RE Future

Mumblin Wind Farm

Application for Planning Permit

Appendix C – Landscape and Visual Impact Assessment

October 2025

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Landscape Architecture

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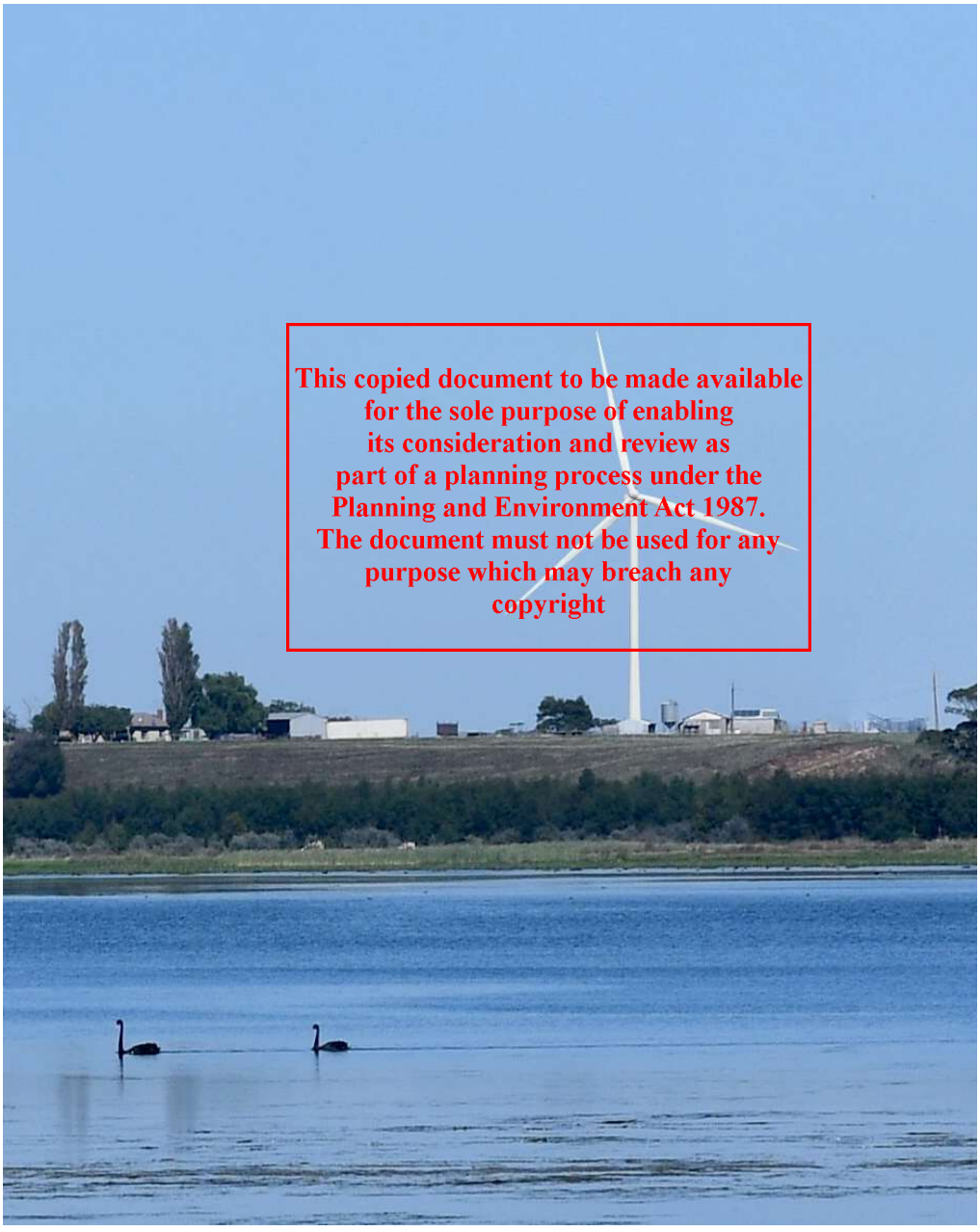
Mumblin Wind Farm

Landscape and Visual Impact Assessment

Prepared for RE Future Pty Ltd 18 June 2024



GBD

Landscape Architecture

gbdla.com.au

GBD is a leading specialist in landscape planning and renewable energy landscape and visual assessment, setting a course that others follow.

Servicing the renewable energy industry for over 18 years, GBD has gathered a wealth of unrivalled project experience in a variety of landscapes from Far North Queensland to western Tasmania.

GBD has applied knowledge across multiple state planning authorities addressing planning frameworks and specific regulatory requirements for renewable energy developments.

Green Bean Design Pty Ltd
ABN 86 603 575 702

LIMITATIONS

This report has been prepared in accordance with the usual care and thoroughness of the consulting profession for the use of RE Futures Pty Ltd. It is based on generally accepted practices and standards at the time it was prepared. No other warranty, expressed or implied, is made as to the professional advice included in this report. It is prepared in accordance with the scope of work and for the purpose outlined in the Green Bean Design Pty Ltd (GBD) Proposal dated April 2021.

The methodology adopted and sources of information used are outlined in this report. GBD has made no independent verification of this information beyond the agreed scope of works and GBD assumes no responsibility for any inaccuracies or omissions.

No indications were found during our investigations that information contained in this report as provided to GBD was false.

This report was completed between April 2021 and June 2024 and is based on the conditions encountered and information reviewed at the time of preparation. GBD disclaims responsibility for any changes that may have occurred after this time. This report should be read in full. No responsibility is accepted for use of any part of this report in any other context or for any other purpose or by third parties. This report does not purport to give legal advice. Legal advice can only be given by qualified legal practitioners. © Green Bean Design Pty Ltd 2024.

Cover image: View from Lake Elingamite Campground toward the proposed Mumblin Wind Farm

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Table 1 Glossary

Term	Definition
Cumulative effects	The summation of effects that result from changes caused by a development in conjunction with other past, present or reasonably foreseeable actions.
Landscape	A visible area of the earth's surface defined by natural or human induced change with discernible characteristic of landform, land use and human cultural overlays.
Landscape character	A distinct and consistent pattern of elements in the landscape that create an area of landscape visually different from other areas.
Magnitude	A combination of the scale, extent and duration of an effect.
Mitigation	Measures, including any processes, activity or design to avoid, reduce, remedy or compensate for adverse landscape and visual effects of a development project.
Photomontage (Visualisation)	Computer simulation or other technique to illustrate the appearance of a development.
Sensitivity	Susceptibility of a receiver to a specific type of change.
Viewshed	The total landscape area seen from a location or path of travel
Visibility	A relative determination at which the proposal can be clearly discerned and described.
Visual amenity	The value of a particular area or view in terms of what is seen.
Visual effect	The change in character of an available view that results from a development or the changes in visual amenity of people living beyond the project.
Visual Assessment	A process of applied professional and methodical techniques to assess and determine the extent and nature of change to the composition of existing views that may result from a development.
View location	A place or situation from which a proposed development may be visible.
Visual receiver	Individual and/or defined groups of people who have the potential to be affected by a proposal.
Visual significance	A measure of the importance or gravity of the visual effect culminating from the degree of magnitude and receiver sensitivity.

Section 1. Executive summary

1.1 Introduction

Green Bean Design Pty Ltd (GBD) was commissioned by Mumblin Wind Farm Pty Ltd, (the Proponent) to undertake a Landscape and Visual Impact Assessment (LVIA) for the proposed Mumblin Wind Farm (the Project).

The Project would comprise up to 8 wind turbines and associated electrical infrastructure and ancillary structures such as a switchyard/substation, access tracks and hardstands. The proposed wind turbines have been assessed with an overall tip height up to 252 metres above ground level and would form the most visible component of the Project (refer Figure 3).

This LVIA has determined that the landscape surrounding the project site, as well as landscape in the broader viewshed, has a moderate sensitivity to change and represents a modified and productive rural/agricultural landscape which is found throughout much of the Victorian southwestern landscape region.

This LVIA has determined that the visual impact of the Project is likely to be low to moderate from publicly accessible locations and that the proposed Mumblin Wind Farm:

- would have a moderate to high and high visual effect on most dwellings within a 2km viewshed from the wind turbines
- would have a low and low to moderate visual effect on most dwellings between a 2km and 5km viewshed from the wind turbines
- would have a low visual effect on [illegible] and
- would result in a low to moderate visual effect on views from local roads and
- would result in a moderate visual effect from scenic areas, camping grounds, public reserves and recreational areas
- would result in a low visual effect from distant elevated views from Mount Noorat and regional state parks/conservation areas.

A cumulative assessment identified 4 wind farms within 30 kilometres (km) from the proposed Mumblin wind turbines, including the:

- Mortlake South Wind Farm at around 17km to the northwest
- Darlington Wind Farm around 26km north
- Timboon Wind Farm 15km to the south and
- Ferguson Wind Farm 29km to the south.

This LVIA determined that there would be a limited degree of visibility between the Mumblin wind turbines and other wind farm projects; however, the potential for any significant level of direct and indirect cumulative impact would be mitigated by the distance between sensitive dwelling locations and wind turbines within each of the wind farms.

Although some mitigation measures are considered appropriate to minimise the visual effects for several of the elements associated with the Project, it is acknowledged that the degree to which the wind turbines may be visually mitigated is limited by their scale and position within the landscape relative to surrounding view locations.

Section 2. Introduction

2.1 Introduction

This LVIA has been prepared by GBD on behalf of the Proponent to accompany a Planning Permit Application for the Project. This LVIA informs the assessment of the Project for suitability to install wind turbines within the landscape surrounding the project site, as well as considering the potential extent and degree of visual effects on people living in, and travelling through, the surrounding landscape.

This LVIA has been prepared with regard to the following documents and guidelines to identify and consider potential landscape and visual impacts:

- Corangamite Shire Planning Scheme and
- Policy and planning guidelines: Development of wind energy facilities in Victoria, November 2021.

This LVIA notes that the Mumblin Wind Farm project site is located beyond the Coastal Spaces (April 2006) and the South West Victoria Landscape Assessment (June 2013) study areas. However, these documents have been reviewed and considered in the preparation of this LVIA.

In addition, this LVIA has also considered landscape and visual impact assessment guidance set out in:

- Guidelines for Landscape and Visual Impact Assessment, Third Edition, Landscape Institute and Institute of Environmental Management & Assessment, 2013
- Siting and Designing Wind Farms in the Landscape, Version 3a, NatureScot (2017) and
- Visual Representation of Wind Farms, Version 2.2, Nature Scot (2017).

Section 3. Methodology and report structure

3.1 Methodology

This LVIA has been prepared by Andrew Homewood, Director and Principal Landscape Architect of GBD. Andrew has over 30 years' experience in landscape architectural consulting, and over 18 years' experience in the preparation of LVIA reports for wind farm projects, as well as other state significant projects including high voltage transmission lines, substations, and battery energy storage systems. Andrew has been commissioned to undertake LVIA studies for over 60 large scale renewable energy projects across Victoria, New South Wales, Queensland, South Australia, and Tasmania.

The methodology employed for this LVIA has been based on existing guidelines identified in the LVIA introduction. The methodology is also based on the assessment of multiple wind farm projects undertaken by GBD within Victoria, South Australia, New South Wales, Queensland and Tasmania. In its most basic form, the key principles of visual impact assessment consider a combination of:

- receiver sensitivity (landscape or people) and
- potential magnitude of visual effects.

These principles are set out in several guidelines including the Victorian Guidelines and the UK Guidelines. For wind farm projects the magnitude of visual effects is primarily determined through:

- distance between wind turbines and receiver locations
- horizontal field of view occupied by wind turbine structures and
- vertical field of view occupied by wind turbines.

The measurement of horizontal and vertical fields of view are difficult to quantify against set criteria for potential visual impact and are often considered against the parameters of normal human eyesight. Whilst human eyesight can be objectified against horizontal and vertical field of view, it does not consider the almost continual movement of receivers in the landscape and a natural inclination to scan distant horizons. Nevertheless, formulating professional judgement on the visual scale of a wind turbine within a particular vista is necessary step in the visual assessment process. It is important to understand the difference between visual impact assessment and landscape visual assessment and why both types of assessments are appropriate to include in this LVIA. Visual impact assessments assess impacts on viewers (people) caused by developments on views from selected viewpoints, as seen by people. A visual impact assessment will determine the change to the view itself caused by the addition of the development. It also determines how change will affect the experience of people who may be at a particular viewpoint, and how they might respond to the change. The effect of seeing a wind farm on viewer experience depends in part on what the viewers are doing when viewing a wind farm, and their response depends in part on who they are and how much they value the view. Landscape impact assessment considers impacts on physical elements and features that make up the aesthetic, perceptual, and experiential aspects of that landscape or that make it distinctive. These impacts affect the "feel," "character," or "sense of place" of an area of landscape, rather than the composition of a view from a particular place. Landscape effects are a measure of the degree of compatibility of the character of the development, which might be, for example, "industrial," with the character of the landscape or seascape it is in or is visible from, say, "wilderness" or "tranquil." The impact receptor is the potentially affected landscape.

The final assessment of potential landscape and visual impacts combines sensitivity and magnitude of visual effects and is ultimately a process of professional judgement. Professional judgement applies knowledge, assessment skills and relevant experience within the context of existing guidelines and technical supplements. Professional judgements applied in this LVIA are based on reasonable and defined criteria and have been subject to peer review.

3.2 Professional judgement in landscape and visual impact assessment

The process of landscape and visual impact assessment incorporates both qualitative and quantitative analysis; however, determinations of impacts are ultimately based on interpretations informed by professional judgement. The application of professional judgement is outlined in the Guidelines for Landscape and Visual Impact Assessment, 3rd Edition 2013 (the UK Guideline, which notes that professional judgement is a very important part of landscape and visual impact assessment. The UK Guideline notes that professional judgement is applied to several other environmental topics (e.g., ecology and cultural heritage) and that judgements made should be:

- Reasonable and based on clear and transparent methods
- Based on training and experience and
- Made, in general, by suitably qualified and experienced landscape professionals.

The UK Guideline notes that qualified and experienced landscape professionals may not agree on various aspects of a landscape and visual impact assessment which may arise from the application of different approaches or criteria; however, the core principals of receiver sensitivity and magnitude of impact should provide some consistency in determinations of impact.

3.3 Site inspections

Site inspections were undertaken in March 2022 and February 2023. Site inspection works included dwelling location verification, landscape character familiarisation and analysis and panorama photography and aerial drone imagery preparation.

3.4 Report structure

The LVIA report structure is set out in **Table 2.**

Table 2 Report Structure

Report Section	Description
1 Executive summary	This section provides an introductory section that describes the intent and purpose of the LVIA
2 Introduction	This section sets out the structure and methodology employed in the LVIA preparation.
3 Methodology and report structure	This section describes the regional and local position of the wind farm development relative to existing landscape features and places and describes the key visible components of the project.

Table 2 Report Structure

4 Project location and description	This section identifies the area of land surrounding the wind farm project site subject to detailed assessment in this LVIA.
5 Legislative and planning frameworks	This section sets out the legislative and planning frameworks describe policies and provisions that apply to proposed wind farm within the viewshed.
6 Viewshed	This section identifies the area of land surrounding the wind farm project site subject to detailed assessment in this LVIA.
7 Panoramic and aerial photographs	This section illustrates the LVIA with panorama and aerial photographs taken during the site inspection. The photographs are provided to illustrate the general appearance of typical landscape characteristics that surround the proposed wind turbines.
8 Landscape Character Assessment	This section describes the physical characteristics of the landscape surrounding the project site and determines the overall sensitivity of the landscape to the wind farm development.
9 Zone of Theoretical Visibility	This section identifies a theoretical area of the landscape from which the wind turbines may be visible within the viewshed and describes a range of factors which may influence the wind farm visibility within the viewshed.
10 Key views and visual effects	This section describes and determines the potential visual effect of the wind turbines on key public viewpoints within the project viewshed.
11 Cumulative assessment	This section describes the potential effect of alternate existing and/or known wind farm developments within proximity to the project.
12 Pre-construction and construction	This section describes the activities associated with pre-construction and during construction which may create visual effects.
13 Mitigation measures	This section outlines potential mitigation measures to minimise visual effects arising from the proposed wind farm development.
14 Conclusion	Conclusions are drawn on the overall visual effect of the proposed project.
Appendix A	Photomontage methodology
Appendix B	Public photomontage

Table 2 Report Structure

Appendix C	Qualifications and experience

Section 4 Project location and description

4.1 Project location

The proposed Mumblin Wind Farm project site is in Southwest Victoria within the Corangamite Shire local government area. The project site is approximately 7km southwest of Cobden and 35km northeast of Warrnambool. The project site location in both regional and local contexts is illustrated in **Figures 1** and **2.**

4.2 Project description

The key visual components of the proposed Mumblin Wind Farm are currently expected to comprise:

- up to 8 wind turbines to a maximum 252 metre tip height
- control room and switchyard
- night time aviation obstacle lighting
- crane hardstand area
- 140m high meteorological mast
- Substation and associated overhead powerline (around 850m) between the substation and existing electrical infrastructure on the Cobden Warrnambool Road corridor
- on site access track for construction, operation and ongoing maintenance and
- signage.

Temporary works associated with the construction of the wind turbines that may be visible during construction and operational phases include:

- temporary site office, parking and materials storage areas.

The proposed wind turbine layout is illustrated in **Figure 2.**

4.3 Wind turbines

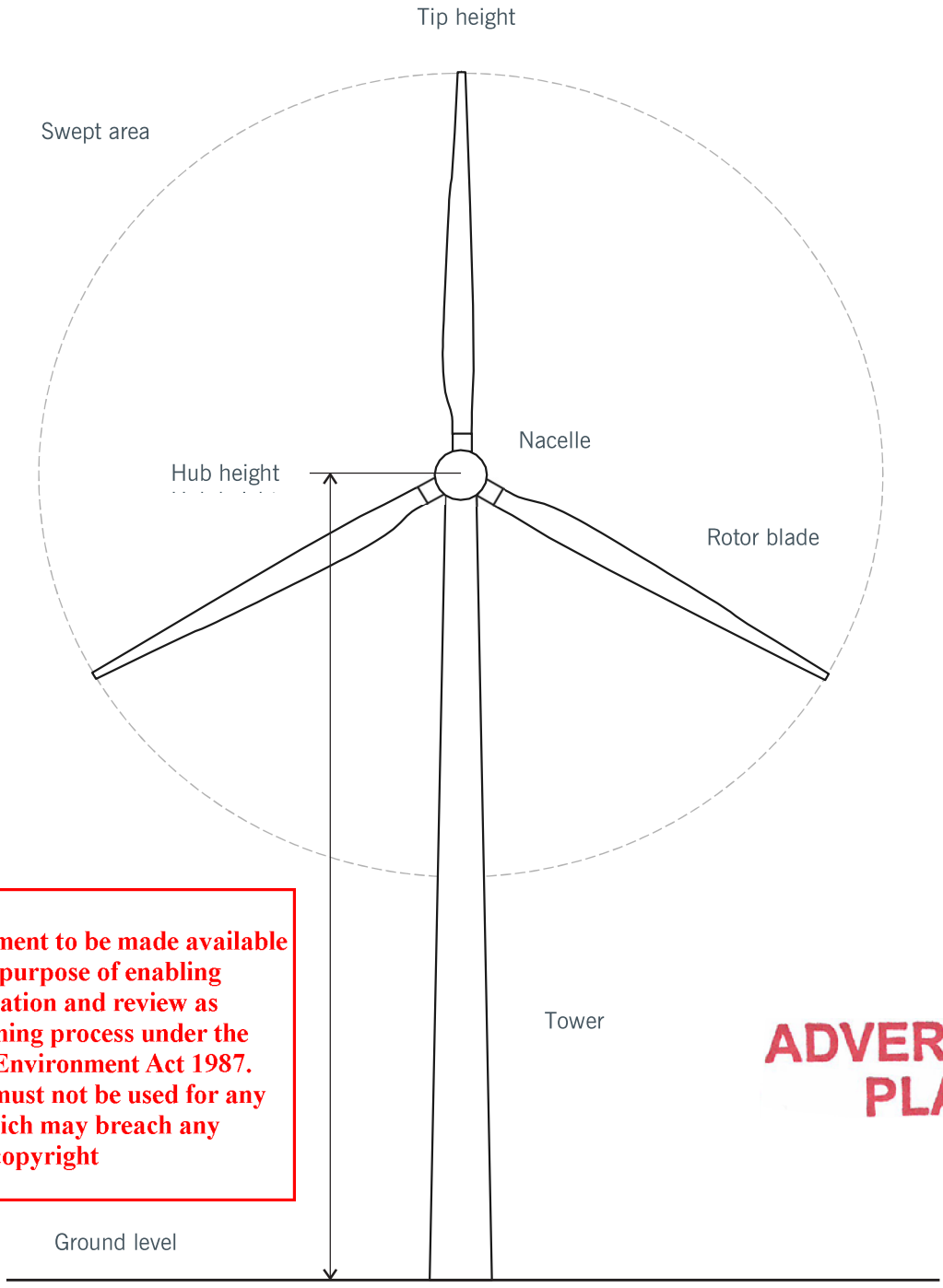
The specific elements of the wind turbines typically comprise:

- concrete foundations
- tubular tapering steel and/or concrete towers
- nacelles at the top of the tower housing the gearbox and electrical generator
- rotors comprising a hub (attached to the nacelle) with three blades and
- three composite material blades attached to each hub.

The proposed indicative wind turbine design is illustrated in **Figure 3.**

Diagram 1 – Typical wind turbine components and terminology (Image: ©GBD Pty Ltd 2022)

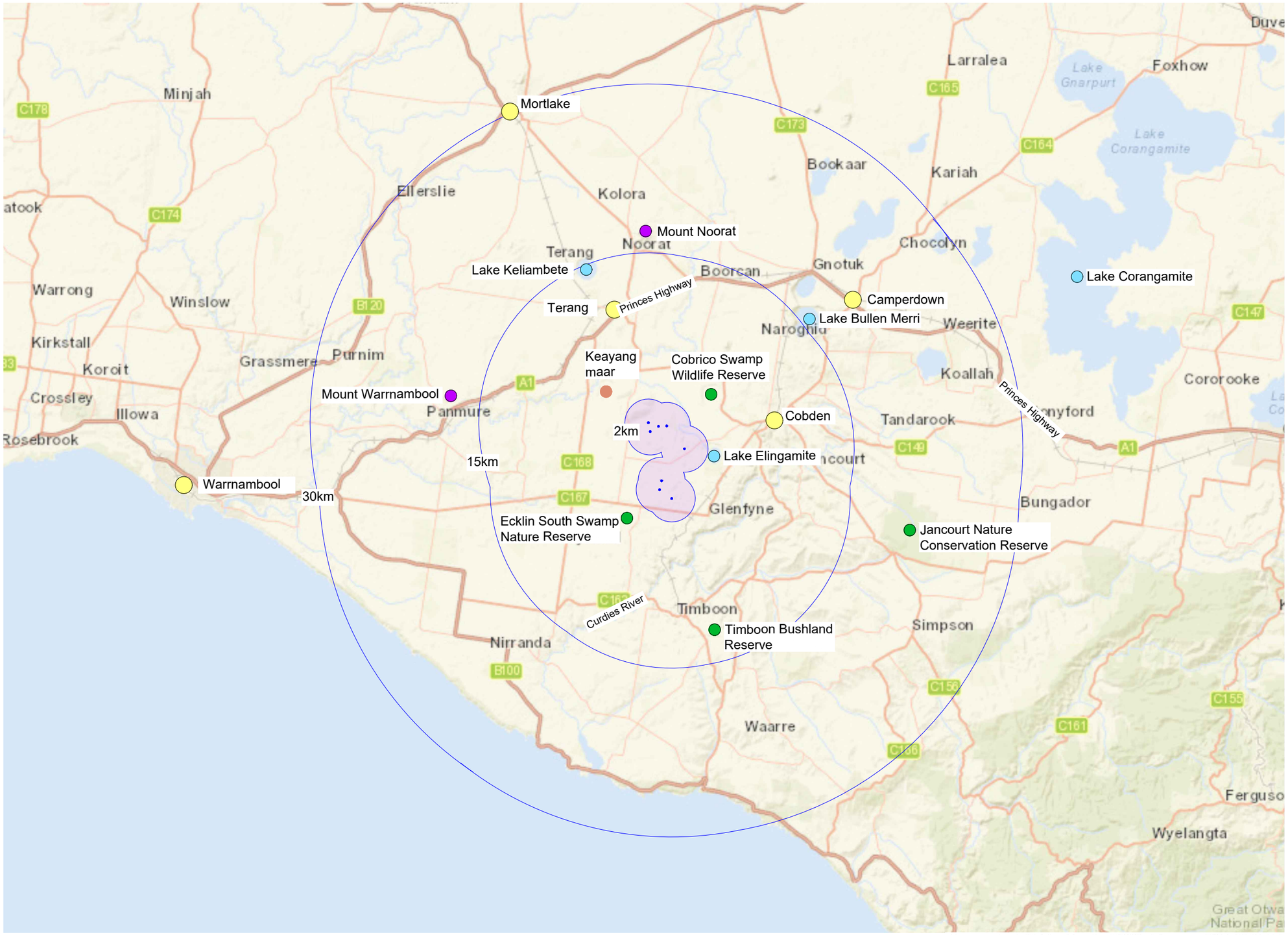
Not to scale



4.4 Electrical works and aviation obstacle lighting

The proposed wind turbines would be connected via a substation/switchyard to the existing distribution line located adjacent to the Cobden-Warrnambool Road. The substation/switchyard would be connected by an above ground single circuit 66kV powerline, spanning the Cobden-Warrnambool Road using single poles either side of the road corridor. This powerline is located on the same alignment as an existing distribution power line. Ancillary electrical infrastructure associated with the project is unlikely to form significant visual elements within the viewshed and not create significant visual effects on surrounding sensitive view locations.

The Proponent commissioned an aeronautical study which included a consideration with regard to obstacle lighting needs and requirements for the installation and operation of obstacle lighting. The aeronautical study concluded that whilst obstacle lighting may be required, a determination for the installation and operation of obstacle lighting would be subject to Civil Aviation Safety Authority (CASA) requirements. Any hazard lighting requirements would be installed in accordance with the Civil Aviation Safety Authority Manual of Standards Part 139 -Aerodromes, Chapter 9, paragraph 9.4.7.



Legend

- T1 — Proposed wind turbine
- Distance from wind turbine
- 2km viewshed
- Urban locality
- Reserve
- Lake/maar

ADVERTISED PLAN

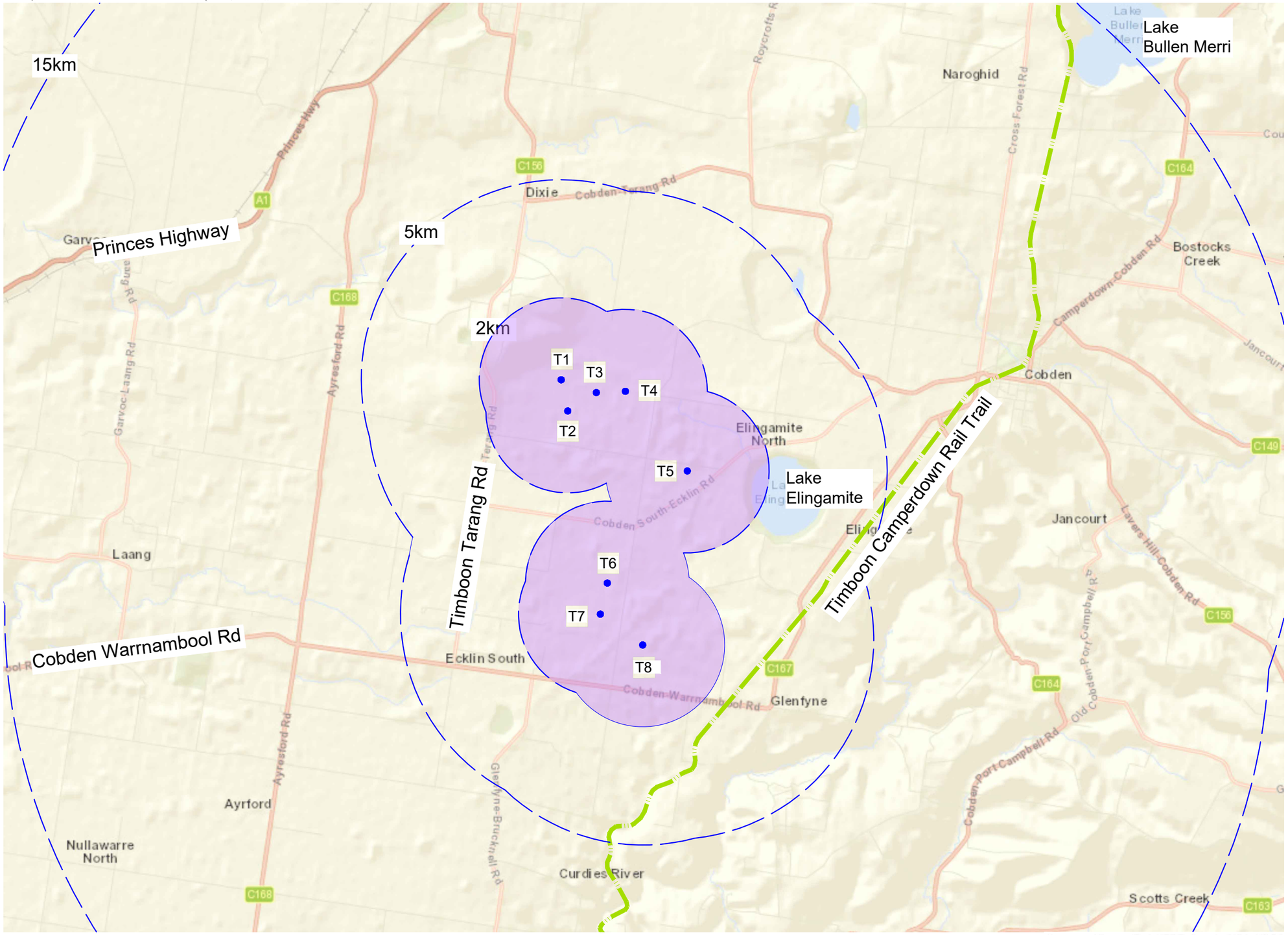
0m — 10km

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Regional location

Figure 1
Regional location

GBD
Landscape architecture



Legend

- T1 — Proposed wind turbine
- Distance from wind turbine
- 2km viewshed
- Timboon Camperdown Rail Trail

ADVERTISED PLAN

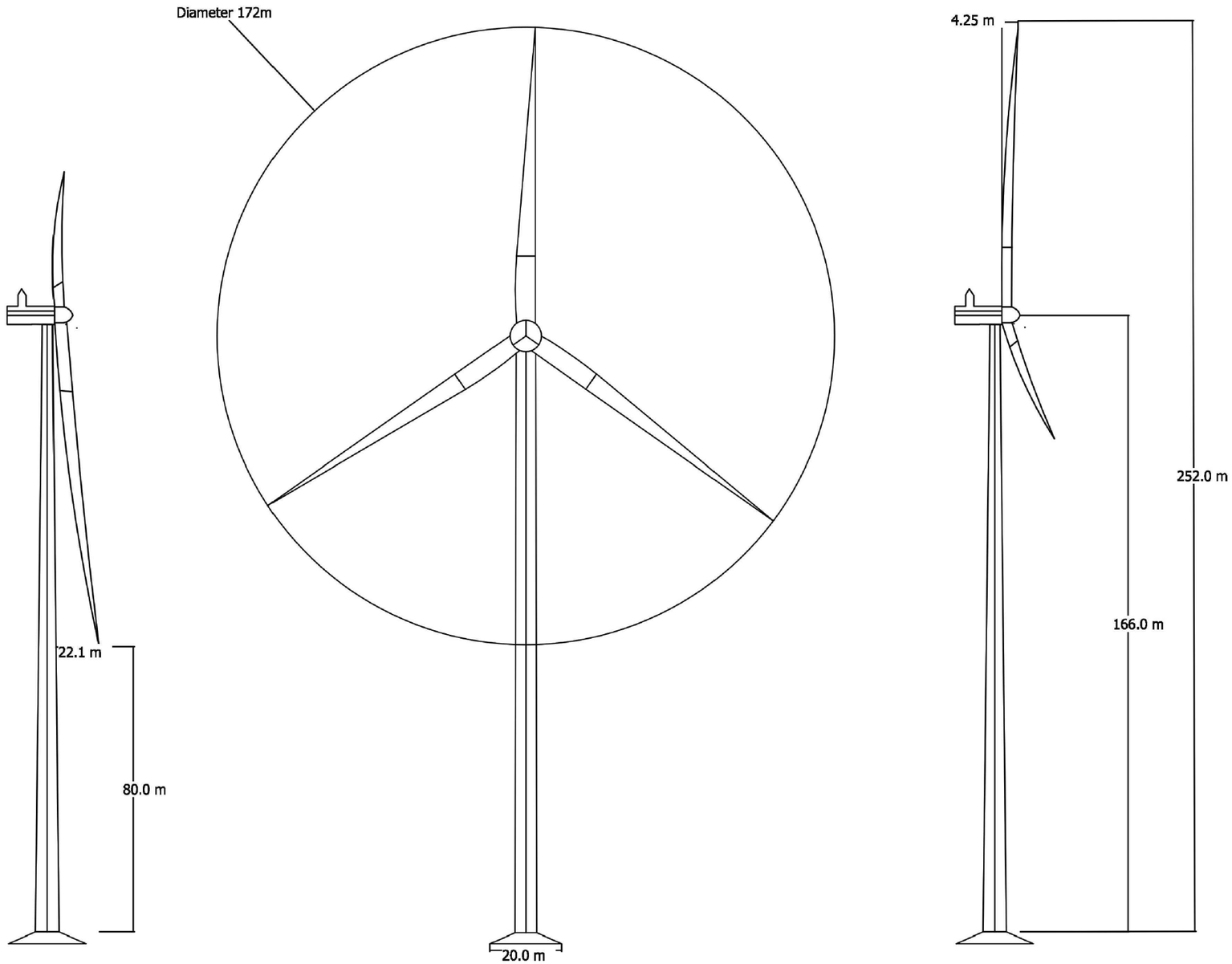
0m 3km

Sources: Vicmap, Esri, HERE, Garmin, NGA, USGS

Project Locality

Figure 2
Project locality

GBD
Landscape architecture



Make: VESTAS
Model: V172
Capacity: 6.8 mW
Nacelle, Cooler Top/Rotor Hub Material: Steel framed composite cover
Blade Material: Fibreglass composite
Tower Material: Concrete with steel reinforcment
Stair Material: Aluminium
Colour and Finish of Stairs: Natural Aluminium
Colour and Finish of Turbines: Light Grey (RAL 7035). {industry standard}
Colour and Finish of Foundations: Cement Grey, Natural Concrete

Figure 3
Indicative wind turbine design

Section 5. Legislative and planning frameworks

5.1 Introduction

This LVIA has been undertaken with regard to various State and Local planning policies, as well as controls and policy guidelines applicable to the Mumblin Wind Farm project. These include:

Planning Policies

- Victorian State Planning Policy Framework – relevant Clause 19.01 (Energy)
- Victorian State Planning Policy Framework – relevant Clause 19.01-2S (Renewable energy)

Planning Controls

- Particular Provisions – relevant Clauses 52.32
- Zoning and Overlays

Relevant guidelines

- Policy and planning guidelines: Development of wind energy facilities in Victoria, November 2021.

5.2 State Planning Policy Framework

The Victorian Government State Planning Policy Framework Clause 19.01-2S Renewable energy, sets out objectives, strategies and policy guidelines for the provision of renewable energy including the development of wind energy facilities.

5.3 Distinctive areas and landscapes - Corangamite Shire Planning Scheme

Clause 11.03-5S of the Corangamite Planning Scheme describes the importance of distinctive areas and landscapes values of the Shire in particular the land systems, natural features and planning constraints within the Shire. Notably the Mumblin Wind Farm does not impact on any of the identified natural features and constraints within the Shire as identified in the relevant policy documents listed in the Planning Scheme.

5.4 Zoning and Overlays

The proposed Mumblin Wind Farm is located within the Rural Farming Zone (FZ) as defined in Clause 35.07 of the Planning Scheme. Wind energy facilities are a permissible use subject to the wind energy project meeting the requirements of the State Planning Policy Clause 52.32 Wind Energy Facility.

In addition to the FZ the following planning zones are located within the 5km viewshed of the wind farm:

- TRZ2, the Cobden Warrnambool Road and associated land adjacent to the project site is in a Transport Zone 2
- PUZ6, a Public Use Zone associated with the Ecklin Hall.
- PCRZ, a Public Use Zone – Other Public Use covering the Lake Elingamite, Cobrico Swamp Wildlife Reserve and South Ecklin public park.

The following Overlays are located within the 5km viewshed of the wind farm:

- Vegetation protection overlay (VPO) south of the Mumblin project site and the Cobden Warrnambool Road and adjoining the Curdies River corridor.
- Environmental Significance overlay (ESO) associated with Lake Elingamite, Cobrico Reserve, Bryants Drain Reserve, Ecklin South Swamp Nature Conservation Reserve, Curdies River, Mount Emu Creek and dry lake east of Aylesford Road and Mount Emu Creek.
- Significant Landscape Overlay (SLO) associated with Lake Elingamite, Cobrico Reserve, land parcel south of Lake Mumblin and Bryants Drain Reserve.
- Various areas of Bushfire Management overlays (BMO).

5.5 Particular provisions

Particular Provisions Clause 52.32, Wind Energy Facility sets out a framework which includes the preparation of a design response to assess the visual impact of the proposal on the surrounding landscape. The Planning Scheme outlines application requirements for wind energy facilities under Clause 52.32. In broad terms the application information with specific regard to landscape and visual includes:

- Direction and distances to nearby dwellings, townships, urban areas, significant conservation and recreation areas, water features, tourist routes and walking tracks, major roads, airports, aerodromes and existing and proposed wind energy facilities
- Views to and from the site, including views from existing dwellings and key vantage points including major roads, walking tracks, tourist routes and regional population growth corridors
- A site plan, photographs or other techniques to accurately describe the site and surrounding area
- Accurate visual simulations illustrating the development in the context of the surrounding area and from key public view points
- A description of how the proposal responds to any significant landscape features for the area identified in the planning scheme and
- An assessment of:
    - the visual impact of the proposal on the landscape and
    - the visual impact on abutting land that is subject to the National Parks Act 1975 and Ramsar wetlands and coastal areas.

5.6 Policy and planning guidelines: Development of wind energy facilities in Victoria, November 2021 (the Victorian Guidelines)

The purpose of the Victorian Guidelines is to set out:

- a framework to provide a consistent and balanced approach to the assessment of wind energy projects across the state
- a set of consistent operational performance standards to inform the assessment and operation of a wind energy facility project and
- guidance as to how planning permit application requirements might be met.

The Victorian Guidelines outline the key criteria for evaluation of the planning merits of a wind energy facility. Section 5.1.3 Landscape and visual amenity identifies several considerations with regard to the degree of visual impact caused by wind farm developments.

5.7 Planning considerations

The key considerations drawn from the existing planning policy framework which are directly relevant to this LVIA are as follows:

- The Victorian Guidelines (November 2021) present a comprehensive and clear set of considerations by which to assess the potential visual impacts of wind farm developments; however, some of the considerations require a greater degree and more detailed level of assessment than is required for this LVIA.
- This LVIA notes that the Draft National Guidelines (July 2010) ceased development in 2010 and have not been revisited or updated. The guidelines lack a degree of technical application which is more clearly set out in the Corangamite Planning Scheme as well as standard industry texts such as the Guidelines for Landscape and Visual Impact Assessment (3rd Edition) Landscape Institute and Institute of Environmental Management & Assessment, 2013.

Section 6. Viewshed

6.1 Viewshed

For this LVIA the viewshed is defined as the area of land surrounding and beyond the project site which may be potentially affected by the wind turbines with regard to key view locations including dwellings. The distance of the viewshed can vary between wind farm projects and may be influenced and informed by several criteria including the height and quantity of wind turbines together with the nature, location and height of landform that may limit and influence the extent of wind farm visibility. In essence, the viewshed defines the LVIA study area.

The viewshed for the proposed Mumblin Wind Farm has been illustrated at 5km extending across the landscape away from the wind turbines. This distance has been selected due to the small number of wind turbines within the wind farm site, as well as their distribution across the wind farm site.

It is important to note that the wind turbines would be visible from areas of the landscape beyond the 5km viewshed; however, within the general parameters of normal human vision, a wind turbine at a maximum height of 252 metres to the tip of the rotor blade would occupy a relatively small proportion of a person's field of view from distances in excess of 5km and result in a relatively low level of perceived visual significance (refer **Figure 19**).

Section 7. Panoramic photographs and aerial images

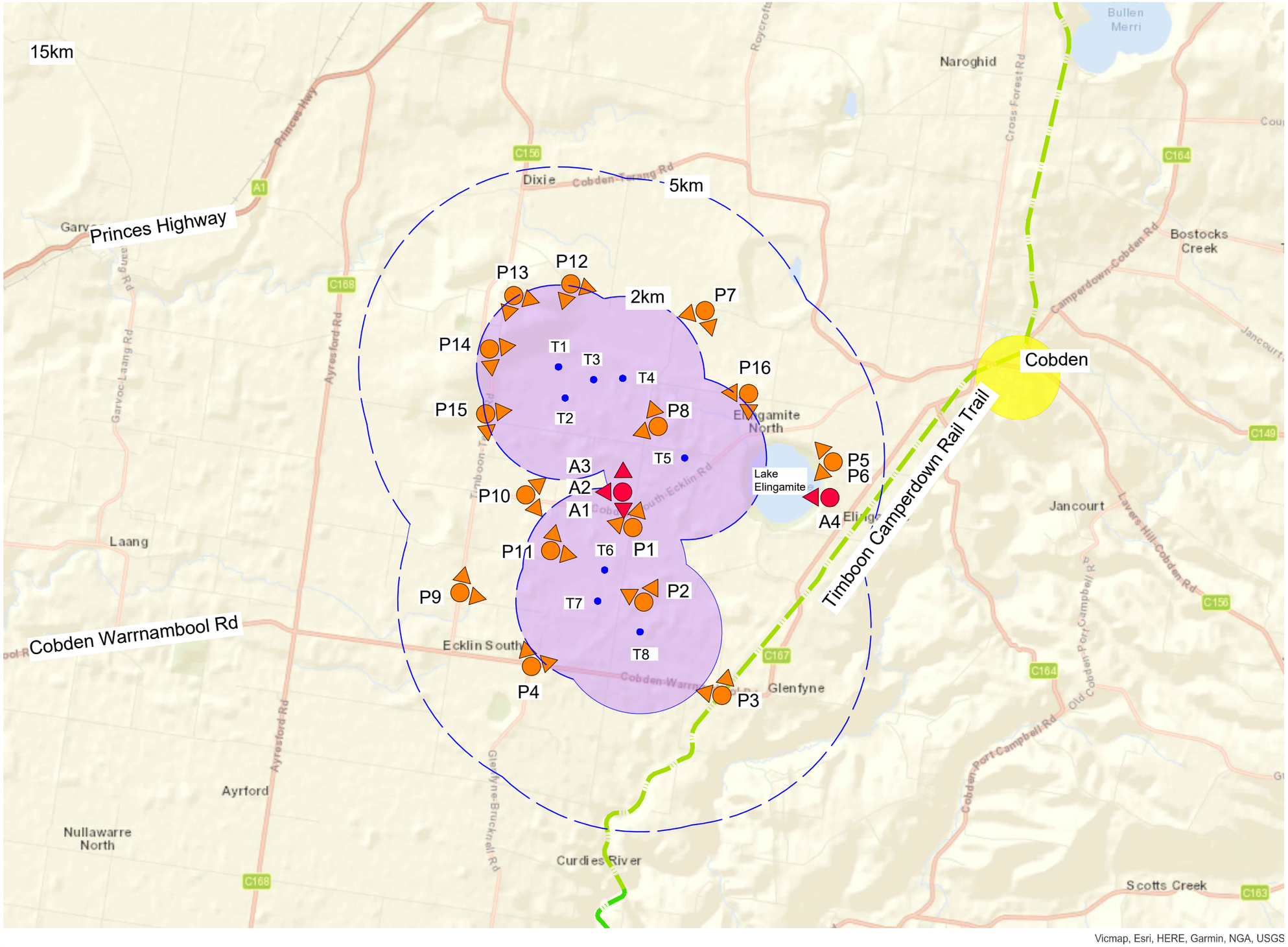
7.1 Panoramic photographs and aerial images

A series of individual and panorama digital photographs and aerial images were taken during the site inspection to illustrate existing views near the Project and to give a sense of the overall site in its broader landscape setting and characteristics. Photo locations were selected to illustrate the variety of landforms and vegetation types found within the viewshed. The panorama photographs were digitally stitched together forming a segmented panorama image to provide a visual illustration of the existing view from each photo location. Photographs presented in this section are informative only and do not illustrate the actual location or appearance of the Project wind turbines. The proposed wind turbines are illustrated in the photomontages included in Appendix B of this LVIA report.

The panorama photographs were taken with a Nikon D850 digital SLR camera with a full frame sensor and a prime 50mm focal length lens. The photographs were taken as a combination of hand held and tripod mounted images; however, all photographs for the purpose of photomontages were taken with the camera tripod mounted with additional GPS data recorded with a hand held Garmin device (as the Nikon D850 does not have an internal GPS) together with start and end bearings for each panorama.

The aerial photos were taken with a DJI Mavic Pro 2, flown to a maximum height of 120m above ground level in accordance with Civil Aviation Safety Authority requirements. The aerial photos provide extensive views and vistas that are not available from ground level due to tree cover within and surrounding the site. The aerial photos provide imagery that illustrates local and distant landscape characteristics as well as the locality of key view locations and the extent/nature of potential screening elements.

The panoramic and aerial photographs presented in this LVIA have been annotated to identify local features within and beyond the Project site. The panorama photograph and aerial image locations are illustrated in **Figure 4** and illustrated in **Figures 5** to **16**.



Legend

- T1 — Proposed wind turbine
- Distance from wind turbine
- 2km viewshed
- P6 — Panorama photo location
- A1 — Aerial photo location
- Timboon Camperdown Rail Trail

0m 3km

Vicmap, Esri, HERE, Garmin, NGA, USGS

Panorama photo locations

Figure 4
Panorama photo locations

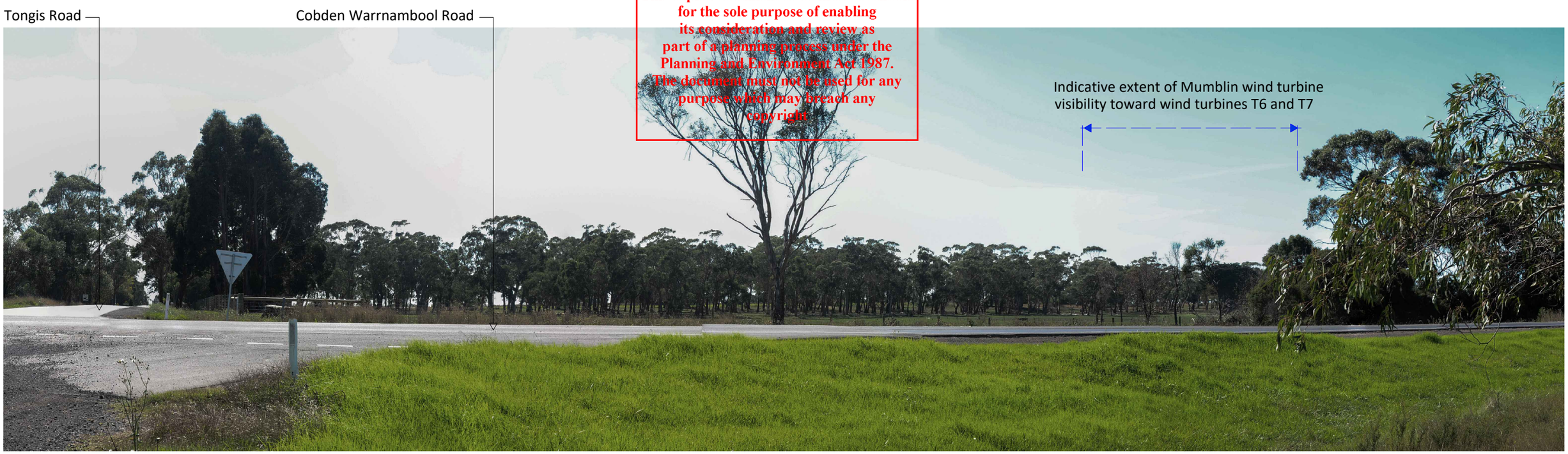
Panorama photo P1 - Existing view from Curdies Leichfield Road at Cobden-South Ecklin Road north west to north east toward the project site. Approximate distance to closest wind turbine (T2) 3.5km

Panorama photo P2 - Existing view from Curdies Leichfield Road north west to north toward the project site. Approximate distance to closest wind turbine (T7) 950m

Extent of horizontal view in which wind turbines may be visible. Note: blue dashed line is not indicative of wind turbine height. Refer figures 23 to 30 for photomontage.

Figure 5
Panorama photos P1 and P2

Panorama photo P3 - Existing view from Cobden Warrnambool Road at Glenfyne Hall north north east toward the project site. Approximate distance to closest wind turbine (T8) 2.5km



Panorama photo P4 - Existing view from Glenfyne-Brucknell Road at Cobden Warrnambool Road north north east toward the project site. Approximte distance to closest wind turbine (T7) 2.2km

Extent of horizontal view in which wind turbines may be visible. Note: blue dashed line is not indicative of wind turbine height. Refer figures 23 to 30 for photomontage.

Figure 6
Panorama photos P3 and P4

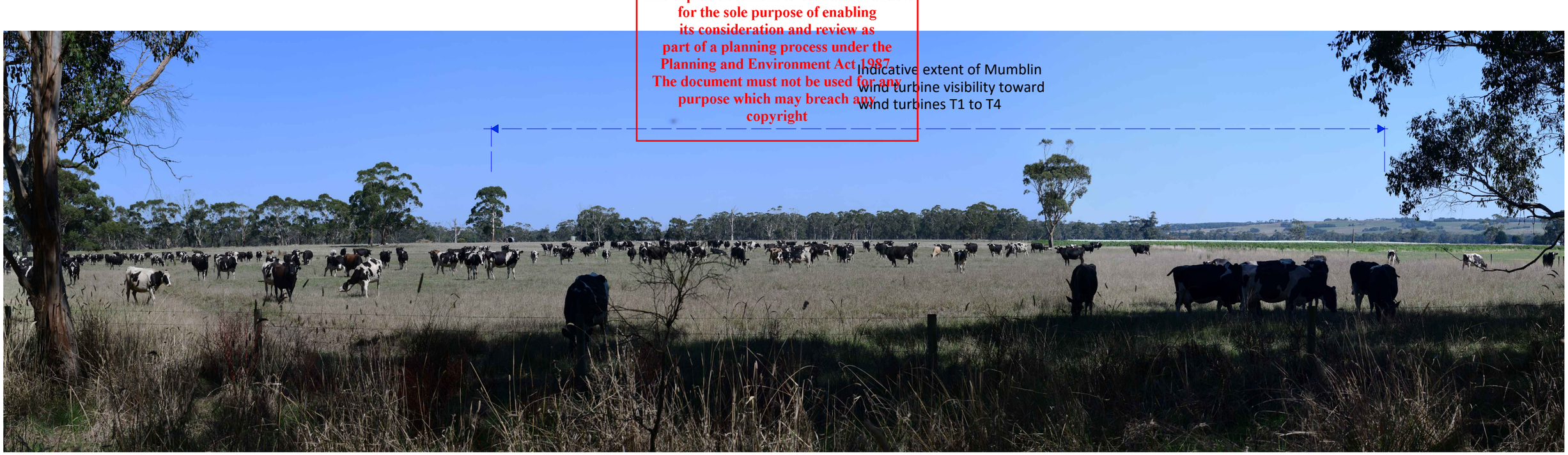
Panorama photo P5 - Existing view from Oates Road across Lake Elingamite west to south west toward the project site. Approximate distance to closest wind turbine (T5) 3.6km

Panorama photo P6 - Existing view from Lake Elingamite campgound/jetty west toward the project site. Approximate distance to closest wind turbine (T5) 3.4km

Extent of horizontal view in which wind turbines may be visible. Note: blue dashed line is not indicative of wind turbine height. Refer figures 23 to 30 for photomontage.

Figure 7
Panorama photos P5 and P6

Panorama photo P7 - Existing view from Curdies Leichfield Road south to south west toward the project site. Approximate distance to closes wind turbine (T4) 2.6km

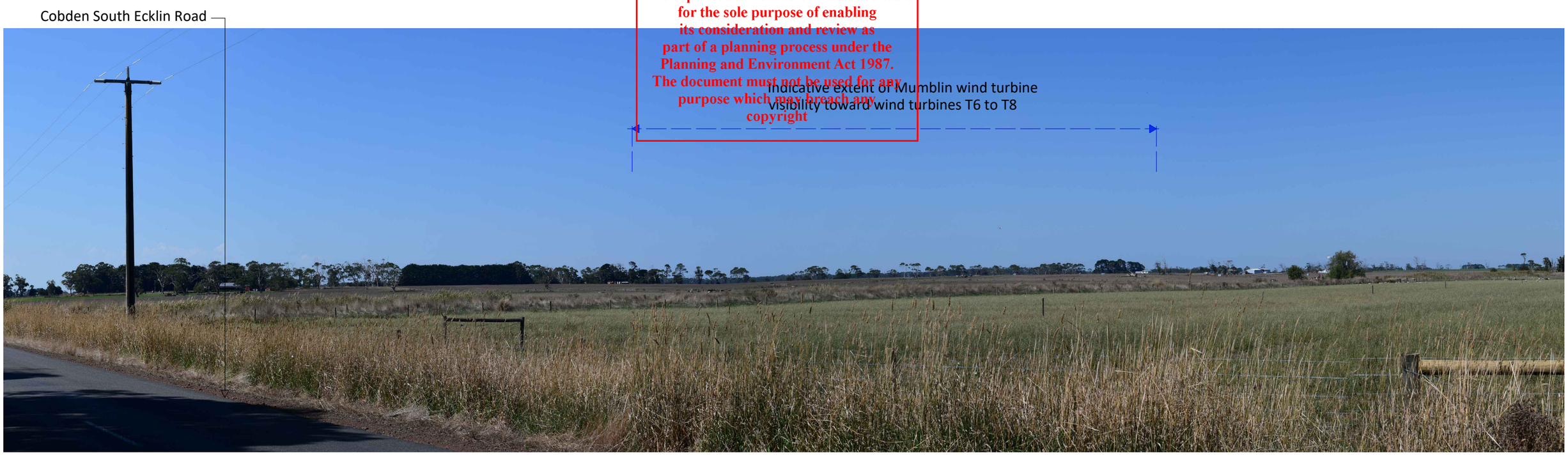


Panorama photo P8 - Existing view from Curdies Leichfield Road west to north west toward the project site. Approximate distance to closest wind turbine (T4) 1.5km

Extent of horizontal view in which wind turbines may be visible. Note: blue dashed line is not indicative of wind turbine height. Refer figures 23 to 30 for photomontage.

Figure 8
Panorama photos P7 and P8

Panorama photo P9 - Existing view from Timboon Terang Road at Ecklin Hall east toward the project site. Approximate distance to closest wind turbine (T7) 3.6km

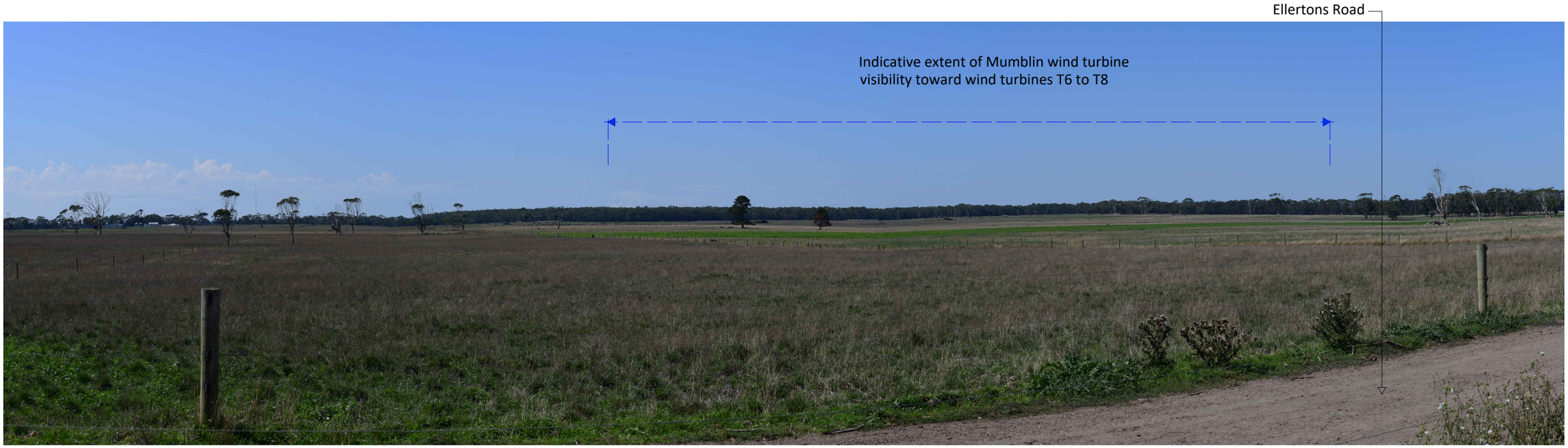


Panorama photo P10 - Existing view from Cobden-South Ecklin Road east to south south east toward the project site. Approximate distance to closest wind turbine (T6) 2.6km

Extent of horizontal view in which wind turbines may be visible. Note: blue dashed line is not indicative of wind turbine height. Refer figures 23 to 30 for photomontage.

Figure 9
Panorama photos P9 and P10

GBD
Landscape architecture



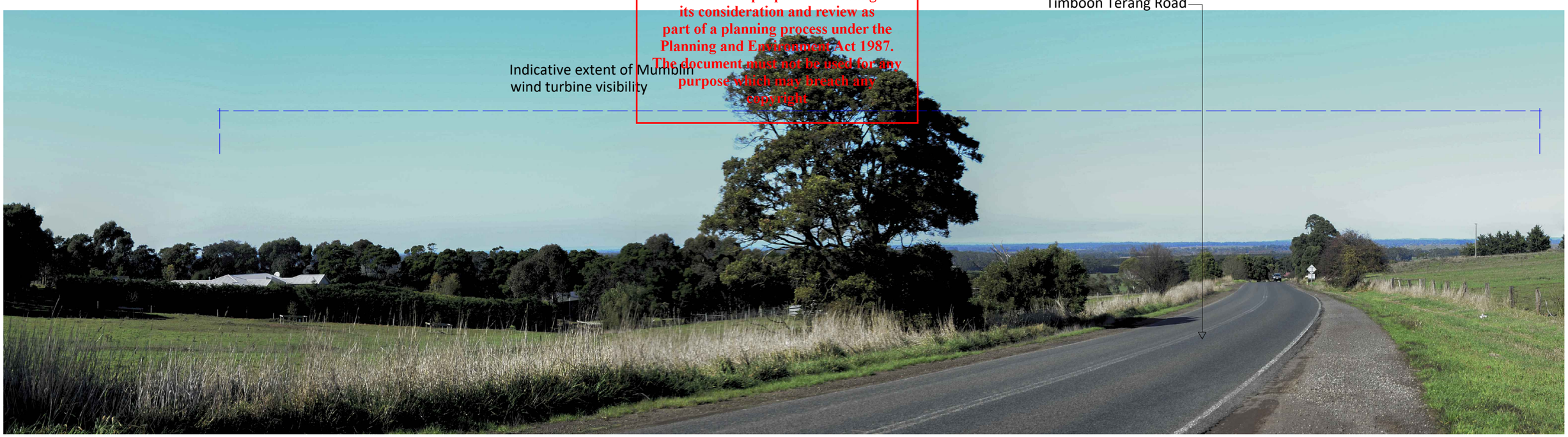
Panorama photo P11 - Existing view from Ellertons Road east to south east toward the project site. Approximate distance to closest wind turbine (T6) 1.4km

Panorama photo P12 - Existing view from Thorntons Road W east to south toward the project site. Approximate distance to closest wind turbine (T3) 2.4km

Extent of horizontal view in which wind turbines may be visible. Note: blue dashed line is not indicative of wind turbine height. Refer figures 23 to 30 for photomontage.

Figure 10
Panorama photos P11 and P12

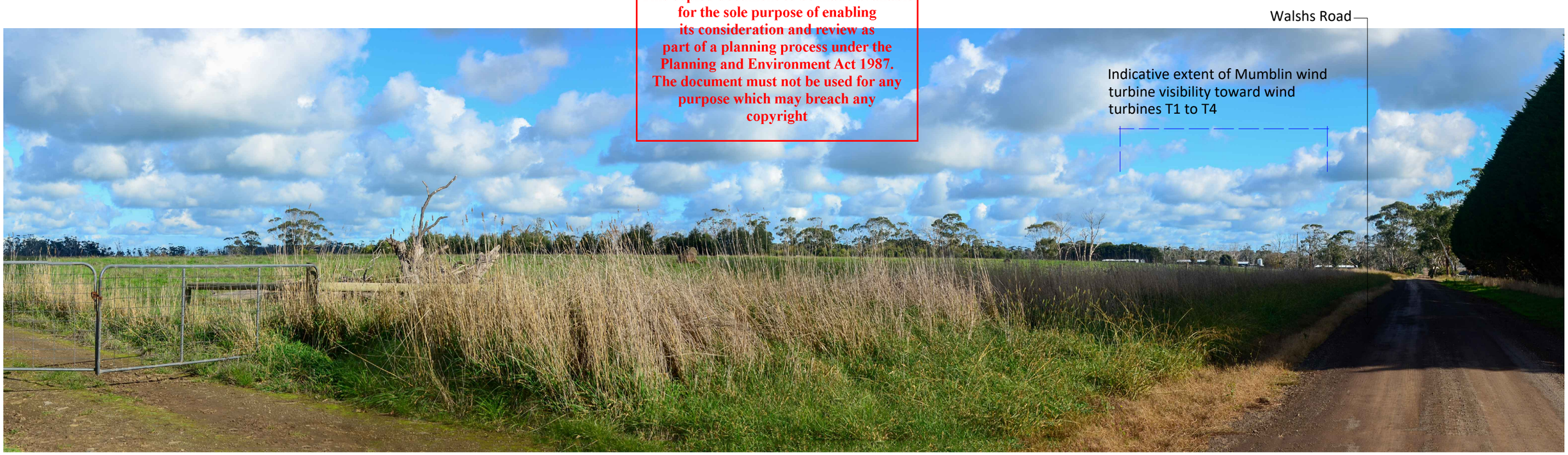
Panorama photo P13 - Existing view from the Old Timboon Terang Road east toward the project site. Approximate distance to closest wind turbine (T1) 2km



Panorama photo P14 - Existing view east to south from Timboon Terang Road toward the project site. Approximate distance to closest wind turbine (T1) 1.7km

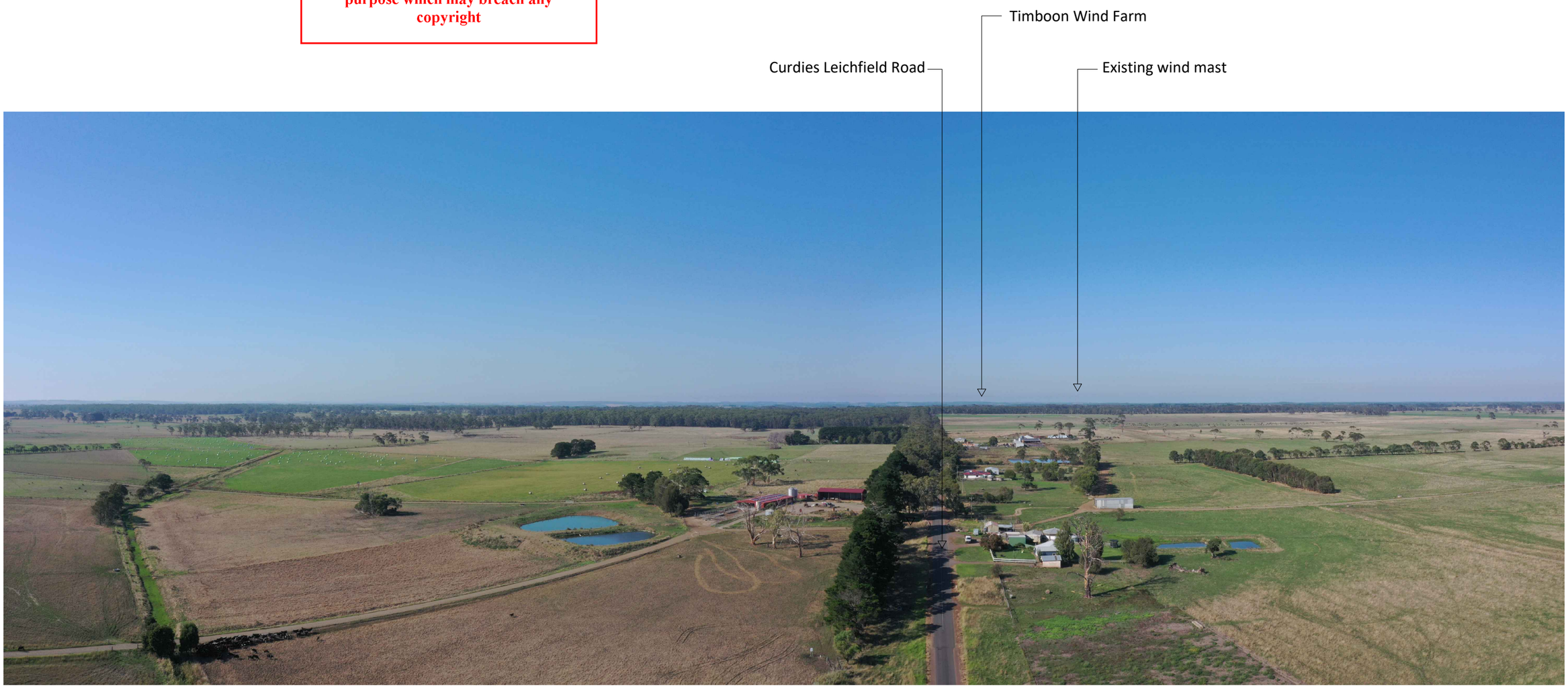
Figure 11
Panorama photos P13 and P14

Panorama photo P15 - Existing view from Gores Road east toward the project site. Approximate distance to closest wind turbine (T2) 1.9km



Panorama photo P16 - Existing view south to west from Walshs Road toward the project site. Approximate distance to closest wind turbine (T4) 3.1km

Figure 12
Panorama photos P15 and P16

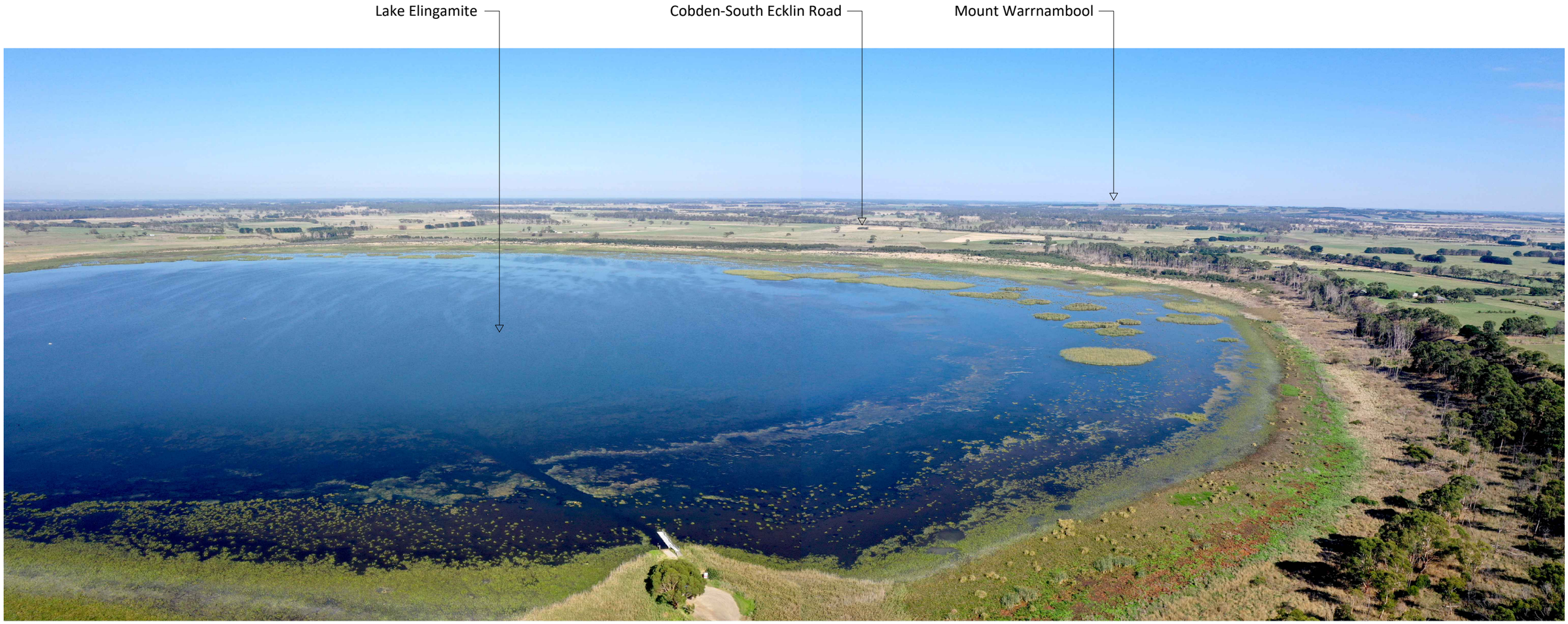


Aerial photo A1 - Existing view south above the Cobden South Ecklin and Curdies Leichfield Road intersection

Aerial photo A1 - Existing view south west to north west above the Cobden-South Ecklin and Curdies Leichfield Road intersection

Aerial photo A3 - Existing view north west to north east above the Cobden-South Ecklin and Curdies Leichfield Road intersection

Figure 15
Aerial photo A3



Aerial photo A4 - Existing view south to north west above Oates Road, Lake Elingamite.

Section 8. Landscape Character Assessment

8.1 Landscape Character Area

As part of the LVIA process it is important to understand the nature and sensitivity of different components of landscape character, and to identify them in a clear and consistent process. For this LVIA, landscape character is defined as '*the distinct and recognisable pattern of elements that occur consistently in a particular type of landscape*' (The Countryside Agency and Scottish Natural Heritage 2002). The pattern of elements includes characteristics such as landform, vegetation, land use and settlement.

For this LVIA, the landscape character surrounding the wind farm site has been determined as a singular landscape unit which generally occurs within the 5km viewshed of the proposed Mumblin Wind Farm site. The landscape unit represents an area that is relatively consistent and recognisable in terms of its key landscape elements and physical attributes, which include a relatively limited combination of topography/landform, vegetation/landcover, land use and built structures (including settlements and local road corridors). The predominant landscape unit within and surrounding the project site has been identified as generally level to gently sloping and modified agricultural land.

8.2 Landscape character assessment

An understanding of a particular landscape's key characteristics and principal visual features is important in defining a regional distinctiveness and sense of place and to determine its sensitivity to change. The criteria applied in the determination of landscape character assessment and the ability of a landscape to accommodate change are outlined in **Table 3**. These criteria are based on established industry good practice employed in the assessment of wind farm developments and have been adopted for numerous wind farm assessments across Australia. The criteria are broadly outlined in the National Wind Farm Development Guidelines (Draft v2.4), Section 6.1 Landscape Character Units, and covered in more detail within the Guidelines for Landscape and Visual Impact Assessment, Third Edition, Landscape Institute and Institute of Environmental Management & Assessment, 2013 – Chapter 5 Assessment of landscape effects.

Landscape sensitivity is a relative concept, and landscape values of the surrounding environment may be considered of a higher or lower sensitivity than other areas in the Victorian region.

Whilst landscape character assessment is largely based on a systematic description and analysis of landscape characteristics, this LVIA acknowledges that some individuals and other members of the local community may place higher values on the local landscape. These values may transcend preferences (likes and dislikes) and include personal, cultural as well as other parameters that may be explored in more depth through consultation with the local community.

Table 3 Criteria for the assessment of landscape character

Landscape Character Assessment Criteria

Characteristic	Aspects indicating lower sensitivity to the wind farm development	↔	Aspects indicating higher sensitivity to the wind farm development
Landform and scale: patterns, complexity and consistency	Large scale landform Simple Featureless Absence of strong topographical variety	↔	Small scale landform Distinctive and complex Human scale indicators Presence of strong topographical variety
Landcover: patterns, complexity and consistency	Simple Predictable Smooth, regular and uniform	↔	Complex Unpredictable Rugged and irregular
Settlement and human influence	Concentrated settlement pattern Presence of contemporary structures (e.g., utility, infrastructure or industrial elements)	↔	Dispersed settlement pattern Absence of modern development, presence of small scale, historic or vernacular settlement
Movement	Prominent movement, busy	↔	No evident movement, still
Rarity	Common or widely distributed example of landscape character area within a regional context	↔	Unique or limited example of landscape character area within a regional context
Intervisibility with adjacent landscapes	Limited views into or out of landscape Neighbouring landscapes of low sensitivity Weak connections, self-contained area and views Simple large-scale backdrops	↔	Prospects into and out from high ground or open landscape Neighbouring landscapes of high sensitivity Contributes to wider landscape Complex or distinctive backdrops

8.3 Landscape sensitivity

The scale of sensitivity for the landscape character area is described below and considered against each characteristic identified in **Table 4.**

The overall sensitivity for the landscape character area has been determined against the following ratings of Negligible through to High:

Negligible – where the characteristics of the landscape character area will not be impacted or visibly altered by the proposed Project.

Low – where the majority of the landscape character area characteristics are generally robust and will be less affected by the proposed Project. The degree to which the landscape may accommodate the Project will not significantly alter existing landscape character.

Medium – where distinguishable characteristics of the landscape character area may be altered by the proposed Project, although the landscape character area may have the capability to absorb some change. The degree to which the landscape character area may accommodate the proposed Project will potentially result in the introduction of prominent elements to the landscape character area, which may be accommodated to some degree.

High – where key characteristics of the landscape may be impacted by the Project and could result in major and visually dominant alterations to perceived characteristics of the landscape character area, which may not be fully mitigated by existing landscape elements or features. The degree to which the landscape may accommodate the proposed Project will result in a number of perceived uncharacteristic and significant changes.

Table 4 – Landscape character area

	Lower Sensitivity ↔ Higher Sensitivity				
	Low	**Low to Med**	**Medium**	**Med to High**	**High**
Landform and Scale				■	
	The landform across the site is visually level to gently sloping from around 131m AHD in the north portion of the wind farm site, dipping gently to around 121m AHD toward the Cobden-South Ecklin Road corridor, before rising gently to around 125m AHD in the southern portion of the site adjoining the Cobden Warrnambool Road corridor. Beyond the site landforms include a variety of features from low undulating rises and maars such as Lake Elingamite, Cobrico Swamp to the east and northeast of the site, and Lake Mumblin to the west of the wind farm site. Visually prominent landform features are located at distance from the wind farm site, including Mount Noorat around 16km to the north, and Mount Warrnambool around 20km to the west of the site. Landform to the southeast of the site falls away gently before descending over steeper slopes to the Curdies River Corridor. The overall landscape scale is moderate to small with an absence of any strong				

Table 4 – Landscape character area

	Lower Sensitivity		↔		Higher Sensitivity
	Low	Low to Med	Medium	Med to High	High
	topographical variety; however, the predominant dairy farming associated with this landscape creates some distinctiveness with associated human scale indicators.				
Landcover		■			
	Landcover is both simple and predictable across the site and surrounding landscape areas. European settlement established an agricultural presence and defines much of the contemporary dairy farming, arable and general livestock areas across the project site and beyond. Cropping and pastoral fields create a regular and uniform appearance throughout the seasonal and repetitive operations associated with agricultural production. View lines across the wind farm site are disrupted from many locations by wind break planting, isolated/scattered trees and small discrete areas of woodland.				
Settlement and human influence			■		
	Settlement is generally dispersed throughout the surrounding landscape and consists largely of farmsteads and individual dwellings. There are limited examples of small scale, historic or vernacular structures within the landscape. The project site is directly north of the Cobden Warrnambool Road and west of the Camperdown-Timboon Rail Trail.				
Movement			■		
	Movement around the project site is generally restricted to vehicular movements, including cars and trucks travelling along the Cobden Warrnambool Road, the Timboon Terang Road and the Cobden Terang Road. and other local roads. A small number of local roads extend through or adjacent to the project site including the Cobden South Ecklin Road and Curdies Leichfield Road. Occasional agricultural vehicles are seen within fields, with movement and activity increasing during seasonal agricultural activities.				
Rarity				■	
	The wind farm site and adjoining landscapes are a relatively common rural landscape type within the Corangamite Shire and surrounding regional context which extends across the southwestern plains district. This LVIA has recognised the presence of volcanic structures (rises and maars) within the viewshed and				

Table 4 – Landscape character area

	Lower Sensitivity		↔		Higher Sensitivity
	Low	**Low to Med**	**Medium**	**Med to High**	**High**
	surrounding landscape which are considered examples of landscape characteristics of importance in a regional context.				
Intervisibility			■		
	The wind farm site offers no elevated viewpoints and does not accommodate far distant and regional scale outlooks, where views from flat to very gently inclined areas are screened by trees and windbreaks within or adjoining the site. Whilst the wind turbines would be visible from some distant elevated landscape features, the distance between the wind turbines and elevated receptor locations would tend to render the wind turbines as generally indistinct features which would occupy a relatively small portion of the overall available view.				
Overall Sensitivity Rating	In consideration of the existing landscape characteristics, the landscape within and surrounding the project site is determined to have a moderate sensitivity to the Project. Distinguishable characteristics of the landscape character area may be altered by the proposed project, although the landscape character area may have the capability to absorb some change. The degree to which the landscape character area may accommodate the proposed project would potentially result in the introduction of prominent elements to the landscape character area but may be accommodated to some degree.				

Section 9. Zone of Theoretical Visibility

9.1 Zone of Theoretical Visibility (ZTV)

ZTV diagrams are used to identify theoretical areas of the landscape from which wind turbines, or portions of turbines, may be visible from areas within and surrounding the Project site. They are useful for providing an overview as to the extent to which the Project wind turbines may be visible from surrounding areas.

9.2 ZTV Methodology

The ZTV methodology is a purely geometric assessment where the visibility of the wind turbines is determined from carrying out calculations based on a digital terrain model of the Project site and the surrounding terrain.

Calculations have been made to determine the visibility of the wind turbines from blade tips (essentially a view toward any part of the wind turbine rotor, including views toward the tips).

The ZTV assessment methodology is considered to be very conservative as:

- the screening effects of any structures and vegetation (including extensive areas of trees within surrounding plantations and National Parks) above ground level are not considered in any way. Therefore, the Project may not be visible at many locations indicated on the ZTV diagrams due to the local presence of trees, buildings or other screening materials.
- additionally, the number of turbines visible from any location is also influenced by prevailing weather conditions. Inclement or cloudy weather would tend to mask the visibility of the wind turbines.

Accordingly, while a ZTV diagram is a useful visualisation tool, it is very conservative in nature and the level of visibility as illustrated in the ZTV diagram is unlikely to occur from all view locations within the viewshed.

A diagram illustrating the tip of blade is illustrated in **Figure 15** and the ZTV diagram is shown in **Figure 16.**

The tip of blade ZTV illustrates the extent of similar areas of potential visibility and highlight the extent and influence of landform surrounding the Project site; however, the ZTV do not illustrate the influence and significant degree of screening provided by tree cover within the pine plantations and National Parks beyond the project site. Whilst the pine plantations provide screening from some proximate view locations this LVIA notes that coupe plantation harvesting may remove trees providing screening to some built elements within the Project.

9.3 Visibility

The level of wind turbine visibility of the Project would result from several factors including, but not limited to:

- distance between view location and wind turbine
- directional movement (travelling toward or away from wind turbines)
- relative position and backdrops and
- climatic and atmospheric conditions

9.4 Distance

With an increase in distance the proportion of a person's horizontal and vertical view cone occupied by a visible turbine structure, or group of turbine structures, would decline. **Figure 17** illustrates the effect increasing view distance on the scale and visibility of wind turbines.

As the view distance increases so do the atmospheric effects resulting from dust particles and moisture in the atmosphere, which makes the turbines appear to be grey thus potentially reducing the contrast between the wind turbines and the background against which they are viewed.

Figure 18 has been prepared to illustrate the influence of distance on the perceived height of wind turbines. A single frame photo of the Murra Warra wind turbines, at a 211m tip height, was taken adjacent to the constructed wind farm. The distance between Murra Warra wind turbines and the photo location are noted on the figure and demonstrates the overall reduction in perceived height as view distance increases.

9.5 Movement

The visibility of the wind turbines would vary between the categories of static and dynamic view locations. In the case of static views, the relationship between a wind turbine and the landscape would not tend to vary greatly. The extent of vision may be relatively wide as a person would tend to scan back and forth across the landscape where panoramic views are available.

In contrast, views from a moving vehicle are dynamic as the visual relationship between wind turbines is constantly changing as well as the visual relationship between the wind turbines and the landscape in which they are seen. The extent of vision available from a vehicle can be partially constrained by the vehicle interior at proximate distances.

9.6 Relative position

In situations where the view location is at a lower elevation than the wind turbine structure most of it would be viewed against the sky. The degree of visual contrast between a white coloured turbine and the sky would depend on the presence of background clouds and their colour. Dark grey clouds would contrast more strongly with white turbines than a background of white clouds.

The level of contrast is also influenced by the position of the sun relative to the individual wind turbines and the view location. Where the sun is in front of the viewer, the visible portion of the wind turbine would be seen in shadow. Where the background to the wind turbine is dark toned the visual contrast would be reduced.

Where the sun is located behind the view location then the visible portion of the wind turbine would be in full sun. If the background is also light toned, such as white clouds, then the contrast is less when compared to a dark background.

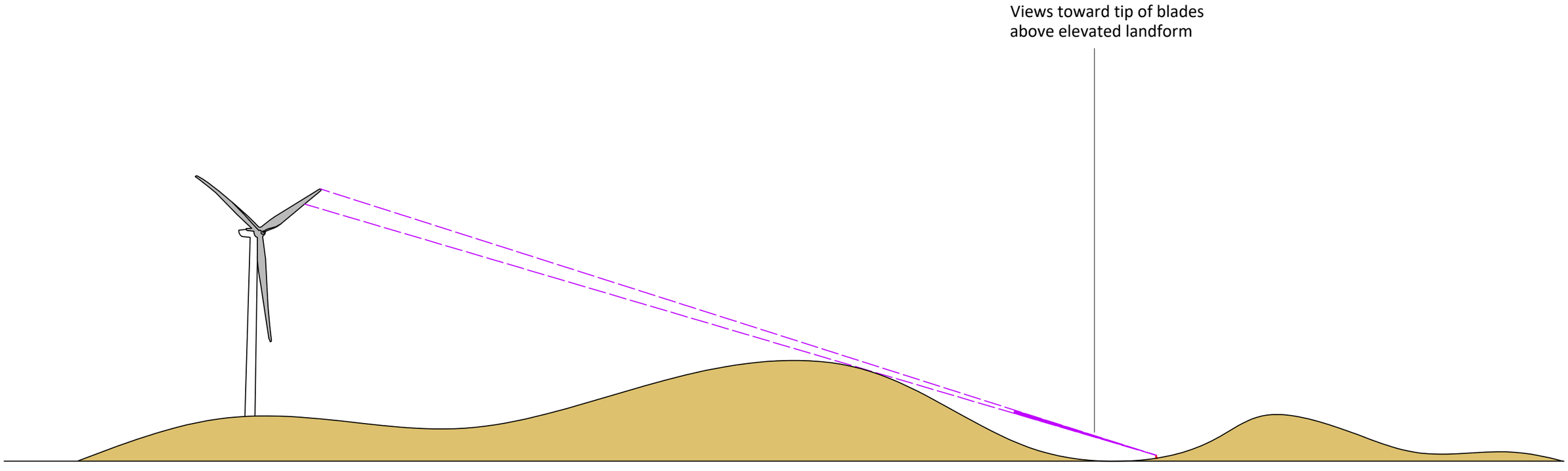
9.7 Climatic and Atmospheric Conditions

Local climatic and atmospheric conditions have the potential to influence the visibility of the Project from surrounding view locations, and more significantly, from middle ground and distant view locations.

Rainfall would tend to reduce the level of visibility toward the Project from several surrounding view locations, with the degree of visibility tending to decrease over distance. Rain periods may also reduce the number of visitors travelling through the areas from which the Project may be visible, and potentially decrease the duration of time spent at a particular public view location with a view toward the Project.

Cloud cover would also tend to reduce the level of visibility of the Project and lessen the degree of contrast between the wind turbine structures and the background against which the wind turbines may be visible.

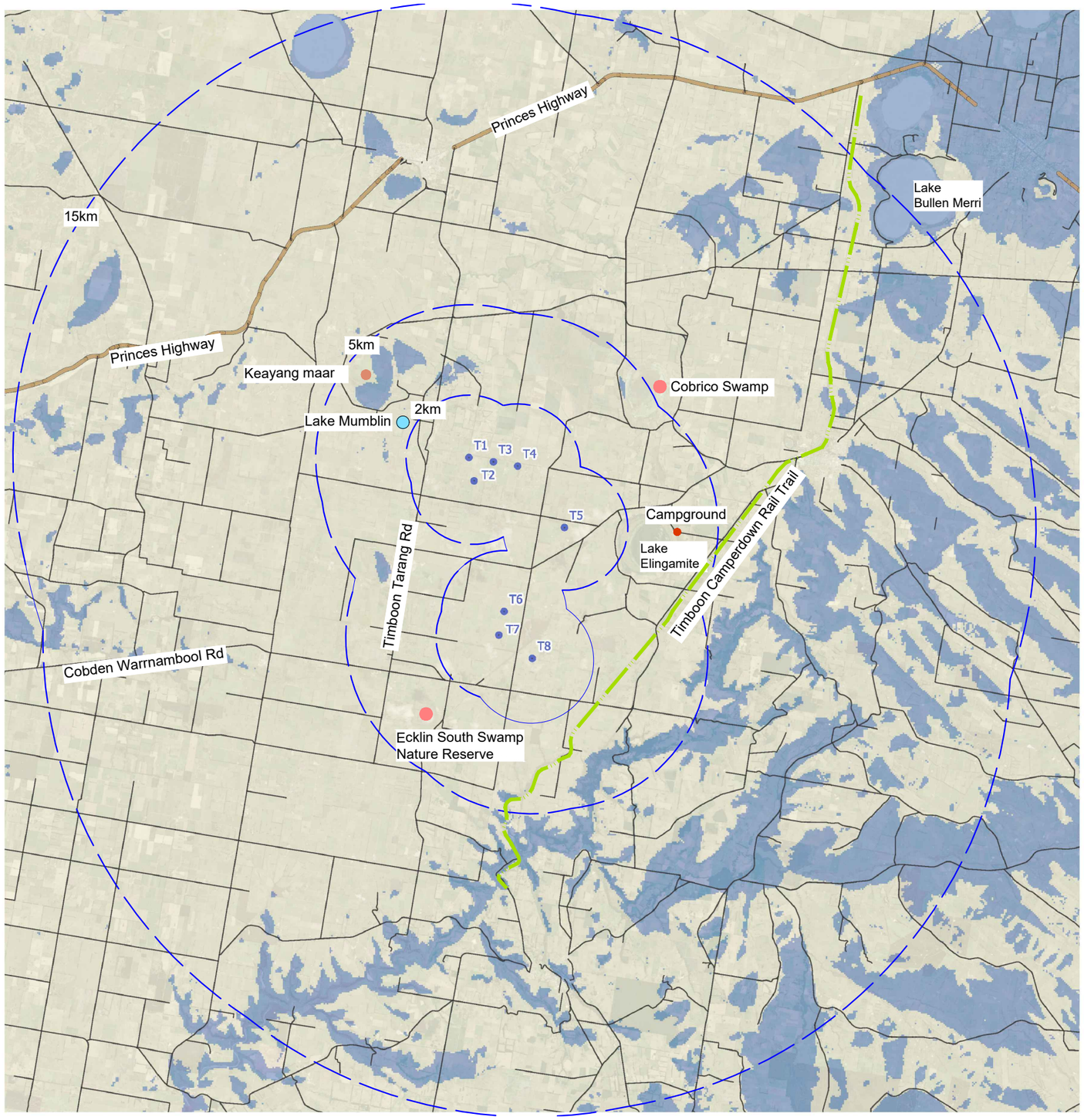
On clear or partly cloudy days, the position of the sun would also influence the degree of visibility of the Project. The degree of effect would be largely dependent on the relationship between the position and angle of the sun relative to the view location. Late afternoon and early evening views toward the west would result in the wind turbines silhouetted above the horizon line, and with increasing distance would tend to reduce the contrast between the wind turbine structures and the surrounding landform.



'Tip of blade'

View toward 'tip of blade' - where views extend toward any part of the turbine including views toward the tip of blades above elevated landform and ridgelines.

Figure 17
ZTV wind turbine visibility



Source: RE Future Pty Ltd, 2022

Legend

- Wind turbine
- Viewshed distance
- Townships

Wind turbine tips

- Not visible
- Visible

- Highway
- Road

Zone of Theoretical Visibility - tip of blade

0m 4km

Figure 18
Zone of Theoretical Visibility - tip of blade

GBD
Landscape architecture

Image 1 Modelled wind turbine 240 metre tip height - view distance 2 km

Image 2 Modelled wind turbine 240 metre tip height - view distance 3 km

Image 3 Modelled wind turbine 240 metre tip height- view distance 4 km

Image 4 Modelled wind turbine 240 metre tip height - view distance 5 km

Modelled wind turbine 240 metre tip height
Photographs: Nikon D700, 50mm prime lens - single frame photo

(All images GBD Pty Ltd 2023)

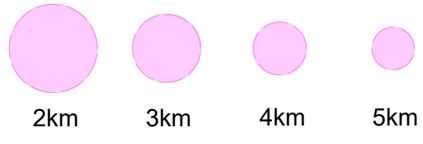


Figure 19
Wind turbine visual magnitude

Section 10. Key views and visual effects

10.1 Introduction

The overall determination of visual effects resulting from the construction and operation of the wind turbines would result primarily from a combination of receptor sensitivity and the magnitude of visual effects.

A determination of visual effects from the combination of receptor sensitivity and the magnitude of visual effect is a well-established methodology and has been applied extensively on wind farm LVIA in Victoria and across Australia. The standard methodology is set out in industry and best practice guidelines including the Guidelines for Landscape and Visual Impact Assessment, Third Edition, Landscape Institute, and Institute of Environmental Management & Assessment, 2013 – Chapter 6 Assessment of visual effects.

10.2 Sensitivity of visual receivers

Judging the sensitivity of visual receivers needs to consider the occupation or activity of people experiencing the view at particular locations and the extent to which their attention or interest is focussed on views toward the wind turbines or electrical infrastructure within and surrounding the Project site.

10.3 Magnitude of visual effects

Judging the magnitude of visual effects has considered the:

- Distance and resultant scale of the change in the view with respect to the loss or addition of features in the view
- Changes in landscape composition, including the proportion of the view occupied by the Project
- Degree of contrast or integration of any new features or changes in the landscape with the existing or remaining landscape elements and characteristics in terms of form, scale and mass, line height, colour, and texture
- Nature of the view of the proposed development, in terms of the relative amount of time over which it would be experienced and
- Whether views from receiver locations would be screened to any degree by existing vegetation or other above ground structures.

View distance and the resultant change in wind turbine scale are illustrated in **Figures 17** and **18.** Wind turbines at around 4km view distance are clearly visible; however, the overall wind turbine scale presents a less dominant visual element within the available field of view. As the overall scale of wind turbine structures dimmish with distance the greater the potential for screening where trees are located between the receiver and the wind turbine. The overall height of planting required to screen wind turbines decreases as it moves nearer to the receiver.

Tables 5 and **6** set out definitions and criteria for sensitivity and magnitude.

The combination of sensitivity and magnitude would provide the rating of visual effect for viewpoints. **Table 17** sets out the relative visual impact grading values which combines issues of sensitivity and magnitude for the project.

Table 5 – Receiver location sensitivity

View Category	Sensitivity
Dwellings	***Highest Sensitivity***
Areas of high scenic value (National Parks or designated landscapes)	
Public recreational areas/lookouts	
Rural employment/farming	
Motorists	
Business (commercial)	
Industrial areas	*Lower Sensitivity*

Table 6 – Magnitude assessment criteria

Criteria	Definition
Distance	
Very short	<1.5 km
Short	1.5 km – 3 km
Moderate	3 km – 5 km
Long	5 km+
Duration of effect	
High	> 2 hours
Moderate	30 – 120 minutes
Low	10 – 30 minutes
Very low	< 10 minutes
Degree of screening	
High	Screening effectively blocks views toward wind turbines
Moderate	Screening partially screens views toward wind turbines
Low	Screening filters some views toward wind turbines
Very low	Limited or no screening toward wind turbines

An overall determination of visual effect at each receiver location has also been assessed and determined against the visual impact grading matrix in **Table 7** below. The levels of sensitivity and magnitude of visual effects outlined in **Table 7** are **used as a guide** to determine levels of visual effect and are not absolute.

Whilst a receiver location may have both a high sensitivity and high magnitude, which result in a high visual effect; the visual effect may be offset and mitigated by screening, through tree cover or intervening landform surrounding or beyond the receiver location.

Dwelling locations are illustrated in **Figure 19** and **Figure 20**. Non-dwelling structures, such as agricultural sheds, within 5km of the proposed wind turbines have not been assessed.

Table 7 Visual effect grading matrix

			Scale or magnitude of visual effects			
			High	Moderate	Low	Negligible
			Very short distance view over a long duration of time. A high extent of wind turbine visibility would tend to dominate the available skyline view and significantly disrupt existing views or vistas. Total loss or major change to pre-development view or introduction of elements which are uncharacteristic to the existing landscape features.	Short to medium distance views over a medium duration of time. A moderate extent of wind turbine visibility would have the potential to dominate available views with visibility recessing over increasing distance. Partial alteration to pre-development view or introduction of elements that may be prominent but not uncharacteristic with the existing landscape.	Medium to long distance views over a low to medium duration of time. Wind turbines in views, at long distances or visible for a short duration not expected to be significantly distinct in the existing view. Minor alteration to pre-development view or introduction of elements that may not be uncharacteristic with the existing landscape.	Visible change perceptible at a very long distance, or visible for a very short duration, and/or is expected to be less distinct within the existing view. Very minor loss or alteration to pre-development view or introduction of elements which are not uncharacteristic with the existing landscape features.
Sensitivity of visual receptor		**Indicator**				
	High	People with a proprietary interest and prolonged viewing opportunities such as those in dwellings or visitors to attractive and/or well-used recreational facilities. Views from a regionally important location whose interest is specifically focussed on the landscape e.g., from lookouts or areas within National Parks.	High	High-moderate	Moderate	Negligible
	Moderate	People with an interest in their environment e.g., visitors to environmental areas, bush walkers, and horse riders etc…those travelling with an interest in their surroundings	High-moderate	Moderate	Moderate-low	Negligible
	Low	People with a passing interest in their surroundings e.g., those travelling along local roads between townships, or people whose interest is not specifically focussed on the wider landscape e.g., service providers or commuters.	Moderate	Moderate-low	Low	Negligible
	Negligible	People with no specific interest in their surroundings or those with occasional and transient views travelling at speed along highways or from a place of work where attention may not be focussed on surrounding views.	Negligible	Negligible	Negligible	Negligible

10.4 Views from townships and localities

Townships and localities beyond the Mumblin Wind Farm include:

- Cobden (around 8km northeast of the proposed wind turbine locations)
- Terang (around 9km northwest of the proposed wind turbine locations)
- Timboon (around 10km south of the proposed wind turbine locations)

Whilst wind turbines are theoretically visible over the distances to populated urban areas, views toward the wind turbines within the project site would be partially restricted by development and built structures within urban areas. Potential views toward the wind turbines would also tend to be disrupted by discrete areas of vegetation both within and beyond urban and peri-urban areas.

The Corangamite Planning Scheme notes that *'Cobden is located on a landing above the rural hinterland providing spectacular views into the valleys skirting the town from the east to the south-west'*. The proposed wind turbines would be located west to southwest of Cobden and would not occur within the general field of view toward valleys beyond the town.

It is unlikely that the proposed wind turbines would have a significant visual impact on people within surrounding townships and localities surrounding the proposed wind turbines.

Table 8 Visual effect grading – Townships

Sensitivity of visual receiver	High
Magnitude of visual effects	Low-Moderate
Visual Effect	Moderate

10.5 Views from the Camperdown–Timboon Rail Trail and Lake Elingamite

The Camperdown-Timboon Rail Trail extends for around 40km between Camperdown, Cobden, and Timboon. Departing Cobden, the trail extends in an approximate northeast to southwest alignment to the east of the Cobden-Warrnambool Road corridor. Passing Lake Elingamite around 1km to the east, the trail departs from the Cobden-Warrnambool Road corridor continuing southwest to the Glenfyne Hall before dropping into valleys and undulating landforms toward the Curdies River and Timboon. The closest wind turbine (T9) to the trail would be approximately 2km northwest as the trail crosses the Cobden-Warrnambool Road to the east of Glenfyne Hall. Views toward the project site from the trail would be subject to a significant amount of screening through tree cover extending along the trail and adjoining the Cobden-Warrnambool Road corridor. Where opportunities exist for views to extend toward wind turbines from the trail, the significance of visual effect is likely to be mitigated by distance and the relatively small number of turbines within the project.

Lake Elingamite is a circular maar around 2km in diameter and located around 1.8km to the east of the closest wind turbine (T5). The maar is accessible to the public and includes a short stay campground on the northeast side of the maar. Views from the rim above the campground extend to long distances above and across the project site. Descending

to the campground, scattered tree cover filters views toward wind turbines from the camp sites with direct views toward wind turbines opening across the water body from the jetty and ramp.

Table 9 Visual effect grading – Timboon Rail Trail

Sensitivity of visual receiver	High
Magnitude of visual effects	Low Moderate
Visual Effect	Moderate

Table 10 Visual effect grading – Lake Elingamite

Sensitivity of visual receiver	High
Magnitude of visual effects	Low Moderate
Visual Effect	Moderate

10.6 Views from local roads

Several roads surround and extend through the project site. Largely orientated in an approximate north to south and east to west alignment, the main roads include the Cobden-Warrnambool Road, Timboon-Terang Road and Cobden-South Ecklin Road. There are several local access roads extending through the project site including Walshs Road and the Curdies-Leichfield Road.

The wind turbines would only be partially visible from some sections of main roads, including the Cobden-Warrnambool Road, where views would be influenced by vegetation and tree planting alongside road corridors. The dynamic and constantly changing nature of views from vehicles travelling along roads would also tend to be transitory in nature and generally short term; however, views from local roads are likely to offer proximate and direct views toward wind turbines. As the sensitivity of people travelling along main roads and local roads tends to be low, in combination with the generally short duration of views, the overall visual impact from roads is likely to be moderate for proximate views.

Table 11 Visual effect grading – local roads

Sensitivity of visual receiver	Low
Magnitude of visual effects	Moderate
Visual Effect	Low Moderate

10.7 Views from agricultural land

The proposed Mumblin Wind Farm may have the potential to impact people engaged in predominantly farming activities, where views toward wind turbines occur from surrounding and non-associated agricultural areas. Ultimately the level of impact would depend on the type of activities engaged in as well as the location of the activities together with the degree of screening provided by local vegetation within individual properties.

Whilst views toward the turbines would occur from a wide area of surrounding rural agricultural land, this LVIA has determined that the sensitivity of visual impacts is less for those employed or carrying out work in rural areas compared to potential views from dwellings; however, the sensitivity of individual view locations would also depend on the perception of the viewer.

Table 12 Visual effect grading – agricultural land

Sensitivity of visual receiver	Low
Magnitude of visual effects	Moderate
Visual Effect	Low Moderate

10.8 Views from publicly accessible locations

Publicly accessible locations, other than road corridors, include various public open spaces, recreational areas, reserves or public meeting places. Most public open spaces and recreational areas are those associated and located within surrounding urban localities, where the influence of both distance and existing vegetative cover is likely to screen any potential views toward the Mumblin Wind Farm site.

Table 13 Visual effect grading – publicly accessible locations

Sensitivity of visual receiver	High
Magnitude of visual effects	Low
Visual Effect	Low to Moderate

10.9 Views from dwellings within a 5km viewshed

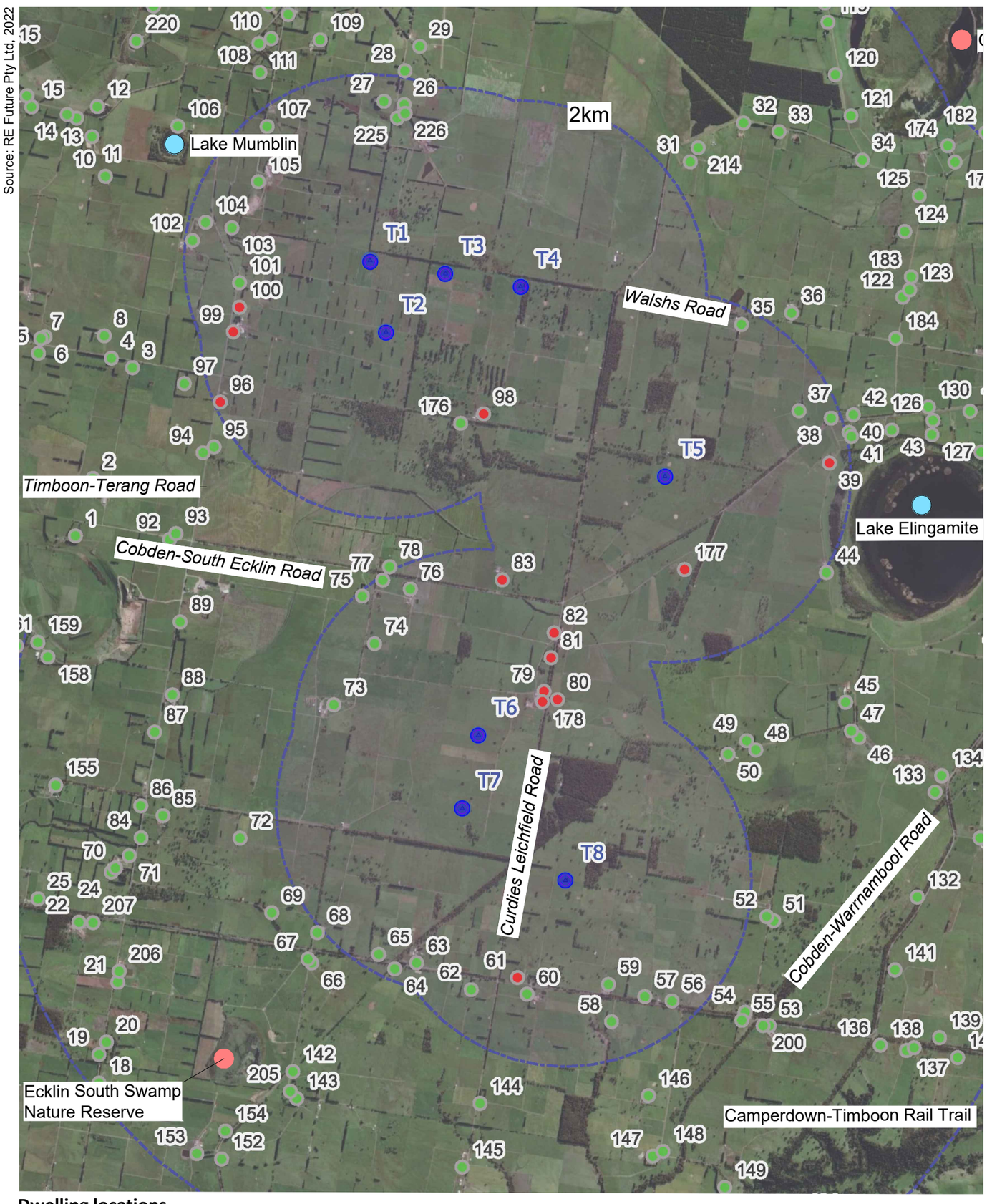
Existing dwellings are illustrated in **Figures 20** and **20a** and include dwellings on properties that are not associated with the proposed project. Non-associated dwellings within the 2km viewshed have been assessed individually as detailed in **Table 14.**

Non-associated dwellings between the 2km and 5km viewsheds have been assessed using dwelling assessment areas which represent views from multiple dwellings where the dwellings are considered to have similar visual outcomes in

relation to distance, field of view and potential for screening. Dwelling assessment areas (DAA) are illustrated in **Figure 20a** and detailed in **Table 14.**

The site inspection noted that several dwellings within the landscape surrounding the wind turbines are screened by tree and/or windbreak shelter planting. It is possible that not all dwellings would have direct or significant views toward the proposed Mumblin wind turbines.

Source: RE Future Pty Ltd, 2022



Legend

- T1 — Proposed wind turbine
- Distance from wind turbine
- 2km viewshed
- Associated dwelling
- Non associated dwelling

0m 1km

Dwelling locations

Figure 20
Dwelling locations within 2km

ADVERTISED PLAN

GBD
Landscape architecture

Table 14 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	**MAGNITUDE**					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
Dwellings within 2km of a wind turbine							
R26	Non-associated landowner Sensitivity: High	1704	High	High	High	The dwelling is located at the southern end of Thorntons Road west with wind turbines within a short distance south to southeast from the dwelling. Views toward wind turbines are likely to be partially filtered by existing vegetation beyond the dwelling. Degree of screening at dwelling: Moderate	Low to Moderate
R27	Non-associated landowner Sensitivity: High	1706	High	High	High	The dwelling is accessed from the southern end of Thorntons Road West with wind turbines within a short distance south to southeast of the dwelling. Located on a rising	Moderate to High

Table 14 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						landform at around 179m AHD, views toward wind turbines are likely to be open and direct with little existing vegetation beyond the dwelling. Degree of screening at dwelling: Low	
R35	Non-associated landowner Sensitivity: High	1632	High	High	High	The dwelling is accessed from Walshs Road with wind turbines within a short distance south to west of the dwelling. Views from the dwelling are partially filtered by tree cover around and beyond the dwelling, farm buildings and sheds to the west of the dwelling. Wind turbines would likely be visible from beyond the immediate dwelling curtilage.	Low to Moderate

Table 14 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						Degree of screening at dwelling: Moderate	
R37	Non-associated landowner Sensitivity: High	1159	High	High	High	The dwelling, accessed from the Cobden-South Ecklin Road, has wind turbines within a short distance southwest to northwest of the dwelling. Views from the dwelling are partially screened and filtered by tree planting to the west of the dwelling and associated sheds. Views toward wind turbines would extend west to northwest from the dwelling driveway extending north around 280m from the Cobden-South Ecklin Road. Degree of screening at dwelling: Moderate	Moderate

Table 14 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
R38	Non-associated landowner Sensitivity: High	1928	High	High	High	The dwelling is accessed from the Cobden-South Ecklin Road with wind turbines within a short distance southwest to northwest of the dwelling. Views from the dwelling are generally open with little tree cover around the dwelling. Views toward wind turbines would extend west to northwest from the dwelling. Degree of screening at dwelling: Low	Moderate
R54	Non-associated landowner Sensitivity: High	1966	High	High	High	The dwelling is located adjacent to the Cobden-Warrnambool Road and opposite the Glenfyne Hall. Wind turbines are located within a short distance northwest of the dwelling. Scattered tree planting beyond the dwelling may offer	Moderate

Table 14 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						some partial filtering of views; however, wind turbines within the southern portion of the project site would be visible from areas within the dwelling curtilage. Degree of screening at dwelling: Low-Moderate.	
R56	Non-associated landowner Sensitivity: High	1496	High	High	High	The dwelling is located adjacent to the Cobden-Warrnambool Road. Wind turbines are located within a short distance north to northwest of the dwelling. Scattered tree planting beyond the dwelling may offer some partial filtering of views; however, wind turbines within the southern portion of the project site would be visible from areas within the dwelling curtilage.	Moderate

Table 14 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						Degree of screening at dwelling: Low-Moderate.	
R57	Non-associated landowner Sensitivity: High	1395	High	High	High	The dwelling is located adjacent to the Cobden-Warrnambool Road. Wind turbines are located within a short distance north to northwest of the dwelling. Views from the dwelling are largely open with no significant screening surrounding the dwelling curtilage. Degree of screening at dwelling: Low	Moderate to High
R58	Non-associated landowner Sensitivity: High	1607	High	High	High	The dwelling is located south of the Cobden-Warrnambool Road. Wind turbines are located within a short distance north to northwest of the dwelling. Views from the dwelling are partly elevated and	Moderate

Table 14 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						open with no significant screening to the north of the dwelling curtilage. Degree of screening at dwelling: Low	
R59	Non-associated landowner Sensitivity: High	1223	High	High	High	The dwelling is located adjacent to the Cobden-Warrnambool Road. Wind turbines are located within a short distance north to northwest of the dwelling. Views from the dwelling are largely open with no significant screening surrounding the dwelling or curtilage. Degree of screening at dwelling: Low	Moderate to High
R60	Non-associated landowner	1270	High	High	High	The dwelling is located to the south of Cobden-Warrnambool Road. Wind turbines are located	Moderate

Table 14 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
	Sensitivity: High					within a short distance northeast to northwest of the dwelling. Scattered tree planting beyond the dwelling may offer some partial filtering of views; however, wind turbines within the southern portion of the project site would be visible from areas within the dwelling curtilage. Degree of screening at dwelling: Low-Moderate.	
R62	Non-associated landowner Sensitivity: High	1516	High	High	High	The dwelling is located to the south of Cobden-Warrnambool Road. Wind turbines are located within a short distance northeast to northwest of the dwelling. Scattered tree planting beyond the dwelling may offer some partial filtering of views; however, wind turbines within the southern	Low to Moderate

Table 14 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						portion of the project site would be visible from areas within the dwelling curtilage. Degree of screening at dwelling: Low-Moderate.	
R63	Non-associated landowner Sensitivity: High	1731	High	High	High	The dwelling is located adjacent to the Cobden-Warrnambool Road. Wind turbines are located within a short distance north to northeast of the dwelling. Scattered tree planting within and beyond the dwelling curtilage may offer some partial filtering of views; however, wind turbines within the southern portion of the project site may be visible from areas within the dwelling curtilage. Degree of screening at dwelling: Moderate.	Moderate

Table 14 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
R64	Non-associated landowner Sensitivity: High	1869	High	High	High	The dwelling is located to the south of Cobden-Warrnambool Road. Wind turbines are located within a short distance northeast of the dwelling. Tree planting beyond the dwelling, including trees along the Cobden-Warrnambool Road corridor, may offer some partial filtering of views; however, wind turbines within the southern portion of the project site would be visible from areas within the dwelling curtilage. Degree of screening at dwelling: Low-Moderate.	Low
R65	Non-associated landowner Sensitivity: High	1807	High	High	High	The dwelling is located adjacent to the Cobden-Warrnambool Road. Wind turbines are located within a short distance northeast of the	Low to Moderate

Table 14 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						dwelling. Agricultural buildings/sheds beyond the dwelling curtilage may offer some partial screening of views; however, wind turbines within the southern portion of the project site may be visible from areas within the dwelling curtilage. Degree of screening at dwelling: Low-Moderate.	
R73	Non-associated landowner Sensitivity: High	1588	High	High	High	The dwelling is located off Daleys Road around 1.5km south of the Cobden-South Ecklin Road. Wind turbines T6 to T9 are located within a short distance view east to southeast of the dwelling with wind turbines T10 and T11 at a moderate view distance beyond and above dense tree cover to the east of the Curdies Leichfield Road	Moderate to High

Table 14 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						corridor. Views from the dwelling are largely open with no substantial screening within or beyond the dwelling curtilage. Wind turbines within the north portion of the project site would also be visible at moderate distance views generally in excess of 4km. Degree of screening at dwelling: Low	
R74	Non-associated landowner Sensitivity: High	1487	High	High	High	The dwelling is located off Ellertons Road around 765m south of the Cobden-South Ecklin Road. Wind turbines T6 to T9 are located within a short distance view east to southeast of the dwelling with wind turbines T10 and T11 at a moderate view distance beyond and above dense tree cover to the	Moderate to High

Table 14 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						east of the Curdies Leichfield Road corridor. Views from the dwelling toward wind turbines within the north portion of the project site would be partially screened by tree cover within and beyond the dwelling curtilage. Degree of screening at dwelling: Low to Moderate	
R75	Non-associated landowner Sensitivity: High	1945	High	High	High	The dwelling is located off Ellertons Road around 270m south of the Cobden-South Ecklin Road. Wind turbines T6 to T9 are located within a short distance view southeast of the dwelling with wind turbines T10 and T11 at a moderate view distance beyond and above dense tree cover to the east of the Curdies Leichfield Road corridor. Views from the dwelling	Moderate

Table 14 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						toward wind turbines within the north portion of the project site are likely to extend above tree cover alongside the Cobden-South Ecklin Road corridor. Degree of screening at dwelling: Low to Moderate	
R76	Non-associated landowner Sensitivity: High	1733	High	High	High	The dwelling is located off Ellertons Road around 110m south of the Cobden-South Ecklin Road. Wind turbines T6 to T9 are located within a short distance view southeast of the dwelling with wind turbines T10 and T11 at a moderate view distance beyond and above dense tree cover to the east of the Curdies Leichfield Road corridor. Views from the dwelling toward wind turbines within the north portion of the project site are	Moderate

Table 14 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						likely to be partially screened by tree cover within the dwelling curtilage and alongside the Cobden-South Ecklin Road corridor. Degree of screening at dwelling: Low to Moderate	
R77	Non-associated landowner Sensitivity: High	1957	High	High	High	The dwelling is adjacent to Ellertons Road and south of the Cobden-South Ecklin Road. Wind turbines T6 to T8 are located within a short distance view southeast of the dwelling with wind turbines T10 and T11 at a moderate view distance beyond and above dense tree cover to the east of the Curdies Leichfield Road corridor. Views from the dwelling toward wind turbines within the north portion of the project site are	Moderate

Table 14 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						likely to be screened by tree cover within the dwelling curtilage and alongside the Cobden-South Ecklin Road corridor. Degree of screening at dwelling: Low	
R101	Non-associated landowner Sensitivity: High	1424	High	High	High	The dwelling is adjacent to Timboon-Terang Road. Wind turbines T1 to T4 are located within a short distance view east of the dwelling with wind turbine T5 at a long view distance beyond and above tree cover and windbreak planting to the west of the Curdies Leichfield Road corridor. Views from the dwelling toward wind turbines within the south portion of the project site are likely to be	High

Table 14 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						screened by tree cover adjoining and beyond the dwelling curtilage. Degree of screening at dwelling: Low	
R102	Non-associated landowner Sensitivity: High	1919	High	High	High	The dwelling is around 285m west of the Timboon-Terang Road. Wind turbines T1 to T3 are located within a short distance view east of the dwelling with wind turbines T4 and T5 at moderate view distances. Long distance views from the dwelling are likely to extend toward wind turbines within the south portion of the project site given the elevated position of the dwelling relative to the project site. Degree of screening at dwelling: Low	High

Table 14 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
R103	Non-associated landowner Sensitivity: High	1523	High	High	High	The dwelling is adjacent to the Old Timboon-Terang Road. Wind turbines T1 to T3 are located within a short distance view east of the dwelling with wind turbines T4 and T5 at a moderate view distance beyond and above tree cover to the west of the Curdies Leichfield Road corridor. Views from the dwelling toward wind turbines within the south portion of the project site are likely to be screened by tree cover adjoining and beyond the dwelling curtilage. Degree of screening at dwelling: Low to moderate	High
R104	Non-associated landowner	1811	High	High	High	The dwelling is around 85m west of the Timboon-Terang Road. Wind turbines T1 to T3 are located	Moderate to High

Table 14 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
	Sensitivity: High					within a short distance view east of the dwelling with wind turbines T4 and T5 at moderate view distances. Long distance views from the dwelling and/or dwelling curtilage are likely to extend toward wind turbines within the south portion of the project site given the elevated position of the dwelling relative to the project site. Degree of screening at dwelling: Low to moderate	
R105	Non-associated landowner Sensitivity: High	1464	High	High	High	The dwelling is adjacent to the Old Timboon-Terang Road. Wind turbines T1 to T3 are located within a short distance view east of the dwelling with wind turbines T4 and T5 at a moderate view distance beyond and above scattered tree cover to the west of	Moderate to High

Table 14 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						the Curdies Leichfield Road corridor. Views from the dwelling toward wind turbines within the south portion of the project site are likely to be screened by tree cover adjoining and beyond the dwelling curtilage. Degree of screening at dwelling: Low to moderate	
R107	Non-associated landowner Sensitivity: High	1808	High	High	High	The dwelling is adjacent to the Old Timboon-Terang Road. Wind turbines T1 to T3 are located within a short distance view east of the dwelling with wind turbines T4 and T5 at a moderate view distance beyond and above scattered tree cover to the west of the Curdies Leichfield Road corridor. Views from the dwelling toward wind turbines within the	Moderate

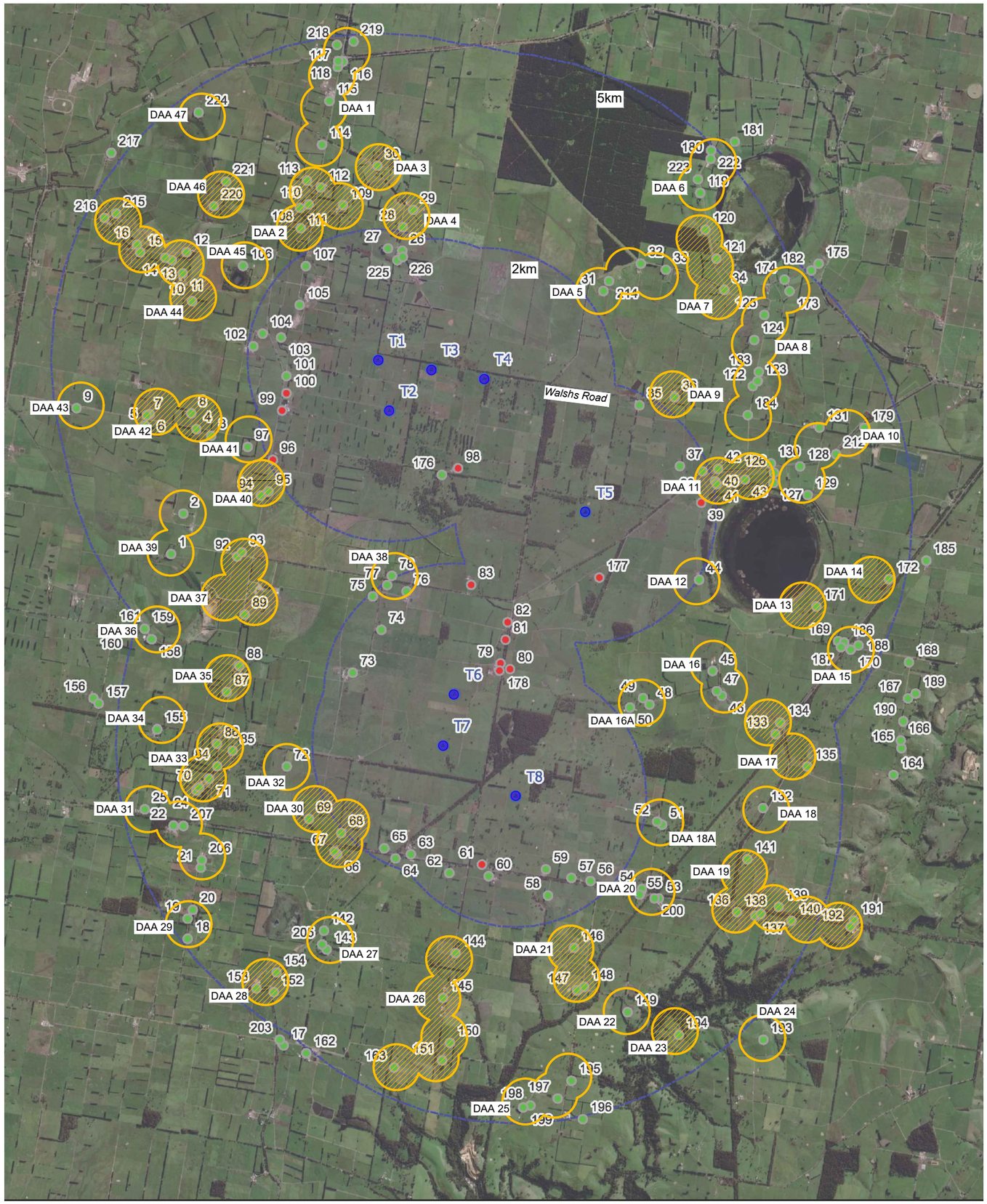
Table 14 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						south portion of the project site are likely to be screened by tree cover south of the dwelling curtilage. Degree of screening at dwelling: Low to moderate	
R176	Non-associated landowner Sensitivity: High	1265	High	High	High	The dwelling is located adjacent to and south of Retallacks Road. Wind turbines T1 to T4 are located within a short distance view to the north and northwest of the dwelling and wind turbine T5 at a short distance view to the east of the dwelling location. Views toward wind turbines north and northwest from the dwelling will be partially filtered and/or screened by trees beyond the dwelling extending along the Retallacks Road corridor. Views toward wind turbine T5 are likely to occur from	Moderate

Table 14 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						some areas of the dwelling curtilage and/or the dwelling. Degree of screening at dwelling: Low to moderate	
R225	Non-associated landowner Sensitivity: High	1548	High	High	High	The dwelling is accessed from the southern end of Thorntons Road west with wind turbines within a short distance south to southeast of the dwelling. Located on a rising landform at around 179m AHD, views toward wind turbines are likely to be open and direct with little existing vegetation beyond the dwelling. Degree of screening at dwelling: Low	Moderate to High

Source: RE Future Pty Ltd, 2024



Dwelling Assessment Areas +2km

Figure 20a
Dwelling Assessment Areas between 2km and 5km

Legend

- T1 — Proposed wind turbine
- Distance from wind turbine
- 2km viewshed
- Associated dwelling
- Non associated dwelling within Dwelling Assessment Area (DAA)
- Dwelling Assessment Area (DAA). Hatch applied to differentiate DAA extent only

0m — 2km

Table 15 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
Dwellings between 2km and 5km from wind turbines							
DAA1 7 dwellings	Non-associated landowners Sensitivity: High	3395 (dwelling 114)	High	High	High	The dwellings extend to the north and south of the Cobden Terang Road. Wind turbines within the north portion of the project site are located southeast of the dwellings. Wind turbines within moderate to long distance views will be partially disrupted and/or screened by tree cover surrounding most dwellings as well as a gently rising landform south of the dwellings around Dixie. Degree of screening at dwellings: Moderate to High	Low
DAA2 6 dwellings	Non-associated landowners	2320 (dwelling 108)	High	High	High	The dwellings are generally located around the Timboon-Terang Road and Old Timboon-Terang Road to	Low

Table 15 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
	Sensitivity: High					the south of Thorntons Road. Wind turbines within the north portion of the project site are located southeast of the dwellings. Wind turbines within moderate to long distance views will be partially disrupted and/or screened by tree cover surrounding most dwellings and windbreaks as well as a gently rising landform south of the dwellings around Dixie. Degree of screening at dwellings: Moderate to High	
DAA3 Single dwelling 30	Non-associated landowner Sensitivity: High	2970 (dwelling 30)	High	High	High	The dwelling is located adjacent to Thorntons Road West. Wind turbines are located within a short distance south to southeast of the dwelling. Tree planting surrounding	Low

Table 15 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						the dwelling will filter and screen views toward wind turbines. Degree of screening at dwelling: Moderate to high	
DAA4 2 dwellings	Non-associated landowners Sensitivity: High	2065 (dwelling 28)	High	High	High	The dwellings are accessed from Thorntons Road West with wind turbines within a short distance south to southeast of the dwelling. Views toward wind turbines are likely to be partially filtered and/or screened by existing vegetation beyond the dwellings. Degree of screening at dwelling: Moderate to high	Moderate
DAA5 4 dwellings	Non-associated landowners Sensitivity: High	2230 (dwelling 31)	High	High	High	The dwellings are located to the south of the Curdies Leichfield Road with wind turbines within a short distance southwest to south	Moderate

Table 15 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						of the dwellings. Views from the dwellings are largely open with little tree screening surrounding or beyond dwellings. Degree of screening at dwellings: Low	
DAA6 4 dwellings	Non-associated landowners Sensitivity: High	4317 (dwelling 119)	High	High	High	The dwellings extend along Erreys Road to the west of the Cobrico Swamp Wildlife Reserve. Wind turbines within the north portion of the project site are within long distance views with tree cover screening views toward most wind turbines. Degree of screening at dwellings: High	Low
DAA7	Non-associated landowners	3880	High	High	High	The dwellings extend along Erreys Road to the west and south of the	Low

Table 15 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
3 dwellings	Sensitivity: High	(dwelling 34)				Cobrico Swamp Wildlife Reserve. Wind turbines within the north portion of the project site are within moderate to long distance views with tree cover screening views toward most wind turbines from the dwellings. Degree of screening at dwellings: High	
DAA8 8 dwellings	Non-associated landowners Sensitivity: High	2845 (dwelling 184)	High	High	High	The dwellings extend along Nelsons Road to the south of the Cobrico Swamp Wildlife Reserve. Wind turbines within the north portion of the project site are within short to moderate to long distance views with tree cover filtering and/or screening views toward most wind turbines from the dwellings.	Low

Table 15 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						Degree of screening at dwellings: High	
DAA9 Single dwelling 36	Non-associated landowner Sensitivity: High		High	High	High	The dwelling is accessed from Walshs Road with wind turbines within a short to moderate distance south to west of the dwelling. Views from the dwelling are partially filtered by tree cover beyond the dwelling, with a grouping of farm buildings/sheds to the north of the dwelling. Wind turbines would likely be visible from beyond the immediate dwelling curtilage. Degree of screening at dwelling: Moderate	Low to Moderate
DAA10	Non-associated landowners	3400	High	High	High	The dwellings extend along the Cobden South Ecklin Road and	Low to Moderate

Table 15 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
5 dwellings Sensitivity: High		(dwelling 129)				south toward Lake Elingamite on Oates Road. Wind turbines would be within moderate to long view distances to the west and southwest of the dwellings and likely visible from beyond the immediate dwelling curtilage. Degree of screening at dwelling: Low to moderate	
DAA11 7 dwellings	Non-associated landowners Sensitivity: High	2030 (dwelling 41)	High	High	High	The dwellings extend along the Cobden-South Ecklin Road with wind turbines within a short distance southwest to northwest of the dwellings. Views from the dwellings are partially open with some tree planting around the dwellings. Views toward wind turbines would extend west to northwest from the dwelling.	Moderate

Table 15 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						Degree of screening at dwelling: Low to moderate	
DAA12 Single dwelling 44	Non-associated landowner Sensitivity: High	1996 (dwelling 44)	High	High	High	The dwelling is located to the west of Lake Elingamite adjacent to Peggs Road. Short distance views from the dwelling and curtilage (toward wind turbine T5) are generally open toward wind turbines in the north portion of the project site northwest of the dwelling. Degree of screening at dwelling: Low to moderate	Moderate to High
DAA13 Single dwelling 171	Non-associated landowner Sensitivity: High	3760 (dwelling 171)	High	High	High	The dwelling is located to the southeast of Lake Elingamite and west of the Cobden-Warrnambool Road. Moderate to long distance views from the dwelling and	Moderate

Table 15 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						curtilage are partially screened toward wind turbines in the north and southern portions of project site. Degree of screening at dwelling: Low to moderate	
DAA14 Single dwelling 172	Non-associated landowner Sensitivity: High	4695 (dwelling 172)	High	High	High	The dwelling is located to the east of Lake Elingamite and adjoining the Cobden-Warrnambool Road. Moderate to long distance views from the dwelling and curtilage are partially screened toward wind turbines in the north and southern portions of project site by tree cover; however, wind turbines would likely be visible above tree lines forming skyline views from the dwelling.	Low to Moderate

Table 15 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						Degree of screening at dwelling: Low to moderate	
DAA15 5 dwellings	Non-associated landowners Sensitivity: High	4310 (dwelling 169)	High	High	High	The dwellings are located to the southeast of Lake Elingamite and adjoining the Cobden-Warrnambool Road corridor. Moderate to long distance views from the dwellings and curtilage are partially screened toward wind turbines in the north and southern portions of project site by tree cover; however, wind turbines may be visible from the dwellings or associated curtilage. Degree of screening at dwelling: Moderate	Low to Moderate
DAA16 3 dwellings	Non-associated landowners	2775 (dwelling 47)	High	High	High	The dwellings are located to the west of Elliots Road. Short to moderate distance views toward	Low to Moderate

Table 15 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
	Sensitivity: High					wind turbines in the north and southern portions of project from the dwellings/curtilage are partially screened by trees surrounding and beyond the dwellings. Degree of screening at dwelling: Moderate	
DAA16A 3 dwellings 48 49 50	Non-associated landowners Sensitivity: High	2294 (dwelling 50)	High	High	High	The dwelling is accessed from Soundrys Road with wind turbines in a short distance southwest to northwest of the dwelling. Views from the dwelling are partially filtered by tree planting scattered to the west and by further scattered tree cover beyond the dwelling curtilage. Degree of screening at dwelling: Low	Low to Moderate

Table 15 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
DAA17 3 dwellings	Non-associated landowners Sensitivity: High	3477 (dwelling 134)	High	High	High	The dwellings are located to the east and west of the Cobden-Warrnambool Road. Moderate distance views toward wind turbines in the north and southern portions of project from the dwellings/curtilage are partially screened by trees surrounding and beyond the dwellings. Degree of screening at dwelling: Moderate to High	Low
DAA18 Single dwelling 132	Non-associated landowner Sensitivity: High	3085 (dwelling 132)	High	High	High	The dwelling is located to the west and adjoining the Cobden-Warrnambool Road corridor. Moderate distance views toward wind turbines in the north and southern portions of the project site from the dwelling/curtilage are largely screened by trees	Low

Table 15 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						surrounding and beyond the dwelling. Degree of screening at dwelling: Moderate to High	
DAA18A 2 dwellings	Non-associated landowner Sensitivity: High	2335 (dwelling 52)	High	High	High	The dwelling is located at the northern end of Troups Road and accessed from the Cobden-Warrnambool Road with wind turbines in a short distance west to northwest of the dwelling. Views from the dwelling are largely open with no significant screening surrounding the dwelling or curtilage. Degree of screening at dwelling: Low	Moderate
DAA19	Non-associated landowners	3020	High	High	High	The dwellings are located to the east and adjoining the Cobden-	Low

Table 15 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
8 dwellings Sensitivity: High		(dwelling 141)				Warrnambool Road corridor as well as extending along the Maddens Bridge Road. Moderate distance views toward wind turbines in the north and southern portions of the project site from the dwelling/curtilage are largely screened by trees along road corridors and tree cover surrounding dwellings. Degree of screening at dwelling: Moderate to High	
DAA20 4 dwellings including Glenfyne Hall (201) and CFA shed (202)	Non-associated landowners Sensitivity: High		High	High	High	The dwellings are located to the south and adjoining the Cobden-Warrnambool Road corridor. Moderate distance views toward wind turbines in the north and southern portions of the project site from the dwelling/curtilage are largely screened by trees along	Low

Table 15 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						road corridors and tree cover surrounding dwellings. Degree of screening at dwelling: Moderate to High	
DAA21 3 dwellings	Non-associated landowners Sensitivity: High	2485 (dwelling 146)	High	High	High	The dwellings are located in excess of 980m to the south the Cobden-Warrnambool Road corridor. Moderate distance views toward wind turbines in the north and southern portions of the project site from the dwelling/curtilage are largely filtered and/or screened by tree cover surrounding dwellings. Degree of screening at dwelling: Moderate to High	Low
DAA22	Non-associated landowner	3564 (dwelling 149)	High	High	High	The dwelling is located to the eastern end of Davis Road around 1.8km south of the Cobden-	Low

Table 15 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
Single dwelling 149	Sensitivity: High					Warrnambool Road. Moderate distance views toward wind turbines in the north and southern portions of project site from the dwelling/curtilage are largely filtered and/or screened by tree cover surrounding dwellings. Degree of screening at dwelling: Moderate to High	
DAA23 Single dwelling 194	Non-associated landowner Sensitivity: High	4200 (dwelling 194)	High	High	High	The dwelling is located around 2km south of the Cobden-Warrnambool Road. Moderate distance views toward wind turbines in the north and southern portions of project site from the dwelling/curtilage are screened by tree cover and landform to the north of the dwelling.	Low

Table 15 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						Degree of screening at dwelling: High	
DAA24 Single dwelling 193	Non-associated landowner Sensitivity: High		High	High	High	The dwelling is located around 2km southeast of the Cobden-Warrnambool Road. Moderate to long distance views toward wind turbines in the southern portion of project site from the dwelling/curtilage may be partially filtered by tree cover and landform to the northwest of the dwelling with some possibility of turbines visible above tree cover forming skyline views. Degree of screening at dwelling: Low	Low to Moderate
DAA25	Non-associated landowners		High	High	High	The dwellings are located around 3km south of the Cobden-	Low to Moderate

Table 15 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
4 dwellings Sensitivity: High						Warrnambool Road along Merretts Road. Long distance views toward wind turbines in the southern portion of project site from the dwellings may be partially filtered by tree cover north of the dwellings with some possibility of turbines being visible above tree cover forming distant skyline views. Degree of screening at dwelling: Low to Moderate	
DAA26 5 dwellings	Non-associated landowners Sensitivity: High	2500 (dwelling 144)	High	High	High	The dwellings are in excess of 1.4km south of the Cobden-Warrnambool Road along the Curdies-Leichfield Road. Short to moderate distance views toward wind turbines in the southern portion of project site from the dwellings are likely to be filtered by tree cover north of the dwellings	Low to Moderate

Table 15 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						with some possibility of turbines being visible above tree cover forming distant skyline views from beyond dwelling curtilage areas. Degree of screening at dwelling: Moderate to High	
DAA27 3 dwellings	Non-associated landowners Sensitivity: High	3490	High	High	High	The dwellings are more than 1.3km south of the Cobden-Warrnambool Road along the Glenfyne Brucknell Road. Short to moderate distance views toward wind turbines in the southern portion of project site from the dwellings are likely to be filtered by tree cover north to northeast of the dwellings with some possibility of turbines being visible above tree cover forming distant skyline views	Low to Moderate

Table 15 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						from beyond dwelling curtilage areas. Degree of screening at dwellings: Moderate	
DAA28 3 dwellings	Non-associated landowners Sensitivity: High	4460 (dwelling 154)	High	High	High	The dwellings are more than 2km south of the Cobden-Warrnambool Road along the Glenfyne Brucknell Road. Moderate to long distance views toward wind turbines in the southern portion of project site from the dwellings are likely to be filtered by tree cover north to northeast of the dwellings with some possibility of turbines being visible above tree cover forming distant skyline views from beyond dwelling curtilage areas. Degree of screening at dwellings: Moderate	Low

Table 15 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
DAA29 3 dwellings	Non-associated landowners Sensitivity: High	4575 (dwelling 20)	High	High	High	The dwellings are more than 1.3km south of the Cobden-Warrnambool Road along the New Brucknell Road. Moderate to long distance views from dwellings toward wind turbines in the southern portion of project site are likely to be filtered by tree cover north to northeast of the dwellings with some possibility of turbines being visible above tree cover forming distant skyline views from beyond dwelling curtilage areas. Degree of screening at dwellings: Moderate to High	Low
DAA30 4 dwellings	Non-associated landowners Sensitivity: High	2040 (dwelling 68)	High	High	High	The dwellings are located to the north and south and adjacent to the Cobden-Warrnambool Road and McKinnons Road. Wind	Low to Moderate

Table 15 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						turbines are located within a short distance northeast of the dwellings. Wind turbines within the southern portion of the project site may be visible from areas at the dwelling/curtilage. Degree of screening at dwelling: Low-Moderate.	
DAA31 6 dwellings	Non-associated landowners Sensitivity: High		High	High	High	The dwellings are located to the north and south an adjacent to the Cobden-Warrnambool Road and the New Brucknell Road. Wind turbines are located within moderate to long distance views northeast of the dwellings. Wind turbines within the southern portion of the project site may be visible from areas at the dwelling/curtilage.	Low

Table 15 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						Degree of screening at dwelling: Low-Moderate.	
DAA32 Single dwelling 72	Non-associated landowner Sensitivity: High	2405 (dwelling 72)	High	High	High	The dwelling is located around 1km east of the Timboon-Terang Road and accessed via Nielsons Road. Short distance views from the dwelling are likely to extend toward the closest wind turbines extending above trees extending along the Nielsons Road corridor. Degree of screening at dwelling: Low	Moderate
DAA33 7 dwellings	Non-associated landowners and Ecklin Hall (208) Sensitivity: High	3212 (dwelling 85)	High	High	High	The dwellings are located to the north of the Cobden-Warrnambool Road and south of the Ecklin Hall. Wind turbines are located within moderate to long distance views east to northeast of the dwellings.	Low

Table 15 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						Views toward wind turbines within the southern portion of the project site are likely to be partially filtered and/or screened by tree cover surrounding or beyond dwelling/curtilage area. Degree of screening at dwelling: Moderate to High.	
DAA34 Single dwelling 155	Non-associated landowner Sensitivity: High	4368 (dwelling 155)	High	High	High	The dwelling is located at the western end of Rigbys Road around 975m west of the Timboon-Terang Road. Moderate to long distance views from the dwelling and curtilage toward wind turbines are likely to be screened by tree cover to the east of the dwelling. Degree of screening at dwelling: Moderate to High.	Low

Table 15 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
DAA35 2 dwellings	Non-associated landowners Sensitivity: High	3403	High	High	High	The dwellings are located adjacent to the Timboon-Terang Road. Moderate distance views from the dwellings and curtilage toward wind turbines are likely to be partially screened by tree cover to the east of the dwellings. Degree of screening at dwellings: Moderate to High.	Low
DAA36 2 dwellings	Non-associated landowners Sensitivity: High	4722 (dwelling 158)	High	High	High	The dwellings are located adjacent to Lileys Road. Moderate to long distance views east from the dwellings and curtilage toward wind turbines are likely to be partially screened by tree cover to the east of the dwellings. Degree of screening at dwelling: Moderate to High.	Low

Table 15 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
DAA37 6 dwellings	Non-associated landowners Sensitivity: High	3450 (dwelling 89)	High	High	High	The dwellings are located to the east and west of the Timboon-Terang Road corridor. Moderate distance views from the dwellings and curtilage toward wind turbines are likely to be partially screened by tree cover to the east of the dwellings; however, some dwellings without surrounding tree cover will have direct views toward wind turbines within the southern portion of the project site. Degree of screening at dwellings: Low to Moderate.	Low to Moderate
DAA38 Single dwelling 78	Non-associated landowner Sensitivity: High	2554 (dwelling 78)	High	High	High	The dwelling is located around 85m north of the Cobden-South Ecklin Road. Wind turbines T1 to T4 are located within a short to moderate view distance north of	Moderate

Table 15 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						the dwelling and wind turbine T5 at a moderate view distance beyond and above tree cover to the west of the Curdies Leichfield Road corridor. Views from the dwelling toward wind turbines within the north portion of the project site are likely to be partially screened by tree cover beyond the dwelling. Views toward wind turbines in the southern portion of the project site will be screened by tree cover along the Cobden-South Ecklin Road corridor. Degree of screening at dwelling: Low to Moderate	
DAA39 2 dwellings	Non-associated landowners	3520 (dwelling 2)	High	High	High	The dwellings are located around 1.2km west of the Timboon-Terang Road and to the north/south of Rowleys Road. Wind turbines are	Low to Moderate

Table 15 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
	Sensitivity: High					located within moderate to long distance views to the northeast and south east of the dwellings. Tree cover surrounding the dwellings is likely to provide some filtering and/or screening of views, with wind turbines likely to be visible from areas beyond the dwellings curtilage. Degree of screening at dwelling: Moderate	
DAA40 2 dwellings	Non-associated landowners Sensitivity: High	2224 (dwelling 95)	High	High	High	The dwellings are located east and west and adjacent to the Timboon-Terang Road. Views toward wind turbines within the project site are likely to be screened by tree cover surrounding the dwellings. Degree of screening at dwelling: High	Low

Table 15 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
DAA41 Single dwelling 97	Non-associated landowner Sensitivity: High		High	High	High	The dwelling is located around 370m west of the Timboon-Terang Road and accessed via Gores Road. Views toward wind turbines within the project site are likely to be partially filtered and/or screened by tree cover surrounding the dwelling curtilage. Degree of screening at dwelling: Moderate to High	Low to Moderate
DAA42 6 dwellings	Non-associated landowners Sensitivity: High	2742 (dwelling 3)	High	High	High	The dwellings are in excess of 940m west of the Timboon-Terang Road and accessed via Gores Road. Short to moderate distance views are likely to extend toward wind turbines within the northern portion of the project site. Potential long-distance views may also extend toward wind turbines within	Low to Moderate

Table 15 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						the southern portion of the project site from areas beyond dwelling curtilage. Degree of screening at dwelling: Low to Moderate	
DAA43 Single dwelling 9	Non-associated landowner Sensitivity: High	4684 (dwelling 9)	High	High	High	The dwelling is located adjacent to Gores Road, around 3km to the west of the Timboon-Terang Road. Views toward wind turbines within the project site are likely to be screened by tree cover to the east of the dwelling Degree of screening at dwelling: High.	Low
DAA44 9 dwellings	Non-associated landowners Sensitivity: High	2990 (dwelling 10)	High	High	High	The dwellings are in excess of 1.2km to the west of the Timboon-Terang Road and along Maguires Road. Most of the dwellings within	Low

Table 15 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						the DAA to the west and northwest of Lake Mumblin have windbreak and tree cover surrounding them which will partially filter and/or screen views toward wind turbines within the project site. Degree of screening at dwelling: High.	
DAA45 Single dwelling 106	Non-associated landowner Sensitivity: High	2530 (dwelling 106)	High	High	High	The dwelling is located to the north of Lake Mumblin around 485m west of the Timboon-Terang Road. Views toward wind turbines within the project site are likely to be screened by tree cover surrounding and beyond the dwelling. Degree of screening at dwelling: High.	Low

Table 15 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
DAA46 2 dwellings	Non-associated landowners Sensitivity: High	3444 (dwelling 220)	High	High	High	The dwellings are located to the east of the Keayang maar and around 1km west of the Timboon-Terang Road. Moderate distance views toward wind turbines within the project site are likely to be filtered and/or screened by tree cover surrounding the dwellings. Degree of screening at dwelling: High.	Low
DAA47 Single dwelling 224	Non-associated landowner Sensitivity: High	4675 (dwelling 224)	High	High	High	The dwelling is located to the north of the Keayang maar and south of Carsons Road. Views toward wind turbines within the project site are likely to be screened by a combination of landform rising to the southeast of the dwelling as well as wind break planting extending across the landscape	Low

Table 15 – Dwelling visual effect matrix (Refer Figures 20 and 20A for dwelling locations)

	SENSITIVITY	MAGNITUDE					
Receiver location	Category of receiver location and sensitivity grading	Approximate distance to closest turbine	Potential duration of effect	Theoretical visibility (ZTV tip height)	Overall magnitude grading	Degree of visibility and screening	Potential visual effect
						between the dwelling and the Timboon-Terang Road. Degree of screening at dwelling: High.	

10.10 Summary of dwelling visual effect within 2km viewshed

This LVIA identified a combined total of 28 non-associated dwellings within the Mumblin Wind Farm 2km viewshed.

An assessment of dwellings within the 2km viewshed determined:

- 3 dwellings would have a High visual effect
- 10 dwellings would have a Moderate to High visual effect
- 10 dwellings would have a Moderate visual effect
- 2 dwellings would have a Low to Moderate visual effect and
- 3 dwellings would have a Low visual effect.

The field assessment for most dwelling locations was undertaken from the closest publicly accessible location, with a conservative approach adopted where there was no opportunity to confirm the actual extent of available view from areas within or immediately surrounding the dwelling. It is anticipated that some visibility ratings would be less than those determined subject to a process of verification of existing screening from private property.

10.11 Summary of dwelling visual effect between 2km and 5km of wind turbines

Most dwellings located beyond the 2km wind turbine offset are unlikely to be significantly impacted by the wind turbines. Dwellings beyond 2km include many dwellings of trees existing within proximity to dwellings which may offer greater screening significance as distance from the wind turbines increases. The LVIA identified 49 DAA between the 2km and 5km viewsheds. An assessment of dwellings between the 2km and 5km viewshed determined:

- 1 dwelling location would have a Moderate to High visual effect
- 7 dwellings would have a Moderate visual effect
- 15 dwellings would have a Low to Moderate visual effect and
- 26 dwellings would have a Low visual effect.

10.12 Switchyard / Substation

The project would incorporate a switchyard connected by a single circuit 66kV powerline extending for 850m above ground south from the switchyard following an existing powerline easement to the powerline extending alongside the Cobden-Warrnambool Road corridor. The proposed 66kV powerline would span the Cobden-Warrnambool Road north to south, suspended between two poles. The overhead section of powerline would not result in a significant visual effect and would be viewed as a contiguous visual element with existing powerline structures once connected.

The switchyard would be located on existing agricultural pastoral land within the project site adjacent to the Curdies-Leichfield Road approximately 438m southwest of wind turbine T8 and approximately 850m north of the Cobden-Warrnambool Road corridor.

The switchyard footprint would be approximately 40m x 30m and would contain a typical arrangement of electrical infrastructure components including overhead gantry and busbars. The switchyard would also include a switchyard control room. This would be generally single storey small-scale building within the switchyard footprint surrounded within a gated chainmesh security fence.

The switchyard, associated buildings and electrical infrastructure would not be out of character with other moderate to large scale agricultural and existing electrical infrastructure located within the landscape surrounding the project site.

10.13 Visual Absorption Capability

Visual Absorption Capability (VAC) is a classification system used to describe the relative ability of the landscape to accept modifications and alterations without the loss of landscape character or deterioration of visual amenity. VAC relates to physical characteristics of the landscape that are often inherent and often quite static in the long term. The visual expanse of the agricultural landscape occasionally interrupted by scattered and groups of trees will have a moderate to high capability to visually absorb the switchyard without significantly altering the character of the landscape.

A moderate to high VAC would tend to mitigate views toward the switchyard where the proposed structures would be viewed against an expansive agricultural landscape.

10.14 Substation/Switchyard visual effect

This LVIA has considered and assessed potential view locations within the vicinity of the switchyard.

There would be no direct views from surrounding dwellings toward the switchyard site. The nearest dwelling would be location around 800m to the south of the switchyard with views screened by wind break planting. Other dwellings generally located beyond 1km from the switchyard site would have direct views screened by tree cover at, or beyond, the dwelling location.

The switchyard would be viewed in the context of transitory and very short-term views from vehicles travelling along the Curdies-Leichfield Road. The visual magnitude of the switchyard structures would not result in significant visual effects as viewed by passing motorists. The switchyard would not be visible from the Cobden-Warrnambool Road corridor, or to an extent that might result in significant visual effects.

Section 11. Cumulative impact assessment

11.1 What is Cumulative Impact Assessment?

A cumulative landscape and visual impact may result from a wind farm being constructed in conjunction with other existing or proposed wind farms or other large-scale infrastructure projects which may be either associated or separate to it.

Separate wind farm or other developments may occur within the established viewshed of the proposed wind farm or may be located within a regional context where visibility is dependent on a journey between each site or project viewshed.

This LVIA is not aware of any separate wind farm developments within approximately 15km of the Project site. The Timboon Wind Farm is the nearest operational wind farm at around 15km south of the project site.

11.2 Other wind farm developments

There are around 7 wind energy developments that are currently operational, approved or proposed within the same regional context (to around 50km) as the Project. These wind farms are illustrated in **Figure 21** and identified in Table 15.

Table 15 Other wind farm developments

Other Wind Farms	Status	Number of turbines or expected generation capacity	Approximate distance between project sites
Darlington	Pre planning	61	26km
Hexham	Pre planning	108	33km
Salt Creek	Operating	15	45km
Mt Fyans	Planning	85	30km
Mortlake South	Construction	35	17km
Timboon West	Operating	2	15km
Ferguson	Operating	3	29km

'Direct' cumulative visual impacts may occur where two or more winds farms or other infrastructure projects have been constructed within the same locality and may be viewed from the same view location simultaneously.

The Mumblin wind turbines are unlikely to be directly visible in addition to other wind farm wind turbines from the majority of the viewshed where gently undulating rises and tree cover combine to restrict distant views beyond the wind farm site. Regional views from elevated landforms such as Mount Noorat would take in views to multiple wind

farms (approved and operational); however, there would be no distinct overlap between the Mumblin Wind Farm turbines and other wind farm developments. The small number of wind turbines included in the Mumblin Wind Farm would reduce the potential for extending an excessive horizontal field of view toward wind turbines.

'Indirect' cumulative visual impacts may occur where two or more wind farms or other infrastructure projects have been constructed within the same locality and may be viewed from the same view location but not within the same field of view (i.e., the viewer turns their head to view both wind farms).

'Sequential' cumulative visual impacts may arise because of multiple wind farms or other infrastructure projects being observed at different locations during a journey (e.g., from a vehicle travelling along a highway or from a network of local roads), which may form an impression of greater magnitude within the construct of short-term memory.

The Mumblin Wind Farm wind turbines are unlikely be visible from vehicles travelling northeast or southwest along sections of the Princes Highway (around 30km from the site), with views from local roads offering a combination of partially screened views with more direct, but intermittent views, where roadside screening is present. Views from vehicles within the viewshed would be transitory and generally short term.

Overall, all cumulative visual impacts would be mitigated by the very small number of wind turbines within the project site reducing the extent of visual influence and potential for cumulative visual impacts to occur.

Salt Creek Wind Farm
Mt Fyan Wind Farm
Hexham Wind Farm
Mortlake
Darlington Wind Farm
Mortlake Wind Farm
Lake Keliambete
Terang
Princes Highway
Lake Corangamite
Camperdown
Lake Narognid
Lake Mumblin
2km
Cobden
Lake Elingamite
Warrnambool
15km
30km
50km
Timboon Wind Farm
Ferguson Wind Farm
Caramut
Minhamite
Hexham
Lismore
Berrybank
Larralea
Foxhow
Bookaar
Kariah
Kolora
Noorat
Chocolyn
Gnotuk
Warrong
Winslow
Kirkstall
Koroit
Grassmere
Purnim
Crossley
Illowa
Panmure
Tandarook
Koallah
Weerite
Cororooke
Glenfyne
Ayrford
Bungador
Timboon
Simpson
Nirranda
Waarre
Ferguson
Wyelangta

Legend

T1 Proposed wind turbine

Distance from wind turbine

Mumblin Wind Farm 2km viewshed

Urban locality

Lake

ADVERTISED PLAN

0m 10km

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Cumuative impacts

Figure 21
Cumulative impacts

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Landscape architecture

Section 12. Pre-construction and construction

12.1 Potential visual impacts

There are potential visual impacts that could occur during both pre-construction and construction phases of the project. The Project construction phase is likely to occur over a period of around 12 months, although the extent and nature of pre-construction and construction activities would vary at different locations within the Project area.

The key pre-construction and construction activities that would be visible from areas surrounding the proposed wind farm include:

- ongoing detailed site assessment including sub surface geotechnical investigations
- various civil works to upgrade local roads and access point
- temporary construction compound buildings and facilities
- temporary construction facilities, including portable structures and laydown areas
- various temporary construction and directional signage
- mobilisation of rock crushing equipment and concrete batching plant (if required)
- excavation and earthworks and
- various construction activities including erection of wind turbines, monitoring mast and electrical infrastructure works.

Most of the pre-construction and construction activities, some of which would result in physical changes to the landscape (which have been assessed in this LVIA report), are generally temporary in nature and for the most part restricted to various discrete areas within or beyond the immediate wind farm site. Most pre-construction and construction activities would be unlikely to result in an unacceptable level of visual impact for their duration and temporary nature. The following images illustrate typical construction activities during preparation and installation of wind turbines:

Plate 1 Cable laying equipment

Plate 2 Typical crane plant utilised in wind turbine construction

Plate 3 Typical storage and laydown area

Plate 4 Typical contractors site office and amenities compound

Plate 5 Typical view toward wind turbines under construction

Section 13. Mitigation measures

13.1 Mitigation measures

The British Landscape Institute states 'the purpose of mitigation is to avoid, reduce, or where possible remedy or offset any significant negative (adverse) effects on the environment arising from the proposed development' (2012). In general mitigation measures would reduce the potential visual impact of the project in one of two ways:

- firstly, by reducing the visual prominence of the wind turbines and associated structures by minimising the visual contrast between the wind turbines and the landscape in which they are viewed; and
- secondly, by screening views toward the wind turbines from specific receptor locations.

The mitigation measures generally involve reducing the extent of visual contrast between the visible portions of the proposed structures and the surrounding landscape, and/or screening direct views toward the proposed wind turbines where possible.

13.2 Detail design

Mitigation measures during the detail design process should consider:

- further refinement in the design and layout if necessary to assist in the mitigation of bulk and height of proposed structures
- consideration in selection and location for tree planting which may provide partial screening or backdrop setting for constructed elements (excluding wind turbine structures) and
- a review of materials and colour finishes for selected components including the use of non-reflective finishes to structures where possible.

13.3 Construction

Mitigation measures during the construction period should consider actions to:

- avoidance of temporary light spill beyond the construction site where temporary lighting is required and
- progressively rehabilitate disturbed areas.

13.4 Operation

Mitigation measures during the operational period should consider:

- ongoing maintenance and repair of constructed elements
- replacement of damaged or missing constructed elements.

13.5 On-site and off-site landscape works

Both on-site and offsite landscape works would be actively considered to reduce the visual impact of the wind turbines and associated ancillary infrastructure where determined to result in a Moderate High or High visual effect on uninvolved view locations. A programme of landscape works would be documented in accordance with any relevant permit conditions.

Section 14. Conclusion

The key findings of the Mumblin Wind Farm LVIA are summarised below:

14.1 Landscape effects

The Mumblin Wind Farm landscape character type identified and described in this LVIA, is generally well represented throughout the Corangamite Shire Council and surrounding Council areas and more generally within southwestern Victoria.

This LVIA determined the overall landscape character sensitivity to be moderate. Distinguishable characteristics of the landscape character area may be altered by the proposed project, although the landscape character area may have the capability to absorb some change. The degree to which the landscape character area may accommodate the proposed project would potentially result in the introduction of prominent elements to the landscape character area but may be accommodated to some degree.

The proposed wind turbines would be located between 15km and 20km from prominent landscape features including Mount Noorat and Mount Warrnambool. Given that distance is one key determinant for establishing degrees of visual impact, the proposed wind turbines are unlikely to dominate or significantly detract from the existing view from prominent landscape features.

14.2 Visual effects

The proposed wind turbines are unlikely to have a significant visual impact on the character of the surrounding townships and localities, where views towards the wind turbines from most dwelling view locations would be screened by adjoining residences, and a combination of tree cover and low undulations in local landforms.

Views toward the proposed wind turbines from local roads would offer a range of transitory views which would be subject to direction of travel and potential screening influence of vegetation alongside road corridors.

Many rural dwellings surrounding the wind turbines maintain tree planting and/or windbreaks around dwellings. The extent of windbreak planting reduces the potential visibility of the wind turbines from many dwelling locations within the surrounding viewshed.

The extent and nature of cumulative visual effects are likely to be mitigated in part by the distance between the proposed wind turbines and other wind farms.

The switchyard and associated power line would not form large scale visual elements within the landscape and would not result in significant visual effects.

14.3 Construction

Both pre-construction and construction activities are unlikely to result in an unacceptable level of visual impact due to the temporary nature of these activities, together with proposed restoration and rehabilitation strategies. The preferred location for some of the construction activities, including the on-site concrete batch plant and rock crusher, would be located away from publicly accessible areas, with the closest dwelling locations generally comprising associated landowners.

14.4 Mitigation measures

Although some mitigation measures (including soft landscape works) may be considered appropriate to minimise the visual impact for elements associated with the wind farm (including wind turbines), it is acknowledged that the degree to which the wind turbines may be visually mitigated is potentially limited by their scale and position within the landscape relative to surrounding view locations.

14.5 Acceptability of landscape and visual impacts

The Development of wind energy facilities Policy and planning guidelines notes that '*a responsible authority needs to determine whether or not the visual impact of a wind energy facility in the landscape is acceptable'.* This LVIA has assessed the potential landscape and visual effect of the Project against relevant policies and guidelines, and has determined that in our professional opinion, the level of landscape and visual effects are acceptable.

Appendix A Photomontage methodology

A.1 Photomontage methodology

A total of ten photomontages have been prepared to illustrate the general appearance of the proposed Project turbines following construction. The photomontage panorama images have been prepared by GBD and the photomontages have been prepared by RE Future.

The photomontage locations were selected following a review of ZVI maps, together with a site inspection to identify potential representative viewpoints. The photomontage locations were selected from surrounding road corridors and at a range of distances between the viewpoint and wind turbine to illustrate the potential influence of distance on visibility. The photomontages are presented at around 90 degrees with an additional detailed field of view at around 40 degrees. The photomontage includes an extended panorama view to provide context within the photomontage. The detailed view illustrates a view within the human central cone of binocular vision and provides a greater level of detail.

The photomontage locations are illustrated in **Figure 22** and photomontages presented in the following figures:

Figure 23 Photomontage PM1 Lake Elingamite

Figure 24 Photomontage PM2 South Ecklin Road

Figure 25 Photomontage PM3 Timboon Road

Figure 26 Photomontage PM4 Cobden Warrnambool Road

Figure 27 Photomontage PM5 Timboon Terang Road

Figure 28 Photomontage PM6 Southern Road

Figure 29 Photomontage PM7 Timboon Terang Road

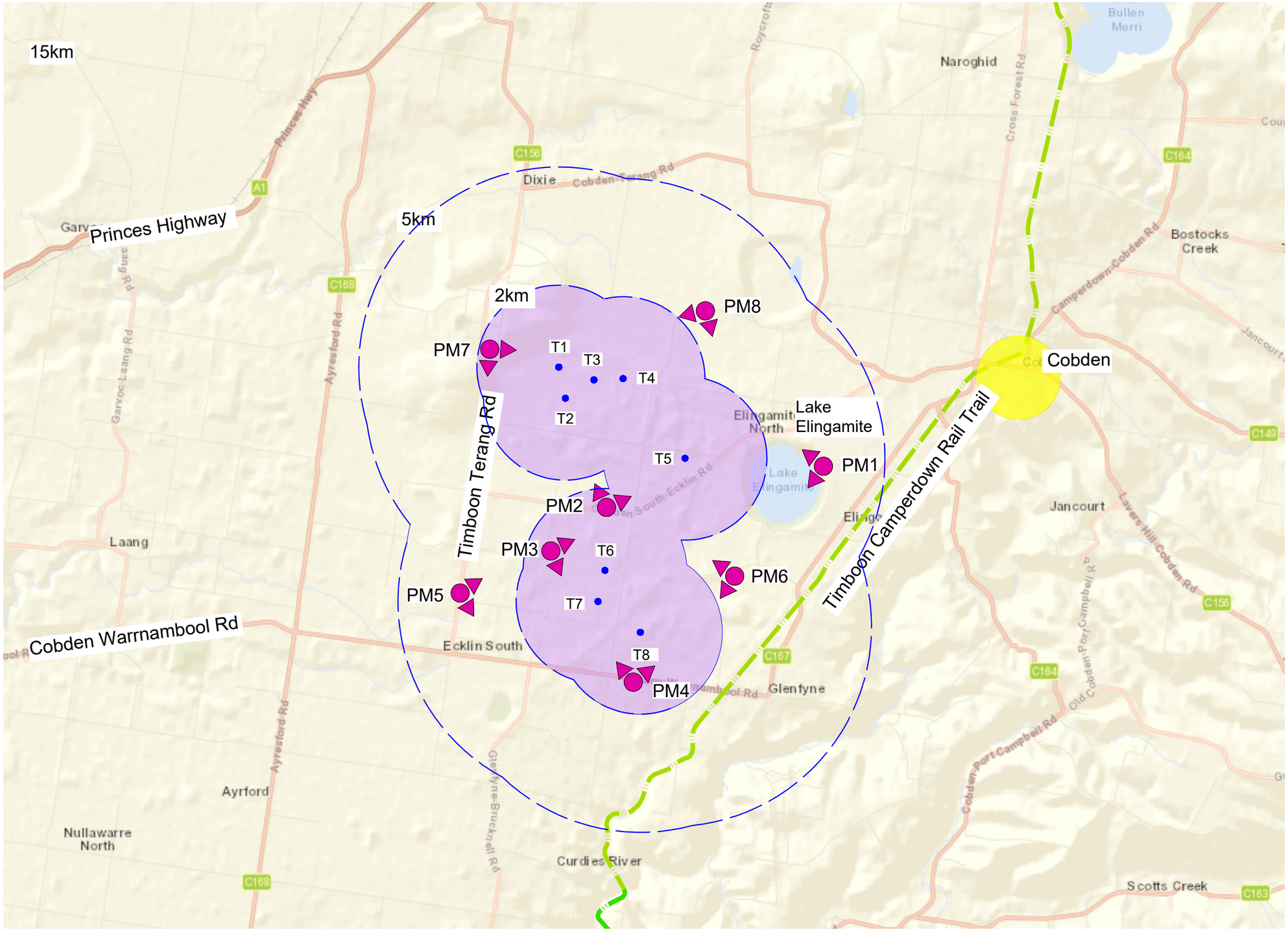
Figure 30 Photomontage PM8 Curdies Leichfield Road

Each photomontage was generated through the following steps:

1. A digital terrain model (DTM) of the proposed Project site was created from a terrain model of the surrounding area using digital contours
2. The site DTM was loaded into the Wind Pro software package
3. The layout of the wind farm and 3-dimensional representation of the wind turbine was configured
4. The location of each viewpoint (photo location) was configured in Wind Pro – the sun position for each viewpoint was configured by using the time and date of the photographs from that viewpoint
5. The view from each photomontage location was then assessed in Wind Pro. This process requires accurate mapping of the terrain as modelled, with that as seen in the photographs. The photographs, taken from each photomontage location were loaded into Wind Farmer and the visible turbines superimposed on the photographs.
6. The photomontages were adjusted using Photoshop CS3 to compensate for fogging due to haze or distance, as well as screening by vegetation or obstacles and
7. The final image was converted to JPG format and imported and annotated as the final figure.

The horizontal and vertical field of view within most of the photomontages exceeds the parameters of normal human vision. However, the eyes, head and body can all move and under normal conditions a person would sample a broad area of landscape within a panorama view. Rather than restricting the extent of each photomontage to a single photographic image, a broader field of view is presented to illustrate the extent of the wind turbines more fully.

Whilst a photomontage can provide an image that illustrates an accurate representation of a wind turbine in relation to its proposed location and scale relative to the surrounding landscape, this LVIA acknowledges that large scale objects in the landscape can appear smaller in photomontage than in real life and is partly because a flat image does not allow the viewer to perceive any information relating to depth or distance.



Legend

- T1 — Proposed wind turbine
- Distance from wind turbine
- 2km viewshed
- PM1 — Photomontage location
- Timboon Camperdown Rail Trail

0m 3km

Sources: Vicmap, Esri, HERE, Garmin, NGA, USGS

Photomontage locations

Figure 22
Photomontage locations

Photomontage PM1 - Proposed view south west to west from Lake Elingamite. Approximate distance to closest wind turbine 3.3km

Photomontage PM1 - Detail view (view angle around 40 degrees)

Extent of detail view

Figure 23
Photomontage PM1 Lake Elingamite

General Notes:

Coordinates:
Easting 675993, Northing 5752416

Camera: Nikon D850 digital SLR, 50mm focal length

Date: 21 January 2022 Time:3.08pm

Original Page Format - A4 Landscape

Photomontage PM1 is illustrated at a view angle of around 65 degrees which is within the central, binocular field, of human vision.

Photomontage limitations

A photomontage can never show exactly what the wind farm will look like in reality due to factors such as different lighting, weather and seasonal conditions which vary through time and the resolution of the image. Also a static image cannot convey turbine movement.

The images provided give a reasonable impression of the scale of the turbines and the distance to the turbines, but can never be 100% accurate.

The viewpoints illustrated are representative of views in this location, but cannot represent visibility at all locations.

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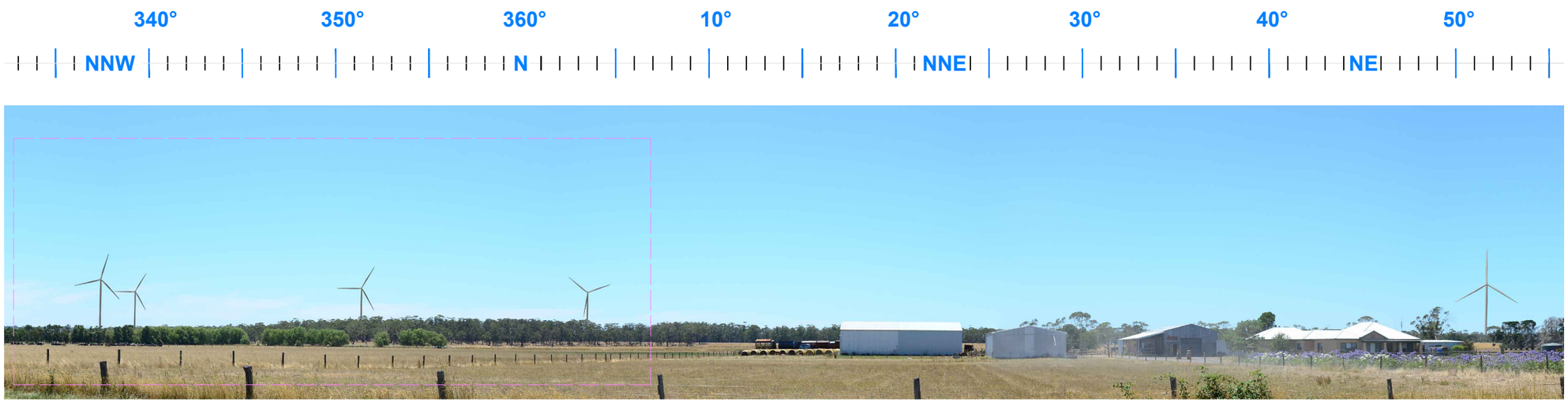

Photomontage PM2 - Proposed view north northwest to north east from South Ecklin Road. Approximate distance to closest wind turbine 3km

Photomontage PM2 - Detail view (view angle around 40 degrees)

Extent of detail view

Figure 24
Photomontage PM2 South Ecklin Road

General Notes:

Coordinates:
Easting 670727, Northing 5752330

Camera: Nikon D7000 digital SLR, 50mm focal length (35mm focal length equivalent 75mm)

Date: 21 January 2022 Time:2.14pm

Original Page Format - A4 Landscape

Photomontage PM2 is illustrated at a view angle of around 80 degrees which is within the central, binocular field, of human vision.

Photomontage limitations

A photomontage can never show exactly what the wind farm will look like in reality due to factors such as different lighting, weather and seasonal conditions which vary through time and the resolution of the image. Also a static image cannot convey turbine movement.

The images provided give a reasonable impression of the scale of the turbines and the distance to the turbines, but can never be 100% accurate.

The viewpoints illustrated are representative of views in this location, but cannot represent visibility at all locations.

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Photomontage PM3 - Proposed view east southeast to north east from Ellertons Road. Approximate distance to closest wind turbine 1.4km

Photomontage PM3 - Detail view (view angle around 40 degrees)

Extent of detail view

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Figure 25
Photomontage PM3 Ellertons Road

General Notes:

Coordinates:
Easting 669339, Northing 5751458

Camera: Nikon D7000 digital SLR, 50mm focal length (35mm focal length equivalent 75mm)

Date: 23 February 2022 Time:1.44pm

Original Page Format - A4 Landscape

Photomontage PM3 is illustrated at a view angle of around 80 degrees which is within the central, binocular field, of human vision.

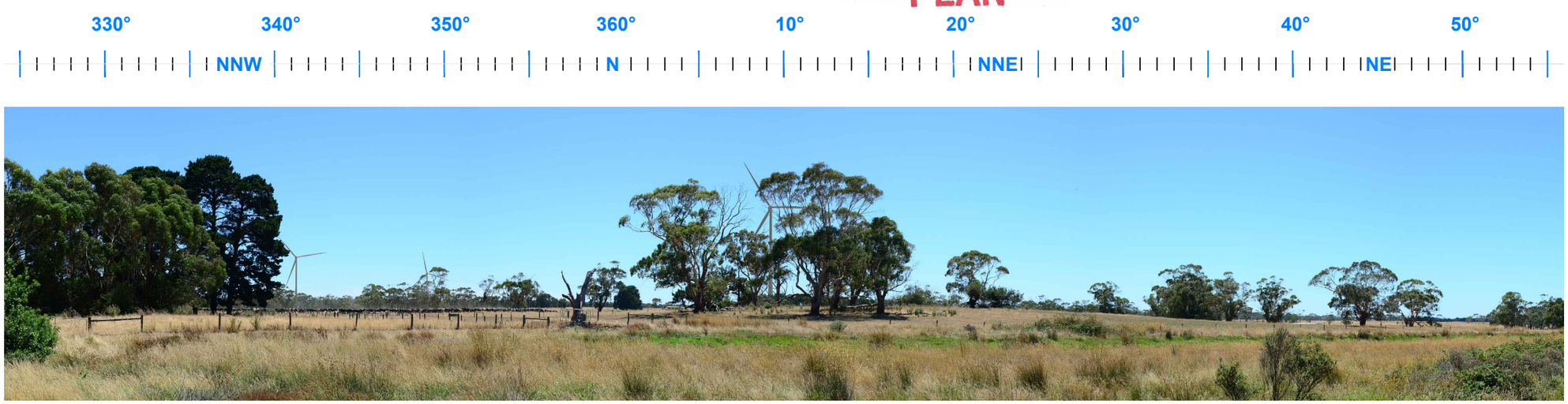
Photomontage limitations

A photomontage can never show exactly what the wind farm will look like in reality due to factors such as different lighting, weather and seasonal conditions which vary through time and the resolution of the image. Also a static image cannot convey turbine movement.

The images provided give a reasonable impression of the scale of the turbines and the distance to the turbines, but can never be 100% accurate.

The viewpoints illustrated are representative of views in this location, but cannot represent visibility at all locations.

GBD
Landscape architecture



Photomontage PM4 - Proposed view northwest to northeast from Cobden Warrnambool Road. Approximate distance to closest wind turbine 1.15km

Photomontage PM4 - Detail view (view angle around 40 degrees)

Extent of detail view

General Notes:

Coordinates:
Easting 671305, Northing 5748086

Camera: Nikon D7000 digital SLR, 50mm focal length (35mm focal length equivalent 75mm)

Date: 21 January 2022 Time:2.03pm

Original Page Format - A4 Landscape

Photomontage PM4 is illustrated at a view angle of around 80 degrees which is within the central, binocular field, of human vision.

Photomontage limitations

A photomontage can never show exactly what the wind farm will look like in reality due to factors such as different lighting, weather and seasonal conditions which vary through time and the resolution of the image. Also a static image cannot convey turbine movement.

The images provided give a reasonable impression of the scale of the turbines and the distance to the turbines, but can never be 100% accurate.

The viewpoints illustrated are representative of views in this location, but cannot represent visibility at all locations.

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Landscape architecture

Photomontage PM5 - Proposed view north north-east to southeast from Timboom Terang Road. Approximate distance to closest wind turbine 3.4km

Photomontage PM5 - Detail view (view angle around 40 degrees)

Extent of detail view

General Notes:

Coordinates:
Easting 667047, Northing 5750277

Camera: Nikon D7000 digital SLR, 50mm focal length (35mm focal length equivalent 75mm)

Date: 21 January 2022 Time:1.32pm

Original Page Format - A4 Landscape

Photomontage PM5 is illustrated at a view angle of around 80 degrees which is within the central, binocular field, of human vision.

Photomontage limitations

A photomontage can never show exactly what the wind farm will look like in reality due to factors such as different lighting, weather and seasonal conditions which vary through time and the resolution of the image. Also a static image cannot convey turbine movement.

The images provided give a reasonable impression of the scale of the turbines and the distance to the turbines, but can never be 100% accurate.

The viewpoints illustrated are representative of views in this location, but cannot represent visibility at all locations.

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Figure 27
Photomontage PM5 Timboon Terang Road

Photomontage PM6 - Proposed view south west to north west from Soundrys Road. Approximate distance to closest wind turbine 2km

Photomontage PM6 - Detail view (view angle around 40 degrees)

Extent of detail view

General Notes:

Coordinates:
Easting 673793, Northing 5750719

Camera: Nikon D7000 digital SLR, 50mm focal length (35mm focal length equivalent 75mm)

Date: 27 May 2022 Time:1.06pm

Original Page Format - A4 Landscape

Photomontage PM6 is illustrated at a view angle of around 80 degrees which is within the central, binocular field, of human vision.

Photomontage limitations

A photomontage can never show exactly what the wind farm will look like in reality due to factors such as different lighting, weather and seasonal conditions which vary through time and the resolution of the image. Also a static image cannot convey turbine movement.

The images provided give a reasonable impression of the scale of the turbines and the distance to the turbines, but can never be 100% accurate.

The viewpoints illustrated are representative of views in this location, but cannot represent visibility at all locations.

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Photomontage PM7 - Proposed view east to southeast from Timboon Terang Road. Approximate distance to closest wind turbine 1.74km

Photomontage PM7 - Detail view (view angle around 40 degrees)

Extent of detail view

Figure 29
Photomontage PM7 Timboon Terang Road

General Notes:

Coordinates:
Easting 667768, Northing 5756292

Camera: Nikon D7000 digital SLR, 50mm focal length (35mm focal length equivalent 75mm)

Date: 10 May 2022 Time:1.32pm

Original Page Format - A4 Landscape

Photomontage PM7 is illustrated at a view angle of around 80 degrees which is within the central, binocular field, of human vision.

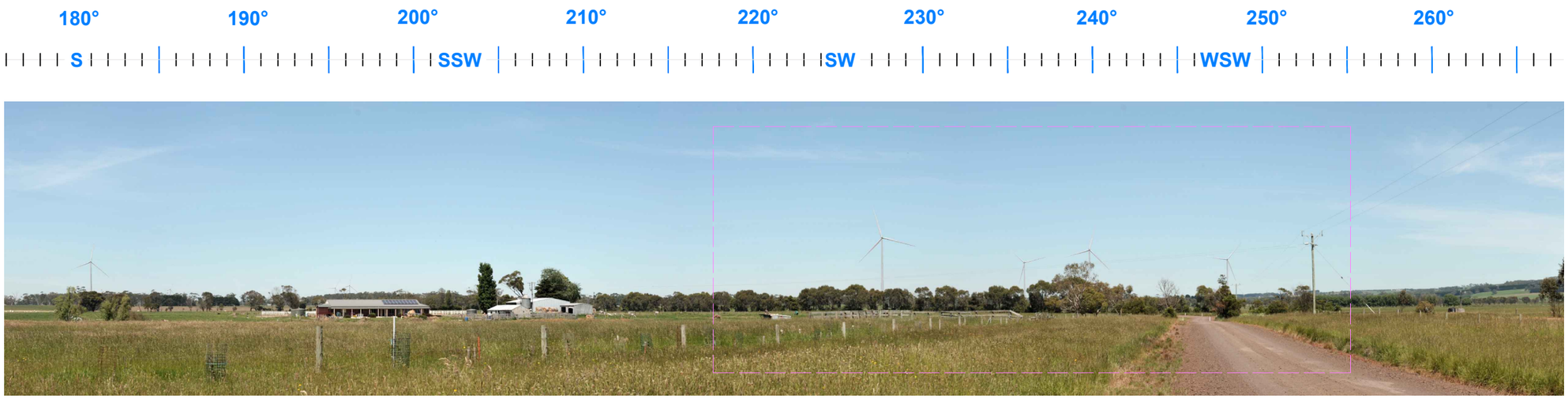
Photomontage limitations

A photomontage can never show exactly what the wind farm will look like in reality due to factors such as different lighting, weather and seasonal conditions which vary through time and the resolution of the image. Also a static image cannot convey turbine movement.

The images provided give a reasonable impression of the scale of the turbines and the distance to the turbines, but can never be 100% accurate.

The viewpoints illustrated are representative of views in this location, but cannot represent visibility at all locations.

GBD
Landscape architecture



Photomontage PM8 - Proposed view southwest to southeast from Curdies Leichfield Road. Approximate distance to closest wind turbine 2.55km

Photomontage PM8 - Detail view (view angle around 40 degrees)

Extent of detail view

Figure 30
Photomontage PM8 Curdies Leichfield Road

General Notes:

Coordinates:
Easting 672978, Northing 5757205

Camera: Nikon D850 digital SLR, 50mm focal length

Date: 13 March 2022 Time:11.39am

Original Page Format - A4 Landscape

Photomontage PM8 is illustrated at a view angle of around 80 degrees which is within the central, binocular field, of human vision.

Photomontage limitations

A photomontage can never show exactly what the wind farm will look like in reality due to factors such as different lighting, weather and seasonal conditions which vary through time and the resolution of the image. Also a static image cannot convey turbine movement.

The images provided give a reasonable impression of the scale of the turbines and the distance to the turbines, but can never be 100% accurate.

The viewpoints illustrated are representative of views in this location, but cannot represent visibility at all locations.

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Appendix C Andrew Homewood qualifications and experience

This Landscape and Visual Impact Assessment (LVIA) has been prepared by Andrew Homewood, Director and Principal Landscape Architect of Green Bean Design (GBD) Pty Ltd (ABN 866 035 75702). Andrew has held this position for the past 18 years.

Andrew holds post graduate, graduate and tertiary qualifications:

- Graduate Diploma Landscape Management (Sheffield University 1995)
- Bachelor Science (Dual Honours) Landscape Design and Archaeology (Sheffield University 1991-1994)
- National Diploma Amenity Horticulture (Writtle University College 1986-1989)

Andrew is a Registered Landscape Architect (membership #001245) and a member of the Australian Institute of Landscape Architects and the Environmental Institute of Australia and New Zealand. Andrew has been directly employed or engaged in landscape related work/studies for the past 37 years in the United Kingdom and Australia.

Andrew has prepared numerous landscape and visual impact assessments across a range of state significant developments including renewable energy, mining, electricity transmission, waste management and transport.

GBD has been commissioned to undertake LVIA for over 60 renewable energy projects across Australia. Our Victorian wind farm project experience includes:

- Woolsthorpe Wind Farm Amendment VIA
- Mumblin Wind Farm LVIA
- Brewster Wind Farm LVIA
- Kentbruck Green Energy Hub LVIA (referral)
- Berrybank Wind Farm (micro siting review)
- Hawkesdale Wind Farm amendments
- Ryan Corner Wind Farm amendments
- Jung and Wimmera Plains Wind Farm LVIA
- Alberton Wind Farm LVIA
- Moorabool Wind Farm (offsite landscape mitigation plan)
- Kiata Wind Farm LVIA
- Murra Warra Wind Farm LVIA (preliminary assessment/reporting)
- Ararat Wind Farm (terminal substation assessment)
- Willatook Wind Farm LVIA (preliminary assessment/reporting)

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Green Bean Design Pty Ltd (GBD) is a highly experienced landscape architectural consultancy specialising in landscape and visual impact assessment. Established in 2006 as an independent consultancy, GBD provide professional advice to a range of commercial and government clients involved in large infrastructure project and policy development.

GBD Director Andrew Homewood is a Registered Landscape Architect, member of the Australian Institute of Landscape Architects and the Environmental Institute of Australia and New Zealand. Andrew has over 35 years' continuous employment in landscape consultancy and has completed numerous landscape and visual impact assessments for a range of state significant developments including wind energy, solar, mining, industrial and transport developments.

GBD has been commissioned for large scale renewable energy projects across New South Wales, Victoria, South Australia, Queensland and Tasmania.

GBD have prepared Expert Witness Statements and been engaged as a peer reviewer of renewable energy landscape and visual impact assessments in Victoria and New South Wales.

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