Table 17 - Residential View Location Matrix (Sapphire Wind Farm turbines)

View Location	Category of Potential View Location	View context from residence toward Sapphire '80m' and '110m' wind turbine layouts (Wellingrove, Swan Vale and Sapphire turbine clusters)	Approximate distance to closest turbine	Relative number of people	Period of view	View Location sensitivity	Visibility rating from residence (for '80m' design layout ZVI at hub height)	Overall Visual Impact for '80m' and 110m' layouts
		topography and timbered areas. **Swan Vale turbine cluster:** Views south west toward the Swan Vale turbine cluster are screened by topography and timbered areas. **Sapphire turbine cluster:** Views west toward the Sapphire turbine cluster are screened by topography and timbered areas.						
R135	Resident	**Wellingrove turbine cluster:** Views toward the Wellingrove turbine cluster are partially screened by topography and timbered areas. **Swan Vale turbine cluster:** Views south west toward the Swan Vale turbine cluster are screened by topography and timbered areas. **Sapphire turbine cluster:** Views west toward the Sapphire turbine cluster are screened by topography and timbered areas.	9km	Very Low	Varies – potential long term	High	Low	Low
R136	Resident	**Wellingrove turbine cluster:**	8.6km	Very Low	Varies –	High	Nil	Nil

Table 17 - Residential View Location Matrix (Sapphire Wind Farm turbines)

View Location	Category of Potential View Location	View context from residence toward Sapphire '80m' and '110m' wind turbine layouts (Wellingrove, Swan Vale and Sapphire turbine clusters)	Approximate distance to closest turbine	Relative number of people	Period of view	View Location sensitivity	Visibility rating from residence (for '80m' design layout ZVI at hub height)	Overall Visual Impact for '80m' and 110m' layouts
		Views south west toward the Wellingrove turbine cluster are screened by topography and timbered areas. **Swan Vale turbine cluster:** Views south west toward the Swan Vale turbine cluster are screened by topography and timbered areas. **Sapphire turbine cluster:** Views south west toward the Sapphire turbine cluster are screened by topography and timbered areas.			potential long term			
R137	Resident	**Wellingrove turbine cluster:** Partial and distant views south west toward upper portions of the Wellingrove turbine cluster; however the majority of views are likely to be screened by topography and timbered areas. **Swan Vale turbine cluster:** Views south west toward the Swan Vale turbine cluster are screened by topography and timbered areas.	8.4km	Very Low	Varies – potential long term	High	Low	Low

Table 17 - Residential View Location Matrix (Sapphire Wind Farm turbines)

View Location	Category of Potential View Location	View context from residence toward Sapphire '80m' and '110m' wind turbine layouts (Wellingrove, Swan Vale and Sapphire turbine clusters)	Approximate distance to closest turbine	Relative number of people	Period of view	View Location sensitivity	Visibility rating from residence (for '80m' design layout ZVI at hub height)	Overall Visual Impact for '80m' and 110m' layouts
		Sapphire turbine cluster: Views south west toward the Sapphire turbine cluster are screened by topography and timbered areas.						
R138	Resident	**Wellingrove turbine cluster:** Partial and distant views south west toward upper portions of the Wellingrove turbine cluster; however the majority of views are likely to be screened by topography and timbered areas. **Swan Vale turbine cluster:** Views south west toward the Swan Vale turbine cluster are screened by topography and timbered areas. **Sapphire turbine cluster:** Views south west toward the Sapphire turbine cluster are screened by topography and timbered areas.	6.1km	Very Low	Varies – potential long term	High	Low	Low
R139	Resident	**Wellingrove turbine cluster:** Views south west toward the Wellingrove turbine cluster are screened by topography and timbered	8.3km	Very Low	Varies – potential long term	High	Nil	Nil

Table 17 - Residential View Location Matrix (Sapphire Wind Farm turbines)

View Location	Category of Potential View Location	View context from residence toward Sapphire '80m' and '110m' wind turbine layouts (Wellingrove, Swan Vale and Sapphire turbine clusters)	Approximate distance to closest turbine	Relative number of people	Period of view	View Location sensitivity	Visibility rating from residence (for '80m' design layout ZVI at hub height)	Overall Visual Impact for '80m' and 110m' layouts
		areas. **Swan Vale turbine cluster:** Views south west toward the Swan Vale turbine cluster are screened by topography and timbered areas. **Sapphire turbine cluster:** Views south west toward the Sapphire turbine cluster are screened by topography and timbered areas.						
R140	Resident	**Wellingrove turbine cluster:** Views south west toward the Wellingrove turbine cluster are screened by topography and timbered areas. **Swan Vale turbine cluster:** Views south west toward the Swan Vale turbine cluster are screened by topography and timbered areas. **Sapphire turbine cluster:** Views south west toward the Sapphire turbine cluster are screened by topography and timbered areas.	8.4km	Very Low	Varies – potential long term	High	Nil	Nil

Table 17 - Residential View Location Matrix (Sapphire Wind Farm turbines)

View Location	Category of Potential View Location	View context from residence toward Sapphire '80m' and '110m' wind turbine layouts (Wellingrove, Swan Vale and Sapphire turbine clusters)	Approximate distance to closest turbine	Relative number of people	Period of view	View Location sensitivity	Visibility rating from residence (for '80m' design layout ZVI at hub height)	Overall Visual Impact for '80m' and 110m' layouts
R141	Resident	**Wellingrove turbine cluster:** Views south west toward the Wellingrove turbine cluster are screened by topography and timbered areas. **Swan Vale turbine cluster:** Views south west toward the Swan Vale turbine cluster are screened by topography and timbered areas. **Sapphire turbine cluster:** Views south west toward the Sapphire turbine cluster are screened by topography and timbered areas.	9.2km	Very Low	Varies – potential long term	High	Low	Nil
R142	Resident	**Wellingrove turbine cluster:** Distant and partial views south east toward a small number of turbines within the Wellingrove turbine cluster. **Swan Vale turbine cluster:** Views south toward the Swan Vale turbine cluster are screened by topography and timbered areas. **Sapphire turbine cluster:**	9.2km	Very Low	Varies – potential long term	High	Low	Low

Table 17 - Residential View Location Matrix (Sapphire Wind Farm turbines)

View Location	Category of Potential View Location	View context from residence toward Sapphire '80m' and '110m' wind turbine layouts (Wellingrove, Swan Vale and Sapphire turbine clusters)	Approximate distance to closest turbine	Relative number of people	Period of view	View Location sensitivity	Visibility rating from residence (for '80m' design layout ZVI at hub height)	Overall Visual Impact for '80m' and 110m' layouts
		Views south to south west toward the Sapphire turbine cluster are screened by topography and timbered areas.						

GREEN BEAN DESIGN *landscape architects* PO Box 3178 Austral NSW 2179 - Mobile 0430 599 995

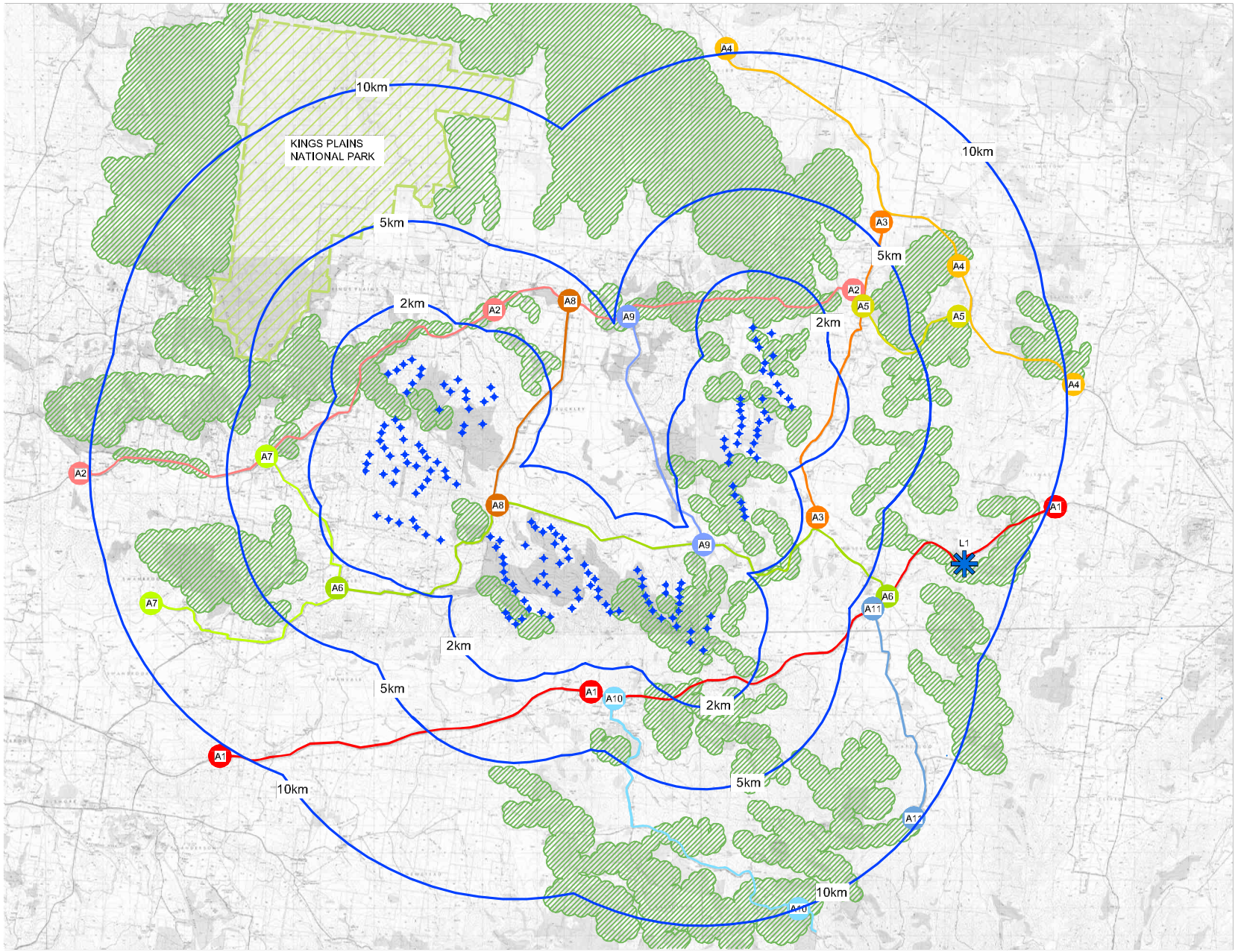
8.3 Future Residential Dwellings

In general existing residential dwellings in the vicinity of the wind farm are located below surrounding ridgelines to maximise potential for shelter from prevailing wind, and/or where exposed tend to include a degree of shelter from windbreak planting or tree planting around dwellings. The tendency to locate residential dwellings in sheltered situations also acts to limit the extent of available views across the surrounding landscape for the majority of residential view locations, although there are a small number of dwellings that appear to have been located on properties to take advantage of distant and panoramic views.

Potential future planning for residential dwellings would be able to take advantage of any approved layout design for the Sapphire wind farm when determining the optimal location for residential dwellings on individual portions of land to minimise views toward wind turbines if desired. In some circumstances future residential dwellings could be located to take advantage of local topographic features in order to screen views toward wind turbines or implement in advance mitigation measures such as tree planting for windbreak and/or screening purposes.

Should residential dwellings be constructed on existing portions of land immediately adjacent to the wind farm site, there is likely to be an associated visual impact not only with additional residential structures within the landscape but also a range of domestic infrastructure associated with it.

GREEN BEAN DESIGN *landscape architects* PO Box 3178 Austral NSW 2179 - Mobile 0430 599 995



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

Legend

- A1 Gwydir Highway
- A2 Kings Plains Road
- A3 Polhill Road
- A4 Strathbogie Road
- A5 Wellingrove Road
- A6 Waterloo Road
- A7 Woodstock Road
- A8 Western Feeder
- A9 Eastern Feeder
- A10 Spring Mountain Road
- A11 Ilparran Road
- Lookout
- Sapphire wind turbine
- Sapphire 10km offset
- Indicative extent of timbered areas

0km 2.5km 5km

Figure 24
Public View Locations

SAPPHIRE WIND FARM

GREEN BEAN DESIGN
landscape architects

WIND PROSPECT CWP

Table 18 - Public View Location Matrix Sapphire Wind Farm turbines

View Location	Category of Potential View Location	View context	Approximate length of road within Sapphire wind farm 10km viewshed	Approximate distance to closest wind turbine	Relative number of people	Period of view	View location sensitivity	Visual Impact
L1 Sinclair Lookout	Visitor	Extensive panoramic and distant views extend south west to north west toward and across the Sapphire wind farm site including views toward the Wellingrove, Swan Vale and Sapphire turbines. Views from the Sinclair Lookout would also extend toward the north portion of the White Rock wind farm as it follows a north sloping ridgeline toward the Gwydir Highway. The Glen Innes wind farm turbines would extend south from the Sinclair Lookout along the Waterloo Range ridgeline, but tend to be partially screened by tree cover around and to the south of the lookout area.	N/A	8.2km	Very Low	Varies	High	Low
L2 Centennial Parklands & Martins Lookout (Glen Innes)	Visitor	Views west toward the Sapphire wind farm would be screened by landform rising toward the Waterloo Range and a north south ridgeline to the west of Glen Innes. This ridgeline would also screen views toward turbines within the White Rock wind farm; however some turbines within the Glen Innes wind farm would	N/A	~13km	Varies – potentially high during events or festivals.	Varies – potentially long term during events or festivals.	High	Nil

Table 18 - Public View Location Matrix Sapphire Wind Farm turbines

View Location	Category of Potential View Location	View context	Approximate length of road within Sapphire wind farm 10km viewshed	Approximate distance to closest wind turbine	Relative number of people	Period of view	View location sensitivity	Visual Impact
		be visible from this view location and have been previously identified within the Glen Innes Visual Impact Assessment (2008).						
A1 Gwydir Highway	Motorist	Opportunities to view wind turbines within the Sapphire wind farm will occur from various sections of the Gwydir Highway. A greater number of turbines will tend to be visible from distant view locations where the road follows elevated areas along or crossing ridgelines. Views from vehicles travelling east and west bound are partially contained within the road corridor by extensive tree planting alongside and immediately beyond the road corridor, including sections of the Gwydir Highway to the south of the Swan Vale turbine cluster. Views toward the White Rock and Glen Innes wind farm turbines would occur along short sections of the Gwydir Highway to the east of the Sapphire wind farm.	34km	1.1km	High	Short term	Low	Low
A2 Kings Plains Road	Motorist	Views from vehicles travelling east and west bound along the unsealed road are largely restricted by dense timbered areas alongside and beyond	33.5km	750m	Very Low	Short term	Low	Low

Table 18 - Public View Location Matrix Sapphire Wind Farm turbines

View Location	Category of Potential View Location	View context	Approximate length of road within Sapphire wind farm 10km viewshed	Approximate distance to closest wind turbine	Relative number of people	Period of view	View location sensitivity	Visual Impact
		the road corridor. Occasional but distant views would extend from areas with less tree cover, including a section of the Kings Plains Road between the Eastern and Western Feeders.						
A3 Polhill Road	Motorist	Indirect views will extend toward a small number of Sapphire wind farm turbines within the Wellingrove turbine cluster, including partial views toward turbines where screened by landform and trees.	12.5km	1.4km	Very Low	Short term	Low	Low
A4 Strathbogie Road	Motorist	Opportunities to view the Sapphire wind farm turbines from sections of the Strathbogie Road corridor will be restricted by landform and timbered areas alongside and beyond the road corridor.	19km	6km	Very Low	Short term	Low	Low
A5 Wellingrove Road	Motorist	Views from vehicles travelling along Wellingrove Road are largely contained by dense tree planting alongside the road corridor. Glimpsed views of turbines within the Wellingrove turbine cluster will occur from the western portion of the road.	5.5km	3.4km	Very Low	Short term	Low	Low

Table 18 - Public View Location Matrix Sapphire Wind Farm turbines

View Location	Category of Potential View Location	View context	Approximate length of road within Sapphire wind farm 10km viewshed	Approximate distance to closest wind turbine	Relative number of people	Period of view	View location sensitivity	Visual Impact
A6 Waterloo Road	Motorist	Direct and indirect views toward turbines within the Sapphire wind farm will be largely influenced by the varying nature of views from sections of the Waterloo Road corridor. Proximate views toward turbines within the Swan Vale and Sapphire turbine clusters will be partially screened by tree planting alongside and beyond the road corridor; however, opportunities for both 'Direct' and 'Indirect' views will exist from vehicles travelling east and west along the road. Opportunities to view the White Rock and Glen Innes wind farm turbines will also extend to short sections of southbound travel along Waterloo Road as it descends to meet the Gwydir Highway.	25.5km	200m	Very Low	Short term	Low	Low
A7 Woodstock Road	Motorist	Largely indirect views toward wind turbines within the Sapphire turbine cluster will be partially screened by a combination of landform and scattered timber areas from some sections of the Woodstock Road.	15km	1.8km	Very Low	Short term	Low	Low
A8	Motorist	Views from vehicles travelling north and southbound toward the Sapphire	8.4km	1.3km	Very Low	Short term	Low	Low

Table 18 - Public View Location Matrix Sapphire Wind Farm turbines

View Location	Category of Potential View Location	View context	Approximate length of road within Sapphire wind farm 10km viewshed	Approximate distance to closest wind turbine	Relative number of people	Period of view	View location sensitivity	Visual Impact
Western Feeder		wind farm turbines will be partially restricted by undulating landform and scattered timbered areas across the surrounding landscape.						
A9 Eastern Feeder	Motorist	Views from vehicles travelling north and southbound toward the Sapphire wind farm turbines will be partially restricted by undulating landform and scattered timbered areas across the surrounding landscape.	9.4km	1.6km	Very Low	Short term	Low	Low
A10 Spring Mountain Road	Motorist	Opportunities for direct views toward the Sapphire wind farm will be restricted to vehicles travelling northbound, and will be partially restricted by timbered areas beyond the road corridor. Views from Spring Mountain Road would also extend toward turbines within the White Rock wind farm development.	15km	3.1km	Very Low	Short term	Low	Low
A11 Ilparran Road	Motorist	Opportunities for views toward the Sapphire wind farm turbines will be restricted to a small number of turbines vehicles travelling northbound. Views toward the majority of turbines within the Wellingrove, Swan Vale and Sapphire clusters will be partially restricted by landform and timbered	8.5km	5.7km	Very Low	Short term	Low	Low

Table 18 - Public View Location Matrix Sapphire Wind Farm turbines

View Location	Category of Potential View Location	View context	Approximate length of road within Sapphire wind farm 10km viewshed	Approximate distance to closest wind turbine	Relative number of people	Period of view	View location sensitivity	Visual Impact
		areas beyond the road corridor. The White Rock and Glen Innes wind farm turbines would appear more prominently from vehicles travelling north and south along Ilparran Road as they extend and follow a series of ridgelines and hills to the east and west of the road.						

8.4 Summary of Potential Visual Impact

This LVIA identified a total of 139 potential residential view locations within the Sapphire wind farm 10km viewshed. Three additional view locations were determined to be non residential structures (2 mine sites and 1 church).

Unoccupied residential dwellings have been included and assessed as part of this LVIA where structures and buildings were considered to be habitable at the time of the field work.

An assessment of each potential residential view location indicated that for the Sapphire '80m' and '110m' design layouts:

- 3 of the 139 residential view locations have been determined to have a high visual impact.
- 34* the 139 residential view locations have been determined to have a moderate visual impact;
- 81 of the 139 residential view locations have been determined to have a low visual impact; and
- 21 of the 139 residential view locations have been determined to have a nil visual impact.

*Moderate visual impact includes those residences determined to be low to moderate impact (16 in total).

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

A total of 13 public view locations (L1, L2 and A1 to A11) were identified as part of the LVIA. An assessment of the visual impact for each public view location indicated that for the Sapphire wind farm '80m' and '110m'design layout:

- 0 of the 13 public view locations have been determined to have a high visual impact;
- 0 of the 13 public view locations have been determined to have a moderate visual impact;
- 12 of the 13 public view locations have been determined to have a low visual impact; and
- 1 of the 13 public view locations has been determined to have a nil visual impact.

This LVIA acknowledges that the Sapphire wind farm will have the potential to be visible to people engaged in predominantly farming or recreational activities from both public and private land, where views toward wind turbines may occur from surrounding and non-associated rural areas. Ultimately the level of visual impact would depend on the type of activities engaged in as well as the location of

the activities together with the degree of screening provided by local landform or vegetation within individual properties.

Whilst views toward the turbines would occur from a wide area of surrounding rural land, this LVIA has determined that the sensitivity of visual impacts is less for those employed or carrying out work in rural areas compared to potential views from residential dwellings.

It should be noted that the term 'visual impact' does not necessarily imply or represent an individual's negative response toward the visibility of wind turbines, and that perceptions of wind farms amongst individuals within any community can be positive, negative or neutral.

Cumulative Visual Impact Assessment

SECTION 9

9.1 What is Cumulative Impact Assessment?

A cumulative landscape and visual impact could result from a proposed wind farm development being constructed in conjunction with other existing or proposed wind farm developments, and could be either associated or separate to it.

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

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

'Indirect' cumulative visual impacts could occur where two or more winds farms have been constructed within the same locality, and could be viewed from the same view location but not within the same field of view.

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

There are a number of proposed, approved and operating wind farm developments within New South Wales which are illustrated in **Figure 25**. The general location of wind farms surrounding the Sapphire wind farm are illustrated in **Figure 26**. These figures illustrate the location of wind farms known at the time this LVIA was prepared. The number and location of wind farms is likely to change as more wind farm projects are announced.

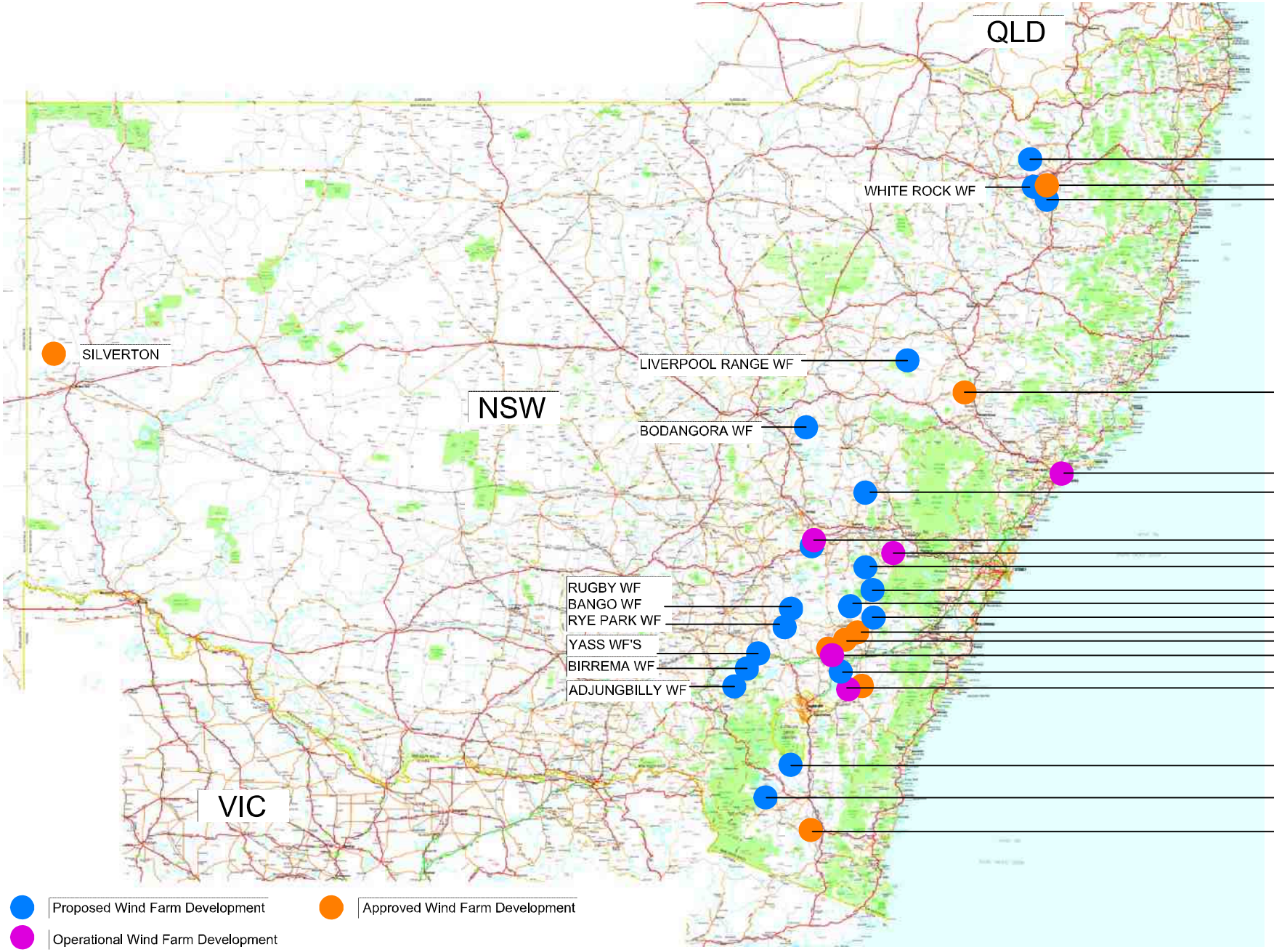
9.2 Other wind farm developments in the New England Tableland Region

The New South Wales DoPI website identifies three wind farm developments that are currently existing or proposed within the same locality as the Sapphire wind farm and are identified in **Table 19**.

Table 19 Other Wind Farm Developments

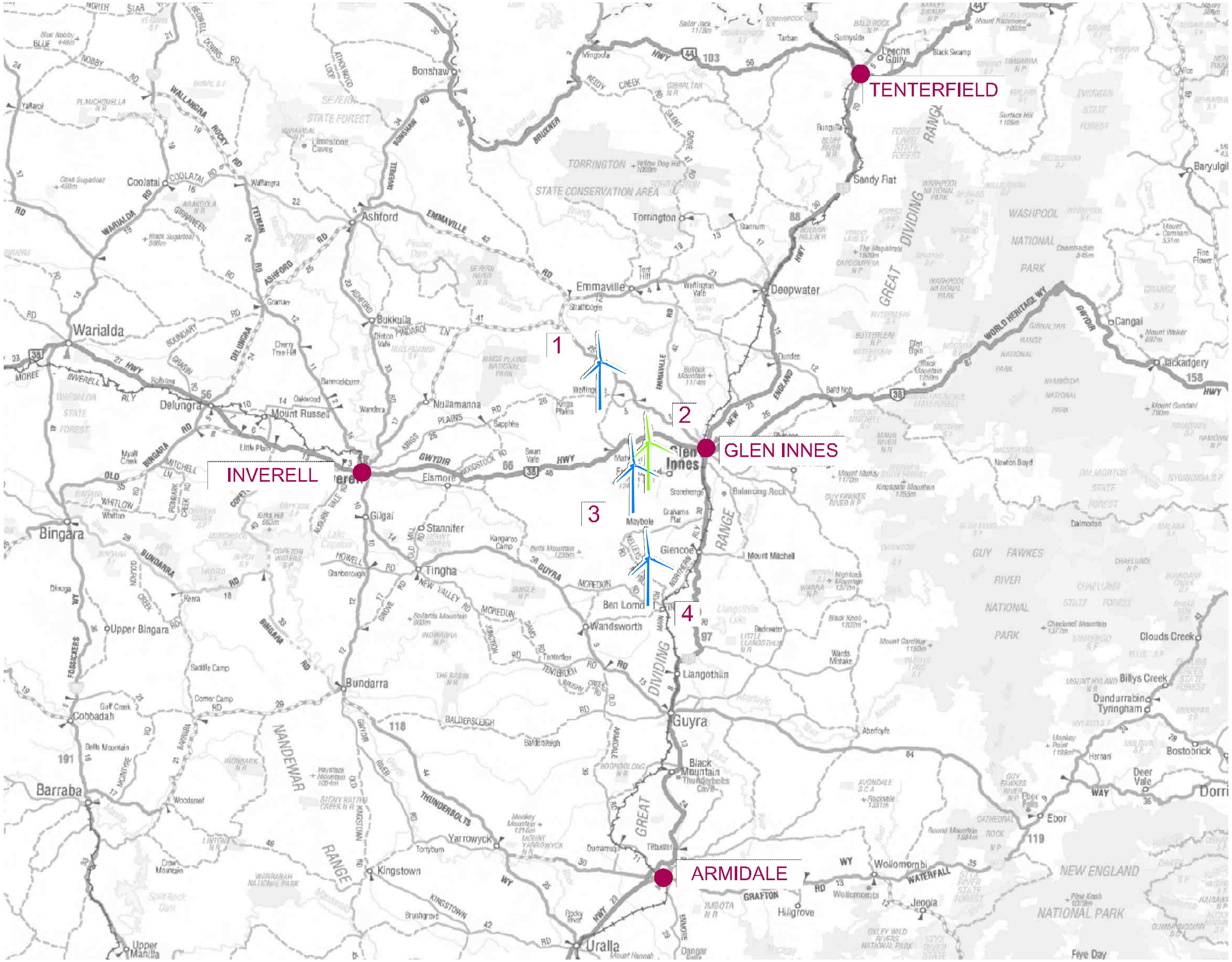
Wind Farm	Proponent	Status	Number of turbines
Glen Innes Wind Farm	Infigen	Approved	27
White Rock Wind Farm	Epuron	DGR's Issued	Up to 119
Ben Lomond	AGL	DGR's lapsed	Up to 98

Figure 25
NSW wind farm locations
(as of August 2011)



Not to scale

SAPPHIRE WIND FARM



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

Legend

1 Sapphire Wind Farm

2 Glen Innes Wind Farm

3 White Rock Wind Farm

4 Ben Lomond Wind Farm

Proposed wind farm development

Approved wind farm development

Figure 26
Wind farms in the
New England Tableland
(as of August 2011)

Not to scale

SAPPHIRE WIND FARM

GREEN BEAN DESIGN landscape architects

WIND PROSPECT CWP

GBD is not aware of any smaller wind farm developments that are currently lodged, or being assessed by Glen Innes Severn or Inverell Shire Councils.

The proposed Ben Lomond wind energy development has not been included in the cumulative assessment as the DoPI DGR's for the Ben Lomond wind farm project expired on the 19th February 2010 and there is no publically available information to suggest that this project will proceed. It is also noted that the closest distance between the Sapphire and Ben Lomond wind turbines would be approximately 25km and therefore any potential for 'Direct' and 'Indirect' cumulative visual impact would be considered very low.

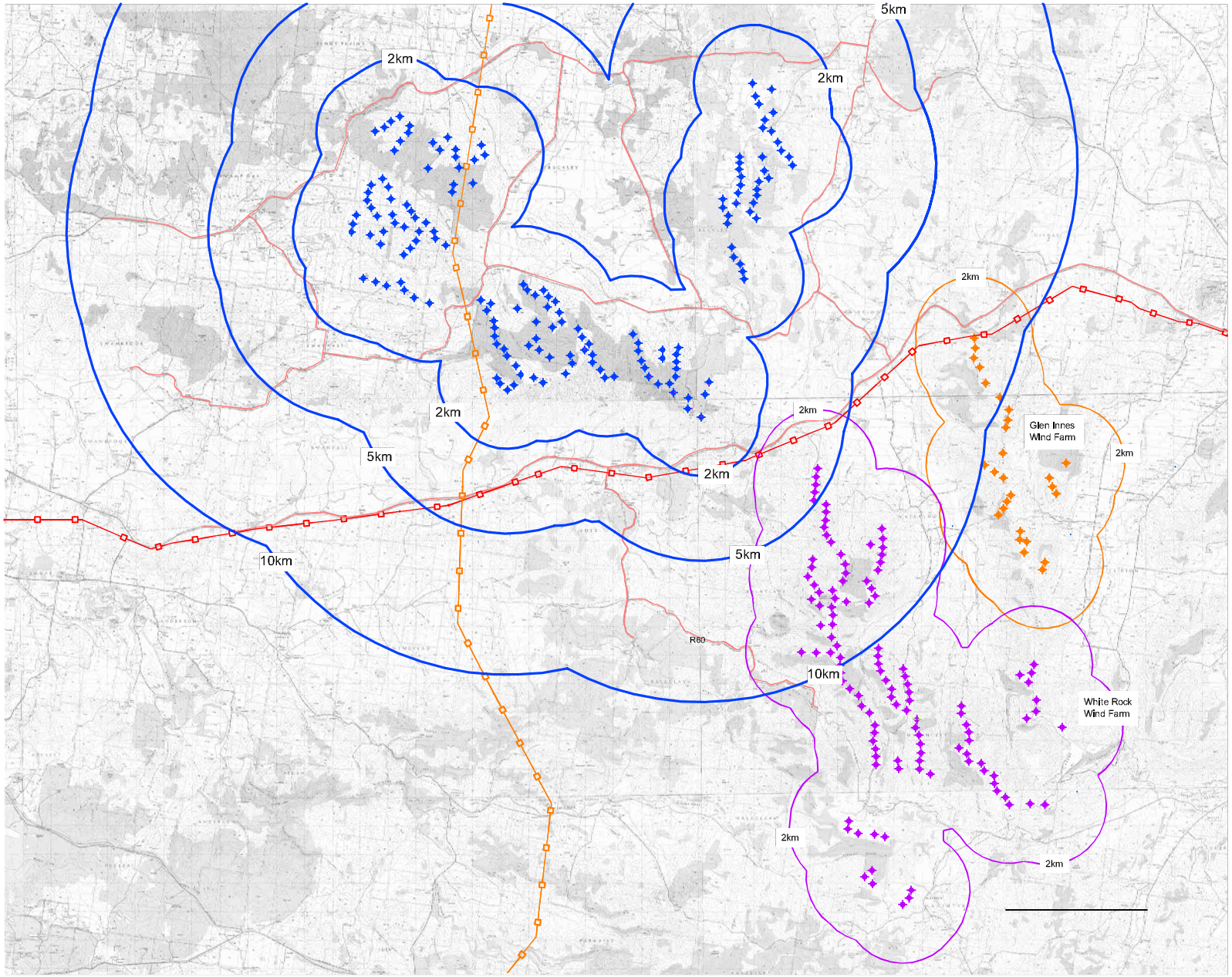
9.3 Other wind farm turbines within the Sapphire 10km viewshed

A number of wind turbines within the White Rock and Glen Innes wind farms would occur within the Sapphire wind farm 10km view shed. The extent and location of wind turbines within the Sapphire 10km viewshed are outlined in **Table 20** and illustrated in **Figure 27**.

Table 20 Other wind turbines within Sapphire 10km viewshed

Wind Farm	Approximate number of turbines within Sapphire 10km viewshed	General location of other wind farms relative to the Sapphire wind farm	Approximate distance between closest Sapphire wind turbine and other wind farm turbine
Glen Innes Wind Farm	6	The Glen Innes wind farm extends along the Waterloo Range ridgeline and runs approximately parallel east to north east of the Sapphire wind farm.	8.4km
White Rock Wind Farm	46	The White Rock wind farm would extend along a series of ridgelines and low hills to the south of the Gwydir Highway and south to south east of the Sapphire wind farm.	4.5km

A cumulative ZVI diagram illustrates the intervisibility of the Sapphire, White Rock and Glen Innes wind farm turbines. This ZVI identifies areas from which views to at least one full turbine from each project would potentially by visible (as 'direct' and 'indirect' views) and, as previously discussed, does not take into account the screening influence of above ground structures or vegetation. The cumulative ZVI are illustrated in **Figures 28** to **30**. The cumulative ZVI demonstrates the influence of topography on the extent and intervisibility of multiple wind turbines.



Legend

- Sapphire wind turbine
- White Rock wind turbine
- Glen Innes wind turbine
- Existing 132kV transmission line
- Existing 330kV transmission line
- Road

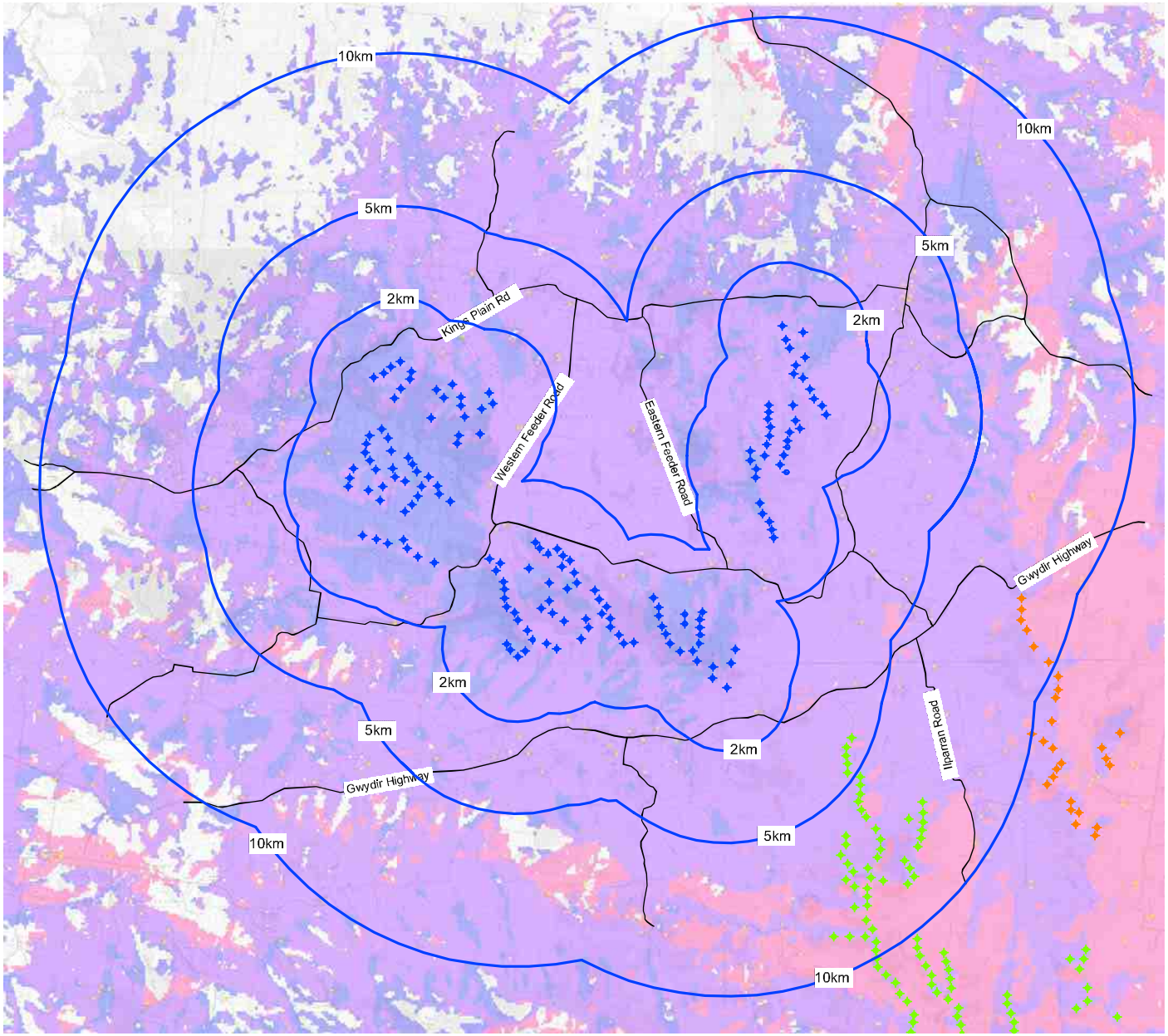
0km 2.5km 5km

Figure 27
Cumulative Impact

SAPPHIRE WIND FARM

GREEN BEAN DESIGN
landscape architects

WIND PROSPECT CWP



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

Legend

- Sapphire turbines
- Glen Innes turbines
- White Rock turbines

- Sapphire turbines
- Glen Innes turbines
- White Rock turbines
- Glen Innes and White Rock turbine intervisibility
- Sapphire, Glen Innes and White Rock turbine intervisibility

0km 2.5km 5km

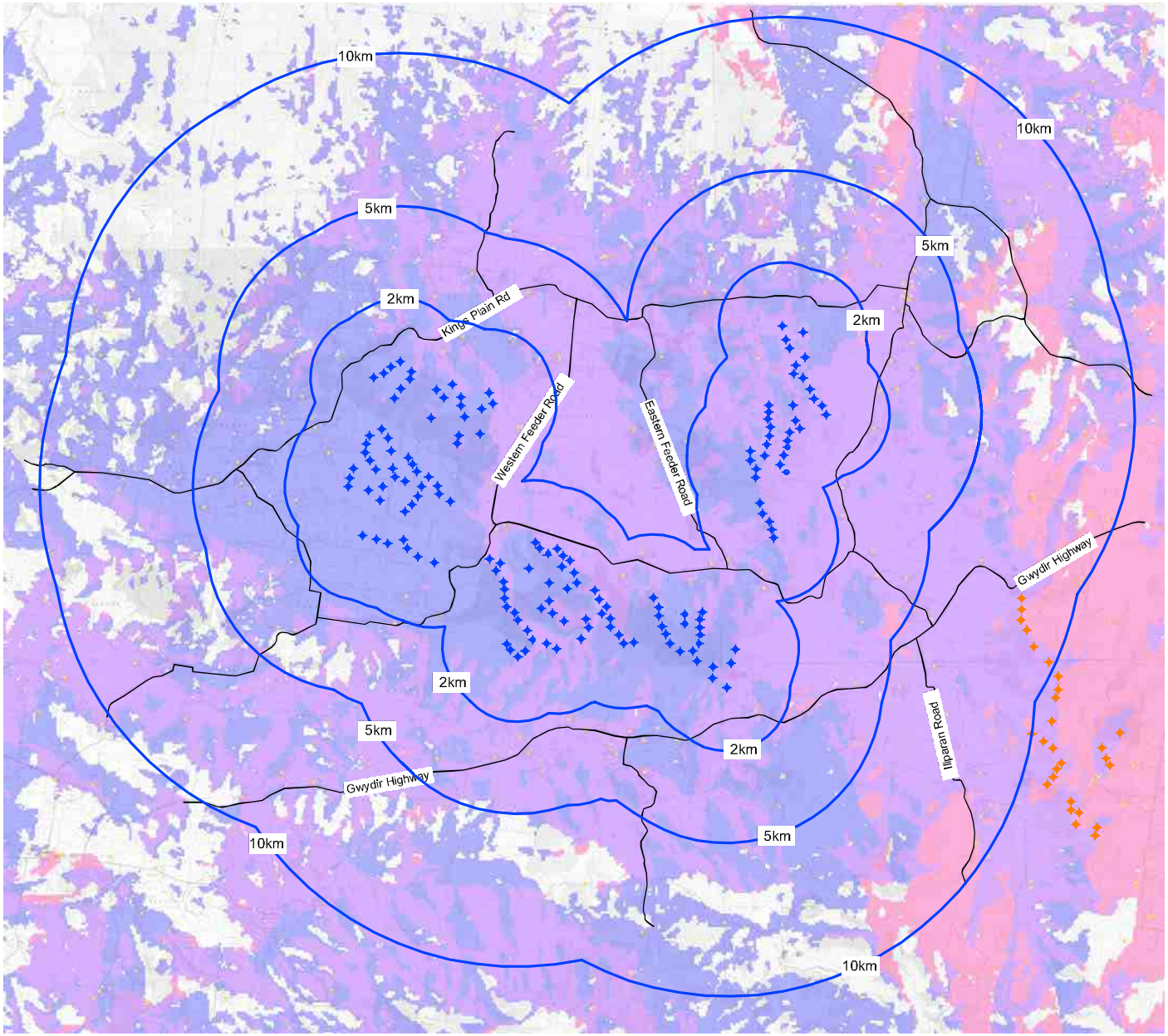
Figure 28
Cumulative ZVI Diagram 7 - '80m' design layout.

Sapphire, Glen Innes and White Rock wind farms

SAPPHIRE WIND FARM

GREEN BEAN DESIGN landscape architects

WIND PROSPECT CWP



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

Legend

- Sapphire turbines
- Glen Innes turbines
- Sapphire turbine visibility
- Glen Innes turbine visibility
- Sapphire and Glen Innes turbine intervisibility

0km 2.5km 5km

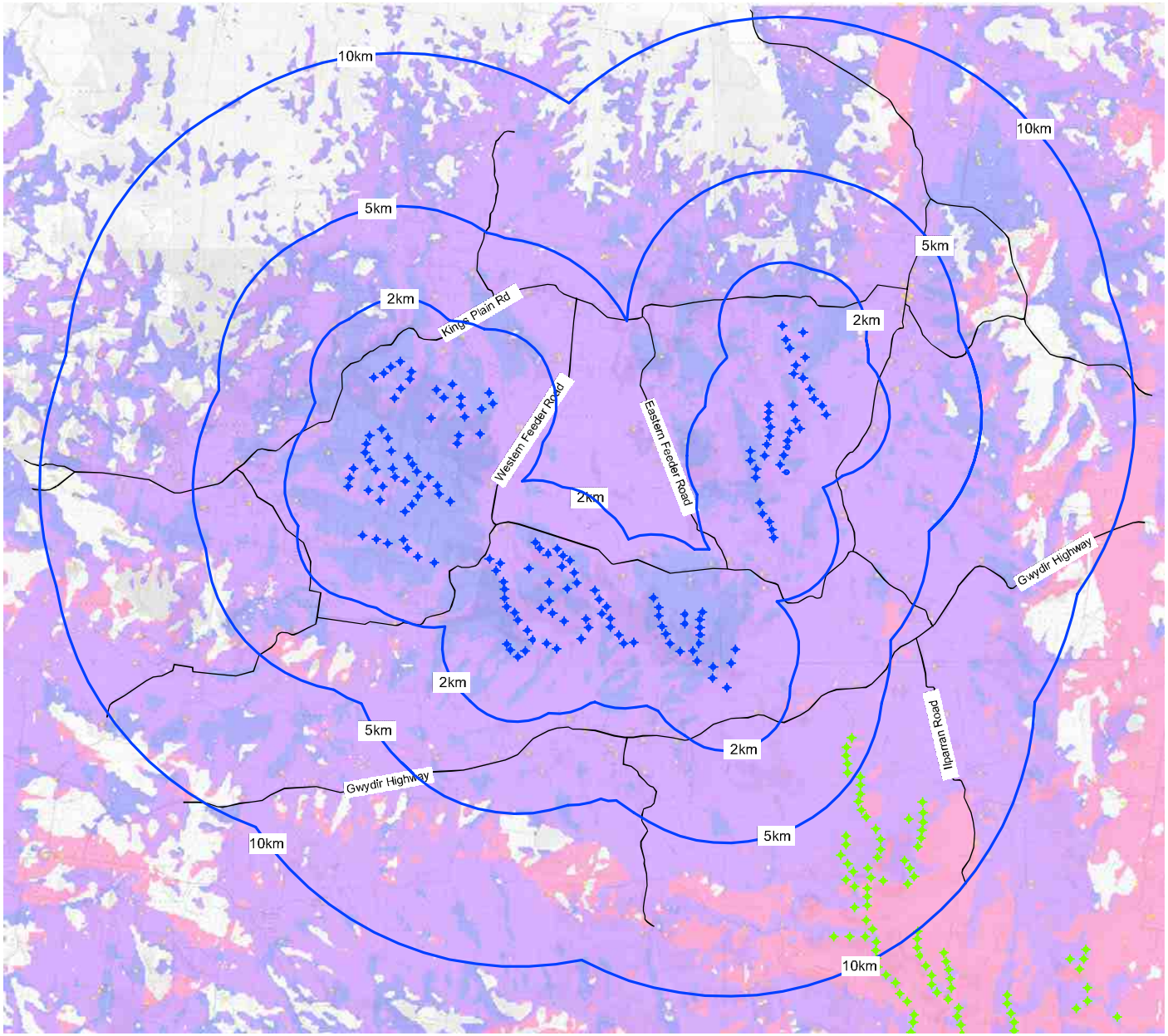
Figure 29
Cumulative ZVI Diagram 8 - '80m' design layout.

Sapphire and Glen Innes wind farms

SAPPHIRE WIND FARM

GREEN BEAN DESIGN landscape architects

WIND PROSPECT CWP



Legend

- Sapphire turbines
- White Rock turbines
- Sapphire turbine visibility
- White Rock turbine visibility
- Sapphire and White Rock turbine intervisibility

0km 2.5km 5km

Figure 30
Cumulative ZVI Diagram 9 - '80m' design layout.

Sapphire and White Rock wind farms

SAPPHIRE WIND FARM

GREEN BEAN DESIGN landscape architects

WIND PROSPECT CWP

9.4 Sapphire and Glen Innes wind farm intervisibility

The potential for the Sapphire wind farm turbines to be visible from various view locations together with the Glen Innes wind farm turbines are considered in **Table 21**.

Table 21 Sapphire and Glen Innes wind farm intervisibility

Turbine Cluster	View description between the Sapphire and Glen Innes wind farms		
	'Direct' Views	**'Indirect' Views**	**'Sequential' Views**
Wellingrove	For the majority of view locations 'Direct' views toward the Wellingrove turbine cluster and the Glen Innes wind farm turbines are likely to be screened by topography and tree cover.	'Indirect' views toward the Wellingrove turbine cluster and the Glen Innes wind farm turbines are likely to be largely screened by topography and tree cover. 'Indirect' views would occur from the Sinclair lookout toward the Wellingrove, Swan Vale and Sapphire turbine clusters, although proximate views toward the Glen Innes wind turbines would be partially screened by tree cover to the south of the designated lookout area.	'Sequential' views will occur from vehicles travelling along local roads surrounding the Wellingrove turbine cluster (as well as the Swan Vale and Sapphire turbine clusters) which also include travel along the Gwydir Highway where views extend toward the Glen Innes wind farm turbines.
Swan Vale	'Direct' views toward the Swan Vale turbine cluster and the Glen Innes wind farm turbines are likely to be screened by topography and tree cover.	'Indirect' views toward the Swan Vale turbine cluster and the Glen Innes wind farm turbines are likely to be limited to a small number of residences within the north portion of the Wellingrove Valley.	'Sequential' views will occur from vehicles travelling along local roads surrounding the Swan Vale turbine cluster (as well as the Wellingrove and Sapphire turbine clusters) which also include travel along the Gwydir Highway where views extend toward the Glen Innes wind farm turbines.
Sapphire	'Direct' views toward the Sapphire turbine cluster and the Glen Innes wind farm turbines are likely to be screened by	'Indirect' views toward the Sapphire turbine cluster and the Glen Innes wind farm turbines are likely to be screened	'Sequential' views will occur from vehicles travelling along local roads surrounding the Sapphire turbine cluster (as well as the Wellingrove and

Table 21 Sapphire and Glen Innes wind farm intervisibility

Turbine Cluster	View description between the Sapphire and Glen Innes wind farms		
	'Direct' Views	**'Indirect' Views**	**'Sequential' Views**
	topography.	by topography.	Swan Vale turbine clusters) which also include travel along the Gwydir Highway where views extend toward the Glen Innes wind farm turbines.

9.5 Sapphire and White Rock wind farm intervisibility

The potential for the Sapphire wind farm turbines to be visible from various view locations together with the Glen Innes wind farm turbines are considered in **Table 22**.

Table 22 Sapphire and White Rock wind farm intervisibility

Turbine Cluster	View description between the Sapphire and White Rock wind farms		
	'Direct' Views	**'Indirect' Views**	**'Sequential' Views**
Wellingrove	'Direct' views toward the Wellingrove turbine cluster and the White Rock wind farm turbines will be largely screened by topography and tree cover within the 10km viewshed; however, more distant and elevated view locations may have views toward the Sapphire and White Rock wind farm developments, including the Sinclair Lookout to the north of the Glen Innes wind farm.	'Indirect' views toward the Wellingrove turbine cluster and the White Rock wind farm turbines are likely to be screened by topography. 'Indirect' views would occur from the Sinclair lookout toward the Wellingrove, Swan Vale and Sapphire turbine clusters, although views toward the White Rock wind turbines would be restricted to turbines within the north portion of the White Rock development.	'Sequential' views will occur from vehicles travelling along local roads surrounding the Wellingrove turbine cluster (as well as the Swan Vale and Sapphire turbine clusters) which also include travel along the Gwydir Highway where views extend toward the White Rock wind farm turbines.

Table 22 Sapphire and White Rock wind farm intervisibility

Turbine Cluster	View description between the Sapphire and White Rock wind farms		
	'Direct' Views	**'Indirect' Views**	**'Sequential' Views**
Swan Vale	'Direct' views toward the Swan Vale turbine cluster and the White Rock wind farm turbines are likely to occur from a very small number of residences along the northern extent of Ilparran Road as well as more distance (>10km) and elevated areas to the south and east of the Sapphire wind farm.	'Indirect' views toward the Swan Vale turbine cluster and the White Rock wind farm turbines are likely to occur from a very small number of residences along the northern extent of Ilparran Road as well as a small number of properties located along the Gwydir Highway (and south of the Swan Vale turbine cluster).	'Sequential' views will occur from vehicles travelling along local roads surrounding the Swan Vale turbine cluster (as well as the Wellingrove and Sapphire turbine clusters) which also include travel along the Gwydir Highway where views extend toward the White Rock wind farm turbines.
Sapphire	'Direct' views toward the Sapphire turbine cluster and the White Rock wind farm turbines are likely to occur from more distance (>10km) and elevated areas to the south and east of the Sapphire wind farm.	'Indirect' views toward the Sapphire turbine cluster and the White Rock wind farm turbines are likely to be screened by topography.	'Sequential' views will occur from vehicles travelling along local roads surrounding the Sapphire turbine cluster (as well as the Wellingrove and Swan Vale turbine clusters) which also include travel along the Gwydir Highway where views extend toward the White Rock wind farm turbines.

9.6 Sapphire, White Rock and Glen Innes wind farm intervisibility

The potential for the Sapphire wind farm turbines to be visible from various view locations together with the Glen Innes and White Rock wind farm turbines are considered in **Table 23**.

Table 23 Sapphire, White Rock and Glen Innes wind farm intervisibility

Turbine Cluster	View description between the Sapphire, White Rock and Glen Innes wind farms		
	'Direct' Views	**'Indirect' Views**	**'Sequential' Views**
Wellingrove, Swan Vale and Sapphire	'Direct' views toward all three wind farm developments, or portions of all developments would be largely limited by a range of topographical features surrounding and beyond each wind farm development, as well as scattered and dense timbered areas extending across hillsides, hilltops and ridgelines. A very small number of view locations (generally located across elevated rural and uninhabited areas) would have potential for restricted views toward a portion of each wind farm; however, views toward turbines would be distant and generally >15km from the Sapphire wind farm site.	Similarly to 'Direct' views, 'Indirect' views would be largely limited by a range of topographical features surrounding and beyond each wind farm development, as well as scattered and dense timbered areas extending across hillsides, hilltops and ridgelines. Given the White Rock and Glen Innes wind farm developments would be constructed on roughly parallel ridgelines and hills, the majority of views toward one development would, as a rule, block views toward the other from east and west view locations. 'Indirect' views toward portions of the Sapphire, White Rock and Glen Innes wind farms would occur from a limited area to the south east of the Sapphire wind farm (along Ilparran Road).	'Sequential' views will occur from the Gwydir Highway for motorists travelling east and west between Glen Innes and Inverell. Tree planting alongside and beyond the Gwydir Highway will provide complete or partial screening from some sections of the road corridor. 'Sequential' views will also occur from travel along local roads including those surrounding the Sapphire wind farm as well as Ilparran Road within the Wellingrove Valley.

9.7 Cumulative Visual Impact Summary

Intervisibility between the Sapphire wind farm and Glen Innes wind farm turbines would potentially occur from residential dwellings south and south east of the Sapphire wind farm and west to north west of the Glen Innes wind farm development. 'Direct' views between the two wind farms would be limited for the majority of residential dwellings due to their position and orientation relative to the proposed turbines and the distribution of dense and scattered tree cover between the wind farm sites. 'Indirect' views would be generally limited to areas east of Swan Vale and around the locality of the Waterloo Road, Ilparran Road and Gwydir Highway junctions.

Intervisibility between the Sapphire wind farm and White Rock wind farm would tend to result in a low 'Direct' and 'Indirect' cumulative visual impact for the large majority of residents within the Sapphire wind farm 10km viewshed due to natural undulating landforms, timbered areas and the separation distance between wind farm turbines. 'Indirect' views would be generally limited to areas east of Swan Vale and around the locality of the Waterloo Road, Ilparran Road and Gwydir Highway junctions.

'Indirect' views would occur within these same areas; however, the number of visible turbines would be relatively low and hence in addition to the individual impact assessment, the cumulative impact assessment would be low for the majority of these residential dwellings.

Motorists travelling along the Gwydir Highway would generally experience a low 'Direct' and 'Indirect' cumulative impact as turbine visibility is limited by local landform, tree cover and the direction of travel relative to turbine locations. Certain local roads would experience 'Sequential' views for relatively short durations within the Sapphire 10km viewshed.

A 'Sequential' view would occur for motorists travelling along the Gwydir Highway although the journey between the wind farms would include a range of views extending toward and beyond turbines. The extent and overall visibility of turbines would be influenced by the direction of travel relative to the alignment of wind turbines as well as the relatively short travel time along the highway and local road network alongside and between the wind farm turbines.

Opportunities to obtain views toward all three wind farms within the Sapphire 10km viewshed are largely restricted; however, more distant views from elevated areas to the west to south west would offer some limited opportunities to view a small portion of each wind farm but from distances approaching 15km and beyond.

This LVIA has determined that the Sapphire wind farm is unlikely to result in any significant 'Direct', 'Indirect' or 'Sequential' cumulative visual impact and is unlikely to significantly increase the level of visual impact that has been determined for the nominated view locations in relation to the Sapphire wind farm development.

Photomontages

SECTION 10

10.1 Photomontages

The DGR's state that the EA must "*include photomontages of the project taken from potentially affected residences (including approved but not yet developed dwellings or subdivisions with residential rights), settlements and significant public view points…*"

Whilst it is possible for any residence with a view toward the Sapphire wind farm turbines to be potentially affected (with a resultant high, moderate or low visual impact), it is not feasible or practical to prepare a photomontage for each and every residence within the Sapphire wind farm 10km viewshed.

In order to provide a representative selection of photomontage, twelve view locations (PM1 to PM11). The twelve photomontage locations are illustrated in **Figure 31**.

The photomontage locations were selected to represent a range of distances between the viewpoint and wind turbines (between 1.4 km and 8.3 km) to illustrate the potential influence of distance on visibility and resultant visual impact.

The photomontages have been prepared with regard to the general guidelines set out in the Scottish Natural Heritage (2006) Visual representation of windfarms: good practice guidance and British Landscape Institute Advice Note 01/11 (March 2011) Photography and photomontage in landscape and visual impact assessment.

Each photomontage was generated through the following steps:

- digital contours were created from a digital terrain model (DTM) of the Sapphire wind farm site;
- the contours were loaded into 'WindFarm' software package;
- the layout of the wind farm and 3 dimensional representation of the wind turbine was configured in 'WindFarm';
- the location of each viewpoint (photo location) was configured in 'WindFarm' – the sun position for each viewpoint was configured by using the time of the photographs from that viewpoint;
- the view from each photomontage location was then assessed in 'WindFarm'. This process requires accurate mapping of the terrain as modelled, with that as seen in the photographs. The photographs, taken from each photomontage location were loaded into 'WindFarm' and the visible turbines superimposed on the photographs;
- the photomontage were adjusted using GIMPshop to compensate for screening by vegetation or obstacles; and
- the final image was converted to JPG format and imported and annotated as the final figure.

Table 24 identifies the ten photomontage locations, property names (where relevant), corresponding reference number identified in the Residential View Matrix outlined in **Tables 17** and **18** as well as the status of each photomontage location.

Table 24 – Photomontage Details

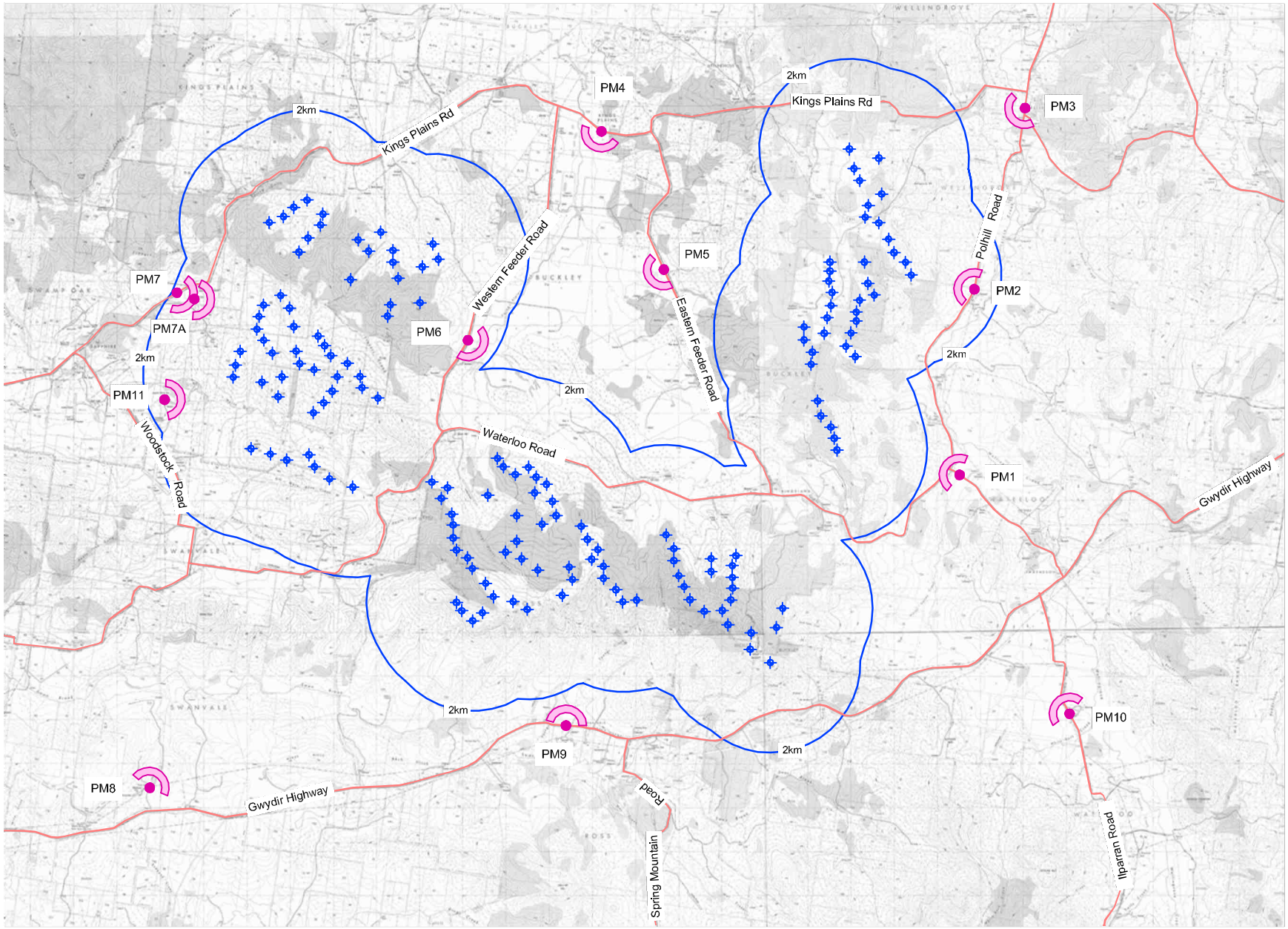
Photomontage Location (Refer Figure 31 for location details)	Figure Reference	Location name and View Location Matrix reference (R) – (Refer Tables 15 and 16)	Status: Residential (associated) Residential (non associated) Road corridor
PM 1 PM1 Detail	**Figures 32** and **33**	Waterloo Road (adjoining Tarana residential property)	Residential property (non associated) bounded by road corridor
PM 2 PM2 Detail	**Figures 34** and **35**	Polhill Road (adjoining Karoola residential property)	Residential property (non associated) bounded by road corridor
PM 3 PM3 Detail	**Figures 36** and **37**	Polhill Road, Wellingrove	Residences (non associated)
PM 4 PM4 Detail	**Figures 38** and **39**	Kings Plains Road	Road corridor
PM 5 PM5 Detail	**Figures 40** and **41**	Eastern Feeder Kings Plains	Road corridor
PM 6 PM6 Detail	**Figures 42** and **43**	Western Feeder Kings Plains	Road corridor
PM 7 PM7 Detail	**Figures 44** and **45**	Kings Plains Road	Road corridor
PM 7A PM7A Detail	**Figures 46** and **47**	Spring Creek Residence	Residential property (non associated)
PM 8 PM8 Detail	**Figures 48** and **49**	Danthonia (Church Communities Australia)	Residential (non associated)
PM 9 PM9 Detail	**Figures 50** and **51**	Swan Vale Gwydir Highway	Road corridor between residential properties (non associated)
PM 10 PM 10 Detail	**Figures 52** and **53**	Ilparran Road (adjoining Balaclava residential property)	Residential property (non associated) bounded by road corridor

Photomontage Location (Refer Figure 31 for location details)	Figure Reference	Location name and View Location Matrix reference (R) – (Refer Tables 15 and 16)	Status: Residential (associated) Residential (non associated) Road corridor
PM11 PM11 Detail	**Figures 54 and 55**	Krystal Blue Residence	Residential property (non associated)

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

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

The British Landscape Institute states that '*it is also important to recognise that two-dimensional photographic images and photomontages alone cannot capture or reflect the complexity underlying the visual experience and should therefore be considered an approximate of the three-dimensional visual experiences that an observer would receive in the field'.*



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

Legend

- Sapphire '80m' wind turbine
- Photomontage Location
- Local road or Highway
- 2km distance from turbines

0km 2.5km 5km

Figure 31
Photomontage Locations

SAPPHIRE WIND FARM

GREEN BEAN DESIGN landscape architects

WIND PROSPECT CWP

Photo A: Viewpoint PM1 Extended panorama
Existing view north west to north from Waterloo Road

Photo B: Viewpoint PM1 Extended panorama
Proposed view north west to north from Waterloo Road
Distance to nearest Sapphire turbine: 2.8km
Number of Sapphire turbines visible: 37

General Notes: Viewpoint PM1, Waterloo Road

Coordinates: Easting 359787, Northing 6711656

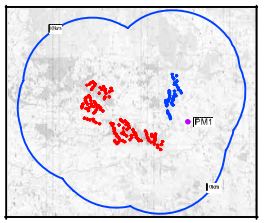
Photo date: 18th January 2011, 1.20pm

Elevation: 931m AHD (+/- 4m)

Camera: Canon EOS 4000, 30mm 1:1.4DC Lens (equivalent to 35mm SLR Camera with 50mm lens). F/16 at 1/160 sec

Original Page Format: A1 Landscape

This photomontage represents the likely view of the proposed Sapphire wind farm.



General location plan - PM1
(Turbine locations are indicative only)

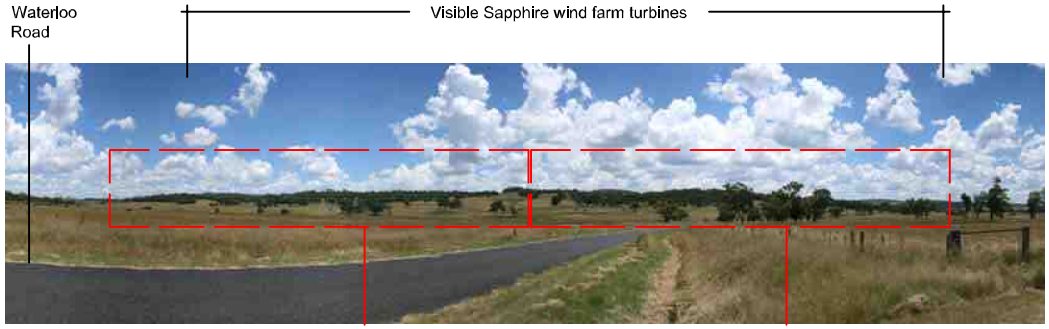
Legend

- Sapphire turbines likely to be visible from Photo Location PM1
- Sapphire turbines unlikely to be visible from Photo Location PM1

Figure 32
Photomontage PM1

SAPPHIRE WIND FARM - PM1 WATERLOO ROAD

Figure 33 Photomontage PM1
Detail Sheet



Photomontage Location PM1
Waterloo Road

Refer Detail A below

Refer Detail B below

Photomontage Location PM1 - Detail A

Photomontage Location PM1 - Detail B

SAPPHIRE WIND FARM - PM1 WATERLOO ROAD

Photo A: Viewpoint PM2 Extended panorama
Existing view south west to north from Polhill Road

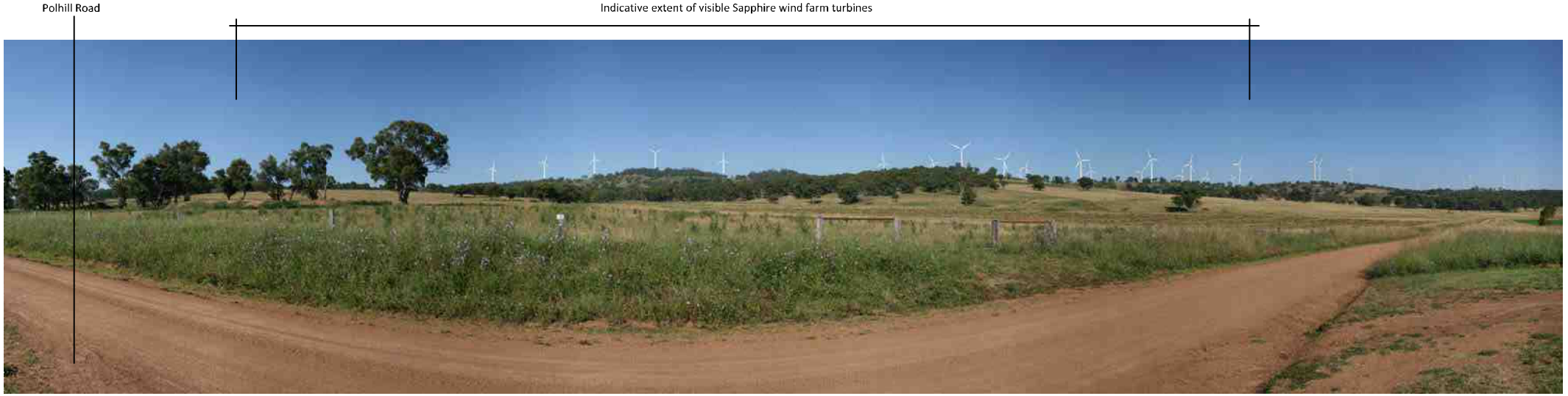


Photo B: Viewpoint PM2 Extended panorama
Proposed view south west to north from Polhill Road
Distance to nearest Sapphire turbine: 1.8km
Number of Sapphire turbines visible: 32

General Notes: Viewpoint PM2, Polhill Road

Coordinates: Easting 358953, Northing 6713973

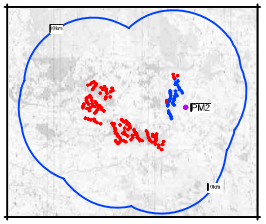
Photo date: 18th January 2011, 9.00am

Elevation: 918m AHD (+/- 4m)

Camera: Canon EOS 4000, 30mm 1:1.4DC Lens (equivalent to 35mm SLR Camera with 50mm lens). F/16 at 1/200 sec

Original Page Format: A1 Landscape

This photomontage represents the likely view of the proposed Sapphire wind farm.



General location plan - PM2
(Turbine locations are indicative only)

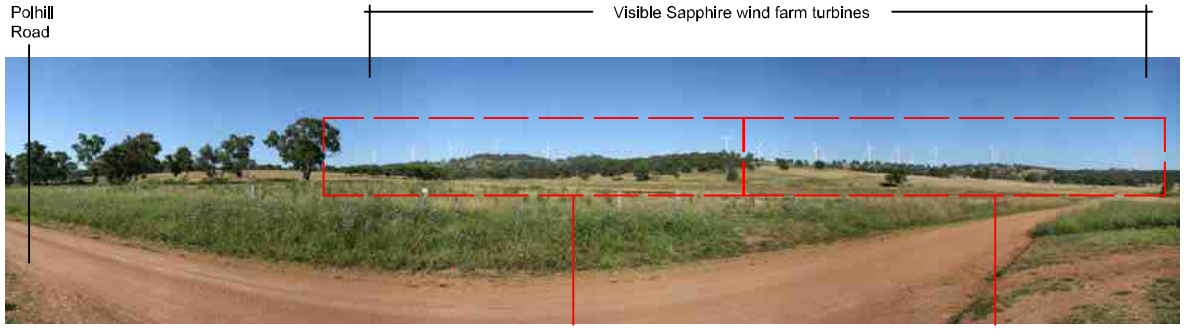
Legend

- Sapphire turbines likely to be visible from Photo Location PM2
- Sapphire turbines unlikely to be visible from Photo Location PM2

Figure 34
Photomontage PM2

SAPPHIRE WIND FARM - PM2 POLHILL ROAD

Figure 35 Photomontage PM2
Detail Sheet



Photomontage Location P3
Polhill Road

Refer Detail A below

Refer Detail B below

Photomontage Location P3 - Detail A

Photomontage Location P3 - Detail B

SAPPHIRE WIND FARM - PM2 POLHILL ROAD

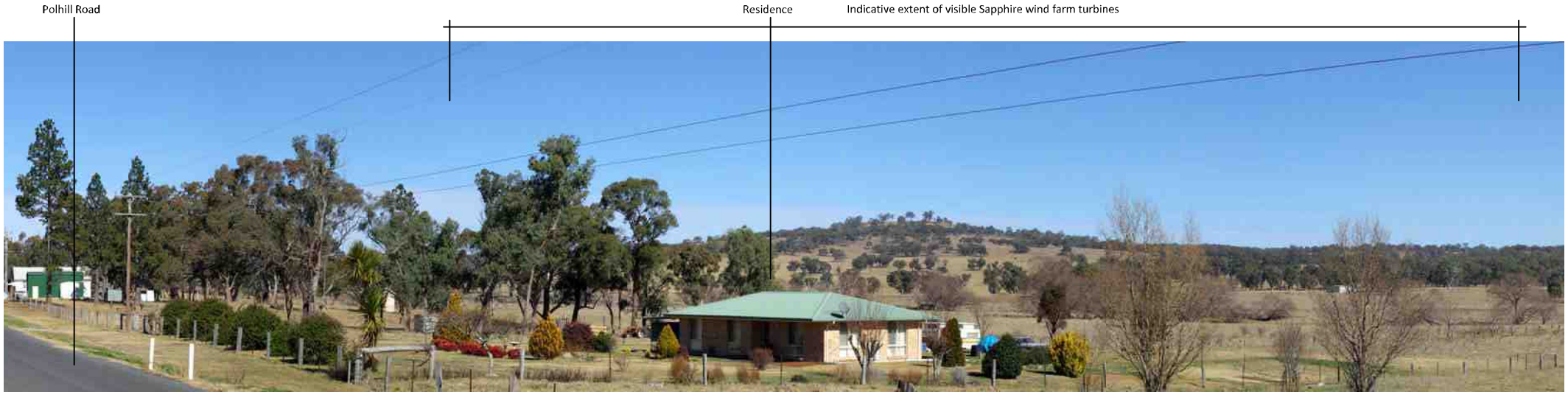


Photo A: Viewpoint PM3 Extended panorama
Existing view south west from Polhill Road, Wellingrove

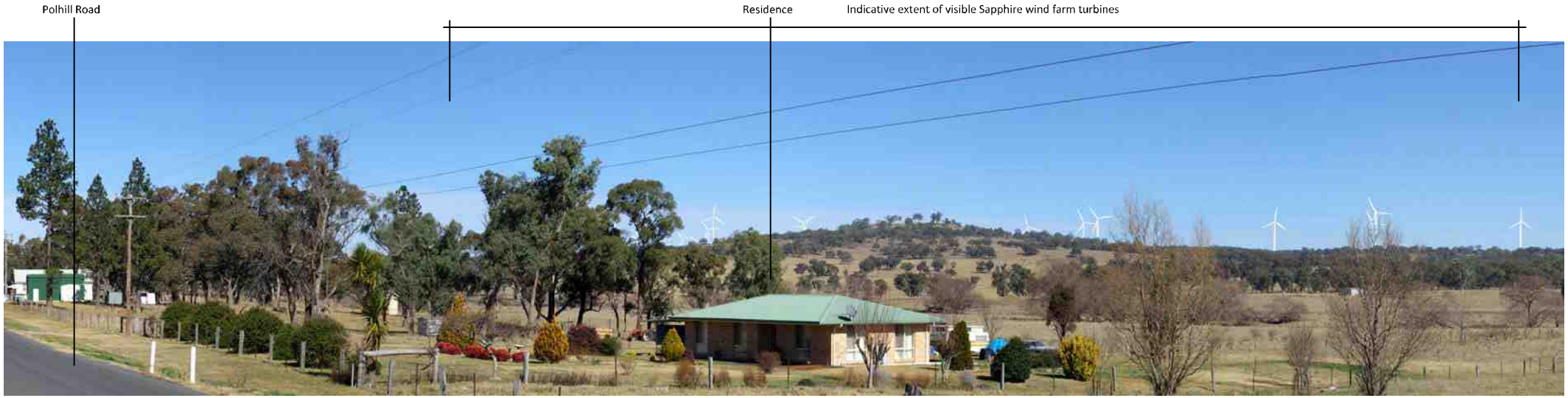


Photo B: Viewpoint PM3 Extended panorama
Proposed view south west from Polhill Road, Wellingrove
Distance to nearest Sapphire turbine: 3.4km
Number of Sapphire turbines visible: 18

General Notes: Viewpoint PM3, Wellingrove

Coordinates: Easting 361228, Northing 6720419

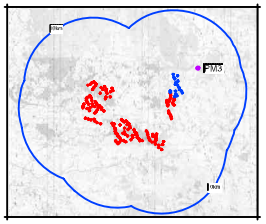
Photo date: 29th June 2009, 10.48am

Elevation: 896m AHD (+/- 4m)

Camera: Pentax KD10, 50mm 1:3.5DA Lens. F/9.5 at 1/250 sec

Original Page Format: A1 Landscape

This photomontage represents the likely view of the proposed Sapphire wind farm.



General location plan - PM3
(Turbine locations are indicative only)

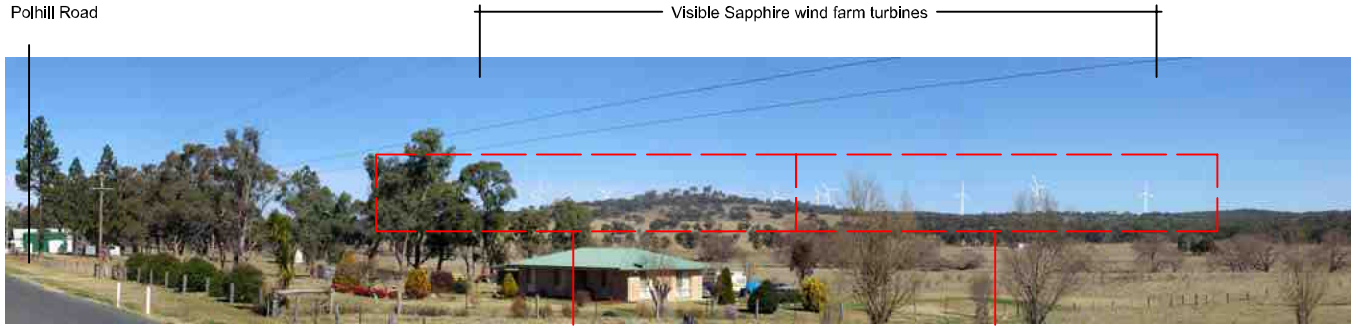
Legend

- Sapphire turbines likely to be visible from Photo Location PM3
- Sapphire turbines unlikely to be visible from Photo Location PM3

Figure 36
Photomontage PM3

SAPPHIRE WIND FARM - PM3 WELLINGROVE

Figure 37 Photomontage PM3
Detail Sheet



Photomontage Location PM3
Polhill Road Wellingrove

Refer Detail A below

Refer Detail B below

Photomontage Location PM3 - Detail A

Photomontage Location PM3 - Detail B

SAPPHIRE WIND FARM - PM3 WELLINGROVE

Photo A: Viewpoint PM4 Extended panorama
Existing view south from Kings Plains Road

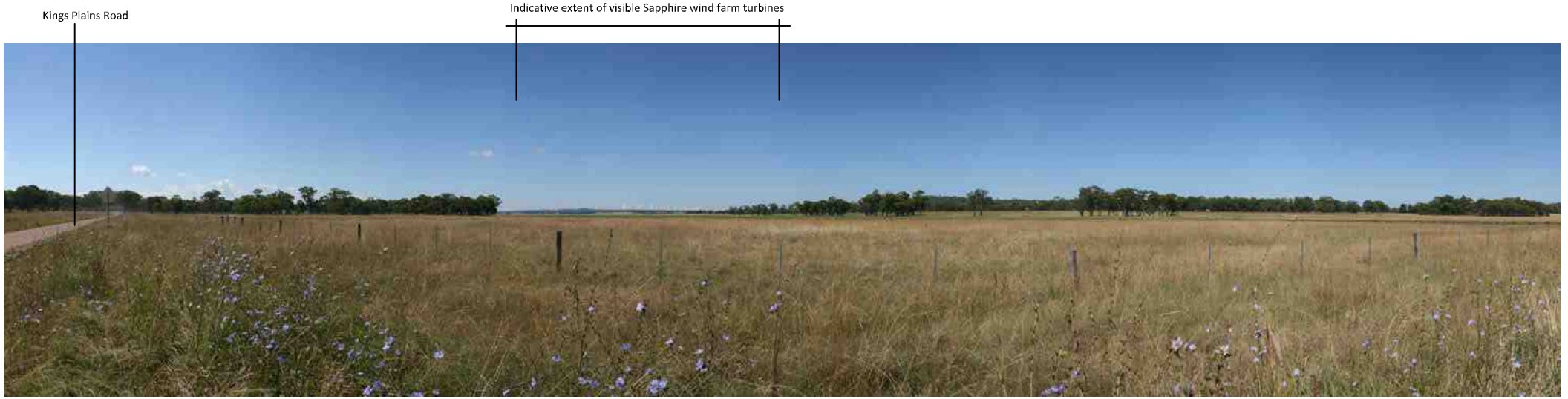


Photo B: Viewpoint PM4 Extended panorama
Proposed view south from Kings Plains Road
Distance to nearest Sapphire turbine: 8km
Number of Sapphire turbines visible: 44

General Notes: Viewpoint PM4, Kings Plains Road

Coordinates: Easting 351002, Northing 6719878

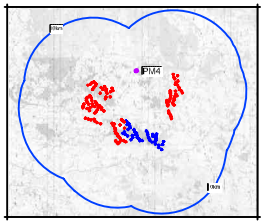
Photo date: 18th January 2011, 10.30am

Elevation: 929m AHD (+/- 4m)

Camera: Canon EOS 4000, 30mm 1:1.4DC Lens (equivalent to 35mm SLR Camera with 50mm lens). F/16 at 1/200 sec

Original Page Format: A1 Landscape

This photomontage represents the likely view of the proposed Sapphire wind farm.



General location plan - PM4
(Turbine locations are indicative only)

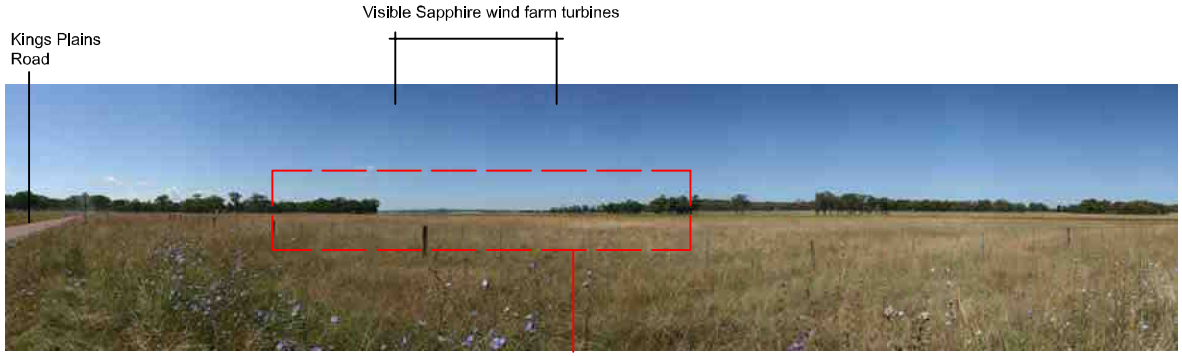
Legend

- Sapphire turbines likely to be visible from Photo Location PM4
- Sapphire turbines unlikely to be visible from Photo Location PM4

Figure 38
Photomontage PM4

SAPPHIRE WIND FARM - PM4 KINGS PLAINS ROAD

Figure 39 Photomontage PM4
Detail Sheet



Photomontage Location PM4
Kings Plains Road

Refer Detail A below

Photomontage Location PM4 - Detail A

SAPPHIRE WIND FARM - PM4 KINGS PLAINS ROAD

Photo A: Viewpoint PM5 Extended panorama
Existing view west to south west from Eastern Feeder Road

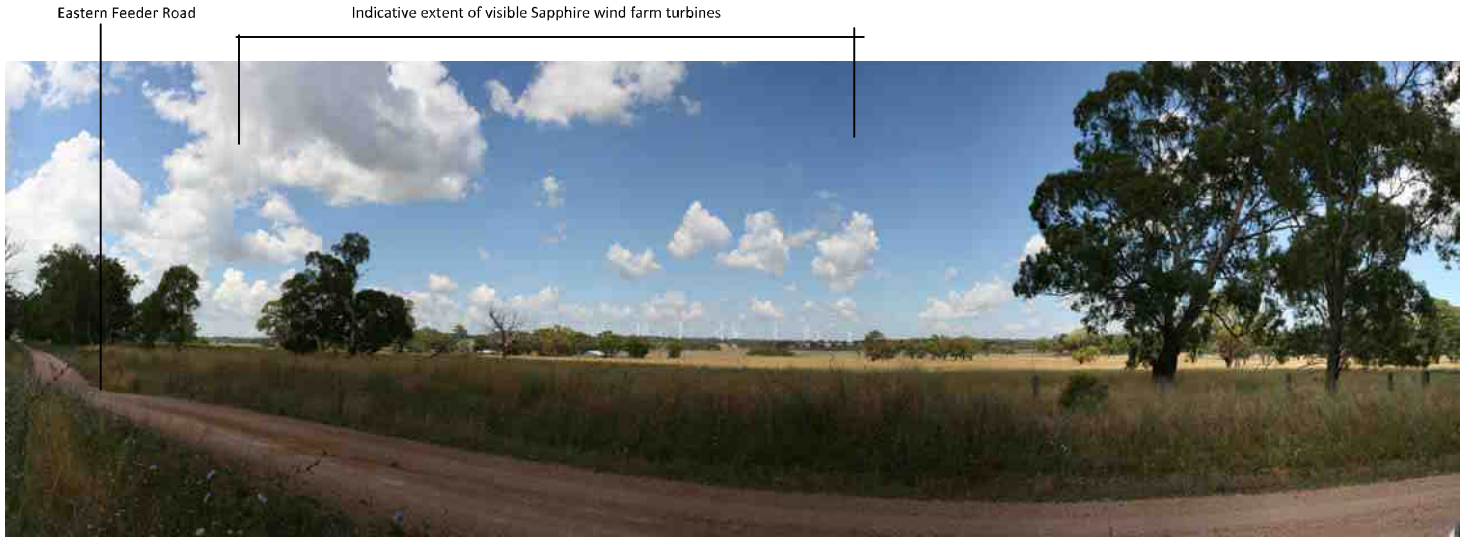


Photo B: Viewpoint PM5 Extended panorama
Proposed view west to south west from Eastern Feeder Road
Distance to nearest Sapphire turbine: 5km
Number of Sapphire turbines visible: 34

General Notes: Viewpoint PM5, Eastern Feeder Road

Coordinates: Easting 353400, Northing 6715217

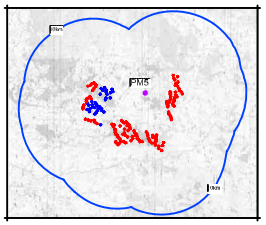
Photo date: 18th January 2011, 11.45am

Elevation: 963m AHD (+/- 4m)

Camera: Canon EOS 4000, 30mm 1:1.4DC Lens (equivalent to 35mm SLR Camera with 50mm lens). F/16 at 1/400 sec

Original Page Format: A1 Landscape

This photomontage represents the likely view of the proposed Sapphire wind farm.



General location plan - PM5
(Turbine locations are indicative only)

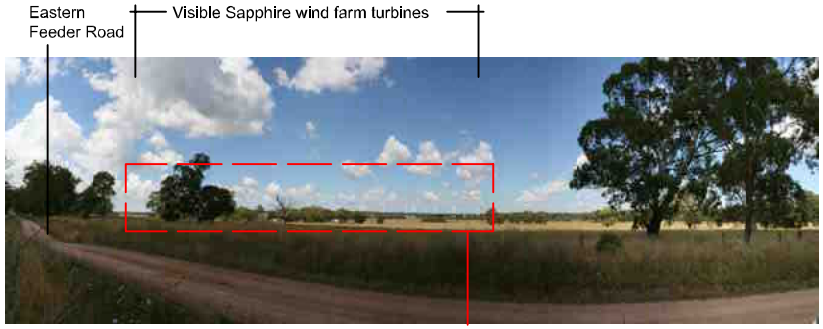
Legend

- Sapphire turbines likely to be visible from Photo Location PM5
- Sapphire turbines unlikely to be visible from Photo Location PM5

Figure 40
Photomontage PM5

SAPPHIRE WIND FARM - PM5 EASTERN FEEDER ROAD

Figure 41 Photomontage PM5
Detail Sheet



Photomontage Location PM5 Refer Detail A below
Eastern Feeder Road

Photomontage Location PM5 - Detail A

SAPPHIRE WIND FARM - PM5 EASTERN FEEDER ROAD

Photo A: Viewpoint PM6 Extended panorama
Existing view south east to north east from Western Feeder Road

Photo B: Viewpoint PM6 Extended panorama
Proposed view south east to north east from Western Feeder Road
Distance to nearest Sapphire turbine: 6.5km
Number of Sapphire turbines visible: 58

General Notes: Viewpoint PM6, Western Feeder Road

Coordinates: Easting 359787, Northing 6711656

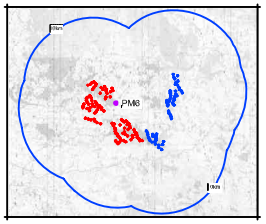
Photo date: 18th January 2011, 2.00pm

Elevation: 946m AHD (+/- 4m)

Camera: Canon EOS 4000, 30mm 1:1.4DC Lens (equivalent to 35mm SLR Camera with 50mm lens). F/16 at 1/400 sec

Original Page Format: A1 Landscape

This photomontage represents the likely view of the proposed Sapphire wind farm.



General location plan - PM6
(Turbine locations are indicative only)

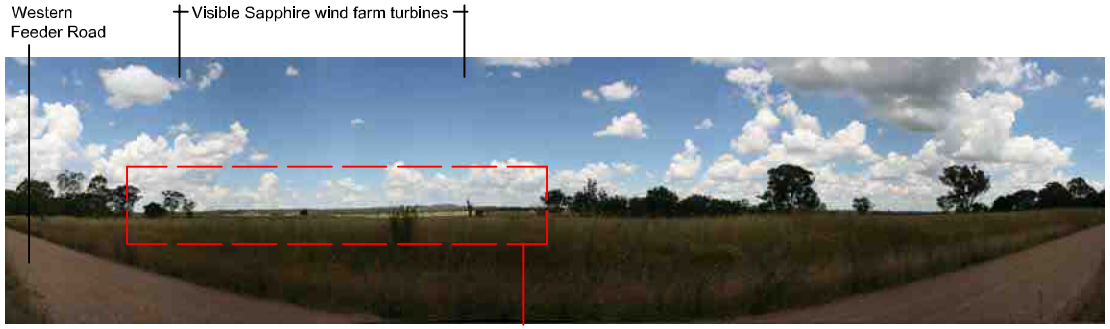
Legend

- Sapphire turbines likely to be visible from Photo Location PM6
- Sapphire turbines unlikely to be visible from Photo Location PM6

Figure 42
Photomontage PM6

SAPPHIRE WIND FARM - PM6 WESTERN FEEDER ROAD

Figure 43 Photomontage PM6
Detail Sheet



Photomontage Location PM6
Western Feeder Road

Refer Detail A below

Photomontage Location PM6 - Detail A

SAPPHIRE WIND FARM - PM6 WESTERN FEEDER ROAD

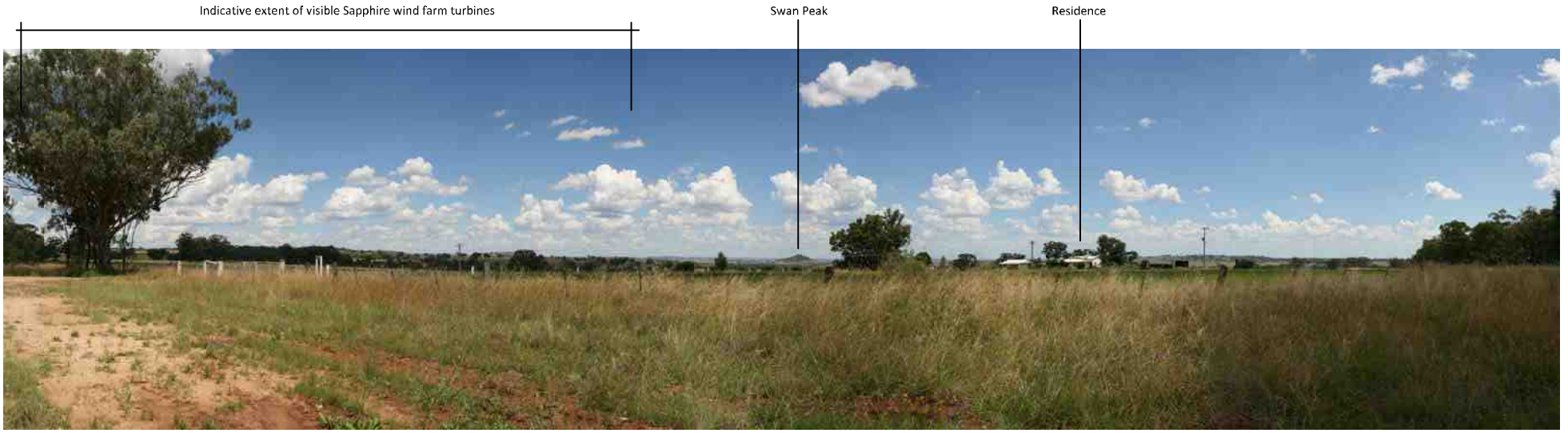


Photo A: Viewpoint PM7 Extended panorama
Existing view north east to south from Kings Plains Road

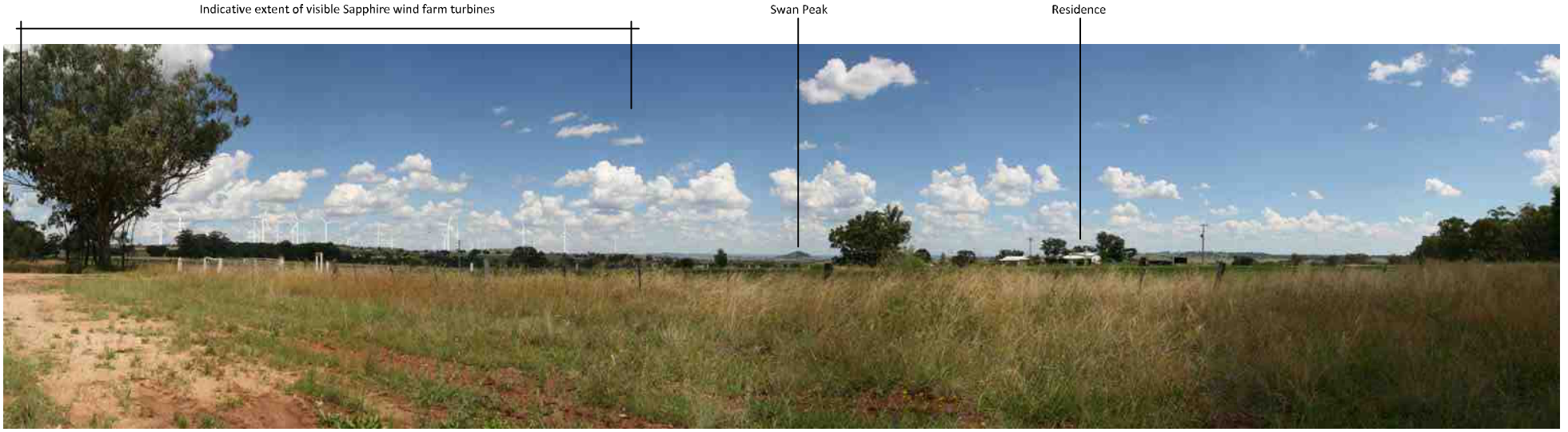


Photo B: Viewpoint PM7 Extended panorama
Proposed view north east to south from Kings Plains Road
Distance to nearest Sapphire turbine: 1.75km
Number of Sapphire turbines visible: 56

General Notes: Viewpoint PM7, Kings Plains Road

Coordinates: Easting 341880, Northing 6716075

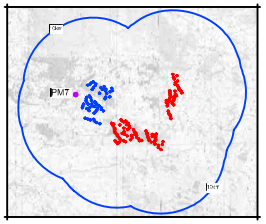
Photo date: 18th January 2011, 3.00pm

Elevation: 835m AHD (+/- 5m)

Camera: Canon EOS 4000, 30mm 1:1.4DC Lens (equivalent to 35mm SLR Camera with 50mm lens). F/16 at 1/320 sec

Original Page Format: A1 Landscape

This photomontage represents the likely view of the proposed Sapphire wind farm.



General location plan - PM7
(Turbine locations are indicative only)

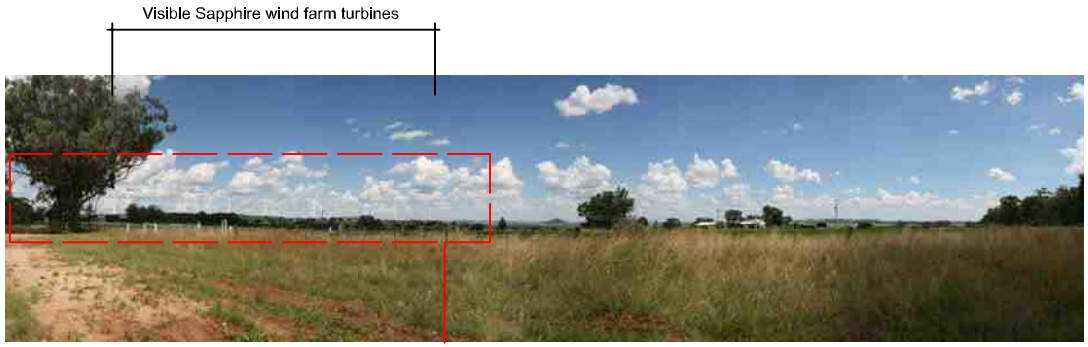
Legend

- Sapphire turbines likely to be visible from Photo Location PM7
- Sapphire turbines unlikely to be visible from Photo Location PM7

Figure 44
Photomontage PM7

SAPPHIRE WIND FARM - PM7 KINGS PLAINS ROAD

Figure 45 Photomontage PM7
Detail Sheet



Photomontage Location PM7
Kings Plains Road

Refer Detail A below

Photomontage Location PM7 - Detail A

SAPPHIRE WIND FARM - PM7 KINGS PLAINS ROAD

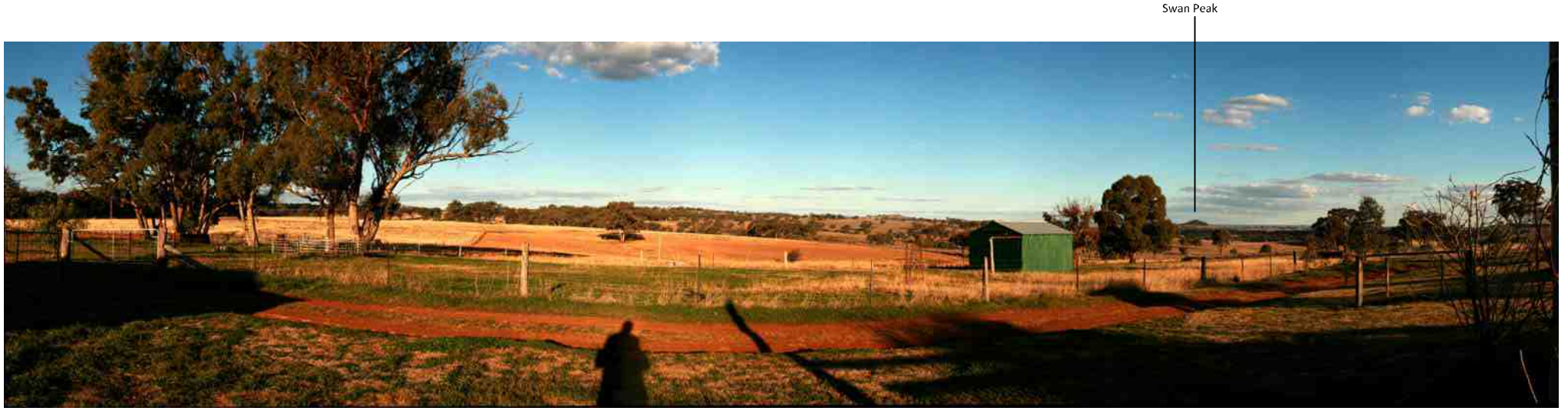


Photo A: Viewpoint PM7A Extended panorama
Existing view north east to south east from Spring Creek

Photo B: Viewpoint PM7A Extended panorama
Proposed view north east to south east from Spring Creek
Distance to nearest Sapphire turbine: 1.8km
Number of Sapphire turbines visible: 60

General Notes: Viewpoint PM7A, Spring Creek

Coordinates: Easting 341823, Northing 6715905

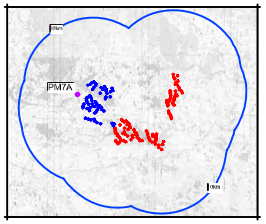
Photo date: 2nd August 2011, 4.15pm

Elevation: 831m AHD (+/- 4m)

Camera: Canon EOS 4000, 30mm 1:1.4DC Lens (equivalent to 35mm SLR Camera with 50mm lens). F/16 at 1/500 sec

Original Page Format: A1 Landscape

This photomontage represents the likely view of the proposed Sapphire wind farm.



General location plan - PM7A
(Turbine locations are indicative only)

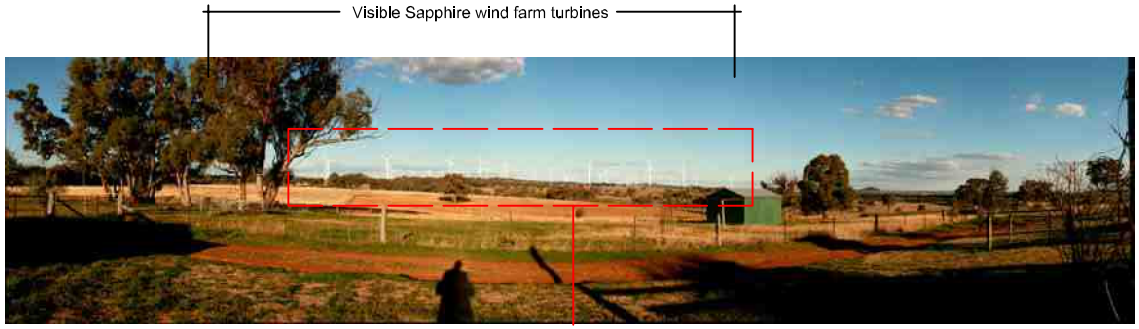
Legend

- Sapphire turbines likely to be visible from Photo Location PM7A
- Sapphire turbines unlikely to be visible from Photo Location PM7A

Figure 46
Photomontage PM7A

SAPPHIRE WIND FARM - PM7A SPRING CREEK

Figure 47 Photomontage PM7A
Detail Sheet



Photomontage Location PM7A
Spring Creek

Refer Detail A below

Photomontage Location PM7A - Detail A

SAPPHIRE WIND FARM - PM7A SPRING CREEK

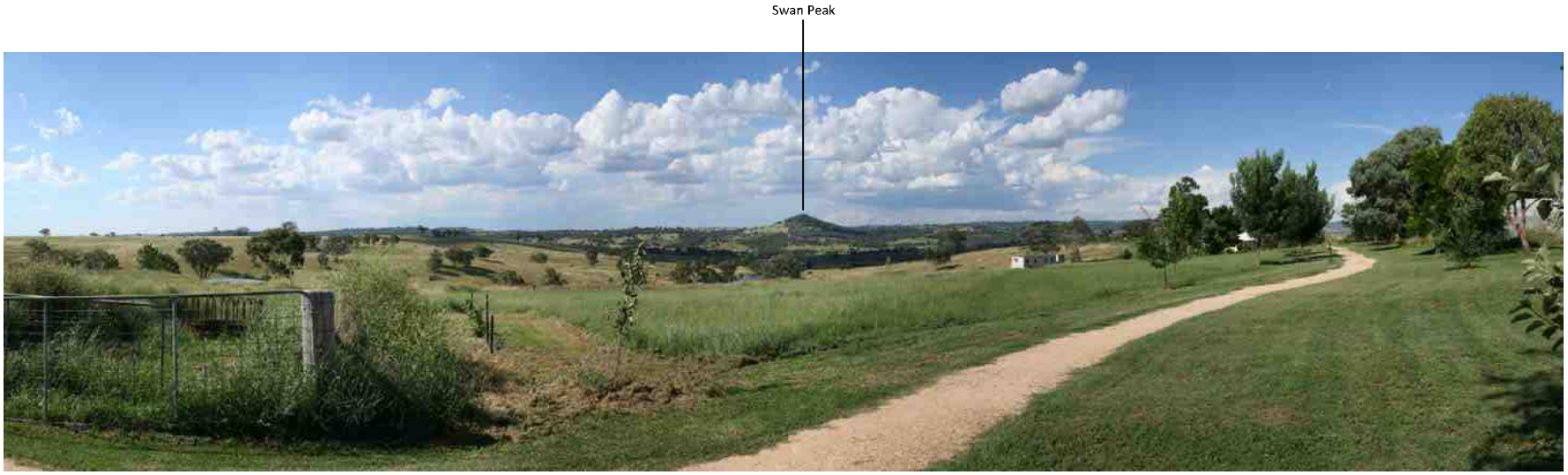


Photo A: Viewpoint PM8 Extended panorama
Existing view north east from Danthonia

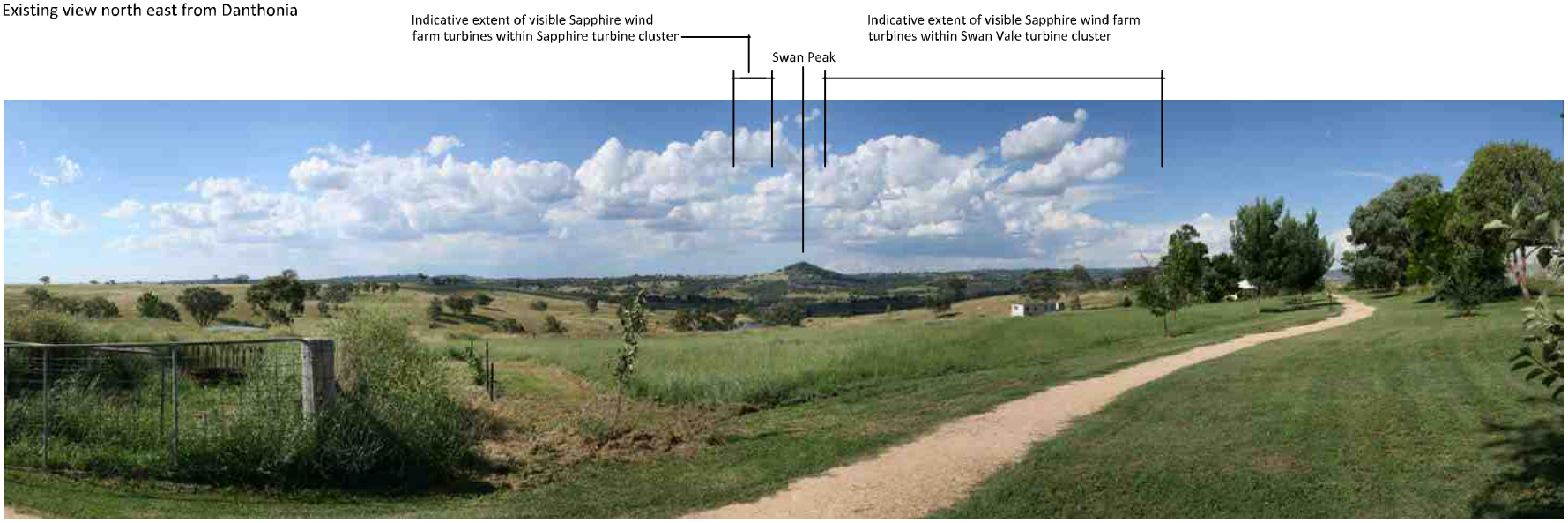


Photo B: Viewpoint PM8 Extended panorama
Proposed view north east from Danthonia
Distance to nearest Sapphire turbine: 8.4km
Number of Sapphire turbines visible: 55

General Notes: Viewpoint PM8, Danthonia

Coordinates: Easting 340619, Northing 6704619

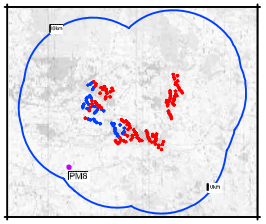
Photo date: 18th January 2011, 3.45pm

Elevation: 785m AHD (+/- 5m)

Camera: Canon EOS 4000, 30mm 1:1.4DC Lens (equivalent to 35mm SLR Camera with 50mm lens). F/16 at 1/200 sec

Original Page Format: A1 Landscape

This photomontage represents the likely view of the proposed Sapphire wind farm.



General location plan - PM8
(Turbine locations are indicative only)

Legend

- Sapphire turbines likely to be visible from Photo Location PM8
- Sapphire turbines unlikely to be visible from Photo Location PM8

Figure 48
Photomontage PM8

SAPPHIRE WIND FARM - PM8 DANTHONIA