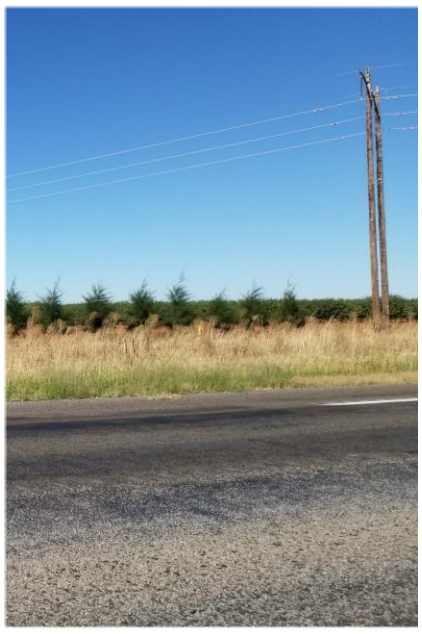
Visual Impact Assessment

Huddersfield Almond Orchard Frost Fan Development

March 2022

Project Number: 20-066



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Document verification

Project Title:	Huddersfield Almond Orchard Frost Fan Development
Project Number:	20-066
Project File Name:	22-066 Huddersfield Almond Orchard VIA Final V1.docx

Revision	Date	Prepared by	Reviewed by	Approved by
Draft V1	18/03/2022	Kyle Mercer	Sarah Hillis	Sarah Hillis
Final V1.0	25/03/2022	Kyle Mercer	Minor changes	Minor changes

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Table of contents

Figures

Tables

Appendices

1. Introduction

1.1 Approach

1.1.1 Visual sensitivity

Visual sensitivity is a measure of how critically a change to the existing landscape is viewed by people from different areas. The assessment is based on the number of people affected, land use, and the distance of the viewer from the Proposal area.

For example, a significant change that is not frequently seen may result in a low visual sensitivity although its impact on a landscape may be high. Generally the following principles apply:

- Visual sensitivity decreases as the viewing time decreases
- Visual sensitivity decreases as the number of potential viewers decreases
- Visual sensitivity can also be related to viewer activity (e.g. A person viewing an affected site whilst engaged in recreational activities will be more strongly affected by change than someone passing a scene in a car travelling to a desired destination).

Sensitivity ratings are defined as high, moderate or low and are shown in Table 1-1 below.

Table 1-1 Visual sensitivity criteria

Land Use	Viewing distance
	0-2km
Townships	High
Recreational Reserve	High
Rural Township	High
Main Highway	Moderate
Local Roads	Moderate
Farm Road	Low
Agricultural Land	Low

1.1.2 Visual magnitude

Visual magnitude refers to the extent of change that will be experienced by receptors. Factors that are considered when assessing the magnitude of change include:

- The proportion of the view / landscape affected

- Extent of the area over which the change occurs
- The size and scale of the change
- The rate and duration of the change
- The level of contrast and compatibility.

Visual impact

Visual impact refers to the change in appearance of the landscape as a result of development. Visual impact is the combined effect of visual sensitivity and visual magnitude. Various combinations of visual sensitivity and visual magnitude will result in high, moderate and low overall visual impacts as suggested in below (TfNSW, 2020).

Table 1-2 Visual impact criteria

Visual impact rating					
		Visual magnitude			
		High	**Moderate**	**Low**	**Negligible**
Visual sensitivity	**High**	High	High-moderate	Moderate	Negligible
	Moderate	High-moderate	Moderate	Moderate-low	Negligible
	Low	Moderate	Moderate-low	Low	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

2. Visual Impact Assessment

2.1 Existing Landscape character

The proposed development of 142 frost fans is located within an existing almond farm site. The proposed development is located 1.6km south of Darlington Point on the southwestern junction of the Sturt Highway and Kidman Way.

Immediate receivers to the proposed development are users of the Sturt Highway, Kidman Way and rural residential receivers to the northeast and south of the site (refer to Figure 2-1).

The proposed development site is shown in Figure 2-1, and is located within a very flat landscape. The topography across the site lacks any significant landscape features such as rises or falls. Across the proposal area, elevation ranges from 120m to 124m. Surrounding the site, elevations are similarly flat, with some minor rises occurring to the north in forested areas closer to the Murrumbidgee River were elevations reach about 135m approximately 3km from the site. These areas however are well forested with dense vegetation screening.

The landscape character and outlook of the area is agricultural, with the area predominately used for flood irrigation development. Expansive views within the area is generally limited given the minor relief and screening provided by vegetation.

Sealed roads such as the Sturt Highway and Kidman Way are the main vantage points from which to view agricultural areas. From the road corridors, land can be viewed openly. Patches of native and planted vegetation screen views of agricultural land from roadways.

In addition to sections of road, overhead transmission lines are visible that reinforce rectilinear shapes and are common in rural landscapes.

Surrounding blocks are made up of primary production and hobby farms, with residences within this landscape being a mix of broadly and relatively closely distributed. Residence are commonly associated with some additional vegetation plantings. Other infrastructure includes agricultural sheds, buildings and low open fences.

The core township of Darlington Point is about 1.6km north of the proposed development. Elevations at Darlington Point ranges from about 122m to 127m. The residents of the town would be screened from the proposed development by scattered and intact vegetation.

The outskirt of the proposed development is in some cases screened by the almond trees themselves and others by planted trees (see images in Appendix A.2). There also exists some screening from earthen mounds evident along Kidman Way associated with the levee of an extensive irrigation trench, however this mounding would provide limited screening due to its small size. The vegetation and mound screening in its existing stage screens the site from about 4-5m (juvenile) to 8-10m (mature).

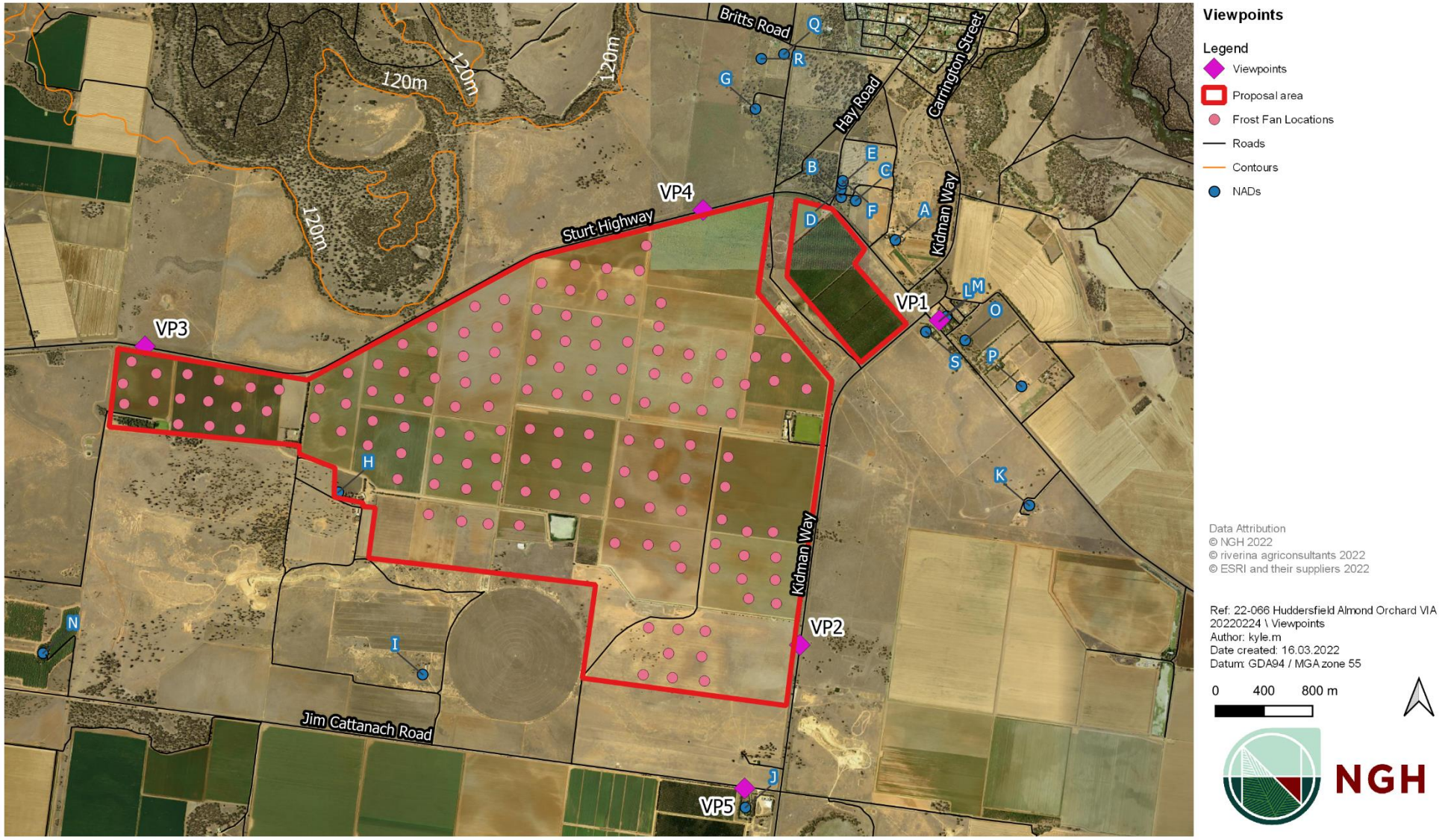

Figure 2-1 Viewpoints

2.2 Potential impacts

To represent key views towards the frost fans, five viewpoint locations were selected that represent receivers to the frost fan from the Sturt Highway, Kidman Way and nearby non-associated dwellings (NAD). The Five locations have been assessed in terms of their visual sensitivity, visual magnitude and overall visual impact Appendix A.1. Photographs from each location are included in Appendix A.2. Visual impacts at each viewpoint are summarised below.

2.2.1 VP1: Truck stop and Residence in the north east of site along the Sturt Highway

Screening vegetation at this location is tall around 8-10m surrounding the orchard. Views in the direction are highly fragmented. There are sentive receivers nearby this location however due to affective screening it is unlikly they would receive meaningful views of the new frost fans. The overall visual impact of this viewpoint is rated as negliable.

No additional mitigation is proposed at this location.

2.2.2 VP2: Kidman way from the east of the site

Screening vegetation at this location is tall around 8-10m, and is very sparse. The vegetation here is unlikly to signifcantly screen views, however there are no NAD within the vicinity of this viewpoint. The sensitivity of this site is low, as the views would only be fleeting and received by passing motorists. The magnitude is also low, given the relatively small viewing area of a fan.Frost fan installations would not result in a magnitude of change that would warrant a high magnitude of change like a wind farm would for example. No additional mitigation is proposed at this location.

2.2.3 VP3 & VP4: Sturt Highway from the north and north west of the site

Screening vegetation at this location is juvenile pine plantations. At the date of inspection these were approximatly 4m tall. The vegetation here is unlikly to signifcantly screen views. The sensitivity of this site is moderate as the views would only be received by passing motorists. The magnitude is also moderate as views of the new frost fans will be received, however frost fan installations would not result in a magnitude of change that would warrant a high magnitude of change.

Screening can only be assessed as it stands in the field however it is expected that the existing vegetation would be dense enough to block a significant amout of views of the frost fans once the trees are mature. As such additional screening planting are not recommended.

2.2.4 VP5: Southern view point along Jim Cattanach Road

There is no screening vegetation at this location as such the residence will have an unblocked view of the frost fans. The distance of the residences along the southern boundary to the frost fans would limit the magnitude of visual impact received. From this viewing distance the 10m tall frost fans would only present a minor change to the viewshed.

Additional screening along this edge of the site may be recommended in consultation with NAD's. It is noted that these recievers may value the landscape view they receive from their properties and blocking this views may cause upset.

2.3 Recommendations

It should be noted that the scale of the frost fan development and the 10m high fan would limit potential for complete screening of the fans, however complete fan screening is not recommended. The distance between the NADs and the proposed fans is far enough that the fans would not be overbearing on the landscape. This is coupled with the existing agricultural land use, which would remain consistent within the orchard (i.e. the land use remains agricultural).

Community consultation is recommended prior to notify NADs about the proposal and what they can expect to view from their property. Community consultation is recommended to consist of letterbox drops to the NADs identified in this impact assessment. Further screening vegetation could be considered if feedback from NADs is received requesting further mitigation. Overall it is expected that the visual impact of the frost fans is unlikely to cause a significant visual impact.

3. References

TfNSW. (2020). *Guidline for landscape character and visual impact assessment - Environmnetal impact assessment practice note EIA-N04.* Retrieved from https://roads-waterways.transport.nsw.gov.au/business-industry/partners-suppliers/documents/centre-for-urban-design/guideline-landscape-character-and-visual-impact.pdf

Appendix A Representative viewpoints

A.1 Representative viewpoints table

Viewpoint	Elevation	Distance to the nearest Frost fan component and viewing direction	Viewpoint description	Visual sensitivity	Visual magnitude	Visual impact	Potential impacts
VP1: Truck stop and Residence in the north east of site along the Sturt Highway	125m	1.2km southwest	**Residential** Screening vegetation at this location is tall around 8-10m surrounding the orchard. Views in the direction are highly fragmented. **Due to the presence of residential receivers the Visual sensitivity is assessed as high.**	High	**Negligable**	**Negligible**	A combination of flat topography and intervening vegetation views towards the frost fans will be contained, with only . **The Visual Magnitude is assessed as Low, and the resulting Visual Impact is Negligible**
VP2: Kidman way from the east of the site	124m	369m northwest	**Road** Screening vegetation at this location is tall around 8-10m, however it is very	**Moderate**	**low**	**Moderate - low**	The existing screening vegetation would not block views to frost fans. Some solar panels are also located in the forground of this viewpoint.

Viewpoint	Elevation	Distance to the nearest Frost fan component and viewing direction	Viewpoint description	Visual sensitivity	Visual magnitude	Visual impact	Potential impacts
			sparse. The vegetation here is unlikly to signifcantly screen views. **Views would be received by road users, the visual sensitivity is assessed as moderate.**				The almond orchard is in view from Kidman Way. As such the nature of the sites viewshed will change with the fan addition, along the extent of Kidman Way. **The Visual Magnitude is assessed as Low, and the resulting Visual Impact is Moderate - Low**
VP3: Sturt Highway from the north west of the site	120m	171m southwest	**Road** Screening vegetation at this location is juvenile pine plantations. At the date of inspection these were approximatly 4m tall. The vegetation here is unlikly to signifcantly screen views. **Views would be**	**Moderate**	**low**	**Moderate - low**	The existing screening vegetation would not block views to frost fans. The almond orchard is in view from the Sturt Highway. As such the nature of the sites viewshed will change with the fan addition, along the extent of Sturt Highway. **The Visual Magnitude is assessed as Low, and the resulting Visual Impact is**

Viewpoint	Elevation	Distance to the nearest Frost fan component and viewing direction	Viewpoint description	Visual sensitivity	Visual magnitude	Visual impact	Potential impacts
			received by road users, the visual sensitivity is assessed as moderate.				**Moderate-low**
VP4: Sturt Highway north of the site	121m	542m southwest	**Road** Screening vegetation at this location is juvenile pine plantations. At the date of inspection these were approximatly 4m tall. The vegetation here is unlikly to signifcantly screen views. **Views would be received by road users, the visual sensitivity is assessed as moderate.**	**Moderate**	**low**	**Moderate - low**	The existing screening vegetation would not block views to frost fans. The almond orchard is in view from the Sturt Highway. As such the nature of the sites viewshed will change with the fan addition, along the extent of Sturt Highway. **The Visual Magnitude is assessed as Low, and the resulting Visual Impact is Moderate-low**

Viewpoint	Elevation	Distance to the nearest Frost fan component and viewing direction	Viewpoint description	Visual sensitivity	Visual magnitude	Visual impact	Potential impacts
VP5: southern view point along Jim Cattanach Road	123m	946m northwest	**Residence / Road** There is no screening vegetation at this location as such the residence will have an unblocked view of the frost fans. **Due to the presence of residential receivers the Visual sensitivity is assessed as high.**	**High**	**Negligable**	**Negligable**	The existing screening vegetation would not block views to frost fans, however the distance of the residences along the southern boundary to the frost fans would limit the magnitude of visual impact received. From this viewing distance the 10m tall frost fans would only present a minor change to the viewshed and are unlikly to to be perciveved as a visual distruption from VADs along the south of the site. **The Visual Magnitude is assessed as Negligable, and the resulting Visual Impact is Negligable**

A.2 Representative viewpoint images

VP1

VP2

VP3

VP4

VP5