



## The Plains Wind Farm

Addendum to Landscape and Visual Impact Assessment

# The Plains Wind Farm

## Addendum to Landscape and Visual Impact Assessment

**Prepared for**

ENGIE Australia and NZ Pty Ltd

**Project Number**

2268

Revision	Date	Author	Checked	Comment
A	10/12/2024	AR	-	Draft Issue for Discussion
B	27/03/2025	AR	-	Final for Submission
C	23/06/2025	AR	-	Revised for Discussion
D	29/07/2025	AR	-	Final for Submission

Moir Landscape Architecture Pty Ltd  
(T/A Moir Studio)  
Studio 1, 88 Fern Street  
PO Box 111, Islington NSW 2296  
admin@moirla.com.au  
Ph.(02) 4965 3500  
www.moirstudio.com.au  
ACN: 097 558 908  
ABN: 48 097 558 908

# Contents

1.0	Introduction	4
2.0	Project Amendments	5
3.0	Overview of Visual Impacts	8
4.0	Response to Submissions	19
5.0	Summary and Recommendations	20

Appendix A: Revised Dwelling Assessment

Appendix B: Comparative Photomontages

# 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 (now trading as Moir Studio) for The Plains Wind Farm Project (SSD-50629707) referred to hereafter as 'the Project'.

The LVIA was prepared for the Project by Moir Studio, forming part of the Environmental Impact Statement (EIS) prepared by ERM and lodged in March 2024. The EIS was publicly exhibited from Wednesday 8th May 2024 until Tuesday 4th June 2024 by the NSW Department of Planning, Housing and Infrastructure (DPHI).

Following exhibition of the EIS, the Project has been revised in response to the submissions received, further consultation with the local community, agencies and stakeholders, and constructibility considerations.

This Addendum Report provides an updated assessment of the revised project layout (referred to as the 'Revised Layout'). The project layout presented in the EIS is referred to as the 'EIS Layout'.

# 2.0 Project Amendments

## 2.1 Overview of Project Amendments

The design and layout change provides benefits to the design of the project by improving electrical efficiencies using overhead lines and collector substations as well as optimising the location of wind turbines to maximise use of the prevailing wind direction and reduce the spacing between turbines to reduce the overall track length and associated project footprint. The Project has decreased the number of proposed turbines by 17 turbines (from 188 to 171).

**Table 1** provides a comparison of the EIS Layout and Revised Layout. **Figure 1** illustrates the Project Layout Amendments.

Apart from a change in the location of the wind farm infrastructure within the Project boundary, all other aspects of the project description provided within the EIS remain unchanged. Importantly, no additional environmental aspects or additional sensitive receivers have been identified for assessment specific to the new proposed location.

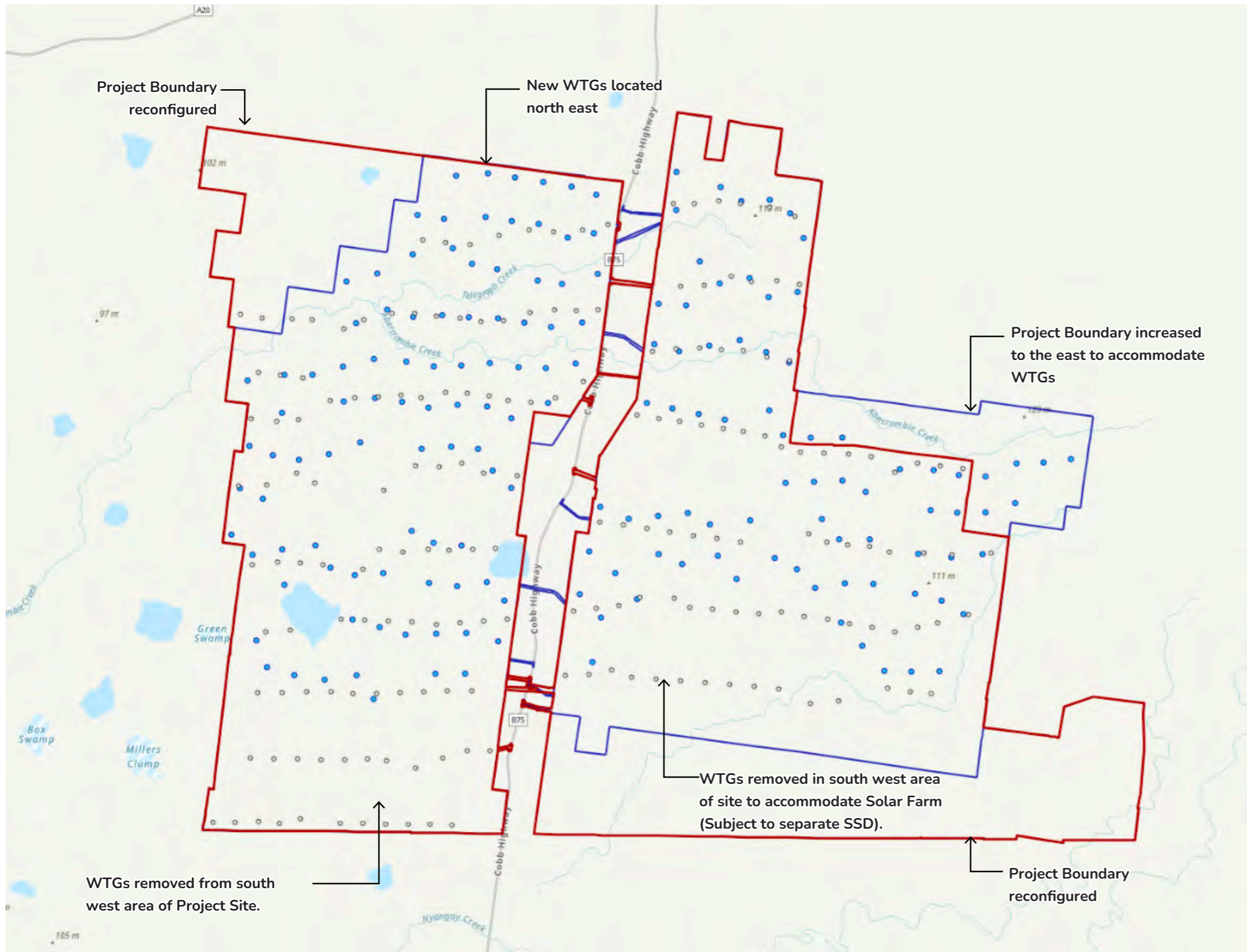
## 2.2 Overview of Updates to Dwelling Status

Since the lodgement of the EIS, two (2) dwellings have updated their status from non-associated to associated. These two (2) dwellings are AD\_12 (formerly NAD\_12) and AD\_23 (formerly NAD\_23).

Summary of Project Changes			
Project Element	EIS Layout	Revised Layout	Environmental Benefits:
Project Area	53,894 ha	46,431 ha	<ul style="list-style-type: none"> <li>Amendments to the Project elements maximise the use of existing public and internal access tracks and minimise vegetation clearance required where possible.</li> <li>The Project continues to avoid locations of raptor nesting sites, remnant woodland habitat and ephemeral wetlands.</li> <li>The Project also continues to largely avoid Plains-wanderer habitat.</li> <li>Changes to the Project design including ongoing design optimisation will avoid impacting Aboriginal sites, a buffer of 200 m will also be provided to recorded PADs, and a buffer of 100 m will be provided to recorded</li> </ul>
Wind Turbines	188 WTGs 1,350 MW Hub height up to 180 m Tip height up to 270 m Blade length up to 90 m	171 WTGs 1,230 MW Hub height up to 180 m Tip height up to 270 m Blade length up to 90 m	
Development Footprint	1,997 ha	1,887 ha	
Substation	At least 1 x 330 kV main substation and 2 x 132 kV collector sub-stations	At least 1 x 330 kV main substation and 2 x 132 kV collector sub-stations	
Site access road	Four (4) access points off Cobb Highway and a portion of West Burrabogie Road	Five (5) access points off Cobb Highway and two off West Burrabogie Road, plus one dedicated emergency access location	

**Table 01** Summary of Project Changes

## Project Layout Amendments

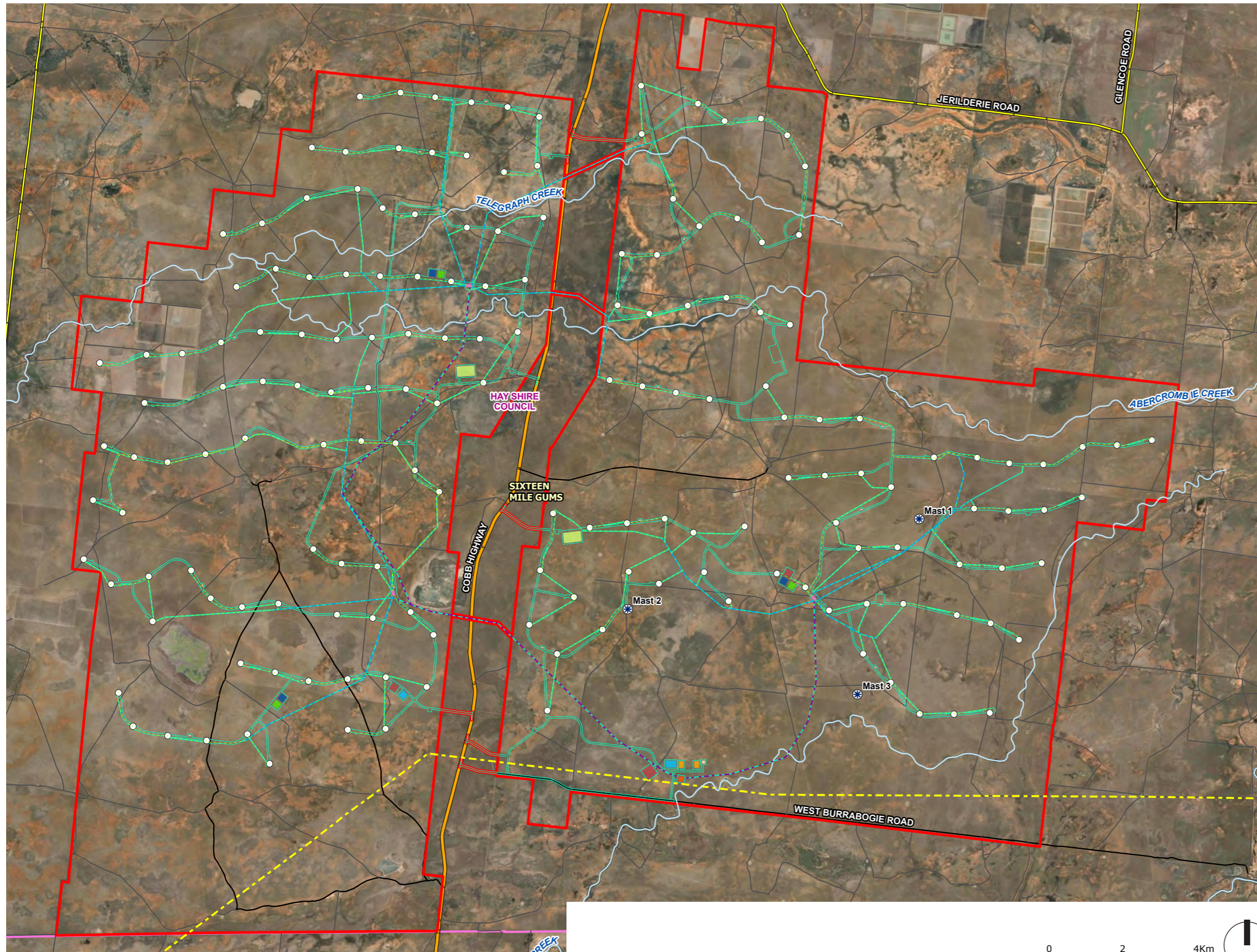


**Legend**

- EIS Project Area
- EIS Layout WTG Location
- Revised Project Area
- Revised Layout WTG Location

**Figure 01** Project Layout Amendments  
Base Map Source - ESRI, 2024

# Revised Wind Farm Layout



**Legend**

- Highway
  - Main Road
  - Local Road
  - Track-Vehicular
  - Watercourse
  - - - 220kV Transmission Line
  - Local Government Area
  - Site Boundary v12 20241010
  - Temporary Disturbance Footprint
- Development Layout**
- Construction Compound
  - Collector Substation
  - Switching Station
  - O & M Compound
  - Batch Plant
  - Construction Camp
  - Construction Compound
  - Equipment Storage
  - Temporary Laydown
  - Turbine Location
  - ⊗ Met Mast
  - - - Wind Farm 330kV Transmission Line
  - - - Wind Farm 33kV Overhead Line
  - - - Wind Farm 33kV Underground Cable

Figure 02 Revised Wind Farm Layout

Source - ERM, 2024

# 3.0 Overview of Visual Impacts

## 3.1 Overview of Assessment Method

The LVIA for the Project was prepared in accordance with the requirements of the *Wind Energy: Visual Assessment Bulletin for State Significant Wind Energy Development* (2016). For consistency, a comparison of the results of the preliminary assessment tools from the Visual Assessment Bulletin (the Bulletin) has been prepared in this report to provide a like for like assessment between the two project layouts. Refer to **Section 3.2**.

A revised assessment of the Revised Project against the performance objectives has also been undertaken for all public viewpoints and non-associated dwellings.

## 3.2 Preliminary Assessment Tools (Visual Assessment Bulletin 2016)

The following provides an overview of the application of the Visual Magnitude Tool on the Revised Layout in comparison to the EIS Layout. **Figure 03** demonstrates the application of the Preliminary Assessment Tools on the EIS Layout, **Figure 04** presents the results of the application of the Preliminary Assessment Tools on the Revised Layout. **Table 02** provides an overview of the comparison in results. Note due to the change in status from non-associated to associated, NAD\_12 (now AD\_12) and NAD\_23 (now AD\_23) are excluded from **Table 02**.

### 3.2.1 Application of the Visual Magnitude Tool

The proposed wind turbines (WTGs) for the Project are based on a worst case scenario with a tip height of 270 metres (m). The 'black line' intersects at a distance of 3,500 m, and the 'blue line' intersects at 5,300 m on the visual magnitude graph (refer to Figure 5 in the Visual Assessment Bulletin).

### 3.2.2 Overview of Amendments to Visual Magnitude Results:

Two (2) Non-associated Dwellings were located within the black line of visual magnitude of the EIS Layout (NAD\_12 and NAD\_26). As a result of the amendments to the WTG locations, NAD\_26 is now located in excess of 3,500 m from the nearest WTG. NAD\_12 is now an associated dwelling (referred to as AD\_12). Therefore there are now no dwellings within the black line of visual magnitude of the Revised Layout.

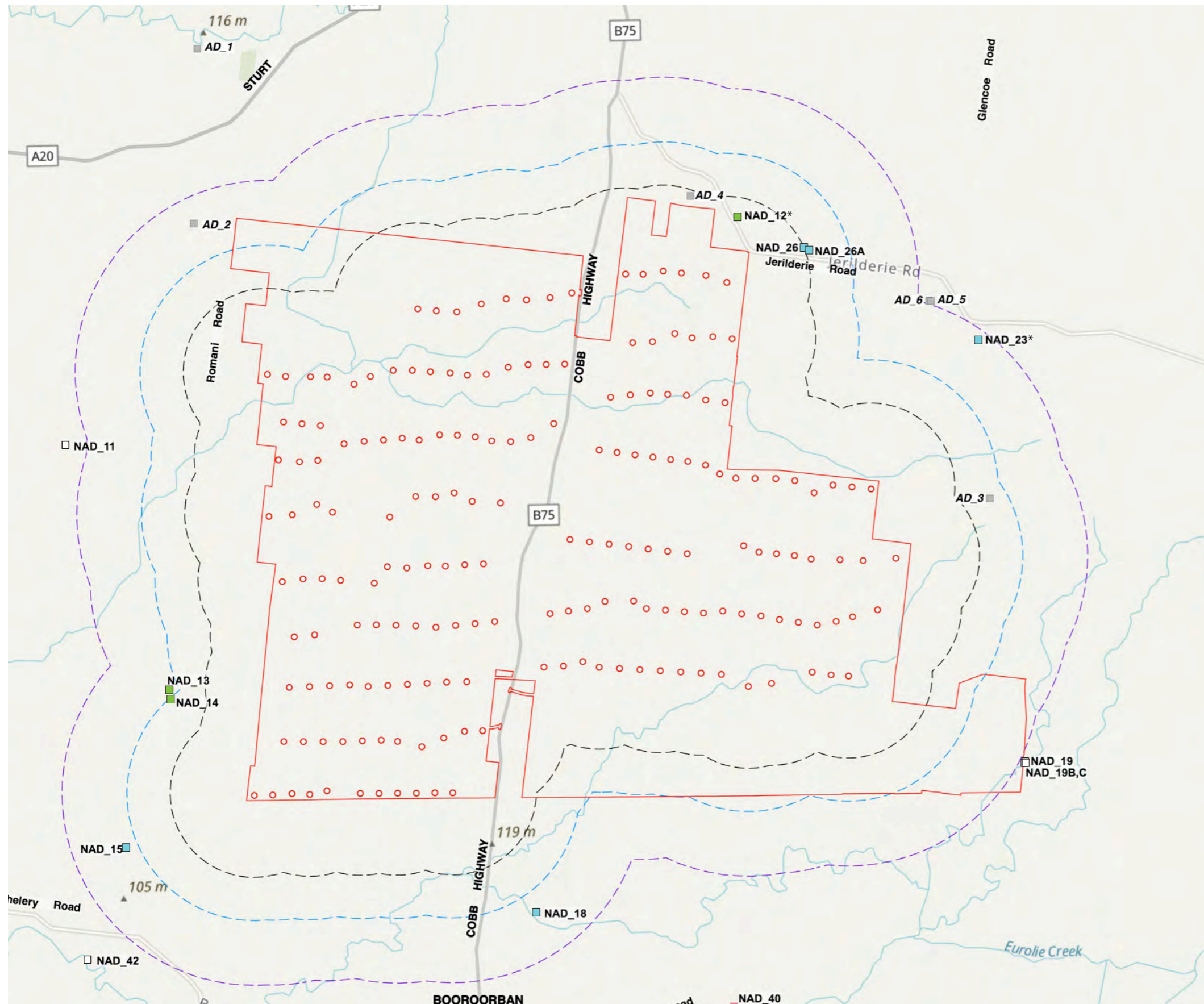
### 3.2.3 Overview of Amendments to Multiple Wind Turbine Tool Results:

The EIS Layout had eight (8) dwellings located within the 8 km Study Area requiring an assessment using the Multiple Wind Turbine Tool (MWTT). Of these eight (8) non-associated dwellings, three (3) had turbines in up to two (2) 60° sectors, the remaining five (5) non-associated dwellings had turbines located in one (1) 60° sector.

The Revised Layout has resulted in a reduction of non-associated dwellings located within the 8 km Study Area requiring an assessment using the MWTT. There are now only four (4) non-associated dwellings located in the Study Area of the Revised Layout. Of these four (4) non-associated dwellings, all four (4) have turbines located within one (1) 60° sector which is deemed acceptable in the Bulletin.

No non-associated dwellings have turbines located in more than two (2) 60° degree sectors.

## Superseded Preliminary Assessment Tools: EIS Layout



### Legend

- EIS Layout Black Line of Visual Magnitude (3,500 m from nearest WTG)
- EIS Layout Blue Line of Visual Magnitude (5,300 m from nearest WTG)
- EIS Study Area (8,000 m from nearest WTG)
- EIS Layout WTG Location
- EIS Layout Project Boundary
- Associated Dwelling Location
- Non-associated Dwelling located outside of 8,000 m Study Area

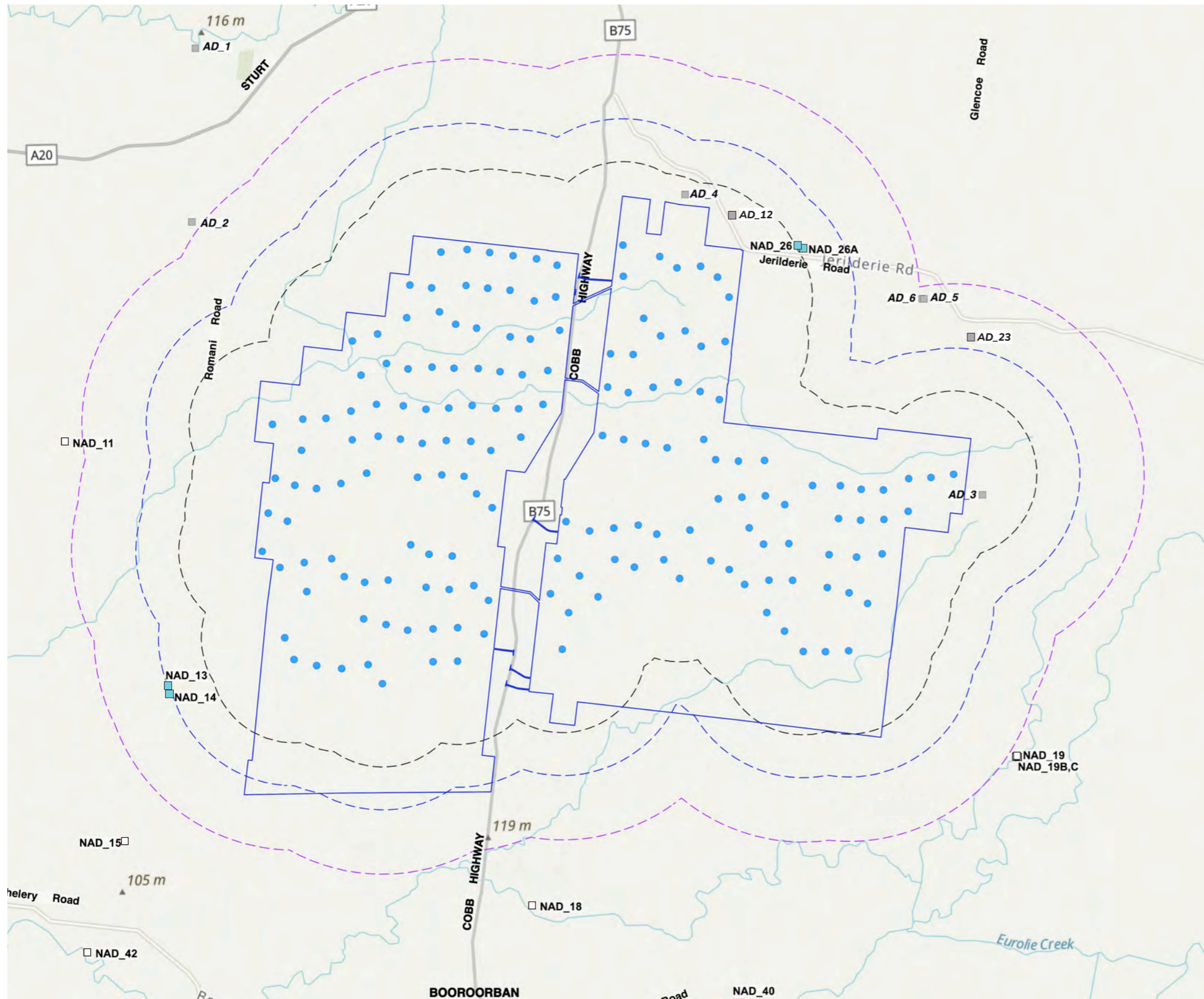
### Results of MWTT:

- One (1) 60° Sector with WTGs
- Two (2) 60° Sectors with WTGs

\*Note: NAD\_12 and NAD\_23 are now associated and referred to in the revised layout as AD\_12 and NAD\_23 respectively.

Figure 03 Superseded Preliminary Assessment Tools - EIS Layout  
Base Map Source - ESRI, 2024

# Preliminary Assessment Tools: Revised Layout



### Legend

- Revised Layout Black Line of Visual Magnitude (3,500 m from nearest WTG)
- Revised Layout Blue Line of Visual Magnitude (5,300 m from nearest WTG)
- Revised Study Area (8,000 m from nearest WTG)
- Revised Layout WTG Location
- Revised Layout Project Boundary
- Associated Dwelling Location
- Non-associated Dwelling located outside of 8,000 m Study Area

### Results of MWTT:

- One (1) 60° Sector with WTGs

\*Note: NAD\_12 and NAD\_23 are now associated and referred to in the revised layout as AD\_12 and AD\_23 respectively.

**Figure 04** Updated Preliminary Assessment Tools - Revised Layout - Non-associated Dwellings  
Base Map Source - ESRI, 2024

Application of Preliminary Assessment Tools - Non-associated Dwellings (Visual Assessment Bulletin 2016)									
Dwelling ID:	Distance to Nearest WTG:		Number of WTGs within black line of visual magnitude (3,500 m):		Number of 60° Sectors:		Visual Influence Zone (VIZ):		
	EIS Layout	Revised Layout	EIS Layout	Revised Layout	EIS Layout	Revised Layout	EIS Layout:	Revised Layout:	Notes:
<b>NAD_26</b>	3.49 km	3.58 km	1	0	1	1	VIZ2	VIZ2	This dwelling has been rated as VIZ2. A revised assessment has been prepared from NAD_26 and is representative of this dwelling, refer to <b>Appendix A</b> .
Variation:	Increased by 90 m		Decreased by 1 WTG		No variation		No variation		
<b>NAD_13</b>	4.97 km	5.28 km	0	0	2	1	VIZ3	VIZ3	No performance objectives for VIZ3 therefore the Project meets the performance objectives at this dwelling.
Variation:	Increased by 310 m		No variation		Reduced by 1 60° sector		No variation		
<b>NAD_14</b>	4.75 km	5.41 km	0	0	2	1	VIZ3	VIZ3	No performance objectives for VIZ3 therefore the Project meets the performance objectives at this dwelling.
Variation:	Increased by 660 m		No variation		Reduced by 1 60° sector		No variation		
<b>NAD_26A</b>	3.66 km	3.71 km	0	0	1	1	VIZ2	VIZ2	A revised assessment has been prepared from NAD_26 and is representative of this dwelling, refer to <b>Appendix A</b> .
Variation:	Increased by 50 m		No variation		No variation		No variation		
<b>NAD_15</b>	5.97 km	10.43 km	0	0	1	0	VIZ3	VIZ3	No performance objectives for VIZ3 therefore the Project meets the performance objectives at this dwelling.
Variation:	Increased by 4.46 km Now outside of 8km Study		No variation		Reduced by 1 60° sector		No variation		
<b>NAD_18</b>	6.13 km	10.71 km	0	0	1	0	VIZ3	VIZ3	No performance objectives for VIZ3 therefore the Project meets the performance objectives at this dwelling.
Variation:	Increased by 4.58 km Now outside of 8km Study		No variation		Reduced by 60° sector		No variation		

**Table 02 – Comparison of Preliminary Assessment Tools on non-associated dwellings**

### 3.3 Comparison of Visual Impact - Non-associated Dwellings

**Table 6** presents a summary of the comparison in the visual impact ratings for six (6) of the non-associated dwellings located within the Study Area of the EIS Layout. The assessment of the Revised Layout concluded that there is a reduction in the number of non-associated dwellings with a visual impact rating that require mitigation.

The EIS Layout had a total of five (5) non-associated dwellings with a moderate visual impact rating. Due to the revised layout, two (2) of these dwellings now have a low visual impact rating (NAD\_13 and NAD\_14) and one (1) dwelling previously assessed as having a moderate visual impact rating is now associated (NAD\_12 is now AD\_12 and excluded from **Table 03**).

Due to the distance, the Revised Layout resulted in two (2) non-associated dwellings being outside of the Study Area. These two non-associated dwellings that were previously rated as 'low visual impact rating' are now 'nil' (NAD\_15 and NAD\_18).

The mitigation recommendations outlined in the EIS for the two (2) non-associated dwellings with a moderate visual impact rating (NAD\_26 and NAD\_26A) remain relevant to reducing the impacts of the Revised Layout. Refer to **Appendix A** for revised detailed assessment.

Comparison of Visual Impact Ratings					
Dwelling ID	Distance to Nearest WTG		Visual Impact Rating: EIS Layout	Visual Impact Rating: Revised Layout	Mitigation Required?
NAD_26	3.49 km	3.58 km	Moderate	Moderate	Yes
NAD_26A	3.66 km	3.71 km	Moderate	Moderate	Yes
NAD_13	4.97 km	5.28 km	Moderate	Low	No. This dwelling has been assessed as having a low visual impact rating.
NAD_14	4.75 km	5.41 km	Moderate	Low	No. This dwelling has been assessed as having a low visual impact rating.
NAD_15	5.97 km	10.43 km	Low	Nil	No. Dwelling is now located outside of the Study Area.
NAD_18	6.13 km	10.71 km	Low	Nil	No. Dwelling is now located outside of the Study Area.

**Table 03 – Comparison of Visual Impact Ratings (EIS to Revised Layout)**

### 3.4 Comparison of Visual Impact - Public Viewpoints

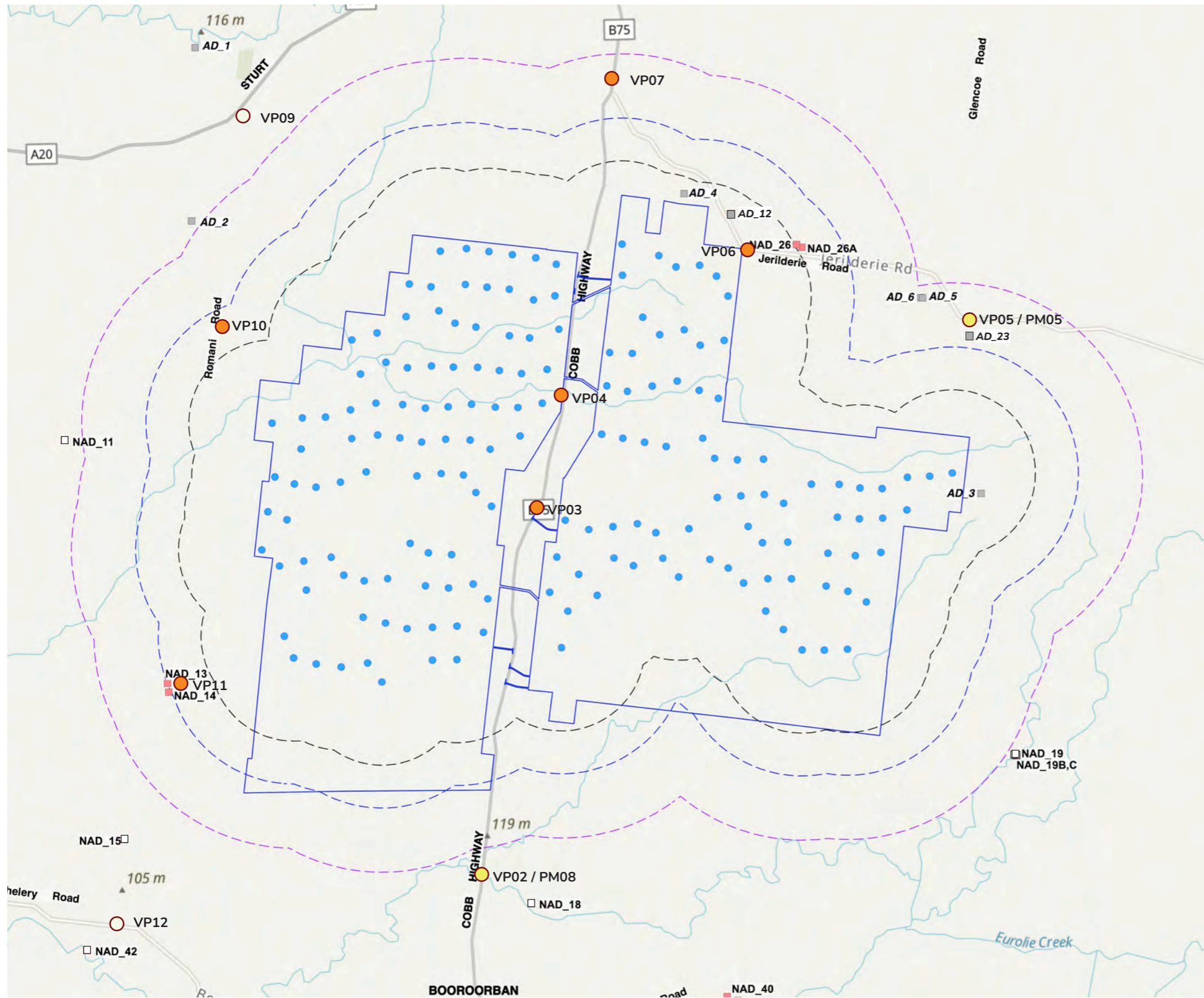
The EIS Layout identified 15 public viewpoints for analysis (refer to **Figure 05**). Of these, 13 viewpoints were classified as Visual Influence Zone 3 (VIZ3) and did not require further assessment against the performance objectives. Two viewpoints (VP03 and VP04) were rated as Visual Influence Zone 2 (VIZ2) due to their closer proximity to the Project.

Moir Studio reassessed all 15 viewpoints against the Revised Layout (refer to **Table 04**). The updated layout resulted in an increased distance to the nearest turbine at seven (7) of the public viewpoints and a decreased distance at eight (8) locations. Despite these changes, the revised assessment confirmed that visual impact ratings are consistent with those established under the EIS Layout. 13 of the viewpoints remain classified as VIZ3, with no applicable performance objectives. The two (2) VIZ2 viewpoints continue to exhibit the same level of visual impact as previously assessed in the original LVIA.

### 3.5 Comparative Photomontages

Two (2) Photomontages have been prepared with the new layout to demonstrate the revised layout (Viewpoint VP05 - see PM05 and from Viewpoint VP02 - see PM08). The comparative photomontages demonstrate the change to the layout from the EIS to the Revised Layout. These two (2) locations have been selected for the preparation of the photomontages as they provide a clear depiction of how turbine positioning has been modified. PM05 is located on Jerilderie Road to the east of the Project, and demonstrates the extension of the project boundary and additional turbines to the east. PM08 is located on Cobb Highway to the south of the Project and illustrates the reduction in turbines in the southern area of the Revised Project.

## Preliminary Assessment Tools: Revised Layout Public Viewpoints



### Legend

- Revised Layout Black Line of Visual Magnitude (3,500 m from nearest WTG)
- Revised Layout Blue Line of Visual Magnitude (5,300 m from nearest WTG)
- Revised Study Area (8,000 m from nearest WTG)
- Revised Layout WTG Location
- Revised Layout Project Boundary
- Associated Dwelling Location
- Non-associated Dwelling located outside of 8,000 m Study Area
- XX ● Public Viewpoint Location
- XX ○ Public Viewpoint Location (Outside of 8 km Study Area)
- XX ● Comparative Photomontage Location (Refer to Appendix B)

\*Note: NAD\_12 and NAD\_23 are now associated and referred to in the revised layout as AD\_12 and NAD\_23 respectively.

Note: The following viewpoint locations are located in excess of figure extent: VP01, VP08, VP13, VP14 and VP15.

**Figure 05** Updated Preliminary Assessment Tools - Revised Layout - Public Viewpoints  
Base Map Source - ESRI, 2024

## Application of Preliminary Assessment Tools - Public Viewpoints (Visual Assessment Bulletin 2016)

Dwelling ID:	Distance to Nearest WTG:		Located within black line of visual magnitude (3,500 m):		Visual Influence Zone		Notes:
	EIS Layout	Revised Layout	EIS Layout	Revised Layout	EIS Layout	Revised Layout	
VP01	9.68 km	14.47 km	No	No	VIZ3	VIZ3	Distance to the nearest turbine has <b>increased by 4.79 km</b> from this viewpoint location. The visual impact resulting from the Revised Layout is consistent with the findings of the LVIA. The viewpoint is VIZ3 and therefore no performance objectives apply.
VP02	4.07 km	9.07 km	No	No	VIZ3	VIZ3	Distance to the nearest turbine has <b>increased by 5 km</b> from this viewpoint location. The visual impact resulting from the Revised Layout is consistent with the findings of the LVIA. The viewpoint is VIZ3 and therefore no performance objectives apply. A revised photomontage has been prepared to demonstrate the revised layout. <b>Refer to Comparative Photomontage PM08 (Appendix B).</b>
VP03	1.50 km	1.25 km	Yes	Yes	VIZ2	VIZ2	Distance to the nearest turbine has <b>decreased by 250 m</b> from this viewpoint location. The impact resulting from the Revised Layout is consistent with the findings of the LVIA.
VP04	1.05 km	885 m	Yes	Yes	VIZ2	VIZ2	Distance to the nearest turbine has <b>decreased by 165 m</b> from this viewpoint location. The impact resulting from the Revised Layout is consistent with the findings of the LVIA.
VP05	8.21 km	8.40 km	No	No	VIZ3	VIZ3	Distance to the nearest turbine has <b>increased by 190 m</b> from this viewpoint location. The visual impact resulting from the Revised Layout is consistent with the findings of the LVIA. The viewpoint is VIZ3 and therefore no performance objectives apply. A revised photomontage has been prepared to demonstrate the revised layout. <b>Refer to Comparative Photomontage PM05 (Appendix B).</b>
VP06	2.05 km	1.78 km	Yes	Yes	VIZ3	VIZ3	Distance to the nearest turbine has <b>decreased by 270 m</b> from this viewpoint location. The visual impact resulting from the Revised Layout is consistent with the findings of the LVIA. The viewpoint is VIZ3 and therefore no performance objectives apply.
VP07	8.14 km	6.90 km	No	No	VIZ3	VIZ3	Distance to the nearest turbine has <b>decreased by 1.24 km</b> from this viewpoint location. The visual impact resulting from the Revised Layout is consistent with the findings of the LVIA. The viewpoint is VIZ3 and therefore no performance objectives apply.
VP08	13.39 km	12.91 km	No	No	VIZ3	VIZ3	Distance to the nearest turbine has <b>decreased by 480 m</b> from this viewpoint location. The visual impact resulting from the Revised Layout is consistent with the findings of the LVIA. The viewpoint is VIZ3 and therefore no performance objectives apply.
VP09	6.03 km	9.86 km	No	No	VIZ3	VIZ3	Distance to the nearest turbine has <b>increased by 3.83 km</b> from this viewpoint location. The visual impact resulting from the Revised Layout is consistent with the findings of the LVIA. The viewpoint is VIZ3 and therefore no performance objectives apply.
VP10	2.53 km	4.55 km	Yes	No	VIZ3	VIZ3	Distance to the nearest turbine has <b>increased by 2.02 km</b> from this viewpoint location and is now outside of the black line of visual magnitude. The visual impact resulting from the Revised Layout is consistent with the findings of the LVIA. The viewpoint is VIZ3 and therefore no performance objectives apply.
VP11	3.55 km	4.74 km	No	No	VIZ3	VIZ3	Distance to the nearest turbine has <b>increased by 1.19 km</b> from this viewpoint location. The visual impact resulting from the Revised Layout is consistent with the findings of the LVIA. The viewpoint is VIZ3 and therefore no performance objectives apply.
VP12	8.04 km	13.38 km	No	No	VIZ3	VIZ3	Distance to the nearest turbine has <b>increased by 5.34 km</b> from this viewpoint location. The visual impact resulting from the Revised Layout is consistent with the findings of the LVIA. The viewpoint is VIZ3 and therefore no performance objectives apply.
VP13	14.59 km	13.52 km	No	No	VIZ3	VIZ3	Distance to the nearest turbine has <b>decreased by 1.07 km</b> from this viewpoint location. The visual impact resulting from the Revised Layout is consistent with the findings of the LVIA. The viewpoint is VIZ3 and therefore no performance objectives apply.
VP14	15.27 km	14.04 km	No	No	VIZ3	VIZ3	Distance to the nearest turbine has <b>decreased by 1.25 km</b> from this viewpoint location. The visual impact resulting from the Revised Layout is consistent with the findings of the LVIA. The viewpoint is VIZ3 and therefore no performance objectives apply.
VP15	14.35 km	13.38 km	No	No	VIZ3	VIZ3	Distance to the nearest turbine has <b>decreased by 970 m</b> from this viewpoint location. The visual impact resulting from the Revised Layout is consistent with the findings of the LVIA. The viewpoint is VIZ3 and therefore no performance objectives apply.

Table 04 – Comparison of Preliminary Assessment Tools on Public Viewpoints

### 3.6 Revised Zone of Visual Influence

A Zone of Visual Influence (ZVI) figure (also referred to as a viewshed map) was prepared for the EIS Layout in the LVIA (refer to **Figure 06**). An updated ZVI figure was prepared for the Revised Layout (refer to **Figure 07**).

Due to the flat topography that characterises the area the results of the ZVI prepared for the Revised Layout remain consistent with the EIS layout. The following provides a summary of the ZVI diagrams prepared for the Project:

- Due to the relatively flat topography that characterises this landscape, the majority of turbines associated with the Project are likely to be visible from most areas around the Project Area.
- Localised topographical changes in certain areas along the Murrumbidgee River that are located within Hay and generally north of the Project Area provide limit some views toward the Project.
- Some areas along the Coleambally Outfall Drain to the south have been identified as having limited views of the Project Area.
- Views to the majority of turbines associated with the Project are likely to be available for all dwellings within eight (8) kilometres of the wind turbines. This assessment is based on a consideration of topography alone and does not consider intervening elements such as vegetation and existing structures.

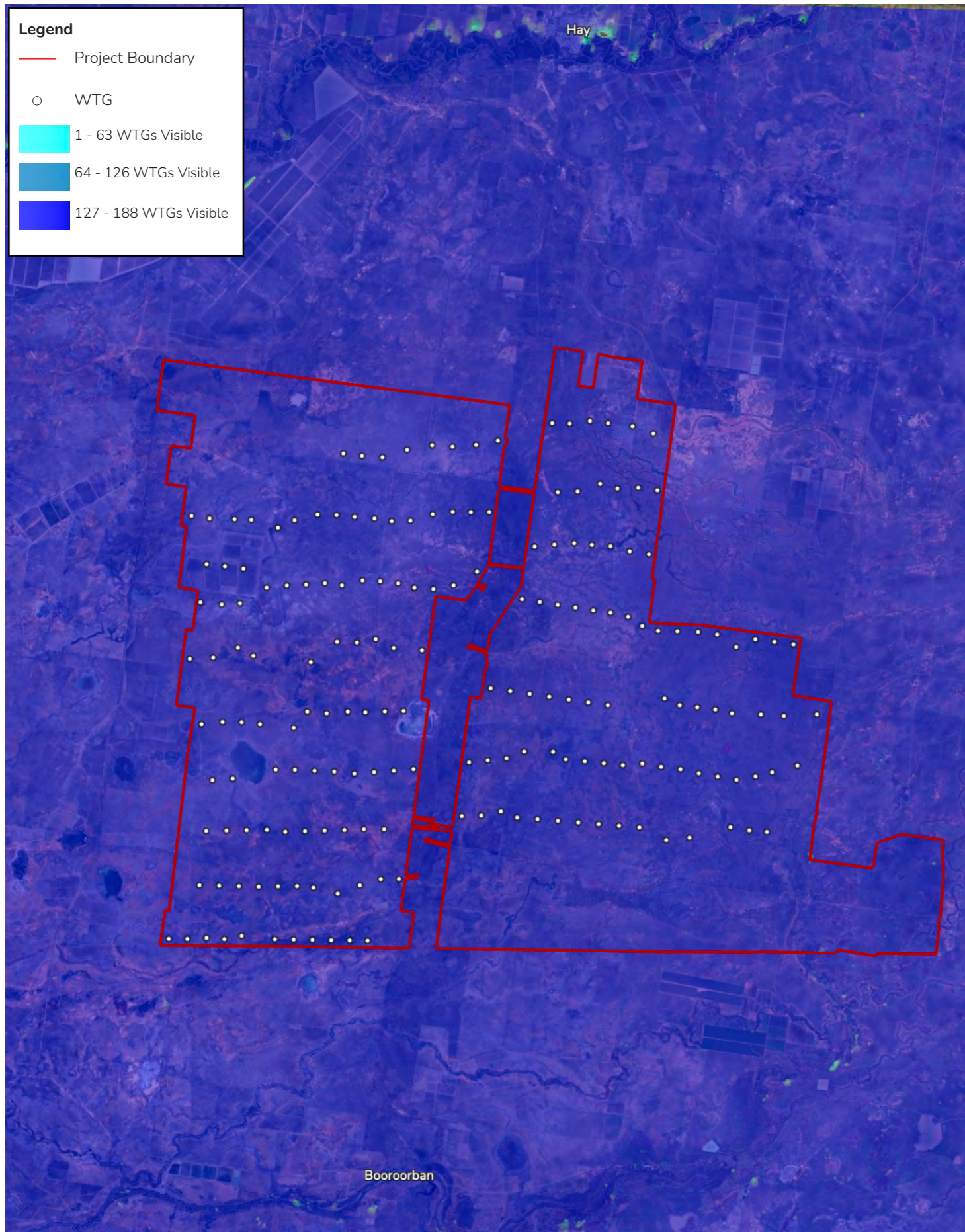


Figure 06 Zone of Visual Influence (EIS Layout)  
Base Map Source - Google Earth, 2025

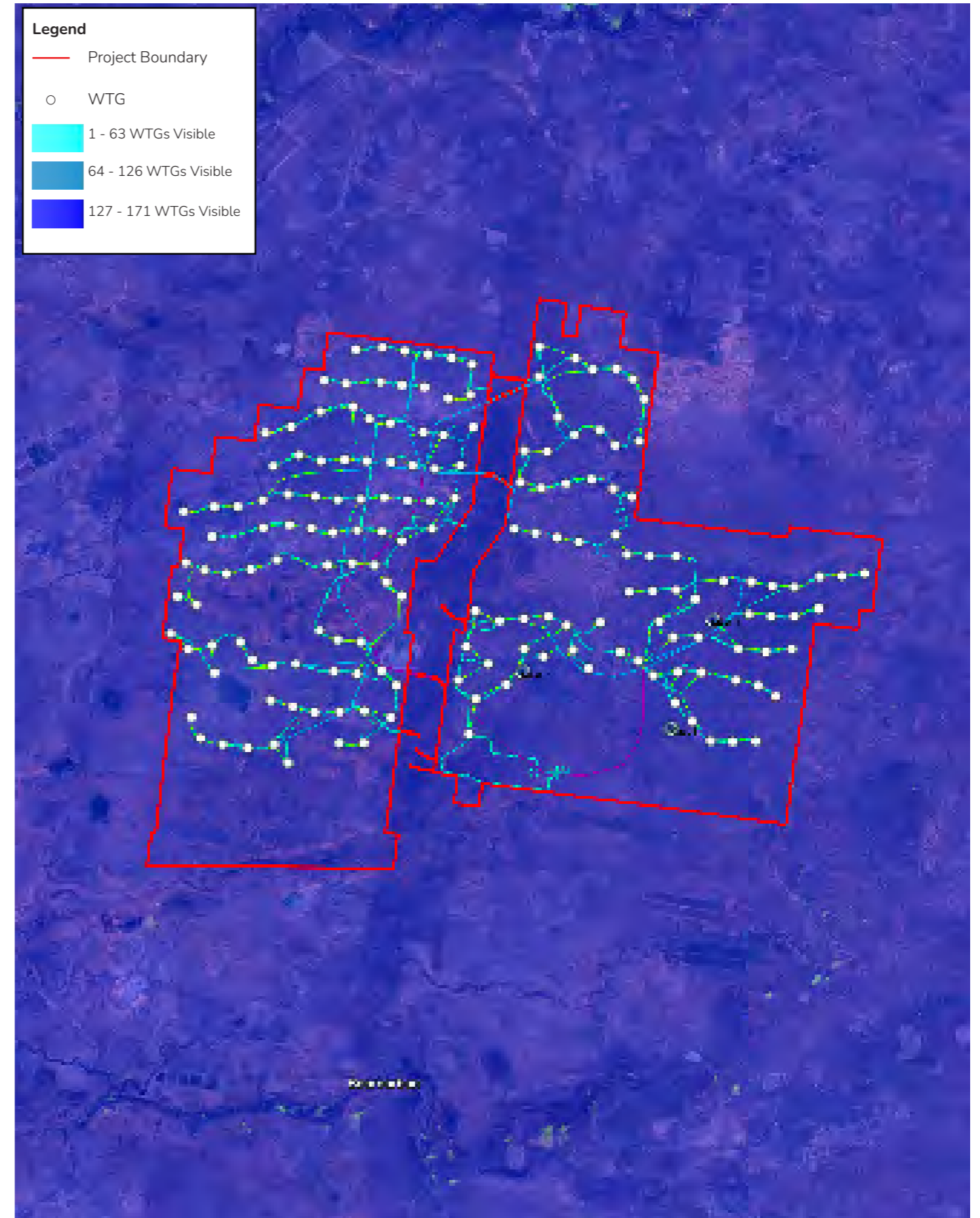


Figure 07 Zone of Visual Influence (EIS Layout)  
Base Map Source - Google Earth, 2025





# 4.0 Response to Submissions

## 4.1 Overview of Submissions relevant to Visual Impact

During the public exhibition phase of the Project, a total of 56 comments were received. Several submissions mentioned general concerns for visual impacts, however no specific locations were identified. One submission raised a concern visual impact resulting from aviation lighting on the area including the townships of Hay and Booroorban. At the time of preparing the LVIA, Aviation Lighting was deemed unnecessary by the Aviation Impact Assessment.

## 4.2 Revised Aviation Lighting Requirements

At the time of preparing the LVIA, the Aviation Assessment for the Project determined obstacle lighting of turbines was not a requirement for the Project. During the exhibition phase of the Project, Civil Aviation Safety Authority (CASA) reviewed the Project and provided a recommendation that the obstacle lighting be installed on the nacelle of turbines with a 200 candela intensity. Below is an excerpt from CASA's submission (dated 02/05/2024):

*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' National Airports Safeguarding Framework Principles and Guidelines (infrastructure.gov.au) and section 9.31 of Part 139 Aerodromes Manual of Standards Part 139 (Aerodromes) Manual of Standards 2019 (legislation.gov.au).*

*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 to alert the wind farm operator of any outage. The lighting system should have a failsafe mode to ensure that at least some of the obstacle lights remain on during an outage, and a management system developed to ensure any outages are corrected promptly. CASA is prepared to review a lighting plan that indicates which turbines are proposed to be lit.*

*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 and intensity control (as described in the Aviation Impact Assessment Table 16 / Page 59 'Effect of obstacle lighting on neighbours').*

The Visual Assessment Bulletin (2016) does not provide recommendations for distances at which aviation lighting should be screened from a dwelling. The Wind Energy Guidelines (DPHI, 2024) state: *The visual impact assessment should consider the worst-case view of a project during the day. Whether or not the turbines have lighting is unlikely to change the impact assessment rating. Consequently, a separate night-lighting assessment is not required for individual viewpoints.*

The visibility of an obstacle light depends on various factors, including distance, environmental conditions (e.g., darkness, fog, or atmospheric clarity), the observer's vision, and the angular position of the light. It is acknowledged that lighting impacts can extend beyond the light source itself (i.e. through glow and light spill). It is important to note aviation obstacle lighting is designed to focus their intensity toward the sky and areas visible to aircraft. Due to the isolated location of the Project, the visual impact resulting from proposed Aviation Lighting is likely to have minimal visibility from publicly accessible areas in the landscape. The nearest town is Hay South, which is over 12 kms north of the Project and Booroorban, which is located 14 kms south of the Project. At these distances and considering intervening vegetation, the visual impact resulting from the Aviation Lighting associated with the Project is deemed to be negligible.

The visibility of WTGs from nearby dwellings has been determined through the dwelling assessments considering the entire WTG. As any obstacle lighting will be installed on the nacelle of the WTG vegetation screening can be implemented at non-associated dwellings with a line of sight to the lit nacelle to reduce visibility.

# 5.0 Summary and Recommendations

## 5.1 Summary and Recommendations

The number of Non-associated Dwellings within the black line of visual magnitude has been reduced to nil. As a result of the amendments to the WTG locations, NAD\_26 is now located in excess of 3,500 m from the nearest WTG. Two (2) dwellings previously located within the 'Study Area' of the Project are now outside of the 'Study Area' (NAD\_15 and NAD\_18).

The revised assessment determined there will be a reduction of dwellings requiring mitigation, as two (2) dwellings that were assessed as moderate in the EIS have now returned a 'low' visual impact rating (NAD\_13 and NAD\_14). As a result of the Revised Layout, two (2) non-associated dwellings would have a moderate visual impact rating (NAD\_26 and NAD\_26A). The non-associated dwellings with a moderate visual impact rating require mitigation. Mitigation recommendations provided in the LVIA for the two (2) non-associated dwellings (NAD\_26 and NAD\_26A) remain relevant. When implemented, it is anticipated the mitigation would reduce the visual impact rating at the non-associated dwelling to low.

# Appendix A

Revised Detailed Assessment - NAD\_26

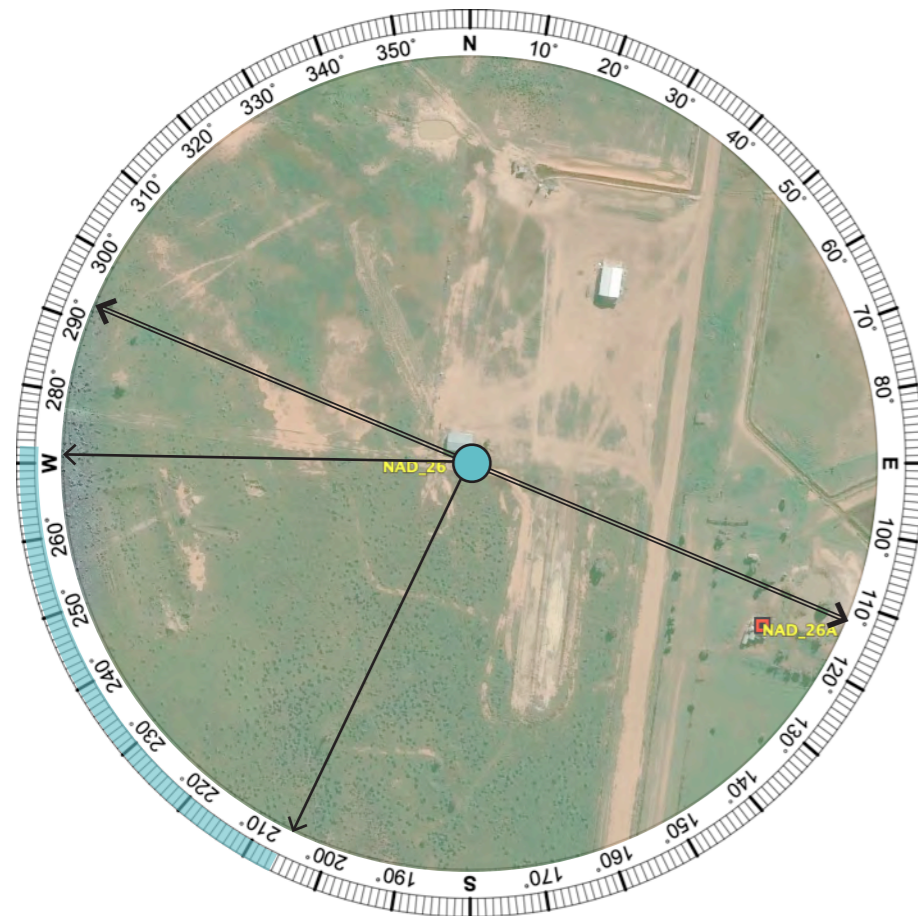
Dwelling ID:

# NAD\_26 Detailed Dwelling Assessment (270 m Turbine Height)

## 180° Proposed View - Photomontage



## Dwelling Location



Dwelling NAD_26			
Nearest proposed turbine (km):	3.58 km	Visibility Distance Zone:	Near Middleground (NM)
Number of proposed WTGs within Black Line of visual magnitude:	Nil	Viewer Sensitivity Zone:	Level 2 (Moderate)
Number of 60° Sectors occupied by WTGS (Based on 2D analysis):	One (1)	Landscape Character Unit:	LCU01: Farmlands & Plains
Number of 60° Sectors occupied by WTGS (Based on 3D analysis):	One (1)	Scenic Quality Rating:	Low
Number of visible WTGs:	171	Visual Influence Zone:	VIZ2

Note: Due to the close proximity, NAD\_26 is considered an adequate representative view to assess impacts from NAD\_26A .

### Assessment Notes:

The detailed assessment prepared from NAD\_26 indicates there is limited intervening vegetation to the south west of the dwelling. Views are available to the Project to the South West of the Dwelling. Landscape screening to the south west of the dwelling in accordance with the recommendations in the LVIA would reduce the visual impact resulting from the Revised Layout to an acceptable level.

### Visual Performance Objective Evaluation

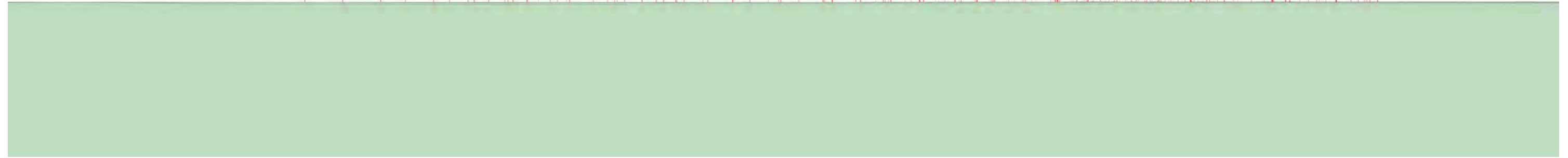
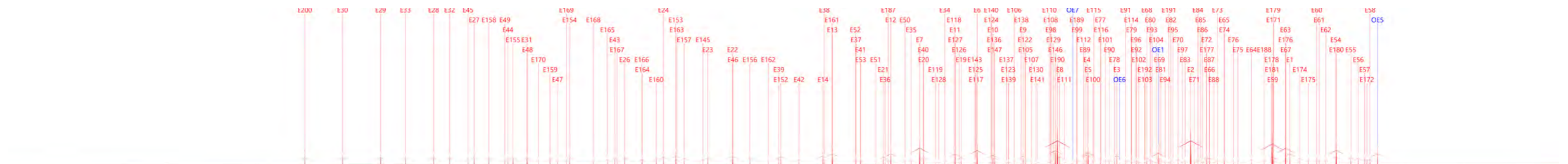
**Visual Magnitude:** No turbines are located within the black line of visual magnitude. Five (5) turbines are located between the black and blue line of visual magnitude, screen planting has been proposed to the south west of the dwelling to reduce visibility towards these turbines in accordance with the performance objectives.

**Multiple Wind Turbine Effect:** Turbines located within 8 km of the Dwelling are visible in up to one (1) 60 degree sector. This is deemed acceptable.

**Landscape Scenic Integrity:** The Project is likely to be visible in its entirety at this location. The landscape scenic quality has been rated as low and the Project will not impact the scenic integrity.

**Key Feature Disruption:** The turbines will be visible in the landscape, however there are no key landscape features impacted by the Project.

180° Proposed View - Photomontage



180° Wireframe Diagram

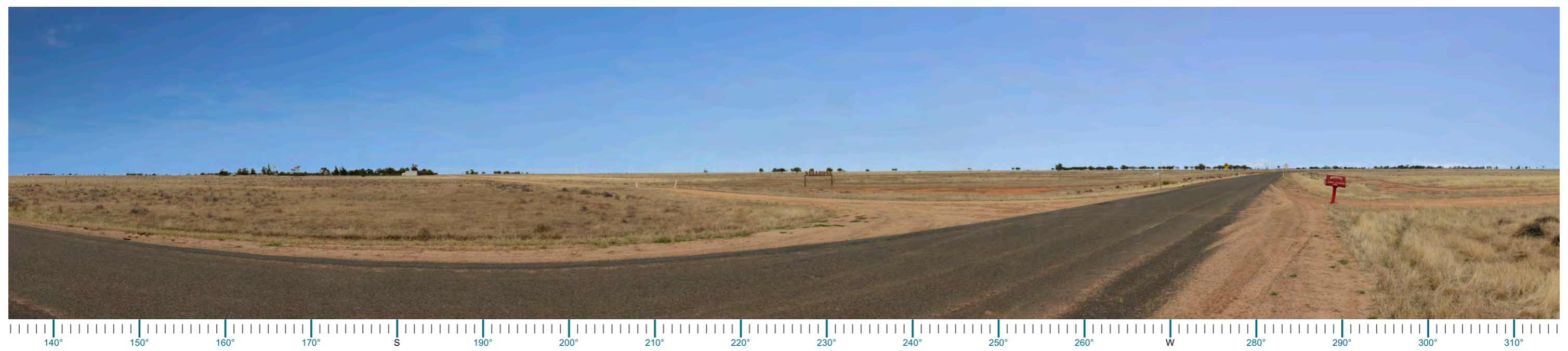
# Appendix B

## Comparative Photomontages

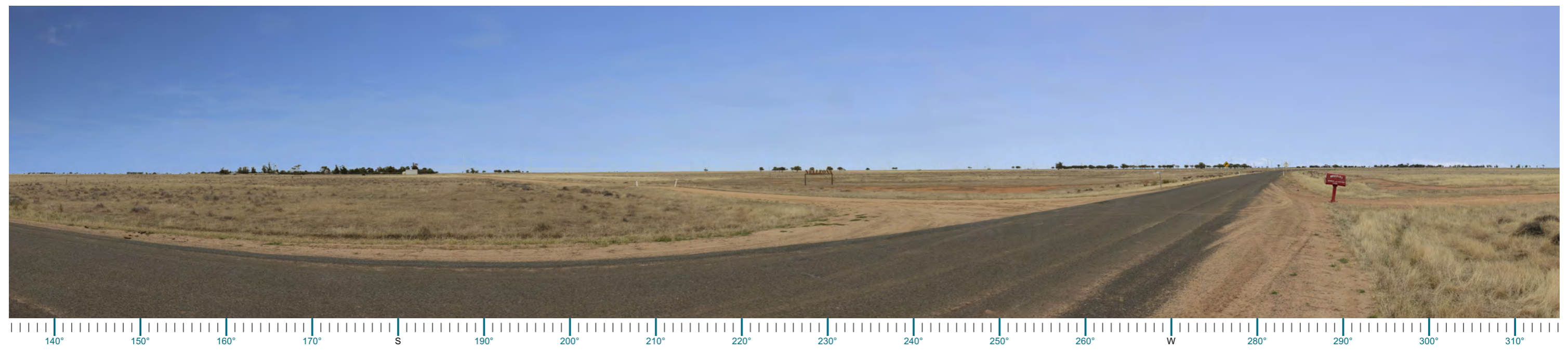
Dwelling ID:

# Photomontage PM05

180° Proposed View - EIS Layout



180° Proposed View - Revised Layout



Dwelling ID:

# Photomontage PM08

180° Proposed View - EIS Layout



180° Proposed View - Revised Layout

