2 Rural Residence
<b>Landscape Character Unit:</b>	LCU02: Yarrabin / Hargrave Farmlands
<b>Scenic Quality Rating:</b>	Moderate
<b>Visual Influence Zone (VIZ):</b>	VIZ2
<b>Visual Impact Rating:</b>	Nil

## Assessment Notes:

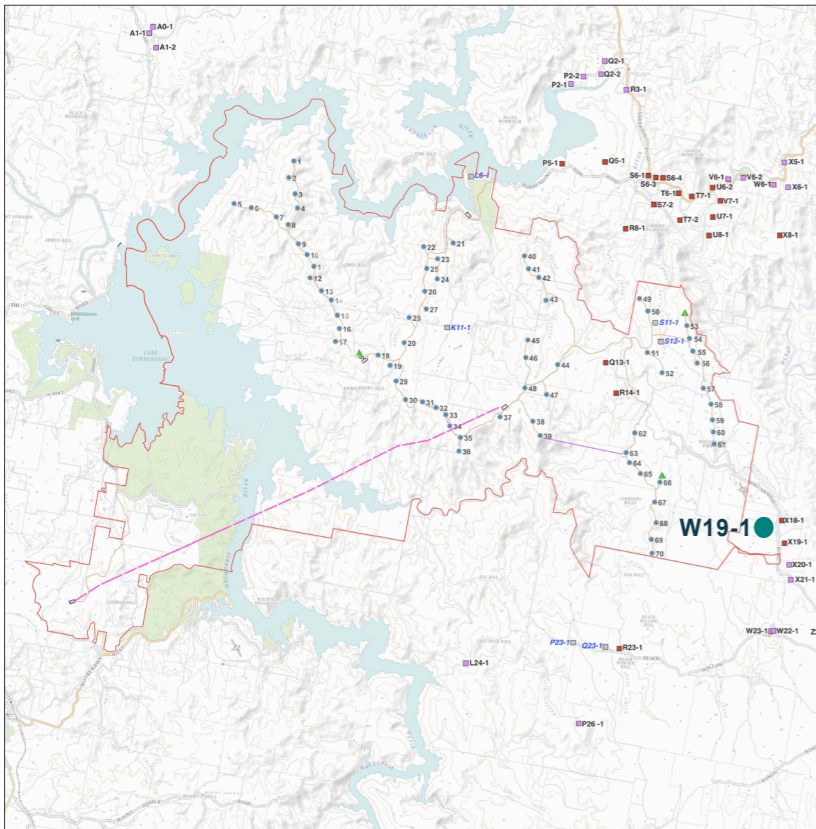
Moir LA undertook a wire frame diagram from the dwelling. It is noted the dwelling was constructed with no Development Approval post 1967.

## Visual Impact Summary:

The wire frame diagram prepared from the dwelling indicates five (5) WTGs are visible to the west of the dwelling. Intervening vegetation is anticipated to screen views to the WTGs from the dwelling. Therefore the visual impact rating has been assessed as nil from this dwelling.

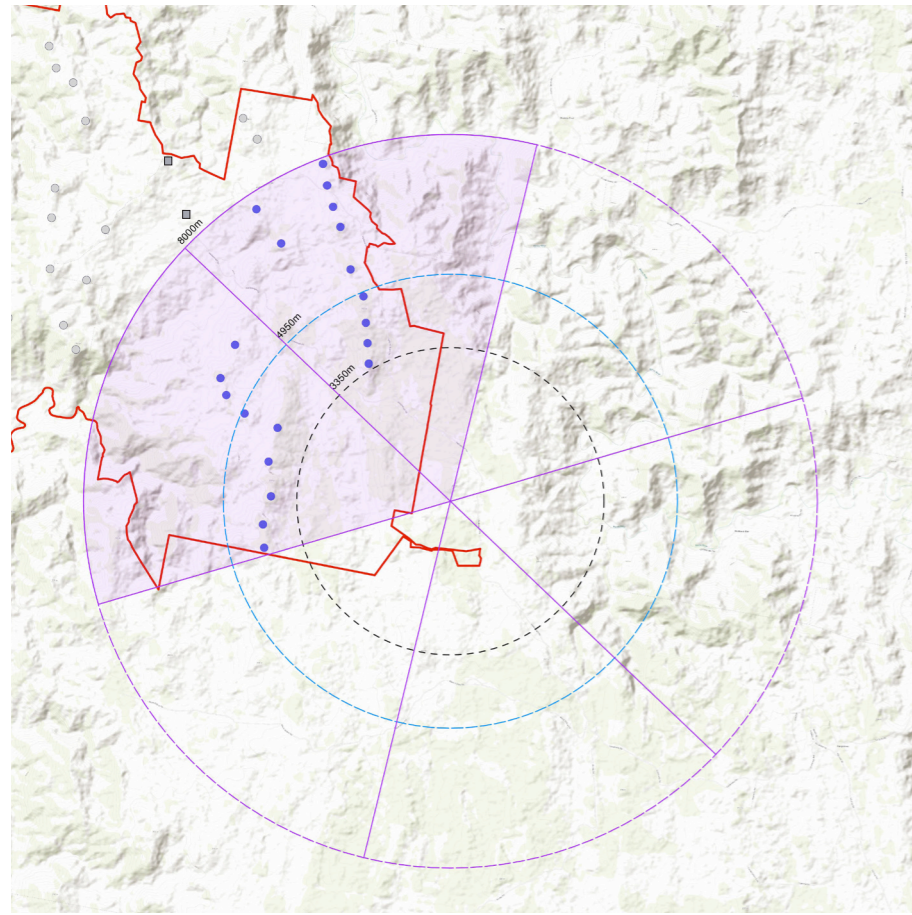
## Evaluation of Visual Performance Objectives (VIZ2):

Performance Objective:	Visual Magnitude	Multiple Wind Turbine Tool	Landscape Scenic Integrity	Key Feature Disruption	Shadow Flicker
<b>Meets Objective?:</b>	Yes	Yes	Yes	Yes	Yes
<b>Discussion:</b>	No turbines are located within the black line of visual magnitude.	WTGs occupy one (1) 60 degree sector of turbines, which is deemed acceptable.	The Project will not be visible due to intervening vegetation.	The Project will not be visible due to intervening vegetation.	No shadow flicker will be experienced at this dwelling.
<b>Recommendation:</b>	N/A	N/A	N/A	N/A	N/A



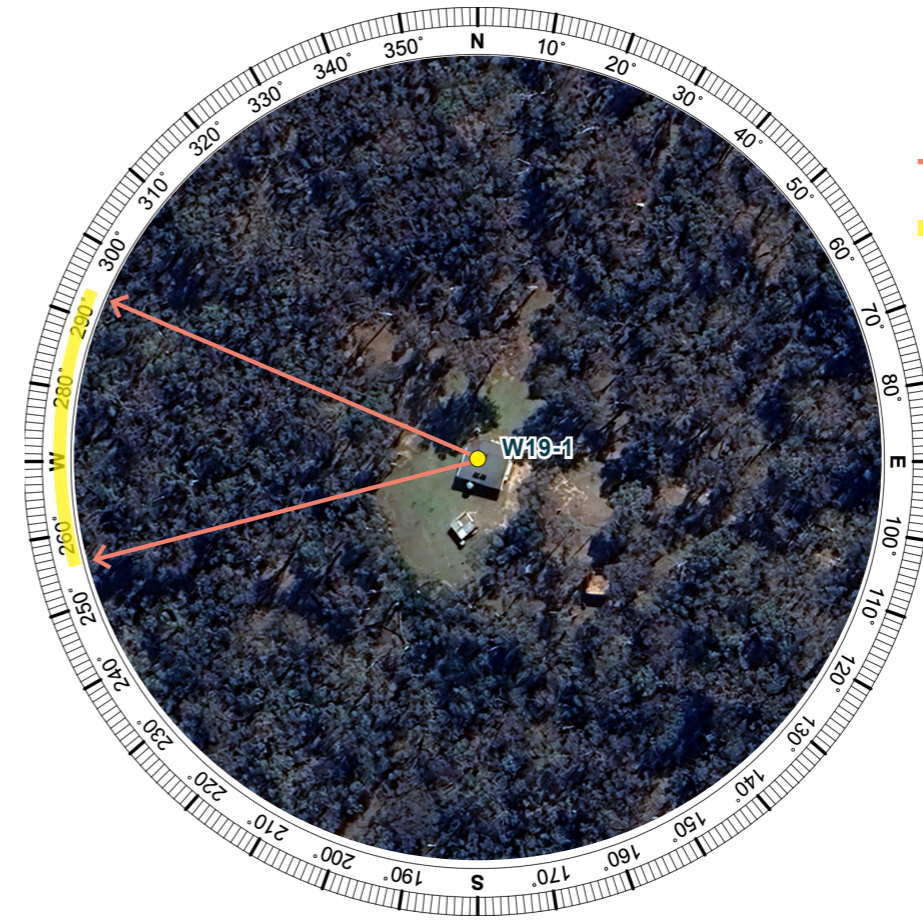
Dwelling W19-1 Location

# Detailed Assessment Building W19-1



- LEGEND**
- 250 m WTG within 8,000 m
  - WTG located in excess of 8,000 m from Residence
  - - - 3,350 m from nearest turbine (Black Line)
  - - - 4,950 m from nearest turbine (Blue Line)
  - - - 8,000 m from nearest turbine
  - 60° sector
  - 60° sector with turbines

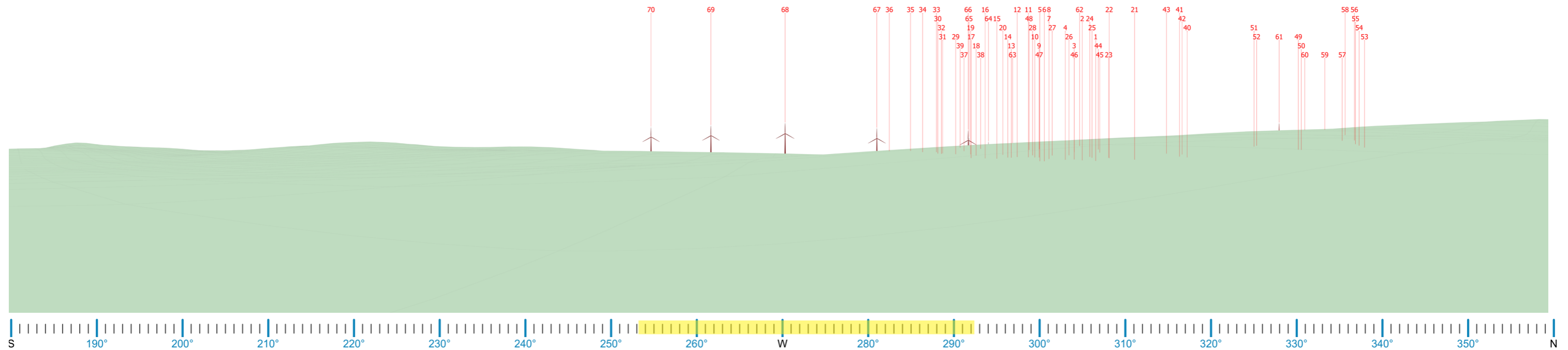
Preliminary Assessment Tools applied to Dwelling W19-1



- LEGEND**
- Representative wire frame location
  - Direction of visible turbines based on topography
  - Extent of visible turbines based on topography

Aerial Image of Dwelling W19-1

Aerial image source: Google Earth 2024



Proposed Wire Frame Diagram - 180 degree field of view

# Detailed Assessment Building Y19-1

## BUILDING Y19-1

**Nearest WTG and distance:** 4.46 km

**WTGs within Black Line (3,350 m):** Nil

**Number of 60° Sectors with visible WTGs:** Two (2)

**Visibility Distance Zone:** Near Middleground (NM)

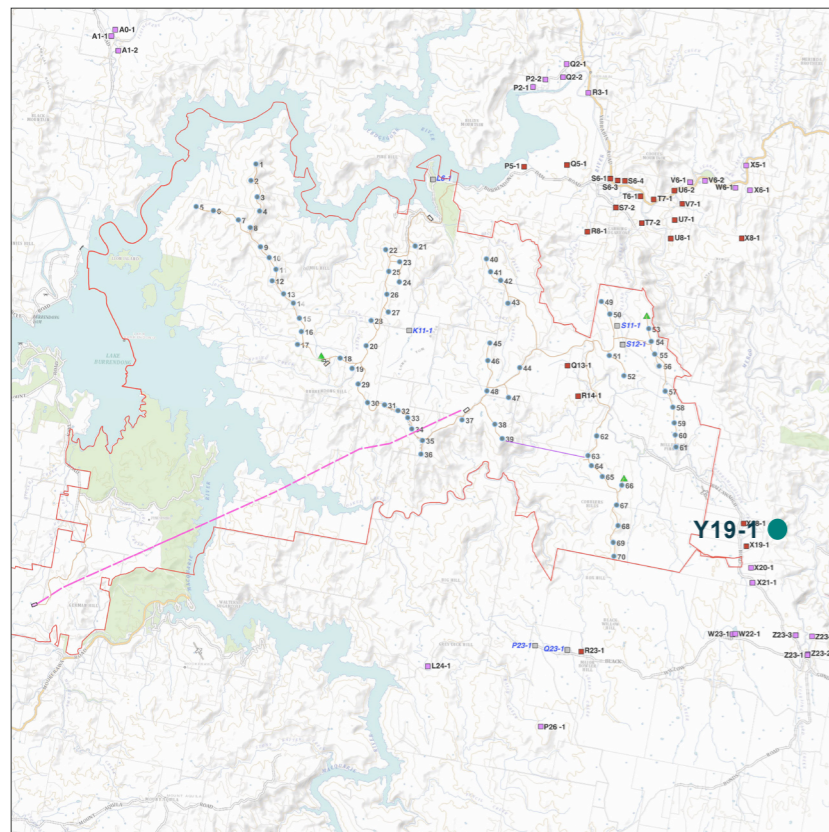
**Viewer Sensitivity Level:** Level 2  
Rural Residence

**Landscape Character Unit:** LCU02: Yarrabin / Hargrave Farmlands

**Scenic Quality Rating:** Moderate

**Visual Influence Zone (VIZ):** VIZ2

**Visual Impact Rating:** Low



Dwelling Y19-1 Location

## Assessment Notes:

Moir LA undertook a wire frame diagram from the dwelling. It is noted the dwelling was constructed with no Development Approval post 1967.

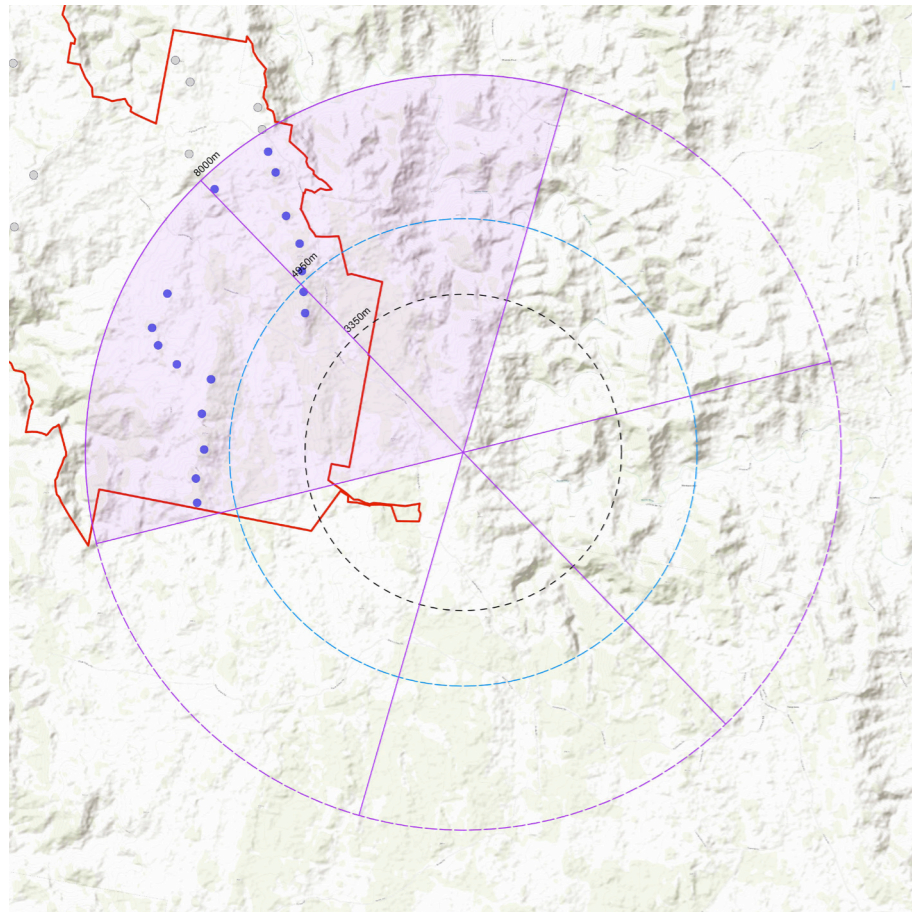
## Visual Impact Summary:

The wire frame diagram prepared from the dwelling indicates all 70 WTGs associated with the Project are visible to the north west of the dwelling. Scattered vegetation is present in the foreground in the direction of the Project. The visual impact rating has been assessed as low from this dwelling.

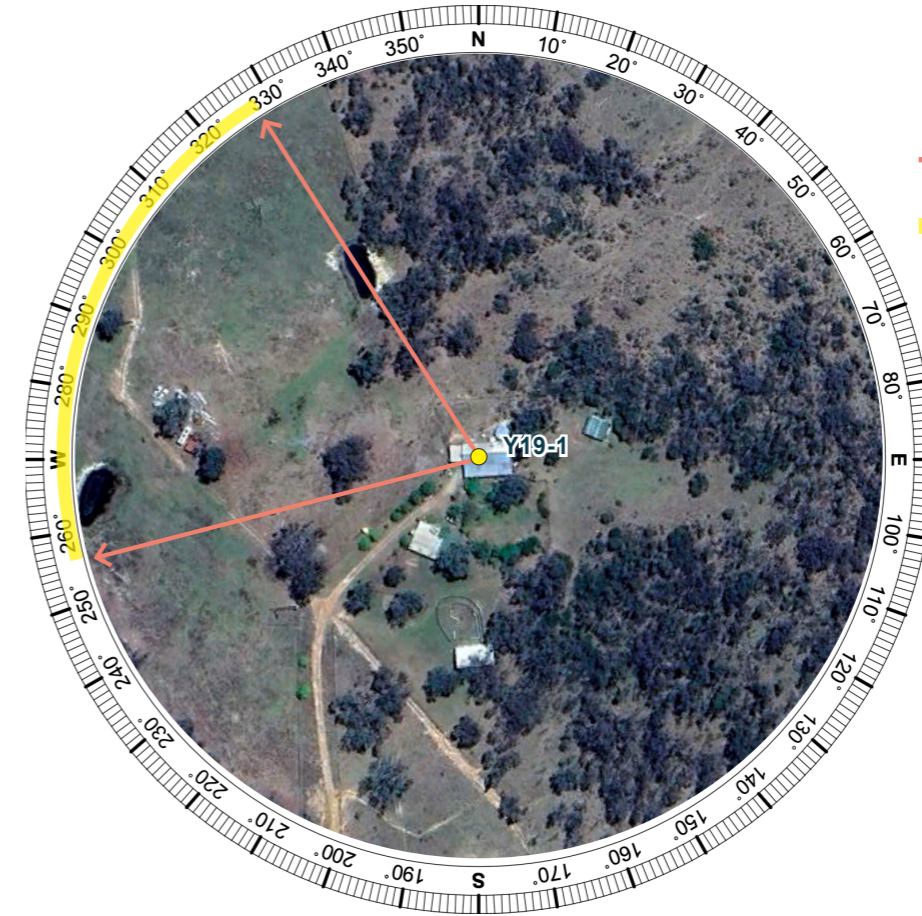
## Evaluation of Visual Performance Objectives (VIZ2):

Performance Objective:	Visual Magnitude	Multiple Wind Turbine Tool	Landscape Scenic Integrity	Key Feature Disruption	Shadow Flicker
<b>Meets Objective?:</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
<b>Discussion:</b>	No turbines are located within the black line of visual magnitude.	WTGs occupy two (2) 60 degree sectors of turbines, which is deemed acceptable.	The Project will not diminish the scenic integrity of the landscape.	The Project will not disrupt views to key landscape features.	No shadow flicker will be experienced at this dwelling.
<b>Recommendation:</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>

# Detailed Assessment Building Y19-1



- LEGEND**
- 250 m WTG within 8,000 m
  - WTG located in excess of 8,000 m from Residence
  - - - 3,350 m from nearest turbine (Black Line)
  - - - 4,950 m from nearest turbine (Blue Line)
  - - - 8,000 m from nearest turbine
  - 60° sector
  - 60° sector with turbines

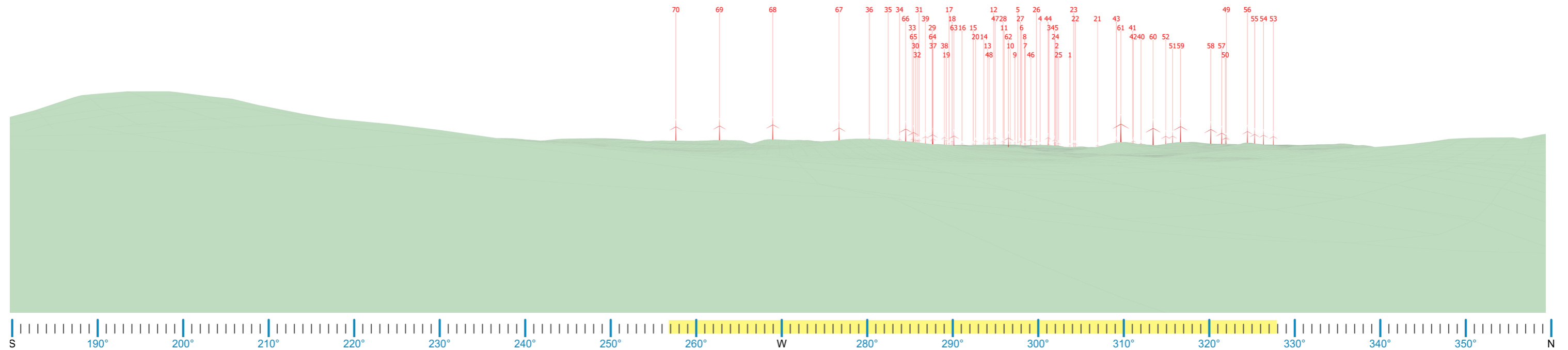


- LEGEND**
- Representative wire frame location
  - Direction of visible turbines based on topography
  - Extent of visible turbines based on topography

Preliminary Assessment Tools applied to Dwelling Y19-1

Aerial Image of Dwelling Y19-1

Aerial image source: Google Earth 2024



Proposed Wire Frame Diagram - 180 degree field of view

# Dwelling Assessment Building O17-1

BUILDING O17-1			
Nearest proposed turbine (km):	1.42 km	Viewer Sensitivity:	Level 2 (Moderate)
Number of proposed turbines within 8,000m of the dwelling:	47	Scenic Quality Rating:	Moderate
Number of potentially visible turbines (Based on topography alone)	2 All at hub	Landscape Character Unit:	LCU01: Yarrabin / Hargrave Hills
Number of 60° sectors occupied by visible turbines (based on 3D assessment):	One (1)	Visual Influence Zone:	VIZ1

**Visual Impact Rating: High**

## Assessment Notes:

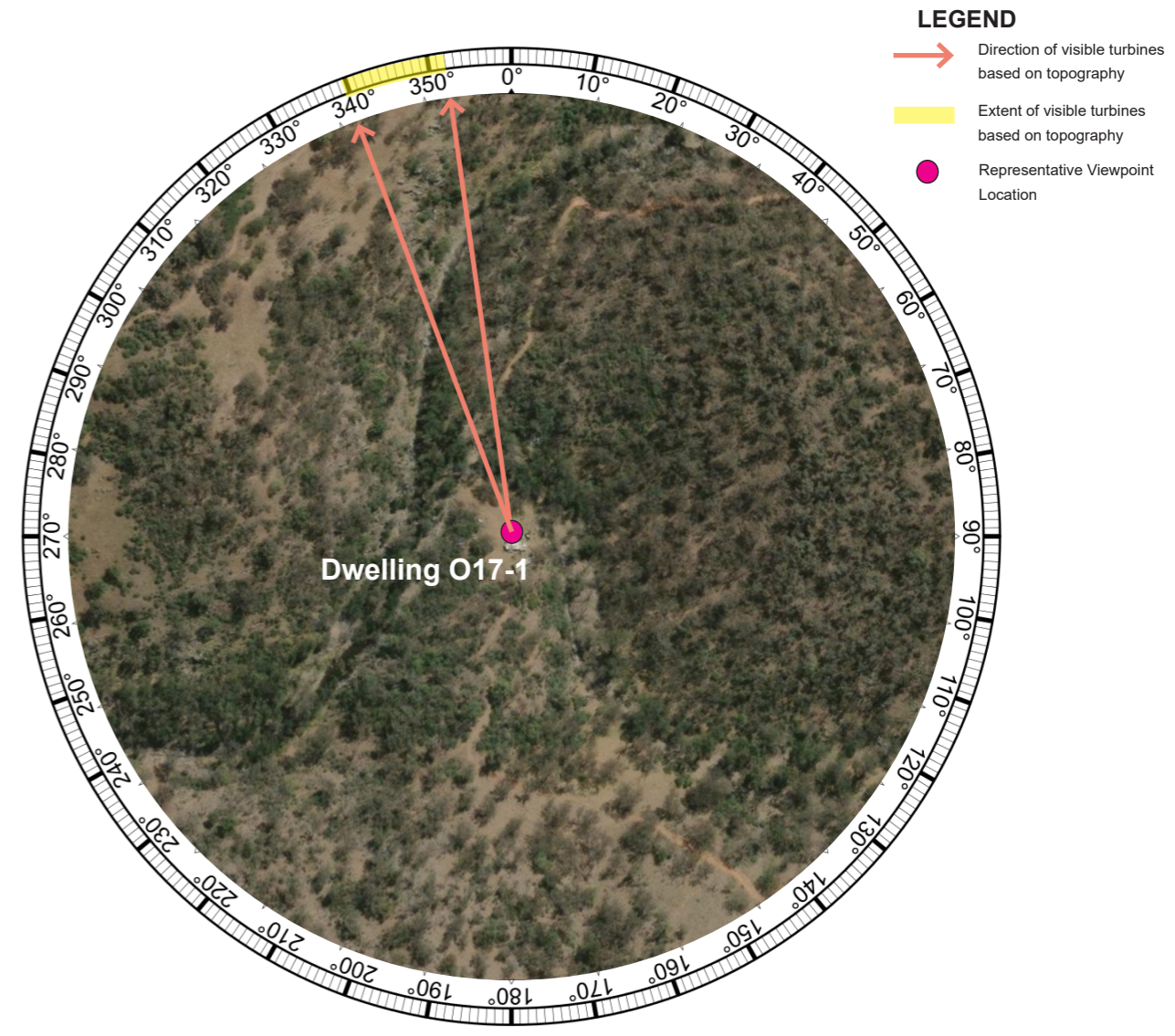
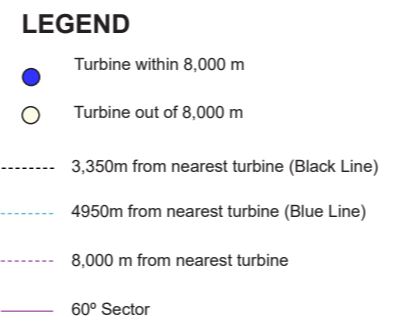
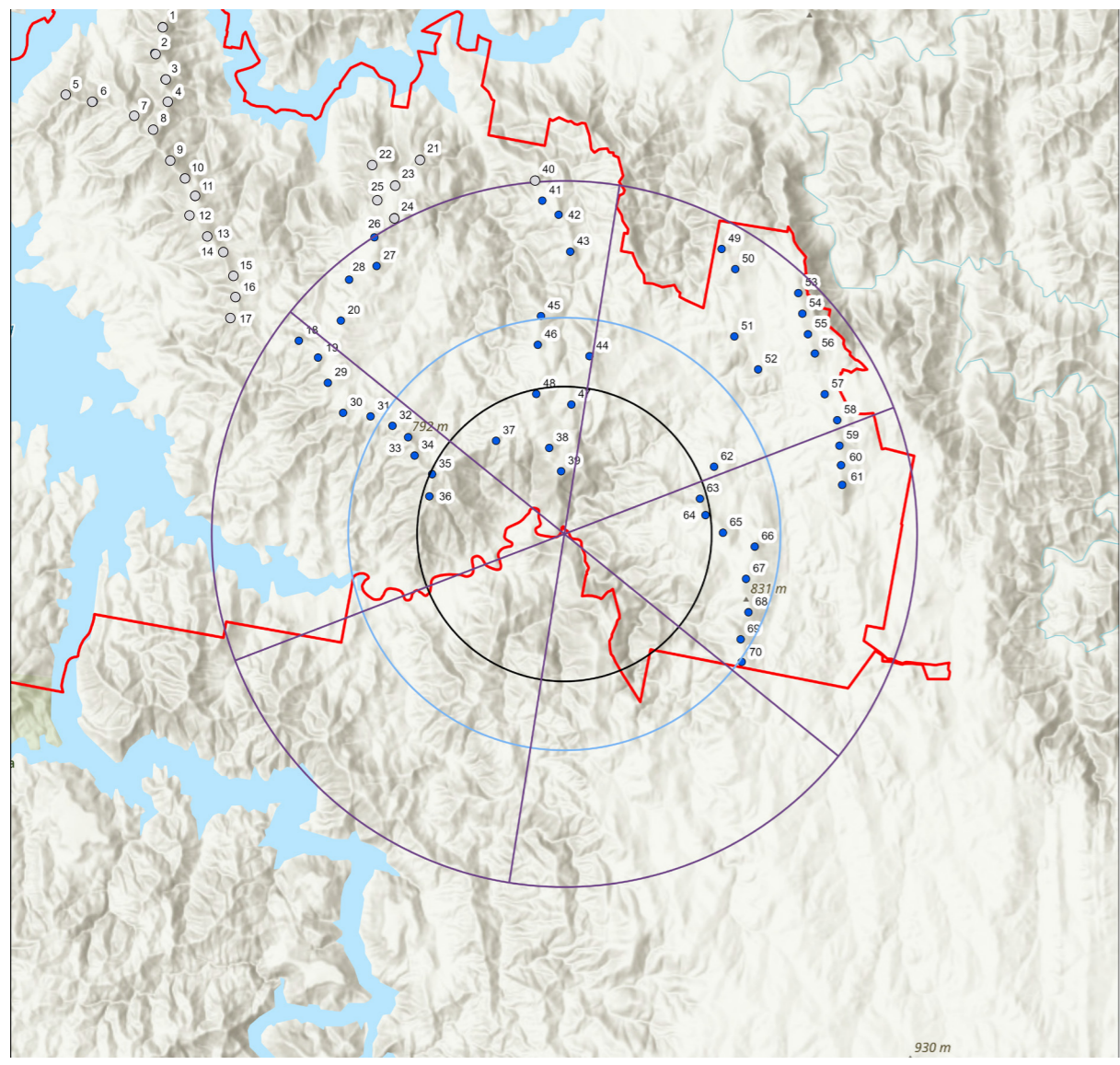
Moir undertook a photographic assessment of the property in March 2021 to assist with the visual impact assessment. Two (2) buildings are located on a cleared section of land, surrounded by vegetation. The proposed turbines surround the dwelling (in up to four 60 degree sectors) however topography and vegetation screens all but two (2) turbines. The wire frame diagram prepared from the dwelling with panoramic photograph overlaid indicates only two (2) turbines would be visible at hub height to the north west of the dwelling. The nearest turbine is located approximately 1.42 km away from the dwelling.

## Visual Performance Objectives

**Visual Magnitude:** The building is located within the black line of visual magnitude. Nine (9) turbines are located within the black line of visual magnitude, however due to topography and vegetation only two (2) of these turbines will be visible (turbines 38 & 39). **Multiple Wind Turbine Effect:** The project will be visible in one (1) 60 degree sector, which is deemed acceptable for a receptor with Level 2 Sensitivity (Rural Dwelling). Intervening vegetation is likely to reduce the number of visible turbines to one (1) 60 degree sector. **Landscape Scenic Integrity:** The proposed turbines would be a visible element in the landscape, however the scenic integrity will remain intact. **Key Feature Disruption:** Views from the dwelling are largely contained by topography which is the main feature from the dwelling. The turbines would be a visible element on the top of the ridge to the north, however will not disrupt views to the vegetated hills.

## Mitigation Recommendations:

In accordance with the visual performance objectives outlined in the Bulletin, "turbines located within the black line of visual magnitude are required to manage visual impacts as far as practicable, justify any residual impacts, and identify appropriate mitigation measures". In this instance, while turbines are located within the black line, the potential visual impact is limited by the orientation and use of the existing structures, which do not appear to contain windows or habitable living spaces oriented toward the Project. As a result, the turbines would not form a dominant or intrusive element within primary viewing locations. The turbines occupy only a small proportion of the broader views available from the lot and do not interrupt key view corridors or valued outlooks. Opportunities for mitigation through targeted landscape screening or planting could be explored in consultation with the landowner, should it be desired, to further reduce turbine visibility. With these considerations, the residual visual impact is considered justifiable and acceptable in the context of the applicable visual performance objectives.

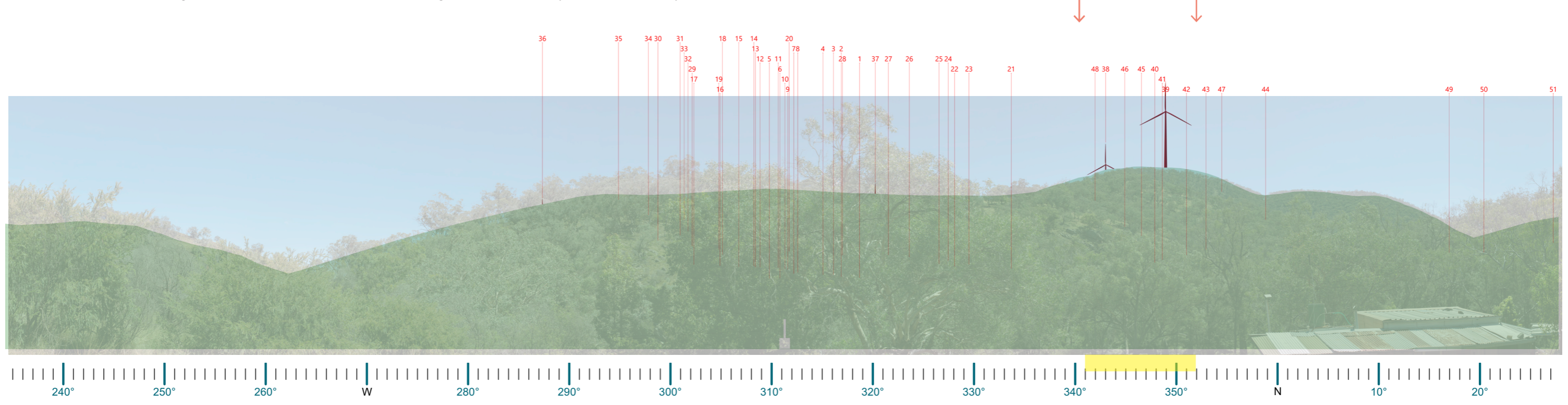


Aerial Image Source: Esri 2025

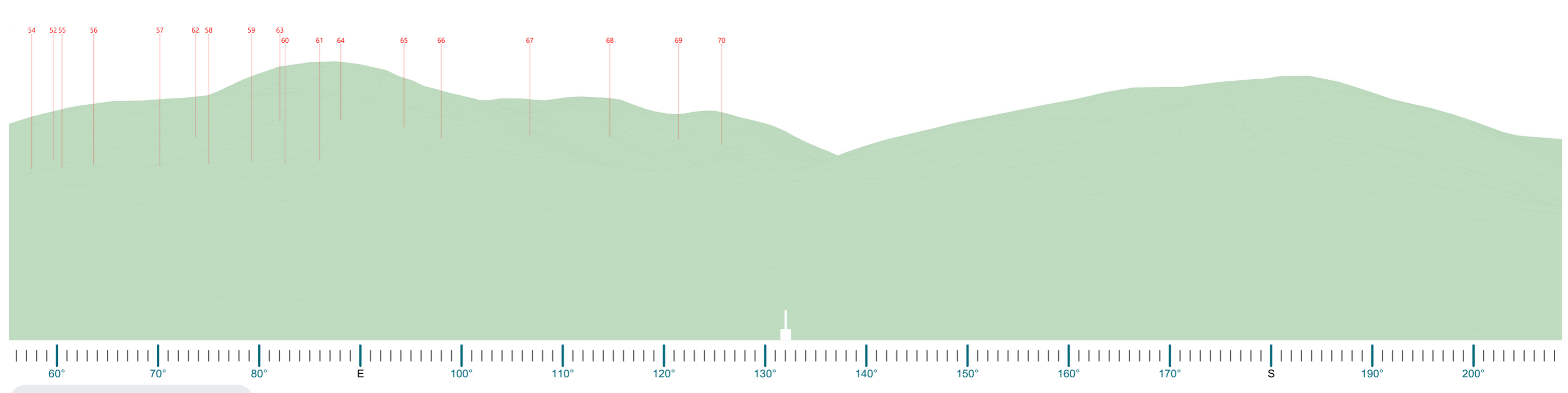
# Dwelling Assessment Building O17-1

Proposed Wire Frame Diagram with panorama overlaid - 180 degree field of view (North West View)

Wire Frame Diagram indicates 2 turbines at hub height are visible.



Proposed Wire Frame Diagram - 180 degree field of view (South East View)



Wireframe Diagram demonstrates no visibility of the Project to the south due to topography.

# Dwelling Assessment Building S7-1

## BUILDING S7-1

Nearest proposed turbine (km):	3.66 km	Viewer Sensitivity:	Level 2 (Moderate)
Number of proposed turbines within 8,000m of the dwelling:	20	Scenic Quality Rating:	Moderate
Number of potentially visible turbines (Based on topography alone)	4 Blades	Landscape Character Unit:	LCU04: Cudgegong River Valley
Number of 60° sectors occupied by visible turbines (based on 3D assessment):	One (1)	Visual Influence Zone:	VIZ2

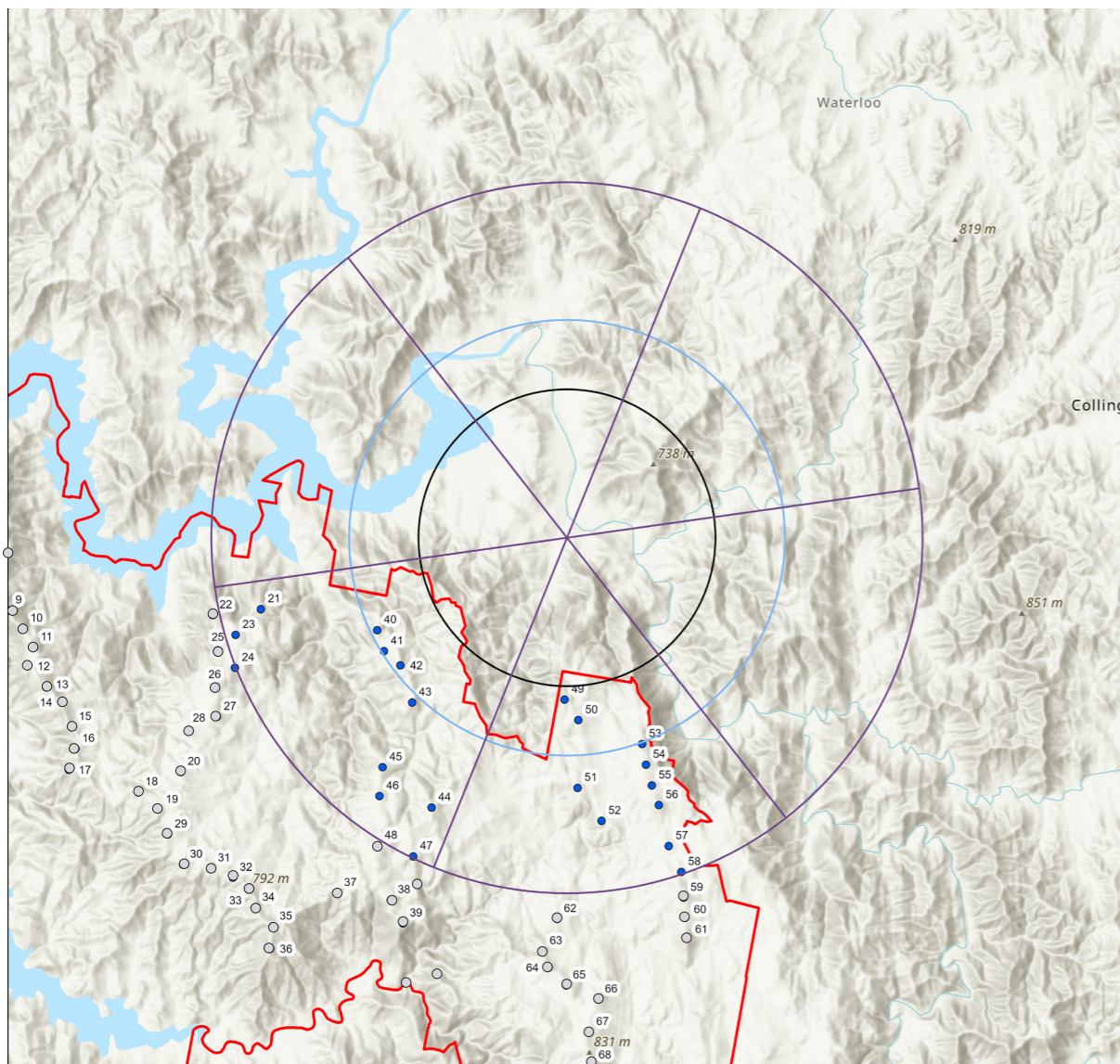
**Visual Impact Rating: Very Low**

## Assessment Notes:

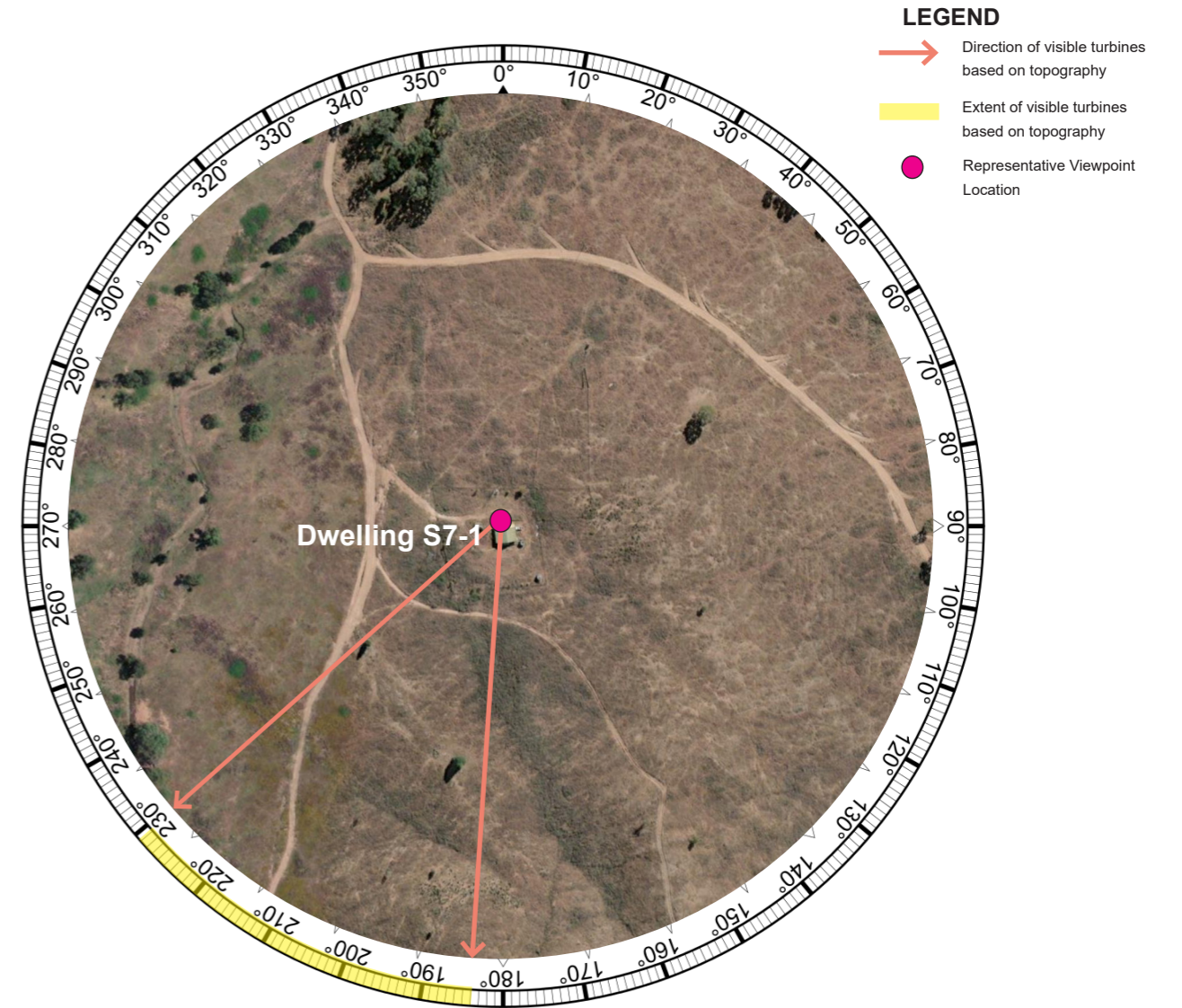
Moir have prepared a wireframe diagram from the dwelling to assist with the visual impact assessment. The dwelling is located on a cleared section of land, south of Worlds End Road, to the north of the Project. The dwelling appears to be orientated to the north. Topography screens views to all but four (4) turbines, which are only visible at the tip of the blade. The nearest turbine is located approximately 3.66 km away from the dwelling.

## Visual Performance Objectives

- Visual Magnitude:** The building is located between the black line and blue line of visual magnitude. No turbines are located within the black line of visual magnitude.
- Multiple Wind Turbine Effect:** The project will be visible in up to one (1) 60 degree sector, which is deemed acceptable for a receptor with Level 2 Sensitivity (Rural Dwelling).
- Landscape Scenic Integrity:** The proposed turbines would be an indiscernible element in the landscape, the scenic integrity will remain intact.
- Key Feature Disruption:** The turbines would be an indiscernible element on the top of the ridge to the north, and will not disrupt views of the key features in the landscape from this location.



- LEGEND**
- Turbine within 8,000 m
  - Turbine out of 8,000 m Study Area
  - 3350m from nearest turbine (Black Line)
  - 4950m from nearest turbine (Blue Line)
  - 8,000 m from nearest turbine
  - 60° Sector

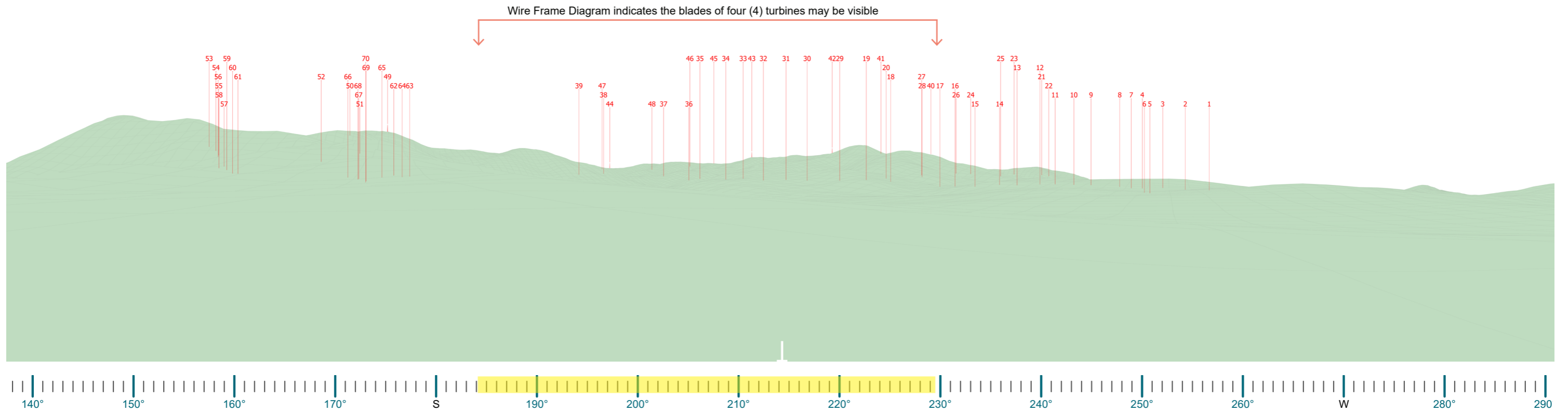


- LEGEND**
- Direction of visible turbines based on topography
  - Extent of visible turbines based on topography
  - Representative Viewpoint Location

Aerial Image Source: Google Earth (December 2022)

# Dwelling Assessment Building S7-1

Proposed Wire Frame Diagram - 180 degree field of view



**Note:**  
No access to Site was available.  
The wire frame diagram 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 wire frame diagram is based solely on topographic information.  
Therefore this should be acknowledged as representing the absolute worst case scenario.

# Dwelling Assessment Building U8-2

BUILDING U8-2			
Nearest proposed turbine (km):	2.87 km	Viewer Sensitivity:	Level 2 (Moderate)
Number of proposed turbines within 8,000m of the dwelling:	23	Scenic Quality Rating:	Moderate
Number of potentially visible turbines (Based on topography alone)	6 5 at hub 1 blade	Landscape Character Unit:	LCU07: Worlds End
Number of 60° sectors occupied by visible turbines (based on 3D assessment):	One (1)	Visual Influence Zone:	VIZ2

### Assessment Notes:

Moir have prepared a wireframe diagram from the dwelling to assist with the visual impact assessment. The dwelling is located on a cleared section of land, to the north of Meroo River at Worlds End Road. Topography screens views to all but six (6) turbines, five (5) are visible at the hub and one (1) tip of a blade is visible. The nearest turbine is located approximately 2.87 km away from the dwelling. Aerial imagery indicates vegetation associated with the Meroo River to the south of the dwelling would assist in fragmenting views in the direction of the turbines.

### Visual Performance Objectives

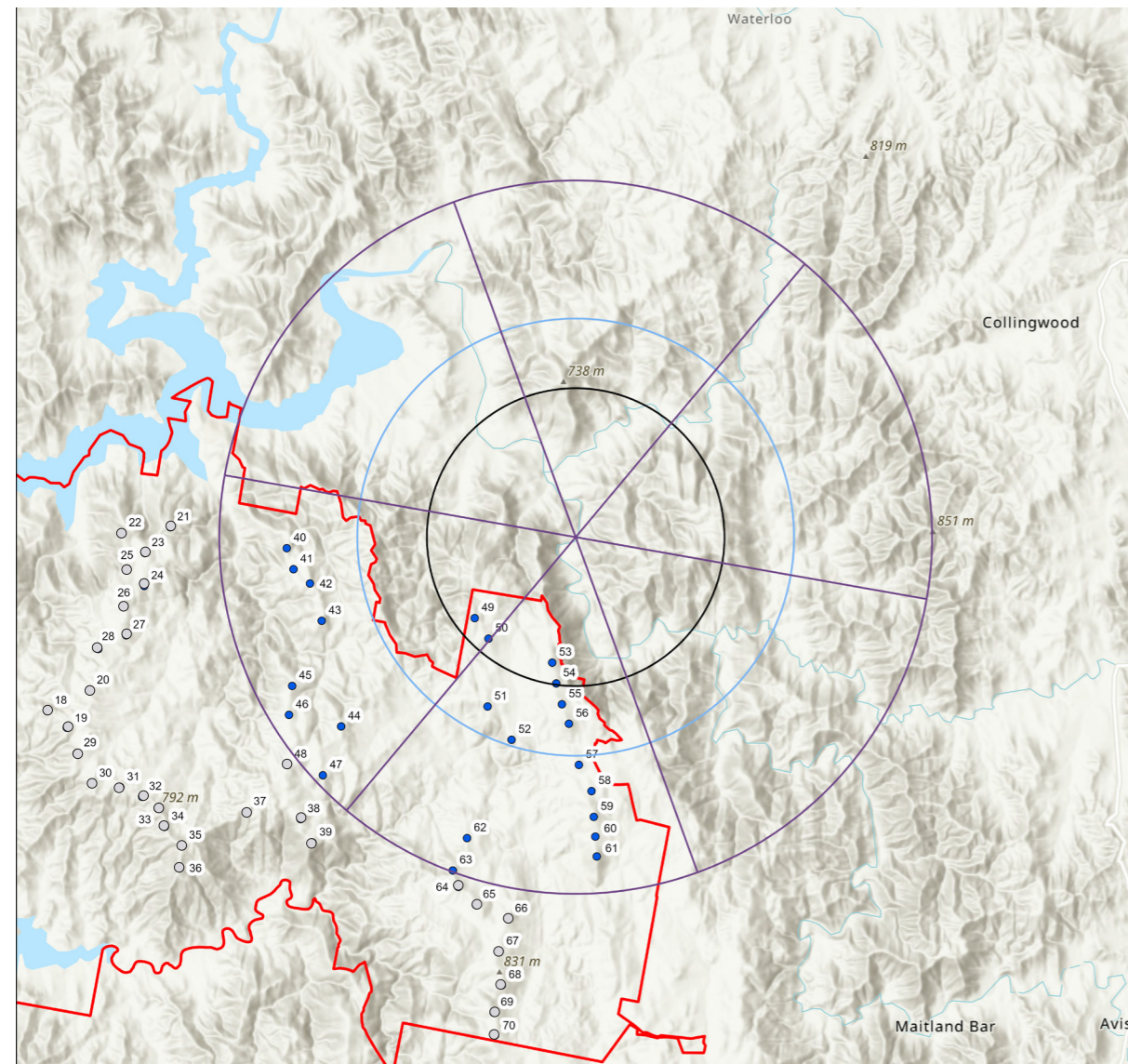
**Visual Magnitude:** The building is located between the black line and blue line of visual magnitude. Four (4) turbines are located within the black line of visual magnitude, two (2) of these are screened by topography. Vegetation is likely to reduce visibility towards turbines within the black line of visual magnitude.

**Multiple Wind Turbine Effect:** The project will be visible in up to one (1) 60 degree sector, which is deemed acceptable for a receptor with Level 2 Sensitivity (Rural Dwelling).

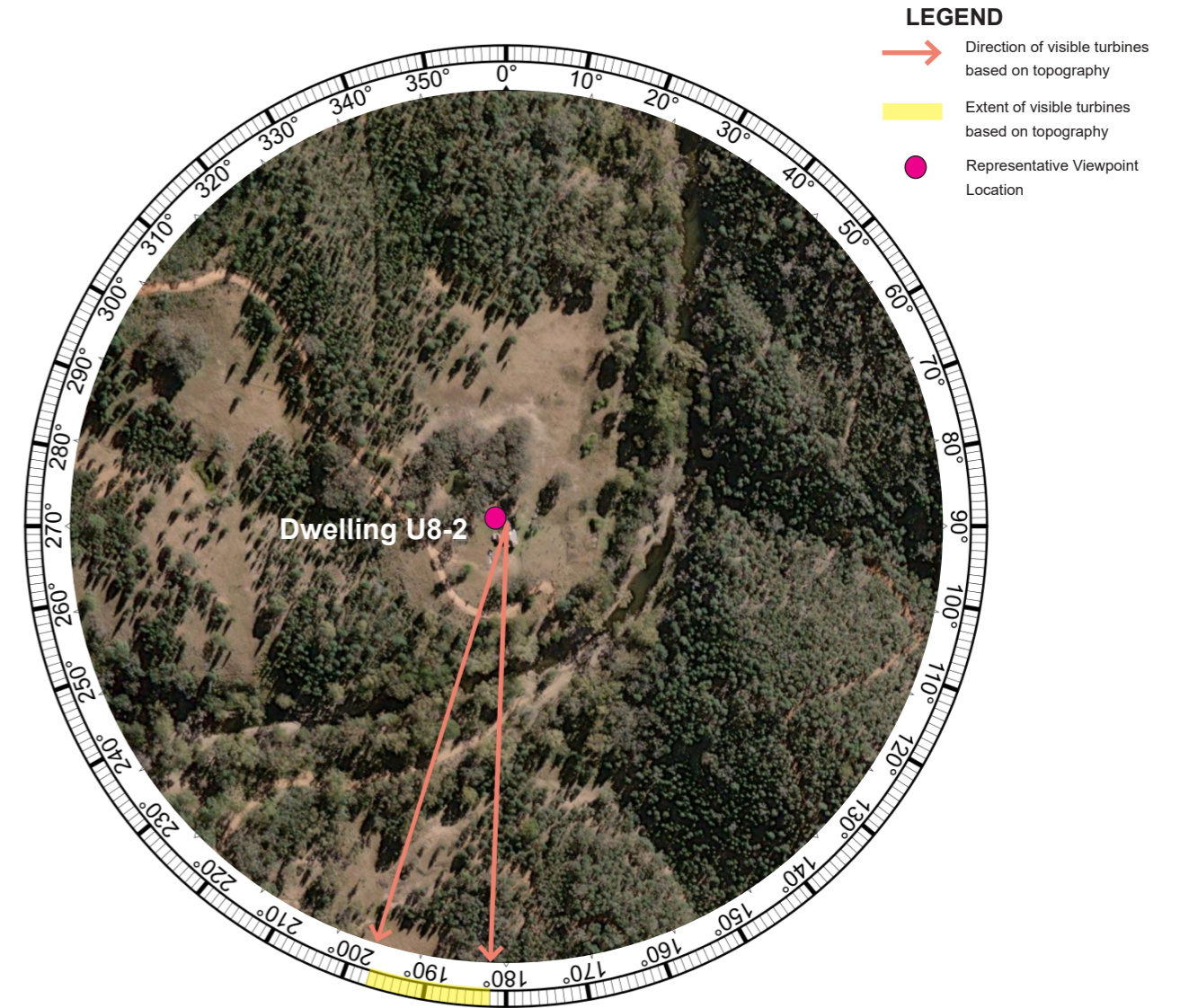
**Landscape Scenic Integrity:** The proposed turbines would be an indiscernible element in the landscape, the scenic integrity will remain intact.

**Key Feature Disruption:** The turbines would be an indiscernible element on the top of the ridge to the south, and will not disrupt views of the key features in the landscape from this location.

Visual Impact Rating: Low



- LEGEND**
- Turbine within 8,000 m
  - Turbine out of 8,000 m Study Area
  - 3,350m from nearest turbine (Black Line)
  - 4,950m from nearest turbine (Blue Line)
  - 8,000 m from nearest turbine
  - 60° Sector

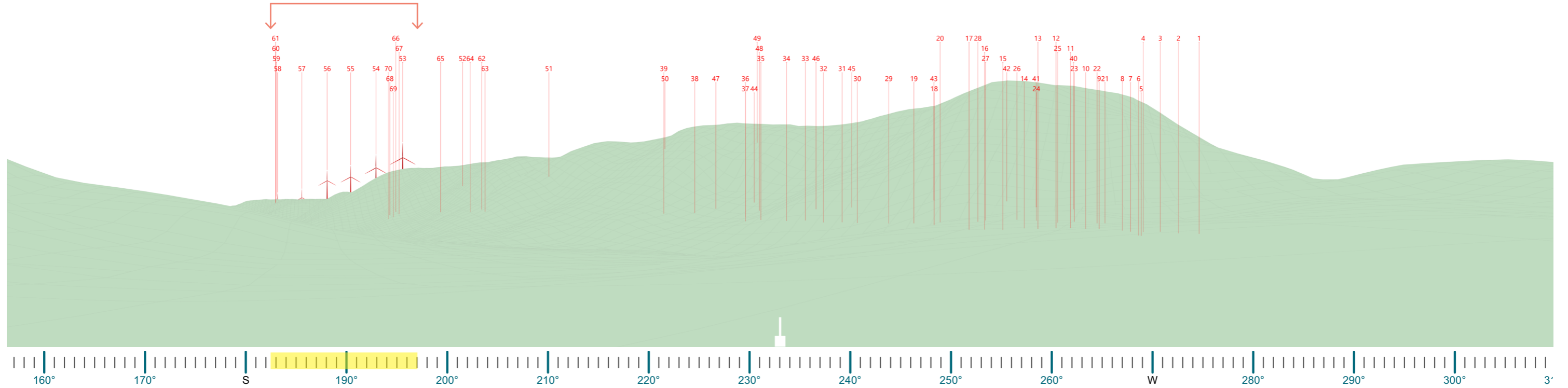


Aerial Image Source: Google Earth (December 2022)

# Dwelling Assessment Building U8-2

Proposed Wire Frame Diagram - 180 degree field of view

Wire Frame Diagram indicates five (5) turbines at hub height and one blade is visible.



**Note:**  
 No access to Site was available.  
 The wire frame diagram 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 wire frame diagram is based solely on topographic information.  
 Therefore this should be acknowledged as representing the absolute worst case scenario.

# Dwelling Assessment Building V13-1

## BUILDING V13-1

Nearest proposed turbine (km):	1.62 km	Viewer Sensitivity:	Level 2 (Moderate)
Number of proposed turbines within 8,000m of the dwelling:	26	Scenic Quality Rating:	Moderate
Number of potentially visible turbines (Based on topography alone)	4 All at hub height	Landscape Character Unit:	LCU01: Yarrabin / Hargrave Hills
Number of 60° sectors occupied by visible turbines (based on 3D assessment):	One (1)	Visual Influence Zone:	VIZ1

### Assessment Notes:

Moir have prepared a photomontage from the dwelling to assist with the visual impact assessment. The dwelling is located on Highland Home Road. The dwelling is orientated to the east with expansive views across the vegetated hills. Views to the west are considered to be a secondary view. The view to the west is largely contained by vegetation at the top of a low rise in topography.

### Visual Performance Objectives

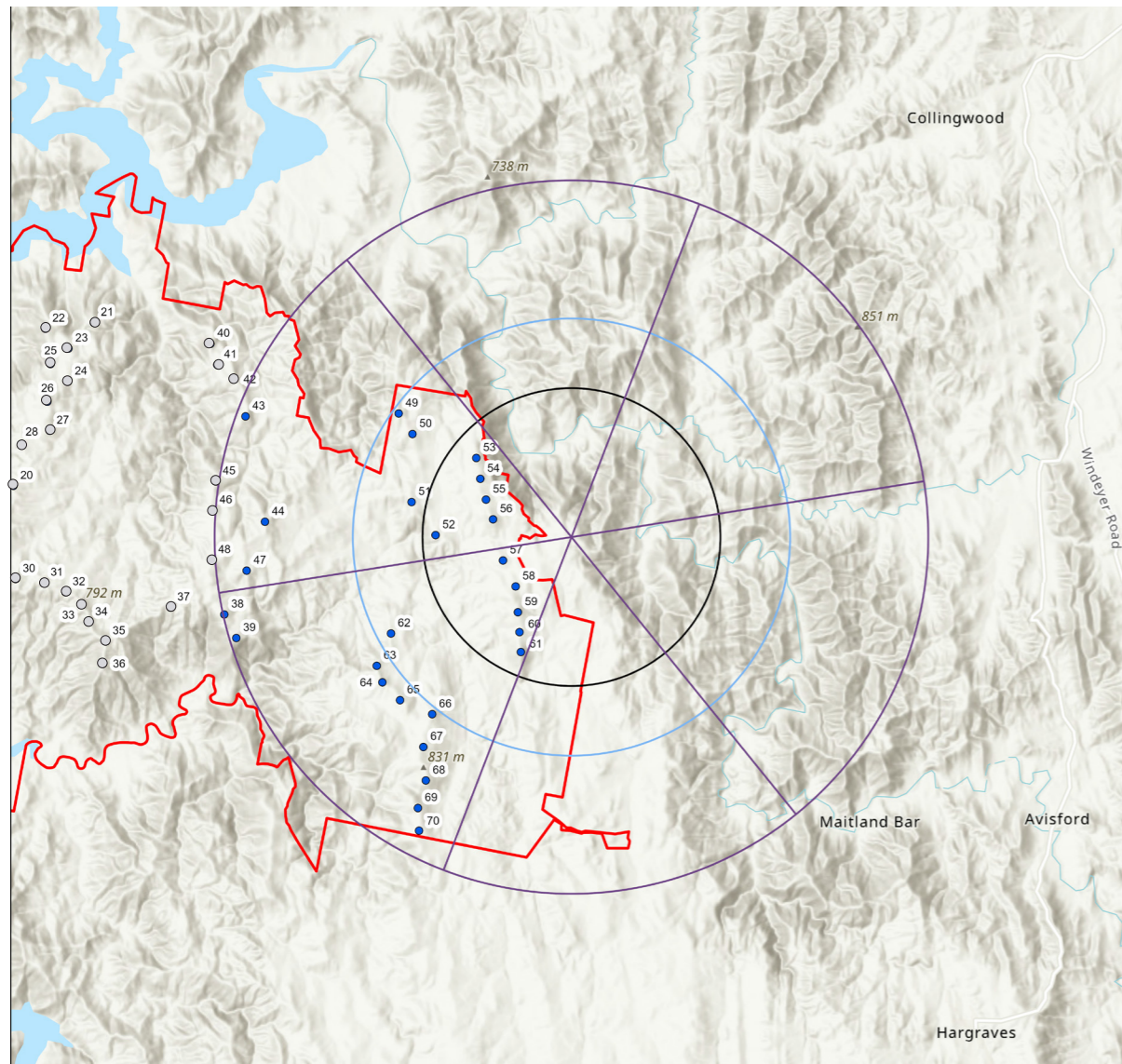
**Visual Magnitude:** Four (4) turbines are visible within the black line of visual magnitude.

**Multiple Wind Turbine Effect:** The project will be visible in up to one (1) 60 degree sector, which is deemed acceptable for a receptor with Level 2 Sensitivity (Rural Dwelling).

**Landscape Scenic Integrity:** The proposed turbines would be an visible element in the landscape, the scenic integrity will remain intact.

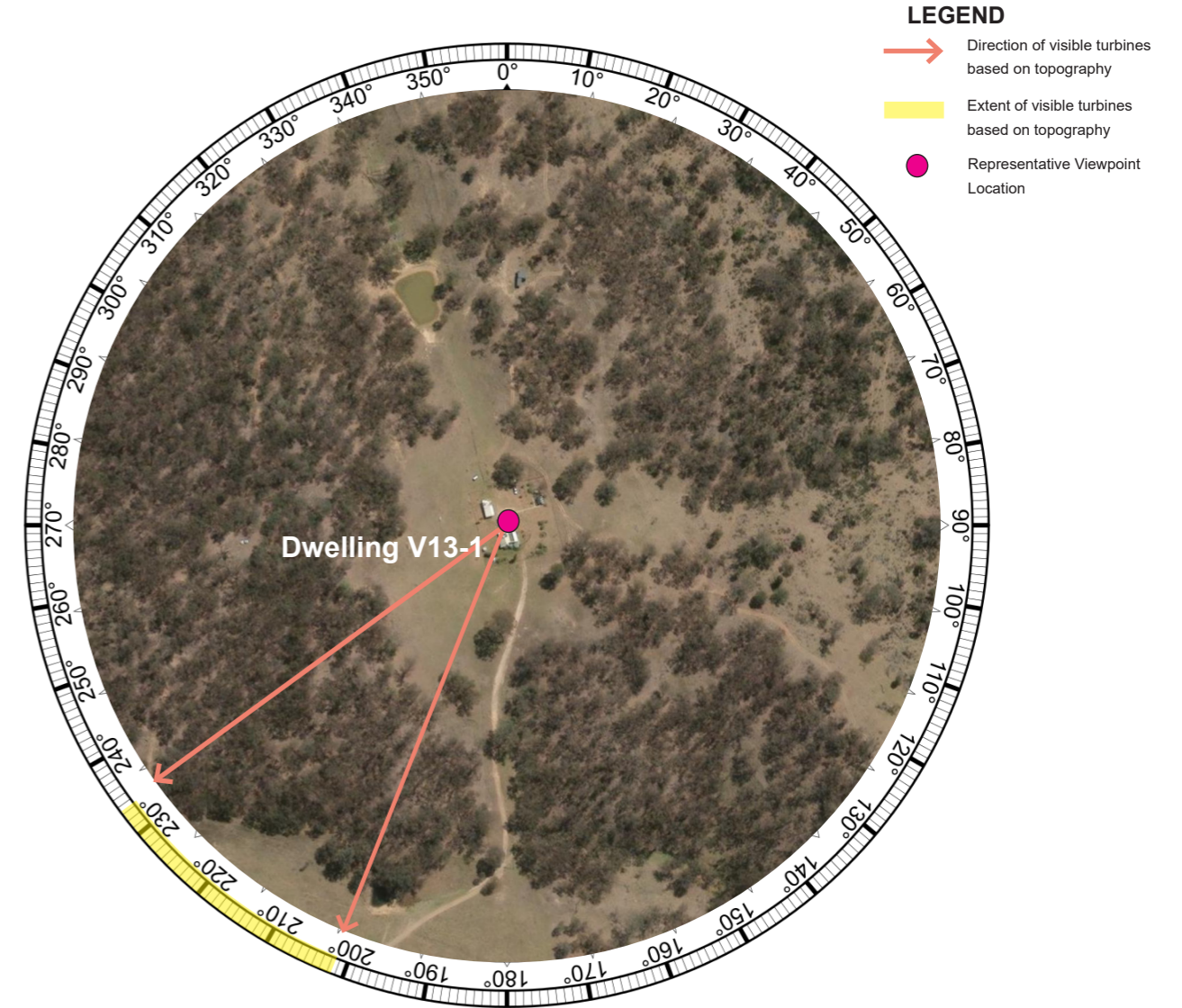
**Key Feature Disruption:** The turbines would be a visible element in the landscape, however will not disrupt views of the key features in the landscape from this location.

Visual Impact Rating: Low



### LEGEND

- Turbine within 8,000 m
- Turbine out of 8,000 m Study Area
- 3,350m from nearest turbine (Black Line)
- 4,950m from nearest turbine (Blue Line)
- 8,000 m from nearest turbine
- 60° Sector



### LEGEND

- Direction of visible turbines based on topography
- Extent of visible turbines based on topography
- Representative Viewpoint Location

Aerial Image Source: Google Earth (May 2022)

# Dwelling Assessment Building V13-1

Proposed Photomontage - 180 degree field of view

Photomontage indicates four (4) turbines are visible to the west of the dwelling at hub height.



# Dwelling Assessment Building W10-1

## BUILDING W10-1

Nearest proposed turbine (km):	2.74 km	Viewer Sensitivity:	Level 2 (Moderate)
Number of proposed turbines within 8,000m of the dwelling:	20	Scenic Quality Rating:	Moderate
Number of potentially visible turbines (Based on topography alone)	8 5 at hub height 3 blade tips	Landscape Character Unit:	LCU07: Worlds End
Number of 60° sectors occupied by visible turbines (based on 3D assessment):	One (1)	Visual Influence Zone:	VIZ2

## Assessment Notes:

Moir have prepared a wireframe diagram from the dwelling to assist with the visual impact assessment. The dwelling is located on a cleared area of land, to the north of Meroo River at Worlds End Road. Topography screens views to all but eight (8) turbines, five (5) are visible at the hub and the tips of three (3) blades are visible. The nearest turbine is located approximately 2.74 km away from the dwelling. Aerial imagery indicates vegetation associated with the Meroo River to the south of the dwelling would assist in fragmenting views in the direction of the turbines.

## Visual Performance Objectives

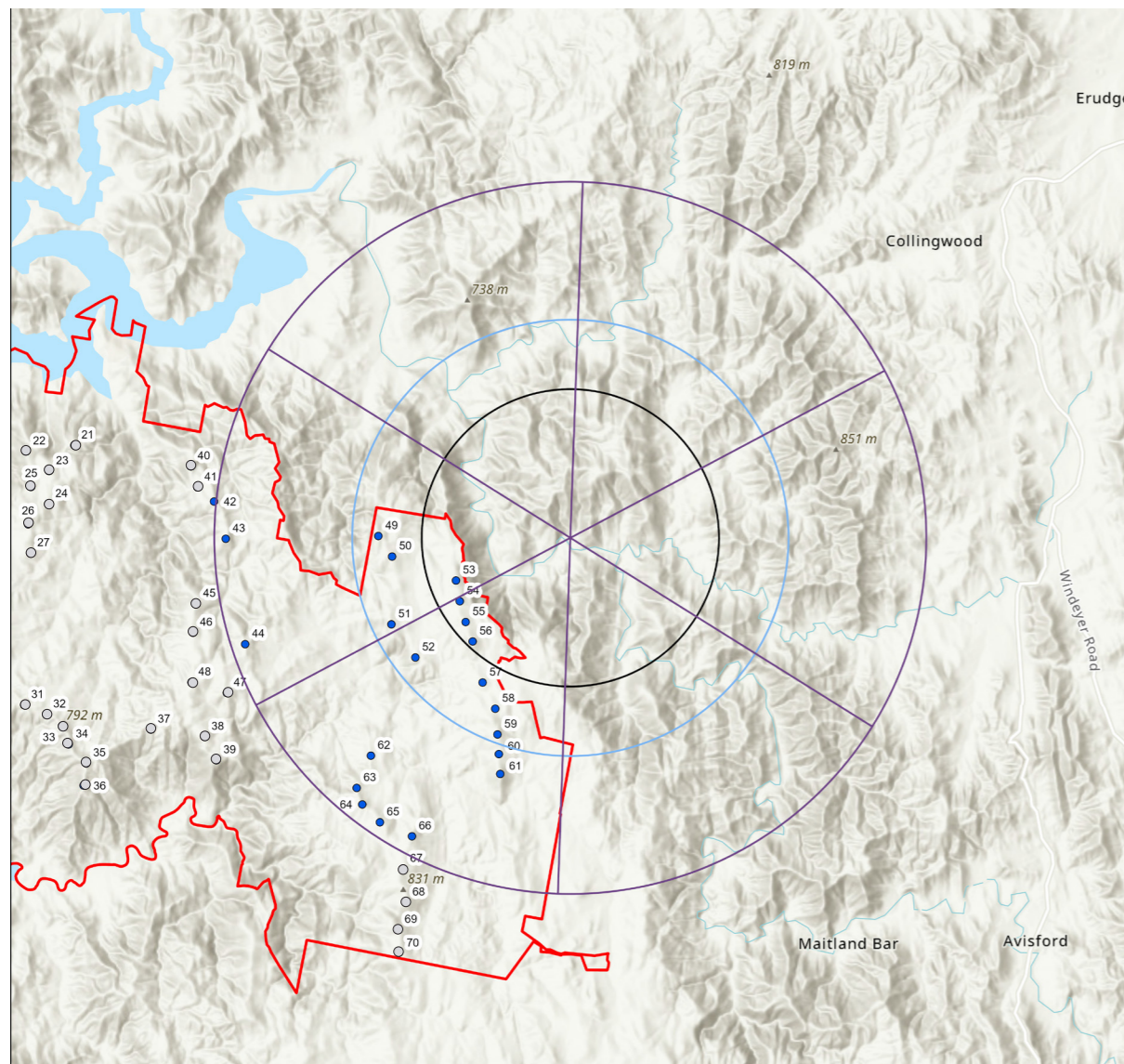
**Visual Magnitude:** Four (4) turbines are visible within the black line of visual magnitude (turbine 53, 54, 55 & 56) it is likely intervening vegetation will fragment views to these turbines.

**Multiple Wind Turbine Effect:** The project will be visible in up to one (1) 60 degree sector, which is deemed acceptable for a receptor with Level 2 Sensitivity (Rural Dwelling).

**Landscape Scenic Integrity:** The proposed turbines would be an visible element in the landscape, the scenic integrity will remain intact.

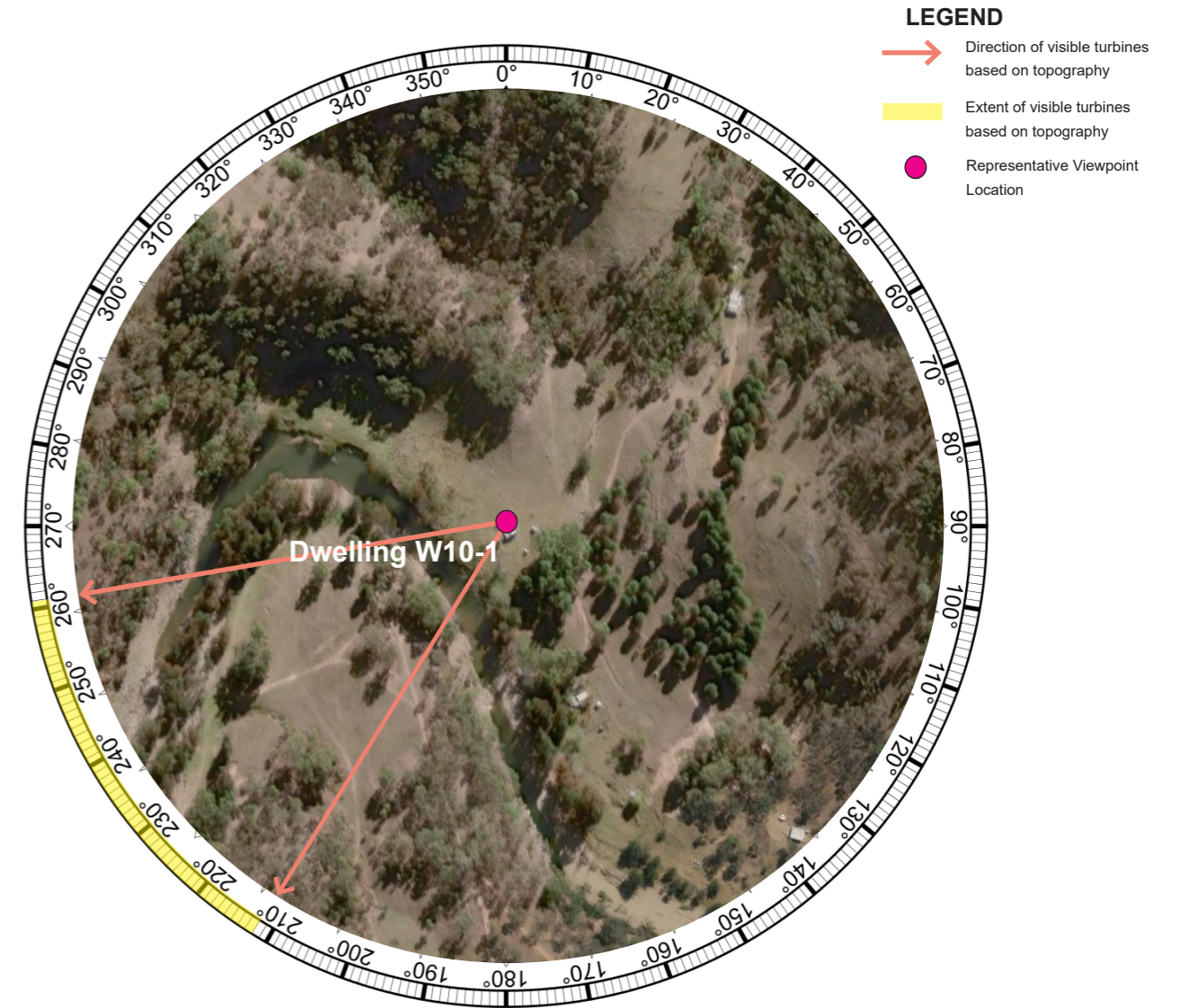
**Key Feature Disruption:** The turbines would be a visible element in the landscape, however will not disrupt views of the key features in the landscape from this location.

Visual Impact Rating: Low



### LEGEND

- Turbine within 8,000 m
- Turbine out of 8,000 m Study Area
- 3,350m from nearest turbine (Black Line)
- 4,950m from nearest turbine (Blue Line)
- 8,000 m from nearest turbine
- 60° Sector



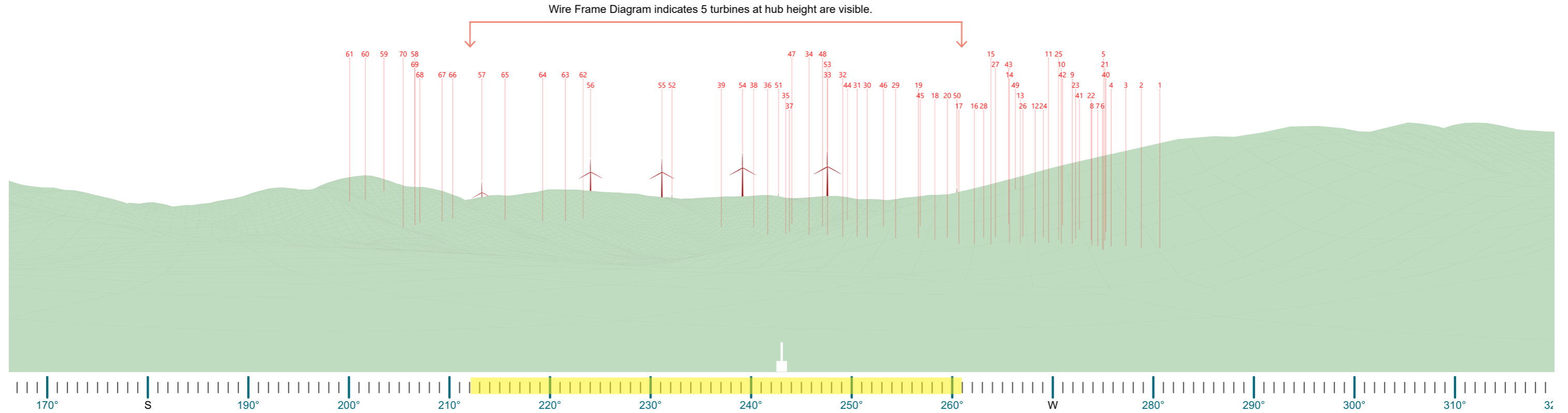
### LEGEND

- Direction of visible turbines based on topography
- Extent of visible turbines based on topography
- Representative Viewpoint Location

Aerial Image Source: Google Earth (May 2022)

# Dwelling Assessment Building W10-1

Proposed Wire Frame Diagram - 180 degree field of view



**Note:**  
No access to Site was available.  
The wire frame diagram 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 wire frame diagram is based solely on topographic information.  
Therefore this should be acknowledged as representing the absolute worst case scenario.

# Dwelling Assessment Building W10-2

## BUILDING W10-2

Nearest proposed turbine (km):	2.95 km	Viewer Sensitivity:	Level 2 (Moderate)
Number of proposed turbines within 8,000m of the dwelling:	20	Scenic Quality Rating:	Moderate
Number of potentially visible turbines (Based on topography alone)	7 5 at hub height 2 blade tips	Landscape Character Unit:	LCU07: Worlds End
Number of 60° sectors occupied by visible turbines (based on 3D assessment):	One (1)	Visual Influence Zone:	VIZ2

Visual Impact Rating: Low

### Assessment Notes:

Moir have prepared a wireframe diagram from the dwelling to assist with the visual impact assessment. The dwelling is located on a slightly elevated area of land, to the north of Meroo River at Worlds End Road. Topography screens views to all but seven (7) turbines, five (5) are visible at the hub and the tips of two (2) blades are visible. The nearest turbine is located approximately 2.95 km to the south west of the dwelling. Aerial imagery indicates intervening vegetation would assist in screening views in the direction of the turbines.

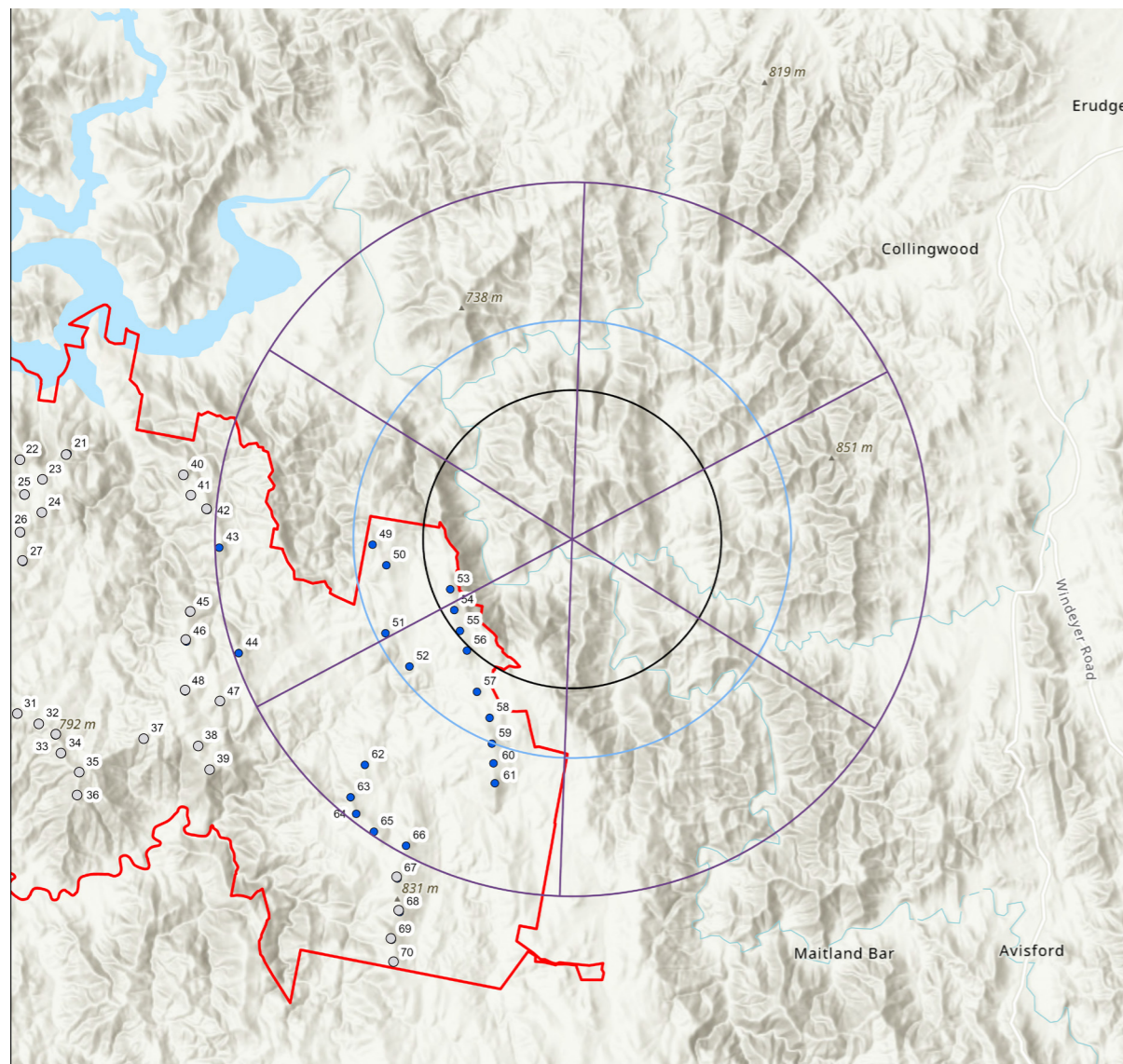
### Visual Performance Objectives

**Visual Magnitude:** Three (3) turbines are visible within the black line of visual magnitude (turbine 53, 54 & 55) it is likely intervening vegetation will fragment views to these turbines.

**Multiple Wind Turbine Effect:** The project will be visible in up to one (1) 60 degree sector, which is deemed acceptable for a receptor with Level 2 Sensitivity (Rural Dwelling).

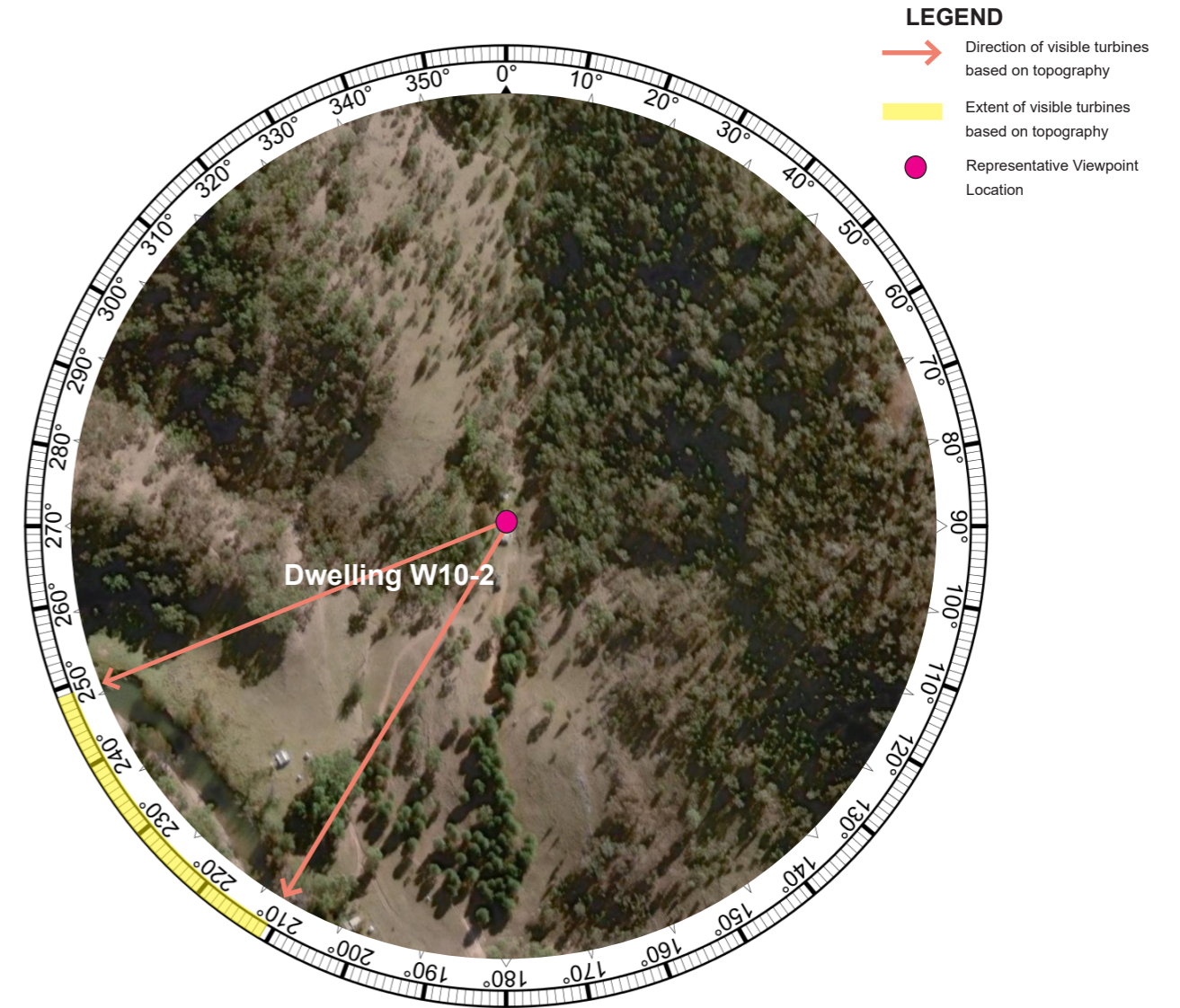
**Landscape Scenic Integrity:** The proposed turbines would be a minor element in the landscape, the scenic integrity will remain intact.

**Key Feature Disruption:** The turbines would be a minor element in the landscape, however will not disrupt views of the key features in the landscape from this location.



### LEGEND

- Turbine within 8,000 m
- Turbine out of 8,000 m Study Area
- 3,350m from nearest turbine (Black Line)
- 4,950m from nearest turbine (Blue Line)
- 8,000 m from nearest turbine
- 60° Sector



### LEGEND

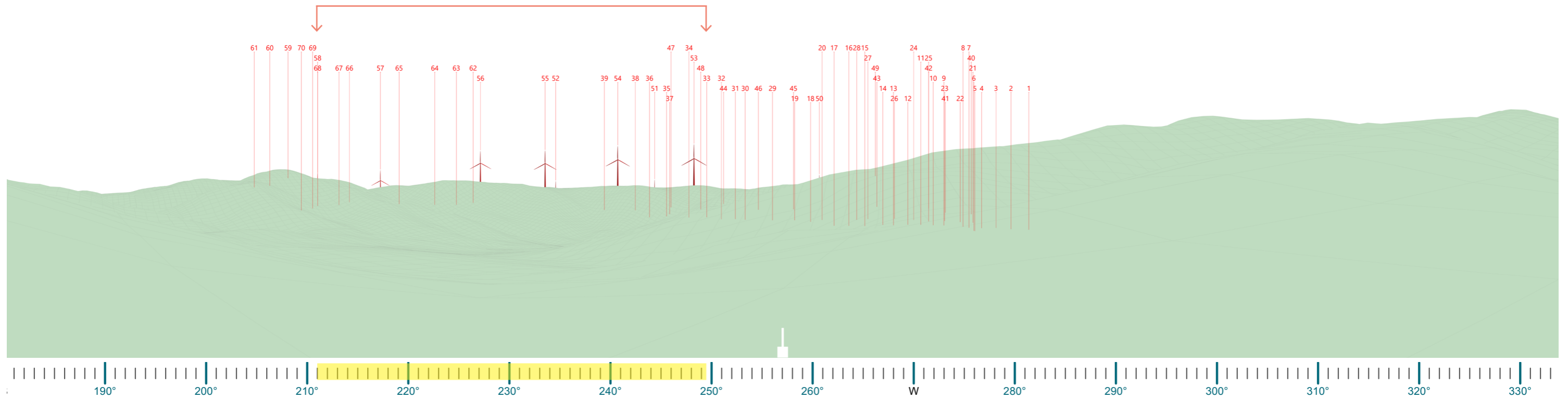
- Direction of visible turbines based on topography
- Extent of visible turbines based on topography
- Representative Viewpoint Location

Aerial Image Source: Google Earth (December 2022)

# Dwelling Assessment Building W10-2

Proposed Wire Frame Diagram - 180 degree field of view

Wire Frame Diagram indicates 5 turbines at hub height and 2 blade tips are visible.



**Note:**

No access to Site was available.

The wire frame diagram 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 wire frame diagram is based solely on topographic information.

Therefore this should be acknowledged as representing the absolute worst case scenario.

# Dwelling Assessment Building X11-1

BUILDING X11-1			
Nearest proposed turbine (km):	3.81 km	Viewer Sensitivity:	Level 2 (Moderate)
Number of proposed turbines within 8,000m of the dwelling:	15	Scenic Quality Rating:	Moderate
Number of potentially visible turbines (Based on topography alone)	6 All at hub height	Landscape Character Unit:	LCU07: Worlds End
Number of 60° sectors occupied by visible turbines (based on 3D assessment):	One (1)	Visual Influence Zone:	VIZ2

**Visual Impact Rating: Low**

### Assessment Notes:

Moir have prepared a wireframe diagram from the dwelling to assist with the visual impact assessment. The dwelling is located on flat cleared area of land, to the north of Meroo River at Worlds End Road. Topography screens views to all but six (6) turbines that are visible at the hub. The nearest turbine is located approximately 3.81 km to the west of the dwelling. Aerial imagery indicates intervening vegetation associated with the Meroo River would assist in screening views in the direction of the turbines.

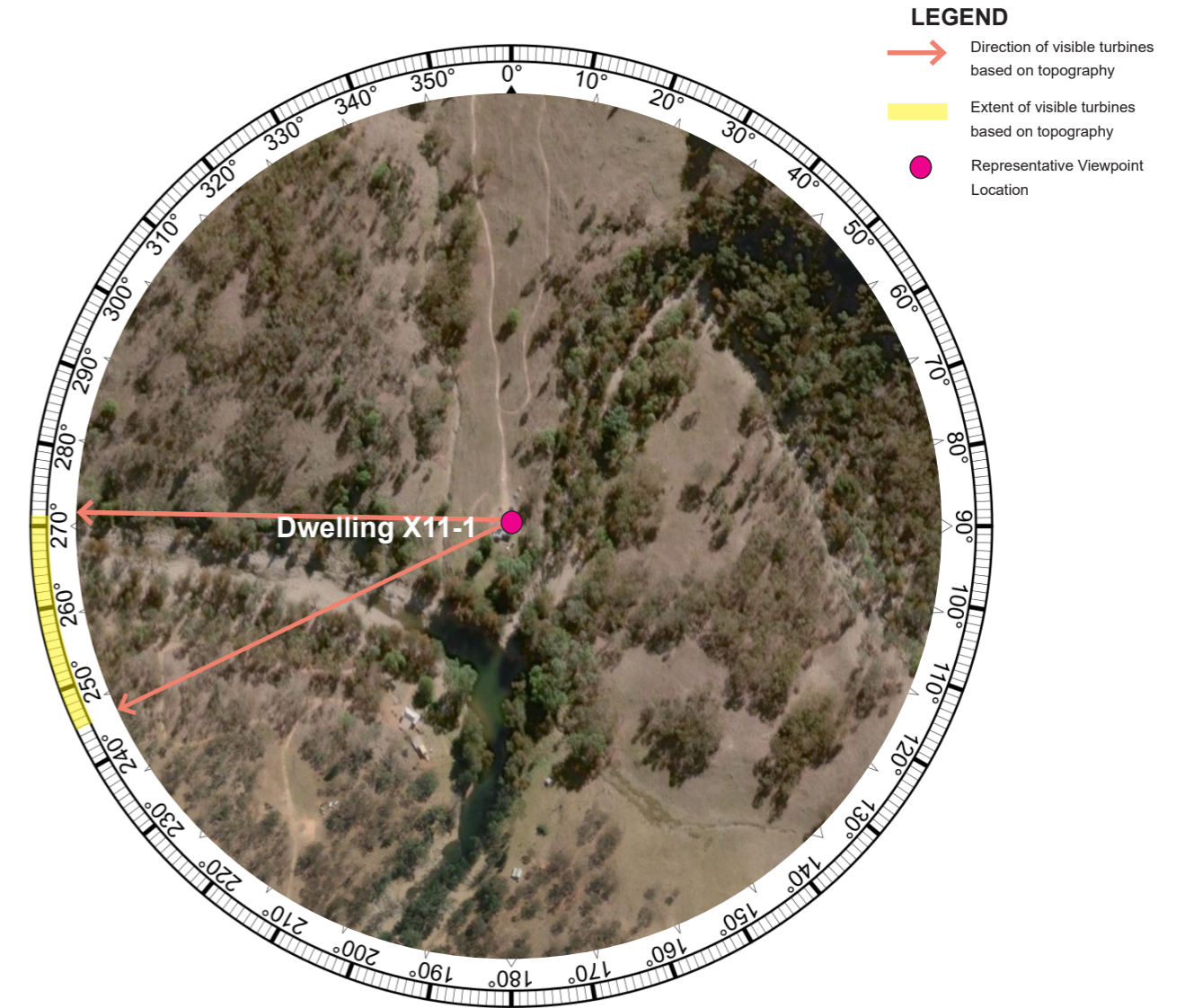
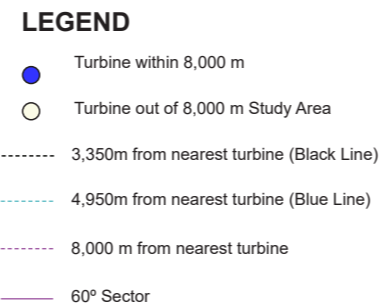
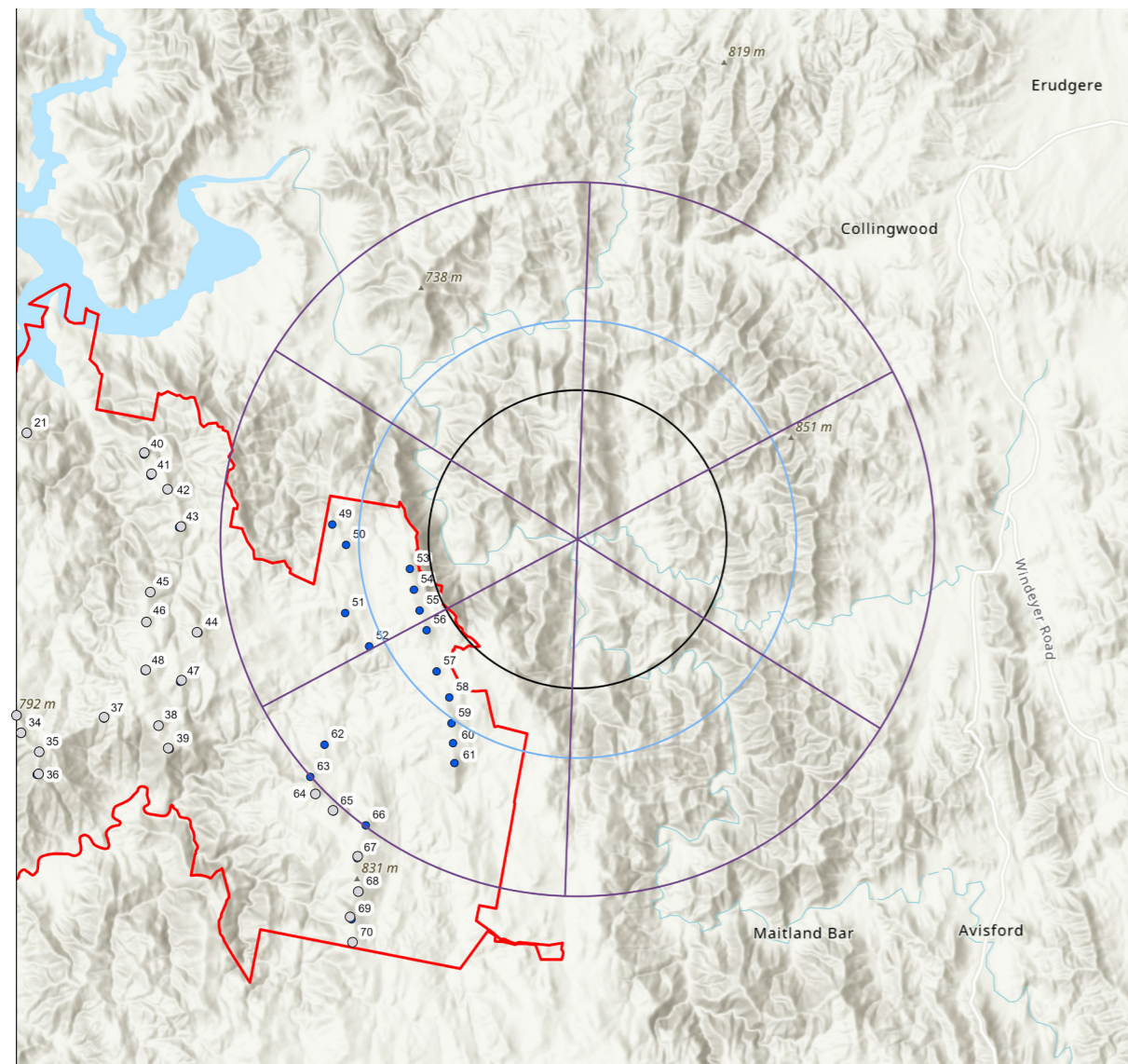
### Visual Performance Objectives

**Visual Magnitude:** No turbines are visible within the black line of visual magnitude.

**Multiple Wind Turbine Effect:** The project will be visible in up to one (1) 60 degree sector, which is deemed acceptable for a receptor with Level 2 Sensitivity (Rural Dwelling).

**Landscape Scenic Integrity:** The proposed turbines would be a minor element in the landscape, the scenic integrity will remain intact.

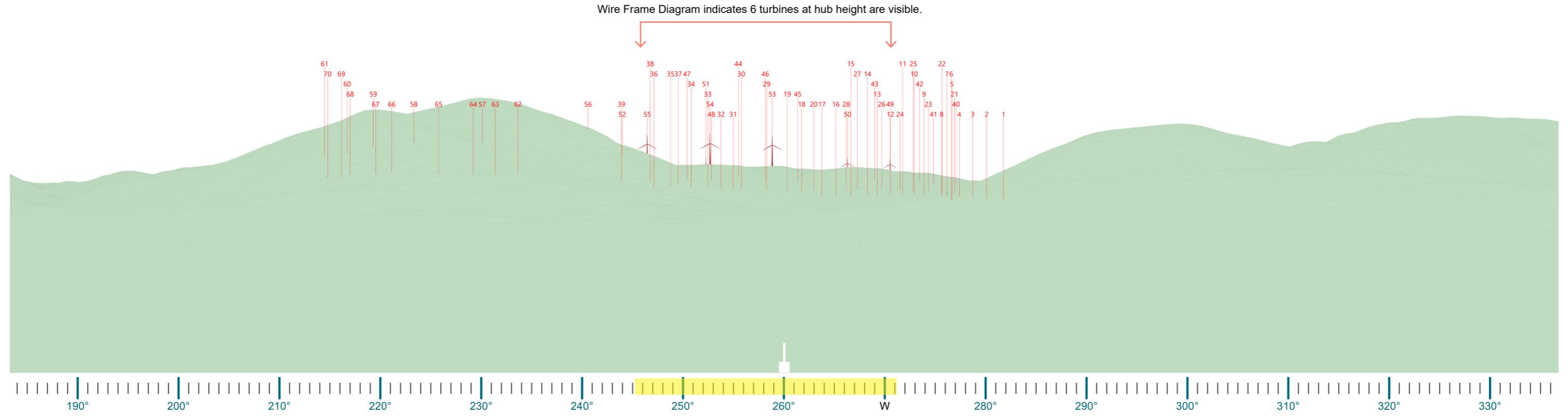
**Key Feature Disruption:** The turbines would be a minor element in the landscape, however will not disrupt views of the key features in the landscape from this location.



Aerial Image Source: Google Earth (December 2022)

# Dwelling Assessment Building X11-1

Proposed Wire Frame Diagram - 180 degree field of view



**Note:**  
No access to Site was available.  
The wire frame diagram 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 wire frame diagram is based solely on topographic information.  
Therefore this should be acknowledged as representing the absolute worst case scenario.

# Dwelling Assessment Building XW12-1

BUILDING XW12-1			
Nearest proposed turbine (km):	2.75 km	Viewer Sensitivity:	Level 2 (Moderate)
Number of proposed turbines within 8,000m of the dwelling:	20	Scenic Quality Rating:	Moderate
Number of potentially visible turbines (Based on topography alone)	7 6 at hub 1 blade tip	Landscape Character Unit:	LCU07: Worlds End
Number of 60° sectors occupied by visible turbines (based on 3D assessment):	One (1)	Visual Influence Zone:	VIZ2

**Visual Impact Rating: Low**

### Assessment Notes:

Moir have prepared a wireframe diagram from the dwelling to assist with the visual impact assessment. The dwelling is located on flat cleared area of land, to the east of Meroo River at Worlds End Road. Topography screens views to all but seven (7) turbines, six of which are visible at hub height and one which may be visible at the tip of the blade. The nearest turbine is located approximately 2.75 km to the west of the dwelling. Aerial imagery indicates intervening vegetation associated with the Meroo River would assist in screening views in the direction of the turbines.

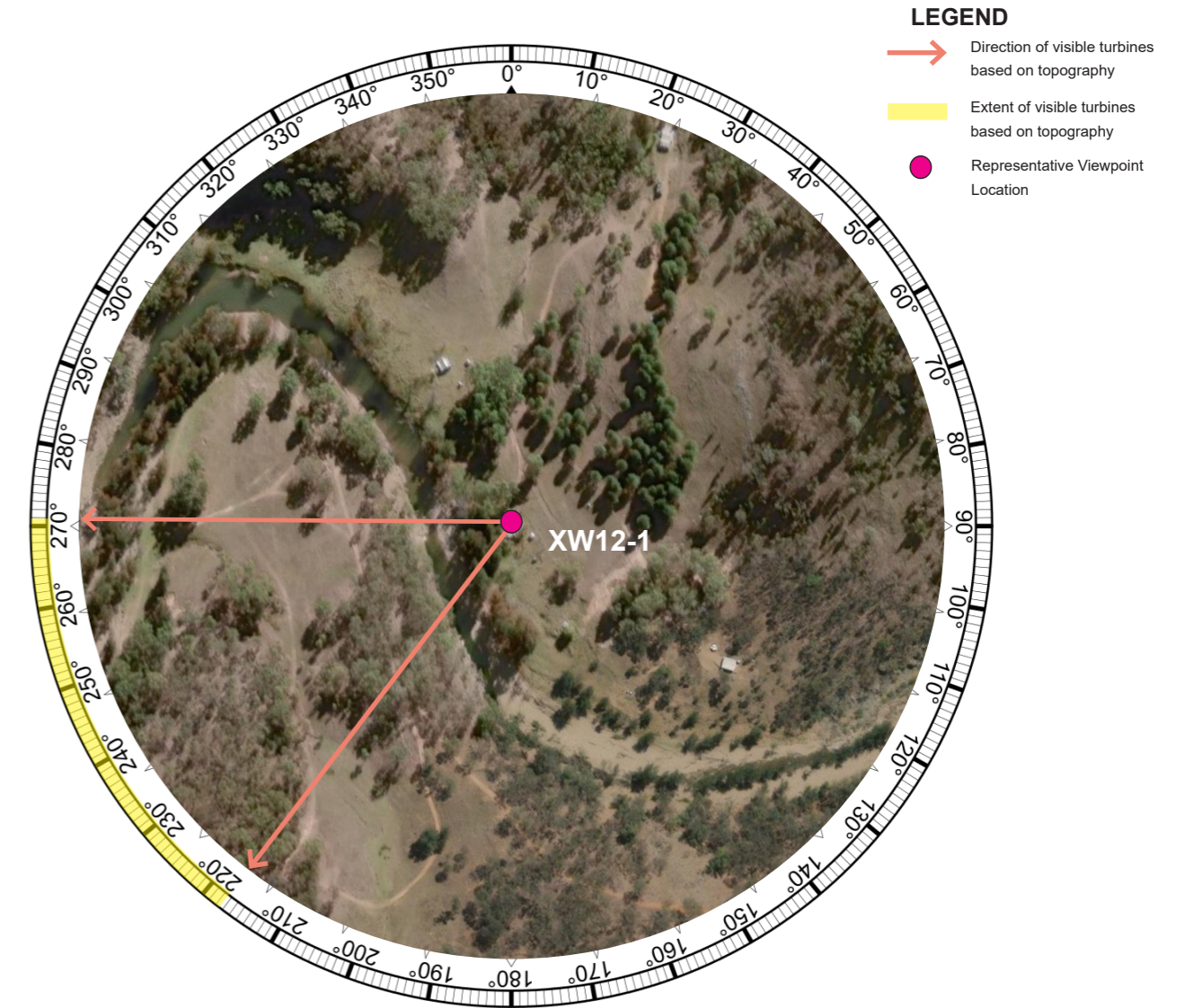
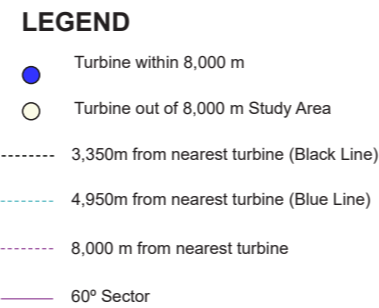
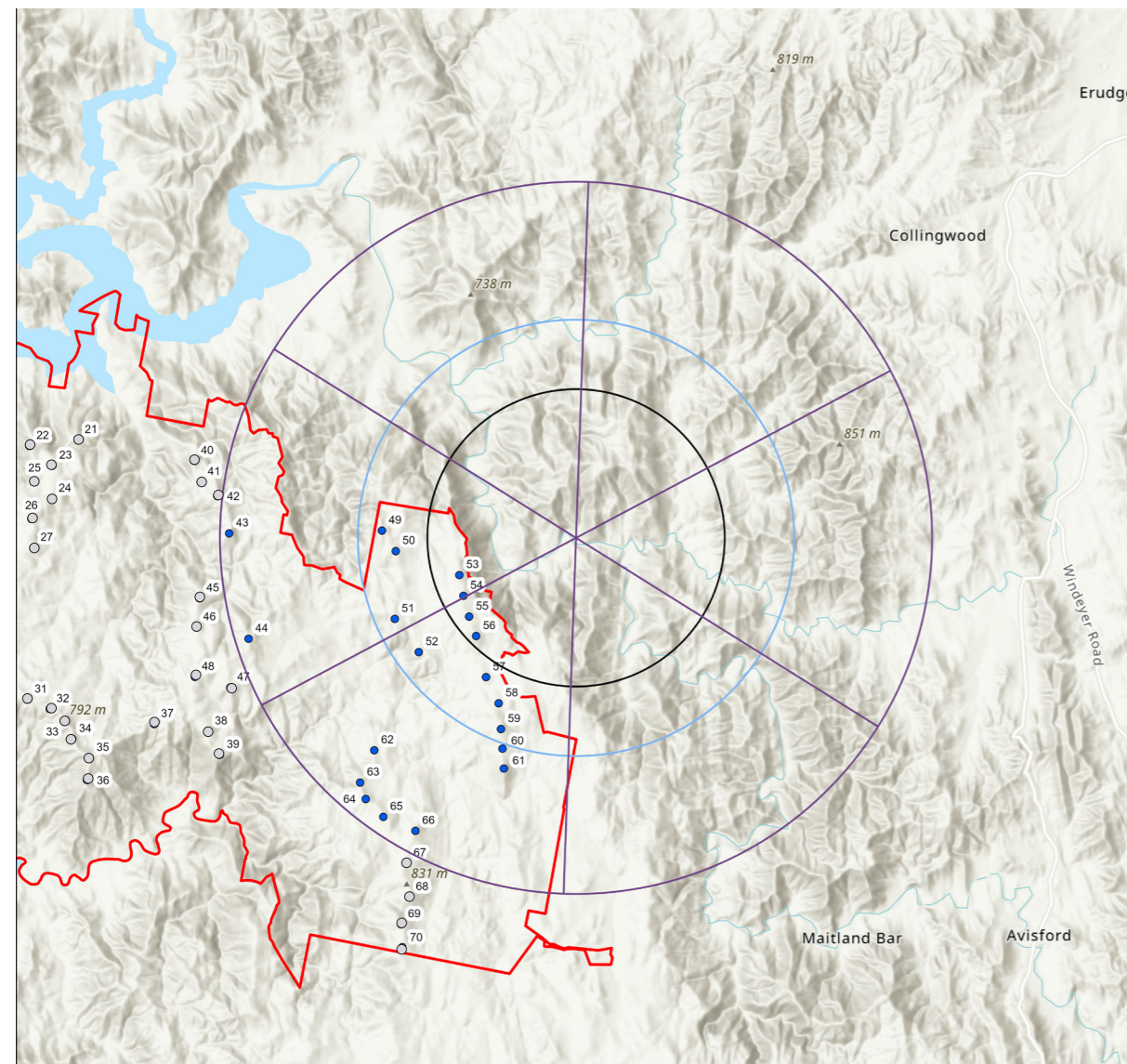
### Visual Performance Objectives

**Visual Magnitude:** Four (4) turbines are visible within the black line of visual magnitude.

**Multiple Wind Turbine Effect:** The project will be visible in up to one (1) 60 degree sector, which is deemed acceptable for a receptor with Level 2 Sensitivity (Rural Dwelling).

**Landscape Scenic Integrity:** The proposed turbines would be a minor element in the landscape, the scenic integrity will remain intact.

**Key Feature Disruption:** The turbines would be a minor element in the landscape, however will not disrupt views of the key features in the landscape from this location.

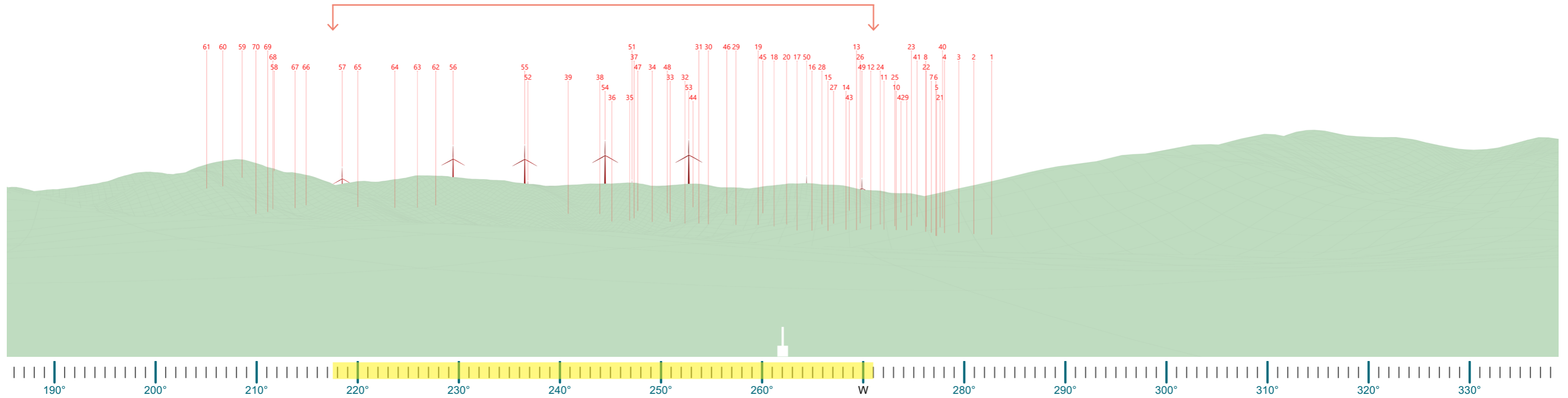


Aerial Image Source: Google Earth (December 2022)

# Dwelling Assessment Building XW12-1

Proposed Wire Frame Diagram - 180 degree field of view

Wire Frame Diagram indicates 6 turbines at hub height are visible.



**Note:**

No access to Site was available.

The wire frame diagram 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 wire frame diagram is based solely on topographic information.

Therefore this should be acknowledged as representing the absolute worst case scenario.

# Dwelling Assessment Building U10-1

## BUILDING U10-1

Nearest proposed turbine (km):	1.40 km	Viewer Sensitivity:	Level 2 (Moderate)
Number of proposed turbines within 8,000m of the dwelling:	29	Scenic Quality Rating:	Moderate
Number of potentially visible turbines (Based on topography alone)	4 at hub height	Landscape Character Unit:	LCU07: Worlds End
Number of 60° sectors occupied by visible turbines (based on 3D assessment):	One (1)	Visual Influence Zone:	VIZ1

**Visual Impact Rating: Low**

### Assessment Notes:

Moir have prepared a wireframe diagram from the dwelling to assist with the visual impact assessment. A panoramic photograph from the site accompanies the wireframe diagram. The dwelling is located on flat cleared area of land, to the east of Meroo River at Worlds End Road. Topography screens views to all but four (4) turbines, which are visible at hub height. The nearest turbine is located approximately 1.4 km to the south west of the dwelling. Aerial imagery and on site photography indicates intervening vegetation located adjacent to the dwelling would assist in fragmenting views in the direction of the turbines.

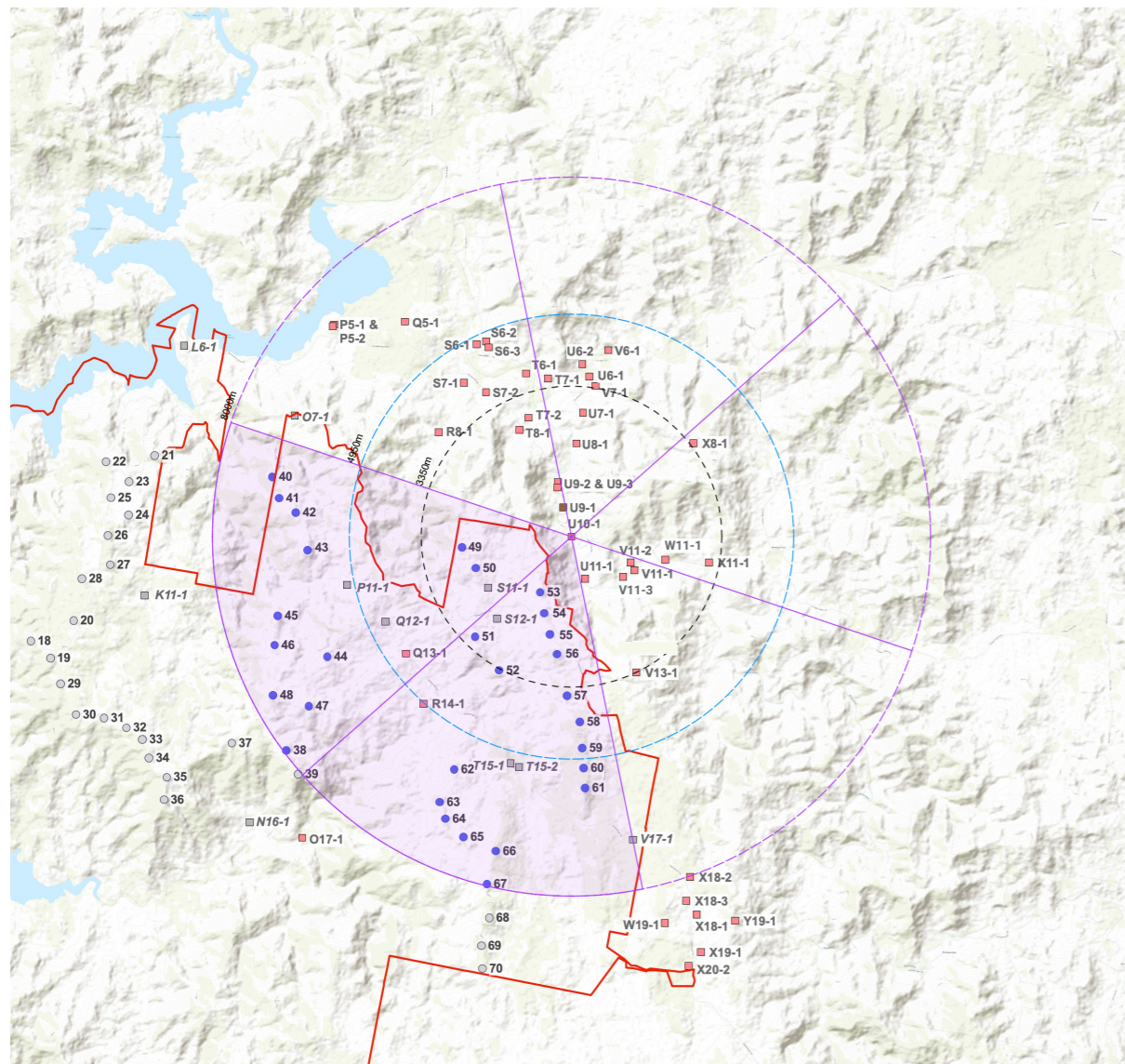
### Visual Performance Objectives

**Visual Magnitude:** Four (4) turbines are visible within the black line of visual magnitude.

**Multiple Wind Turbine Effect:** The project will be visible in up to one (1) 60 degree sector, which is deemed acceptable for a receptor with Level 2 Sensitivity (Rural Dwelling).

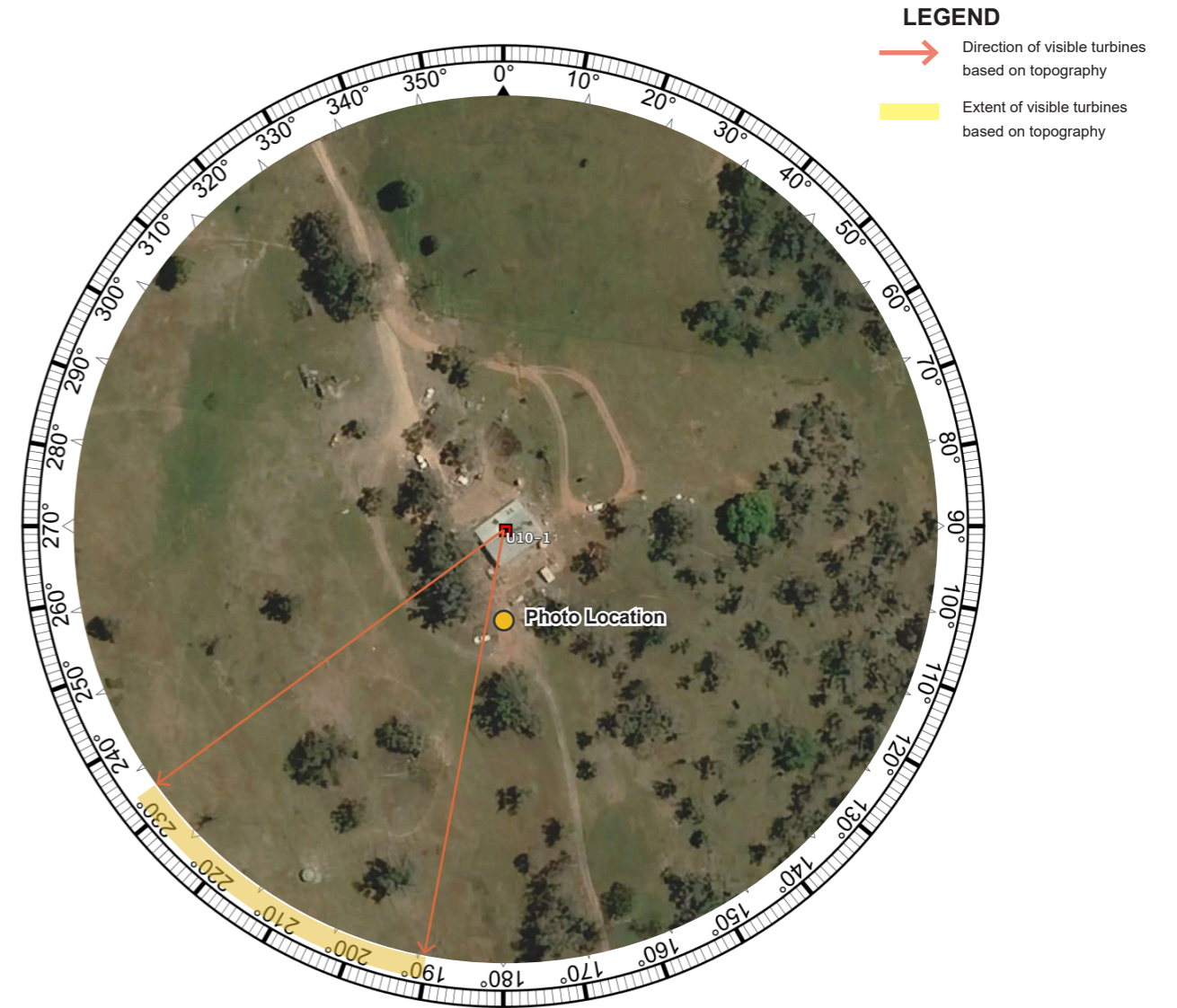
**Landscape Scenic Integrity:** The proposed turbines would be a noticeable element in the landscape, the scenic integrity will remain intact.

**Key Feature Disruption:** The turbines would be a noticeable element in the landscape, however will not disrupt views of the key features in the landscape from this location.



### LEGEND

- Turbine within 8,000 m
- Turbine out of 8,000 m Study Area
- 3,350m from nearest turbine (Black Line)
- 4,950m from nearest turbine (Blue Line)
- 8,000 m from nearest turbine
- 60° Sector

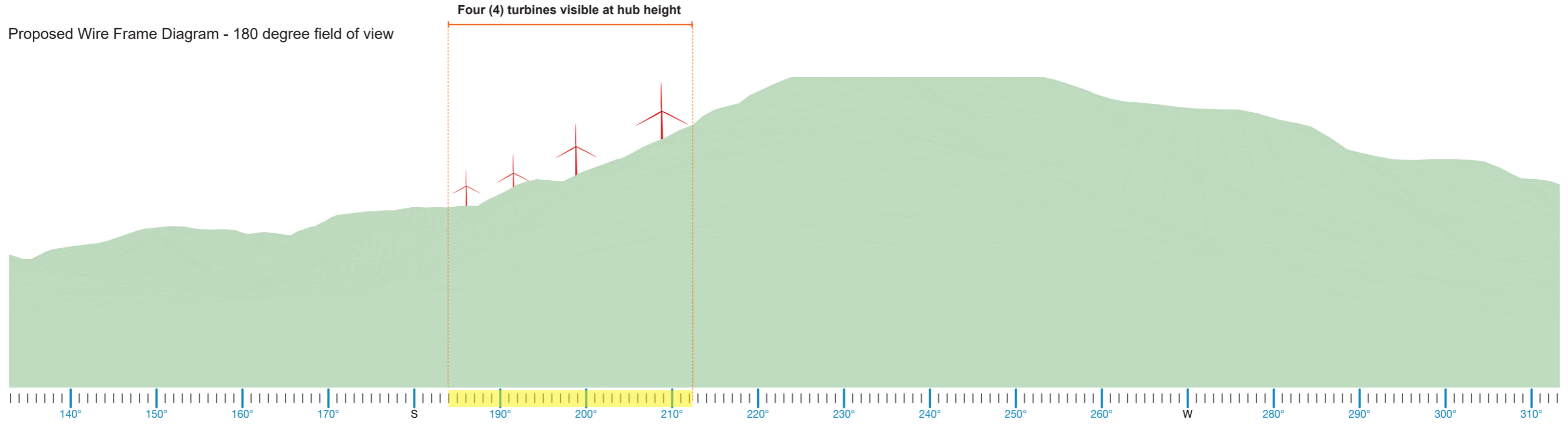


### LEGEND

- Direction of visible turbines based on topography
- Extent of visible turbines based on topography

# Dwelling Assessment Building U10-1

Proposed Wire Frame Diagram - 180 degree field of view



# Dwelling Assessment Building U11-1

BUILDING U11-1			
Nearest proposed turbine (km):	1.07 km	Viewer Sensitivity:	Level 2 (Moderate)
Number of proposed turbines within 8,000m of the dwelling:	31	Scenic Quality Rating:	Moderate
Number of potentially visible turbines (Based on topography alone)	4 4 at hub height	Landscape Character Unit:	LCU07: Worlds End
Number of 60° sectors occupied by visible turbines (based on 3D assessment):	One (1)	Visual Influence Zone:	VIZ1

**Visual Impact Rating: High**

## Assessment Notes:

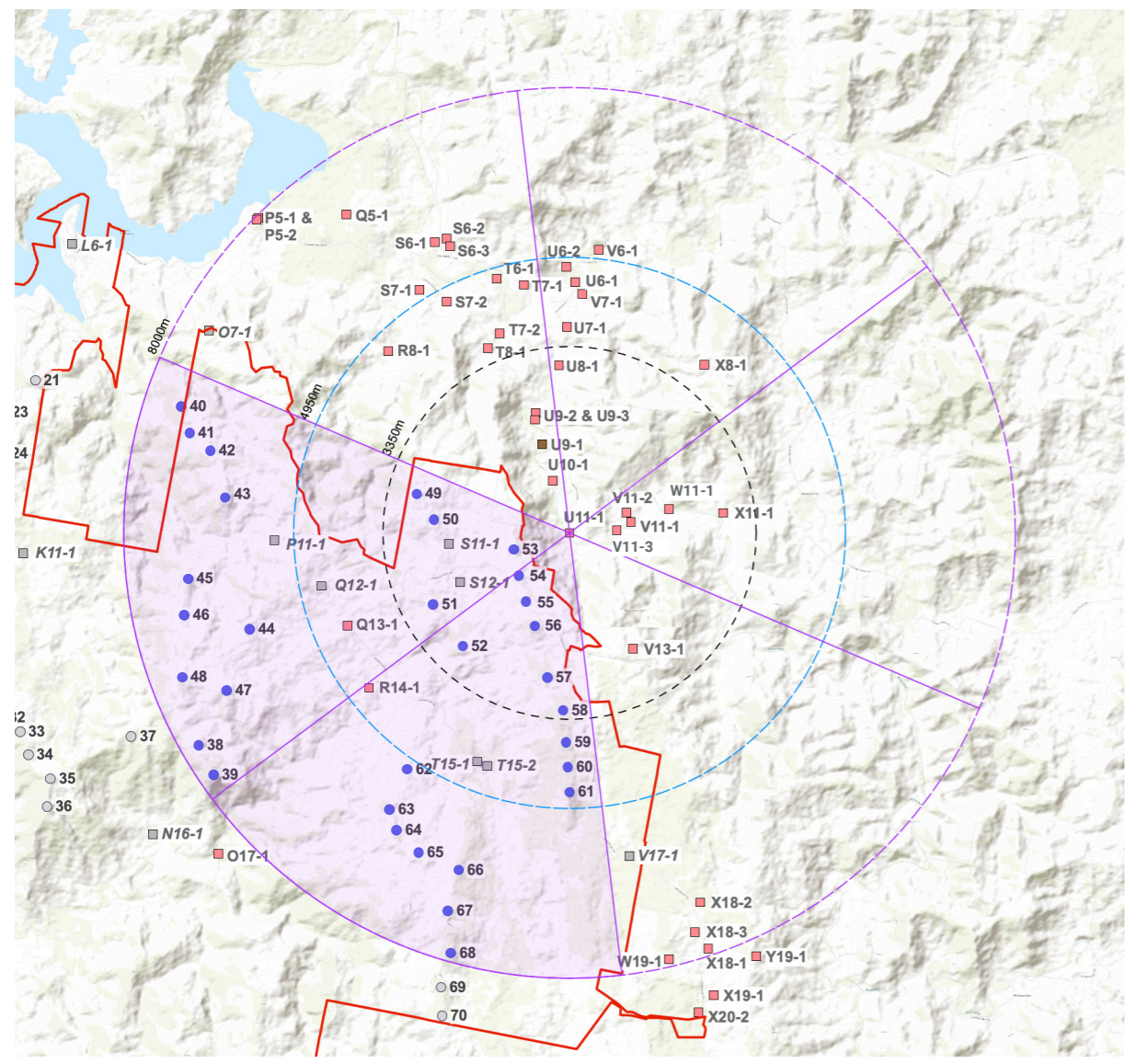
Assessment was undertaken from the valley associated with the Meroo River. The location is accessed via a locked gate which is inaccessible to the public. Representatives from Moir undertook a site inspection during March 2023 to determine the site conditions. A representative photograph was taken from two (2) buildings adjacent to Meroo River. A wire frame diagram has been prepared from the photograph location. The wire frame diagram indicates a total of four (4) turbines will be visible along the ridgeline to the west of the location.

## Visual Performance Objectives

**Visual Magnitude:** Four (4) turbines are visible within the black line of visual magnitude.  
**Multiple Wind Turbine Effect:** The project will be visible in up to one (1) 60 degree sector, which is deemed acceptable for a receptor with Level 2 Sensitivity (Rural Dwelling).  
**Landscape Scenic Integrity:** The proposed turbines would be a dominant element in the landscape, the scenic integrity will remain intact.  
**Key Feature Disruption:** The turbines would be a dominant element in the landscape, however will not disrupt views of the key features in the landscape from this location (Meroo River and surrounding hills).

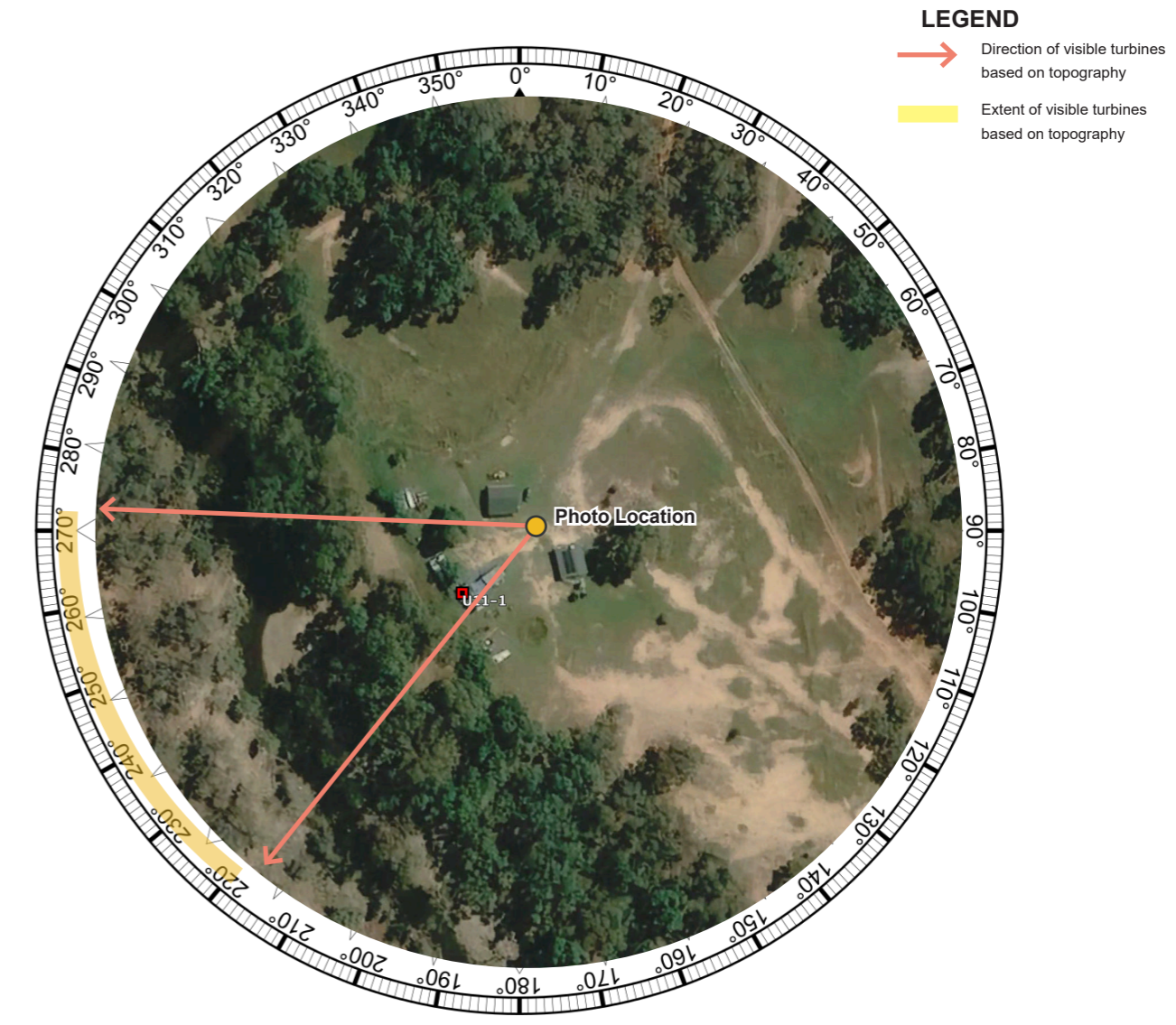
## Mitigation Recommendations:

In accordance with the visual performance objectives outlined in the Bulletin, "turbines located within the black line of visual magnitude are required to manage visual impacts as far as practicable, justify any residual impacts, and identify appropriate mitigation measures". While turbines are located within the black line, they occupy only a small proportion of the views available from the lot toward the west. The limited extent of visibility means that mitigation measures are feasible. Options to mitigate potential visual impacts at the buildings include strategically placed landscape screening to the west of the structures, developed in consultation with the landowner. Given the confined extent of turbine visibility along the ridgeline, effective screening could be achieved. An alternative mitigation option is the reorientation of the two existing structures. The two structures are non-permanently affixed buildings which appear to be relocatable. It is proposed these buildings be orientated so that primary living spaces face north, away from the Project.



**LEGEND**

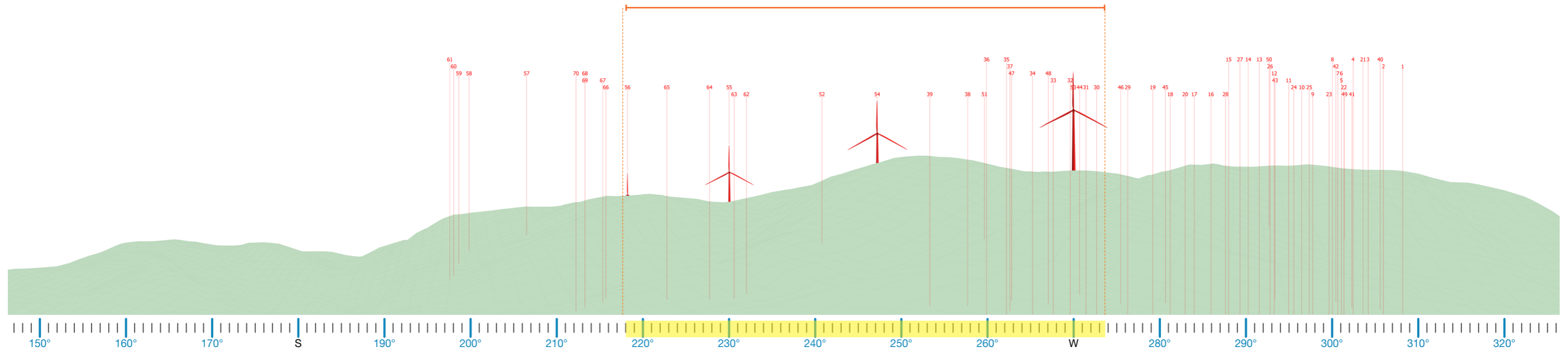
- Turbine within 8,000 m
- Turbine out of 8,000 m Study Area
- 3,350m from nearest turbine (Black Line)
- 4,950m from nearest turbine (Blue Line)
- 8,000 m from nearest turbine
- 60° Sector



# Dwelling Assessment Building U11-1

Proposed Wire Frame Diagram - 180 degree field of view

Four (4) turbines visible at hub height.



# Dwelling Assessment Building U9-1

## BUILDING U9-1

Nearest proposed turbine (km):	1.96 km	Viewer Sensitivity:	Level 2 (Moderate)
Number of proposed turbines within 8,000m of the dwelling:	27	Scenic Quality Rating:	Moderate
Number of potentially visible turbines (Based on topography alone)	6 1 at hub height 5 blades	Landscape Character Unit:	LCU07: Worlds End
Number of 60° sectors occupied by visible turbines (based on 3D assessment):	One (1)	Visual Influence Zone:	VIZ1

## Assessment Notes:

No access was available to the structure identified as U9-1. The wire frame diagram is presented as a worst case scenario based on topography alone. A wire frame diagram has been prepared from this location. The wire frame diagram indicates a total of one (1) turbine and five (5) blades will be visible beyond the ridgeline to the south of the location.

## Visual Performance Objectives

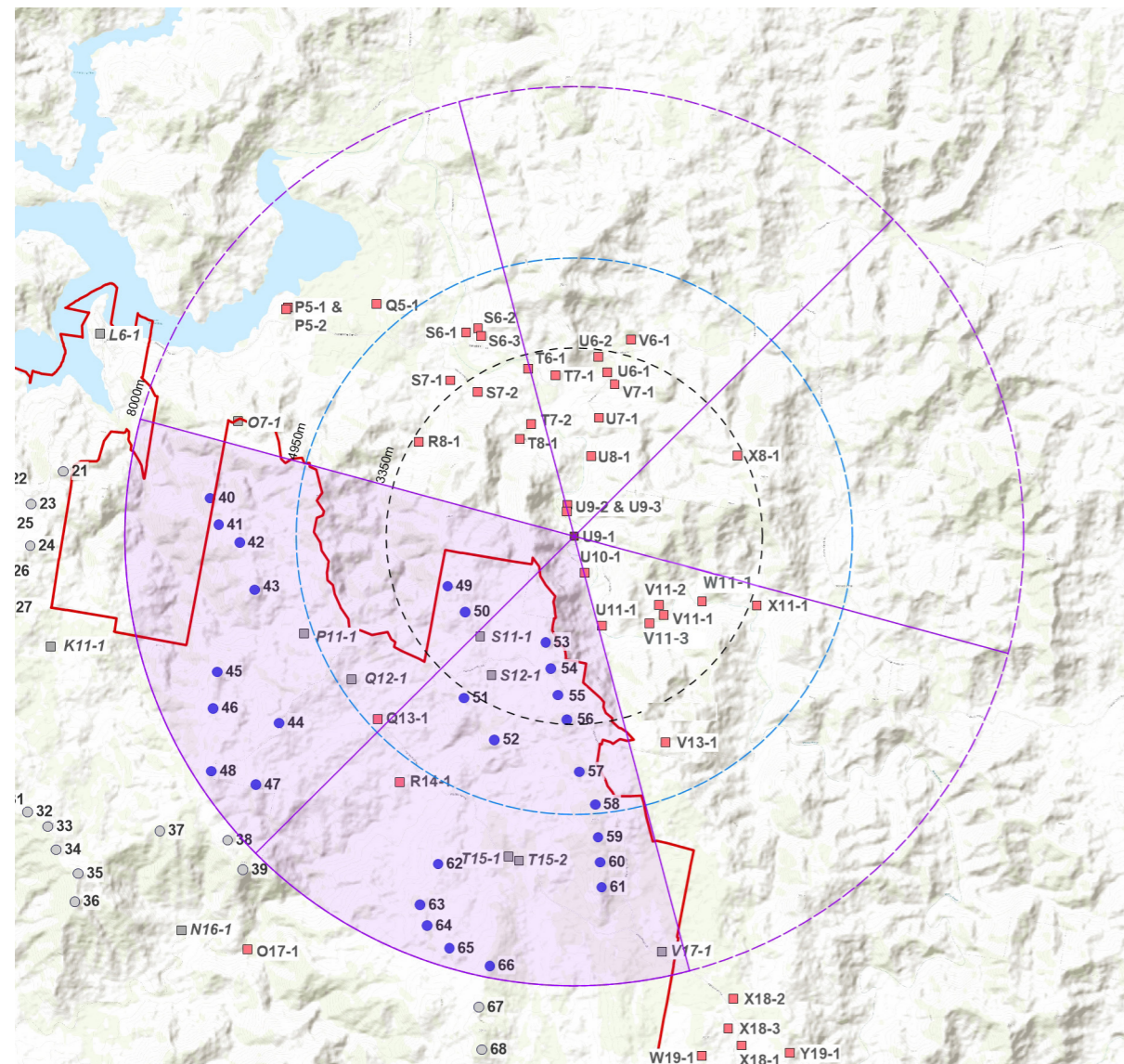
**Visual Magnitude:** Six (6) turbines are visible within the black line of visual magnitude (only one at hub height).

**Multiple Wind Turbine Effect:** The project will be visible in up to one (1) 60 degree sector, which is deemed acceptable for a receptor with Level 2 Sensitivity (Rural Dwelling).

**Landscape Scenic Integrity:** The proposed turbines would be a noticeable element in the landscape, the scenic integrity will remain intact.

**Key Feature Disruption:** The turbines would be a noticeable element in the landscape, however will not disrupt views of the key features in the landscape from this location (Meroo River and surrounding hills).

Visual Impact Rating: Low

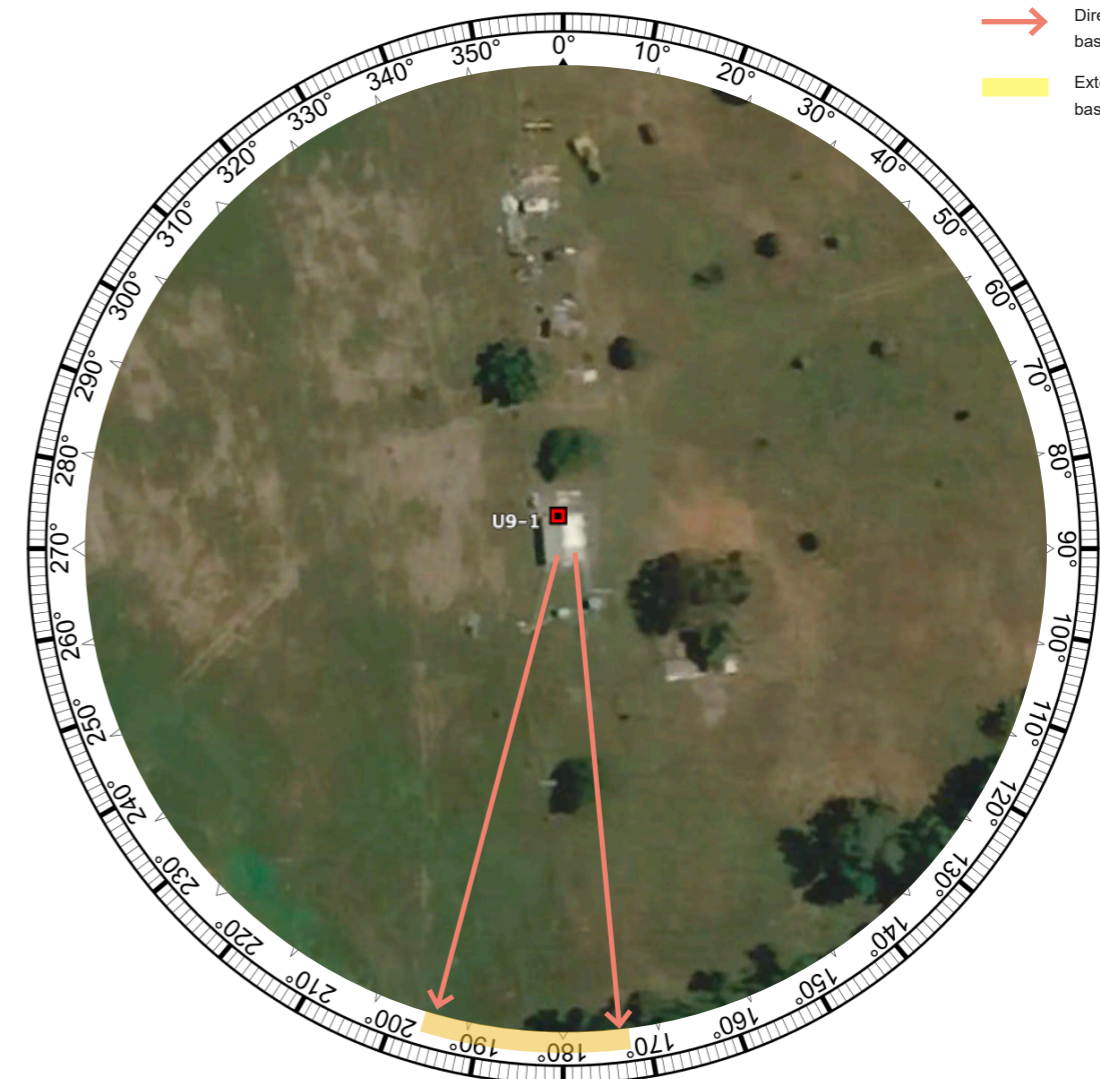


### LEGEND

- Turbine within 8,000 m
- Turbine out of 8,000 m Study Area
- 3,350m from nearest turbine (Black Line)
- 4,950m from nearest turbine (Blue Line)
- 8,000 m from nearest turbine
- 60° Sector

### LEGEND

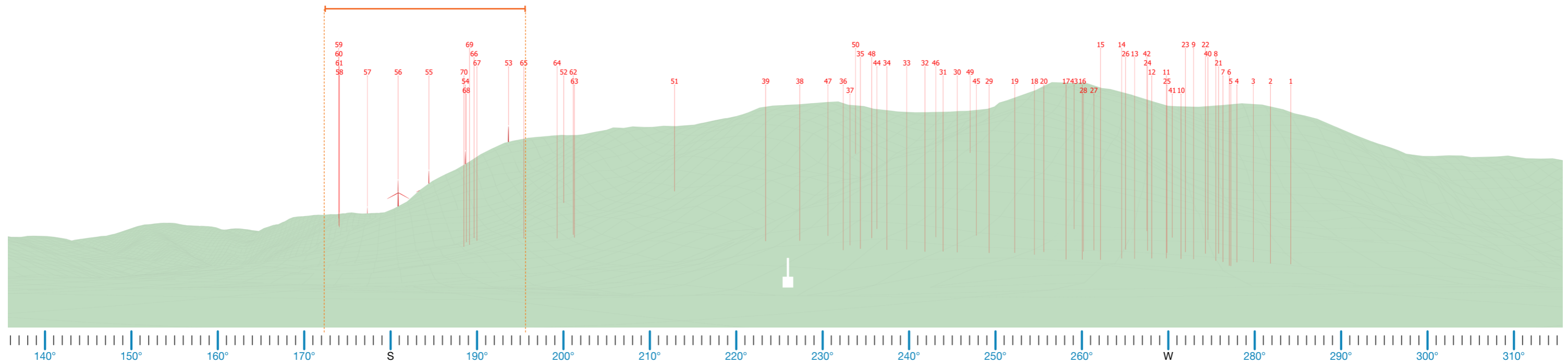
- Direction of visible turbines based on topography
- Extent of visible turbines based on topography



# Dwelling Assessment Building U9-1

Proposed Wire Frame Diagram - 180 degree field of view

One (1) turbine visible at hub height  
and five (5) blade tips visible.



**Note:**

No access to Site was available.

The wire frame diagram 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 wire frame diagram is based solely on topographic information.

Therefore this should be acknowledged as representing the absolute worst case scenario.

# Dwelling Assessment Building V11-2

## BUILDING V11-2

Nearest proposed turbine (km):	2.135 km	Viewer Sensitivity:	Level 2 (Moderate)
Number of proposed turbines within 8,000m of the dwelling:	23	Scenic Quality Rating:	Moderate
Number of potentially visible turbines (Based on topography alone)	6 4 at hub height 2 blades	Landscape Character Unit:	LCU07: Worlds End
Number of 60° sectors occupied by visible turbines (based on 3D assessment):	One (1)	Visual Influence Zone:	VIZ2

Visual Impact Rating: Low

### Assessment Notes:

A wireframe diagram has been prepared with an accompanying panoramic photograph from Site. The wire frame diagram indicates a total of four (4) turbine at hub height and two (2) blades will be visible to the south west of the location. Intervening vegetation will assist in fragmenting views to some turbines.

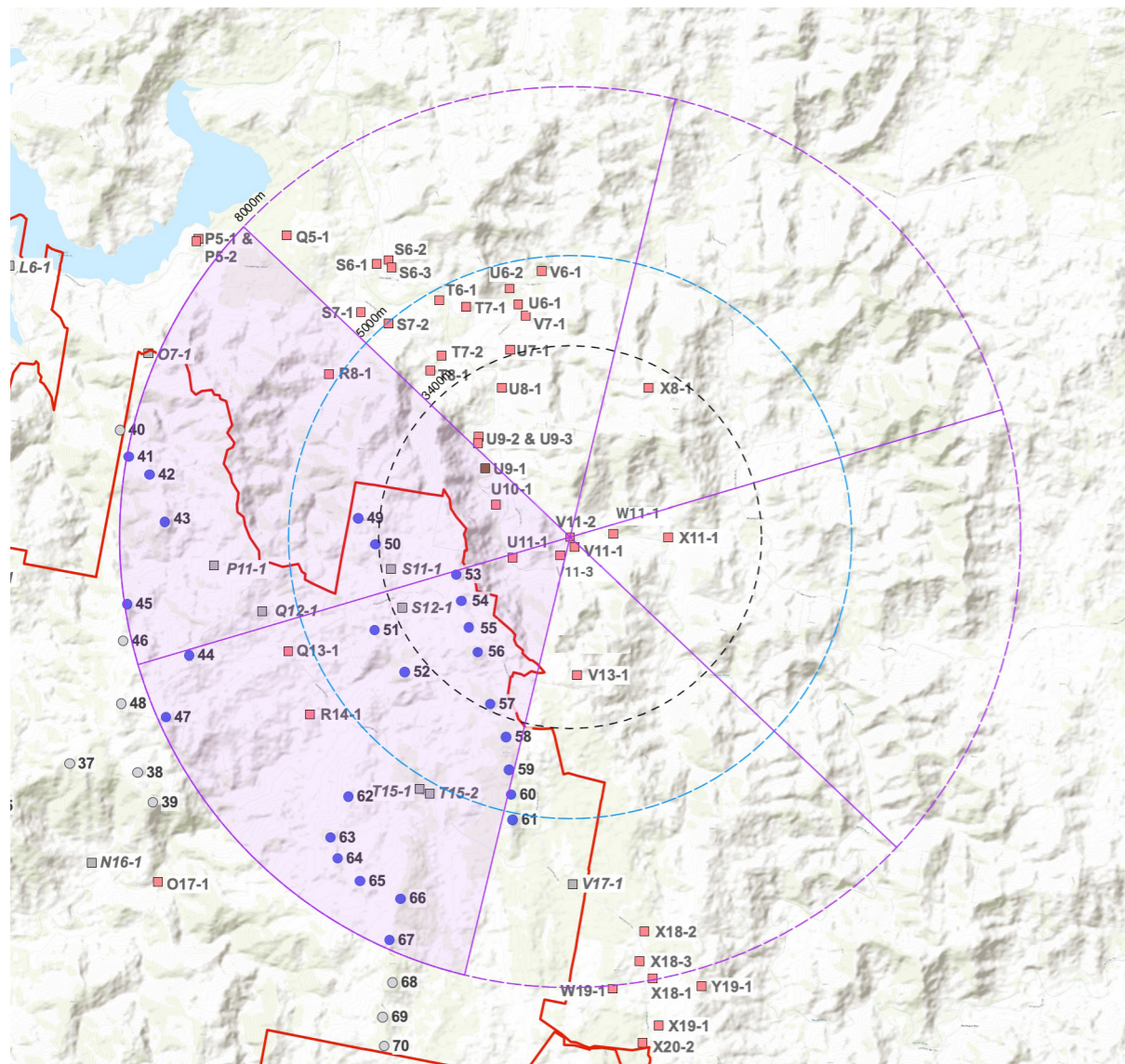
### Visual Performance Objectives

**Visual Magnitude:** Five (5) turbines are visible within the black line of visual magnitude (only 4 at hub height).

**Multiple Wind Turbine Effect:** The project will be visible in up to one (1) 60 degree sector, which is deemed acceptable for a receptor with Level 2 Sensitivity (Rural Dwelling).

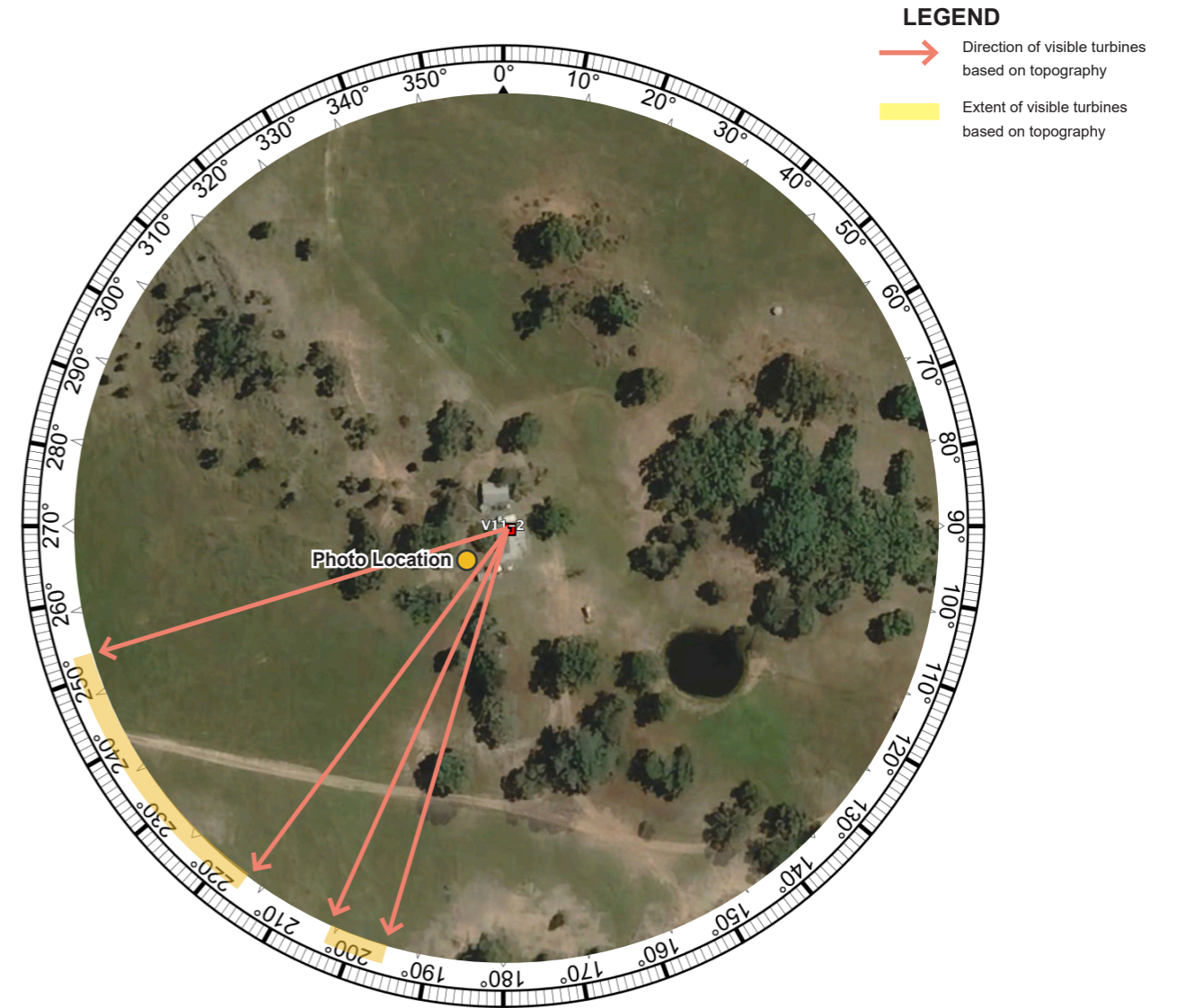
**Landscape Scenic Integrity:** The proposed turbines would be a noticeable element in the landscape, the scenic integrity will remain intact.

**Key Feature Disruption:** The turbines would be a noticeable element in the landscape, however will not disrupt views of the key features in the landscape from this location (Meroo River and surrounding hills).



### LEGEND

- Turbine within 8,000 m
- Turbine out of 8,000 m Study Area
- 3,350m from nearest turbine (Black Line)
- 4,950m from nearest turbine (Blue Line)
- 8,000 m from nearest turbine
- 60° Sector

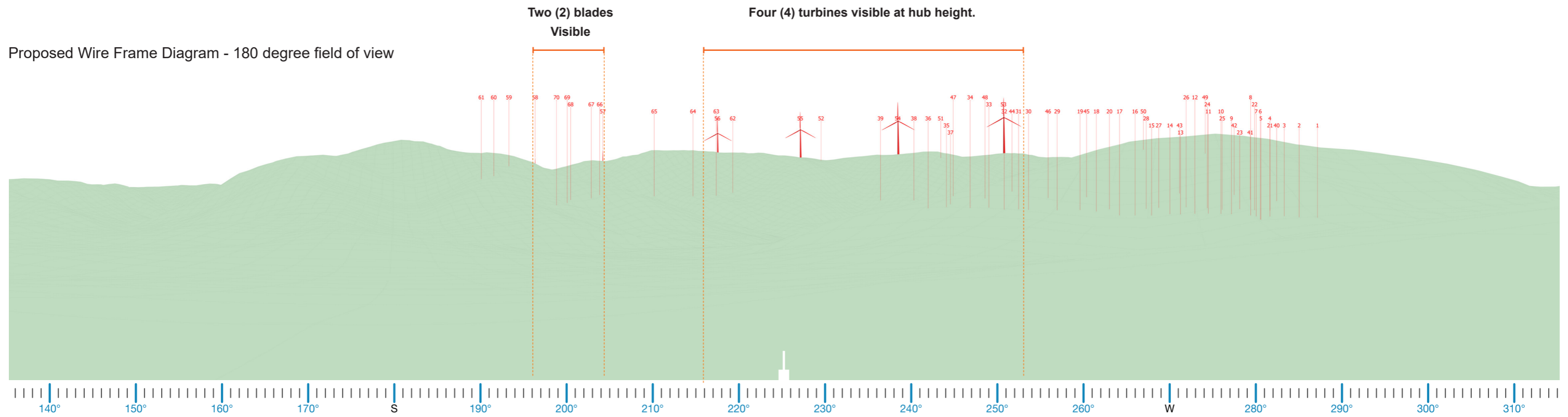


### LEGEND

- Direction of visible turbines based on topography
- Extent of visible turbines based on topography

# Dwelling Assessment Building V11-2

Proposed Wire Frame Diagram - 180 degree field of view



# Dwelling Assessment Building W11-1

## BUILDING W11-1

Nearest proposed turbine (km):	2.867 km	Viewer Sensitivity:	Level 2 (Moderate)
Number of proposed turbines within 8,000m of the dwelling:	20	Scenic Quality Rating:	Moderate
Number of potentially visible turbines (Based on topography alone)	9 5 at hub height 4 blades	Landscape Character Unit:	LCU07: Worlds End
Number of 60° sectors occupied by visible turbines (based on 3D assessment):	One (1)	Visual Influence Zone:	VI22

### Assessment Notes:

A wireframe diagram has been prepared with an accompanying panoramic photograph from Site. The wire frame diagram indicates a total of five (5) turbines at hub height and four (4) blades will be visible to the west of the location. Intervening vegetation will assist in fragmenting views to some turbines.

### Visual Performance Objectives

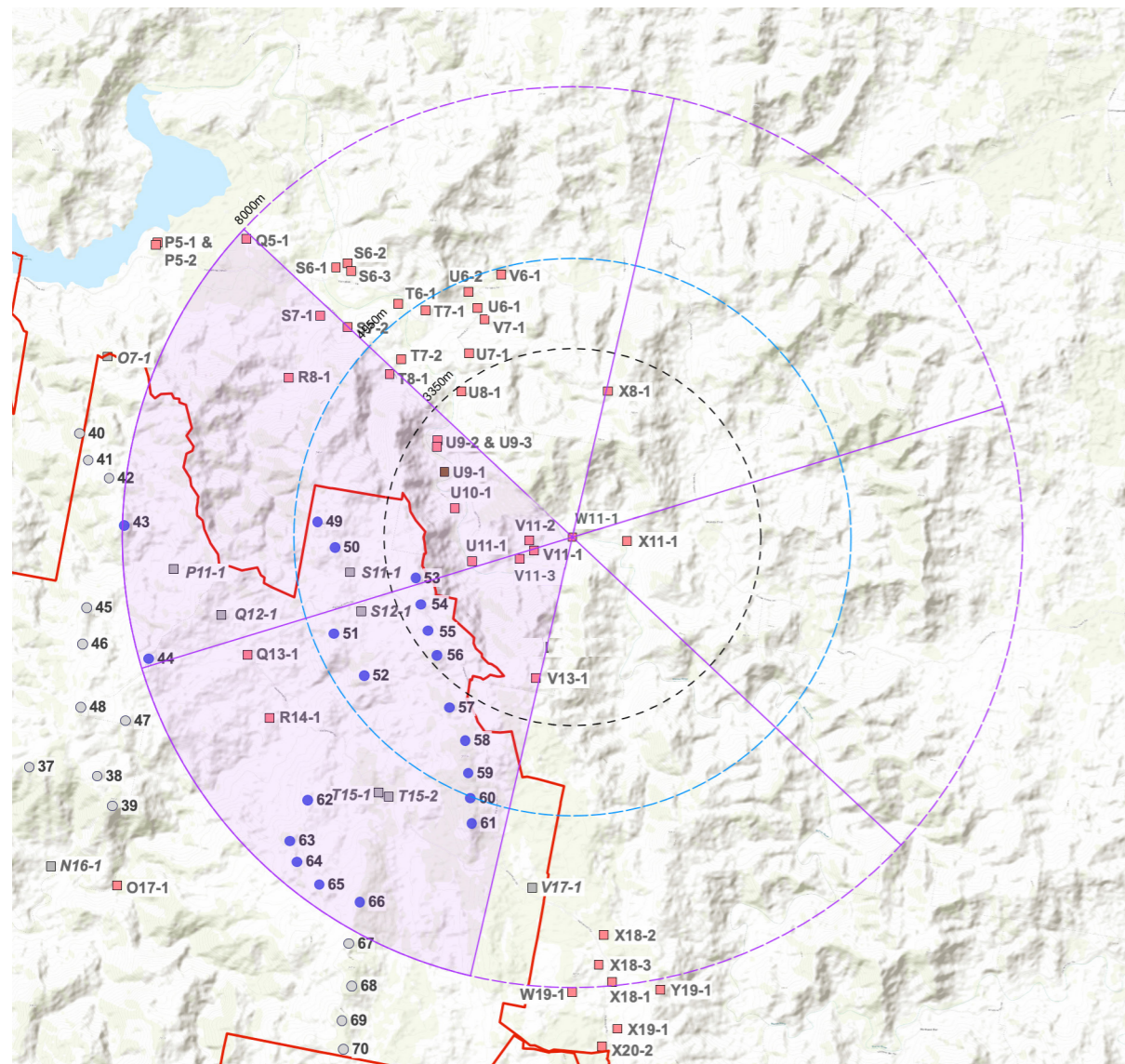
**Visual Magnitude:** Four (4) turbines are located within the black line of visual magnitude, however only two (2) will be visible due to intervening vegetation.

**Multiple Wind Turbine Effect:** The project will be visible in up to one (1) 60 degree sector, which is deemed acceptable for a receptor with Level 2 Sensitivity (Rural Dwelling).

**Landscape Scenic Integrity:** The proposed turbines would be a minor element in the landscape, the scenic integrity will remain intact.

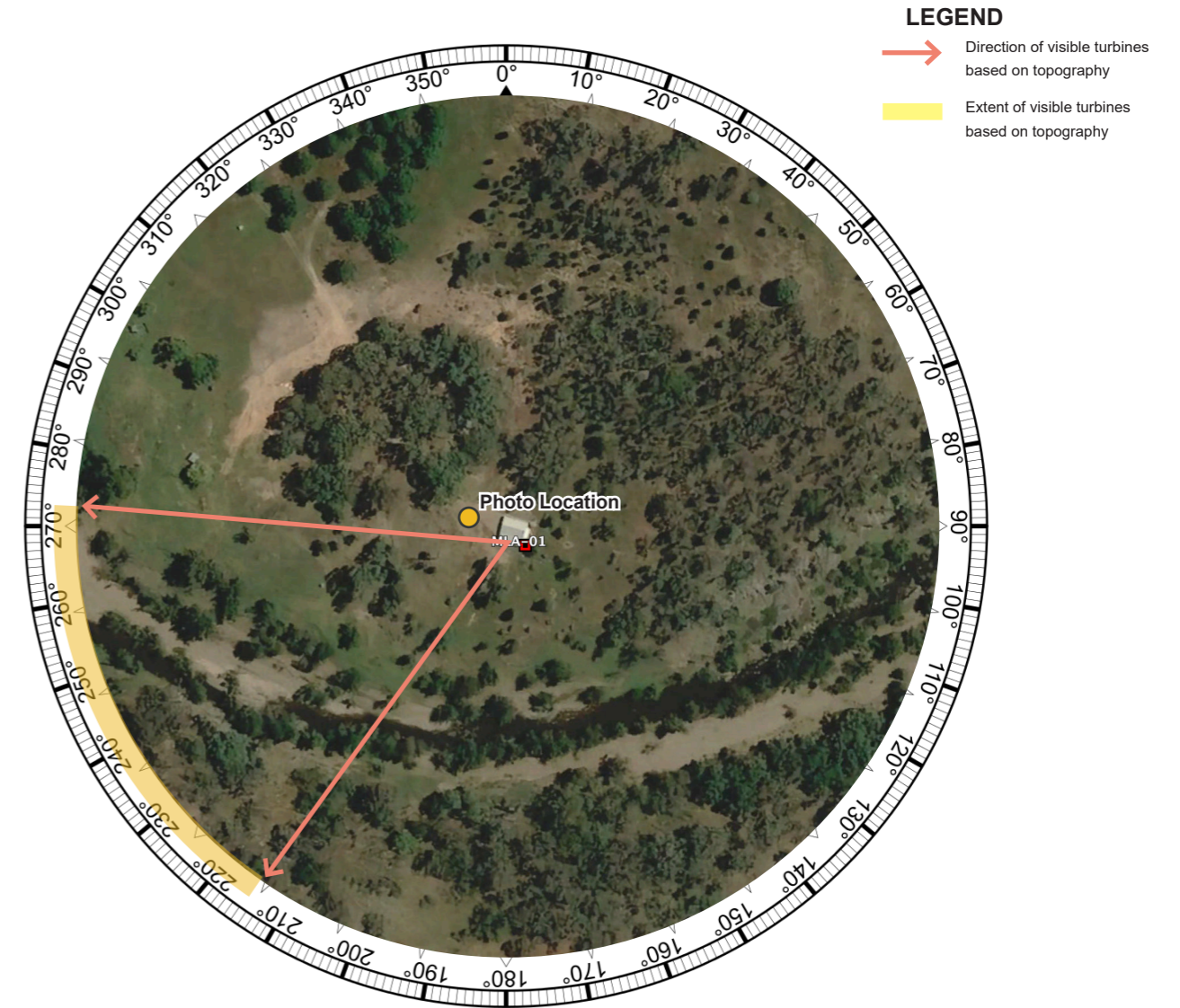
**Key Feature Disruption:** The turbines would be a minor element in the landscape, however will not disrupt views of the key features in the landscape from this location (Meroo River and surrounding hills).

Visual Impact Rating: Low



### LEGEND

- Turbine within 8,000 m
- Turbine out of 8,000 m Study Area
- 3,350m from nearest turbine (Black Line)
- 4,950m from nearest turbine (Blue Line)
- 8,000 m from nearest turbine
- 60° Sector

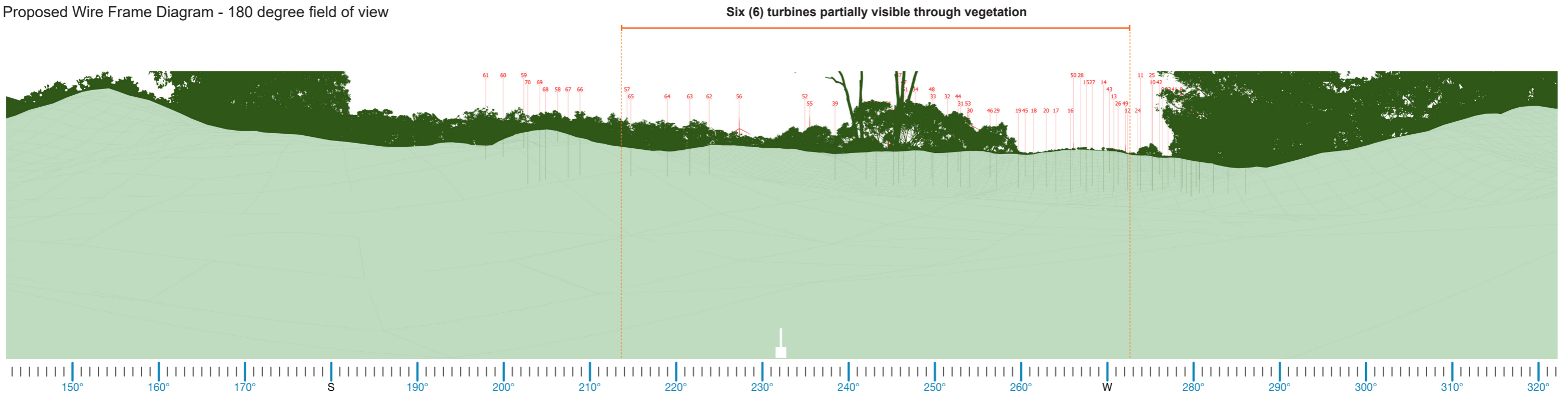


### LEGEND

- Direction of visible turbines based on topography
- Extent of visible turbines based on topography

# Dwelling Assessment Building W11-1

Proposed Wire Frame Diagram - 180 degree field of view



**Note:**

As authorisation to display a photo of the property was not provided, a wire-frame diagram has been prepared instead. This diagram represents a bare-ground scenario, with vegetation shown as a colour block.

# Dwelling Assessment Building V11-3

## DWELLING V11-3

Nearest proposed turbine (km):	1.885 km	Viewer Sensitivity:	Level 2 (Moderate)
Number of proposed turbines within 8,000m of the dwelling:	26	Scenic Quality Rating:	Moderate
Number of potentially visible turbines (Based on topography alone)	5 4 at hub height 1 blade	Landscape Character Unit:	LCU07: Worlds End
Number of 60° sectors occupied by visible turbines (based on 3D assessment):	One (1)	Visual Influence Zone:	V122

**Visual Impact Rating: Moderate**

### Assessment Notes:

Assessment was undertaken from the valley associated with the Meroo River. The location is accessed via a locked gate which is inaccessible to the public. Representatives from Moir undertook a site inspection during March 2023 to determine the site conditions. A representative photograph was taken from a cleared area to the south west of the structure as a worst case scenario. The wire frame diagram indicates a total of five (5) turbines will be visible along the ridgeline to the south west of the location (four at hub height and one blade).

### Visual Performance Objectives

**Visual Magnitude:** Four (4) turbines are located within the black line of visual magnitude to the south west of the dwelling.

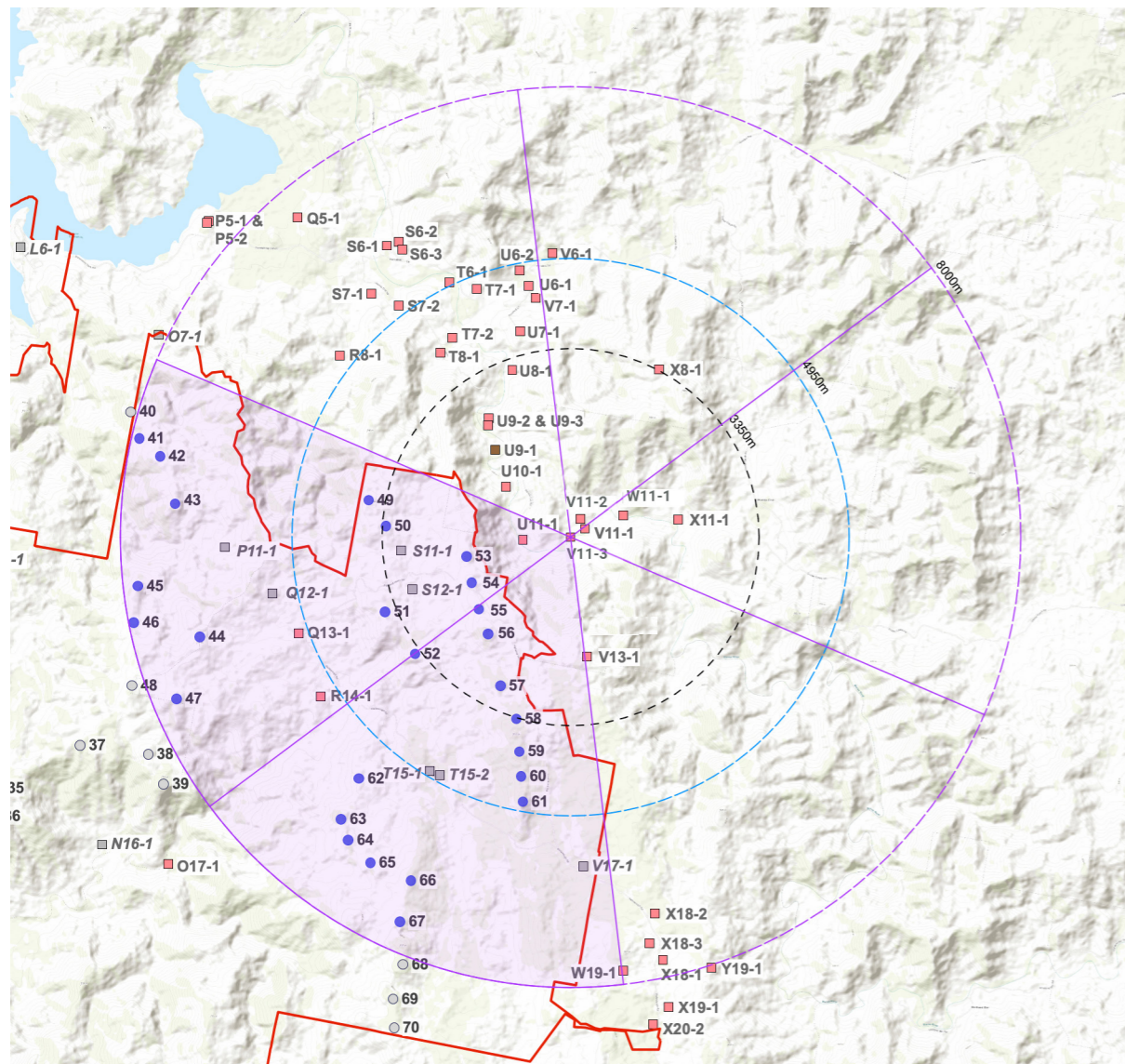
**Multiple Wind Turbine Effect:** The project will be visible in up to one (1) 60 degree sector, which is deemed acceptable for a receptor with Level 2 Sensitivity (Rural Dwelling).

**Landscape Scenic Integrity:** The proposed turbines would be a noticeable element in the landscape, the scenic integrity will remain intact.

**Key Feature Disruption:** The turbines would be a noticeable element in the landscape, however will not disrupt views of the key features in the landscape from this location (Meroo River and surrounding hills).

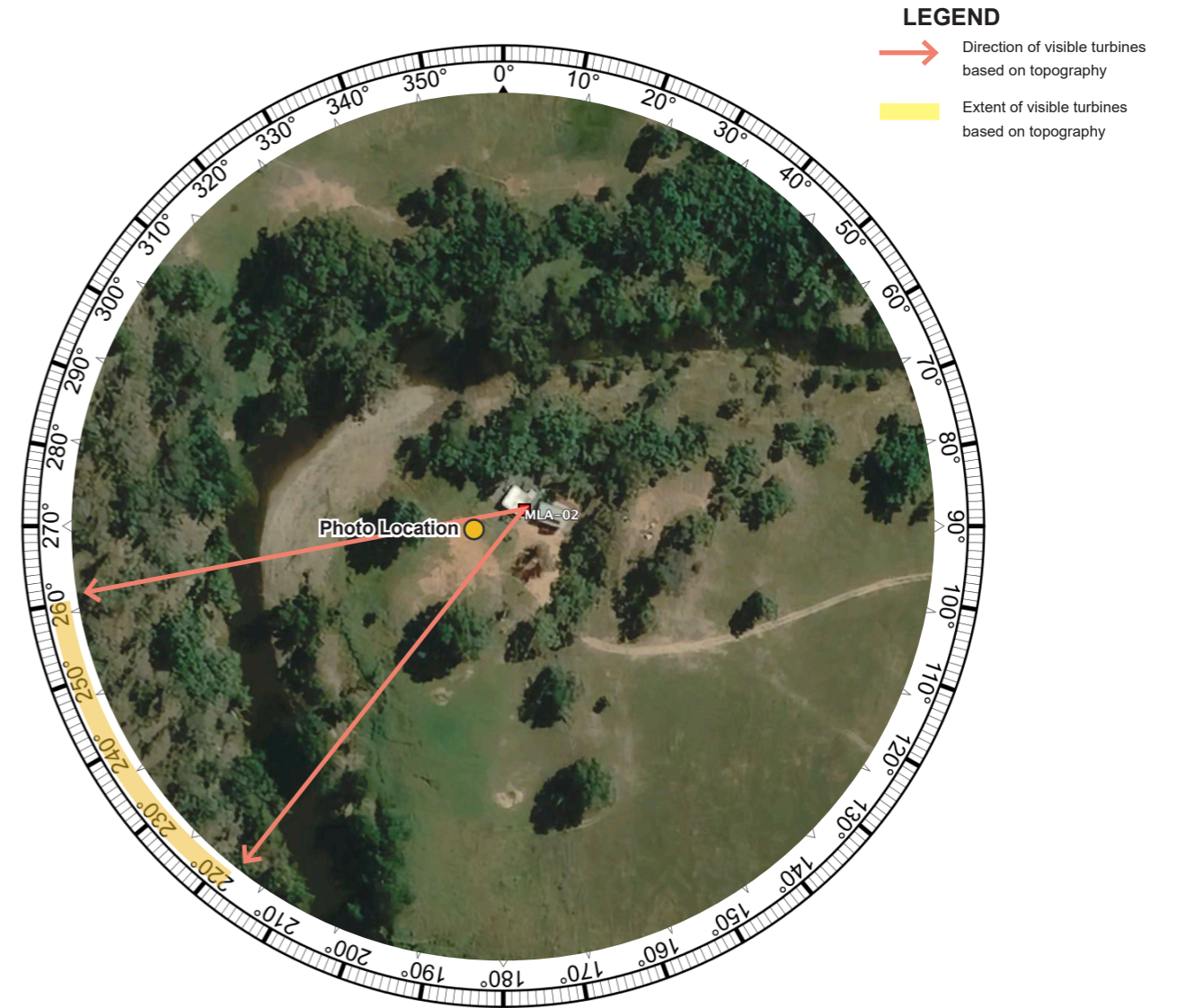
### Mitigation Recommendations:

In accordance with the visual performance objectives outlined in the Bulletin, "turbines located within the black line of visual magnitude are required to manage visual impacts as far as practicable, justify any residual impacts, and identify appropriate mitigation measures". Opportunities for mitigation through targeted landscape screening or planting could be explored in consultation with the landowner, should it be desired, to further views of turbines to the south west of the dwelling. With these considerations, the residual visual impact is considered justifiable and acceptable in the context of the applicable visual performance objectives.



### LEGEND

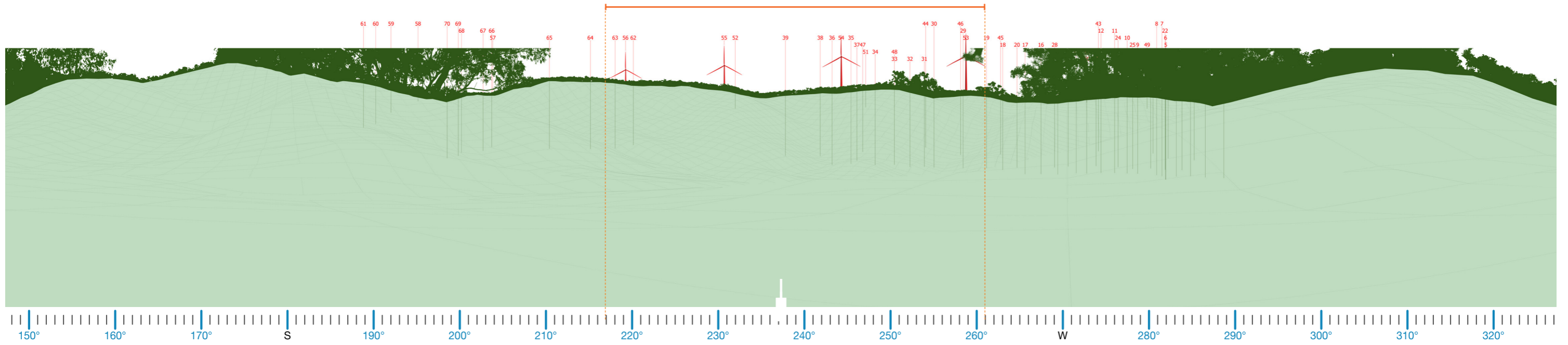
- Turbine within 8,000 m
- Turbine out of 8,000 m Study Area
- 3,350m from nearest turbine (Black Line)
- 4,950m from nearest turbine (Blue Line)
- 8,000 m from nearest turbine
- 60° Sector



# Dwelling Assessment Building V11-3

Proposed Wire Frame Diagram - 180 degree field of view

Four (4) turbines visible at hub height.

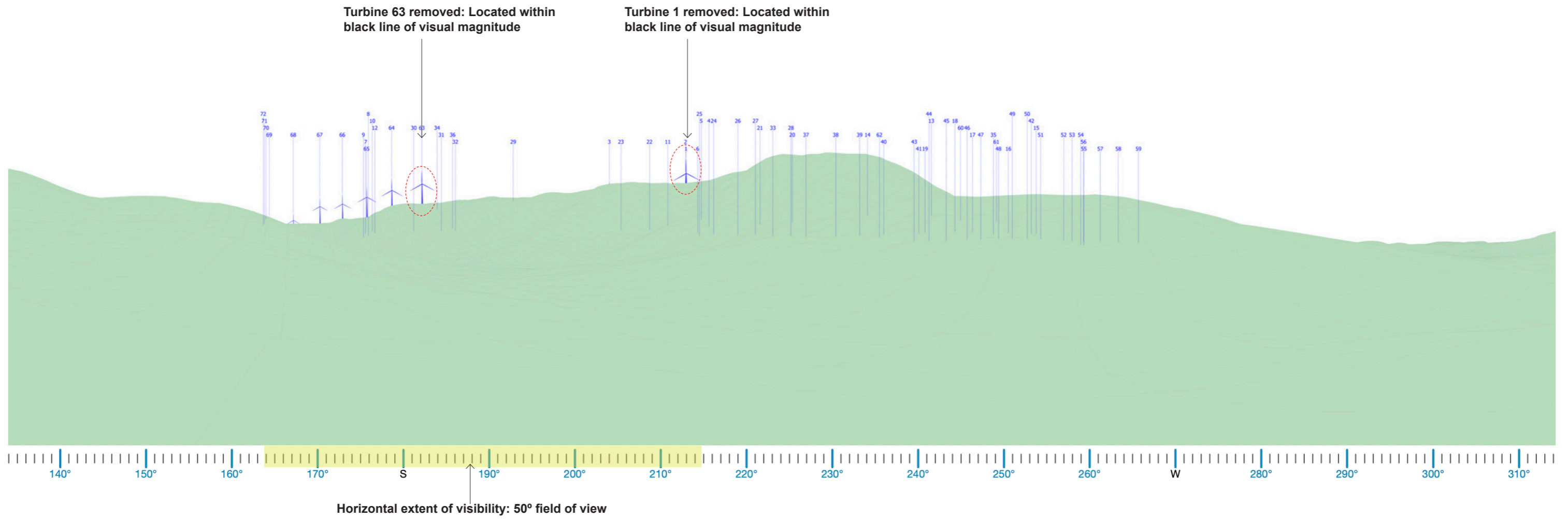


**Note:**  
As authorisation to display a photo of the property was not provided, a wire-frame diagram has been prepared instead. This diagram represents a bare-ground scenario, with vegetation shown as a colour block.

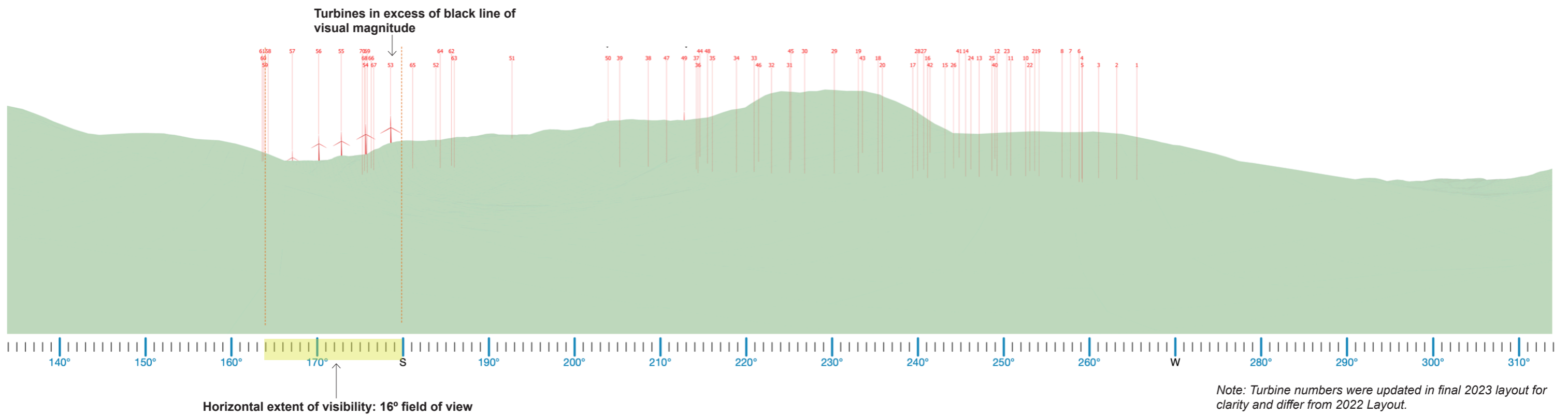
**Appendix B**

**Project Layout Iterations**

**Wire Frame Diagram Prepared from U8-1: 2022 Superseded Layout**



**Wire Frame Diagram Prepared from U8-1: 2022 Superseded Layout**



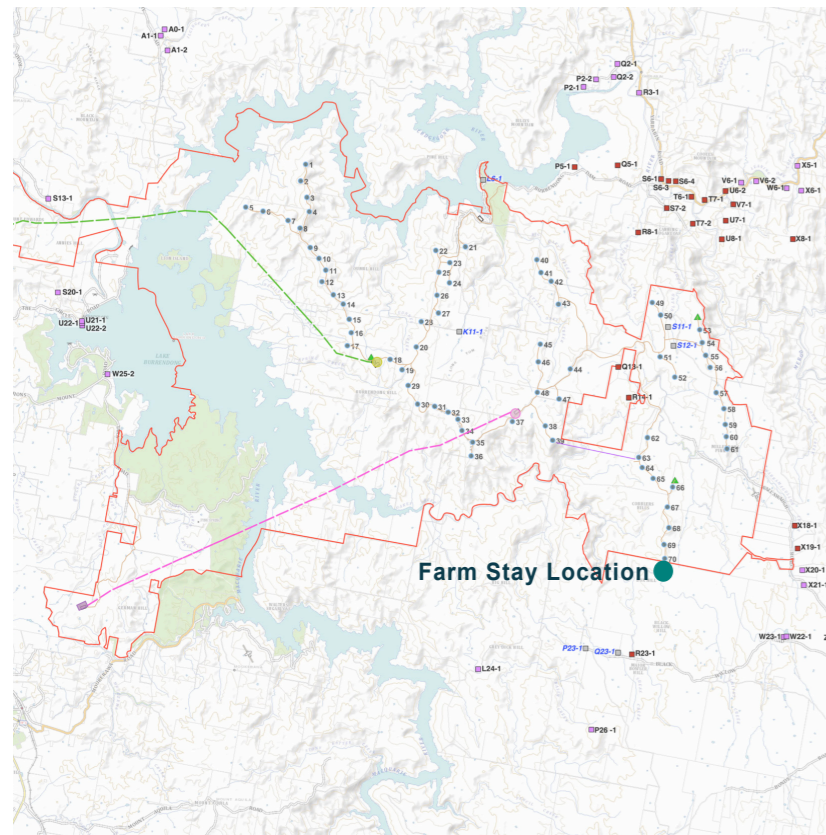
## **Appendix C**

### **Proposed Farm Stay Development Lot 27 DP756887**

# Proposed Farm Stay Development | Lot 27 DP756887

## Proposed Farm Stay

<b>Nearest WTG and distance:</b>	217 m (WTG 70)
<b>WTGs within Black Line (3,350 m):</b>	Six (6)
<b>Number of 60° Sectors with visible WTGs:</b>	Two (2)
<b>Visibility Distance Zone:</b>	Near Foreground (NF)
<b>Viewer Sensitivity Level:</b>	Level 2: Rural Residence
<b>Landscape Character Unit:</b>	LCU02: Yarrabin / Hargrave Farmlands
<b>Scenic Quality Rating:</b>	Moderate
<b>Visual Influence Zone (VIZ):</b>	VIZ1
<b>Visual Impact Rating:</b>	High



Proposed Farm Stay Development Location

## Assessment Notes:

Moir LA attended the proposed farm stay development location in May 2024. The site is located approximately 4.8 kilometres from the entry to the lot off Black Willow Road, adjacent to the southern boundary of the Project. A photomontage was prepared from this location. It was noted that construction of the Farm Stay dwelling had not commenced.

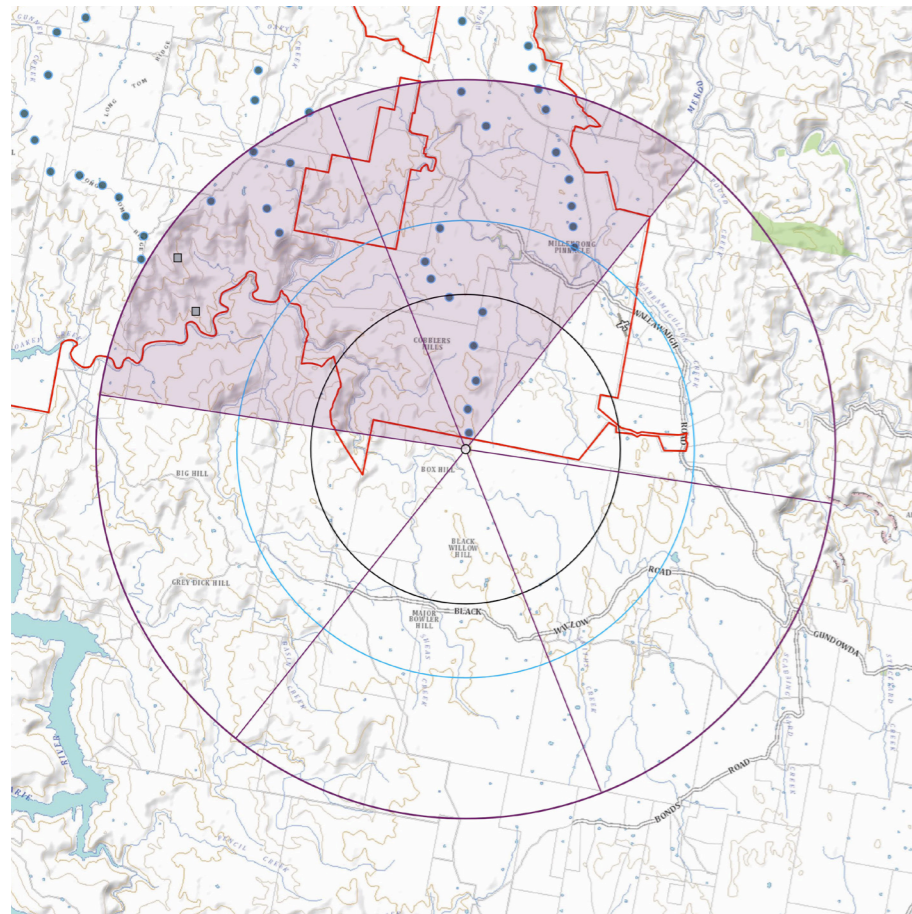
## Visual Impact Summary:

The proposed Farm Stay site is located in an elevated position adjacent to the northern boundary of the lot (the southern boundary of the Project). The site is 217 metres to the south of WTG 70. The site has expansive views to the east and west across vegetated ranges. Views to the north are filtered by existing vegetation along the top of the ridgeline. The photomontage prepared demonstrates the existing vegetation will screen views to turbines to the north west. Six (6) WTGs are located within the black line of visual magnitude (WTGs 65-70) visible to the north. WTGs 67-70 will dominate views to the north of this Site. The primary view from the farm stay (based on the plans in the farm stay development application) is to the south west, away from the nearest wind turbines. The assessment has confirmed desirable views to the east and west will remain unaltered.

## Evaluation of Visual Performance Objectives (VIZ1):

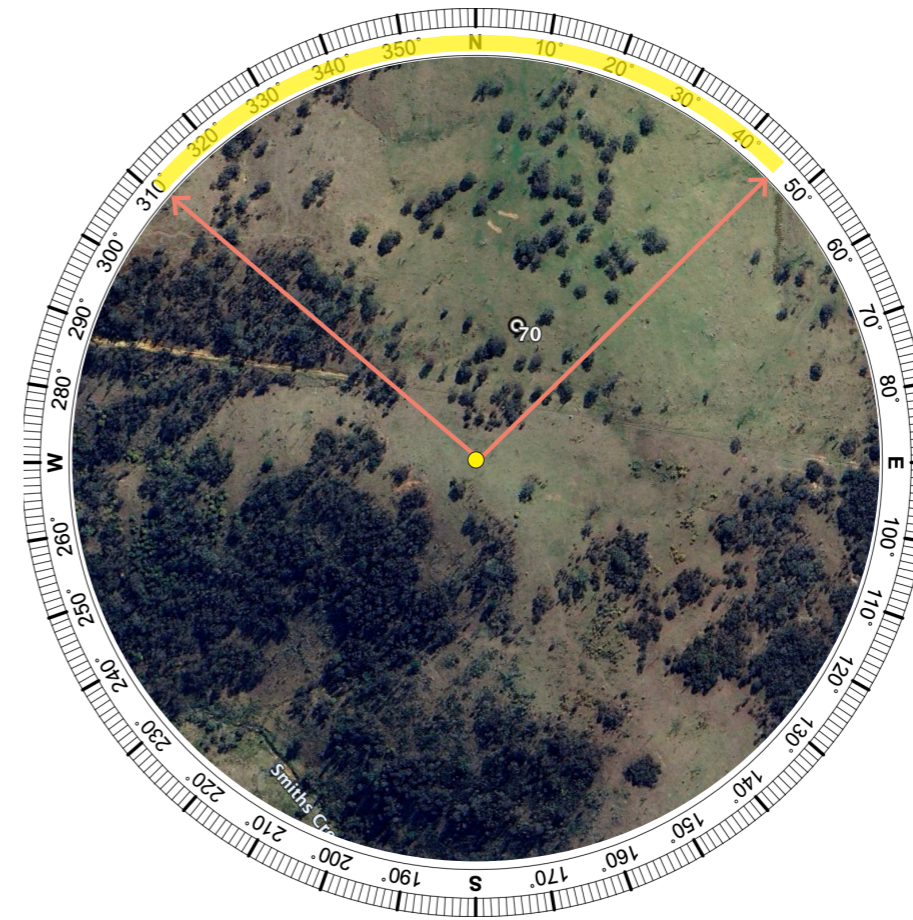
Performance Objective:	Visual Magnitude	Multiple Wind Turbine Tool	Landscape Scenic Integrity	Key Feature Disruption	Shadow Flicker
<b>Meets Objective?:</b>	<b>No</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>	<b>No</b>
<b>Discussion:</b>	Six (6) WTGs are located within the black line of the Farm Stay Location. This includes WTGS: 65, 66, 67, 68, 69 and 70. Vegetation partially screens WTGs 65 & 66. These WTGs would be a dominant element in the landscape due to the close proximity and lack of screening elements.	Turbines are location within two (2) 60 degree sectors. This is deemed acceptable.	The proposed WTGs would be a dominant element in the view from this location, however they would occupy approximately 95 degrees of the 360 degree view. From this location views extend across distance vegetated ranges to the east and west.	The proposed WTGs would be a dominant element in the view from this location, however they do not disrupt views to key features. The key landscape features viewed from this location are the expansive views across vegetated ranges to the east and west.	The proposed location is likely to experience more than 30 hours per year of shadow flicker.
<b>Recommendation:</b>	The Farm Stay is sited close to the boundary adjacent the Project. There are many alternative locations available on the lot with a lower visibility of the Project. Consider re-location of the farm stay to a suitable site on the Lot.	N/A	Consider re-location of the Farm Stay to a suitable site on the Lot.	N/A	The Farm Stay is sited close to the Project. There are many alternative locations available on the lot with no potential to experience shadow flicker.

# Proposed Farm Stay Development | Lot 27 DP756887



- LEGEND**
- 250 m WTG within 8,000 m
  - WTG located in excess of 8,000 m from Residence
  - Non-associated Dwelling
  - Associated Dwelling
  - - - 3,350 m from nearest turbine (Black Line)
  - - - 4,950 m from nearest turbine (Blue Line)
  - - - 8,000 m from nearest turbine
  - 60° sector
  - 60° sector with turbines

Preliminary Assessment Tools applied to Proposed Farm Stay Location



- LEGEND**
- Representative photomontage location
  - Direction of visible turbines based on topography
  - Extent of visible turbines based on topography

Aerial Image of Proposed Farm Stay Location

Aerial image source: Google Earth 2024

Expansive views across vegetated ranges will not be disrupted by the Project

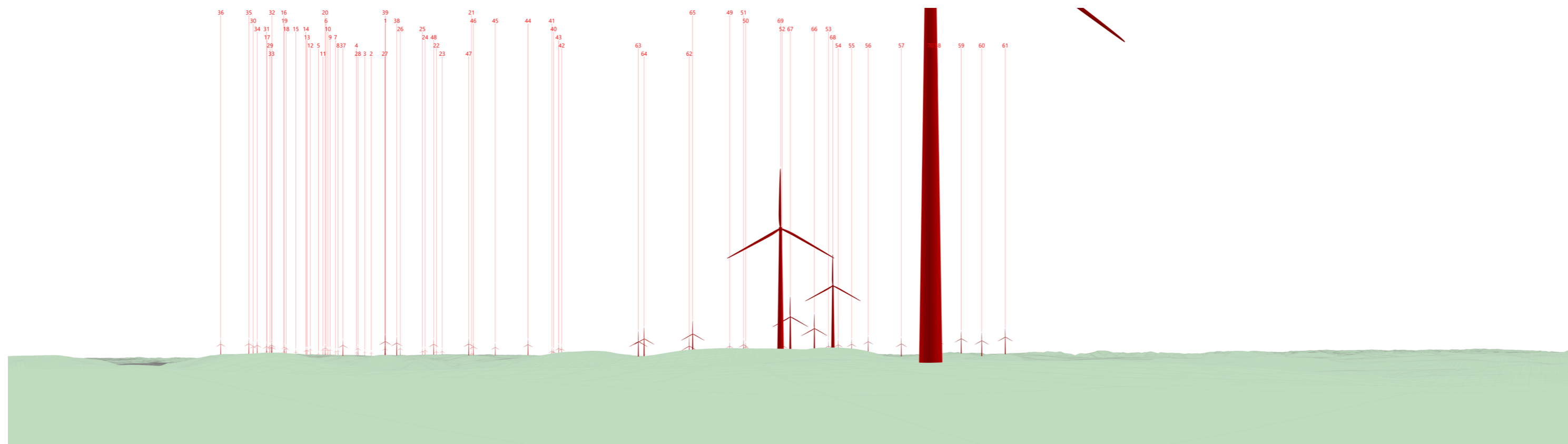
Extent of view with turbines

Expansive views across vegetated ranges will not be disrupted by the Project



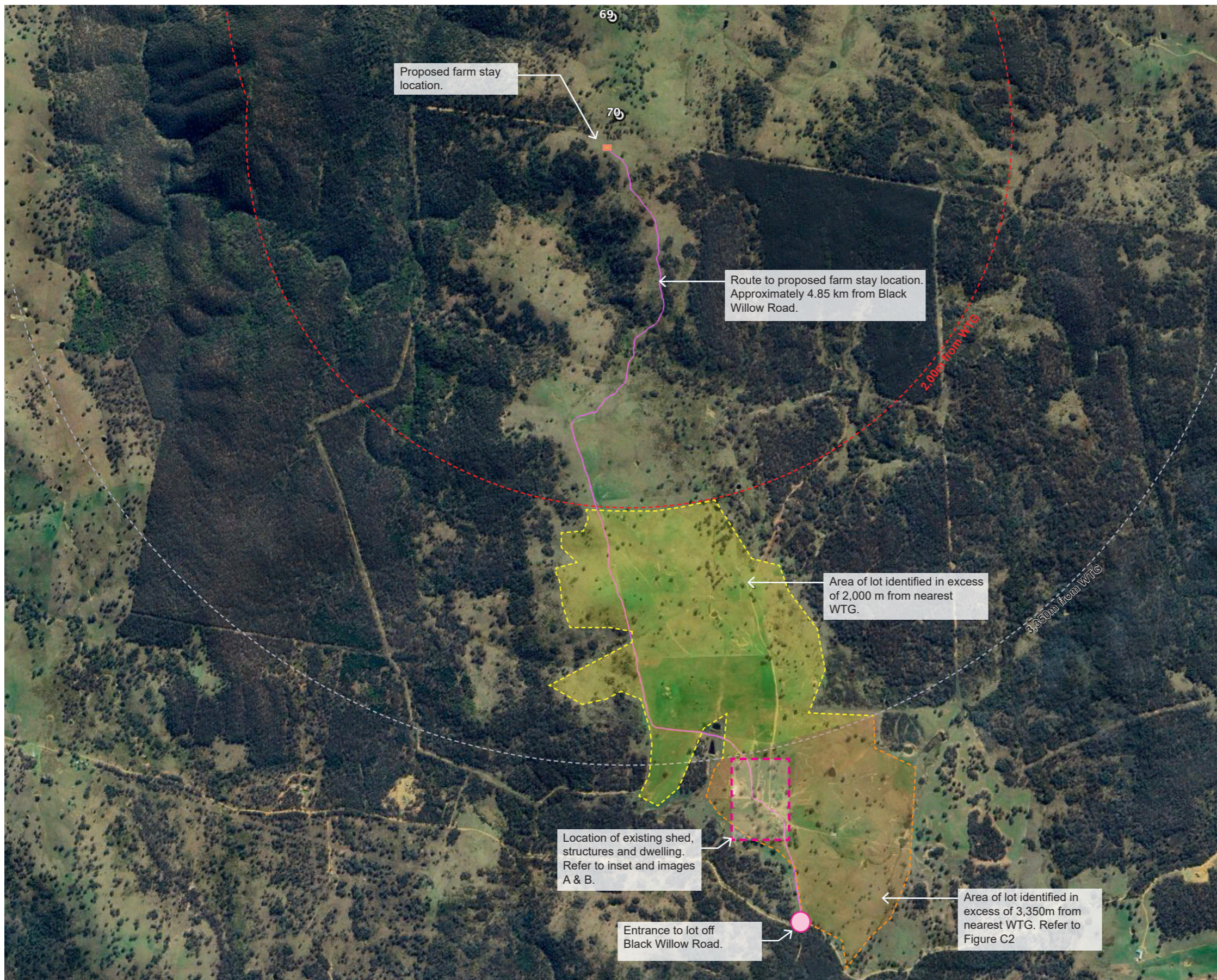
360° Panorama at Proposed Farm Stay Location

Proposed View - 180 degree field of view (Representative of Secondary View from Proposed Farm Stay)



Proposed Wire Frame Diagram - 180 degree field of view (Representative of Secondary View from Proposed Farm Stay)

**Figure C.1**  
**Analysis of Lot 27 DP756887**



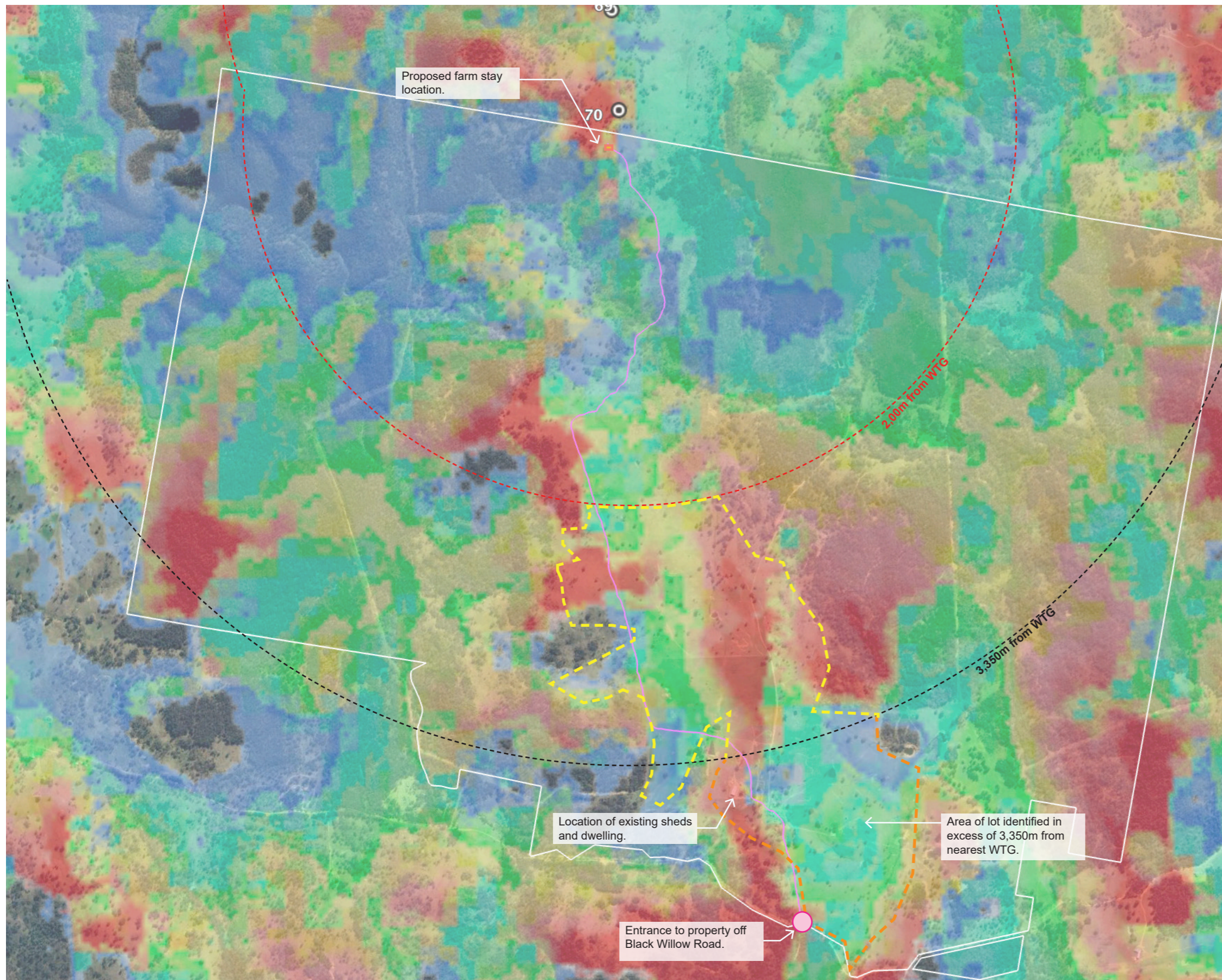
- - - - - 2,000 m from nearest WTG
- - - - - 3,350 m from nearest WTG (Black Line of Visual Magnitude)
- Route to Farm Stay Site
- Area identified for siting a dwelling in excess of 2,000m from nearest WTG.
- Area identified for siting a dwelling in to meet the performance objectives outlined in the Bulletin.



**Figure C.1: Analysis of Lot 27 DP756887 Analysis**



**Figure C.2**  
**Analysis of Lot 27 DP756887**

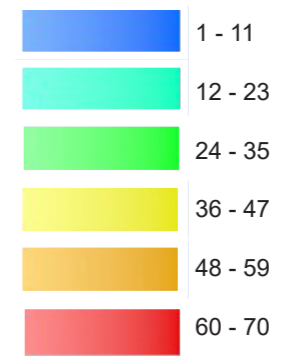


**LEGEND**

----- 2,000 m from nearest WTG

----- 3,350 m from nearest WTG  
 (Black Line of Visual Magnitude)

Number of turbines theoretically visible  
 (Based on topography alone):



----- Indicative area suitable for siting Farm Stay.  
 See Figure D1.

**Figure C.2: Lot 27 DP756887 Zone of Visual Influence**





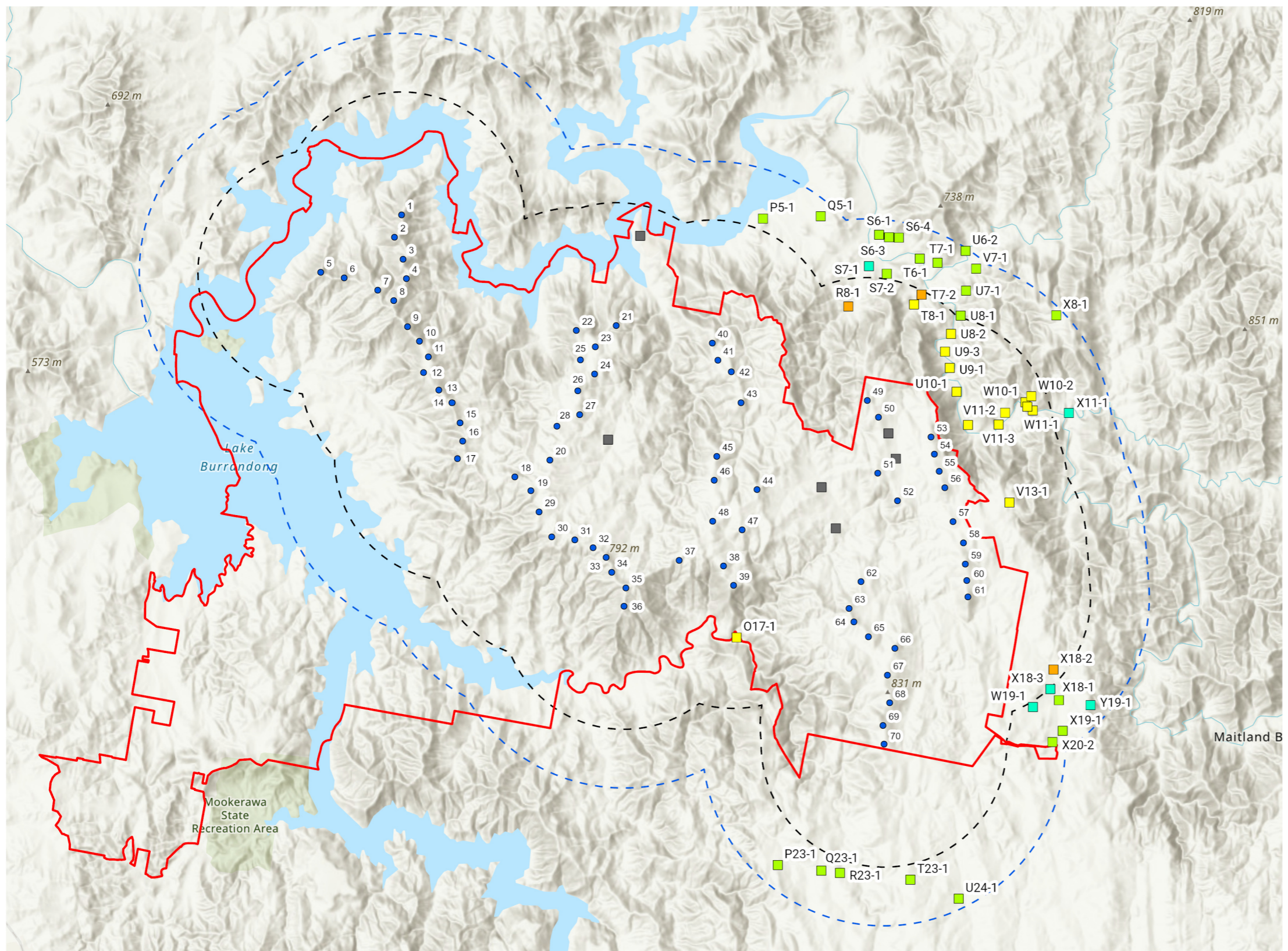
**Image A: Existing dwelling on lot (Photo taken March, 2021)**



**Image B: Existing structures on lot (Photo taken March, 2021)**

# Appendix D

Updated Table - Dwellings within Black and Blue Line of Visual Magnitude

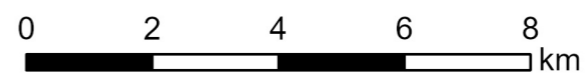


**LEGEND**

- 4,950m from the nearest WTG
- 3,350m from the nearest WTG
- Project Boundary
- WTG Locations
- Associated Dwelling
- Non-Involved Building Within 3,350m
- Non-Involved Dwelling Within 3,350m
- Non-Involved Building Within 3,350 - 4,950m
- Non-Involved Dwelling Within 3,350 - 4,950m



**Figure D.1 Overview of Buildings and Dwellings within Black and Blue Line of Visual Magnitude**



Non-involved dwellings within Black Line of Visual Magnitude (3,350m)												
Dwelling ID:	Distance to nearest turbine:	Nearest Turbine:	Number of turbines within 3,350 m:	Turbines within 3,350 m:	Number of turbines within 4,950 m:	Turbines within 4,950 m:	Theoretical number of 60° sectors (Based on 2D Assessment):	Number of 60° sectors (Based on 3D Assessment):	Number of potentially visible turbines:	Shadow Flicker:	Visual Impact Rating:	Assessment Note:
R8-1	2.61 km	49	2	49, 50	7	40, 41, 42, 43, 51, 53, 54	Two (2)	Two (2)	2 turbines 0 at hub 2 at blade tip	Nil	Very Low	Refer to EIS LVIA - Appendix D (Moir 2023)
T7-2	3.25 km	49	1	49	4	50, 53, 54, 55	Two (2)	One (1)	2 turbines 1 at hub 1 at blade tip	Nil	Low	Refer to EIS LVIA - Appendix D (Moir 2023)
X18-2	3.07 km	61	1	61	8	60, 59, 58, 66, 57, 68, 57, 69	Two (2)	One (1)	4 turbines 2 at hub 2 at blade tip	Nil	Low	Refer to Appendix A
Non-involved Approved Farmstay within Black Line of Visual Magnitude (3,350m)												
Approved Farmstay	217 m	70	6	65, 66, 67, 68, 69, 70	4	61, 62, 63, 64	Two (2)	Two (2)	70 turbines 70 at hub	30 + hr/y	High	Refer to Appendix C

Table D.1 Summary of Non-involved Dwellings and Farm Stay within Black Line of Visual Magnitude (Within 3,350 m of Nearest Turbine)

## Non-involved Buildings within Black Line of Visual Magnitude (3,350m)

Dwelling ID:	Distance to nearest turbine:	Nearest Turbine:	Number of turbines within 3,350 m:	Turbines within 3,350 m:	Number of turbines within 4,950 m:	Turbines within 4,950 m:	Theoretical number of 60° sectors (Based on 2D Assessment):	Number of 60° sectors (Based on 3D Assessment):	Number of potentially visible turbines:	Visual Impact Rating:	Assessment Note:
U9-3	2.49 km	53	5	53, 49, 50, 54, 55	4	56, 51, 52, 57	Two (2)	Nil	Nil	Nil	Refer to Appendix A
U9-2	2.46 km	53	5	53, 49, 50, 54, 55	4	56, 51, 52, 57	One (1)	One (1)	6 turbines 3 at hub 3 at blade tip	Low	Refer to Appendix A
T8-1	3.89 km	49	2	49, 50	4	53, 54, 55, 51	Two (2)	One (1)	2 turbines 1 at hub 1 at blade tip	Nil	Refer to Appendix A
X18-3	3.35 km	61	1	61	8	60, 59, 66, 68, 67, 58, 69, 70	Two (2)	One (1)	13 turbines 13 at hub	Nil	Refer to Appendix A
O17-1	1.42 km	39	9	35, 36, 37, 38, 39, 47, 48, 63, 64	11	32, 33, 34, 44, 46, 62, 65, 66, 67, 68, 69	Four (4)	One (1)	3 turbines 2 at hub 1 at blade tip	High	Refer to Appendix A
XW12-1	2.75 km	53	4	53, 54, 55, 56	7	49, 50, 51, 52, 57, 58, 59	Two (2)	One (1)	7 turbines 5 at hub height 1 blade tip	Low	Refer to Appendix A
U10-1	1.40 km	53	7	49, 50, 51, 53, 54, 55, 56	4	52, 57, 58, 59	Two (2)	One (1)	4 turbines All at hub height	Low	Refer to Appendix A
U11-1	1.07 km	53	10	49, 50, 51, 52, 53, 54, 55, 56, 57,	3	59, 60, 61	Two (2)	One (1)	4 turbines All at hub height	High	Refer to Appendix A
U9-1	1.96 km	53	6	49, 50, 53, 54, 55, 56	4	51, 52, 57, 58	Two (2)	One (1)	6 turbines 1 at hub 5 blade	Low	Refer to Appendix A
U8-2	2.87 km	53	4	49, 50, 53, 54	4	51, 52, 55, 56	Two (2)	One (1)	6 turbines 5 at hub 1 blade	Low	Refer to Appendix A
V13-1	1.62 km	57	10	52, 53, 54, 55, 56, 57, 58, 59, 60, 61	4	49, 50, 51, 62	Two (2)	One (1)	4 turbines All at hub height	Low	Refer to Appendix A
W10-1	2.74 km	53	4	53, 54, 55, 56	7	49, 50, 51, 52, 57, 58, 59	Two (2)	One (1)	8 turbines 5 at hub height 3 blade tips	Low	Refer to Appendix A
W10-2	2.95 km	53	3	53, 54, 55	7	49, 50, 51, 52, 56, 57, 58	Two (2)	One (1)	7 turbines 5 at hub height 2 blade tips	Low	Refer to Appendix A

Table D.2 Summary of Non-involved Buildings within Black Line of Visual Magnitude (Within 3,350 m of Nearest Turbine)

## Non-involved dwellings & buildings within Blue Line of Visual Magnitude (Between 3,350 - 4,950 m)

Dwelling ID:	Distance to nearest turbine:	Nearest Turbine:	Number of turbines within 3,350 m:	Turbines within 3,350 m:	Number of turbines within 4,950 m:	Turbines within 4,950 m:	Theoretical number of 60° sectors (Based on 2D Assessment):	Number of 60° sectors (Based on 3D Assessment):	Number of potentially visible turbines:	Shadow Flicker:	Visual Impact Rating:	Assessment Note:
U8-1	3.40 km	53	0	0	7	49, 50, 51, 53, 54, 55, 56	Two (2)	One (1)	8 turbines 5 at hub 4 at blade tip	Nil	Low	Refer to Appendix D.5 - EIS Appendix F (MLA 2023)
S7-2	3.50 km	49	0	0	3	49, 50, 53	Two (2)	Nil	Nil	Nil	Nil	Refer to Appendix D.6 - EIS Appendix F (MLA 2023)
P5-1	3.67 km	40	0	0	3	40, 41, 42	Two (2)	One (1)	14 turbines 8 at hub Height 6 at blade tip	Nil	Nil	Refer to Appendix D.7 - EIS Appendix F (MLA 2023)
R23-1	3.69 km	70	0	0	3	70, 69, 68	One (1)	One (1)	32 turbines 15 at hub Height 17 at blade tip	Nil	Low	Refer to Appendix D.8 - EIS Appendix F (MLA 2023)
T23-1	3.73 km	70	0	0	3	70, 69, 68	One (1)	One (1)	70 turbines 67 at hub Height 3 at blade tip	Nil	Low	Refer to Appendix A
U24-1	4.68 km	70	0	0	1	70	One (1)	One (1)	Nil	Nil	Negligible	Refer to Appendix A
P23-1	4.38 km	70	0	0	2	69, 70	One (1)	One (1)	30 turbines 22 at hub height 8 at blade tip	Nil	Low	Refer to Appendix A
Q23-1	3.85 km	70	0	0	3	68, 69, 70	One (1)	One (1)	7 turbines 3 at hub height 4 at blade tip	Nil	Nil	Refer to Appendix A
X18-1	3.76 km	61	0	0	8	61, 60, 59, 66, 67, 68, 69, 70	Two (2)	Two (2)	17 turbines 16 at hub Height 1 at blade tip	Nil	Nil	Refer to Appendix D.9 - EIS Appendix F (MLA 2023)
U7-1	3.39 km	49	0	0	4	49, 50, 53, 54	Two (2)	One (1)	31 turbines 21 at hub Height 10 at blade tip	Nil	Moderate	Refer to Appendix D.10 - EIS appendix F (MLA 2023) Mitigation measures proposed, refer to Appendix G.3 - EIS Appendix F (MLA 2023)

## Non-involved dwellings & building within Blue Line of Visual Magnitude (Between 3,350 - 4,950 m)

Dwelling ID:	Distance to nearest turbine:	Nearest Turbine:	Number of turbines within 3,350 m:	Turbines within 3,350 m:	Number of turbines within 4,950 m:	Turbines within 4,950 m:	Theoretical number of 60° sectors (Based on 2D Assessment):	Number of 60° sectors (Based on 3D Assessment):	Number of potentially visible turbines:	Shadow Flicker:	Visual Impact Rating:	Assessment Note:
T6-1	4.13 km	49	0	0	3	49, 50, 53	Two (2)	One (1)	21 turbines 13 at hub Height 8 at blade tip	Nil	Low	Refer to Appendix D.11 - EIS Appendix F (MLA 2023)
T7-1	4.22 km	49	0	0	3	49, 50, 53	Two (2)	One (1)	27 turbines 18 at hub Height 9 at blade tip	Nil	Low	Refer to Appendix D.12 - EIS Appendix F (MLA 2023)
X19-1	4.48 km	61	0	0	5	60, 61, 68, 69, 70	Two (2)	Two (2)	31 turbines 19 at hub Height 12 at blade tip	Nil	Nil	Refer to Appendix D.13 - EIS Appendix F (MLA 2023)
S6-3	4.50 km	49	0	0	2	49, 50	Two (2)	Two (2)	29 turbines 20 at hub Height 9 at blade tip	Nil	Low	Refer to Appendix D.14 - EIS Appendix F (MLA 2023)
S6-4	4.52 km	49	0	0	2	49,50	Two (2)	Two (2)	30 turbines 17 at hub 13 at blade tip	Nil	Low	Refer to Appendix D.15 - EIS Appendix F (MLA 2023)
X20-2	4.53 km	68	0	0	6	68, 61, 70, 69, 67, 60	Two (2)	Two (2)	9 Turbines 5 at hub 4 at blade tip	Nil	Negligible	Refer to Appendix A (MOIR 24)
S6-1	4.09 km	49	0	0	1	49	Two (2)	Two (2)	29 turbines 19 at hub 10 at blade tip	Nil	Low	Refer to Appendix D.16 - EIS Appendix F (MLA 2023)
Q5-1	4.55 km	40	0	0	3	40, 41, 42	Two (2)	Two (2)	34 turbines 28 at hub 6 at blade tip	Nil	Low	Refer to Appendix D.17 - EIS Appendix F (MLA 2023)
V7-1	4.67 km	49	0	0	3	49, 50, 53	Two (2)	One (1)	6 turbines 3 at hub 3 at blade tip	Nil	Nil	Refer to Appendix D.18 - EIS Appendix F (MLA 2023)
X8-1	4.76 km	53	0	0	1	53	One (1)	One (1)	62 turbines 57 at hub 5 at blade tip	Nil	Moderate	Refer to Appendix D.19 - EIS Appendix F (MLA 2023) Mitigation measures proposed, refer to Appendix G.4
U6-2	4.89 km	49	0	0	1	49	One (1)	One (1)	13 turbines 9 at hub 4 blades	Nil	Low	Refer to Appendix D.20 - EIS Appendix F (MLA 2023)

### Non-involved dwellings & buildings within Blue Line of Visual Magnitude (Between 3,350 - 4,950 m)

Dwelling ID:	Distance to nearest turbine:	Nearest Turbine:	Number of turbines within 3,350 m:	Turbines within 3,350 m:	Number of turbines within 4,950 m:	Turbines within 4,950 m:	Theoretical number of 60° sectors (Based on 2D Assessment):	Number of 60° sectors (Based on 3D Assessment):	Number of potentially visible turbines:	Shadow Flicker:	Visual Impact Rating:	Assessment Note:
W19-1	3.46 km	61	0	0	10	61, 60, 68, 67, 66, 69, 70, 59, 58, 65	Two (2)	One (1)	6 turbines 5 at hub Height 1 at blade tip	Nil	Nil	Refer to Appendix A
Y19-1	4.46 km	61	0	0	2	60, 61	Two (2)	Two (2)	70 turbines 68 at hub 2 blades	Nil	Low	Refer to Appendix A
S7-1	3.66 km	49	0	0	5	40, 41, 42, 49, 50	Two (2)	One (1)	2 turbines 0 at hub 2 at blade tip	Nil	Very Low	Refer to Appendix A
X11-1	3.81 km	53	0	0	6	53, 54, 55, 56, 57, 58	Two (2)	One (1)	6 turbines All at hub height	Nil	Low	Refer to Appendix A

Table D.3 Summary of Non-involved Dwellings and Buildings within Blue Line of Visual Magnitude (Between 3,350 - 4,950 m of Nearest Turbine)