Existing View | 180º Baseline Panorama

Proposed View | 180º Photomontage

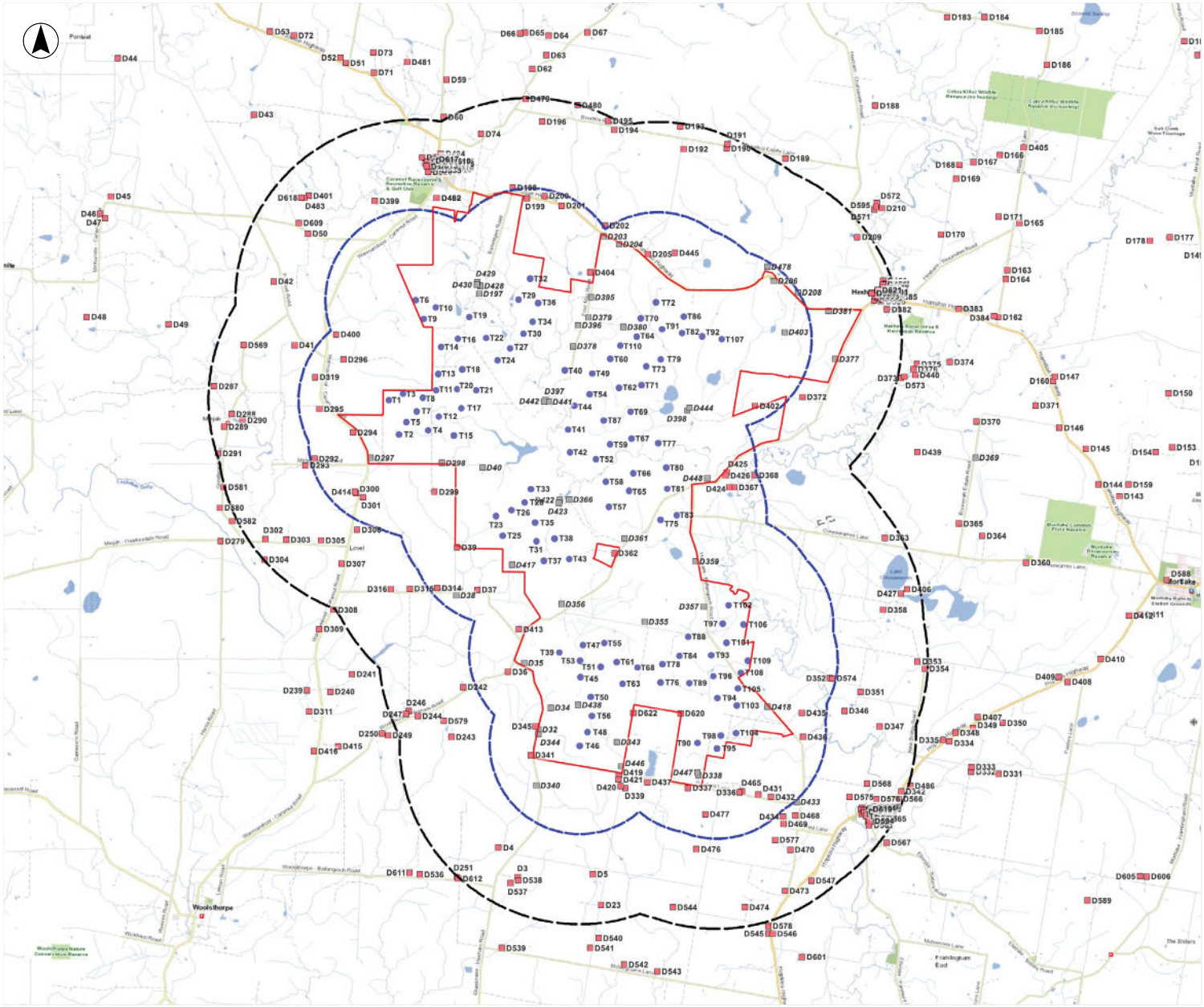
Figure 14.11 VP09: Warrnambool-Caramut Road, looking north-east (Top: existing view; Bottom: project photomontage) (Source: Moir Landscape Architecture)

Dwellings

Of the 49 non-involved dwellings located within three kilometres of a proposed project wind turbine, 39 dwellings are surrounded by screening elements such as vegetation and / or structures that would help limit views of the project.

A representative dwelling assessment was undertaken for 28 non-involved dwellings within three kilometres of the nearest turbine. The representative dwelling assessment locations were selected to best represent varying distances and viewing directions from dwellings within this distance. Of these dwellings, prior to the implementation of management measures, 19 were assessed as having a low visual impact rating, seven were assessed as having a moderate visual impact rating, and two were assessed as having a high visual impact rating. Through the implementation of the recommended management measures [EMM LV02], dwellings with potential for a moderate or high visual impact rating would be significantly reduced. Once vegetation screening is established, it is anticipated that residual impacts would be acceptable.

Figure 14.12 shows the location of these 28 non-involved dwellings, and Table 14.12 summarises the findings of this assessment.



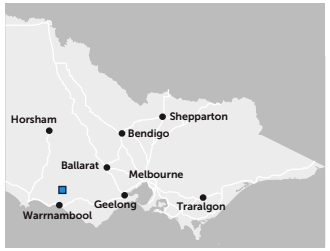
Legend

- Project Boundary
- Proposed 260 m Turbine Location
- Involved Dwelling
- Non-involved Dwelling
- 3,000 m from nearest turbine
- 6,000 m from nearest turbine
- Main Road
- Minor Road

DWELLING IMPACT RATINGS:

- Nil / Negligible Visual Impact Rating
- Low Visual Impact Rating
- Moderate Visual Impact Rating
- High Visual Impact Rating
- Representative Public Viewpoints

0 2 4 6 8 10km



Data: State of Victoria (DECCA/Land Use Victoria), Commonwealth of Australia, Wind Prospect, and specialist studies/reports. Data is indicative only; accuracy and completeness are not guaranteed.

Figure 14.12 Dwellings assessment locations and impact ratings

Table 14.12 Dwelling visual impact assessment summary

Dwelling ID	Distance to nearest project turbine	Initial visual impact rating	Landscape mitigation	Residual visual impact rating
D36	1.82 kilometres	Low	Existing vegetation would screen view to the turbines. Mitigation is not required.	No change
D37	1.99 kilometres	Low	Existing vegetation would screen view to the turbines. Mitigation is not required.	No change
D39	1.52 kilometres	Moderate	Turbines within three kilometres are likely to be visible at the dwelling. Supplementary screen planting along the eastern side of the dwelling would potentially reduce the visual impact to **low**. Consultation with the landowner is recommended to discuss appropriate mitigation.	Low
D205	1.53 kilometres	Low	Existing vegetation would screen view to majority of the turbines. Mitigation is not required.	No change
D294	2.00 kilometres	Low	Existing vegetation would screen view to majority of the turbines. Mitigation is not required.	No change
D295	2.32 kilometres	Moderate	It is likely that all turbines would be visible at hub height when viewed from this dwelling. Provision of screen planting in the dwelling foreground to the east would potentially reduce the visual impact to **low**. Consultation with the landowner is recommended to discuss appropriate mitigation.	Low
D296	2.01 kilometres	Low	Existing vegetation would screen views to majority of the turbines. Mitigation is not required.	No change
D299*	1.55 kilometres	Low	It is likely that turbines would be screened by existing vegetation. Mitigation is not required.	No change
D314	2.76 kilometres	Low	It is likely that majority of the turbines would be screened by existing vegetation and farm outbuildings. Mitigation is not required.	No change
D336	1.33 kilometres	Low	It is likely that majority of the turbines would be screened by existing vegetation. Mitigation is not required.	No change
D337*	1.54 kilometres	Low	Mitigation is not required.	No change
D339	2.11 kilometres	Low	Mitigation is not required.	No change
D341	1.68 kilometres	Low	Existing vegetation would screen view to the turbines. Mitigation is not required.	No change
D345*	1.59 kilometres	Low	Mitigation is not required.	No change
D352	2.82 kilometres	Moderate	Supplementary screen planting along the existing row of windbreak vegetation would potentially reduce the visual impact to **low** once planting is established. Consultation with the landowner is recommended to discuss appropriate mitigation options.	Low
D362	1.51 kilometres	Low	Existing vegetation would screen view to majority of the turbines. Mitigation is not required.	No change
D402	2.34 kilometres	Low	Existing vegetation would screen view to the turbines. Mitigation is not required.	No change
D404	1.99 kilometres	Low	Existing vegetation and farm outbuildings would screen views to majority of the turbines. Mitigation is not required.	No change

Dwelling ID	Distance to nearest project turbine	Initial visual impact rating	Landscape mitigation	Residual visual impact rating
D413*	1.54 kilometres	Moderate	It is likely that there would be views of the project to the east and south-east. Additional screen planting along the along the driveway would potentially reduce the visual impact to **low** once the planting is established. Consultation with the landowner is recommended to discuss appropriate mitigation.	Low
D421	1.74 kilometres	Moderate	It is likely that the nearest turbines would be visible and visually dominant. Additional screen planting on the northern side of the dwelling would potentially reduce the visual impact to **low**. Consultation with the landowner is recommended to discuss appropriate mitigation.	Low
D435	2.14 kilometres	Moderate	Additional screen planting on the west of the dwelling would potentially reduce the visual impact to **low**. Consultation with the landowner is recommended to discuss appropriate mitigation.	Low
D436	2.14 kilometres	Low	Existing vegetation would screen view to the turbines. No mitigation required.	No change
D445	1.85 kilometres	High	It is likely that majority of the turbines would be visible to the south of the dwelling. Additional screen planting along the southern fence line would potentially reduce the visual impact to **moderate**. Consultation with the landowner is recommended to discuss appropriate mitigation.	Moderate
D622	1.03 kilometres	High	It is likely that majority of the turbines would be visible at the dwelling. Additional screen planting in the northern, eastern and south-western directions would potentially reduce the visual impact to **moderate-low**. Consultation with the landowner is recommended to discuss appropriate mitigation.	Moderate-low
D424	1.99 kilometres	Low	Existing vegetation would screen view to the turbines. No mitigation required.	No change
D367	2.12 kilometres	Low	Existing vegetation would screen view to the turbines. No mitigation required.	No change
D425	2.02 kilometres	Moderate	Screen planting in the dwelling's foreground to the northwest would potentially reduce the visual impact to **low** as demonstrated in locations where existing windbreak planting is effective in screening views, however this will take time to establish. The visual impact rating is therefore **moderate**. Consultation with the landowner is recommended to discuss appropriate mitigation.	Moderate
D301	2.40 kilometres	Low	Existing vegetation would screen view to the turbines. No mitigation required.	No change

** No access to the dwelling was available*

Lighting

The ***Aviation Impact Assessment*** (Appendix O) determined that the project would not require aviation obstacle lighting. However, should this lighting be required as a condition of the project planning permit, it is unlikely to impact dwellings as internal lights reflect on windows and limit views to the exterior at night. The highest visual impact is likely to be in the outdoors landscape, where the dark sky is a valued quality of the rural landscape due to the lack of light pollution. If aviation obstacle lighting is required, the implementation of EMM LV03 would reduce the potential visual impact of night lighting (described in Section 14.7.3) to an ambient level as opposed to direct visibility.

Security lighting is proposed for areas including the operations and maintenance facilities and terminal station. However, it is unlikely the proposed night lighting would create a noticeable impact on the existing night time landscape. Implementing the measures contained in EMM LV04, described in Section 14.7.3, it is likely that there would be no visual impacts from night lighting of ancillary structures.

Cumulative visual impacts

The proposed Mt Fyans Wind Farm project is the only wind farm project located within six kilometres of the project site. Nine non-involved dwellings are located within six kilometres of a project wind turbine and the Mt Fyans Wind Farm. Detailed assessment identified that all nine dwellings are likely to have limited or no views to the projects due to screening provided by existing vegetation and structures.

A Zone of Visual Influence (based on topography) was prepared to assess areas where there is the potential to view both projects simultaneously (Figure 14.13). Based on this Zone of Visual Influence, simultaneous views to both the project and Mt Fyans Wind Farm may be possible along Hamilton Highway, Hopkins Highway and Connewarren Lane due to the relatively flat topography. However, considering the direction and speed of travel along Hamilton Highway and Hopkins Highway, motorists would have limited opportunities to view both projects. Patches of dense vegetation along these roads and Connewarren Lane would also limit views of multiple wind farm projects.

There would be opportunities to view the Mortons Lane Wind Farm and the project simultaneously when travelling along Hamilton Highway to the north-west of the project site, and the Salt Creek Wind Farm and the project when travelling along Hamilton Highway to the north-east of the project site. However, the wind turbines are located at a distance where they would not be a dominant element in the landscape, and vegetation along the roadsides would also assist to screen views.

The potential cumulative visual impact of the wind farms when viewed sequentially may result in a change in the overall perception of the landscape. From public viewing locations and travel corridors such as the Hamilton Highway, it is considered that the turbines will be visible within the landscape. Due to the close proximity of Mt Fyans Wind Farm, it is likely that the project will be viewed as an extension of the Mt Fyans project. The height of the proposed turbines (260 metre tip height) is generally consistent with the height of the turbines associated with Mt Fyans (200 metre tip height), and therefore, the region's broader character is likely to be perceived as a landscape that is characterised by operations that harness wind energy.

Potential cumulative visual impacts are further discussed in Chapter 26 – ***Cumulative effects***.

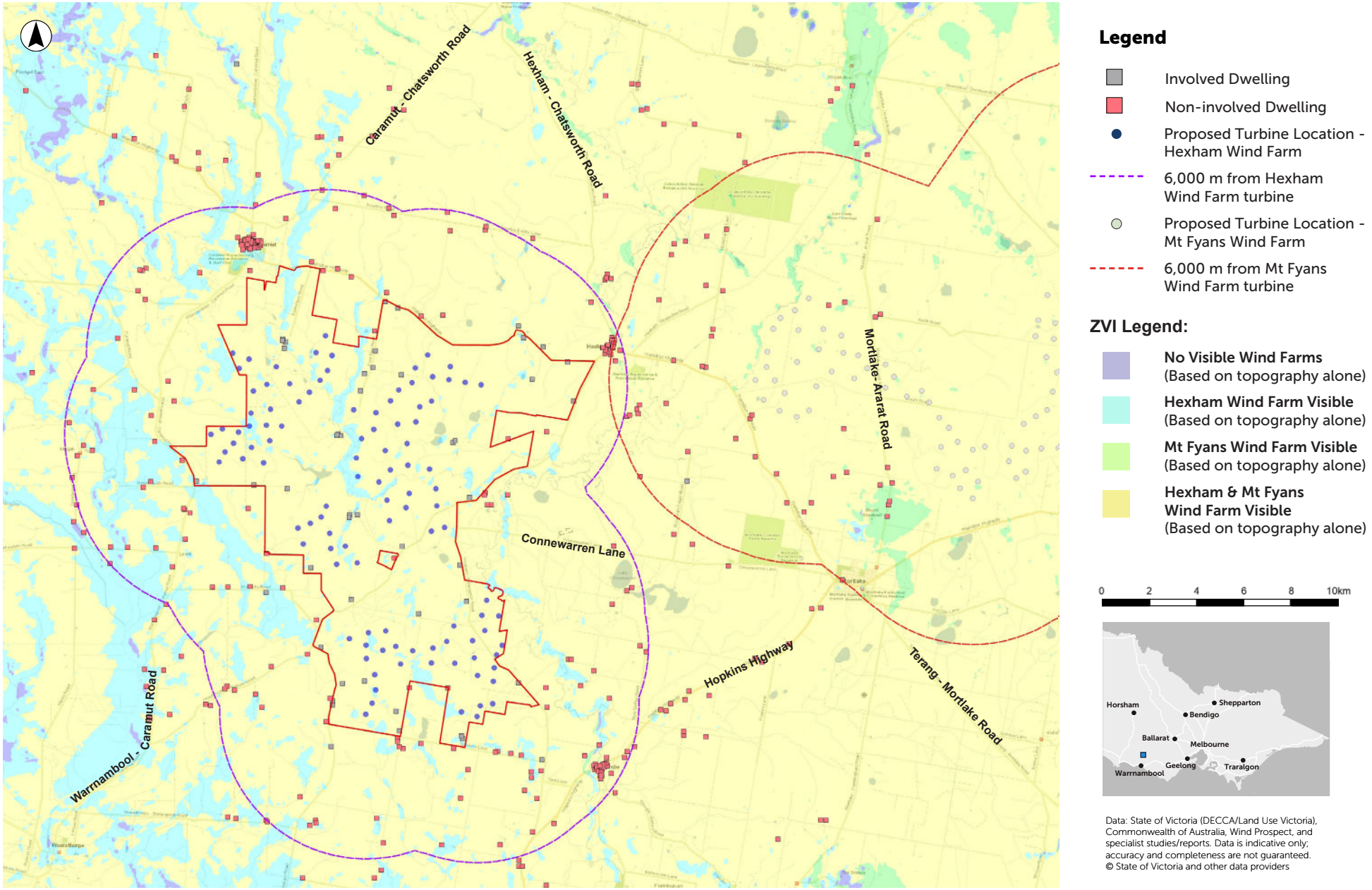


Figure 14.13 Cumulative Zone of Visual Influence for the project and Mt Fyans Wind Farm

14.7.5 Impact assessment summary

A summary of the landscape and visual impact assessment is provided in Table 14.13, with the full assessment presented in Appendix F1 – ***Landscape and Visual Impact Assessment***.

Table 14.13 Landscape and visual impact assessment summary

Impact pathway	Asset, value or receptor	Project phase	Likely impact (considering magnitude, extent and duration)	Potential for visual impacts (with management measures)
Potential for the project to have a visual impact from public or private viewpoints outside of the project site	Public and private viewpoints	Construction	Construction activities would be short in duration and confined to discrete areas across the project site.	The visual impact of project construction would be **high** for viewers who do not like the appearance of wind farms and **low – positive** for others.
Potential for the project to impact landscape character	Landscape Character Units (see Table 14.6)	Operation	The project is likely to be visible from all Landscape Character Units, to varying degrees. However, existing vegetation and structures would limit opportunities to view the project.	It is likely the broader character of investigation area which is highly modified due to the agricultural land use, would remain intact.
Potential for the project to have a visual impact from publicly available viewpoints	Major roads (highways), connector roads and local roads	Operation	Change to the existing landscape character are likely to cause impact relating to visual magnitude associated with visual contrast.	Sixteen public viewpoint locations from roads were assessed as having a **low** visual impact rating, three were assessed as having a **moderate-low** visual impact rating, and four were assessed as having a **moderate** visual impact rating.
	Ellerslie Cemetery and Ellerslie Memorial Park	Operation	Change to the existing landscape character are likely to cause impact relating to visual sensitivity associated with scenic quality and integrity of landscape.	The overall visual impact of the project in views from these locations would be **moderate**.
Potential for the project to have a visual impact to residential dwellings	Residential dwellings	Operation	At distances where the project comprises greater than 50% of the field of the vertical field of view (i.e., less than three kilometres from the project) the project would always be visually dominant.	Two non-involved dwellings within three kilometres of a proposed project wind turbine would have **moderate-low** to **moderate** visual impact following the implementation of management measures. It is considered that, in conjunction with design measures, these management measures would significantly reduce the visual impact to an acceptable level at all non-involved dwellings.

Impact pathway	Asset, value or receptor	Project phase	Likely impact (considering magnitude, extent and duration)	Potential for visual impacts (with management measures)
Potential for visual impacts due to aviation obstacle lighting	Road users and residential dwellings	Operation	Few existing sources of lighting are present in the night time landscape of the investigation area. Aviation lighting has the potential to impact receptors who view the landscape at night.	Should aviation obstacle lighting be required, it is assumed that night lighting is unlikely to be experienced from inside of a dwelling as internal lights reflect on windows and limit views to the exterior at night.
Potential for visual impacts due to lighting of ancillary structures	Residential dwellings	Operation	Few existing sources of lighting are present in the night time landscape of the investigation area. It is unlikely that night lighting associated with the ancillary infrastructure would create a noticeable impact on the existing night time landscape.	With management measures, visual impacts from lighting of ancillary structures are unlikely.
Potential for cumulative visual impacts	Road users	Operation	Simultaneous views of multiple wind farms would be limited due to road side vegetation screening, direction, and speed of travel. Sequential views of multiple wind farms are highly likely along key travel corridors.	The overall visual impact of the project in views from travel corridors would be low.
	Residential dwellings	Operation	It is highly likely that the impact on private viewing locations would be limited due to moderate to dense vegetation surrounding dwellings limits views of the project.	The overall visual impact of the project in views from residential dwellings would be low.

14.8 Conclusions

Wind farm developments have the potential to cause visual impacts through changes to the landscape character. The impacts are influenced by various factors, including the characteristics of the wind farm (such as the number and height of turbines, and presence of transmission lines and access tracks), the existing land use or modification of the landscape, and the visibility and distance to the wind farm infrastructure. The overall perceived visual impact can also vary depending on the individual viewer's sensitivity to and acceptance of change, which can be influenced by the viewer's connection with the landscape.

Within the investigation area, existing vegetation surrounding dwellings and along roadsides would significantly reduce visibility towards the project. The greatest visual impacts are most likely to be experienced by residents in the immediate vicinity of the project, however existing vegetation surrounding dwellings that provide windbreaks may also assist in screening views to the wind farm.

To minimise potential visual impacts of the project, the design has incorporated a 1.5-kilometre buffer of non-involved dwellings, and a minimum three-kilometre buffer of surrounding townships. In addition to these design measures, proposed vegetation screening [EMM LV02] is anticipated to have a positive effect on reducing visual impacts of the project from non-involved dwellings (identified as having a moderate or high visual impact prior to mitigation) to an acceptable level.