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Delburn Wind Farm

Preliminary Landscape and Visual Impact Assessment

Landscape and Visual Impact Assessment

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Client Name: Delburn Wind Farm Pty Ltd (An OSMI Australia company)
Client No:
Project Manager: Alexandra Elliott
Author: Hayden Burge
File Name: Delburn Wind Farm LVIA

Jacobs Group (Australia) Pty Limited
ABN 37 001 024 095
Floor 11, 452 Flinders Street
Melbourne VIC 3000
PO Box 312, Flinders Lane
Melbourne VIC 8009 Australia
T +61 3 8668 3000
F +61 3 8668 3001
www.jacobs.com

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1. Introduction

Delburn Wind Farm Pty Ltd (an OSMI Company) is seeking approval to develop a new wind energy facility in southeast Victoria.

The proposed Delburn Wind Farm (the Project) will include:

- Up to 35 wind turbines, with an overall height of 250 m;
- Internal access tracks;
- Wind monitoring stations; and
- Underground cabling and necessary infrastructure to connect the Project to the grid.

The Project, inclusive of the grid connecting infrastructure, is proposed within existing HVP's Thorpdale Tree Farm.

The original turbine layout proposed up to 53 wind turbines with an overall height of 250 m, as well as internal access tracks, wind monitoring stations, underground cabling and an on-site terminal station. This layout has been refined to remove 18 turbines in response to a range of initial concerns which include views and amenity. The decision to remove turbines has in part been guided by early advice which included the preparation several comparative photomontages.

Where appropriate, the changes made between the original 'Concept Layout' and the 'Project' will be discussed to understand the change in views.

1.1 Purpose of this report

This Preliminary Landscape and Visual Impact Assessment (PLVIA) provides an initial assessment of the Project in support of a referral to the Minister for Planning in accordance with the *Environment Effects Act 1978*.

This structure and scope of this PLVIA is based upon the guidelines set out in the following documents:

- *Ministerial guidelines for assessment of environmental effects under the Environment Effects Act 1978*;
- Referral of a project for a decision on the need for assessment under the *Environment Effects Act 1978* – Referral Form; and
- *Policy and planning guidelines for development of wind energy facilities in Victoria, Department of Land, Water, Environment and Planning, revised March 2019.*

Section 14 of the 'Referral Form' set out the objectives for a preliminary landscape and visual assessment and key considerations. These include a description of the Project in proximity to:

- Nearby Significant Landscape Overlays;
- Locations that have landscape values of either regional or State significance;
- Land reserved under the *National Parks Act 1975*;
- Within or adjoining public land used for conservation or recreational purposes;
- Vegetation clearing or alteration of landforms that are likely to affect landscape values; and
- Potential for mitigation of proposed effects.

Specific to the referral of a wind energy facility is the requirement to describe:

- *The landscape character of the site and surrounding areas including landform, vegetation types and coverage, water features, any other notable features and current land use;*
- *The location of nearby dwellings, townships, recreation areas, major roads, aboveground utilities, tourist routes and walking tracks; and*
- *Views to the site and to the proposed location of wind turbines from key vantage points (including views showing existing nearby dwellings and views from major roads, walking tracks and tourist routes) sufficient to give a sense of the overall site in its setting.*

The intention of this report is therefore to address the above considerations sufficient to assist the Minister for Planning's assessment as to whether an Environment Effects Statement (EES) is required.

1.2 Further studies

A further, more detailed assessment will be prepared following the determination of the need for an EES in accordance with the requirements set out in Clause 52.32 (Wind Energy Facilities) of the Planning Scheme and Section 5.1.3 of the *Policy and Planning Guidelines for development of wind energy facilities in Victoria*.

This future detailed assessment would consider, amongst other things, the degree of visual impact of a wind energy facility considering:

- The visibility of the development;
- The locations and distances from which the development can be viewed;
- The significance of the landscape as described in the planning scheme (including in an overlay, a relevant strategic study or landscape features referenced in the planning scheme);
- Landscape values associated with nearby parks described in a schedule to the National Parks Act 1975 or Ramsar wetlands;
- Landscape values associated with nearby land such as specified areas of landscape and environmental significance;
- Key views and sightlines in the area; and
- The sensitivity of the landscape features to change.

2. Methodology and Report Structure

The methodology used within this PLVIA of the proposed Delburn Wind Farm includes the following steps and tasks.

2.1 Project Description

This chapter outlines the visual components of the Delburn Wind Farm that have the potential to contribute to views and visual impact. These changes will include the proposed wind turbines, grid connection point, access roads, substations and construction activity. The major visual component of this project, however will be the wind turbines and will be the main focus of this PLVIA.

2.2 The Viewshed

Defining the viewshed of the Project is based upon the key elevation or overall change in height that might be brought about by the key components of the Project. The viewshed is considered as the distance at which the visual changes brought about by the project may no longer contribute to views in a meaningful way based on parameters of the human vision. The rationale behind the definition of the viewshed is discussed in Section 4 of this report.

2.2.1 Zones of Visual Influence (ZVI)

Zones of visual influence seeks to quantify the scale of the potential effects of a Project over varying distances. This step is a useful measure to contemplate the potential for visual dominance of the project in views.

2.3 Seen Area Analysis

A Seen Area Analysis (SAA) utilizes Geographical Information Software (GIS) to map the areas of theoretical visibility of the Project, as a whole or in part, utilising topographical data alone. The SAA is a conservative analysis tool as it does not take into account other factors that may affect visibility, such as intervening vegetation, built form or atmospheric conditions such as fog, low cloud or haze.

2.4 Statutory Context

This chapter will identify the relevant policies and provisions that apply to areas within the viewshed of the Project that are relevant to views, landscape sensitivity and visual impact.

2.5 Landscape Units and Sensitivity

Landscape Units are based on the physical characteristics, land-use and planning provisions of the area within the Viewshed. Features that assist in defining the landscape units and a sensitivity rating include geology, vegetation, topography and drainage patterns, urban development and modification of the landscape. The use of the land and the underlying protections of an area that are afforded by the provisions within the planning scheme assist to determine the sensitivity of that area to visual change. This step recognises that the planning scheme identifies landscapes that are significant, rare or threatened and provides guidance on how these features may be preserved.

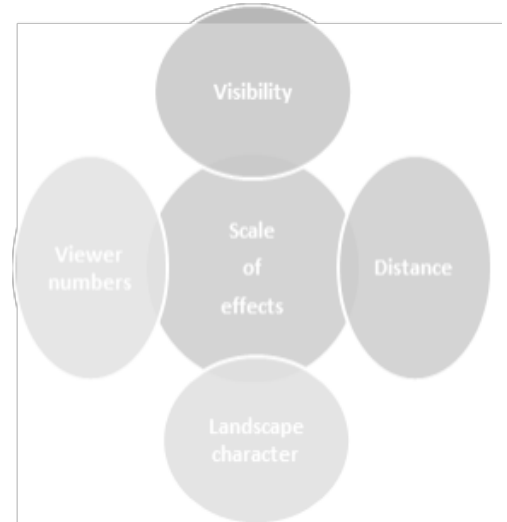
The sensitivity of a landscape unit considers the ability for a landscape to accommodate the level of change that is proposed by a project. Generally, the greater the extent of modifications in an area, or the prevalence of the landscape type and its use, the lower the sensitivity that landscape will be to visual change.

2.6 Assessment of Publicly Accessible Viewpoints

This chapter will assess the visual impact of the Project from indicative viewpoints within the public domain. This assessment will be supported by photomontages to assist with describing the location, scale and visibility of the Project.

The visual impact of a wind farm development from the public domain, is based upon four criteria which are supported by the preceding steps and assessment tasks. These criteria and their influence in determining the assessment of the overall visual impact from the public domain are set out below:

- **Visibility:** The visibility of the Project elements can be affected by topography, vegetation, built form and infrastructure.
- **Distance:** Turbine visibility and dominance will decrease with distance. The Zones of Visual Impact (ZVI) provides an indication visual dominance and potential impact based on distance. This criterion is one of several to be considered when assessing the overall visual impact of the Project from any location.
- **Landscape Character and Sensitivity:** Landscape character of an areas is based upon visual features such as topography, vegetation and the use of the land, the naturalness of the area and planning provisions. Sensitivity may also be influenced by specific landscape studies and assessments within the project viewshed. Typically, a modified landscape that is prevalent within the viewshed or the region is less sensitive than one that is ostensibly natural or protected for its environmental, ecological or cultural values.
- **Viewer numbers:** The overall level of visual impact, which considers these four criteria, will decrease where there are fewer people able to view the Project. Conversely, the level of visual impact may also increase where the viewing location is a recognised vantage point or tourist route where. Viewer numbers from these locations would be rated as 'high'.



The overall visual impact is not numerically based alone, rather it is the outcome of the above quantitative criteria that can be measured that is balanced by a discussion of the qualitative aspects from each viewpoint.

The overall visual effect will range from Nil to High. The definition for each scale is discussed below.

2.7 Scale of Effects

2.7.1 Nil Visual Impact

Nil – The project will be screened by topography, vegetation or buildings and structures.

2.7.2 Negligible Visual Impact

Negligible – minute level of effect that is barely discernible over ordinary day-to-day effects. The assessment of a 'negligible' level of visual impact is usually based on distance. That is, the wind farm is at such a distance that, when visible in good weather, it would be a minute element in the view within a modified landscape or will be predominantly screened by intervening topography, vegetation or buildings and structures.

2.7.3 Low Visual Impact

Low – visual impacts are those where the Project is noticeable but that will not cause significant adverse impacts. The assessment of a "low" level of visual impact will be arrived at if the rating of any one or more of the four criteria, (visibility, distance, viewer numbers and landscape sensitivity), are assessed as low. Therefore, an additional piece of infrastructure in a landscape which is man-modified, and which already contains many examples of existing infrastructure may be rated as a low level of visual impact.

2.7.4 Medium/Moderate Visual Impact

Medium/Moderate – visual impact may occur when several of the four assessment criteria are considered as higher than “low” or the visual effects are able to be mitigated / remedied from an initial rating of High. This will of course be moderated by the context of the existing view and the modifications within the landscape.

2.7.5 High Visual Impact

High or unacceptable adverse effect – extensive adverse effects that cannot be avoided, remedied or mitigated. The assessment of a “high or unacceptable adverse effect” from a publicly accessible viewpoint requires the assessment of all criteria to be high. For example, a highly sensitive landscape, viewed by many people, with the proposed wind farm in close proximity and largely visible would lead to an assessment of an unacceptable adverse effect.

2.7.6 Positive Visual Impact

Positive Visual Impact – is a visual change that improves the outlook or view. For renewable energy projects, a positive visual impact may be experienced where the individual viewer appreciates the view of wind turbines in the landscape or the link to renewable energy. This positive reaction is supported by the findings in numerous community perceptions surveys undertaken within Australia and globally.

2.8 Impacts from Residential Dwellings

The proximity of nearby towns, residential clusters and dwellings will be identified sufficient to determine a sense of the Project in its overall setting. An assessment of individual residential dwellings will be undertaken by the final Landscape and Visual Impact Assessment.

The assessment of visual impact from residences is different to that undertaken from publicly accessible viewpoints in that visitor numbers is not applicable and landscape sensitivity is also always rated as ‘high’. It is recognised that people feel most strongly about the view from their house and areas or attached outdoor living spaces.

2.9 Mitigation

It is recognised that wind turbines are unavoidably visible and often contrast with the environments in which they are situated. The assessment and approvals process is required to give consideration to the acceptability of impacts on landscape values, the amenity of communities and residential dwellings and the ability of mitigation to manage these impacts.

Mitigation options available to manage visual impact from locations that are considered to be significantly visually affected by a wind farm include:

- vegetation screening to filter or screen to the proposed wind turbines from dwellings or areas of private open space;
- re-siting of turbines to locations where they will have less visual impact (or removal if necessary).

This PLVIA will consider the ability for landscape screening to be effective at filtering or screening views towards the Project.

2.10 Photomontages

Photomontages are used within the report to show the anticipated change in views that might be brought about by the Project. Photomontages can assist in visual assessment by illustrating the scale and location of the proposed wind turbines. Photomontages can also demonstrate how landscape screening can assist filter or screen views to a 250 m high wind turbine.

2.10.1 Lens size and photos used within the photomontages

Photomontages are prepared to show the change in a fixed view of 60° horizontal and either 10° or 15° in the vertical field of view. The 60° horizontal field of view represents the central cone of view in which symbol recognition and colour discrimination can occur. By using a standard field of view (60° horizontal and 10° or 15° vertical) the photomontages can also assist to portray the scale of the proposed wind turbines when viewed over various distances. The 60° horizontal field of view is important to demonstrate the context and scale of the Project in views.

The vertical field of view assist to represent the central field of view of human vision as shown in Figure 2-1.

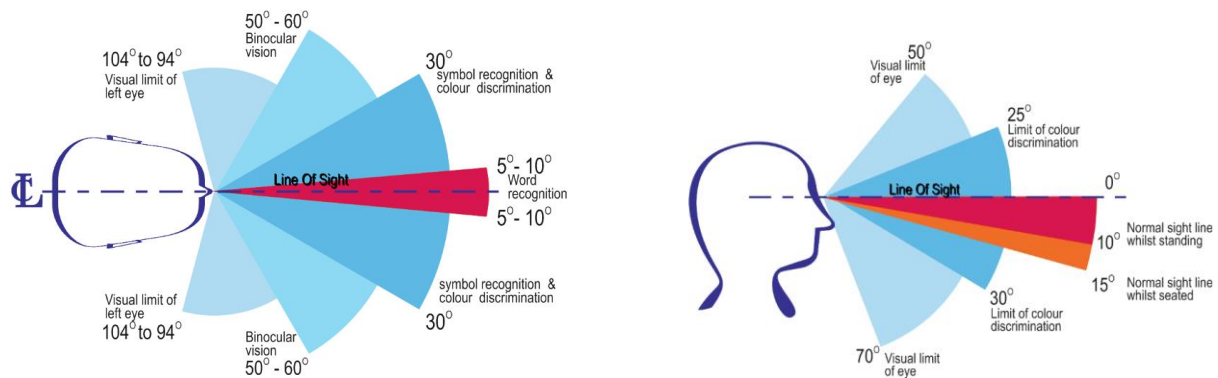


Figure 2-1: Horizontal and Vertical field of view (Human Dimension and Interior Space, Julius Panero & Martin Zellnik, Witney Library of Design, 1979)

Similar data can be found in the more recent publication entitled 'The Measure of Man and Woman, Current Edition', Henry Dreyfuss Associates, John Wiley & Sons, 2012.

The A3 photomontages, which are appended to this report in Annex B, provide a better size in which to view the images in the context of the report and the assessment.

For verification purposes, each photomontage included in the appendices includes:

- The existing view and proposed photomontage
- a 60° horizontal field of view of the existing view and photomontage: and
- a wireframe view of the computer model accompanied by a numbered turbine layout.

The latter technically illustrates how the photomontages are prepared. In these views Vertical 'poles' or cylinders located features such as trees, towers or buildings and a 'mesh' models the existing topography into the view. These features allow the computer model (prepared in 3D Studio Max) and the photograph to be accurately aligned prior to preparing the final renderings.

This ensures that the proposed wind farm is accurately located within the photograph and then the rest of the model is removed, and the wind farm is rendered into the image. This is explained further in Section 2.10.3 below.

2.10.2 Photographs

A 70 mm lens on a Nikon D850 digital camera has a picture angle of 26.5° and a horizontal angle of view of approximately 21.3°. <https://imaging.nikon.com/lineup/dslr/basics/19/01.htm>.

Four photographs overlapped by approximately 1/3 create an image approximately the same as the central cone of view of human vision, i.e. 50-60° horizontal and 15° vertical. Figure 2-2 demonstrates this theory.

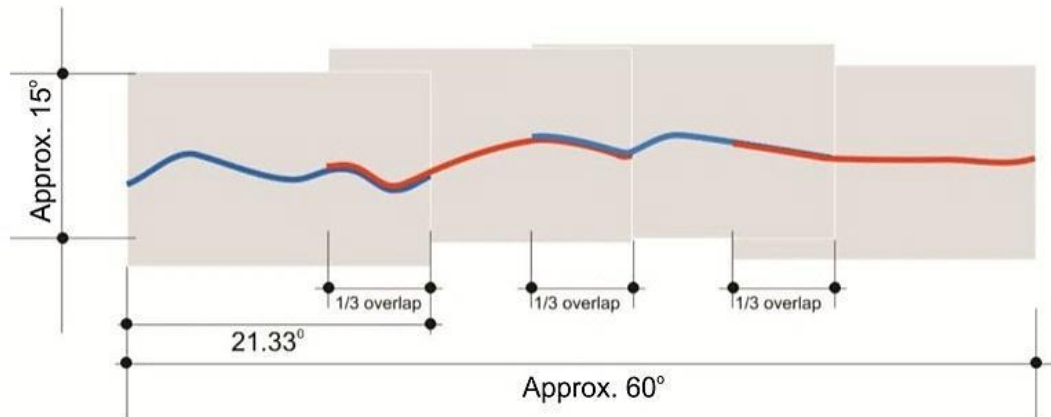


Figure 2-2: Photomontage layout

This technique also assists to remove distortion at the edges of the images that would be pronounced using a single image captured through a wide-angle lens.

2.10.3 Computer modelling and the wireframe model

Contour data as well as the proposed development are modelled within a computer program (3ds Max). A virtual camera is set up in the model at the GPS coordinates for each of the photographs that are being used within the panorama.

The digital model or wireframe view is then overlaid on the photographic panorama. Known points within survey information such as topography, building locations or other infrastructure are registered into the base photographs (or other predetermined points). For technical accuracy, these points must align. This verifies the location and apparent height and scale of the proposed development.

After the background reference points have been aligned, the wireframe is removed, leaving only the proposed wind farm facilities, which are rendered, either to match the lighting conditions at the time the photographs were taken or, more typically, to maximise their visibility by increasing their contrast against the background sky.

Photomontages are prepared with a 60° field of view, which follows the parameters of human vision. Wider panoramas are also used to indicate the full extent of the proposed wind farm facilities where appropriate.

2.10.4 GPS Coordinates and distance to the wind farm

The Nikon D850 camera also records the GPS coordinates as part of the metadata. GPS coordinates are also taken based on a separate hand-held GPS and the locations from which the photographs were taken is also marked on a digital map at the location of each photograph.

2.10.5 Photomontages

Nine photomontages have been prepared to assist with informing this Preliminary Landscape and Visual Impact Assessment. The photomontages have been prepared from locations within the public domain and have been included at viewpoints M3, M6, L5, L6, L8, L9, L12, L13, L16 and T6. Photomontages have been prepared for both the original 'Concept Layout' and the current 'Revised Layout'.

Two wireframe views have also been prepared using the 'Concept Layout' only. These are shown at viewpoints L10 and T9. The reason for the wireframe views is that the proposed wind turbines would be largely screened by topography, vegetation or both. For this reason, the images have been included within the assessment as they demonstrate the potential visibility from clusters of residential dwellings or localities.

These photomontages are appended to this report (Refer Annex B for A3 size photomontages with a 60° field of view).

It is recognised that the small photographs and the A3 photomontages included within this assessment are not indicative of the actual visual impact. The A3 images, which are appended to this report (Annex B), are clearer than the smaller images in the text.

However, to view the photomontages in a way that they appear perceptually accurate, they need to be printed and viewed on A0 sized sheets and held at arms' length. When viewed at A0 the photomontages are representative of the level of visual alteration.

3. Project Description

This section will describe and locate the Project relative to nearby towns and features and identify key elements of the Project relevant to undertaking a PLVIA.

3.1 Wind Farm Location

The Project site is located approximately 126 km east of Melbourne and 8.5 km south of Moe.

The Project will be located entirely within existing HVP's Thorpdale Tree Farm. Figure 3-1 shows the proposed site boundary in relation to nearby towns and major roads.

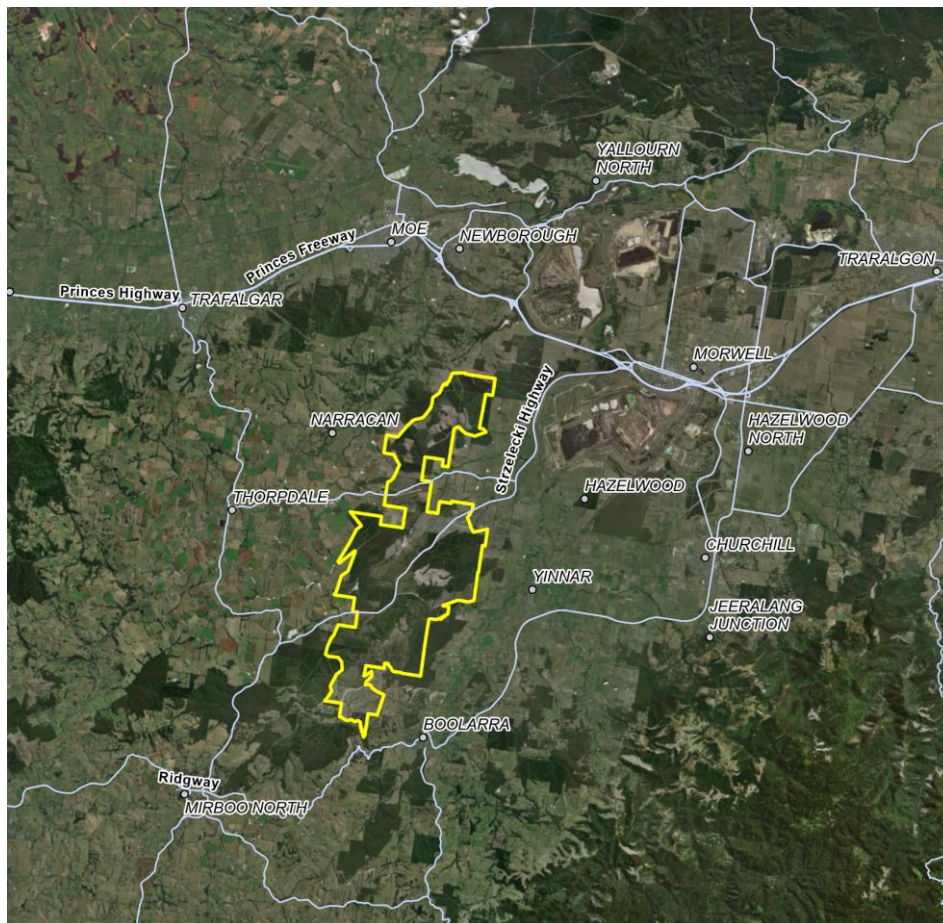


Figure 3-1: Subject site (Source: <https://mapshare.vic.gov.au/vicplan/>)

Nearby towns and rural communities include Trafalgar, Narracan, and Coalville to the north west, Thorpdale to the west, Hazelwood, Yinnar and Morwell to the north east, Yinnar and Churchill to the east, Boolarra, Delburn and Mirboo North to the south of the Project.

Major roads include the Princes Freeway to the north of the Project and the Strzelecki Highway which passes through the existing pine plantations and the Project site. There are a number of sealed and gravel roads connecting farms, towns and rural communities.

The Grand Ridge Rail Trail is located to the south of the Project. The trail is approximately 13 km long and runs between Boolarra at its eastern end and Mirboo North to the west. The trail follows the line of the former Mirboo North railway line along its entire distance.

There are several open cut coal mines and operating coal fired power stations located generally to the north, north east and east of the Project area. Power stations are connected to the State electricity grid via a network of high voltage transmission lines which bisect the landscape.

A 220kV transmission line runs through the northern part of the Project site and near to the area of the proposed on-site substation.

3.2 Turbine Layout

The concept layout comprised 53 wind turbines with an overall height of 250 m to the tip of the blade. The Revised layout which forms the basis of this PLVIA has been revised to retain 35 wind turbines of the original 53 proposed wind turbines. The Revised layout responds to preliminary visual advice, technical studies and community feedback.

Figure 3-2 shows the original 53 wind turbine 'Concept' layout in blue and the current 'Revised' wind turbine layout in orange. The deleted wind turbines are marked with an 'X'.

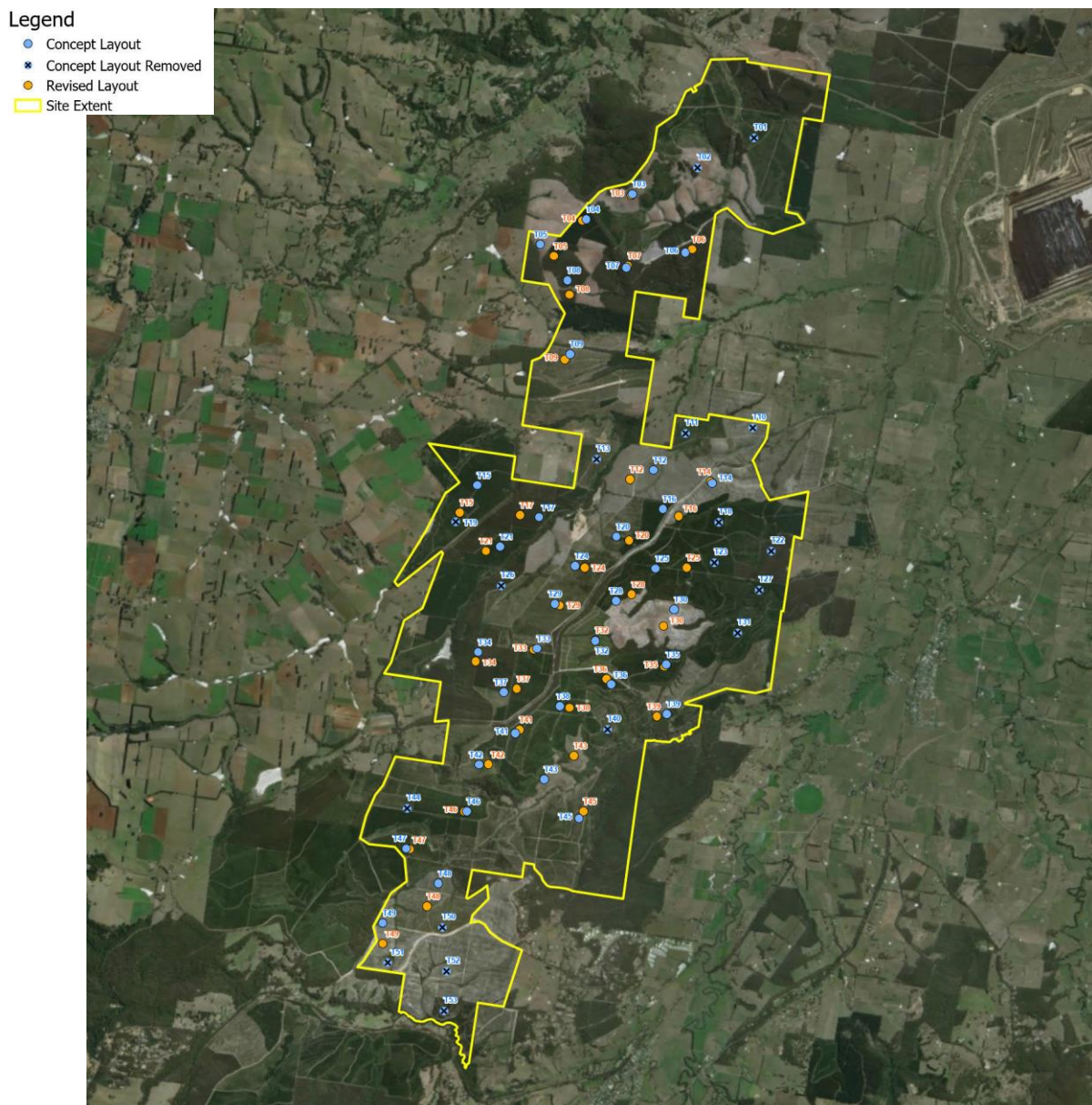


Figure 3-2: Concept and Revised turbine Layout

The Revised layout has removed eighteen wind turbines generally around the margins of the project and near to populated locations. The change in views brought about by the removal of turbines is demonstrated in the comparative photomontages discussed at Section 8 of this report.

Table 3.1 summarises the changes between the concept and 'Revised' layout. The wind turbine height remains un-altered between the concept and Revised layout.

Table 3.1: Concept Layout and Revised Turbine Locations

Layout WTG ID	CONCEPT LAYOUT (v1.5)		REVISED LAYOUT (v2.0)		
	Easting	Northing	Easting	Northing	Distance Moved
T01	438480	5766467	-	-	-
T02	437581	5765992	-	-	-
T03	436545	5765575	436525	5765561	24
T04	435812	5765174	435750	5765156	65
T05	435080	5764776	435296	5764592	284
T06	437387	5764645	437495	5764699	121
T07	436449	5764408	436473	5764438	38
T08	435512	5764205	435544	5763978	229
T09	435553	5763033	435470	5762948	119
T10	438622	5762012	-	-	-
T11	437391	5761774	-	-	-
T12	436880	5761192	436508	5761045	400
T13	435976	5761363	-	-	-
T14	437814	5760983	437790	5761008	35
T15	434078	5760951	433800	5760517	515
T16	437029	5760574	437282	5760458	279
T17	435059	5760445	434760	5760476	301
T18	437919	5760361	-	-	-
T19	433734	5760370	-	-	-
T20	436291	5760136	436493	5760073	212
T21	434439	5759976	434216	5759907	233
T22	438754	5759903	-	-	-
T23	437848	5759720	-	-	-
T24	435635	5759669	435788	5759640	156
T25	436913	5759629	437408	5759641	495
T26	434457	5759352	-	-	-
T27	438563	5759284	-	-	-
T28	436284	5759115	436532	5759218	269
T29	435312	5759066	435389	5759043	80
T30	437211	5758977	437040	5758715	313
T31	438220	5758603	-	-	-
T32	435956	5758480	435954	5758492	12
T33	435028	5758358	434976	5758338	56
T34	434091	5758300	434051	5758153	152
T35	437083	5758103	437056	5758069	43
T36	436208	5757790	436134	5757873	111
T37	434500	5757664	434704	5757718	211
T38	435391	5757441	435544	5757416	155
T39	437093	5757315	436935	5757281	162
T40	436150	5757073	-	-	-
T41	434684	5757012	434751	5757067	87
T42	434107	5756513	434253	5756519	146
T43	435142	5756280	435616	5756655	604
T44	432961	5755818	-	-	-
T45	435696	5755659	435767	5755772	133
T46	433910	5755773	433871	5755768	39
T47	432945	5755180	433005	5755169	61
T48	433458	5754626	433276	5754264	405
T49	432572	5753997	432576	5753672	321
T50	433522	5753927	-	-	-
T51	432653	5753369	-	-	-
T52	433588	5753229	-	-	-
T53	433547	5752600	-	-	-

This turbine layout may be altered further as the various technical studies progress.

3.3 Wind Turbines

The greatest potential to bring about a change in views in the area will be brought about by the wind turbines. There are three key components of a wind turbine that are useful to assessing the visual impact of a proposed wind farm and the assessment methodology described in Section 2.

These are, the overall turbine height (which is used to determine the extent of the viewshed and the visual study area), the rotor diameter (which supports the preparation of the Seen Area Analysis or GIS studies) and the nacelle or hub height (which is a static element in views).

The actual turbine specifications for the blade length and the nacelle height will not be determined until after the final assessments have been prepared. What will be fixed is the overall turbine height being 250 m. This assessment has been based upon the turbine specifications set out in the table below.

Table 3.2: Turbine Specifications



Turbine Feature	Specification
Overall Height	250 m above natural ground
Hub Height / Nacelle	160 m above natural ground
Swept Path/ Rotor Diameter	180 m
Number of turbines	35

The overall height of the wind turbines, which is proposed to be 250 m above natural ground will be used to determine the extent of viewshed and Zones of Visual Influence from the base of the wind turbine layout.

3.4 Aviation Obstacle Lighting

At the time of writing this PLVIA, the preliminary Aviation Impact Assessment did not recommend lighting on the proposed wind turbines.

Should the final Aviation Impact Assessment determine the requirement for obstacle lighting, a separate assessment of the night-time visual impacts would be undertaken as part of the full LVIA assessment.

3.5 Grid Connection

Grid connecting infrastructure will require a new substation, underground 33 kV power lines and transformers. The current project is exploring the potential to include a battery storage area to moderate the transfer of energy into the electricity grid.

All new electrical infrastructure will be located within the existing timber plantations and proposed site boundary.

3.5.1 Terminal Substation and battery storage

A new terminal substation would be located at the northern end of the Project area adjacent to the existing 500 kV power line. The substation and battery storage area would be located with existing recently logged area of the plantation approximately 2.0 km west of the Strzelecki Highway located off Deans Road.

Figure 3-3 shows the investigation area for the proposed on-site substation and battery storage area.

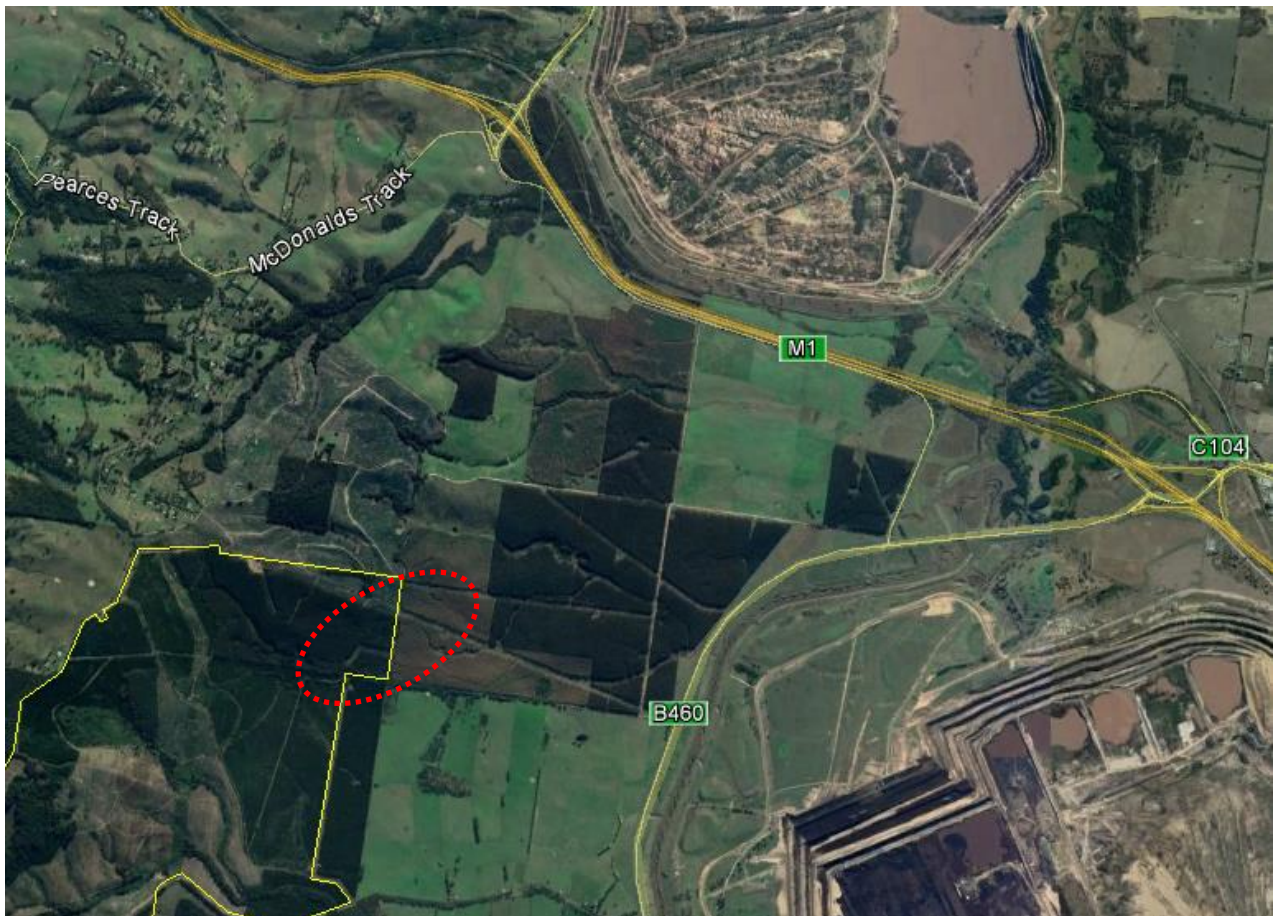


Figure 3-3 Substation and Battery Storage investigation area

Figure 3-4 shows the clearing and existing transmission line in the area of the proposed terminal sub-station and battery storage area.



Figure 3-4 Substation and Battery Storage investigation area

The final location and dimensions of the new terminal station will be confirmed as the technical studies progress. Figure 3-5 shows a typical substation similar in scale to that which would be required by the Project.



Figure 3-5: Typical substation

It is typically a requirement of any permit for a wind farm that perimeter screening planting be installed along sensitive interfaces and boundaries. This requirement would be fulfilled by the existing timber plantations. If required, permanent supplementary plantings may be proposed to mitigate views from sensitive locations.

3.5.1 Battery Storage

The Project is investigating the viability and benefits that might be achieved through the inclusion of a battery storage facility as part of the Project. Should this be included, the battery storage area would be located near to the terminal station.

Figure 3-6 shows an example of a typical battery storage area similar to that which is proposed.



Figure 3-6: Typical battery storage

The battery storage facility would also be located in an area largely surrounded by timber plantations. If required, permanent supplementary plantings may be proposed.

3.5.2 Power lines

Electricity generated by the proposed wind turbines is required to be converted from Direct Current (DC) to alternating current (AC) via transformers located at the base of each turbine. The transformers will be located either within the turbine tower or adjacent to the turbines in an enclosed cabinet.

The converted AC electricity will be transferred to the on-site substation via underground 33 kV power lines.

3.6 Operations and Maintenance Facility

New operations and maintenance buildings will be required for use by permanent employees of the Project. These buildings will include offices and meeting spaces as well as storage of equipment, materials and vehicles.

It is noted that these buildings will be visually similar to buildings found in the surrounding area.

3.7 Wind Monitoring

Up to three wind monitoring stations are proposed across the wind farm site. These will include a mixture of steel lattice or tubular steel structures that are supported by guy wires and mobile LIDAR units.

The tower type monitoring stations will be up to 160 m in height to measure wind speeds at the nacelle or turbine hub level. The mobile LIDAR units are containerised and fixed to a trailer.

A 160 m high meteorological mast and mobile LIDAR unit have already been established. Figure 3-7 shows the existing meteorological mast and mobile LIDAR unit already established as part of the Project.



Figure 3-7 Existing meteorological mast and LIDAR units

3.8 Access Tracks

The Project seeks to utilise existing access tracks and to limit the extent of new tracks required to be constructed to minimise impacts to the existing timber plantation operations and adjacent remnant native vegetation, as well as minimising impacts on local traffic during the construction phase.

Existing logging tracks will be widened and upgraded to accommodate the articulation and widths required to transport the turbine components. New tracks would be constructed between the existing logging tracks and the final turbine locations.

3.9 Construction

Construction activities will include the upgrading and construction of access tracks, modifications to intersections, establishment of crane hardstands at the base of the wind turbines, establishment of the operations and maintenance facilities and construction of compounds.

Temporary on-site concrete batching plants may be required for the construction of the foundations for the wind turbines. On-site batching plants assist to minimise traffic impacts on the surrounding road network. Figure 3-8 shows an example of a modular silo batching plant.



Figure 3-8 Portable batching plant

Following the completion of construction, all temporary works such as access tracks not required for the ongoing operation of the wind farm or the timber plantation, construction compounds and laydown areas and batching plants would be removed.

4. Viewshed

This section establishes a basis on which to determine the extent of the study area for visual impact, and the scale of the proposed 250 m high wind turbines when viewed at various distances.

The view shed is considered to be the distance at which the proposed wind turbines would not be a recognisable feature within a view and is determined based upon the parameters of the human vision. It may still be possible to see wind turbines from areas outside the view shed, however they would be at a distance where they would be barely noticeable. For this reason, the view shed is the extent of the study area for the visual assessment of a wind farm.

The key parameters of human vision relevant to views and visual impact include the vertical and horizontal fields of view as shown in Figure 4-1. These figures are based on data from '*Human Dimension and Interior Space*', Julius Panero & Martin Zellnik, *Witney Library of Design*, 1979. Similar data can be found in the more recent publication entitled '*The Measure of Man and Woman, Revised Edition*', Henry Dreyfuss Associates, John Wiley & Sons, 2012.

Figure 4-1 shows the vertical field of view and the assumption made to calculate the viewshed for the Delburn Wind Farm.

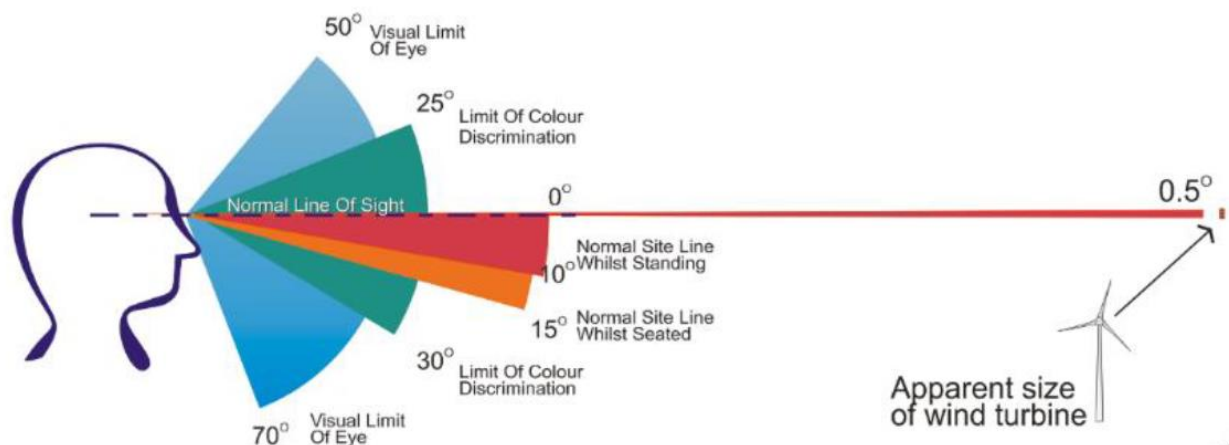


Figure 4-1: Determining the viewshed extent based on wind turbine in the vertical field of view

Typically, the “Normal” vertical field of view of a person is between 10° - 15°. The theoretical extent of the view shed is considered to a distance at which the tallest component of the Project would take up less than 5% or 0.5° of the “Normal” 10° of the vertical field of view.

With an overall height of 250 m, the proposed wind turbines are the largest element of the Project. The distance at which a 250 m high turbine would take up 5% (0.5°) of the vertical field of view is 28.6 km.

The following section will describe the Zones of Visual Influence (ZVI) for the Turbines.

4.1 Zones of Visual Influence

Zones of Visual Influence (ZVI) assist to assess the visible scale of the proposed turbines over varying distances. The same principles used to determine the view shed assist to define visual scale based on distance to a turbine. For example, when a view location is closer to a turbine, the turbine would take up a greater percentage of the vertical field of view. This forms one element of several criteria that contribute to determining the overall visual impact of a project from viewing locations.

The ZVI, which will form part of the visual assessment of Project are also calculated based upon the parameters of the human vision are set out in Table 4.1.

Table 4.1: Zones of Visual Influence.

Distance to 250m high Turbine	Vertical angle of view (°)	Zones of Visual Influence
>28.60 km	<0.5	Visually insignificant – Extent of the project view shed The Project will be a very small element in views, is difficult to discern and will be invisible in some lighting or weather circumstances.
14.5-28.6 km	0.5-1.0	Discernible, but will not be dominant in views The Project will be visible however, will not be a dominant feature in views or the landscape.
6.0 -14.5 km	1.0-2.5	Potentially noticeable and can dominate the landscape Where visible, the Project has the potential to be noticeable in views.
3.0- 6.0 km	2.5-5.0	Highly visible and will usually dominate the landscape The Project has the potential to be a dominant visual element in views. The degree of visual intrusion will depend on the wind turbines' placement within the landscape and factors such as foreground screening.
<3.0 km	>5.0	Will always be visually dominant in the landscape Dominates the landscape in which they are sited.

Figure 4-2 demonstrates the reducing scale of the Project relative to the zones of visual influence are perceived in views across the landscape. That is, the further away a viewing location is from the Project, the smaller or lower the Project will appear in the vertical field of view.

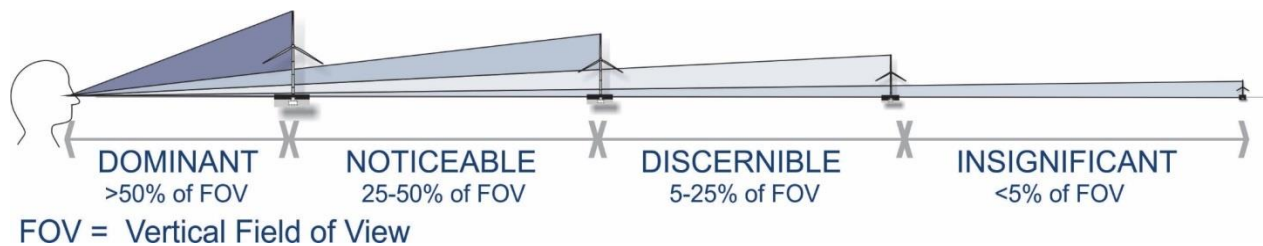


Figure 4-2 Zones of Visual Influence

Figure 4-2 shows the ZVI bands in relation to the Delburn Wind Farm up to the extent of the viewshed.

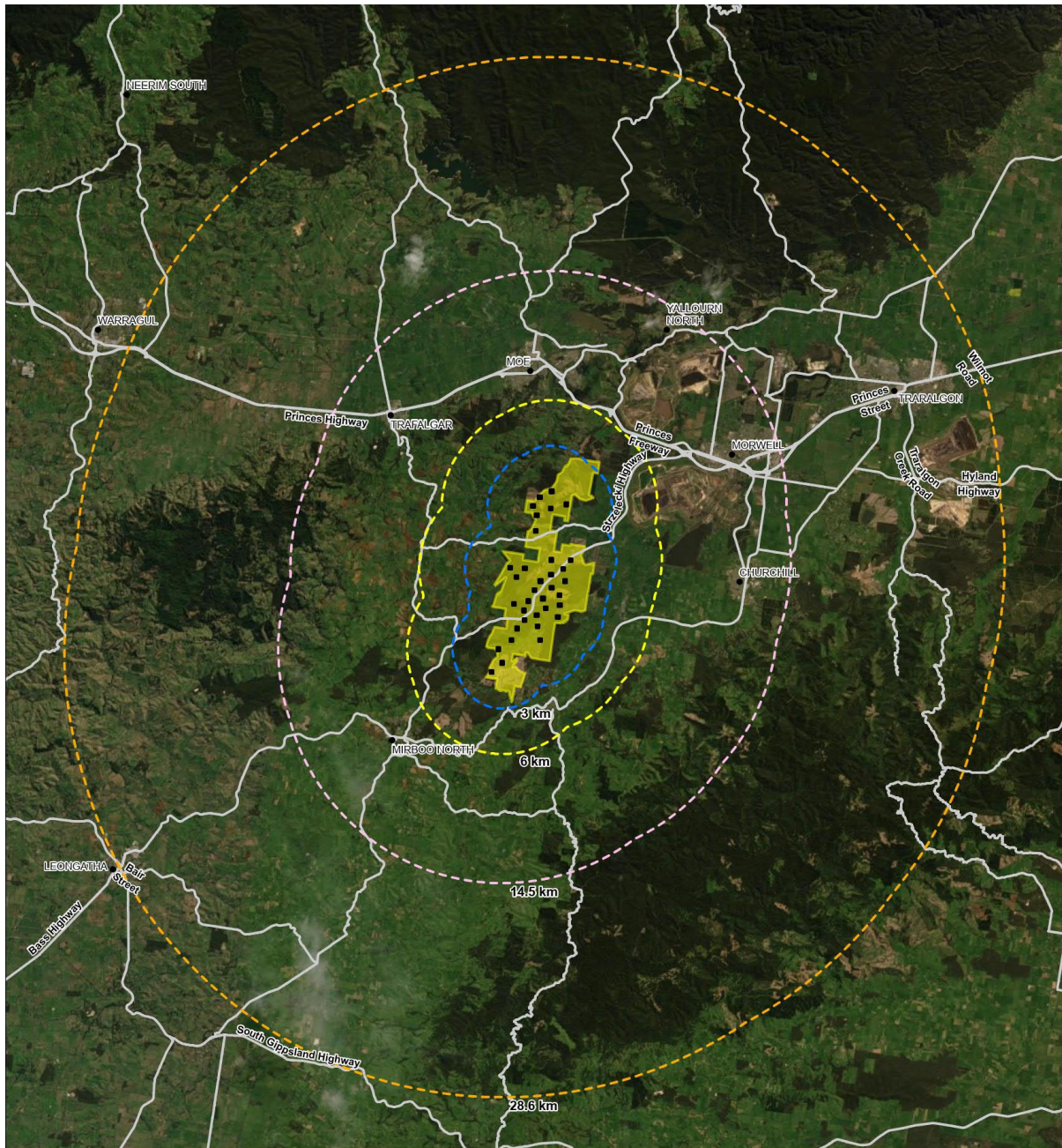


Figure 4-3: Zones of Visual Influence Map

Areas that have the potential to be most visually affected by the proposed turbines are those within 6.0 km of the nearest turbine, while areas that may have potentially noticeable visual impacts associated with the Project extend out to 28.6 km. On clear days, turbines may still be visible beyond 28.6 km. However, they would be a small element within views.

ZVI provide a guide to considering the visual scale of a wind turbine(s) based on distance as part of the overall scale of visual effects described at Section 2.7 of this report. The overall assessment will also consider visibility, the number of viewers and the sensitivity of the landscape at the viewpoint.

It is recognised that the apparent size of the Project will not change dramatically when a viewer moves from one distance band to another, for example from 5.9 km to 6.1 km.

This preliminary landscape and visual impact assessment will consider the area within a 28.6 km radius of the current turbine layout.

5. Planning Policy Framework

Section 14 of the 'Referral Form' requires a Preliminary Landscape and Visual Assessment to describe and consider the proximity of Project in relation to:

- *Nearby Significant Landscape Overlays;*
- *Locations that have landscape values of either regional or State significance;*
- *Land reserved under the National Parks Act 1975;*
- *Land within or adjoining public land used for conservation or recreational purposes;*
- *Vegetation clearing or alteration of landforms that are likely to affect landscape values; and*
- *Potential for mitigation of proposed effects.*

And:

- *The landscape character of the site and surrounding areas including landform, vegetation types and coverage, water features, any other notable features and current land use;*
- *The location of nearby dwellings, townships, recreation areas, major roads, aboveground utilities, tourist routes and walking tracks; and*
- *Views to the site and to the proposed location of wind turbines from key vantage points (including views showing existing nearby dwellings and views from major roads, walking tracks and tourist routes) sufficient to give a sense of the overall site in its setting.*

The Project viewshed covers land located within the Baw Baw, South Gippsland, Latrobe and Wellington Planning Schemes. The Project site is located within areas covered by the Baw Baw, La Trobe and South Gippsland Planning Schemes. The majority of the Project boundary and viewshed is located within the Latrobe Shire. Figure 5-1 shows the Project boundary and the 28.6 km viewshed in proximity to shire boundaries.



Figure 5-1 Project boundary and viewshed relative to LGA's

This section will describe the planning provisions relevant to this PLVIA of the Project.

This is not intended to be a thorough review of the planning scheme, mechanisms and triggers as this is best undertaken by others. Rather this review seeks to identify areas or locations that may be of a particular landscape or visual significance when compared to other landscapes in the region and recognised or protected accordingly.

5.1 Planning Policy Framework (PPF)

The PPF sets out broad policy objectives to ensure uniform and consistent application of the planning scheme. The following Clauses are of relevance to a PLVIA of the Project.

5.1.1 Clause 12.05-2S Landscapes

The objective of this provision is to protect and enhance significant landscapes and open spaces that contribute to character, identity and sustainable environments. Key strategies include:

- *Ensure significant landscape areas such as (Native) forests, the bays and coastlines are protected;*
- *Ensure development does not detract from the natural qualities of significant landscape areas;*
- *Improve the landscape qualities, open space linkages and environmental performance in significant landscapes and open spaces, including green wedges, conservation areas and non-urban areas;*
- *Recognise the natural landscape for its aesthetic value and as a fully functioning system; and*
- *Ensure important natural features are protected and enhanced.*

Local content to this clause is provided at Clause:

- 21.06 (Natural Environment) of the Baw Baw Planning Scheme;
- 21.06 (Environmental and Landscape Values) of the South Gippsland Planning Scheme;
- 21.03 (Environmental and Landscape Values) of the Latrobe Planning Scheme; and
- 21.13 (Environment and Landscape Values) of the Wellington Planning Scheme.

5.1.2 Clause 19.01-2S Renewable energy

Clause 19.01-2s seeks to promote the provision of renewable energy in a manner that ensures appropriate siting and design considerations are met. Key and relevant strategies include:

- *Facilitate renewable energy development in appropriate locations;*
- *Set aside suitable land for future energy infrastructure;*
- *Consider the economic and environmental benefits to the broader community of renewable energy generation while also considering the need to minimise the effects of a proposal on the local community and environment; and*
- *Recognise that economically viable wind energy facilities are dependent on locations with consistently strong winds over the year.*

5.2 Local Planning Policy Framework (LPPF)

The following clauses of the LPPF's of described within the Baw Baw, South Gippsland, Latrobe and Wellington Planning Schemes are of relevance to this PLVIA of the Project.

5.2.1 Baw Baw Planning Scheme – Clause 21.06 Natural Environment and Resource Management

Clause 21.06 describes the role that rural areas and significant water catchments play in the provision of the State's water and natural resources and the value placed on the pastoral, rural and bushland landscapes by residents and visitors. Key objectives of this clause relate primarily to the protection of:

- *Clause 21.06-3 Biodiversity*
- *Clause 21.06-4 Natural Resource Base*
- *Clause 21.06-5 Water Catchments*
- *Clause 21.06-6 Farmland and Soil Quality*
- *Clause 21.06-7 Forestry Operations*
- *Clause 21.06-8 Coal Resources*
- *Clause 21.06-9 Stone Resources*

5.2.2 South Gippsland Planning Scheme - Clause 21.06 Environmental and landscape values

Clause 21.06 describes specific coastal landscapes within the Shire that are of State or regional significance which include Venus Bay Peninsula and Anderson Inlet, Cape Liptrap and Waratah Bay, and Corner Inlet Amphitheatre. These areas are included within a Significant Landscape Overlay which seeks to protect landscape values specific to these areas. These features are over 30 km from the project and outside the viewshed.

5.2.3 South Gippsland Planning Scheme - Clause 21.13 Infrastructure

Clause 21.13 Infrastructure recognises that *'the use of alternative, renewable energy sources such as solar and wind power is a small, yet significant, method by which the community can address the global issue of climate change through local actions. However, there needs to be a balance between the potential benefits and negative impacts of using alternative energy technologies.*

Relevant objectives and strategies include:

- *Objective 1 – To encourage the use of alternative energy sources in the provision of electricity.*
- *Strategy 1.1 – Promote the use of alternative energy sources, such as wind, tidal and solar power.*
- *Objective 2 – To ensure that the use of alternative energy technology does not detrimentally affect the surrounding environment. Specifically, strategy 2.2 discourages tall structures on ridgelines or in view corridors.*
- *Strategy 2.1 - Ensure the design and siting of structures associated with alternative energy production does not detrimentally affect the character of the area.*
- *Strategy 2.2 – Discourage tall structures on ridgelines or in view corridors*
- *Strategy 2.3 – Minimise the potential impact of alternative energy sources on the existing physical and ecological relationships of flora and fauna, and identify appropriate mitigation techniques where required*
- *Strategy 2.4 - Minimise the potential impact of alternative energy sources on public health and safety, including fire hazard*

When deciding on an application for alternative energy sources the following matters will be considered as appropriate:

- *The design and siting of any structure associated with the energy installation; and*
- *The visual impact on the landscape, including visual corridors and sight lines.*

5.2.4 Latrobe Planning Scheme - Clause 21.03 Environmental and Landscape Values

This provision provides local content to support Clause 12 (Environmental and Landscape values) of the SPPs. A relevant objective is:

- *Objective 3 - To protect and enhance the visual, natural and cultural heritage values of rural landscapes.*

5.2.5 Wellington Planning Scheme – Clause 21.13 Environment and Landscape Values

The overview of the Wellington Environment and Landscape Values states that *“The Shire’s rural areas contain some of the most ecologically important and diverse areas in the State. These have high intrinsic natural values and are a significant factor in attracting people to reside and visit the Shire. There are significant environmental landscape issues facing the Shire’s rural areas, including inappropriate residential development and the protection of vegetation habitat. Infrastructure development can have significant detrimental effects on the landscape. The rural amenity of the Shire is an asset which warrants protection. Residents and tourists derive pleasure from the scenic values of the rural landscapes. Even the highly modified areas of the Shire possess high landscape values. The Macalister Irrigation District, with its picturesque, green irrigated dairy country set against the foothills of the Great Dividing Range is an excellent example of the region’s aesthetic assets.”*

- *Objective 1 - To protect, improve and sustainably manage the Shire’s natural environment and diverse landscapes.*
- *Objective 2 - To recognise the visual, landscape and recreational importance of the Gippsland Lakes and coastal environment to the region.*

5.3 Zones and Overlays

Planning zones describe permissible uses, identify areas of sensitivity and protection of features that are special or unique to an area. Zones and overlays also provide protection to enable the continued use of areas and business against adverse amenity claims such as dust, noise, odour or views.

Uses such as coal mines and reserves, power stations, plantations or farming areas have the potential for offsite amenity impacts such as odour, noise, dust or visual. Planning provisions for these areas put in place protections to enable the continued use of those areas and protect them from encroachment and incompatible uses.

Similarly, landscapes that exhibit special or unique features are typically found within a Significant Landscape Overlays (SLOs) or Environmental Significance Overlay (ESO) and include guidance on how these areas might be protected. Sensitive uses, such as residential areas or National Parks are often protected against adverse impacts that may be detrimental to the use and enjoyment of these areas from incompatible uses.

5.3.1 Zone and overlays affecting the site

The majority of the Project is within land designated Farming Zone (FZ). A small portion of the northern part of the site is within land zoned Special Use Zone – Brown Coal (SUZ1). The portion of the site within the Baw Baw Planning Scheme is included within a broader Erosion Management Overlay (EMO). An Environmental Significance Overlay – Schedule 5 (ESO) within the South Gippsland Shire Planning Scheme also covers part of the site’s southern boundary. This ESO relates to the management of erosion and water quality.

5.3.2 Zones within the viewshed

The majority of the area within the Project view shed is also within the Farming Zone (FZ) and Special Use Zone 1 – Brown Coal Reserves (SUZ1). The Public Use Zone 1 (PUZ1) covers services and utilities in the Shire of Baw Baw, north of the Project site.

Sensitive zones and land use within the viewshed include the Public Conservation and Resource Zone (PCRZ) which include the Bull Beef Creek Nature Conservation Reserve, Moondarra State Park and Tyers Park. Other sensitive zones within the viewshed, include residential settlements included with the General Residential Zone (GRZ), areas within the Rural Living Zone (RLZ) and open space areas located within the Public Park and Recreation Zone (PPRZ). Figure 5-2 shows the zones within the area immediately surrounding the site.

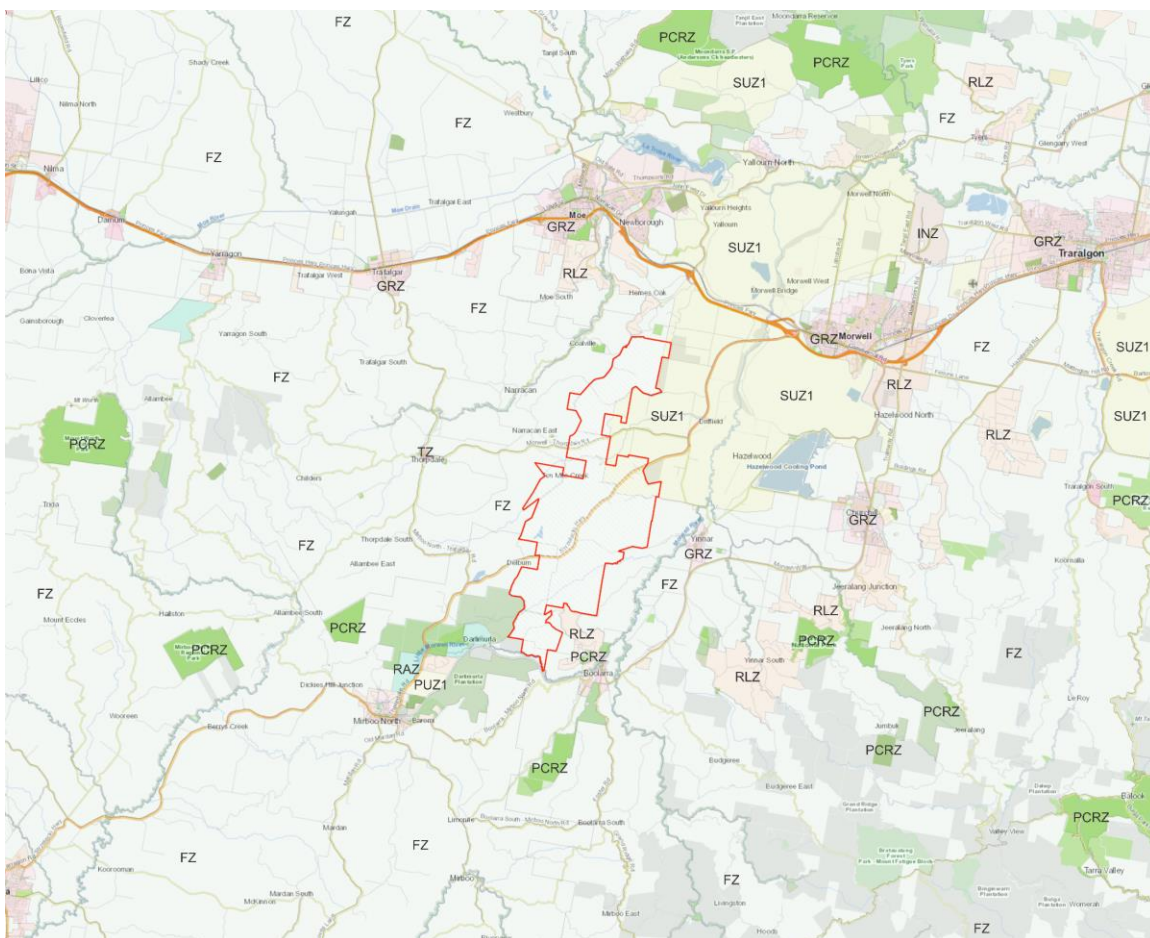


Figure 5-2: Zones within and surrounding the site. (Source: <https://mapshare.vic.gov.au/vicplan/>)

With the exception of the Rural Living Zones near Boolarra to the south of the site and Moe to north, the majority of the sensitive residential areas area removed from the site’s immediate boundaries.

5.3.3 Farming Zone (FZ)

The purpose of the Farming Zone is:

- *To implement the Municipal Planning Strategy and the Planning Policy Framework;*
- *To provide for the use of land for agriculture;*
- *To encourage the retention of productive agricultural land;*
- *To ensure that non-agricultural uses, including dwellings, do not adversely affect the use of land for agriculture;*
- *To encourage the retention of employment and population to support rural communities;*
- *To encourage use and development of land based on comprehensive and sustainable land management practices and infrastructure provision; and*
- *To provide for the use and development of land for the specific purposes identified in a schedule to this zone.*

The Farming Zone contemplates that uses within these areas have the potential to impact on the amenity of sensitive uses such as residential dwellings. Areas within Farming Zones are not sensitive.

5.3.4 Special Use Zone (SUZ1)

The purpose of the Special Use Zone is *to recognise or provide for the use and development of land for specific purposes as identified in the schedule to this zone.*

The purpose of SUZ1 – Brown Coal is:

- *To provide for brown coal mining and associated uses;*
- *To provide for electricity generation and associated uses; and*
- *To provide for interim and non-urban uses which protect brown coal resources and to discourage the use or development of land incompatible with future brown coal mining and industry.*

Areas within the Special Use Zone contemplates future uses that are intensive and not sensitive to visual change.

5.3.5 Public Conservation and Resource Zone (PCRZ)

Purpose:

- *To implement the Municipal Planning Strategy and the Planning Policy Framework;*
- *To protect and conserve the natural environment and natural processes for their historic, scientific, landscape, habitat or cultural values;*
- *To provide facilities which assist in public education and interpretation of the natural environment with minimal degradation of the natural environment or natural processes; and*
- *To provide for appropriate resource-based uses.*

Areas within the PCRZ typically include parks, open space and recreational areas. Typically, these areas are sensitive.

5.3.6 Overlays within the viewshed

Overlays recognise landscape features that are special or unique that are distinct to the areas that surround them. Significant Landscape Overlays (SLO) are implemented to identify, conserve and enhance the character of significant landscapes. There are two such overlays within the Project viewshed. Figure 5-3 shows the SLOs in proximity to the Project site.

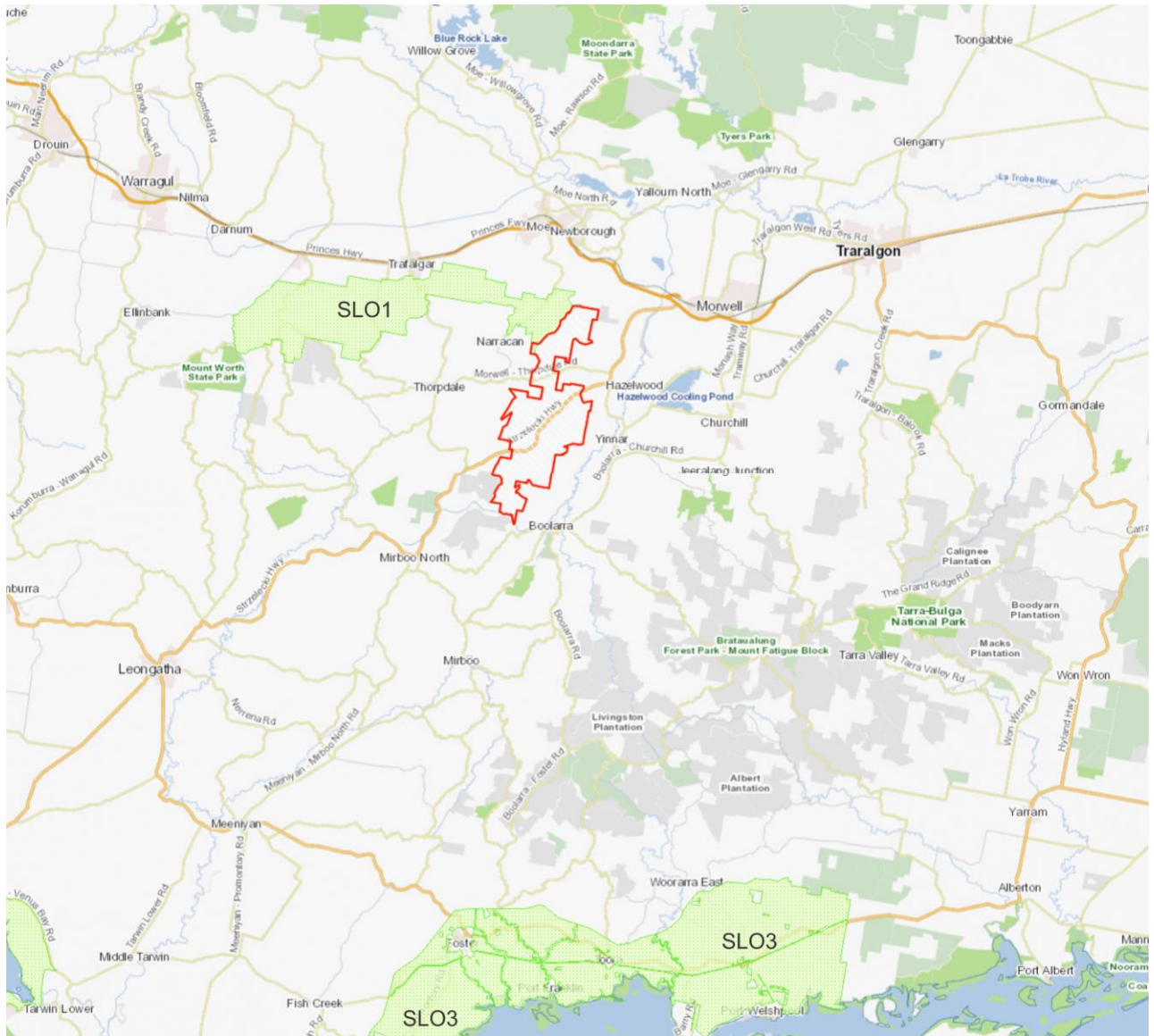


Figure 5-3: SLOs within the viewshed. (Source: <https://mapshare.vic.gov.au/vicplan/>)

Schedule 3 to the SLO of the South Gippsland Planning Scheme relates specifically to a landform known as the Corner Inlet Amphitheatre. The Project will not be discernible, or visible from locations with will affect the interpretation of SLO3.

Schedule 1 to the SLO of the Baw Baw Planning Scheme applies to the northern foothills of the Strzelecki Ranges. The Statement of significance states that:

The north face of the Strzelecki Ranges presents a landscape of diversity where cleared land, remnant vegetation and timber plantations co-exist. No dominant built development exists and yet houses, and narrow roads climb from the valley floor and foothills adjoining the Princes Highway between Yarragon and Trafalgar.

The Landscape Character objective to be achieved within SLO1 is:

- To protect the natural beauty and landscape form of the Strzelecki Range.
- To protect the rural landscape from insensitively designed development.
- To maintain and protect the diversity of landscapes, native fauna, remnant vegetation and sites of historical, botanical and zoological significance.

- *To provide for the development of tourism-oriented activities which complement the landscape of the Strzelecki Ranges.*
- *To recognise and protect the landscape and conservation features of the Strzelecki Ranges.*
- *To protect the Ranges and the surrounding landscapes from visual intrusion and inappropriate development.*

SLO1 is located to the south of the Princes Highway between the shire boundary near the Project site to Hazeldean Road to the west and applies to a broad area approximately 15 km in length and up to 4 km deep behind Yarragon South. Figure 5-4 shows part of the landscape within SLO located in the area behind the township Trafalgar to the west of the site.



Figure 5-4: View of SLO1 from edge of Trafalgar

SLO 1 seeks to, amongst other things protect the landscape form of the Strzelecki Range and the rural landscape from insensitively designed development and to protect them and the surrounding landscapes from visual intrusion and inappropriate development.

The proposed wind farm will not alter the landform of the Strzelecki Range. This assessment will consider views from publicly assessable locations that may include the area within the SLO.

The change in views and the interpretation of the SLO from residential dwellings will be undertaken in the final Landscape and Visual Impact Assessment.

Environmental Significant Overlay (ESO)

There are several Schedules to the ESO within the viewshed which are set out below.

The Baw Baw Planning Scheme includes ESO:

- Schedule 2 – Special Water Supply Catchment Areas
- Schedule 3 - Trafalgar Sand Resource
- Schedule 4 - Protection of giant Gippsland Earthworm and Habitat Areas

The Latrobe Planning Scheme contains the following ESOs:

- Schedule 1 – Urban buffer
- Schedule 2 – Water Catchments
- Schedule 3 – Maryvale Pulp and Paper Mills – Amenity Rural Buffer

The South Gippsland Planning Scheme contains the following ESOs:

- Schedule 1 – Areas of Natural Significance
- Schedule 2 – Special Water Supply Catchment Areas
- Schedule 3 – Coastal Settlements – Non-Residential Zones
- Schedule 5 – Areas Susceptible to Erosion
- Schedule 9 – Giant Gippsland Earthworm and Habitat Protection

There were no particular landscape-visual values or objectives identified in a high-level review of the purpose and objectives of each schedule. ESO1 (Areas of Natural Significance) of the South Gippsland Planning Scheme, although outside the Project viewshed identifies areas of natural and landscape significance as follows:

- *To conserve areas of high environmental and landscape quality, ensuring development minimises adverse environmental impact; and*
- *To project the views of identified significant vistas*

There are several policies and strategies within the Latrobe Planning Scheme that seek to protect and preserve large areas for future exploitation of the vast brown coal resources. There are no overlays in these areas that seek to protect these areas for their scenic qualities and amenity to the broader region.

5.4 Particular Provisions

Clause 52.32 (Wind Energy Facility) applies to land used and developed or proposed to be used and developed for a Wind energy facility to establish and expand wind energy facilities, in appropriate locations, with minimal impact on the amenity of the area.

Section 4 Application requirements requires an application to provide a site and context analysis including specific information relevant to landscape and visual impact.

5.4.1 Policy and Planning Guidelines for Development of Wind Energy Facilities in Victoria (March 2019)

Policy and Planning Guidelines for Development of Wind Energy Facilities in Victoria (October 2018) (the Guidelines) is a reference document listed at Clause 52.32-6 (Decision guidelines). The Guidelines provide operational performance standards to inform the assessment and operation of a wind energy facility. Visual impact is considered under Section 5.1.3 of the Guidelines.

The *Policy and planning guidelines for the development for wind energy facilities in Victoria* were amended in March 2019 and state that:

'Wind energy facilities will have a degree of impact on the landscape.

A responsible authority needs to determine whether or not the visual impact of a wind energy facility in the landscape is acceptable. In doing so, they should consider planning scheme objectives for the landscape, including whether the land is subject to an Environmental Significance Overlay, Vegetation Protection Overlay, Significant Landscape Overlay or a relevant strategic study that is part of the relevant planning scheme.

The visual impact of a proposal should have regard to relevant state and local government planning policy.'

5.5 Planning Implications

The PPF puts in place measures to protect natural features, scenic qualities and prominent views and vistas across the project viewshed. These desires are also echoed by Clause 52.32 which seeks to balance the recognition that wind turbines are large structures and to ensure that they are sited correctly paying particular attention to overlays including ESOs, and SLOs, all of which identify and protect particular environmental or qualitative features.

The majority of the project viewshed is occupied by areas within the Farming Zone (FZ) or Special Use Zone (SUZ) which is set aside specifically for the purpose of extraction of coal and energy production. The more sensitive uses in proximity to the project are the residential clusters to the west, south and south east of the project.

South Gippsland Planning Scheme Clause 21.13 Infrastructure *Objective 2 seeks to ensure that the use of alternative energy technology does not detrimentally affect the surrounding environment. Specifically, strategy 2.2 discourages tall structures on ridgelines or in view corridors.*

There were originally 5 turbines located within this area in the Concept layout. 2 turbines have been removed in this area within the current Revised Layout.

The following section (Section 6) will determine the landscape character types and their sensitivity to change. Section 7 will then explore the visibility of the turbines from these areas within the viewshed to assist with selecting views from each of the identified character areas to develop an understanding of the project in key and sensitive views which are discussed in Section 8.

6. Landscape Character

Landscape Units are based on areas with similar visual characteristics in terms of topography and features, such as creeks and drainage lines, soil, vegetation and land use. The following sections describe the underlying patterns of these elements to derive the landscape units within the view shed.

The Delburn Wind Farm is set within an area of vegetated hills (plantations).

Existing infrastructure includes roads, telecommunication towers, transmission lines, power lines as well as existing power infrastructure in the north eastern areas.

6.1 Topography

The Project and the study area are located within the Latrobe Valley and part of the Strzelecki Ranges.

The topography within the study area is predominantly hilly and ranges in elevation from 25 m on the outskirts of Traralgon to 740 m at Mt Tassie on the outskirts of the viewshed.

6.2 Vegetation

Vegetation within the viewshed is varied. It includes plantation vegetation, natural forested areas, roadside vegetation, windbreak/buffer planting within farm areas and garden planting around residences.



Figure 6-1: Vegetation examples

6.3 Land use

The predominant land uses within the viewshed of the Project include:

- Pine plantation and forestry;

- Townships;
- Open-cut coal mines;
- Coal fired power stations.
- State and National parks
- Farming and agriculture; and
- Water storage / cooling ponds.

The brown coal resources in the area are one of the largest in the world. The Latrobe Valley brown coal electricity generators supply around 90% of Victoria’s electricity. The region is recognised as the powerhouse of Victoria through its open cut coal mines and power stations.

Figure 6-2 shows the core power stations, associated open cut coal mines, substation locations and the high-voltage power line network.

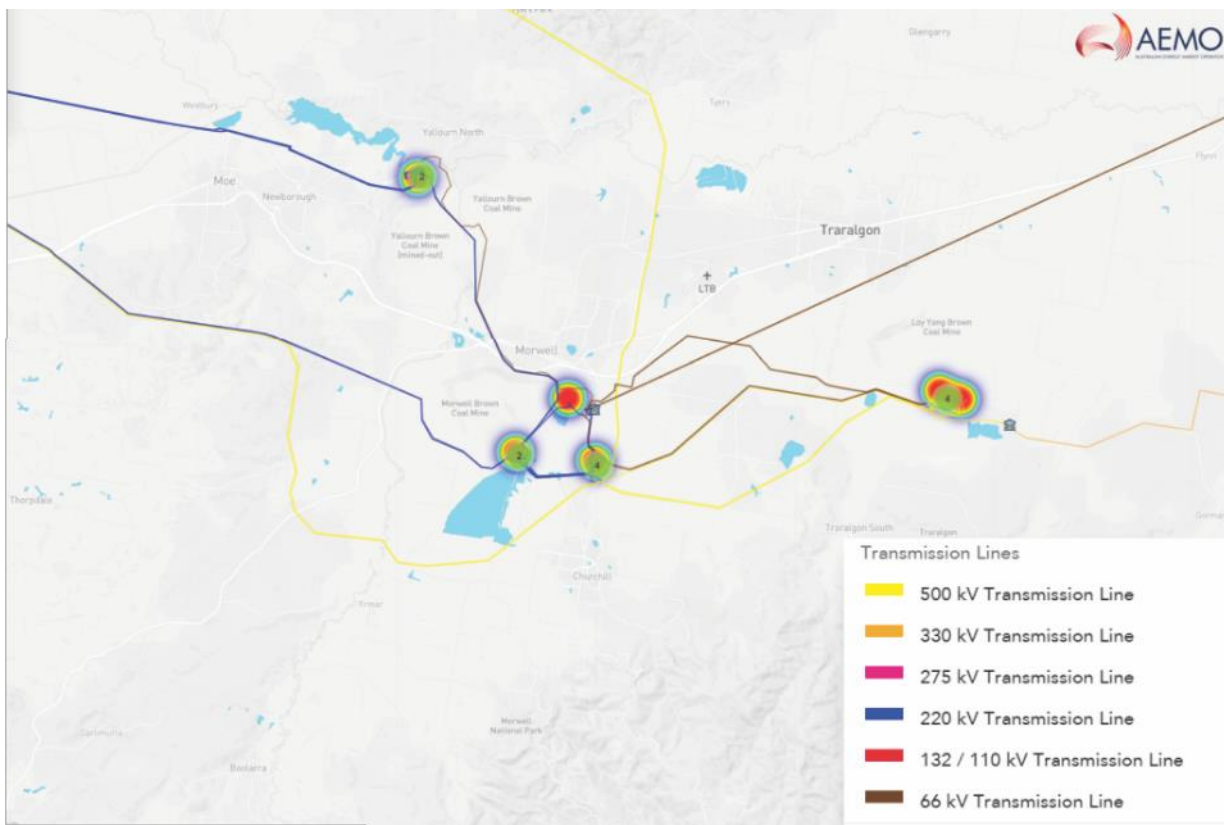


Figure 6-2 Energy Infrastructure (Source <https://www.aemo.com.au/aemo/apps/visualisations/map.html>)

The majority of the infrastructure is located in the area to the north and east of the Project, with an existing 500 kV transmission line (shown in yellow) that runs through the northern section of the Project.

The presence of open cut coal mines and power stations, supported by high-voltage and domestic scale power lines, in combination with the protection of these areas within the PPF provide a visual reminder and connection to the important role the Latrobe Valley region plays to the state’s electricity security.

This is further supported by the various instruments within the local and state planning schemes, such as the State Resource Overlay (SRO) discussed in Section 5 of this report. The implications of such strategies will be explored with regards to landscape sensitivity and land use in the final assessment.

6.4 Landscape Units

There are five distinct landscape character types in the area surrounding the proposed Delburn Wind Farm. These have been assessed on the basis of land use, topography and vegetation. These landscape character types can be defined as the following:

6.4.1 Landscape Unit 1 – Townships

Townships are characterised by a cluster of residential dwellings around a main street with shops. Some townships have parks and reserves as well as community orientated buildings.

Vegetation within rural communities and townships are typically located within road reserves and residential gardens.



Figure 6-3: Landscape Unit 1 - Township examples



Figure 6-4: Landscape Unit 1 - Township example

6.4.2 Landscape Unit 2 – Cleared Farmland

Landscape Unit 2a – Cleared Flat Farmland are areas used primarily for agricultural purposes. There are many instances of constructed elements within this landscape type, including the road network, transmission lines, farm buildings and fences.



Figure 6-5: Landscape Unit 2a– Cleared Flat Farmland example

Landscape Unit 2b – Cleared Hilly Farmland is highly modified, given the historic clearance of native vegetation. The intersection of rolling hills and deeply incised valleys provides for a diversity of framing of views that are either closed and confined or reveal longer views across the valley floor and to the elevated hills in the distance.



Figure 6-6: Landscape Unit 2b – Cleared Hilly Farmland example

6.4.3 Landscape Unit 3 – Industrial/Mining

A large part of the area to the east and north east of the Project are within the area of land in the SUZ1 and includes many operating coal mines and power stations as well as the recently closed Hazelwood Power Station. Within these areas are the extraction pits, which are open, partially rehabilitated or fully rehabilitated, operating and transitioning power stations and the many overhead high voltage powerlines. The images below show the character of the area within the land in the SUZ1.

Figure 6-7 shows Yallourn Power Station, Figure 6-8 shows Hazelwood Cooling Pond and Power Station and Figure 6-9 shows an example of overhead powerlines within the area.



Figure 6-7: Landscape Unit 3 – Industrial/Mining example (Yallourn Power Station)



Figure 6-8: Landscape Unit 3 – Industrial/Mining example (Hazelwood Cooling Pond & Power Station)



Figure 6-9: Landscape Unit 3 – Industrial/Mining example (Transmission Line)

6.4.4 Landscape Unit 4a – Forested Hills (Natural)

Landscape Unit 4a – Forested Hills generally consists of rolling or dramatic hills with large sections of natural vegetation. This landscape is attractive as it contains areas that appear pristine.



Figure 6-10: Landscape Unit 4a – Forested Hills (Natural) example

6.4.5 Landscape Unit 4b – Forested Hills (Plantation)

Landscape Unit 4b consists of rolling hills that are vegetated with an ordered plantation vegetation. This landscape is attractive when vegetated. This landscape is European in appearance and regularly modified through timber harvesting.



Figure 6-11: Landscape Unit 4a – Forested Hills (Plantation) example



Figure 6-12: Landscape Unit 4a – Forested Hills (Plantation) example

6.4.6 Landscape Unit 5 – Lakes & Waterways

There are a number of waterways, catchments, streams and lakes within the viewshed of the Delburn Wind Farm. These include the larger rivers of Morwell and Latrobe Rivers and the more local catchments of Little Morwell River and Middle Creek. There are also a number of constructed lakes such as the Hazelwood Pondage, which were constructed for the functional purpose of cooling the Hazelwood Power Station, which have now been adopted as community assets.

Over time the Morwell River has been impacted by the various mining and extractive activities adjacent to several of its banks, which have caused it to be modified from a naturally appearing and somewhat organic waterway system. This is evidenced in the profile and alignment of the streambed particularly where the Strzelecki Highway crosses the river. Nonetheless Lakes and waterways usually have a high sensitivity to visual change due to their scenic qualities, passive or recreational uses and intrinsic value.

It must also be contemplated that as existing coal mines seek to close and transition to care and maintenance there will be a number of other open cut pits that transition to a pit lake and recreational asset to the community.



Figure 6-13: Landscape Unit 5 – Morwell River



Figure 6-14: Landscape Unit 5 – Hazelwood Cooling Pond

6.5 Landscape Sensitivity

Landscape sensitivity is in part a measure of the ability of a landscape to absorb visual change based on attributes of a particular landscape. The sensitivity of the previously described landscape units will depend upon a number of attributes, such as:

- **Location.** The sensitivity of a potential viewer varies according to location. For example, visitors to a National Park where the landscape appears untouched or pristine will be more sensitive to the imposition of new or artificial elements within that landscape. The same viewer travelling along a rural highway, which contains existing examples of modifications and artificial elements, will be less sensitive to the presence of new elements. Modifications or artificial elements are not confined to vertical structures or built form, they also include removal of native vegetation; visibility of roads, tracks, fences and other rural infrastructure all of which decrease the sensitivity of a landscape to further change.
- **The rarity of a particular landscape.** Landscapes that are considered rare or threatened are valued more highly by viewers.
- **The scenic qualities of a particular landscape.** Landscapes that are considered scenic are also those that are considered sensitive. They often contain dramatic topographical changes, the presence of water, coastlines, and other comparable features. The presence of modifications or artificial elements (including built form, roads, tracks, fences, and silos), as well as farming practices including land clearing, cropping and burning can decrease the sensitivity of a landscape's scenic qualities.

The landscape within the view shed includes many constructed elements including new dwellings, structures and sheds, high voltage transmission line towers, mining activities, power infrastructure and other interventions.

The landscape sensitivity of the Cleared Farmland Landscape Unit is considered low. It is not a rare or threatened land-use or character and common across a large area of Victoria. This landscape undergoes visually apparent change both on a regularly basis and progressively over time. Rural activities such as grazing, tractors, crop cycles and other farming changes associated with farming and agriculture are constant reminders of human influence on the landscape. However, it must be recognised that some people value the cleared farmland with minimal signs of mechanised construction such as houses, farm sheds and the like. The presence of wind turbines may be perceived as a high visual impact due to the presence of large-scale structures on a rural landscape to these viewers, notwithstanding that the landscape is already highly modified by human activity.

The landscape sensitivity of the Forested Hills (Natural) Landscape Unit is considered medium to high, as although it too is relatively common, it appears more pristine or natural than the Forested Hills (Plantation) and Cleared Farmland landscape units.

The Townships Landscape Unit is considered to have a medium sensitivity. This is based on the higher number of residents and the historical setting. The village settlement has limited views to the surrounding landscape which is screened by buildings and roadside vegetation.

Table 6.1 rates the sensitivity of the various landscape units within the view shed of the Delburn Wind Farm.

Table 6.1: Landscape Units

Landscape Unit	Sensitivity
Unit 1 – Townships	Medium – Built form and other visual elements reduce the visual sensitivity of these areas. However as these are urban areas with many houses, the landscape sensitivity is rated medium.
Unit 2a – Cleared Flat Farmland	Low – Highly modified, contains visible infrastructure, is not topographically dramatic and does not contain large bodies of water.
Unit 2b – Cleared Hilly Farmland	Low - Medium – Highly modified, by way of clearing of native vegetation. The intersection of rolling hills deeply incised valleys provides for a diversity of framing of views that are either closed and confined or reveal longer views across the valley floor and to the elevated hills in the distance.
Unit 3 – Industrial/Mining	Low – Highly modified landscape.
Unit 4a – Forested Hills (Natural)	Medium to High – This landscape is attractive as it contains areas that appear pristine.
Unit 4b – Forested Hills (Plantation)	Low to Medium – This landscape is attractive when vegetated. This landscape is European in appearance and regularly modified through timber harvesting.
Unit 5 – Lakes & Waterways	High

The landscape units and sensitivity ratings will form the basis of the visual impact of views from publicly accessible locations.

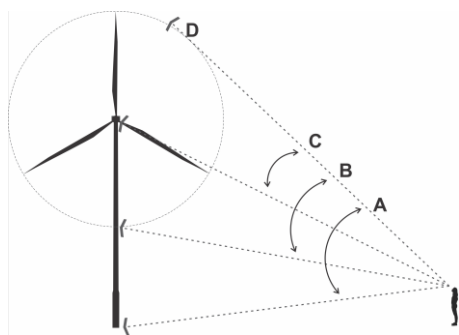
Landscape sensitivity from individual residential properties will always be assessed as “high” as for a resident, their home will always be a highly sensitive location and disturbances to a resident’s views must always be considered to have the highest degree of sensitivity.

7. Seen Area Analysis

A Seen Area Analysis (SAA) identifies patterns of theoretical visibility and potential views towards the project. The SAA is a theoretical model that is based upon key Project infrastructure and the topography of the surrounding landscape. The SAA does not include features such as vegetation, buildings or structures that will assist to screen or filter views.

The patterns of theoretical visibility assist to determine locations where the project would be most visible and guide the selection of representative viewpoints to determine to consider the views to the site and to the proposed location of wind turbines, key vantage points, major roads and tourist routes, and residential clusters sufficient to give a sense of the Project and its setting.

The Seen Area Analysis can map patterns of visibility for the either the project as a whole or in key components. Sections that are relevant to views and visual impact are set out below.



- Zone A – Areas from which one or more Turbines are visible in their entirety;
- Zone B – Areas from which the entire swept path of one or more Turbines are visible;
- Zone C – Areas from which nacelle and above of one or more Turbines are visible; and
- Zone D - Areas from which tip of the blade of one or more Turbines are visible

Figure 7-1: Visibility parameters (not to scale)

The mapping of turbines in their entirety or the areas from which a blade tip is visible is too prescriptive and is not indicative of overall visibility of the Project. Mapping those areas where the swept path (Zone B) and the nacelle and above (Zone C) are more useful when selecting viewpoints in which to assess the likely visual impact of the Project.

Figure 7-2 shows the visibility patterns for Zone C (nacelle and upper portion of the swept path) within the Project viewshed. This is a conservative assessment in that the mapping for Zones A and B tend to show smaller areas of visibility. This is because the modelling will exclude areas that may not “see” part of these features and are therefore excluded from the results. The mapping for each of the zones for both the Concept Layout and current ‘Revised’ Layout is included in Appendix A.

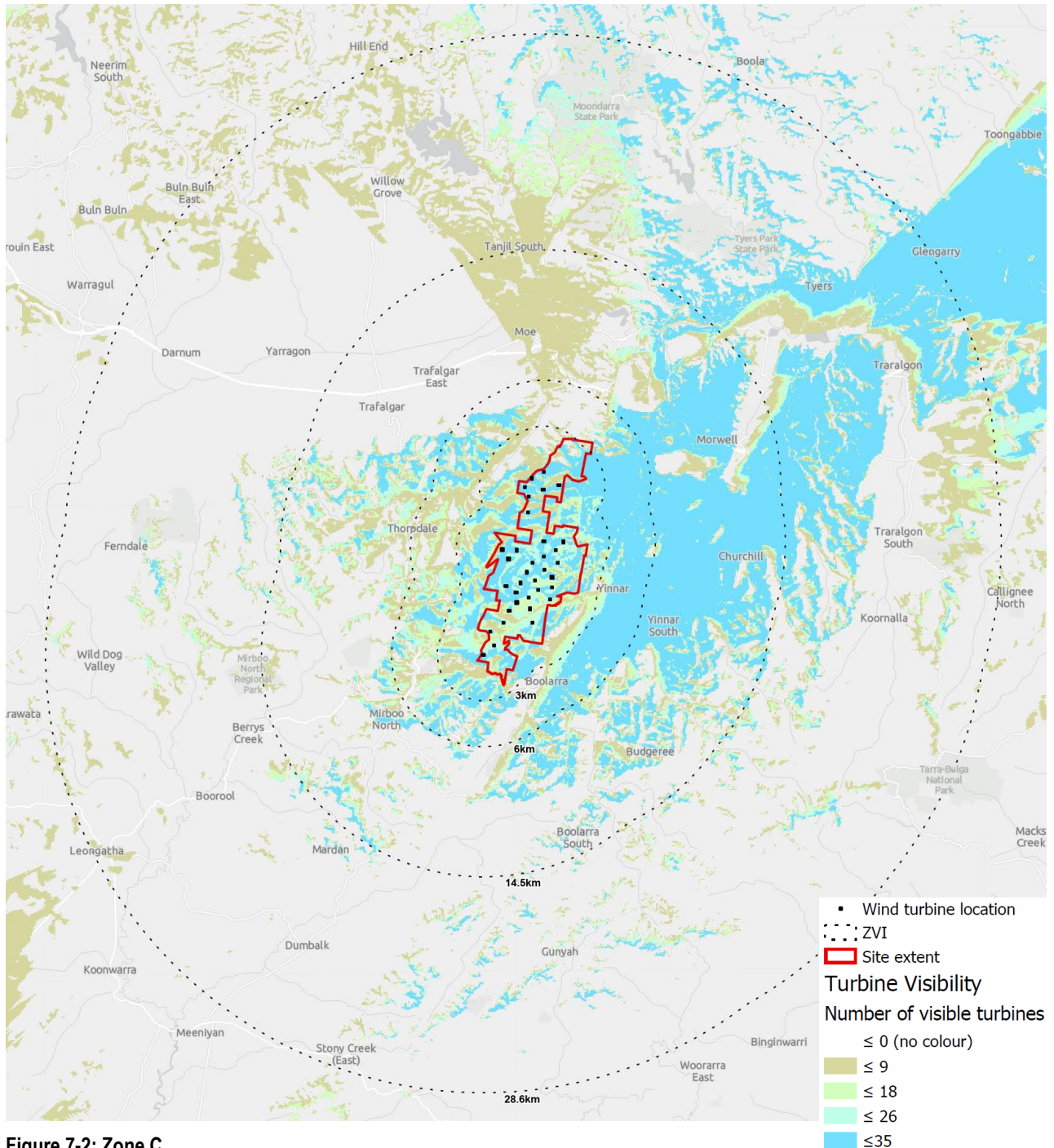


Figure 7-2: Zone C

The areas with the greatest potential for visibility of the majority of the wind turbines are those areas to the east and north east. These areas are predominantly within land zoned SUZ1 which include the many large areas of large open cut coal mines that are either operating or transitioning and power stations.

There are also several residential clusters that surround the project and include:

- North eastern townships such as Morwell and Tyers; and
- Eastern townships such as Yinnar, Yinnar South and Churchill.

Other areas have the potential to see several, but fewer turbines. It is emphasised that this modelling is theoretical and does not consider vegetation seen in many areas across the project viewedshed.

8. Publicly Accessible Viewpoints

This section will assess the potential visual impact of the proposed Delburn Wind Farm from publicly accessible locations. Viewpoints have been selected to consider the location of the proposed wind turbines from key vantage points, major roads, tourist routes and residential clusters sufficient to give a sense of the Project and its setting.

8.1 Viewpoint locations

43 viewpoints have been selected as representative of the publicly accessible locations in and around the wind farm. Figure 8-1 shows the locations of each of these viewpoints.

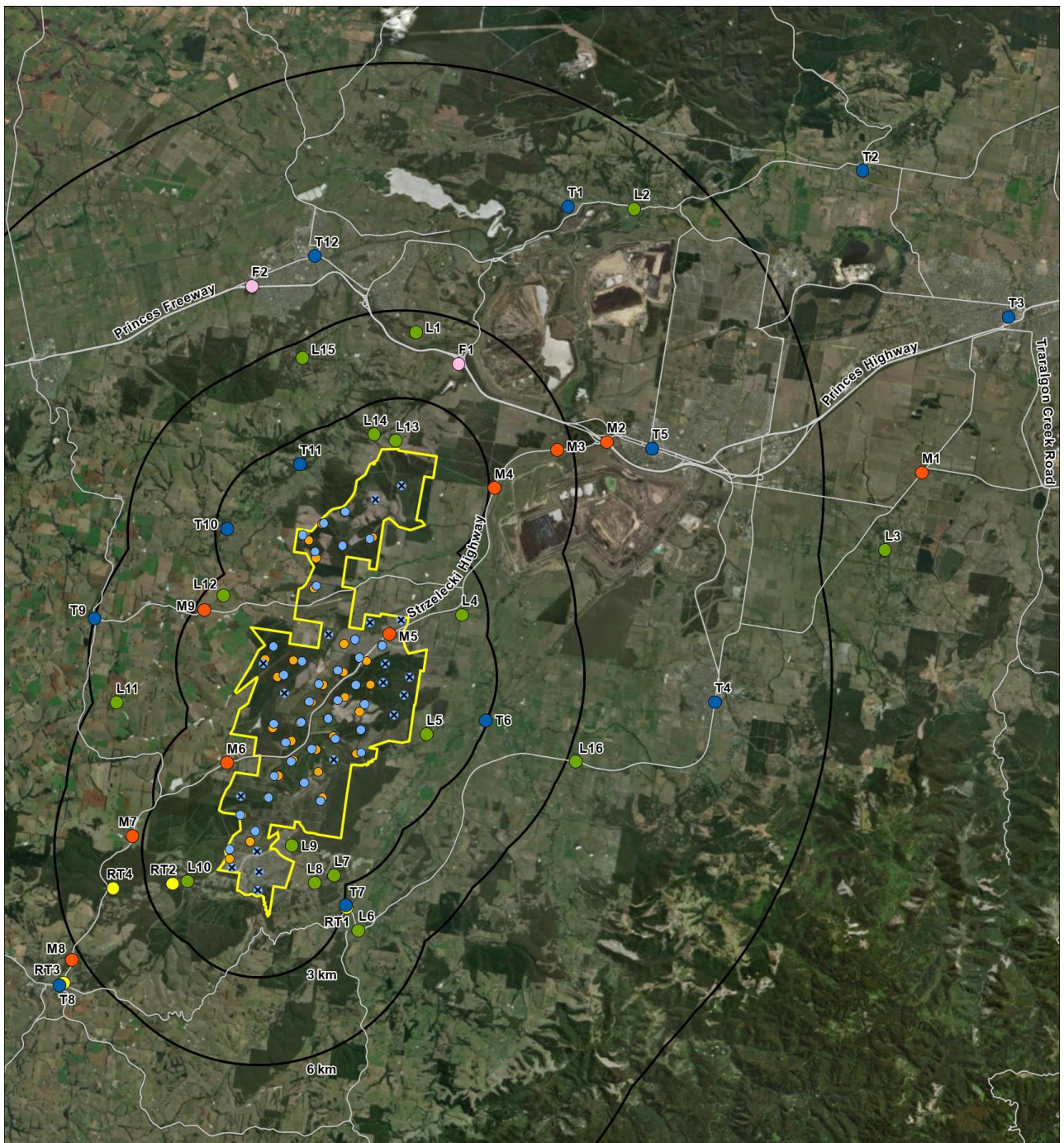


Figure 8-1: Overall Viewpoint Map

Viewpoints have been selected where the SAA model identified the greatest potential for turbine visibility or where these locations coincide with key vantage points or viewing locations. For this reason, the majority of viewpoints are within 15 km of the proposed wind turbines. Beyond this distance the proposed wind turbines will not be a dominant feature in views or are will not be visible due to intervening topography or terrain. (Refer Section 4 – The Viewshed).

The visual impact from each of these 38 viewpoints is discussed in the following sections to build up an overall assessment of the visual impact of the proposed Delburn Wind Farm. A number of viewpoints with similar locational attributes are grouped together and discussed to ascertain the overall visual impact from different areas or locations. The following locations have been discussed separately:

- Freeways (Viewpoints F1-F2)
- Major Roads (Viewpoints M1-M9)
- Local Roads (Viewpoints L1-L16)
- Townships (Viewpoints T1-T12)
- Recreational Trails (Viewpoints RT1-RT4)
- Residential Clusters.

The visual impact of the wind farm from nearby locations is also informed by photomontages which have been prepared for 10 locations (Viewpoints M3, M6, L5, L6, L8, L9, L12, L13, L16 and T6) for both the Concept and current Revised Layouts. Two wireframes have also been prepared for Viewpoints L10 and T9 of the Concept Layout only.

8.2 Freeways

Two viewpoint locations (F1-F2) have been selected as representative of views from the Princes Freeway which is to the north of the Project. Viewer numbers from the freeway would be assessed as high while the landscape sensitivity would vary dependant on the location of the viewpoint.

The location of each viewpoint in proximity to the project is shown in Figure 8-2. The viewpoint, GPS co-ordinates, distances to the nearest wind turbine and landscape unit in views towards the Project are described in Table 8.1.

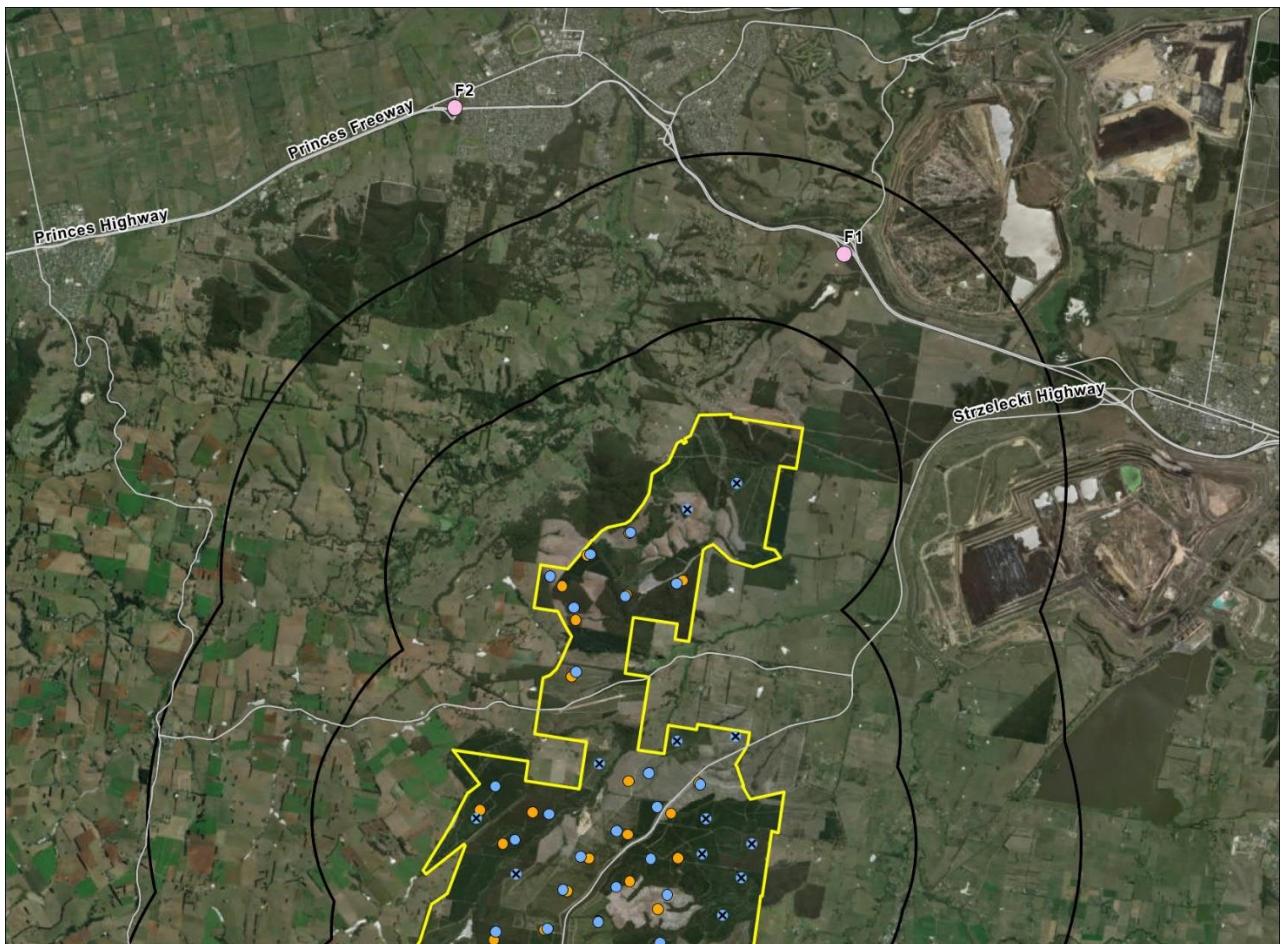


Figure 8-2: Freeway Viewpoint Locations

Table 8.1: Freeways Viewpoint Locations

VP	Location	GPS Co-ordinates	Nearest Turbine Concept Layout	Nearest Turbine Revised Layout	Landscape Unit
F1	Freeway Overpass	55H 440437, 5770644	4.5km SW (T01)	6.4km SW (T03)	Unit 2b
F2	Princes Freeway	55H 433341, 5773312	8.4km SE (T03)	8.4km SE (T03)	Unit 4b

8.2.1 Viewpoint F1 – Freeway Overpass

Viewpoint F1 is located at the freeway overpass of Haunted Hills Road and Princes Freeway. The closest turbine (T01) in the Concept Layout was approximately 4.5 km south west. The closest turbine in the Revised Layout is turbine (T03) approximately 6.4 km south west.

Figure 8-3 shows the view looking south west from the freeway overpass at Haunted Hills Road.



Figure 8-3: Viewpoint F1 – Existing view looking south west

There will be clear views to turbines on the vegetated hill in the background of this view when travelling south along Haunted Hills Road towards the freeway onramp.

This view will be available for duration prior to entering the freeway.

8.2.2 Viewpoint F2 – Princes Freeway

Viewpoint F2 is located on Old Gippsland Drive overpass where it crosses the Princes Freeway to the north west of the Project. The nearest turbine (T03) is approximately 8.4 km south east.

This elevated location was selected as it demonstrated the low setting of the freeway in the context of vegetation and topography to the south of the roadway.

Figure 8-4 shows the view looking south east from the Old Gippsland Drive overpass.



Figure 8-4: Viewpoint F2 – Existing view looking south east

Local vegetation and topography notwithstanding, the proposed turbines would be screened in these views by the low vegetated hill seen in the background of this view.

8.2.3 Summary of Freeway Viewpoints

These two viewing locations demonstrate the range of views afforded from the Princes Freeway to the north of the Project. At its nearest point, the freeway is approximately 6.0 km, views will range from clear open views where breaks in topography and vegetation allow longer views beyond the road way to views that will be completely screened by topography and vegetation within the road reserve and the broader landscape.

Views from the freeway are at speeds of approximately 100 km per hour, typically oblique to the direction of travel. Where the Project would be visible, views tend to be over landscapes that are modified to include plantations, open cut coal mines, power stations and a range of transmission lines.

The overall visual impact from freeways would be Low-Negligible.

8.3 Major Roads

Major roads are frequently used by locals as they go about their daily lives and tourists to the area. Major roads include Hazelwood Road to the east, the Strzelecki Highway which bisects the Project and the Morwell – Thorpdale Road which runs through the part of the northern end of the site.

Nine viewpoint locations (M1-M9) have been selected as representative of the view and landscape character types within the viewshed.

Viewer numbers for these roads have been considered as medium/moderate, with the landscape sensitivity varying dependant on the viewing location and proximity to the Project.

The location of each viewpoint in proximity to the Project is shown in Figure 8-5. The viewpoint, GPS coordinates, distances to the nearest wind turbine and landscape unit in views towards the Project are described in Table 8.2.

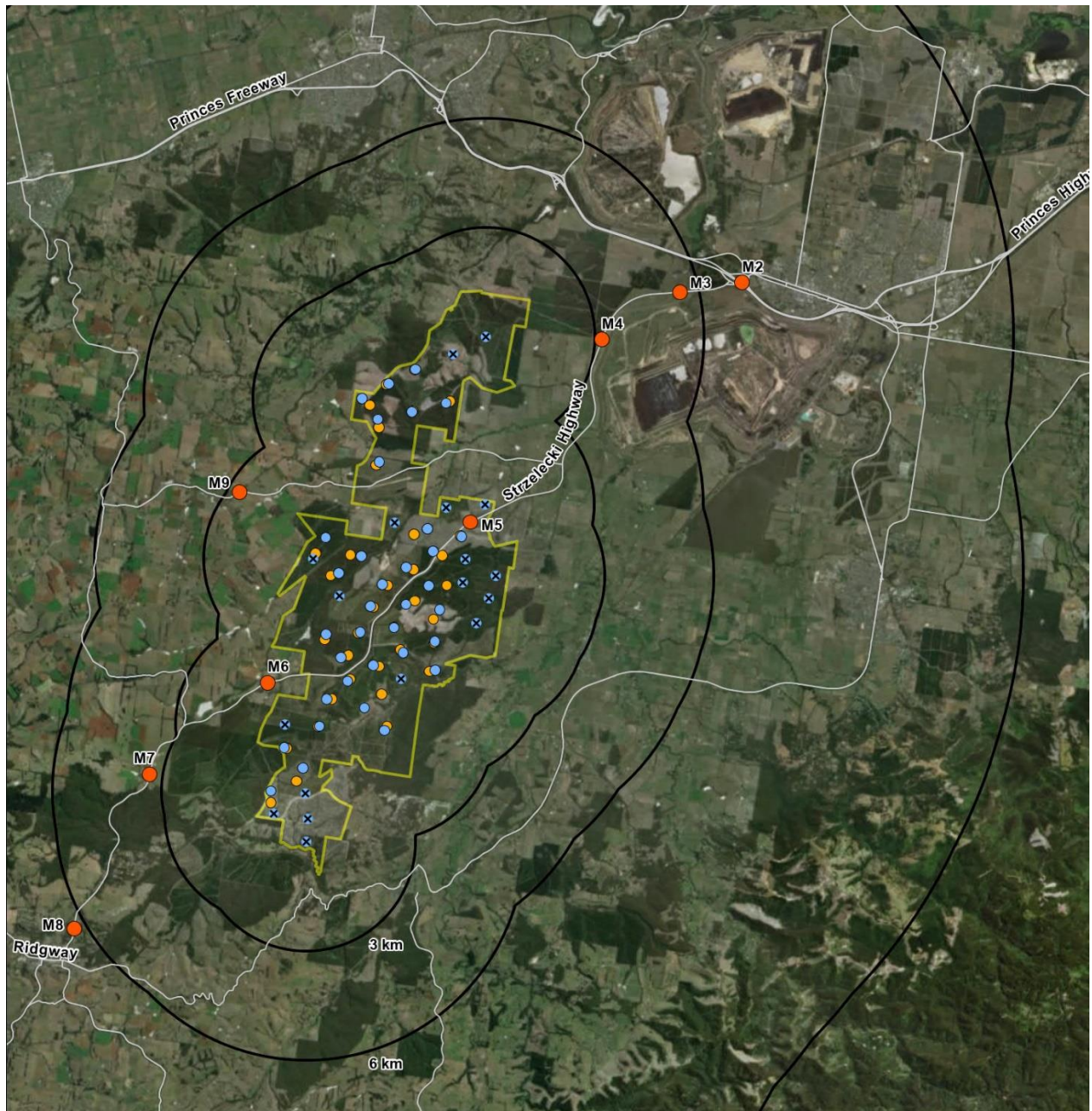


Figure 8-5: Major Roads Viewpoint Locations

Table 8.2: Major Roads Viewpoint Locations

VP	Location	GPS Co-ordinates	Nearest Turbine Concept Layout	Nearest Turbine Revised Layout	Landscape Unit
M1	Hazelwood Road	55H 456342, 5766918	17.5 km SW(T01)	18.9 km SW (T06)	Unit 2a
M2	Strzelecki Highway	55H 445526, 5767963	7.2 km SW (T01)	8.6 km SW (T06)	Unit 3
M3	Strzelecki Highway	55H 443821, 5767692	5.4 km SW (T01)	7.0 km SW (T06)	Unit 3
M4	Strzelecki Highway	55H 441670, 5766395	3.2 km W (T01)	4.5 km SW (T06)	Unit 4b
M5	Strzelecki Highway	55H 438059, 5761381	465 m SW (T14)	460 m SW (T14)	Unit 4b
M6	Strzelecki Highway	55H 432486, 5756968	1.2 km SE (T44)	1.8 km SE (T42)	Unit 4b
M7	Strzelecki Highway	55H 429241, 5754456	3.3 km E (T49)	3.4 km SE (T49)	Unit 2a
M8	Strzelecki Highway	55H 427167, 5750208	6.3 km NE (T51)	6.4 km NE (T49)	Unit 2a
M9	Morwell–Thorpdale Rd	55H 431712, 5762203	2.6 km SE (T15)	2.6 km SE (T15)	Unit 2b

8.3.1 Viewpoint M1 – Hazelwood Road

Viewpoint M1 is located on Hazelwood Road approximately 200 m south of its intersection with Sanders Road. The nearest turbine (T01) in the Concept Layout was approximately 17.5 km south west. The closest turbine in the Revised Layout is turbine (T06) approximately 18.9 km south west.

Figure 8-6 shows the view looking south west from Hazelwood Road.



Figure 8-6: Viewpoint M1 – Existing view looking south west

This view is taken from one of the few areas where a gap in the roadside vegetation would allow views towards the project. Views from this location are over cleared farmland which is not a landscape that is recognised as being visually sensitive.

Further, at approximately 18.9 km and oblique to the direction of travel the turbines would not be a dominant element in the view.

8.3.2 Viewpoint M2 – Strzelecki Highway

Viewpoint M2 is located on the Strzelecki Highway where it crosses the Princes Freeway. The closest turbine (T01) in the Concept Layout was approximately 7.2 km south west. The nearest turbine in the Revised Layout is turbine (T06) approximately 8.6 km south west.

Figure 8-7 shows the view looking south west from the Strzelecki Highway overpass at the Princes Freeway.



Figure 8-7: Viewpoint M2 – Existing view looking south west

This elevated location will allow clear views to the existing time plantations and turbines located at the northern end of the Project and the elevated hills of the Strzelecki Ranges in the background. Views from this location also include power stations, high voltage transmission lines and the Princes Freeway infrastructure.

In this view, the proposed turbines would not be visually dominant nor detrimental to views. Further, this viewpoint this not one that is sensitive, nor are the views towards the Project.

8.3.3 Viewpoint M3 – Strzelecki Highway

Viewpoint M3 is located on the Strzelecki Highway where it crossed a section of the re-constructed Morwell River approximately 570 m north east of Marrett’s Road.

The nearest turbine (T01) in the Concept Layout was approximately 5.4 km south west. The closest turbine in the Revised Layout is turbine (T06) approximately 7.0 km south west.

A photomontage has been prepared for both the Concept Layout and Revised Layout from this location.

Figure 8-8 shows the existing view from the Strzelecki Highway looking south west.



Figure 8-8: Viewpoint M3 – Existing view looking south west

Figure 8-9 shows a photomontage of the Concept Layout.

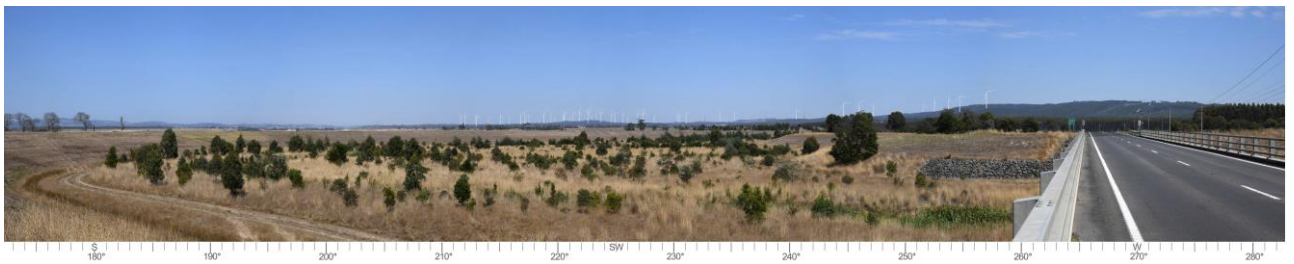


Figure 8-9: Viewpoint M3 – Photomontage Concept Layout

Figure 8-10 shows a photomontage of the Revised Layout.



Figure 8-10: Viewpoint M3 – Photomontage Revised Layout

Views from this location include a section of the reconstructed Morwell River, revegetation areas, power lines and timber plantations within which the proposed turbines are proposed.

The photomontages show that turbines would be noticeable in views. However, they would not be visually dominant. For some viewers, the turbines may be considered to frame or accentuate to topography of the site.

8.3.4 Viewpoint M4 – Strzelecki Highway

Viewpoint M4 is located on the Strzelecki Highway at the intersection of Deans Road. The closest turbine (T01) in the Concept Layout was approximately 3.2 km west. The closest turbine in the Revised Layout is turbine (T06) approximately 4.5 km south west. The investigation area of the proposed on-site substation and battery storage area is approximately 2.0 km to the west.

Figure 8-11 shows the view looking south along the Strzelecki Highway and west along Deans Road. The existing 220 kV transmission line which the Project is proposed to connect to, is located along the northern side of Dean's Road.



Figure 8-11: Viewpoint M4 – Existing view looking south west along Strzelecki Highway

The proposed turbines between the towers of the 220kV transmission line and roughly central to the image in Figure 8-11. The proposed substation located at the western end of Dean's Road would be screened by vegetation within the plantation. Views to the east of the Strzelecki Highway are over Hazelwood cooling pond and former Power Station.

The turbines would be highly visible, but in views that are already highly modified landscape (i.e. that include many structures).

8.3.5 Viewpoint M5 – Strzelecki Highway

Viewpoint M5 is located on the Strzelecki Highway approximately 1 km north east of the intersection of Smiths Road. This location shows the view looking north where road users emerge from the established plantings with the plantations to the east and west of the road and the extensive native roadside vegetation. Longer views to the north include the elevated and protected hills around Mt Baw Baw.

The closest turbine (T14) is approximately 465m south west (opposite direction). Several turbines will be located in the timber plantations further to the north of this view. Figure 8-12 shows the view looking north from the Strzelecki Highway.



Figure 8-12: Viewpoint M5 – Existing view looking north

The northern cluster of turbines will be visible to the left of the Strzelecki Highway in Figure 8-12. Views from this location include the elevated hills of Mt Baw Baw to the north, existing timber plantations, the Strzelecki Ranges further the west and the existing dual circuit 500 kV power which bisects the site further to the south of the 220kV line relevant to this project.

Views over landscape Unit 4b – Hills (plantation) which has a medium level of sensitivity. These views also include existing large power infrastructure such as the transmission line.

8.3.6 Viewpoint M6 – Strzelecki Highway

Viewpoint M6 is located on the Strzelecki Highway approximately 360 m south west of its intersection with Ten Mile Creek Road. The closest turbine (T44) in the Concept Layout was approximately 1.2 km to the south east. The closest turbine in the Revised Layout is turbine (T42) approximately 1.8 km south east.

Similar to the previous viewpoint, this view is taken where vegetation permits views over the landscape. A photomontage has also been prepared to demonstrate the change in views between the Concept Layout and this Revised Layout.

Figure 8-13 shows the view looking south east from the Strzelecki Highway.



Figure 8-13: Viewpoint M6 – Existing view looking south east

Figure 8-13 shows the photomontage of the Concept Layout.



Figure 8-14: Viewpoint M6 – Photomontage Concept Layout

Figure 8-14 shows the photomontage of the Revised Layout.



Figure 8-15: Viewpoint M6 – Photomontage Revised Layout

Existing vegetation to the left of Figure 8-13 will screen parts of the bases of the turbines. At approximately 1.2 km, the proposed turbines would be dominant features where vegetation permits views.

Although the turbines would be dominant, views would be short in duration and at speeds of approximately 100 km per hour.

8.3.7 Viewpoint M7 – Strzelecki Highway

Viewpoint M7 is located on the Strzelecki Highway at the intersection of Peters Lane. The closest turbine (T49) in the Concept Layout was approximately 3.3 km east. This turbine would be approximately 100 m further to the south east in the Revised Layout. Figure 8-16 shows the view looking east from the Strzelecki Highway.



Figure 8-16: Viewpoint M7 – Existing view looking east

Viewpoint M7 is taken from a section of road, where vegetation within the roadside and nearby farming properties allows views towards the project. The proposed wind turbines would be located to the east extending through to the north east with increasing distance.

The upper sections of the turbines directly to the east will be visible above vegetation to the left and centre of Figure 8-16. Turbines further to the north-east would be screened or filtered by topography and vegetation.

8.3.8 Viewpoint M8 – Strzelecki Highway

Viewpoint M8 is located on the Strzelecki Highway approximately 240 m north of its intersection with Galvin's Road. The nearest turbine (T53) in the Concept Layout was approximately 6.8 km north east. The closest turbine in the Revised Layout is turbine (T49) approximately 6.4 km north east.

This is the northern entrance to Mirboo and near to the Grand Ridge Rail Trail. Figure 8-17 shows the view looking north east from the Strzelecki Highway.



Figure 8-17: Viewpoint M8 – Existing view looking north east

Viewpoint M8 is taken through a break in roadside vegetation. The proposed turbines located at the southern extent of the Project may be visible above the vegetation seen in the background of the view. A combination of topography, existing vegetation and distance will screen turbines towards the centre and northern end of the Project.

Where the turbines are visible, they would not be visually dominant or detrimental to these views.

8.3.9 Viewpoint M9 – Morwell – Thorpdale Road

Viewpoint M9 is located on Morwell-Thorpdale Road at the intersection of McDonalds Track. The closest turbine (T15) is approximately 2.6 km south east. This turbine was not altered by the revised turbine layout.

Figure 8-18 shows the view looking south east from Morwell-Thorpdale Road at the intersection with McDonalds Track.



Figure 8-18: Viewpoint M9 – Existing view looking south east

Existing roadside vegetation will filter most views towards the Project. Where gaps in vegetation allow for clear views to the Project, the nearest turbines would be at a distance such that they would be a dominant element in that views albeit in scale and proportion consistent with this vegetation.

8.3.10 Summary of Major Roads Viewpoints

Major roads within the viewshed include Strzelecki Highway which runs through the middle of the Project. When travelling south, views along the Strzelecki Highway will be diverse and range from open clear views which include several turbines, to large sections that are completely enclosed by roadside vegetation which is protected and the large and extensive timber plantations which will be harvested periodically.

There will be sections along the Strzelecki Highway to the northern end of the Project where turbines will reside in long range views of elevated views of Mt Baw Baw to the north and north west of the Project. These views, which are regularly altered by the adjoining timber plantations, are modified to include coal mines, power stations and overhead powerlines.

Overall, the visual impact of the Project in views from major roads will range from predominantly Negligible to Low. This is due to the majority of views towards the Project being limited by vegetation within roadsides, plantation areas and adjoining farming properties and screening afforded by nearby and surrounding topography. Views and visual impact would be further modified by the presence of other infrastructure which at times will be noticeable if not more dominant than the presence of the proposed wind turbines.

8.4 Local Roads

Fifteen viewpoint locations (L1-L15) have been selected as representative of view that are likely to be afforded from local roads within the viewshed. Viewer numbers are considered to be low while the landscape sensitivity would vary dependant on the location of the viewpoint.

The location of each viewpoint location is shown in Figure 8-19. The viewpoint location, corresponding GPS co-ordinates, distances to the nearest wind turbine and landscape sensitivities are listed in Table 8.3.

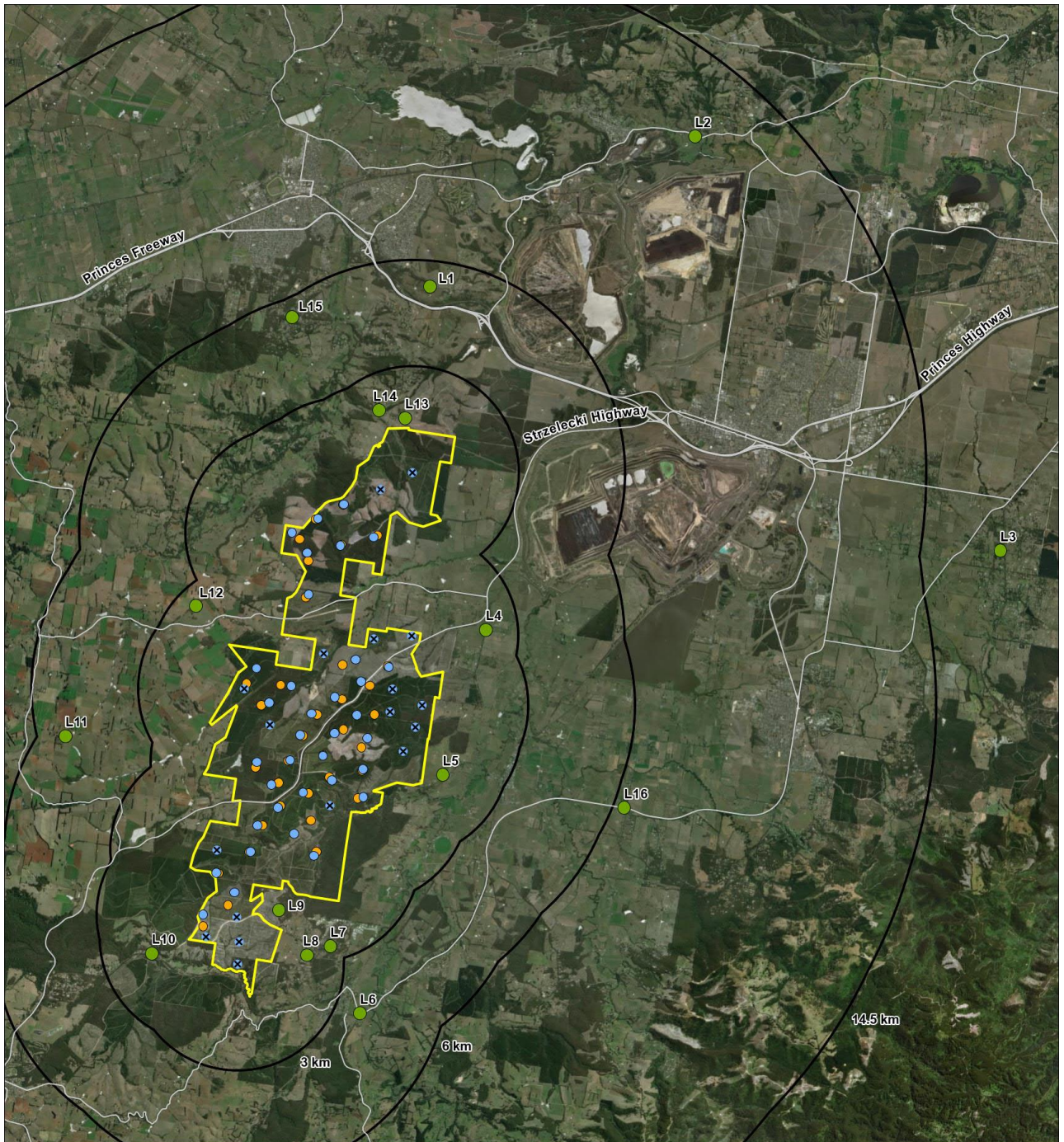


Figure 8-19: Local Roads Viewpoint Locations

Table 8.3: Local Roads Viewpoint Locations

VP	Location	GPS Co-ordinates	Nearest Turbine Concept Layout	Nearest Turbine Revised Layout	Landscape Unit
L1	Haunted Hills Road	55H 438973, 5771721	5.2km S (T01)	6.6km SW (T03)	Unit 2b
L2	Brown-Coalmine Road	55H 446457, 5775955	12.3km SW (T01)	14.3km SW (T03)	Unit 3
L3	Jeeralang North Road	55H 455073, 5764263	16.8km W (T01)	17.5km W (T06)	Unit 2a
L4	Yinnar-Driffield Road	55H 440550, 5762032	2.0km W (T10)	2.9km SW (T14)	Unit 2a
L5	Creamery Road	55H 439336, 5757942	1.3km NW (T31)	2.2km W (T35)	Unit 4b
L6	Monash Way	55H 437001, 5751214	3.7km NW (T53)	4.7km NW (T45)	Unit 2a
L7	Darlimurla Road	55H 436164, 5753103	2.5km W (T52)	3.1km NW (T48)	Unit 4b
L8	Bunderra Drive	55H 435501, 5752853	1.9km W (T52)	2.6km NW (T48)	Unit 4b
L9	Todds Road	55H 434710, 5754128	1.2km SW (T50)	1.4km W (T48)	Unit 4b
L10	Darlimurla Road	55H 431126, 5752903	1.6km NE (T51)	1.6km NE (T49)	Unit 4a
L11	McDonalds Track	55H 428688, 5759035	5.2km NE (T19)	5.3km NE (T15)	Unit 2b
L12	McDonalds Track	55H 432370, 5762710	2.4km SE (T15)	2.6km SE (T15)	Unit 2b
L13	Sayers Track	55H 438274, 5768007	1.5km SE (T01)	3.0km SW (T03)	Unit 3
L14	McDonalds Track	55H 437538, 5768230	2.0km SE (T01)	2.8km SW (T03)	Unit 4a
L15	Moe South Road	55H 435082, 5770849	5.4km SE (T02)	5.5km SE (T03)	Unit 2a
L16	Monash Way	55H 444454, 5757011	6.2km NW (T27)	7.4W W (T35)	

8.4.1 Viewpoint L1 – Haunted Hills Road

Viewpoint L1 is located on Haunted Hills Road approximately 500 m east of its intersection with Ghost Way. Haunted Hills Road is a local road to the north of the Princes Freeway and east of Moe.

The closest turbine (T01) in the Concept Layout is approximately 5.2 km south. The closest turbine in the Revised Layout is turbine (T03) approximately 6.6 km south west. Figure 8-20 shows the view looking south through a break in roadside vegetation.



Figure 8-20: Viewpoint L1 – Existing view looking south west from behind existing roadside vegetation

The tips and upper sections of the swept path (SAA Zone C) of several turbines located in the northern section of the wind farm would be visible above the hills seen in the background of the view.

Views from this location will be oblique to the direction of travel and largely screened or filtered by nearby roadside vegetation.

8.4.2 Viewpoint L2 – Brown-Coalmine Road

Viewpoint L2 is located on Brown-Coalmine Road approximately 325 m east of its intersection with Quarry Road. The nearest turbine (T01) in the Concept Layout was approximately 12.3 km south west. The closest turbine in the Revised Layout is turbine (T03) approximately 14.3 km also to the south west.

Figure 8-21 shows the view looking south west from Brown-Coalmine Road.



Figure 8-21: Viewpoint L2 – Existing view looking south west

Views from this location are over Landscape Unit 3 – Industrial/Mining, and include the Yallourn Open Cut Mine, Yallourn power station and other associated infrastructure.

At a distance of approximately 14.3 km, the turbines would be noticeable, but would not be visually dominate features.

8.4.3 Viewpoint L3 – Jeeralang North Road

Viewpoint L3 is located on Jeeralang North Road approximately 240 m south of its intersection with Arrandoon Drive. The closest turbine (T01) in the Concept Layout was approximately 16.8 km west. This distance has increased to approximately 17.5 km to turbine (T06) in the Revised Layout.

Figure 8-22 shows the view looking west along Jeeralang North Road.



Figure 8-22: Viewpoint L3 – Existing view looking west

Existing vegetation within the road reserve and property boundaries will filter views towards the Project. At a distance of approximately 17.5 km, the proposed turbines would may be noticeable where visible, but not dominant.

8.4.4 Viewpoint L4 – Yinnar-Driffield Road

Viewpoint L4 is located on Yinnar Driffield Road approximately 550 m south of its intersection with the Strzelecki Highway. The closest turbine (T10) in the Concept Layout was approximately 2.0km west. The closest turbine in the Revised Layout is turbine (T14) approximately 2.9 km south west.

Figure 8-23 shows the view looking west from Yinnar Driffield Road through a break in road side vegetation and over cleared farmland.



Figure 8-23: Viewpoint L4 – Existing view looking west

At a distance of approximately 2.0km, the wind turbines will be a dominant element in the view. Views from this location are over Landscape Unit 2a – Cleared Flat Farmland, which has a low sensitivity to visual change and with few road users taking in this particular view.

8.4.5 Viewpoint L5 – Creamery Road

Viewpoint L5 is located on Creamery Road. The closest turbine (T31) in the Concept Layout was approximately 1.3 km northwest. The closest turbine in the Revised Layout is turbine (T35) now approximately 2.2 km west. Photomontages have been prepared from this location as there are clear views and to demonstrate views from the east of the Project. Figure 8-24 shows the existing view looking north west from Creamery Road.



Figure 8-24: Viewpoint L5 – Existing view looking north west

Figure 8-25 shows a photomontage of the Concept Layout.



Figure 8-25: Viewpoint L5 – Photomontage Concept Layout

Figure 8-26 shows a photomontage of the Revised Layout.



Figure 8-26: Viewpoint L5 – Photomontage Revised Layout

The photomontage shows that at a distance of approximately 2.3 km the turbines will be a dominant visual elements where clear views are permitted. These comparative photomontages also demonstrate the effectiveness of turbine placement in moderating turbine visibility and visual impact from sensitive viewing locations.

The vegetation including the small nearby shrub roughly central to the views and larger trees in the distance to the left of these comparative images also demonstrate role and effectiveness of landscape mitigation and screening views from sensitive locations (e.g. residential dwellings).

8.4.6 Viewpoint L6 – Monash Way

Viewpoint L6 is located on Monash Way near the intersection of Morwell River Road. This viewpoint is near to the entry to Boolarra. The closest turbine (T53) in the Concept Layout was approximately 3.7 km west north west, while the closest turbine in the Revised Layout is turbine (T48) approximately 4.7 km west, north west.

Figure 8-27 shows the view looking north west from Monash Way.



Figure 8-27: Viewpoint L6 – Existing view looking north west

Figure 8-28 shows a photomontage of the Concept Layout.



Figure 8-28: Viewpoint L6 – Photomontage Concept Layout

Figure 8-29 shows a photomontage of the Revised Layout.



Figure 8-29: Viewpoint L6 – Photomontage Revised Layout

Viewpoint L6 is taken from a section of road, where a gap in roadside vegetation allows for clear views towards the part of the northern section of the Project. Visible turbines in this direction are at a distance of approximately 6.0 km or greater. The nearest wind turbines to the west north west of Boolarra are screened by both topography and vegetation.

Visible turbines would be over Landscape Unit 2 - Cleared Flat Farmland and at a distance of approximately 6.0 km. It is clear from the photomontages, that although visible, the turbines would not be visually dominant features in these views.

8.4.7 Viewpoint L7 – Darlimurla Road

Viewpoint L7 is located on Darlimurla Road approximately 500 m east its intersection with Bunderra Drive. The closest turbine (T52) in the Concept Layout was approximately 2.5 km west. the closest turbine in the Revised Layout is turbine (T48) approximately 3.1 km north west.

Figure 8-30 shows the view looking west from Darlimurla Road.



Figure 8-30: Viewpoint L7 – Existing view looking west

Existing vegetation will filter the majority of views along this section of Darlimurla Road. Turbines may be visible where breaks in vegetation and fences allow for views beyond the road reserve. The height and scale of the turbines in the context of the existing vegetation would not be of significance.

8.4.8 Viewpoint L8 – Bunderra Drive

Viewpoint L8 is located on Bunderra Drive approximately 350 m south of its intersection with Darlimurla Road. The closest turbine (T52) in the Concept Layout was approximately 1.9 km west. The closest turbine in the Revised Layout is turbine (T48) approximately 2.6 km north west. Comparative photomontages have been prepared due to the clear views from the roadway and to assist with views and visual impact associated with the layout changes.

Figure 8-31 shows the view looking west from Bunderra Drive where a break in roadside vegetation allows for views to the Project.



Figure 8-31: Viewpoint L8 – Existing view looking west

Figure 8-32 shows the photomontage of the Concept Layout.



Figure 8-32: Viewpoint L8 – Photomontage Concept Layout

Figure 8-33 shows the photomontage of the Revised Layout.



Figure 8-33: Viewpoint L8 – Photomontage Revised Layout

Figure 8-31 is taken from a section of Bunderra Drive where a gap in vegetation allows clear views towards the Project. At a distance of approximately 1.9 km, the turbines may dominate the view.

From the roadway, these views will be short in duration due to the extent of roadside vegetation and until such a time that the recently planted trees take up this vegetation break.

8.4.9 Viewpoint L9 – Todds Road

Viewpoint L9 is located on an unsealed road called Todds Road off Darlimurla Road approximately 900 m north west of the intersection with Bunderra Drive. The closest turbine (T50) in the Concept Layout was approximately 1.2 km south west. The closest turbine in the Revised Layout is turbine (T48) approximately 1.4 km west. Again, photomontages have been prepared due to the currently relatively open views and to assist with considering the alterations to the turbine layout.

Figure 8-34 shows the view looking south west from a dirt road off Darlimurla Road.



Figure 8-34: Viewpoint L9 – Existing view looking south west

Figure 8-35 shows the photomontage of the Concept Layout.



Figure 8-35: Viewpoint L9 – Photomontage Concept Layout

Figure 8-36 shows the photomontage of the Revised Layout.



Figure 8-36: Viewpoint L9 – Photomontage Revised Layout

At a distance of approximately 1.2 km, the nearest wind turbine seen in Figure 8-35 for the Concept Layout shows the prominence of the turbines when directly in the view. Figure 8-36 shows the photomontage and the improvements to this view through the adjustments made by the Revised Layout.

This view is one that would ordinarily be experienced by few, albeit local residents of the area. Over time, this view would also be screened by the existing timber plantations as demonstrated in Figure 8-36.

8.4.10 Viewpoint L10 – Darlimurla Road

Viewpoint L10 is located on Darlimurla Road approximately 100 m east of its intersection with Old Darlimurla Road. The closest turbine (T51) in the Concept Layout was approximately 1.6 km north east. The closest turbine in the Revised Layout is still approximately 1.6 km north east, however this is now turbine (T49).

Figure 8-37 shows the view looking north east from Darlimurla Road.



Figure 8-37: Viewpoint L10 – Existing view looking north east

Figure 8-38 shows a wireframe view of the Concept Layout.



Figure 8-38: Viewpoint L10 – Wireframe Concept Layout

There may be glimpses of parts of turbines, where gaps in vegetation allow. Due to existing topography and vegetation the turbines will not dominate this view.

8.4.11 Viewpoint L11 – McDonalds Track

Viewpoint L11 is located on McDonalds Track approximately 1.2 km east of its intersection with Mirboo North – Trafalgar Road. The closest turbine (T19) in the Concept Layout was approximately 5.2 km north east. The closest turbine in the Revised Layout is turbine (T15) approximately 5.3 km north east.

Figure 8-39 shows the view looking north east from McDonalds Track.



Figure 8-39: Viewpoint L11 – Existing view looking north east

Figure 8-39 is taken through a break in roadside vegetation which allows for views over the cleared farmland towards the Project. Vegetation on the roadside and within property boundaries will filter some views to turbines, while at a distance of approximately 5.2 km turbines will be noticeable but not dominant in this view.

8.4.12 Viewpoint L12 – McDonalds Track

Viewpoint L12 is located on McDonalds Track approximately 850 m north east of the intersection with Morwell-Thorpdale Road. The closest turbine (T15) in the Concept Layout is approximately 2.4 km south east. This turbine moves approximately 200 m south east in the Revised Layout. Comparative photomontages have been prepared to assist with interpreting views of the turbines over cleared farmland set in rolling hills.

Figure 8-40 shows the existing view looking south east from McDonalds Track where a break in roadside vegetation allows for views to the Project.



Figure 8-40: Viewpoint L12 – Existing view looking south east

Figure 8-41 shows a photomontage of the Concept Layout.



Figure 8-41: Viewpoint L12 – Photomontage Concept Layout

Figure 8-42 shows a photomontage of the Revised Layout.



Figure 8-42: Viewpoint L12 – Photomontage Revised Layout

Viewpoint L12 is taken through a break in roadside vegetation and nearby hills that allow long views to the east. This area which has been cleared for farming practices allows for views towards the Project due to the low-level crops which hold the contour of the site.

At a distance of approximately 2.4 km, the proposed wind turbines have the potential to be a dominant visual element in this view. However, when compared to the existing vegetation and turbine placement on the nearby hills, the turbines are not out of scale or context.

8.4.13 Viewpoint L13 – Sayers Track

Viewpoint L13 is located on Sayers Track approximately 600 m east of its intersection with McDonalds Track. The closest turbine (T01) in the Concept Layout was approximately 1.5 km south east. The closest turbine in the Revised Layout is turbine (T03) approximately 3.0 km south west. Comparative photomontages have been prepared to assist with interpreting the changes in views between the Concept Layout and the current Revised turbine layout. Figure 8-43 shows the existing view looking south east from Sayers Track.

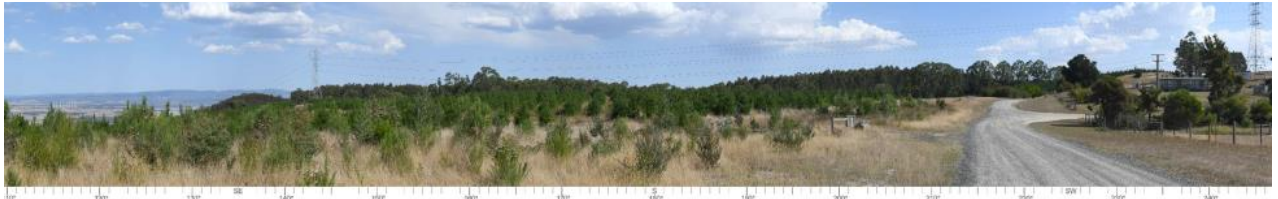


Figure 8-43: Viewpoint L13 – Existing view looking south east

There are long views to the lower plains which include the Hazelwood Cooling Pond, former power station and high voltage power lines. The existing 220 kV power line relevant to this project can be seen in the foreground of this view.

Figure 8-44 shows the photomontage of the Concept Layout.



Figure 8-44: Viewpoint L13 – Photomontage Concept Layout

Figure 8-45 shows the photomontage of the Revised Layout.



Figure 8-45: Viewpoint L13 – Photomontage Revised Layout

The tips of turbines located in the northern section of the Project where visible in the Concept Layout through the 220kV transmission line. The Revised Layout, which removes several turbines at the northern end of the Project alters this view to limit or completely screen turbines from this location.

8.4.14 Viewpoint L14 – McDonalds Track

Viewpoint L14 is located on McDonalds Track approximately 450 m north west of the intersection with Sayers Track. The closest turbine (T01) in the Concept Layout was approximately 2.0 km south east. The closest turbine in the Revised Layout is turbine (T03) approximately 2.8 km south west.

Figure 8-46 shows the view looking south east from McDonalds Track.



Figure 8-46: Viewpoint L14 – Existing view looking south east

Existing topography and vegetation will screen or filter most views of the Proposed turbines from this location. Where turbines may be visible, these views are likely to be modified to include the existing high voltage transmission line.

8.4.15 Viewpoint L15 – Moe South Road

Viewpoint L15 is located on Moe South Road at the intersection of Blackwood Rise. The closest turbine (T02) in the Concept Layout was approximately 5.4 km south east, while the closest turbine in the Revised Layout is turbine (T03) approximately 5.5 km south east.

Figure 8-47 shows the view looking south east from Moe South Road.



Figure 8-47: Viewpoint L15 – Existing view looking south east

Existing topography and vegetation will screen all views towards the proposed turbines.

8.4.16 Viewpoint L16 – Monash Way

Viewpoint L16 is located on Monash Way approximately 80 m west of its intersection with Walshs Road. The closest turbine (T27) in the Concept Layout was approximately 6.2km north west. The closest turbine in the Revised Layout is turbine (T35) approximately 7.4km west.

Figure 8-48 shows the view looking-south west to north-west from Monash Way.



Figure 8-48: Viewpoint L16 - Existing view looking west

Existing views are over cleared flat farmland towards the elevated hills on which the Delburn Wind farm is proposed. In this view the hills are generally low lying and provide a visual backdrop to the nearby farming land. Views towards the proposed wind farm include the existing transmission line within the southern edge of the road reserve which provide a reference of visual scale for the turbines.

Figure 8-49 shows the same view with a photomontage of the Concept Layout superimposed.



Figure 8-49: Viewpoint L16 – Photomontage Concept Layout

At this distance, the proposed wind turbines will be highly noticeable due to their elevation and the silhouette on the horizon.

Figure 8-50 shows a photomontage of the Revised Layout.



Figure 8-50: Viewpoint L16 – Photomontage Revised Layout

With the exception of fewer turbines to the north (right) of this view, the change in visibility between the proposed turbines in Concept Layout and the Revised Layout would be largely not discernible.

The proposed wind turbines will be highly noticeable due to their elevation and the silhouette on the horizon and limited vegetation in road sides and along property boundaries.

8.4.17 Summary of Local Roads Viewpoints

Views and visibility of the proposed turbines from local roads will vary greatly depending on location and proximity to the Project. The local road network is located within a landscape of great diversity ranging from views over cleared flat farmland where long views are available across the valley floor and plain, through to confined views from the tightly folding landscape of the vegetated elevated hills.

Local roads within the area to the west tend to be more confined due to the rolling hills, extensive roadside vegetation and trees within the pine plantations of the Project. Views in this location tend to be more dramatic due to the regular closing and opening up of views across the landscape permitted by topography and vegetation.

More broadly the views from areas to the east of the project that are near to or within the land in the SUZ1 would be less sensitive to visual change due to the presence of electrical generating and distributing infrastructure, there are however sensitive views to elevated features such as Strzelecki Ranges and Mt Baw Baw.

Overall visual impact from local roads is anticipated to be low for areas to the north and east of the project and generally low to medium for local roads to the south and west this would be dependent on the visibility of turbines which would be influenced by topography and vegetation and the context of the view where these are available.

8.5 Townships

Twelve viewpoint locations (T1-T12) have been selected as representative of the visual impact on viewers using the townships within the viewshed.

Landscape sensitivity is assessed as moderate/high due to the residential component of townships, while the viewer numbers range from low to high depending on the township.

Each viewpoint location is shown in Figure 8-51 and the corresponding GPS co-ordinates and distances to the nearest wind turbine are listed below in Table 8.4.

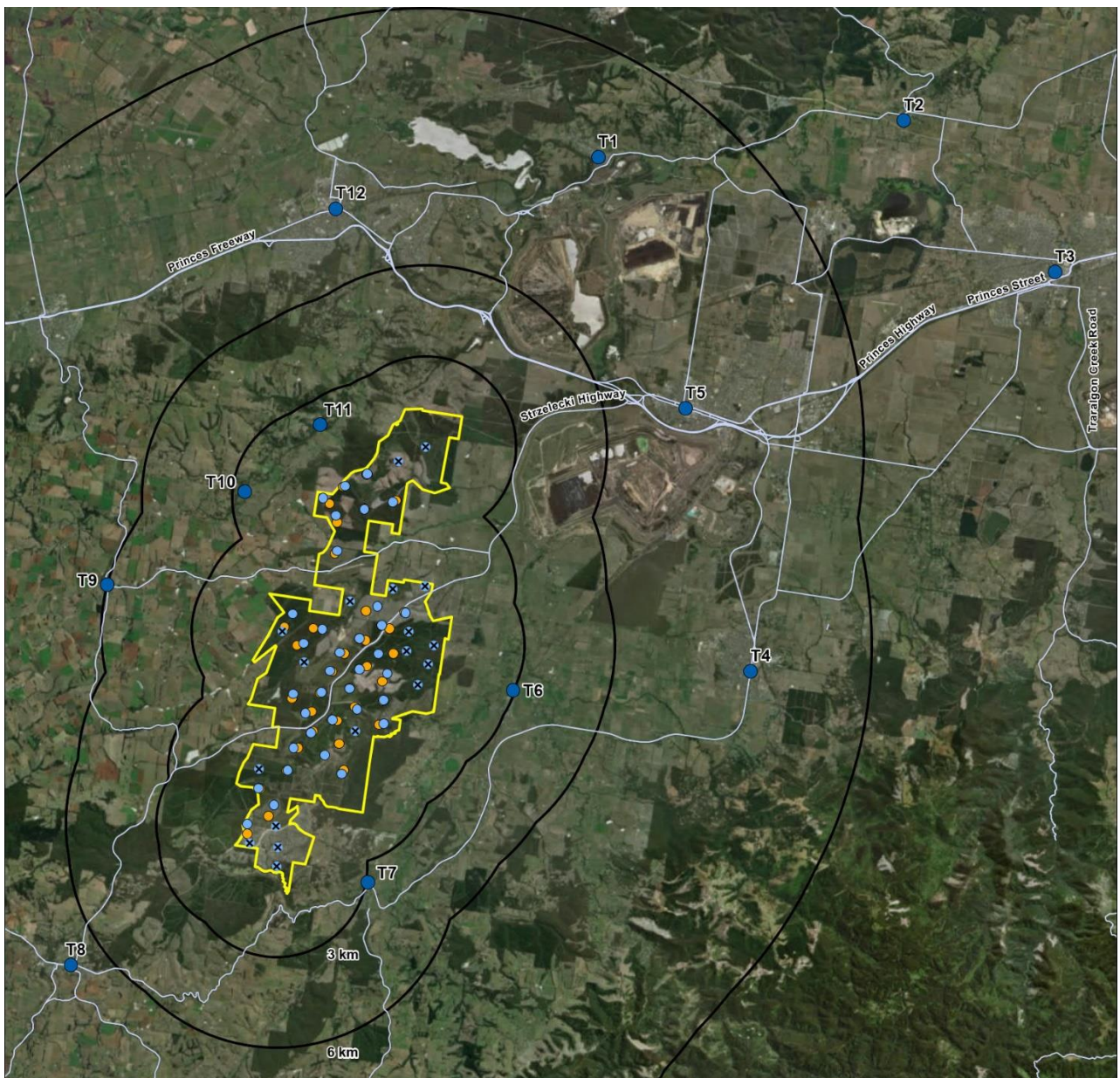


Figure 8-51: Township Viewpoint Locations

Table 8.4: Township Viewpoint Locations

VP	Location	GPS Co-ordinates	Nearest Turbine Concept Layout	Nearest Turbine Revised Layout	Landscape Unit
T1	Yallourn	55H 444194, 5776042	11km SW (T01)	12.9km SW (T03)	Unit 1
T2	Tyers	55H 454305, 5777264	19.1km SW (T01)	21km SW (T06)	Unit 1
T3	Traralgon	55H 459315, 5772249	21.1km SW (T01)	23km SW (T06)	Unit 1
T4	Churchill	55H 449238, 5759046	10.5km W (T22)	11.6km W (T14)	Unit 1
T5	Morwell	55H 447080, 5767745	8.6km SW (T01)	10km SW (T06)	Unit 1
T6	Yinnar	55H 441097, 5758150	2.8km W (T27)	3.9km W (T25)	Unit 1
T7	Boolarra	55H 436563, 5752078	3.0km W (T53)	3.7km NW (T45)	Unit 1
T8	Mirboo	55H 426733, 5749334	7.1km NE (T51)	7.2km NE (T49)	Unit 1
T9	Thorpdale	55H 428175, 5762013	5.8km SE (T19)	5.8km SE (T15)	Unit 1
T10	Narracan	55H 432495, 5764986	2.6km E (T05)	2.8km E (T15)	Unit 1
T11	Coalville	55H 434986, 5767209	2.1km SE (T04)	2.1km SE (T04)	Unit 1
T12	Moe	55H 435501, 5774344	8.4km SE (T01)	8.8km S (T03)	Unit 1

8.5.1 Viewpoint T1 – Yallourn

Viewpoint T1 is located at the Yallourn North Oval. The closest turbine (T01) in the Concept Layout was approximately 11km south west. The closest turbine in the Revised Layout is turbine (T03) approximately 12.9 km south west.

Figure 8-52 shows the view looking south west from the edge of Yallourn North Oval near the playground.



Figure 8-52: Viewpoint T1 – Existing view looking south west

The landscape sensitivity of townships is rated medium, however at a distance of approximately 11km wind turbines would not be a noticeable element within the view. From this location they would most likely be completely screened by existing vegetation on the southern edge of the township.

8.5.2 Viewpoint T2 – Tyers

Viewpoint T2 is located in the township of Tyers. The closest turbine (T01) in the Concept Layout was approximately 19.1 km south west. The nearest turbine in the Revised Layout is turbine (T06) approximately 21.0 km south west.

Figure 8-53 shows the view looking south west from the edge of Tyers Recreation Reserve.



Figure 8-53: Viewpoint T2 – Existing view looking south west from Tyers Recreation Reserve

Figure 8-54 shows the view looking south west from Tyers Road on the western outskirts of Tyers. The closest turbine is approximately 19 km southwest.



Figure 8-54: Viewpoint T2 – Existing view looking south west from Tyers Road

These two views have been taken from locations within the township where breaks in vegetation and buildings that would allow for clear views towards the Project. At a distance of approximately 21.0 km the turbines may be visible, however would not be dominant features in these views.

8.5.3 Viewpoint T3 – Traralgon

Viewpoint T3 is located in Traralgon. The closest turbine (T01) in the Concept Layout was approximately 21.1 km south west. The closest turbine in the Revised Layout is turbine (T06) approximately 23.0 km south west.

Figure 8-55 shows the view looking south west along Church Street.



Figure 8-55: Viewpoint T3 – Existing view looking south west along Church Street

The landscape sensitivity of townships is rated medium, however at a distance of approximately 23.0 km wind turbines would not be a noticeable element within the view. From this location they would be completely screened by existing buildings and vegetation with the township.

8.5.4 Viewpoint T4 – Churchill

Viewpoint T4 is located in Churchill. The closest turbine (T22) in the Concept Layout was approximately 10.5 km west, while the closest turbine in the Revised Layout is turbine (T14) approximately 11.6 km west.

Figure 8-56 shows the view looking north east to the shopping centre from Monash Way.



Figure 8-56: Viewpoint T4 – Existing view of shopping complex in Churchill

Views within this part of town would be screened by existing buildings, vegetation and topography. Figure 8-57 show the view looking west along Switchback Road from the corner of Blackwood Crescent.



Figure 8-57: Viewpoint T4 – Existing view looking west

From this second location in Churchill there will be views along Switchback Road towards the project. At a distance of approximately 11.6 km, the turbines have the potential to be noticeable however would not be a dominant element in this view.

Many views to the west from Churchill are modified to include existing power infrastructure associated with brown coal reserves and power stations located within the land zoned SUZ.

8.5.5 Viewpoint T5 – Morwell

Viewpoint T5 is located in Morwell. The closest turbine (T01) in the Concept Layout was approximately 8.6 km south west, while the closest turbine in the Revised Layout is turbine (T06) approximately 10.0 km south west.

Figure 8-58 shows the existing view from the edge of the Morwell Recreation Reserve.



Figure 8-58: Viewpoint T5 – Existing view looking from the edge of Morwell Recreation Reserve

Turbines may be visible to the centre of Figure 8-58, but would not be a dominant element in the view. There are many vertical elements in view, including vertical poles within the recreation reserve and infrastructure around the former Hazelwood power station.

Figure 8-59 shows the views along Commercial Road near the local council office.

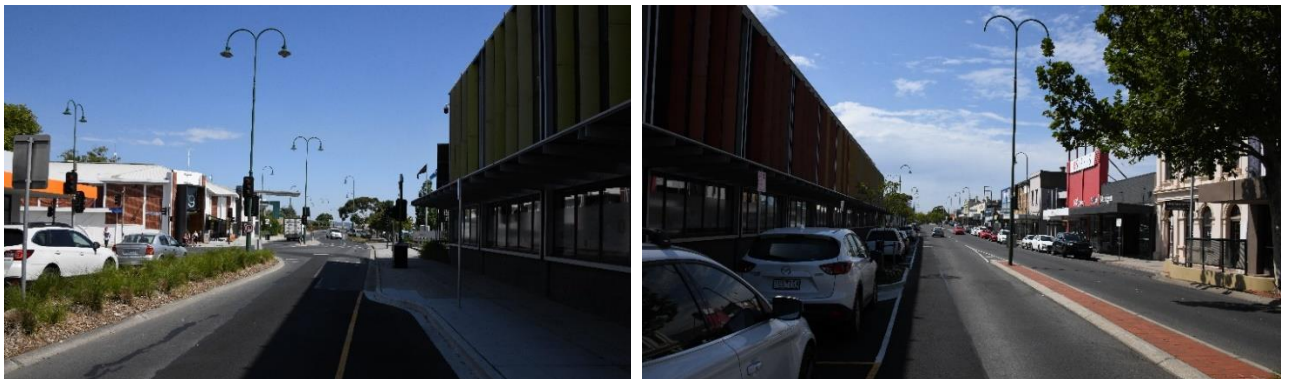


Figure 8-59: Viewpoint T5 – Existing view looking along Commercial Road

Views from within Morwell township will be blocked by existing buildings and vegetation located within road reserves and private allotments.

Figure 8-60 shows the view from the edge of Norman Sharpe Reserve.



Figure 8-60: Viewpoint T5 – Existing view looking from edge of Norman Sharpe Reserve

Turbines may be visible on hill in background, but would not be a dominant element in the view.

8.5.6 Viewpoint T6 – Yinnar

Viewpoint T6 is located in Yinnar. The closest turbine (T27) in the Concept Layout was approximately 2.8 km west. The closest turbine in the Revised Layout is turbine (T25) approximately 3.9 km west. Comparative photomontages have been prepared to assist with considering views from the broader landscape. The change in these views from alterations to the turbine layout have been also captured in these images.

Figure 8-61 shows example images of the township of Yinnar.



Figure 8-61: Viewpoint T6 – Yinnar character images

Views within the township will have glimpses or clear views of the project where breaks in vegetation and buildings allow for views beyond the town.

Figure 8-62 shows the existing view looking west from the roadside stop behind buildings in the main street.



Figure 8-62: Viewpoint T6 – Existing view looking west from the roadside stop

Figure 8-63 shows a photomontage of the Concept Layout.



Figure 8-63: Viewpoint T6 – Photomontage Concept Layout

Figure 8-64 shows a photomontage capturing the changes proposed by the Revised Layout.



Figure 8-64: Viewpoint T6 – Photomontage Revised Layout

The photomontage shows that at a distance of approximately 2.8 km turbines will be a dominant element in this view. The visual impact will be dependant largely on the perception of turbines and renewable energy of the individual viewer.

These views also demonstrate the ability for landscape screening to reduce or alter the visual impact of the proposed wind turbines from sensitive viewing locations such as residential dwellings.

8.5.7 Viewpoint T7 – Boolarra

Viewpoint T7 is located in Boolarra. The closest turbine (T53) in the Concept Layout was 3.0 km west. The closest turbine in the Revised Layout is turbine (T45) approximately 3.7 km north west.

Figure 8-65 shows the view looking back towards town along Duke Street.



Figure 8-65: Viewpoint T7 – Existing view looking back towards town along Duke St

Views from within the town are largely screened by existing topography, vegetation and buildings within the township. There may be longer views along roads where turbines to the north are visible. These would be at distances of approximately 6.0 km and not out of scale with urban elements such as light and telegraph poles also seen in these views.

8.5.8 Viewpoint T8 – Mirboo North

Viewpoint T8 is located in Mirboo North. The closest turbine (T51) in the Concept Layout was approximately 7.1 km north east. The closest turbine in the Revised Layout is turbine (T49) approximately 7.2 km also to the north east.

Figure 8-66 shows the view looking along the Strzelecki Highway approximately 100 m west of its intersection with Grand Ridge East Road and the western end of the Grand Ridge Rail Trail.



Figure 8-66: Viewpoint T8 – Existing view looking along the Strzelecki Highway

Views from within town will be largely screened or filtered by existing buildings and vegetation in foreground views and topography and vegetation in longer views towards the Project.

Figure 8-67 shows the view from the park to the north of the main street and retail shops.



Figure 8-67: Viewpoint T8 – Existing view looking north east towards the project from park behind main shops

Gaps in vegetation within the park may allow views towards the Project in the centre of this view. However, at a distance of approximately 7.1 km and the amount of existing vegetation, these turbines will not dominate the view.

8.5.9 Viewpoint T9 – Thorpdale

Viewpoint T9 is located in Thorpdale. The closest turbine (T19) in the Concept Layout was approximately 5.8 km south east. In the Revised Layout, the closest turbine is now T15 which is also approximately 5.8 km to the south east,. Figure 8-68 shows some of the streetscape views within Thorpdale.



Figure 8-68: Viewpoint T9 – Existing view looking from street network within Thorpdale

Figure 8-69 shows the existing view looking east from Hamilton Street at the eastern edge of the town.



Figure 8-69: Viewpoint T9 – Existing view looking east from Hamilton Street

Figure 8-70 shows a wireframe model of the proposed turbines in the Concept Layout.



Figure 8-70: Viewpoint T9 – Wireframe Concept Layout

Views within Thorpdale township will be filtered or completely screened by existing topography, vegetation and buildings.

8.5.10 Viewpoint T10 – Narracan

Narracan is a low-lying village located amongst extensive canopy trees to the north western end of the Project. Viewpoint T10 is located in Narracan. The closest turbine (T05) in the Concept Layout was 2.6 km east. The closest turbine in the Revised Layout is turbine (T15) approximately 2.8 km, also to the east. Figure 8-71 shows the view looking east through roadside vegetation from Coalville Road, situated to the north east of Narracan.



Figure 8-71: Viewpoint T10 – Existing view looking east from Coalville Road

Views from of the Project from the majority of locations within Narracan will be filtered or screened by either topography, roadside vegetation or both. Turbines may be visible from locations from the east facing hillsides along the western side of the village.

8.5.11 Viewpoint T11 – Coalville

Coalville is a small residential cluster located towards the north western edge of the project. The locality is situated on the lower north facing slopes below the same hills on which the Project is proposed. Viewpoint T11 is located on Coalville Road roughly central to the locality of Coalville. The closest turbine (T04) in the Concept Layout and Revised Layout is approximately 2.1 km south east.

Figure 8-72 shows the view looking south east from the side of Coalville Road.



Figure 8-72: Viewpoint T11 – Existing view looking south east

Views from this location will be predominantly filtered or screened by topography and existing vegetation. There may be viewing opportunities for glimpses to turbines where breaks in vegetation allow. Where visible, the turbines would not be dominant features due to the scale and extent of vegetation in most views towards the Project.

This may vary from some residential dwellings where breaks in vegetation have been created to take in specific views or aspects. Views from these locations would be considered in the final, more detailed assessment should they be of concern to the individual owners.

8.5.12 Viewpoint T12 – Moe

Viewpoint T12 is located in Moe. The closest turbine (T01) in the Concept Layout was approximately 8.4 km south east. The closest turbine in the Revised Layout is turbine (T03) approximately 8.8 km south. The SAA demonstrates theoretical visibility for the nacelle and above of approximately 9 turbines.

Figure 8-73 shows the view looking south across the trainline to east of the Moe train station. This location was selected as it is slightly elevated, roughly central to the town and include the elevated and vegetated hills at the northern end of the Project.



Figure 8-73: Viewpoint T12 – Existing view looking south across the train line in Moe township

Views from within town will be predominantly screened by buildings, vegetation and infrastructure within the township.

Figure 8-74 shows the view looking south along King Street towards the southern edge of Moe. This viewing location is approximately 7.5 km from the nearest wind turbine.



Figure 8-74: Viewpoint T12 – Existing view looking south along King Street on the outskirts of Moe

Views from the outskirts on this side of town are also likely to be screened by existing topography, vegetation, buildings and infrastructure.

The SAA model indicated visibility of up to 9 turbines from areas within the township of Moe. Actual visibility would be limited to few locations where breaks in vegetation, buildings and other structures allow views to the south and towards the Project.

8.5.13 Summary of Township Viewpoints

Views from most locations within the nearby towns and locality will be filtered or screened by a combination of topography, vegetation or buildings and other structures.

Views are typically limited to the edges of townships or areas such as recreation reserves that allow for clear views over large open areas. Where visible, the turbines would not be dominant features due to the scale and extent of vegetation in most views towards the Project.

The overall the visual impact from these majority of the areas would be low.

There may be views from residential dwellings where breaks in vegetation have been created to take in specific views or aspects. Views from these locations would be considered in the final, more detailed assessment should they be of concern to the individual owners.

8.6 Recreational Trails

Four viewpoint locations (RT1-RT4) have been selected as representative of views from recreational trails within the viewshed of the Project. Viewer numbers from recreational trails would be assessed as low while the landscape sensitivity would vary dependant on the location of the viewpoint.

The location of each viewpoint in proximity to the project is shown in Figure 8-75. The viewpoint, GPS co-ordinates, distances to the nearest wind turbine and landscape unit in views towards the Project are described in Table 8.5.

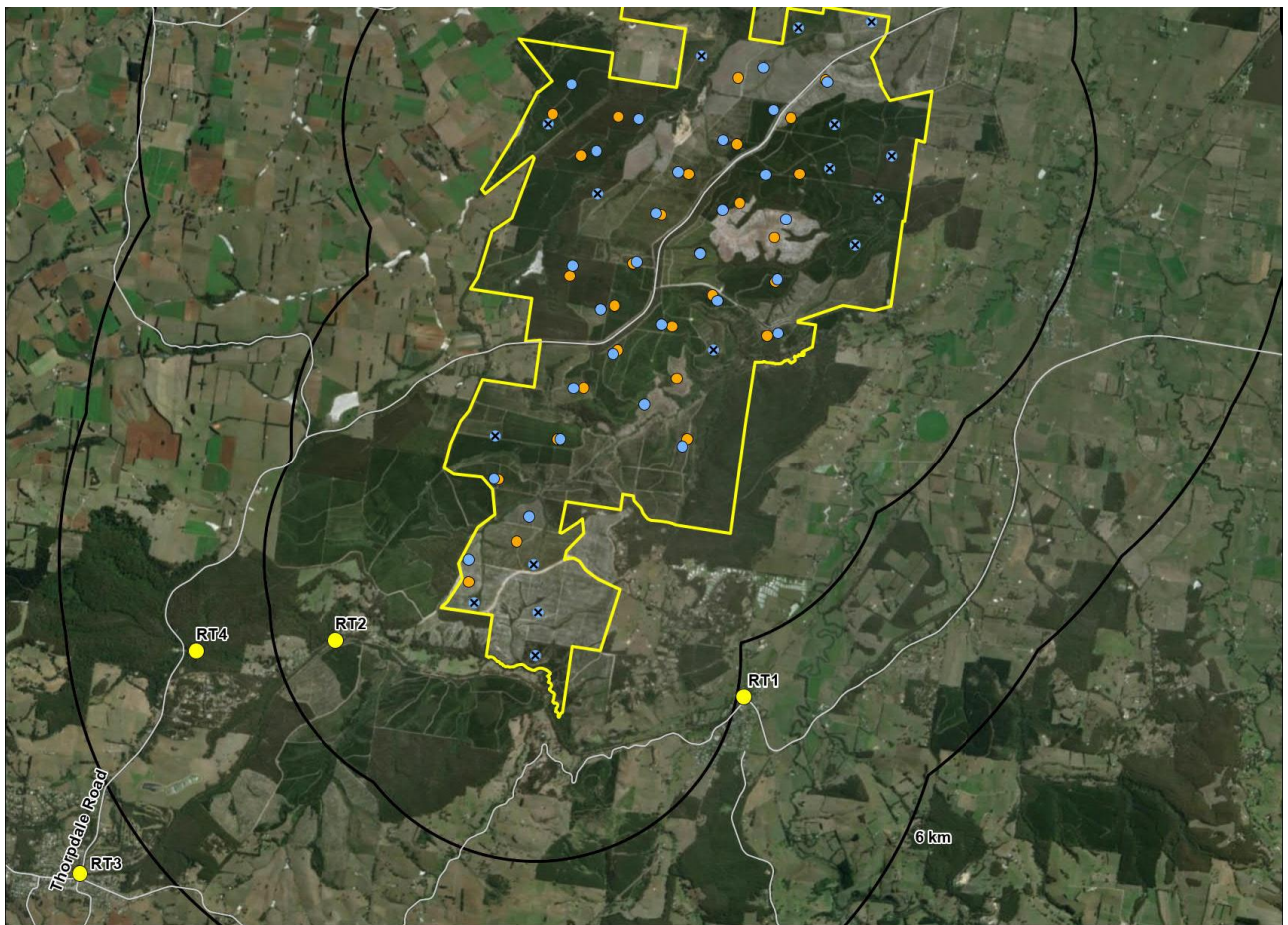


Figure 8-75: Recreational Trail Viewpoint Locations

Table 8.5: Recreational Trail Viewpoint Locations

VP	Location	GPS Co-ordinates	Nearest Turbine Concept Layout	Nearest Turbine Revised Layout	Landscape Unit
RT1	GR Trail - Boolarra	55H 436593, 5752000	3.0km NW (T53)	3.8km NW (T45)	
RT2	GR Trail - Darlimulra	55H 430622, 5752820	2.1km NE (T51)	2.1km NE (T49)	
RT3	GR Trail – Mirboo Nth	55H426878, 5749416	6.9km NE (T51)	7.1km NE (T49)	
RT4	Lyrebird Forest Walk	55H 428577, 5752665	4.1km NE (T51)	4.1km NE (T49)	

8.6.1 Viewpoint RT1 – Grand Ridge Trail Boolarra

Viewpoint RT1 is located at Boolarra entrance to the Grand Ridge Trail. The closest turbine (T53) in the Concept Layout was approximately 3.0km north west. The closest turbine in the Revised Layout is turbine (T45) approximately 3.8km north west.

Figure 8-76 shows the view looking south towards the trail entrance from the carpark at Christian Street Boolarra.



Figure 8-76: Viewpoint RT1 – existing view looking south west

Figure 8-77 shows the view looking generally south west to northwest from Christian Street through a break in existing trees.



Figure 8-77 View looking southwest to northwest

Views towards the turbines from the reserve and trail entrance will be filtered or screened by existing vegetation within the reserve, road sides and private allotments. Views to the nearer turbines directly to the east will be screened by the vegetated hill directly to the west of the town.

8.6.2 Viewpoint RT 2 – Grand Ridge Trail Darlimurla

Viewpoint RT2 is located at the former Darlimurla Station roughly midway along the Grand Ridge Trail. The former station site is now a rest stop and interpretive centre.

The closest turbine (T51) in the Concept Layout was approximately 2.1km north east, while the closest turbine in the Revised Layout is turbine (T49) approximately 2.1km north east.

Figure 8-78 shows the layout and setting of the trail stop which includes shelters, a grassed terrace and picnic tables.



Figure 8-78: Viewpoint RT2 – existing view looking south towards the Rail Trail

Figure 8-79 shows the view looking north towards the proposed turbines from the upper terrace of the Darlimurla Station rest stop.



Figure 8-79 View looking north

Existing vegetation in the landscape to the north will filter most views towards the proposed wind turbines. Although there will be limited turbine visibility from the rest stop, users of rail trails are more inclined to consider turbines a positive contribution to views.

8.6.3 Viewpoint RT3 – Grand Ridge Trail Mirboo North

Viewpoint RT3 is located at the western entrance to the Grand Ridge Trail in Mirboo North. The closest turbine (T51) in the Concept Layout was approximately 6.9km north east. The closest turbine in the Revised Layout is turbine (T49) approximately 7.1km north east. Figure 8-80 shows the view looking generally east from the trail entrance near the Strzelcki Highway.



Figure 8-80: Viewpoint RT3 – existing view looking east

Figure 8-81 shows the view looking generally north from the trail entrance. There is a small carparking and grassed area, seating and picnic tables.



Figure 8-81 View looking north – northwest

Views towards the proposed turbines are through existing trees within the trail reserve, surrounding road network and private allotments.

The Grand Ridge Brewery is directly to the south of this location. The Mirboo North trail entrance is set within a vegetated cutting. It is unlikely that there will be any turbines visible from this location.

8.6.4 Viewpoint RT4 – Lyrebird Forest Walk

Viewpoint RT4 is located at the entrance and carparking area of the Lyrebird Forest Walk. The closest turbine (T51) in the Concept Layout was approximately 4.1km north east, while the closest turbine in the Revised Layout is turbine (T49) approximately 4.1km north east.

The trail start comprises a small car parking area, picnic tables and chairs and interpretive signage. Figure 8-82 shows the view from the car parking area looking generally north east towards the trail entrance.



Figure 8-82: Viewpoint RT4 – existing view looking north east

The majority of the Lyre Bird Walk is set within the mature forests of the Mirboo North Regional Park. Most views towards the wind farm would be filtered or screened by topography and vegetation.

8.6.1 Summary of Trail Viewpoints

Views from nearby trails will be filtered or screened by combination of topography or vegetation. There may be views from locations where breaks in vegetation afford longer views across the landscape and in the direction of the turbines. There will be limited to no views from key trail locations such as entrances or designated stops. A more detailed analysis of key viewing locations will be determined in consultation with key stakeholders for inclusion within the detailed report.

8.7 Residential Clusters

Views and visual impacts from residential dwellings have the greatest potential for visual impacts to be brought about by the Project. The visual impact is in part one that can be assessed by discussing the number and scale of wind turbines in particular views, although the perceived visual impact is one that is influenced by the individual viewer. For this reason, the assessment of visual impact from residential properties differs from that undertaken from publicly accessible viewpoints.

For residential occupiers, the view to the wind turbines may not be just a glimpse or a 5-minute experience as they drive around the local road network, but potentially a permanent view from living areas or outside entertainment spaces of their homes. Landholders that farm the land may also be impacted as they work on their property. These areas, like other places of work, are not considered as sensitive as views from places of residence or attached private open space. The analysis of visual impact from residential properties is based on the following assumptions:

- An occupant of a residential dwelling will have a high degree of sensitivity to the change in their immediate landscape;
- Visitor numbers are not applicable to residences;
- Farmers may be able to see the wind turbines as they move around their property. These areas may be used as much in daylight hours as the living areas of their residences; and
- Landscape can be designed to mitigate visual impact when located near a fixed viewpoint, such as a residence, with far greater ease than that can be achieved along the road network.

Whilst not a requirement of a Preliminary Landscape and Visual Impact Assessment, the guidelines do require the identification of sensitive viewing locations and sightlines and residential clusters surrounding the Project. These areas can be broadly classified up into distinct areas.

Section 4 of this Preliminary Landscape and Visual Impact Assessment described the key parameters of human vision relevant to views and visual impact. Section 4.1 defined the distance at which the proposed wind turbines have the potential to be noticeable and potential to be dominant elements in views being up to 6.0 km from a wind turbine.

Figure 8-83 shows the location of known residential dwellings within 6.0 km of the current 'Revised' turbine layout.

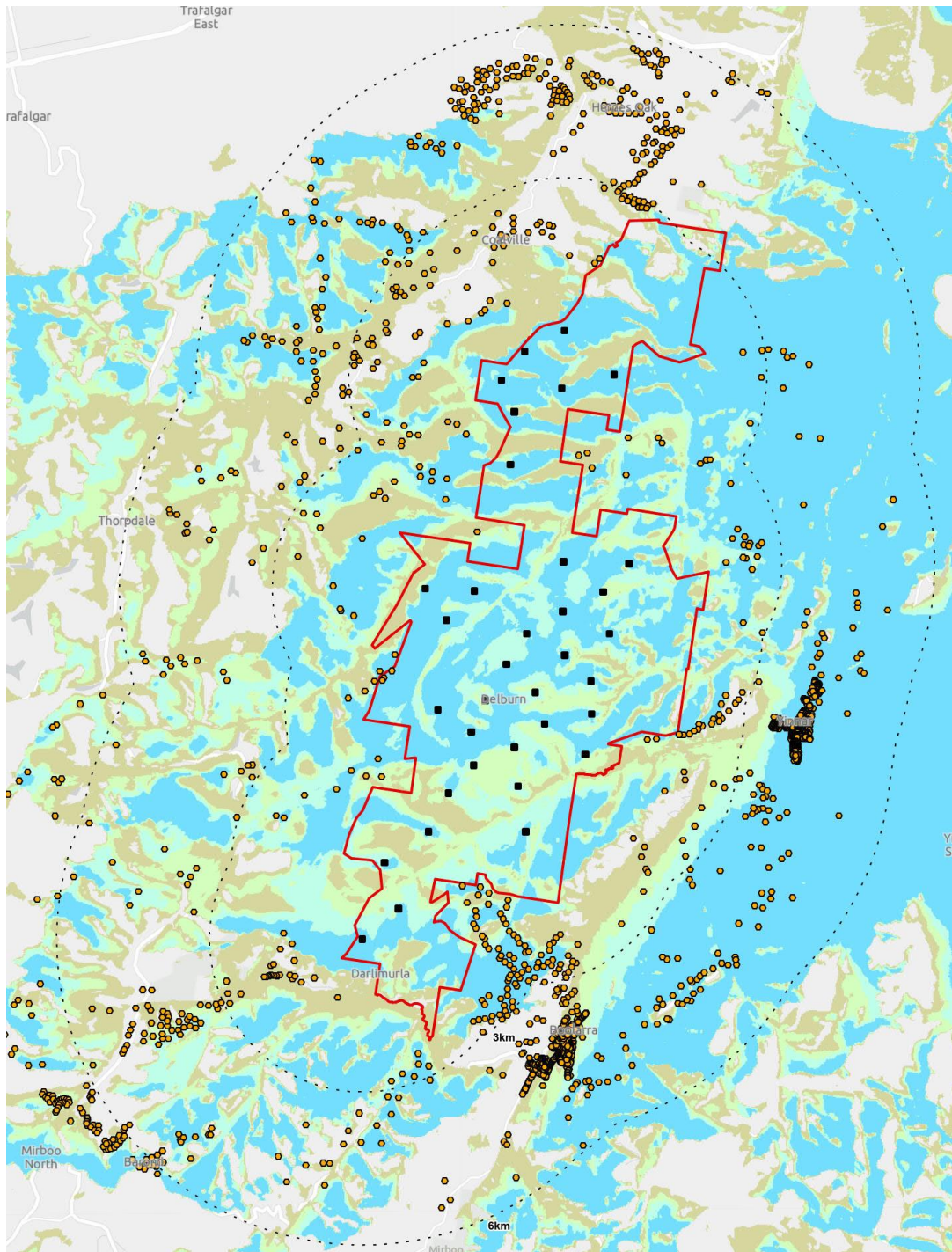


Figure 8-83: Residential Clusters within 5km of proposed turbines

There are several distinct clusters scattered within 6.0 km of a turbine. The larger clusters which include Yinnar to the east, Boolarra and Mirboo North to the south, Thorpdale to the west and Narracan to the north west are described in the preceding section. There are also several smaller clusters of residential dwellings such as Darlimurla and Coalville also within 6.0 km of a turbine. These patterns are typical of wind farm in rural landscapes.

A detailed assessment of views from these locations would be considered in the final, more detailed assessment should they be of concern to the individual owners. Of relevance to a PLVIA is the ability for visual impacts from sensitive viewing locations to be effectively mitigated. It is recognised that not all views can be mitigated nor will it be the desire for all owners to take up the offer for landscape mitigation.

8.7.1 Landscape Mitigation

Landscape mitigation measures can be utilised to screen and filter views to the Project from residential locations. Such measures are also suitable for facilities such as the on-site substation facilities.

For wind energy projects landscape screening for views from sensitive viewing locations particularly residential dwellings is one method which can be applied to ameliorate visual impacts which are predicted to be greater than high.

The preceding analysis has demonstrated the scale and extent of existing vegetation found in many areas across the project viewshed and the influence that this vegetation plays in screening views in the area.

Photomontages have also been prepared from a range of viewing angles, distances and landscape settings that exist within the Project viewshed. These photomontages also demonstrate how landscape mitigation can be effective and screening or filtering views towards the proposed wind turbines particularly from viewing locations that are near to the proposed turbines.

The following sections will briefly explore and re-examine the views, landscape character and amenity for residential dwellings surrounding the Project. This assessment will be undertaken based on precincts and similar landscape character types that were observed in the preceding sections, where relevant this will be supported by a re-examination of photomontages prepared from these areas.

8.7.2 Eastern

The Eastern Residential Cluster landscape is characterized by cleared flat or slightly undulating farmland. Vegetation is limited to roadsides, wind breaks and creek lines.

The majority of residential dwellings to the east of the project sit within the Yinnar township or along Creamery Road closer to the proposed wind farm. Within this cluster there are several clear views to project over cleared farmland (Landscape Unit 2).

The following images show the range and nature of views from residential clusters to the east towards the Project. Refer to Viewpoints L5 & T6 (Section 8.4.5 and 8.5.6). These images also show examples of existing vegetation found within the area and in views towards the project.



Figure 8-84: Viewpoint L5 – Photomontage Concept Layout



Figure 8-85: Viewpoint L5 – Photomontage Revised Layout



Figure 8-86: Viewpoint L6 – Photomontage Concept Layout



Figure 8-87: Viewpoint L6 – Photomontage Revised Layout

The hill on which the project is located is a prominent feature in views to the west in this area, the visible hills are currently modified by timber plantings and high voltage transmission lines.

There will be an opportunity for clear views to the Project from residential dwellings situated to the east of the Project.

These photomontages also show that landscape screening can be effective at filtering or screening the proposed 250m high turbines.

8.7.3 South Eastern

The South Eastern residential cluster is characterized by vegetated hills both natural and plantation. The majority of residential dwellings to the south east lie within Boolarra township and the rural residential outskirts of the township to the north west.

There is a large amount of vegetation within this area that will filter/block most views. However, there will be a few areas where gaps in vegetation allow views to the Project.

The following images show the range and nature of views from residential clusters to the south east towards the Project. Refer viewpoints L7, L8 and L9 (Section 8.4.7, 8.4.8 and 8.4.9).



Figure 8-88: Viewpoint L7 – Existing view looking west



Figure 8-89: Viewpoint L8 – Photomontage Concept Layout



Figure 8-90: Viewpoint L8 – Photomontage Revised Layout



Figure 8-91: Viewpoint L9 – Photomontage Concept Layout



Figure 8-92: Viewpoint L9 – Photomontage Revised Layout

The landscape structure in this area is that of rolling vegetated hills, often with steep slopes. The SAA in Figure 8-83 shows that dwellings located on slopes that face north west have the potential to see part or all of the turbines within the project. The figures above show the extensive areas of native and planted forests which screen or filter views across the landscape and towards the Project.

These views also assist to demonstrate that if required vegetation can be effective at mitigating views and visual impact from dwellings within this area.

8.7.4 South Western

The South Western residential cluster is characterized by vegetated hills both natural and plantation. The majority of residential dwellings to the south west lie within Darlimurla and Mirboo North.

There is a large amount of vegetation within this area that will filter/block most views. There are not many areas where gaps in vegetation will allow views to the project.

The following images show the range and nature of views from residential clusters to the south west towards the Project. Refer Viewpoints L10 and M8 (Section 8.4.10, 8.3.8).



Figure 8-93: Viewpoint L10 – Existing view looking north east



Figure 8-94: Viewpoint L10 – Wireframe Concept Layout



Figure 8-95: Viewpoint M8 – Existing view looking north east

The landscape structure in this area is that of rolling vegetated hills. The figures above show the extensive areas of native and planted forests which screen or filter views across the landscape and towards the project. These views also assist to demonstrate that if required vegetation can be effective at mitigating views and visual impact from dwellings within this area.

8.7.5 North Western

The North Western residential cluster is characterized by vegetated hills both natural and plantation. The majority of residential dwellings to the north west lie around the townships of Narracan and Coalville.

There is an extensive amount of vegetation within this area that will filter/block most views.

The following images show the range and nature of views from residential clusters to the north west towards the Project. Refer viewpoints T10, T11 & L12 (Section 8.5.10, 8.5.11 and 8.4.12 south of main residential cluster although it has clear views to project at gap in vegetation).



Figure 8-96: Viewpoint T10 – Existing view looking east from Coalville Road



Figure 8-97: Viewpoint T11 – Existing view looking south east



Figure 8-98: Viewpoint L12 – Photomontage Concept Layout



Figure 8-99: Viewpoint L12 – Photomontage Revised Layout

The landscape structure in this area is that of rolling vegetated hills. Views from this area tend to be more open due to the areas cleared for farming. Figure 8-96 and Figure 8-97 above show the areas of vegetation which screen or filter views across the landscape and towards the project. Whilst Figure 8-98 shows the open areas that have been cleared for farming, that will allow views towards the project.

These views also assist to demonstrate that if required vegetation can be effective at mitigating views and visual impact from dwellings within this area.

8.7.6 Northern

The Northern residential cluster is characterized by vegetated hills both natural and plantation. The majority of residential dwellings to the north lie within the townships of Hernes Oak and Moe south.

There is a large amount of vegetation within this area that will filter/block most views. Not many areas exist where gaps in vegetation will allow views to the Project. If there are views, they include existing power and transmission infrastructure.

The following images show the range and nature of views from residential clusters to the north towards the Project. Refer Viewpoints L13, L14 & L15 (Section 8.5.13, 8.4.14 and 8.4.15).



Figure 8-100: Viewpoint L13 – Photomontage Concept Layout



Figure 8-101: Viewpoint L13 – Photomontage Revised Layout



Figure 8-102: Viewpoint L14 – Existing view looking south east



Figure 8-103: Viewpoint L15 – Existing view looking south east

The landscape structure in this area is that of rolling vegetated hills. The figures above show the extensive areas of native and planted forests which screen or filter views across the landscape and towards the project. Where views are more open, they will take in existing coal and power infrastructure to the north east of the Project.

These views also assist to demonstrate that if required vegetation can be effective at mitigating views and visual impact from dwellings within this area.

8.7.7 Residential Clusters Summary

As with the views from local roads, residential clusters vary greatly within the viewshed. Depending on location and proximity to the Project.

Areas to the west tend to be more confined due to the rolling hills, and extensive roadside vegetation and trees within the pine plantations of the Project. Views in this location tend to be more dramatic due to the regular closing and opening up of views across the landscape permitted by topography and vegetation.

Views to the south and west this would be dependant of visibility of turbines which would be influenced by topography and vegetation and the context of the view where these are available.

The range and nature of residential views will be dependent on the proximity and orientation of the dwelling towards the Project. For dwellings in the more elevated and hilly locations to the west, south and south east of the Project, visibility will be further influenced by the orientation of the hillside and its proximity to the Project.

It is important to note that dwellings that sit behind roadside vegetation on local roads, on hills that have hill faces facing towards the Project may have differing views to those from the road network. There may be more or less vegetation that affects their visibility of the turbines.

Landscape sensitivity from individual residential properties will always be assessed as “high” as for a resident, their home will always be a highly sensitive location and disturbances to a resident’s views must always be considered to have the highest degree of sensitivity.

It is clear that vegetation forms part of the landscape character and views of the area. It can also be effective at screening views from residential dwellings if required.

9. Conclusion

The Latrobe Valley has long been recognised for its role and contribution to Victoria's energy, agriculture and resources sector and as gateway to several of Victoria's Premier National Parks.

These roles are recognised at various levels of the PPF which seek to protect this unique mix of uses and has allowed them to co-exist for several decades.

The viewshed of the proposed Delburn Wind Farm, which extends out to a distance of approximately 28 km includes the local planning schemes of Latrobe, Baw Baw, South Gippsland and Wellington Shires. The landscape character within this area can be broadly characterised as National Parks and State Forests, townships, farming, mining & energy and lakes and waterways.

Sensitive locations include the townships of Moe, Morwell, Yallourn, Traralgon, Churchill, Yinnar and Boolarra, Rural Living Areas, Residential Dwellings and the large areas of national parks and state forests to the north.

The majority of the area within the project viewshed is land within Farming Zone (FZ), which is not a sensitive use or a Special Use Zone (SUZ) which is protected for the future extraction of coal and energy production. Neither use is sensitive.

Clause 52.32 of the PPF seeks to balance the recognition that wind turbines are large structures and to ensure that they are sited correctly paying particular attention to sensitives uses such as residential dwellings and landscapes such as those protected by overlays including ESO's, VPO's and SLO's.

Townships and Residential Clusters

Areas with the greatest sensitivity are from the townships and residential clusters located around the edges of the project.

The majority of views from the larger population centres to the north of the Princes Freeway such as Moe, Morwell and Traralgon will be filtered or screened by buildings and vegetation within and around the fabric of the towns.

The range and nature of residential views and visual impact from individual dwellings, residential clusters and smaller towns to the south east, south and west of the Project will be dependent on the proximity and orientation of the dwelling towards the Project. For dwellings in the more elevated and hilly locations to the west and south and south east of the Project, visibility will be further influenced by the orientation of the hillside and its proximity to the project.

For wind energy projects landscape screening for views from sensitive viewing locations particularly residential dwellings is one method which can be applied to ameliorate visual impacts which are predicted to be greater than high. This section will also consider the suitability and ability for landscape mitigation to be contemplated by the project.

Each viewpoint included within the preceding report includes existing vegetation found in and around the residential areas that surround the Project. The photomontages prepared to assist with this Preliminary assessment of the proposed Delburn Wind Farm show a range of viewing locations, viewing angles and distances to the proposed 250 m high wind turbines. Existing vegetation within each of these views demonstrates that landscape can reach heights required to filter or screen views towards the proposed turbines if required.

National Parks, State Forests and Trails

National Parks and State Forests are located within areas zoned PCRZ and highly sensitive to visual change. Although not specifically assessed within this PLIVA, the preceding assessment has identified the extensive vegetation cover within these areas in the many viewpoints assessed from publicly accessible

locations. When in these areas, this vegetation will either completely screen or filter most views towards the proposed wind turbines. The final Landscape and Visual Impact will assess specific locations or lookouts identified by the community.

The majority of Grand Ridge Rail Train, which runs between Boolarra and Mirboo North is set within a heavily vegetated landscape that also filters or screens views from locations beyond the trail. There will be locations that have the potential to take in clear views of the Project. These, and other key locations along the trail will be identified with the local community and key user groups for inclusion in the final Landscape and Visual Impact Assessment.

Freeways

Most of the views along the Princes Freeway will be lower in the landscape and at speeds of 100km/hr. Views from freeways within the viewshed are dynamic where vegetation and topography reveal views towards the elevated hills within the national parks and state forests to the north and south east of the proposed Delburn Wind Farm.

Many views towards the project include power stations, coal handling infrastructure and transmission lines of varying scales and sizes.

Major Roads

There are similarly diverse views from the Strzelecki Highway which area at times completely enclosed by roadside vegetation and timber plantations which will be harvested periodically to wide open views across the valley floor.

Views from parts of the Strzelecki Highway towards the northern end of the Project will include turbines as part of long-range views that also include Mt Baw Baw and Walhalla as well as features of the Yallourn Power Station and nearby powerlines which cross the site.

Local Roads

Local roads vary greatly within the viewshed. They run through different landscape units and vary depending on location and proximity to the Project.

More broadly the views from areas to the east of the project that are near to or within the land zoned SUZ1 would be less sensitive to visual change due to the presence of electrical generating and distributing infrastructure, there are however sensitive views to elevated features such as Strzelecki ranges and Mt Baw Baw.

Local roads within the area to the west tend to be more confined due to the rolling hills, and extensive roadside vegetation and trees within the pine plantations of the Project.

Appendix A. Seen Area Analysis

Appendix B. Photomontages