

# White Rock Wind Farm



*Proposed view from Maybole Road toward White Rock wind farm*

## LANDSCAPE & VISUAL IMPACT ASSESSMENT

*Prepared for:*

**EPURON**  
POWER FOR PORTFOLIOS

March 2011

*Prepared by:*

**GREEN BEAN DESIGN**

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**Executive Summary****Section 1 Introduction**

1.1	Introduction	10
1.2	Methodology	12
1.3	Desktop Study	12
1.4	Fieldwork	12
1.5	Assessment of Landscape Sensitivity	12
1.6	Assessment of Visual Impact	13
1.7	Photomontages	14
1.8	Shadow Flicker and Blade Glint	14

**Section 2 Location**

2.1	Location	15
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**Section 3 White Rock wind farm, Project Description**

3.1	Project Description	17
3.2	Wind Turbines	18
3.3	Wind Monitoring Masts	18
3.4	On-site access tracks	18
3.5	Electrical cabling	19

**Section 4 Local Environmental Factors**

4.1	Climate & Atmospheric Conditions	20
4.2	Topography and Drainage	20
4.3	Vegetation	21

**Section 5 Panoramic Photographs (Existing views)**

5.1	Panoramic Photographs	22
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**Section 6 Landscape Character Areas and Sensitivity Assessment**

6.1	Landscape Character Areas	23
6.2	Landscape Sensitivity Assessment	23

6.3	Analysis of Landscape Sensitivity	25
6.4	Summary	31
<b>Section 7</b>	<b>Viewshed, Zone of Visual Influence and Visibility</b>	
7.1	Introduction	32
7.2	Viewshed	32
7.3	Zone of Visual Influence	33
7.4	ZVI Methodology	34
7.5	ZVI Summary	34
7.6	Visibility	35
<b>Section 8</b>	<b>Visual Impact Assessment Criteria and Matrices</b>	
8.1	Introduction	38
8.2	Residential and Public View Location Visibility Matrices	40
8.3	Future Residential Dwellings	62
8.4	Summary of Potential Visual Impacts	68
<b>Section 9</b>	<b>Cumulative Visual Impact Assessment</b>	
9.1	What is Cumulative Impact Assessment?	69
9.2	Other wind farm developments within the New England Tableland Region	69
9.3	Other wind turbines within the White Rock 10km viewshed	70
9.4	White Rock and Sapphire intervisibility	71
9.5	White Rock and Glen Innes intervisibility	73
9.6	White Rock and Ben Lomond intervisibility	76
9.7	Visual Cumulative Impact Summary	78
<b>Section 10</b>	<b>Photomontages</b>	
10.1	Photomontages	79
<b>Section 11</b>	<b>Night time lighting</b>	
11.1	Introduction	81
11.2	Existing light sources	81

## Contents

Page

11.3 Potential light sources 82

11.4 Potential view locations and impact 82

### **Section 12 Electrical works**

12.1 Introduction 84

12.2 Substation 84

12.3 132kV Transmission Line 85

### **Section 13 Pre construction and construction**

13.1 Potential visual impacts 87

### **Section 14 Perception and Public Consultation**

14.1 Perception 88

14.2 Public Consultation 88

14.3 Quantitative Research 89

14.4 The Broader Public Good 91

### **Section 15 Mitigation Measures**

15.1 Mitigation Measures 92

15.2 Summary of Mitigation Measures 93

### **Section 16 Conclusion**

16.1 Summary 96

### **Appendix A**

Civil Aviation Safety Authority Advisory Circular AC139-18(0) July 2007 (Withdrawn)

### **References and Bibliography**

### **Limitations**

### **Green Bean Design Profile**

## Figures

Figure 1	Location Plan
Figure 2	White Rock wind farm '119' design layout
Figure 3	Visibility
Figure 4	Topography
Figure 5	Panoramic Photo Locations
Figure 6	Photo Sheet 1 - W1 to W4
Figure 7	Photo Sheet 2 - W5 to W8
Figure 8	Photo Sheet 3 - W9 to W12
Figure 9	Photo Sheet 4 - W13 to W16
Figure 10	Photo Sheet 5 - W17 to W20
Figure 11	Photo Sheet 6 - W21 to W24
Figure 12	Photo Sheet 7 - W25 to W28
Figure 13	Photo Sheet 8 - W29 to W32
Figure 14	Photo Sheet 9 - W33 to W39
Figure 15	Photo Sheet 10 - W40 to W43
Figure 16	ZVI Diagram 1, '119' design layout – from tip of rotor
Figure 17	ZVI Diagram 2, '119' design layout – from hub height
Figure 18	ZVI Diagram 3, '119' design from – toward full turbine
Figure 19	Residential View Locations
Figure 20	Public View Locations
Figure 21	New South Wales Wind Farm Locations
Figure 22	New England Tablelands Wind Farm Locations
Figure 23	Cumulative Impact
Figure 24	ZVI Diagram 4, White Rock and Glen Innes wind farms cumulative ZVI
Figure 25	Photomontage Locations
Figure 26	Photomontage W2
Figure 27	Photomontage W14

## Figures

Figure 28	Photomontage W16
Figure 29	Photomontage W22
Figure 30	Photomontage W26
Figure 31	Photomontage W30
Figure 32	Photomontage W36
Figure 33	Photomontage W40
Figure 34	Photomontage W41
Figure 35	Photomontage W42
Figure 36	Photomontage W43
Figure 37	Night lighting at 500m (at Cullerin wind farm)
Figure 38	Night lighting at 3.5km (at Cullerin wind farm)
Figure 39	Night lighting at 17km (at Cullerin wind farm)
Figure 40	Proposed 132kV Transmission Line

## Executive Summary

Green Bean Design (GBD) was commissioned by Epuron Pty Ltd (the Proponent) to undertake a Landscape and Visual Impact Assessment (LVIA) for the White Rock wind farm and associated development infrastructure.

The White Rock wind farm would include up to 119 wind turbines measuring 140m from ground level to tip of blade, associated electrical works including a 132kV transmission line, substation, facilities building and a small car park.

This LVIA involved a desk top study and field inspections to collect and analyse information to describe and define landscape characteristics of the area in which the White Rock wind farm would be located. This LVIA has determined that the landscape surrounding the White Rock wind farm has an overall medium sensitivity to accommodate change, and represents a landscape that is reasonably typical of landscape character areas that are commonly found in the surrounding area of the New England Tablelands Renewable Energy Precinct.

As a landscape with an overall medium sensitivity to accommodate change, some intrinsic characteristics of the landscape are likely to be altered by the wind farm; however, the landscape will have some capability to accommodate change. This LVIA has determined that the White Rock wind farm would not be an unacceptable development within the New England Tablelands region.

The White Rock wind farm visibility was determined within the 10km radius of the wind farm development and illustrated by a series of panoramic photographs and 4 Zone of Visual Influence (ZVI) diagrams. The ZVI diagrams demonstrate the influence of topography on visibility and identify areas from which the wind farm turbines would be visible.

This LVIA assessed the potential visual impact of the White Rock wind farm for the majority of residential view locations within the White Rock 10km viewshed as well as impacts for motorists travelling along highways and local roads surrounding the wind farm. A number of criteria were considered and assessed to determined levels of visual impact.

A total of one hundred and five residential view locations within the White Rock 10km viewshed have been determined to have a low or nil visual impact. Twenty nine of the residential view locations would have moderate visual impact and eight a high visual impact. Seven of the residential view locations with a high visual impact would be associated residential properties.

This LVIA assessed the potential visual impact associated with the proposed 132kV transmission line, substation and associated electrical infrastructure and determined that the overall visual impact of these elements would be low due to their location relative to existing view locations together with screening influence of surrounding topography and vegetation.



## Executive Summary

A cumulative visual impact assessment identified 3 additional current and approved wind farm developments within the White Rock wind farm viewshed including the approved Glen Innes, and proposed Ben Lomond and Sapphire wind farm projects. This LVIA determined that there would be some intervisibility between the White Rock wind farm and other wind farm developments with potential 'direct' and 'indirect' visibility within the White Rock wind farm viewshed from residential dwellings, and 'sequential' views from some surrounding road corridors.

Whilst there are opportunities for 'direct' and 'indirect' views from residential dwellings, and 'sequential' views from some surrounding road corridors between the White Rock wind farm and other wind farms, there is unlikely to be a significant increase in visual impact arising from cumulative impacts.

Night time obstacle lighting would have the potential to create a visual impact for a small number of residential view locations surrounding the White Rock wind farm. This LVIA notes that further to the withdrawal of the CASA Advisory Circular there are no guidelines by which to define criteria for wind farm night time obstacle lighting, and that night time lighting has been determined as not required for the Gullen Range wind farm. Night time obstacle lighting has also been recently removed from the Cullerin wind farm adjoining the Hume Highway to the west of Yass.

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

## 1.1 Introduction

This LVIA addresses one of the key requirements of the White Rock wind farm Environmental Assessment (EA) to be submitted and assessed under Part 3A of the Environmental Planning & Assessment Act 1979 (EP&A Act).

This LVIA methodology adopted by GBD has been applied to a number of similar LVIA for large scale infrastructure projects prepared by GBD, which have been assessed and approved by the New South Wales Department of Planning under Part 3A of the EP&A Act.

This LVIA addresses and responds to the Director General's Requirements (DGR's) dated 13<sup>th</sup> October 2010, for the assessment of potential landscape and visual impacts of the project. **Table 1** outlines the relevant landscape and visual impact assessment requirements of the DGR's and the corresponding section in which they are addressed within this LVIA report.

**Table 1** Director General's Requirements

DGR's	Report Reference
<ul style="list-style-type: none"> <li>provide a comprehensive assessment of the landscape character and values and any scenic or significant vistas of the area potentially affected by the project. This should describe community and stakeholder values of the local and regional visual amenity and quality, and perceptions of the project based on surveys and consultation.</li> </ul>	Refer LVIA <b>Sections 5 and 6.</b>
<ul style="list-style-type: none"> <li>assess the impact of shadow "flicker", blade "glint" and night lighting from the wind farm.</li> </ul>	Refer White Rock wind farm EA <b>Section 10.4</b> , LVIA <b>Section 11</b> and <b>Figures 37, 38 and 39.</b>
<ul style="list-style-type: none"> <li>identify the zone of visual influence (no less than 10 kilometres) and assess the visual impact of all project components on this landscape.</li> </ul>	Refer LVIA <b>Sections 6, 7 and 8.</b>
<ul style="list-style-type: none"> <li>include an assessment of the visual impacts associated with the transmission line, including impacts on local and regional views. Alternative pole designs should be presented and assessed and the potential for undergrounding in sensitive locations should also be assessed.</li> </ul>	Refer LVIA <b>Section 10</b> and <b>Figure 40.</b>
<ul style="list-style-type: none"> <li>include photomontages of the project taken from potentially affected residences (including approved but not yet developed dwellings or subdivisions with residential</li> </ul>	Refer LVIA <b>Section 11, 15</b> and <b>Figures 26 to 36.</b>

DGR's	Report Reference
rights), settlements and significant public view points, and provide a clear description of proposed visual amenity mitigation and management measures.	
<ul style="list-style-type: none"> <li>provide an assessment of the feasibility, effectiveness and reliability of proposed mitigation measures and any residual impacts after these measures have been implemented.</li> </ul>	Refer LVIA <b>Section 15</b> .

Although not directly applicable to the requirements of the EA, GBD has reviewed the Glen Innes Severn and Inverell Shire Council's Development Control Plans (DCP) – Wind Power Generation 2008 and 2009 respectively, and GBD confirm that this LVIA addresses a number of the key DCP requirements with regard to consideration of visual assessment, including provision for:

- The assessment of visual impact and scenic value;
- The assessment of cumulative impact;
- Viewshed mapping; and
- Photomontages.

The assessment of potential visual impact associated with Shadow Flicker has been assessed and included in **Section 10.4** of the EA.

GBD is not aware of any landscape areas within the immediate wind farm viewshed that are subject to any Local, State or Federal statutory designations for high landscape values or scenic quality and/or scenic protection.

GBD is cognisant of the Australian Wind Energy Association and Australian Council of National Trust's publication Wind Farms and Landscape Values National Assessment Framework, June 2007, and have encompassed the general assessment framework outlined in the National Assessment Framework within the LVIA methodology. In addition to the National Assessment Framework, the preparation of this LVIA has also included a review of the National Wind Farm Development Guidelines (Public Consultation Draft V2.4 July 2010).

This LVIA involved a comprehensive evaluation of the landscape character in which the White Rock wind farm and ancillary structures would be located, and an assessment of the potential landscape and visual impacts that could result from the construction and operation of the wind farm, taking into account appropriate mitigation measures. This LVIA is based on technical and design information provided by the Proponent to GBD.

## 1.2 Methodology

This LVIA methodology included the following activities:

- Desktop study addressing visual character and identification of view locations within the surrounding area;
- Fieldwork and photography;
- Preparation of ZVI diagrams;
- Assessment and determination of landscape sensitivity;
- Assessment and determination of visual impact;
- Preparation of photomontages and illustrative figures; and
- Preparation of a Shadow Flicker Assessment.

## 1.3 Desktop study

A desktop study was carried out to identify an indicative viewshed for the White Rock wind farm. This was carried out by reference to 1:25,000 scale topographic maps as well as aerial photographs and satellite images of the project area and surrounding landscape. A preliminary ZVI diagram was also produced prior to the commencement of fieldwork in order to inform the likely extent and nature of areas within the nominated 10km viewshed of the proposed wind farm.

Topographic maps and aerial photographs were also used to identify the locations and categories of potential view locations that could be verified during the fieldwork component of the assessment. The desktop study also outlined the visual character of the surrounding landscape including features such as landform, elevation, landcover and the distribution of settlements.

## 1.4 Fieldwork

The fieldwork involved:

- A total of 3 days of site inspections to determine and confirm the potential extent of visibility of the White Rock wind farm and ancillary structures;
- Determination and confirmation of the various view location categories and locations from which the White Rock wind farm and ancillary structures could potentially be visible; and
- Preparation of a record for each view location inspected and assessed.

## 1.5 Assessment of Landscape Sensitivity

The potential impact of the White Rock wind farm on the sensitivity of the landscape surrounding the wind farm would result primarily from the capability of the landscape to integrate with, or to accommodate the wind farm.

The capability of the landscape to accommodate the wind farm would result primarily from the nature and degree of perceptual factors that can influence interpretation and appreciation of the landscape, including landform, scale, topographic features, landcover and human influence or modifications.

## 1.6 Assessment of Visual Impact

The potential visual impact of the wind farm on surrounding view locations would result primarily from a combination of the potential visibility of the wind turbines and the characteristics of the landscape between, and surrounding, the view locations and the wind farm. The potential degree of visibility and resultant visual impact would be partly determined by a combination of factors including:

- The category and type of situation from which people could view the wind farm (examples of view location categories include residents or motorists);
- The visual sensitivity of view locations surrounding the wind farm;
- The potential number of people with a view toward the proposed wind farm from any one location;
- The distance between view locations and the wind farm; and
- The duration of time people could view the wind farm from any particular static or dynamic view location.

An underpinning rationale for this LVIA is that if people are not normally present at a particular location, such as agricultural areas, or they are screened by landform or vegetation, then there is likely to be a nil visual impact at that location.

If, on the other hand, a small number of people are present for a short period of time at a particular location then there is likely to be a low visual impact at that location, and conversely, if a large number of people are present then the visual impact is likely to be higher.

Although this rationale can be applied at a broad scale, this LVIA also considers, and has determined, the potential visual impact for individual view locations that would have a higher degree of sensitivity to the wind farm development, including the potential impact on individual residential dwellings situated in the surrounding landscape. The determination of a visual impact is also subject to a number of other factors which are considered in more detail in this LVIA.

Whilst this LVIA addresses a number of static elements associated with the White Rock wind farm, the assessment acknowledges and has considered the potential visual impact associated with the movement of the wind turbine rotors.

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## 1.7 Photomontages

The Proponent prepared photomontages from eleven view locations to illustrate the potential visibility of the White Rock wind farm following construction. The photomontage locations were selected by GBD and photographed by GBD in conjunction with the Proponent. The photomontage locations were selected to provide representative views from the vicinity of residential dwellings as well as publically accessible areas and road corridors. The photomontage locations are illustrated in **Figure 25** and the photomontages in **Figures 26 to 36**. The photomontages prepared by the Proponent were subject to peer review and verification by GBD. The Glen Innes wind farm turbines have been included in the photomontages where deemed visible.

## 1.8 Shadow Flicker & Blade Glint

The Proponent prepared a shadow flicker assessment and report for the White Rock wind farm. The results of the shadow flicker assessment are included in **Section 10.4** of the EA.

### 2.1 Location

The White Rock wind farm would be located in the north of New South Wales within the New England Tablelands Renewable Energy Precinct, around 20km west of Glen Innes and 40km east of Inverell.

The general location of the White Rock wind farm is illustrated in **Figure 1**.

The White Rock wind farm would extend across 16 participating rural residential and farming properties, covering an area around 9,650 hectares, administered by the Glen Innes Severn and Inverell Shire Councils.

The Glen Innes Severn Council covers around 548,700 hectares covering large tracts of the New England Tablelands, and the Inverell Shire Council area covers approximately 860,600 hectares of the New England Tablelands. The footprint of the White Rock wind farm project would therefore occupy a very small proportion of both Councils administered areas.

The '119' wind turbine layout would be located along a series of ridgelines and low hills, to the west of the Furracabad Valley and above the Wellingrove Creek valley. The longest extent of ridgeline occupied by wind turbines extends for approximately 10km along the White Rock Mountain ridgeline on the western extent of the project area.

The eastern extent of the White Rock wind farm would be located approximately 15km from Glen Innes, a rural town located at the intersection of the New England and Gwydir Highways. Gazetted around 1852, Glen Innes has an estimated population of 5,944 people as of the 2006 Census, residing either side of the New England Highway which passes through the centre of the town or located within the general rural district of Glen Innes.

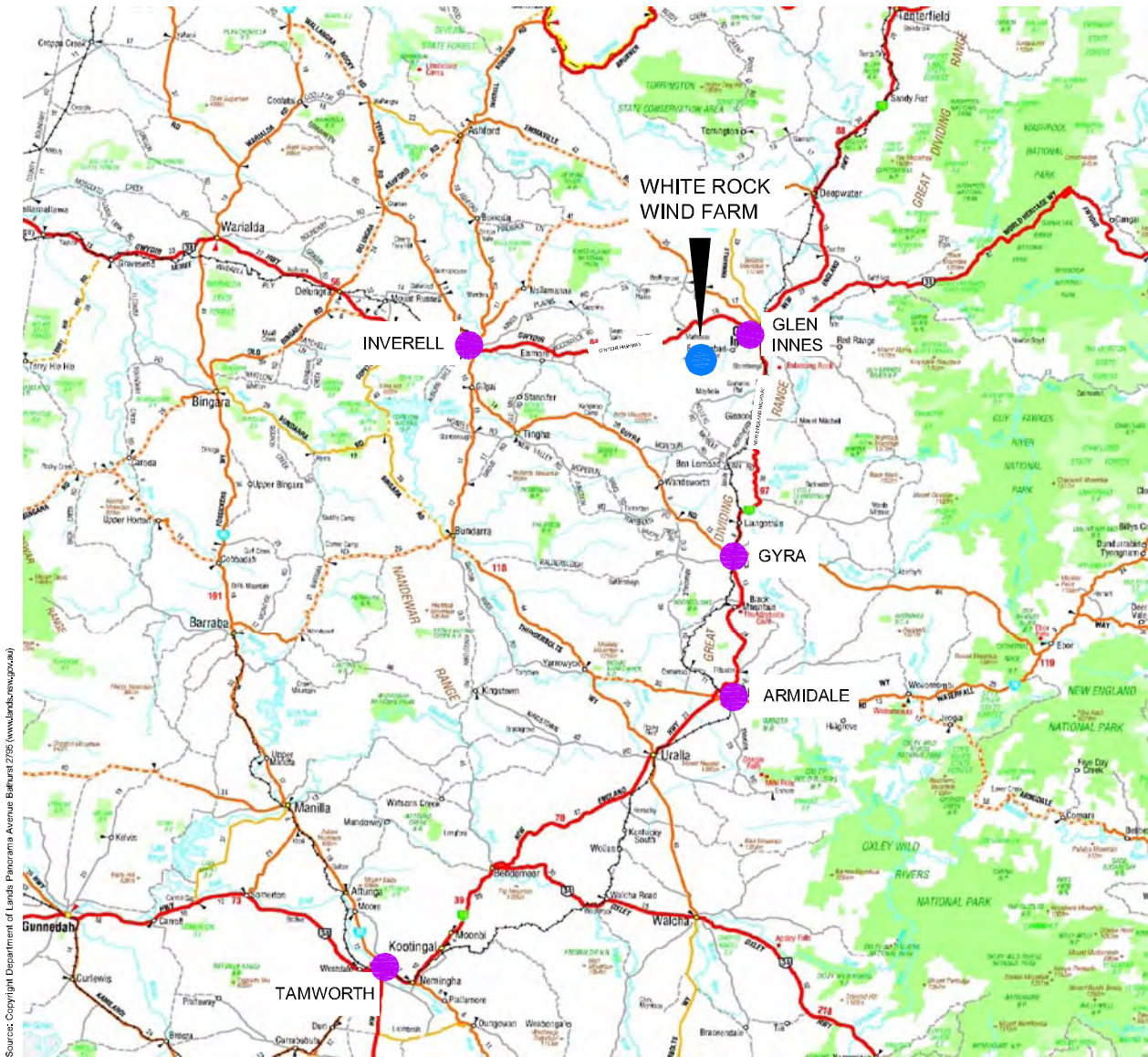
Glen Innes contains a number of historic and diverse built structures, which are still largely connected by the original fabric of urban development that was established following European settlement in the area. The more notable buildings include:

- The Courthouse;
- The Town Hall;
- Glen Innes Post Office;
- Old Police Station, Residence and Sheriffs Cottages;
- Great Central Hotel; and
- Royal Hotel.

Views toward the wind farm from the majority of the town would be restricted or screened by landform rising to the south west, as well as vegetation and buildings within the town itself. The

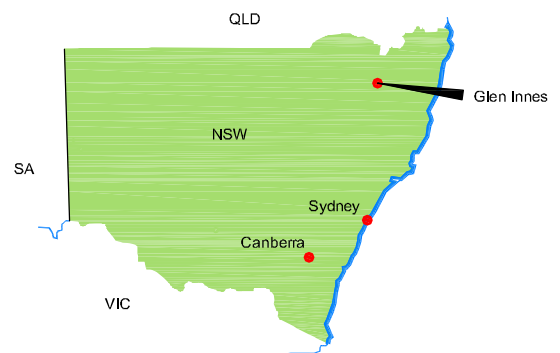


Figure 1  
Location Plan



Source: Copyright Department of Lands, Panoramas Avenue Belmont 2705 (www.lands.nsw.gov.au)

WHITE ROCK WIND FARM -  
LOCATION PLAN, REGIONAL CONTEXT (Not to scale)



WHITE ROCK WIND FARM -  
LOCATION PLAN, STATE CONTEXT (Not to scale)



White Rock wind farm would be unlikely to have a direct or significant impact on the immediate visual qualities of Glen Innes.

There are a small number of National Parks within the New England Tableland region. The more significant include the Kings Plains, Gibraltar Range, Guy Fawkes River and Washpool National Parks. Through the influence of distance, landcover and topography, the wind farm site would be unlikely to be visible from camping or recreational areas within any of these regional National Parks.

The Main North Railway once passed through Glen Innes; however, the line north of Armidale was abandoned and closed in the 1980's.

### 3.1 Project description

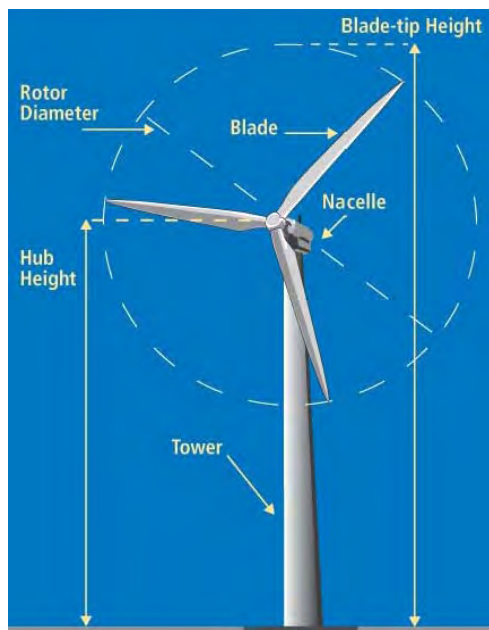
The key visual components of the White Rock wind farm would comprise:

- Up to 119 wind turbines;
- Individual transformers and switchgear with associated control systems to be located in the vicinity of the wind turbine towers (in some turbine models transformer equipment would be integrated within the tower or nacelle);
- Underground electrical and communication cable network linking turbines to each other within the site boundary;
- On site substation, internal 33kV reticulation and 132kV transmission line connection to the grid;
- Control room and facilities building;
- Up to 3 wind monitoring masts;
- On site access tracks for construction, operation and ongoing maintenance;
- White Rock wind farm signage.

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

- Crane hardstand areas; and
- Mobile concrete batching plant and rock crushing facilities.

The following diagram identifies the main components of a typical wind turbine:



*Configuration and components of a typical wind turbine*

### 3.2 Wind turbines

The specific elements of the wind turbines comprise:

- Concrete foundations;
- Tubular tapering steel towers;
- Nacelles at the top of the tower housing the gearbox and electrical generator;
- Rotors comprising a hub (attached to the nacelle) with three blades; and
- Three fibreglass blades attached to each hub.

**Table 2** outlines the main design parameters for the proposed White Rock '119' design layout:

**Table 2** White Rock '119' design layout:

Element	Description
Tower height	84m
Rotor Diameter	112m
Overall height from ground level to tip of blade	140m
<b>Proposed number of White Rock wind turbines</b>	<b>119 turbines</b>

The layout of the White Rock wind farm is illustrated in **Figure 2**.

### 3.3 Wind Monitoring Masts

Up to 3 wind monitoring masts would be installed on-site, extending to around 84m in height. The wind monitoring masts would be of a guyed, narrow lattice or tubular steel design.

The wind monitoring masts would be unlikely to create a significant visual impact, and are similar in scale, or smaller than a number of surrounding communication masts visible in the landscape surrounding the wind farm project area.

### 3.4 On-site access tracks

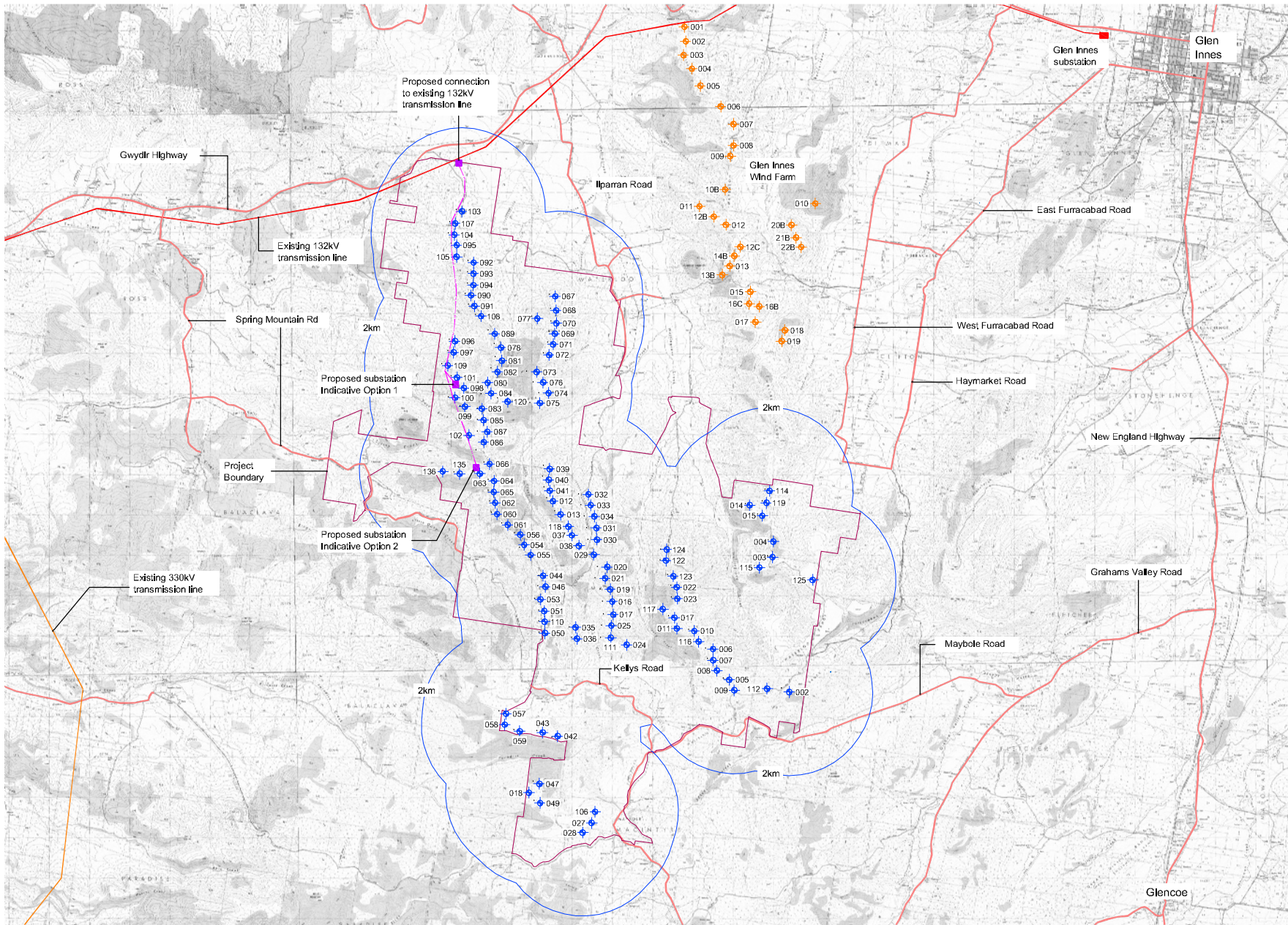
On-site access tracks would be constructed to provide access to turbine locations across the site during construction and operation. During construction the majority of access tracks would be approximately 5m wide to allow for vehicle manoeuvring, and would be maintained at this width to facilitate access for maintenance vehicles during the operational phase.

The final access track design would be developed on a number of environmental grounds, including minimising the potential for visual impact by considering:

- the overall length and extent;
- the need for clearing vegetation;



Source: Copyright Department of Lands, Panorama Avenue Bathurst 2795 (www.lands.nsw.gov.au)



### Legend

- White Rock Wind Turbine ◆ 082
- Glen Innes Wind Turbine ◆ 108
- White Rock site boundary —
- Proposed 132kV transmission line and substation —
- Existing 132kV transmission line —
- Existing 330kV transmission line —
- Local road or Highway —
- 2km offset —

Figure 2  
'119' Design Layout

- the potential for erosion;
- the extent of cut and fill; and
- the potential to maximise rehabilitation at the completion of the construction phase.

### 3.5 Electrical cabling

The majority of cabling works, including the installation of control cables linking the turbines to the control building would be installed underground. For electrical reasons some cabling may be required to be installed on medium voltage overhead transmission lines supported by single low profile tubular poles.

Grid connection would be achieved via a connection to the 132kV transmission line which bypasses the north portion of the wind farm site. The wind farm turbines would be connected to an on-site single substation, control room and facilities for the grid connection.

The proposed electrical works are described in **Section 12** and illustrated in **Figure 37**.

### 4.1 Climatic and Atmospheric Conditions

Local climatic and atmospheric conditions have the potential to influence the visibility of the White Rock wind farm from surrounding view locations, and more significantly, from distant view locations.

The Bureau of;">

- 105 clear days (annual mean average);
- 130 cloudy days (annual mean average); and
- 80 days of rain (annual mean average).

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

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

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

The extent to which local weather conditions can influence visibility toward turbine structures is illustrated in **Figure 3**.

### 4.2 Topography and Drainage

The White Rock wind farm would be located on a series of ridgelines, spurs and low undulating hills in a predominant north south alignment to the south of the Gwydir Highway. The turbines would extend south from Fletchers Nob at around 1,030m AHD and follow a ridgeline that rises to the White Rock Mountain at around 1,334m AHD. The turbines continue to extend south of White Rock along a ridgeline, climbing gently to the south portion of the Waterloo Range at around 1,300m AHD.

Turbines would also extend in north south alignment on several smaller parallel ridgelines to the east of White Rock.

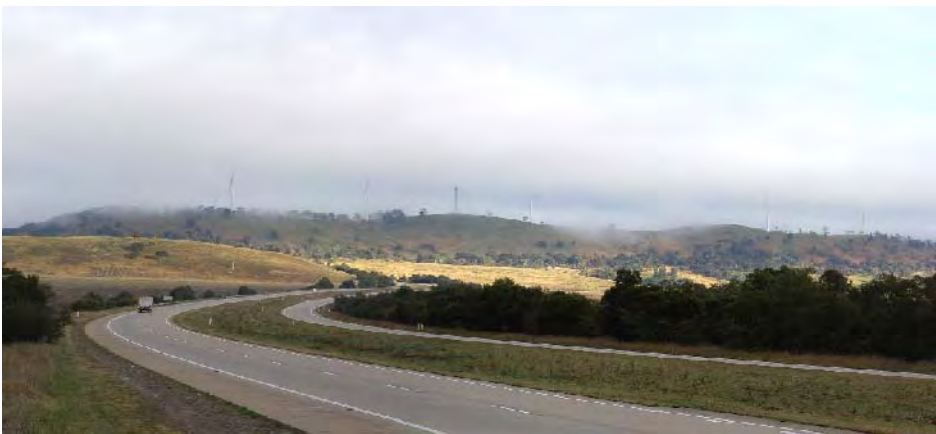




DAY TIME VIEW FROM HUME HIGHWAY TOWARD CULLERIN  
WIND FARM AT AROUND 3.5KM (13th June 2010)



DAY TIME VIEW FROM HUME HIGHWAY TOWARD CULLERIN  
WIND FARM AT AROUND 3.5KM (10th June 2010)



DAY TIME VIEW FROM HUME HIGHWAY TOWARD CULLERIN  
WIND FARM AT AROUND 3.5KM (7th July 2010)



The landscape within and surrounding the White Rock wind farm contains a number of prominent topographic features, including:

- White Rock Mountain (around 1,334m AHD);
- Arthurs Seat (around 1,244m AHD);
- Spring Mountain (around 1,203m AHD);
- Waterloo Sugarloaf (around 1,194m AHD);
- Carters Mountain (around 1,107m AHD);
- Carpenters Hill (around 1,178m AHD); and
- Waterloo Range (reaching 1,325m AHD).

A number of creek and gully lines extend from the landform across the site, draining water to the west toward the Macintyre River, and east to the Wellingrove Creek which extends north and eventually drains to the Severn River.

Landform elevation within and surrounding the White Rock wind farm is illustrated in **Figure 4**.

### 4.3 Vegetation

A detailed survey of existing vegetation has been carried out as part of the biodiversity assessment for the White Rock wind farm EA and is summarised in **Chapter 9.3** of the EA.

In general the landscape within the White Rock wind farm site contains vegetation associated with woodland, drainage lines, small ponds/dams and cleared land for pasture and agricultural crop cultivation. Stands of remnant woodland occur within the wider context of a modified landscape which continues to be managed through a variety of farming activities.



**Plate 1** – View south along Ilparran Road illustrating vegetation types toward wind farm site.

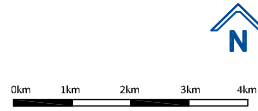
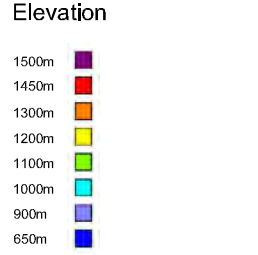
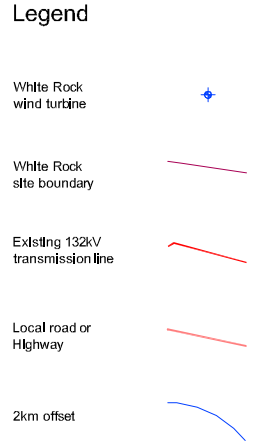
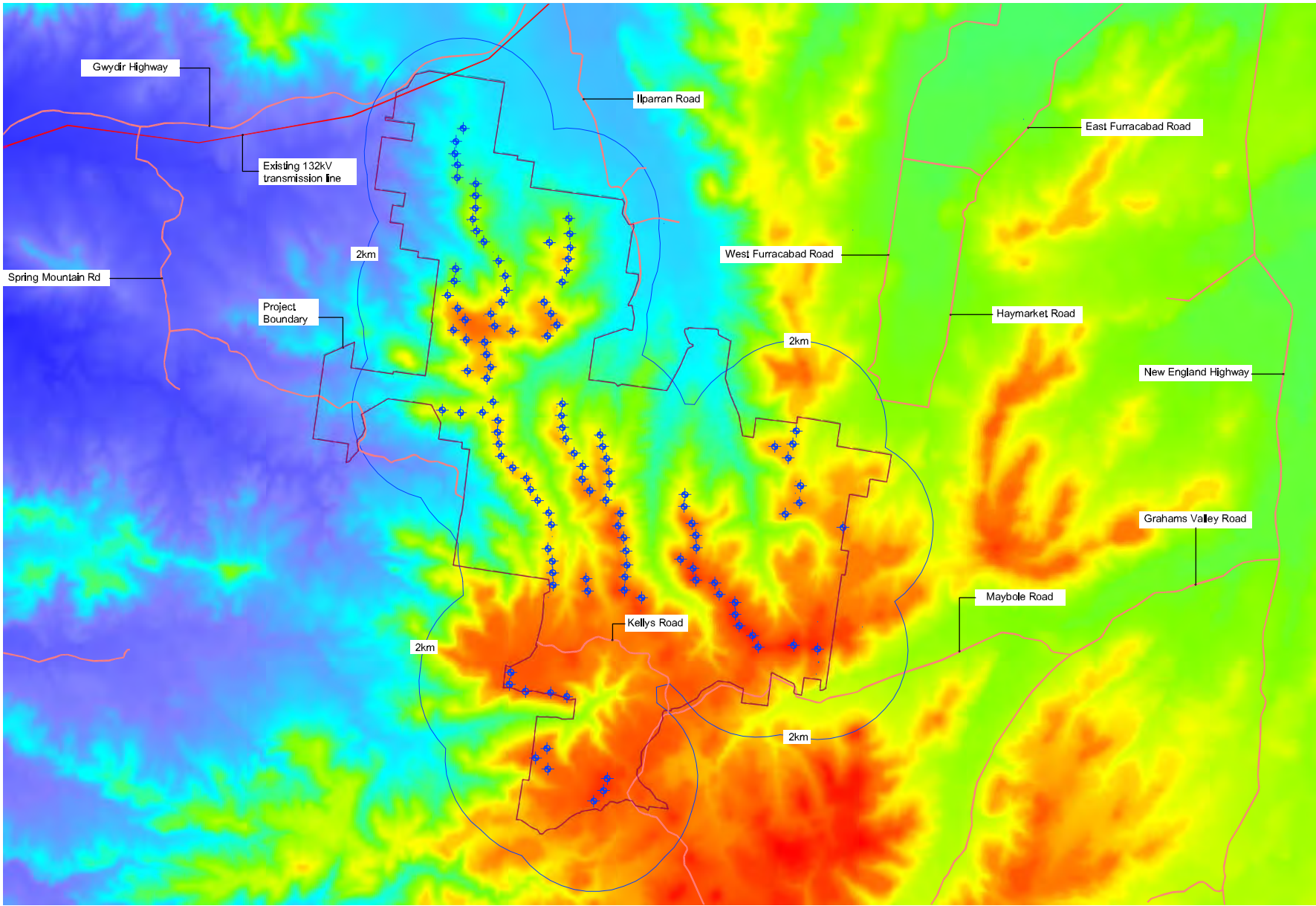


Figure 4  
Topography

Source: Epuron Pty Ltd

### 5.1 Panoramic Photographs

A series of digital photographs were taken during the course of the fieldwork to illustrate existing views in the vicinity of a number of view locations inspected and assessed as part of this LVIA.

The photographs were taken with a tripod mounted digital Nikon D90 camera with a prime 50mm lens. Individual photographs were digitally stitched together to form a segmented panorama image to provide a visual illustration of the existing view from each photo location.

The real world coordinate location for each panorama photograph was recorded with a hand held GPS unit to an accuracy of around plus or minus four meters. Additional information including the bearing or direction of each photograph, time of day and prevailing weather conditions was also recorded.

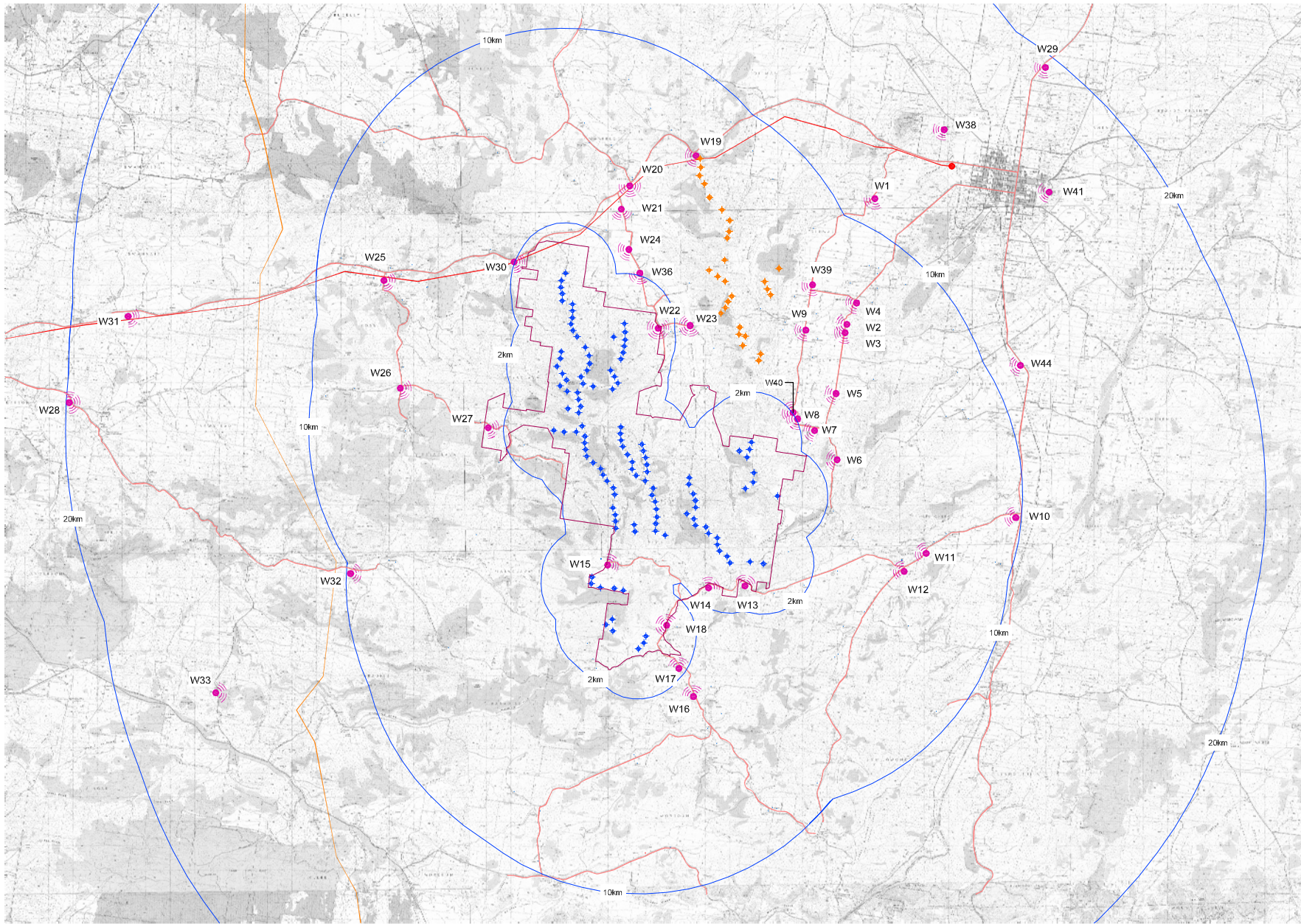
The panoramic photographs presented in this LVIA have been annotated to identify key features or structures located within the existing view, and indicatively illustrate the general extent and location of potentially visible wind turbines or portions of turbine structures for the proposed White Rock and approved Glen Innes wind farms.

The panoramic photograph locations are illustrated in **Figure 5**, and the panoramic photographs illustrated in **Figures 6 to 15**.

The panoramic photographs are not to be confused with the photomontages. The panoramic photographs do not include a representation or model of the wind turbine structures. The photomontages are discussed in **Section 11** of this LVIA, and are illustrated in **Figures 26 to 36**.



Source: Copyright Department of Lands Panorama Avenue Bathurst, 2795 (www.lands.nsw.gov.au)



### Legend

- Photo Location and indicative direction
- White Rock Wind Turbine
- Glen Innes Wind Turbine
- White Rock site boundary
- Existing 132kV transmission line
- Existing 330kV transmission line
- Road
- Offset distance as noted



Figure 5  
Panoramic  
Photo Locations



Distant views toward  
White Rock Wind Farm

Views toward Glen Innes  
Wind Farm

West Furracabad Road



Photo Location W1- View south west from West Furracabad Road.

Haymarket Road

Distant views toward White Rock Wind Farm

Views toward Glen Innes Wind Farm



Photo Location W2 - View south to south west from Haymarket Road

Haymarket Road

Distant views toward  
White Rock Wind Farm

Views toward Glen Innes Wind Farm



Photo Location W3 - View south to south west from Haymarket Road

Haymarket Road

East Furracabad Road

Views toward Glen Innes Wind Farm



Photo Location W4 - View south to west from Haymarket Road at junction to East Furracabad Road



Photo Location W5 - View south to west from Haymarket Road



Photo Location W6 - View south to west from Haymarket Road



Photo Location W7 - View west from Cherry Tree Road



Photo Location W8 - View south west from West Furracabad Road



Views toward White Rock Wind Farm



Photo Location W9 - View south to west from West Furracabad Road

Views toward Glen Innes Wind Farm



Photo Location W10 - View west from Grahams Valley Road



Photo Location W11 - View west from Grahams Valley Road



Photo Location W12 - View west from Grahams Valley Road



Views toward White Rock Wind Farm generally screened by landform, some upper portions of turbines visible

Maybole Road



Photo Location W13 - View north to east from Maybole Road

Views toward White Rock Wind Farm

Maybole Road



Photo Location W14 - View north to east from Maybole Road

Views toward White Rock Wind Farm



Photo Location W15 - View north east to east from Kelleys Road

Views toward White Rock Wind Farm (southern extent of wind farm)

Maybole Road

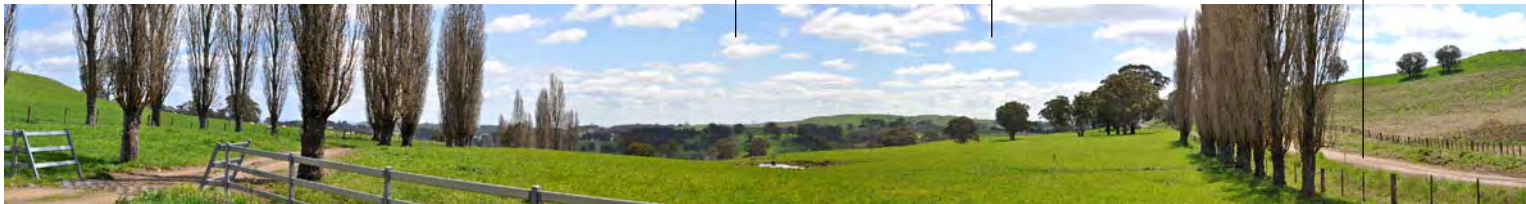


Photo Location W16 - View north from Maybole Road



Views toward White Rock Wind Farm

Maybole Road



Photo Location W17 - View north from Maybole Road

Maybole Road (south)

Views toward White Rock Wind Farm

Maybole Road (north)



Photo Location W18 - View south to north from Maybole Road

Views toward White Rock Wind Farm

Gwydir Highway

Indicative extent of Sapphire Wind Farm



Photo Location W19 - View west from Sinclair Lookout (above Gwydir Highway)

Views toward Glen Innes Wind Farm

Views toward White Rock Wind Farm

Gwydir Highway



Photo Location W20 - View South from Waterloo Road junction to Gwydir Highway



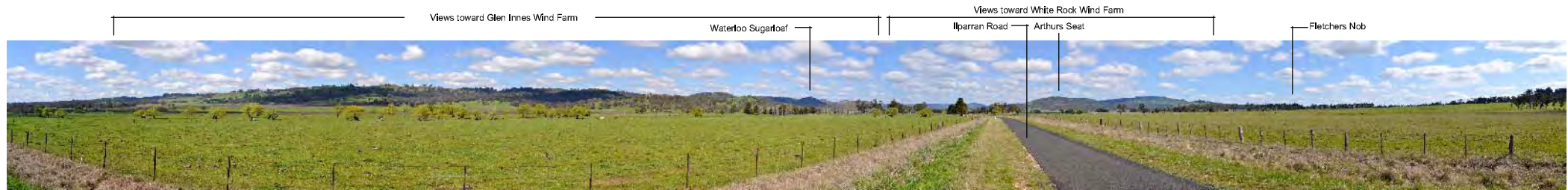


Photo Location W21 - View south from Iparran Road

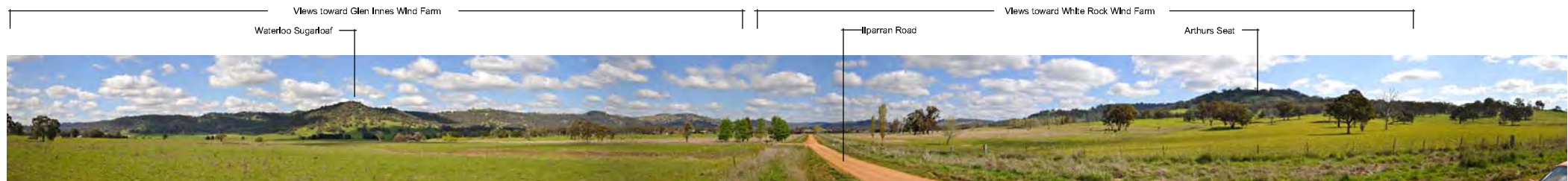


Photo Location W22 - View east to west from Iparran Road



Photo Location W23 - View west from Iparran Road



Photo Location W24 - View west from Iparran Road





Photo Location W25 - View east to south east from Spring Mountain Road



Photo Location W26 - View east from Spring Mountain Road



Photo Location W27 - View east from Spring Mountain Road

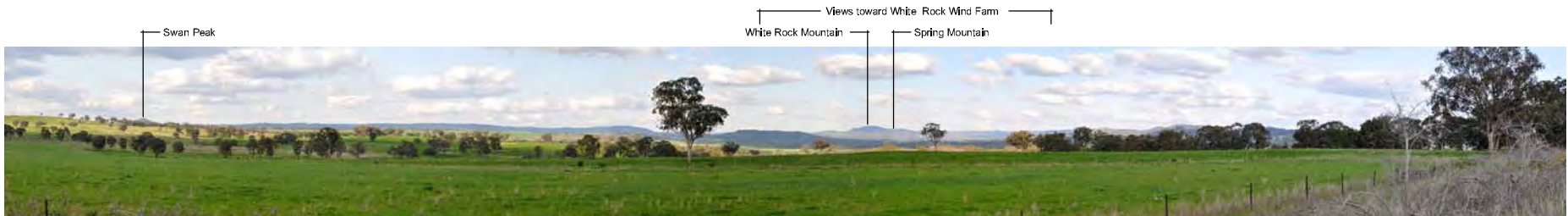


Photo Location W28 - View east from Elsmore-Paradise Road



Photo Location W29 - View south to south west from New England Highway



Photo Location W30 - View south to southeast from Gwydir Highway



Photo Location W31 - View east to southeast from entry to Sundown Pastoral Company Paradise Station



Photo Location W32 - View east from Elsmore-Paradise Road





Photo Location W33 - View east from Paradise-Guyra Road



Photo Location W36 - View east to north west from Ilparran Road



Photo Location W38 - View south west from Tuttle's Road



Photo Location W39 - View south to west from West Furracabad Road

Note: There is no recorded location for W37



Photo Location W40 - View south to west from West Furracabad Road



Photo Location W41 - View west to south west from Centennial Park Glen Innes



Photo Location W44 - View west from New England Highway