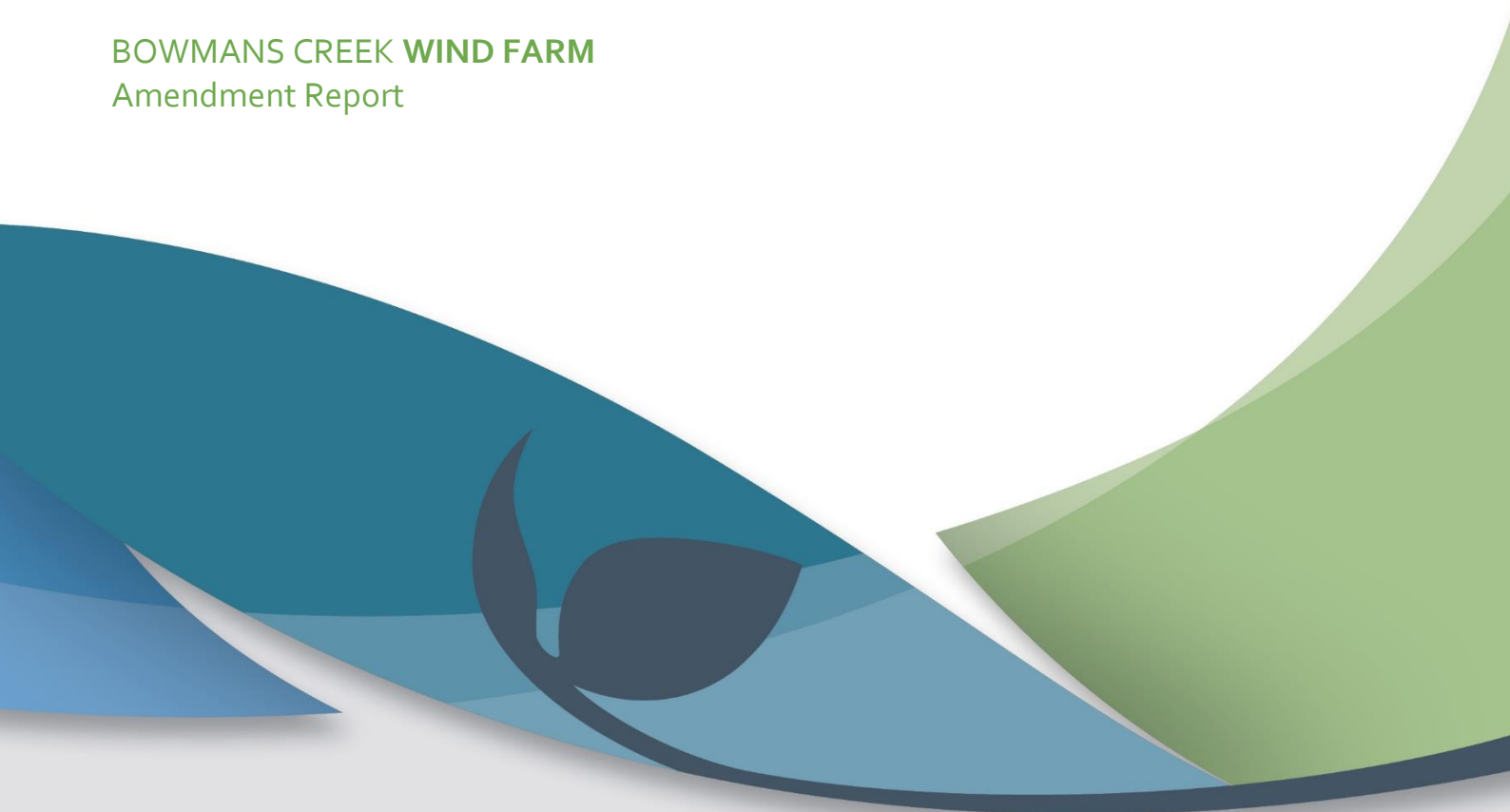


APPENDIX D

SUPPORTING INFORMATION

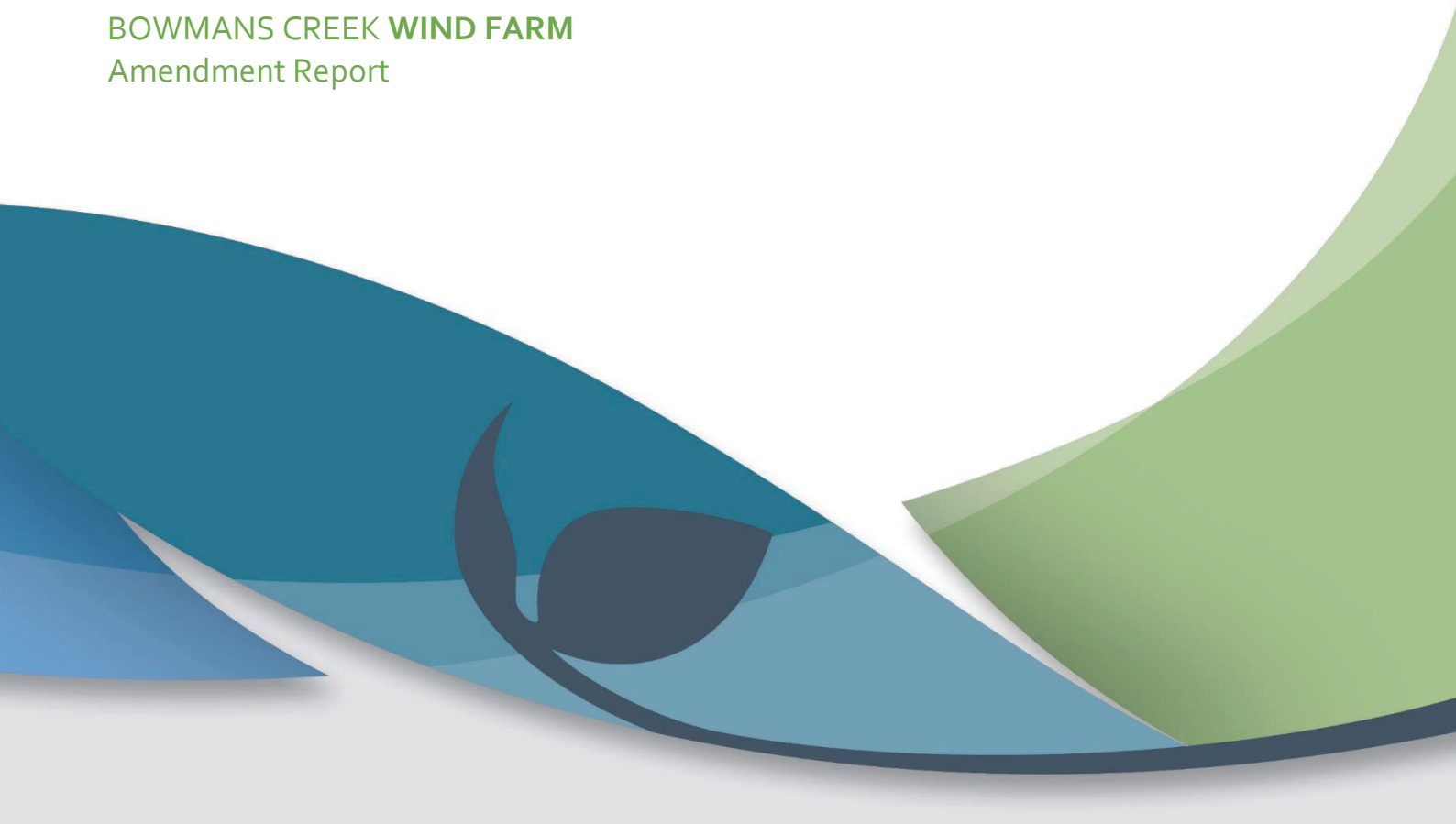
INCLUDING TECHNICAL REPORTS

BOWMANS CREEK WIND FARM
Amendment Report



APPENDIX D1
LANDSCAPE AND VISUAL IMPACT
ASSESSMENT AMENDED REPORT

BOWMANS CREEK WIND FARM
Amendment Report



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7 October September 2021

Bowmans Creek Wind Farm LVIA amended report and response to DPIE requests

Introduction

Thank you for your email 15th August 2021 and request to review and amend the Bowmans Creek Wind Farm Landscape and Visual Impact Assessment Report, v7 17th March 2021. The LVIA amended report has been prepared to address changes to the wind turbine layout as well as responding to a request from the Department of Planning, Industry and Environment (DPIE) to provide a concise summary of results. The DPIE has also requested a confirmation of the proposed night lighting arrangement and appropriate visual assessment. The proposed night lighting arrangement is illustrated in Figure 8.

Changes to wind turbine layout

We understand that a small number of changes have been proposed following the preparation and submission of the Green Bean Design Pty Ltd (GBD) Bowmans Creek Wind Farm Landscape and Visual Impact Assessment (LVIA) v7, 17th March 2021.

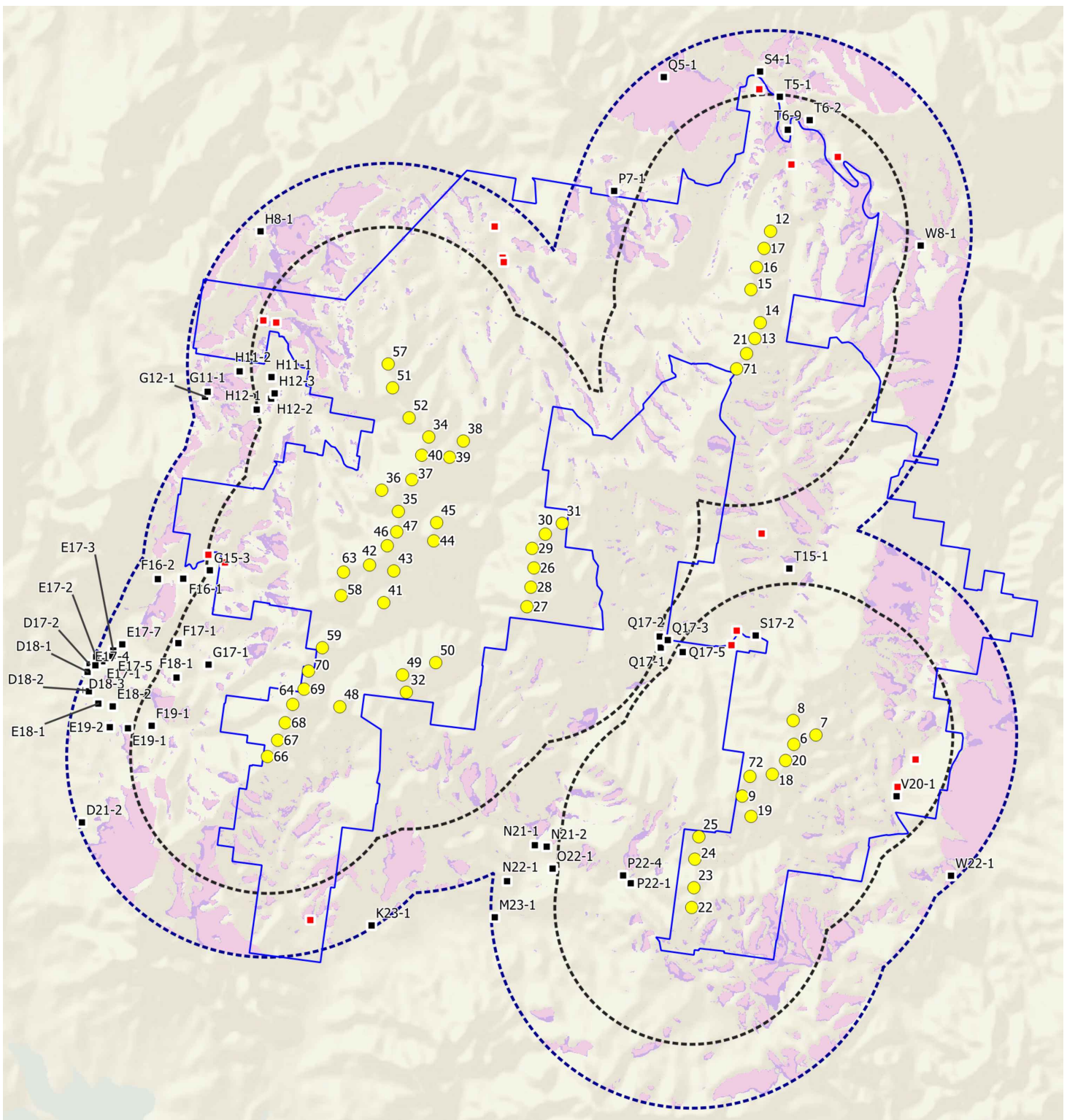
The changes include:

- Removal of wind turbines T10, T33, T60 and T61, and
- Relocation of wind turbines T8, T9 and T32.

A desktop review has identified and confirmed that 15 non-associated dwellings may experience a change to their Sensitivity Level and/or a reduction in visual impact due to wind turbine removal or relocation. The 15 non-associated dwellings are identified in Table A-1, together with amended distances to the closest wind turbine and wind turbine ID (where visible or not visible) and the resultant Visual Influence Zone rating.

An additional dwelling, Q17-5 has been identified within a cluster of existing dwellings (Q17-1, Q17-2 and Q17-3). Q17-5 has been assessed and included in the amended LVIA.

The amended wind turbine layout has been illustrated revised Figures 5 and 8 which plot wind turbine visibility and the location of non-associated dwellings against the 3km black line and 4.4km blue line thresholds.



Legend

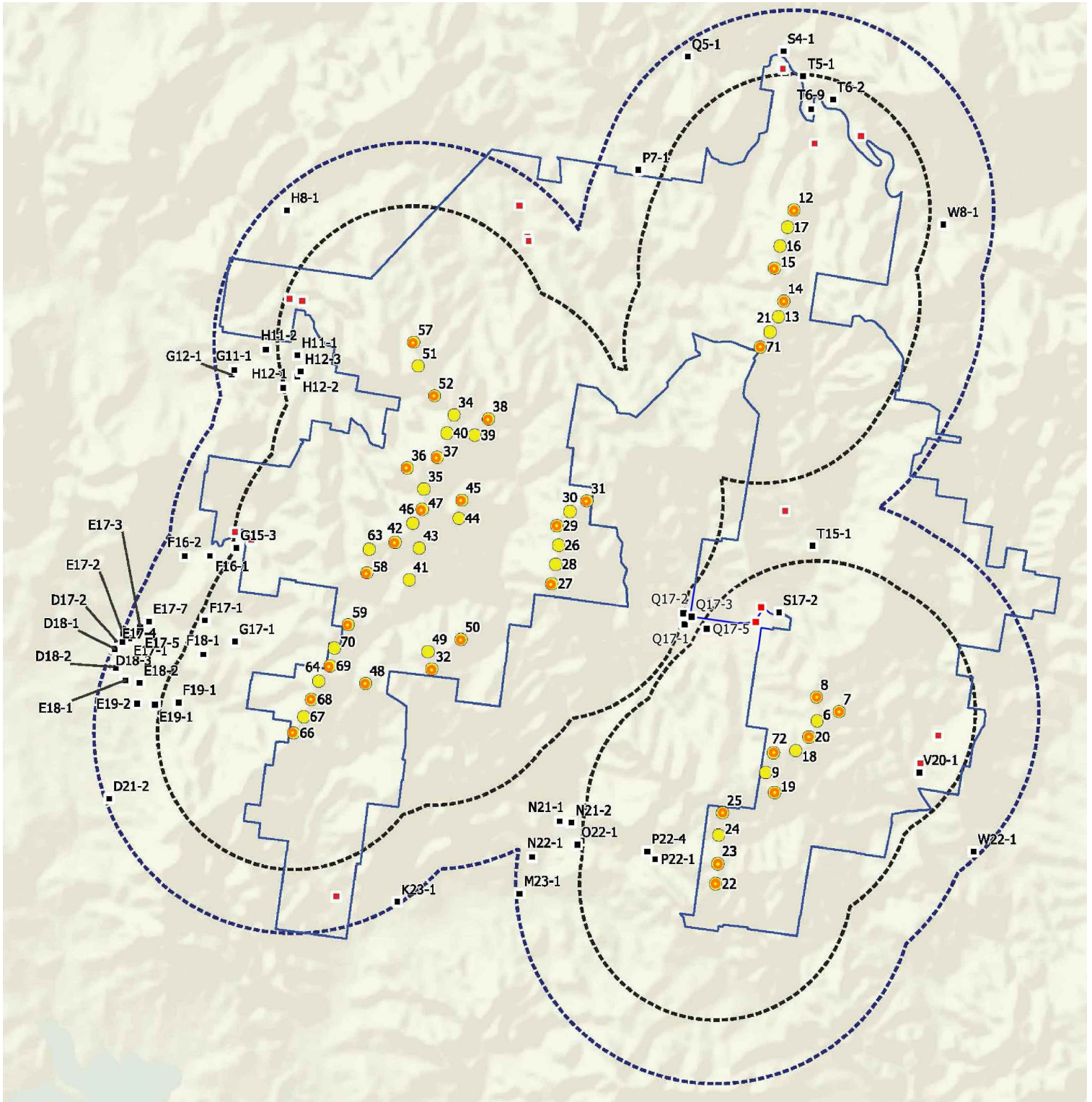
- Site boundary
- Wind turbine
- 3km black line
- 4.4km blue line
- Associated dwelling
- Non associated dwelling
- Area where wind turbines are not visible
- Areas where wind turbines are visible above the nacelle only



Figure 5
Wind Turbine Visibility Map

GREEN BEAN DESIGN

landscape architects



Legend

- Site boundary
- Wind turbine
- 3km black line
- 4.4km blue line
- Associated dwelling
- Non associated dwelling
- Aviation hazard lighting

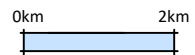


Figure 8
Key view locations - dwellings

Table A-1 sets out a summary of changes to Sensitivity Levels, Visual Influence Zones and Multiple Wind Turbine Tool results for non-associated dwellings most likely to experience a noticeable difference following the removal of 4 wind turbines and relocation of 3 wind turbines.

Table A-1 Summary of changes

Dwelling ID	Change to Sensitivity Level	Change to Visual Influence Zone	Change to Multiple Wind Turbine Tool assessment
F16-1	Level 2 unchanged	VIZ 2 unchanged	Unchanged
F16-2	Level 2 unchanged	VIZ 2 unchanged	Unchanged
F17-1	Level 2 unchanged	VIZ 2 unchanged	Unchanged
F18-1	Level 2 unchanged	VIZ 2 unchanged	Unchanged
G15-3	Changes from Level 1 to Level 2 due to relocation of turbines to > 2km from dwelling	Changes from VIZ 1 to VIZ2	Unchanged
G17-1	Changes from Level 1 to Level 2 due to confirmation of turbine distance at > 2km from dwelling	Changes from VIZ 1to VIZ2	Unchanged
L23-1	Level 2 unchanged	VIZ 2 unchanged	Changes from 2 60 degree sectors to 1 60 degree sector
M23-2 (M23-1)	Level 2 unchanged	VIZ 2 unchanged	Unchanged
N21-1	Level 2 unchanged	VIZ 2 unchanged	Unchanged
N22-1	Level 2 unchanged	VIZ 2 unchanged	Unchanged
O22-1	Level 2 unchanged	VIZ 2 unchanged	Unchanged
Q17-3 (Q17-1 and Q17-2)	Level 2 unchanged	VIZ 2 unchanged	Changes from 4 60 degree sectors to 2 60 degree sectors

Dwelling ID	Change to Sensitivity Level	Change to Visual Influence Zone	Change to Multiple Wind Turbine Tool assessment
Q17-5	Level 2	VIZ 2	2 60 degree sectors
S17-2	Changes from Level 1 to Level 2 due to relocation of turbines to > 2km from dwelling	Changes from VIZ 1 to VIZ 2	Changes from 3 60 degree sectors to 2 60 degree sectors
T15-1	Level 2 unchanged	VIZ 2 unchanged	Unchanged

Our review of the proposed Bowmans Creek Wind Farm layout changes has determined that 3 dwellings would have a reduction in the number of 60 degree sectors with visible wind turbines and 3 dwellings will become VIZ 2 locations (from VIZ 1) due to an increase in distance between dwelling and closest wind turbine .

Visual performance objectives compliance

Previous DPIE wind farm project assessment reports note the relationship between wind turbine height and visual magnitude to black and blue line thresholds. For a 220m high turbine we note the following would be applicable to the project:

'In accordance with the Bulletin, 220m turbines have the potential to result in high visual magnitude impacts on receivers within 4.4km and potentially significant visual impacts on receivers within 3km and provides performance objectives depending on the visual influence zone'.

'For 220m turbines located within 4.4km of any non-associated receivers identified as being in a high visual influence zone (i.e., VIZ 1) the performance objective in the Bulletin requires proponents to either avoid locating turbines or provide detailed justification.

'For 220m turbines located within 3km of any non-associated receivers identified as being in a moderate visual influence zone (VIZ2) the performance objective in the Bulletin requires proponents to manage impacts and describe proposed mitigation measures. The Bulletin requires the proponent to consider screening for any non-associated receiver located between 3km and 4.4km in a VIZ2 zone or located within 3km in a low visual influence zone (VIZ3)'.

Table A-2 Visual performance objectives compliance

Dwelling ID and Sensitivity Level	Closest turbine and turbine ID	Visible turbines below black line	Visible turbines between black line and blue line	Number of 60-degree sectors	Visual Influence Zone (VIZ)	Mitigation measures	Visual performance objectives compliance
D18-3 (D18-2 and E18-1) Level 2	4.17km Turbine 66	0	3	1	VIZ 2	<p>Existing mitigation Lightly scattered tree cover around and beyond the dwellings may offer some filtering of views toward wind turbines from the dwellings and curtilage.</p> <p>Proposed mitigation Screen planting to be offered in accordance with relevant consent conditions.</p>	<p>The project is compliant with the Bulletin visual performance objectives for VIZ 2 dwellings. Residual impacts will be managed as far as practicable through screen planting in accordance with relevant consent conditions.</p>
D21-2 Level 2	4.17km Turbine 66	0	1	1	VIZ 2	<p>Existing mitigation Scattered tree cover around the dwelling may present some filtering toward distant</p>	<p>The project is compliant with the Bulletin visual performance objectives for VIZ 2 dwelling. Residual impacts will be managed as far as</p>

Dwelling ID and Sensitivity Level	Closest turbine and turbine ID	Visible turbines below black line	Visible turbines between black line and blue line	Number of 60-degree sectors	Visual Influence Zone (VIZ)	Mitigation measures	Visual performance objectives compliance
						views of wind turbine hubs and blades. Proposed mitigation Screen planting to be offered in accordance with relevant consent conditions.	practicable through screen planting in accordance with relevant consent conditions.
E17-3 (E17-1, E17-2, and E17-5) Level 2	4.09km Turbine 68	0	6	2	VIZ 2	Existing mitigation Scattered tree cover around the dwellings may present some filtering toward distant views of wind turbine hubs and blades. Proposed mitigation Screen planting to be offered in accordance with relevant consent conditions.	The project is compliant with the Bulletin visual performance objectives for VIZ 2 dwellings. Residual impacts will be managed as far as practicable through screen planting in accordance with relevant consent conditions.
E17-4 Level 2	4.27km Turbine 66	0	3	1	VIZ 2	Existing mitigation	The project is compliant with the Bulletin visual

Dwelling ID and Sensitivity Level	Closest turbine and turbine ID	Visible turbines below black line	Visible turbines between black line and blue line	Number of 60-degree sectors	Visual Influence Zone (VIZ)	Mitigation measures	Visual performance objectives compliance
						<p>Scattered tree cover around the dwelling may present some filtering toward distant views of wind turbine hubs and blades.</p> <p>Proposed mitigation Screen planting to be offered in accordance with relevant consent conditions.</p>	<p>performance objectives for the dwelling. Residual impacts will be managed as far as practicable through screen planting in accordance with relevant consent conditions.</p>
E19-1 (E18-2) Level 2	3.12km Turbine 66	0	6	1	VIZ 2	<p>Existing mitigation Individual trees around and beyond the dwellings may offer some filtering of views toward wind turbines from the dwellings.</p> <p>Proposed mitigation</p>	<p>The project is compliant with the Bulletin visual performance objectives for the dwellings. Residual impacts will be managed as far as practicable through screen planting in accordance with relevant consent conditions.</p>

Dwelling ID and Sensitivity Level	Closest turbine and turbine ID	Visible turbines below black line	Visible turbines between black line and blue line	Number of 60-degree sectors	Visual Influence Zone (VIZ)	Mitigation measures	Visual performance objectives compliance
						Screen planting to be offered in accordance with relevant consent conditions.	
F16-1 Level 2	3.41km Turbine 59	0	10	2	VIZ 2	<p>Existing mitigation</p> <p>Tree cover beyond the dwelling may offer some filtering of views toward wind turbines from the dwelling and at various locations from the surrounding curtilage.</p> <p>Proposed mitigation</p> <p>Screen planting to be offered in accordance with relevant consent conditions.</p>	The project is compliant with the Bulletin visual performance objectives for the dwelling. Residual impacts will be managed as far as practicable through screen planting in accordance with relevant consent conditions.
F16-2 Level 2	3.82km Turbine 70	0	4 (2 blade only)	2	VIZ 2	Existing mitigation	The project is compliant with the Bulletin visual

Dwelling ID and Sensitivity Level	Closest turbine and turbine ID	Visible turbines below black line	Visible turbines between black line and blue line	Number of 60-degree sectors	Visual Influence Zone (VIZ)	Mitigation measures	Visual performance objectives compliance
						<p>Tree cover beyond the dwelling may offer some filtering of views toward wind turbines from the dwelling and at various locations from the surrounding curtilage.</p> <p>Proposed mitigation Screen planting to be offered in accordance with relevant consent conditions.</p>	<p>performance objectives for the dwelling. Residual impacts will be managed as far as practicable through screen planting in accordance with relevant consent conditions.</p>
F17-1 Level 2	2.84km Turbine 64	3	3	2	VIZ 2	<p>Existing mitigation Tree cover beyond the dwelling may offer some filtering of views toward wind turbines from the dwelling and at various locations from the surrounding curtilage.</p>	<p>The project is compliant with the Bulletin visual performance objectives for the VIZ 2 dwelling. Residual impacts will be managed as far as practicable through screen planting in accordance</p>

Dwelling ID and Sensitivity Level	Closest turbine and turbine ID	Visible turbines below black line	Visible turbines between black line and blue line	Number of 60-degree sectors	Visual Influence Zone (VIZ)	Mitigation measures	Visual performance objectives compliance
						<p>Proposed mitigation</p> <p>Proponent to offer neighbour agreement and screen planting (below the black line) to the landowner.</p>	with relevant consent conditions.
F18-1 Level 2	2.58km Turbine 68	6	4	2	VIZ 2	<p>Existing mitigation</p> <p>The dwelling curtilage lacks significant tree cover, views would extend toward wind turbines on ridgeline east of the dwelling.</p> <p>Proposed mitigation</p> <p>Proponent to offer neighbour agreement and screen planting (below the black line) to the landowner.</p>	The project is compliant with the Bulletin visual performance objectives for the VIZ 2 dwelling. Residual impacts will be managed as far as practicable through screen planting in accordance with relevant consent conditions.

Dwelling ID and Sensitivity Level	Closest turbine and turbine ID	Visible turbines below black line	Visible turbines between black line and blue line	Number of 60-degree sectors	Visual Influence Zone (VIZ)	Mitigation measures	Visual performance objectives compliance
F19-1 Level 2	2.63km Turbine 66	3	5	1	VIZ 2	<p>Existing mitigation Tree cover beyond the dwelling may offer some filtering of views toward wind turbines from the dwelling and at various locations from the surrounding curtilage.</p> <p>Proposed mitigation Proponent to offer neighbour agreement and screen planting (below the black line) to the landowner.</p>	The project is compliant with the Bulletin visual performance objectives for the VIZ 2 dwelling. Residual impacts will be managed as far as practicable through screen planting in accordance with relevant consent conditions.
G12-1 (G11-1) Level 2	4.08km Turbine 57 (G11-1 at 4.00km)	0	0	1	VIZ 2	No wind turbine visibility. This will be confirmed post construction.	The project is compliant with the Bulletin visual performance objectives for the VIZ 2 dwelling.

Dwelling ID and Sensitivity Level	Closest turbine and turbine ID	Visible turbines below black line	Visible turbines between black line and blue line	Number of 60-degree sectors	Visual Influence Zone (VIZ)	Mitigation measures	Visual performance objectives compliance
G15-3 Level 2	2.93km Turbine 63	3	14	2	VIZ 2	<p>Existing mitigation Extensive tree cover beyond the dwelling will provide filtering and screening of views toward wind turbines from the dwelling and the surrounding curtilage.</p> <p>Proposed mitigation Proponent to offer neighbour agreement and screen planting (below the black line) to the landowner.</p>	The project is compliant with the Bulletin visual performance objectives for the VIZ 2 dwelling. Residual impacts will be managed as far as practicable through screen planting in accordance with relevant consent conditions.
G17-1 Level 2	2.04km Turbine 64	7	4	2	VIZ 2	<p>Existing mitigation The dwelling curtilage has scattered tree cover; however, views toward wind turbines would be visible on ridgeline east of dwelling.</p>	The project is compliant with the Bulletin visual performance objectives for the VIZ 2 dwelling. Residual impacts will be managed as far as

Dwelling ID and Sensitivity Level	Closest turbine and turbine ID	Visible turbines below black line	Visible turbines between black line and blue line	Number of 60-degree sectors	Visual Influence Zone (VIZ)	Mitigation measures	Visual performance objectives compliance
						<p>Proposed mitigation</p> <p>Proponent to offer neighbour agreement and screen planting (below the black line) to the landowner.</p>	practicable through screen planting in accordance with relevant consent conditions.
H8-1 (H7-1) Level 2	4.03km Turbine 57 (H7-1 at 4.41km)	0	1	1	VIZ 2	<p>Existing mitigation</p> <p>The dwelling curtilage includes some tree cover with views toward the wind turbine partially screened or filtered from the dwelling and curtilage.</p> <p>Proposed mitigation</p> <p>Screening (between the blue line and the black line) will be offered to the landowner in accordance with the consent conditions.</p>	The project is compliant with the Bulletin visual performance objectives for the VIZ 2 dwellings. Residual impacts will be managed as far as practicable through screen planting in accordance with relevant consent conditions.

Dwelling ID and Sensitivity Level	Closest turbine and turbine ID	Visible turbines below black line	Visible turbines between black line and blue line	Number of 60-degree sectors	Visual Influence Zone (VIZ)	Mitigation measures	Visual performance objectives compliance
H11-2 Level 2	3.26km Turbine 57	0	6	2	VIZ 2	<p>Existing mitigation</p> <p>The project is partially screened by landform and scattered tree cover with views toward the wind turbine partially screened or filtered from the dwelling and curtilage.</p> <p>Proposed mitigation</p> <p>Screening (between the blue line and the black line) will be offered to the landowner in accordance with the consent conditions.</p>	The project is compliant with the Bulletin visual performance objectives for the VIZ 2 dwelling. Residual impacts will be managed as far as practicable through screen planting in accordance with relevant consent conditions.
H12-1 Level 2	3.02km Turbine 51	0	12	2	VIZ 2	<p>Existing mitigation</p> <p>Landform and tree cover beyond the dwelling may offer some filtering of views</p>	The project is compliant with the Bulletin visual performance objectives for the VIZ 2 dwelling.

Dwelling ID and Sensitivity Level	Closest turbine and turbine ID	Visible turbines below black line	Visible turbines between black line and blue line	Number of 60-degree sectors	Visual Influence Zone (VIZ)	Mitigation measures	Visual performance objectives compliance
						<p>toward wind turbines east to south south east from the dwelling and at various locations from the surrounding curtilage.</p> <p>Proposed mitigation</p> <p>Screening (between the blue line and the black line) will be offered to the landowner in accordance with the consent conditions.</p>	Residual impacts will be managed as far as practicable through screen planting in accordance with relevant consent conditions.
H12-3 (H11-1 and H12-2) Level 2	2.57km Turbine 57 (H11-1 at 2.57km) (H12-2 at 2.67km)	2	6	1	VIZ 2	<p>Existing mitigation</p> <p>Landform and partial tree cover beyond the dwellings may offer some filtering of views toward wind turbines south east from the dwelling</p>	The project is compliant with the Bulletin visual performance objectives for the VIZ 2 dwellings. Residual impacts will be managed as far as practicable through screen

Dwelling ID and Sensitivity Level	Closest turbine and turbine ID	Visible turbines below black line	Visible turbines between black line and blue line	Number of 60-degree sectors	Visual Influence Zone (VIZ)	Mitigation measures	Visual performance objectives compliance
						and at various locations from the surrounding curtilage. Proposed mitigation Proponent to offer neighbour agreement and screen planting (below the black line) to the landowner.	planting in accordance with relevant consent conditions.
K23-1 Level 2	4.35km Turbine 66 (Not visible)	0	0	2	VIZ 2	Existing mitigation Landform and tree cover beyond the dwelling will offer some screening of views toward wind turbines north from the dwelling from various locations from the dwelling curtilage. Proposed mitigation Screen planting (between the blue line and the black line)	The project is compliant with the Bulletin visual performance objectives for the VIZ 2 dwelling. Residual impacts will be managed as far as practicable through screen planting in accordance with relevant consent conditions.

Dwelling ID and Sensitivity Level	Closest turbine and turbine ID	Visible turbines below black line	Visible turbines between black line and blue line	Number of 60-degree sectors	Visual Influence Zone (VIZ)	Mitigation measures	Visual performance objectives compliance
						will be offered to the landowner in accordance with the consent conditions.	
N21-1 (N21-2) Level 2	3.52km Turbine 23	0	3	2	VIZ 2	<p>Existing mitigation Landform and tree cover beyond the dwelling will offer some screening of views toward wind turbines from the dwelling from various locations from the dwelling curtilage.</p> <p>Proposed mitigation Screen planting (between the blue line and the black line) will be offered to the landowner in accordance with the consent conditions.</p>	The project is compliant with the Bulletin visual performance objectives for the VIZ 2 dwellings. Residual impacts will be managed as far as practicable through screen planting in accordance with relevant consent conditions.

Dwelling ID and Sensitivity Level	Closest turbine and turbine ID	Visible turbines below black line	Visible turbines between black line and blue line	Number of 60-degree sectors	Visual Influence Zone (VIZ)	Mitigation measures	Visual performance objectives compliance
N22-1 Level 2	4.10km Turbine 22	0	4	2	VIZ 2	<p>Existing mitigation Landform and tree cover beyond the dwelling will offer some screening of views toward wind turbines from the dwelling from various locations from the dwelling curtilage.</p> <p>Proposed mitigation Screen planting (between the blue line and the black line) will be offered to the landowner in accordance with the consent conditions.</p>	The project is compliant with the Bulletin visual performance objectives for the VIZ 2 dwelling. Residual impacts will be managed as far as practicable through screen planting in accordance with relevant consent conditions.
O22-1 Level 2	3.12km Turbine 24	0	3	3	VIZ 2	<p>Existing mitigation Landform and tree cover beyond the dwelling will offer some screening of views</p>	The project is not compliant with the Bulletin visual performance objectives

Dwelling ID and Sensitivity Level	Closest turbine and turbine ID	Visible turbines below black line	Visible turbines between black line and blue line	Number of 60-degree sectors	Visual Influence Zone (VIZ)	Mitigation measures	Visual performance objectives compliance
						<p>toward wind turbines from the dwelling from various locations from the dwelling curtilage.</p> <p>Proposed mitigation Screen planting (between the blue line and the black line) will be offered to the landowner in accordance with the consent conditions.</p>	<p>for the VIZ 2 dwelling with wind turbines in 3 60 degree sectors. However, given distance the wind turbines within one of the 3 60-degree sectors (exceeding 5km) they are not considered to dominate the available viewshed. The wind turbines do not impart a vertical dominance over the dwelling or surrounding curtilage. Residual impacts will be managed as far as practicable through screen planting in accordance</p>

Dwelling ID and Sensitivity Level	Closest turbine and turbine ID	Visible turbines below black line	Visible turbines between black line and blue line	Number of 60-degree sectors	Visual Influence Zone (VIZ)	Mitigation measures	Visual performance objectives compliance
							with relevant consent conditions.
P7-1 Level 2	3.52km Turbine 17	0	5	2	VIZ 2	<p>Existing mitigation Landform and tree cover beyond the dwelling will offer some screening of views toward wind turbines from the dwelling from various locations from the dwelling curtilage.</p> <p>Proposed mitigation Screen planting (between the blue line and the black line) will be offered to the landowner in accordance with the consent conditions.</p>	The project is compliant with the Bulletin visual performance objectives for the VIZ 2 dwelling. Residual impacts will be managed as far as practicable through screen planting in accordance with relevant consent conditions.

Dwelling ID and Sensitivity Level	Closest turbine and turbine ID	Visible turbines below black line	Visible turbines between black line and blue line	Number of 60-degree sectors	Visual Influence Zone (VIZ)	Mitigation measures	Visual performance objectives compliance
P22-1 (P22-4) Level 1	1.38km Turbine 23 (P22-4 at 1.57)	4	0	2	VIZ 1	<p>Existing mitigation</p> <p>Tree cover and undulating landform will provide some degree of potential screening toward the wind turbines. There is a greater degree of screening toward wind turbines 24 and 25 with existing tree cover generally restricting views to upper portions of rotor blades.</p> <p>Proposed mitigation</p> <p>Proponent to offer neighbour agreement and screening (below the black line) to the landowner.</p>	<p>The project is largely compliant with the Bulletin visual performance objectives for the VIZ 1 dwelling.</p> <p>Photomontages prepared from dwellings P22-1 and P22-4 (within the same property) illustrates a combination of landform and tree cover providing some degree of screening/filtering of views toward the 4 wind turbines below the black line, with a greater degree of tree screening/filtering of views toward wind</p>

Dwelling ID and Sensitivity Level	Closest turbine and turbine ID	Visible turbines below black line	Visible turbines between black line and blue line	Number of 60-degree sectors	Visual Influence Zone (VIZ)	Mitigation measures	Visual performance objectives compliance
							turbines 24 and 25. No other wind turbines would be visible below the blue line. Without a neighbour agreement the removal of turbines 22 and 23 has the potential to mitigate visual impacts to an acceptable level (refer photomontages P22-1 and P22-4).
Q5-1 Level 2	4.11km Turbine 12	0	0	0	VIZ 2	No wind turbine visibility. This will be confirmed post construction.	The project is compliant with the Bulletin visual performance objectives for the VIZ 2 dwelling.
Q17-3	3.13km Turbine 8	0	15	2	VIZ 2	Existing mitigation Tree cover and a gently undulating landform to the	The project is compliant with the Bulletin visual performance objectives

Dwelling ID and Sensitivity Level	Closest turbine and turbine ID	Visible turbines below black line	Visible turbines between black line and blue line	Number of 60-degree sectors	Visual Influence Zone (VIZ)	Mitigation measures	Visual performance objectives compliance
(Q17-1 and Q17-2) Level 2	(Q17-1 at 3.14km) (Q17-2 at 3.03km)					south east of dwelling Q17-1 will provide some degree of filtering views toward some wind turbines. Proposed mitigation Screening will be offered to the landowner in accordance with the consent conditions.	for the VIZ 2 dwelling. Residual impacts will be managed as far as practicable through screen planting in accordance with relevant consent conditions.
Q17-5 Level 2	2.85km Turbine 8	1	14	2	VIZ 2	Existing mitigation Tree cover alongside Bowmans Creek to the south and south east of dwelling Q17-5 may provide some degree of filtering views toward some wind turbines.	The project is compliant with the Bulletin visual performance objectives for the VIZ 2 dwelling. Residual impacts will be managed as far as practicable through screen planting in accordance with relevant consent conditions.

Dwelling ID and Sensitivity Level	Closest turbine and turbine ID	Visible turbines below black line	Visible turbines between black line and blue line	Number of 60-degree sectors	Visual Influence Zone (VIZ)	Mitigation measures	Visual performance objectives compliance
						Proposed mitigation Screening will be offered to the landowner in accordance with the consent conditions.	
S4-1 Level 2	3.51km Turbine 12	0	3	1	VIZ 2	Existing mitigation Landform and tree cover beyond the dwelling will screen views toward the majority of project wind turbines from the dwelling from various locations from the dwelling curtilage. Proposed mitigation Screen planting (between the blue line and the black line) will be offered to the landowner in accordance with the consent conditions.	The project is compliant with the Bulletin visual performance objectives for the VIZ 2 dwelling. Residual impacts will be managed as far as practicable through screen planting in accordance with relevant consent conditions.

Dwelling ID and Sensitivity Level	Closest turbine and turbine ID	Visible turbines below black line	Visible turbines between black line and blue line	Number of 60-degree sectors	Visual Influence Zone (VIZ)	Mitigation measures	Visual performance objectives compliance
S17-2 Level 1	2.04km Turbine 8	4	2	2	VIZ 2	<p>Existing mitigation</p> <p>Tree cover around and beyond the dwelling follows a creek line to the east, north and west of the dwelling/curtilage and provides some degree of screening and/or filtering of views toward wind turbines. The level of screening is variable within and beyond the curtilage; however, views toward wind turbines from the dwelling have some degree of screening.</p> <p>Proposed mitigation</p> <p>Proponent to offer neighbour agreement and screen</p>	<p>The project is compliant with the Bulletin visual performance objectives for the VIZ 2 dwelling. Visual impacts have been managed through the removal of wind turbine T10 and relocation of turbine T9. Residual impacts will be managed as far as practicable through screen planting in accordance with relevant consent conditions.</p>

Dwelling ID and Sensitivity Level	Closest turbine and turbine ID	Visible turbines below black line	Visible turbines between black line and blue line	Number of 60-degree sectors	Visual Influence Zone (VIZ)	Mitigation measures	Visual performance objectives compliance
						planting (between the blue and the black lines) to the landowner.	
T5-1 Level 2	2.95km Turbine 12	1	3	1	VIZ 2	<p>Existing mitigation</p> <p>Landform and tree cover beyond the dwelling will screen views toward the majority of wind turbines from the dwelling from various locations from the dwelling curtilage.</p> <p>Proposed mitigation</p> <p>Screen planting (under the black line) will be offered to the landowner in accordance with the consent conditions.</p>	The project is compliant with the Bulletin visual performance objectives for the VIZ 2 dwelling. Residual impacts will be managed as far as practicable through screen planting in accordance with relevant consent conditions.

Dwelling ID and Sensitivity Level	Closest turbine and turbine ID	Visible turbines below black line	Visible turbines between black line and blue line	Number of 60-degree sectors	Visual Influence Zone (VIZ)	Mitigation measures	Visual performance objectives compliance
T6-2 Level 2	2.58km Turbine 12	1	3	1	VIZ 2	<p>Existing mitigation Landform and tree cover beyond the dwelling will screen views toward the majority of wind turbines from the dwelling from various locations from the dwelling curtilage.</p> <p>Proposed mitigation Screen planting (under the black line) will be offered to the landowner in accordance with the consent conditions.</p>	The project is compliant with the Bulletin visual performance objectives for the VIZ 2 dwelling. Residual impacts will be managed as far as practicable through screen planting in accordance with relevant consent conditions.
T6-9 Level 2	2.26km Turbine 12	2	3	1	VIZ 2	<p>Existing mitigation Landform and tree cover beyond the dwelling will screen views toward the majority of wind turbines</p>	The project is compliant with the Bulletin visual performance objectives for the VIZ 2 dwelling. Residual impacts will be

Dwelling ID and Sensitivity Level	Closest turbine and turbine ID	Visible turbines below black line	Visible turbines between black line and blue line	Number of 60-degree sectors	Visual Influence Zone (VIZ)	Mitigation measures	Visual performance objectives compliance
						<p>from the dwelling from various locations from the dwelling curtilage.</p> <p>Proposed mitigation Screen planting (under the black line) will be offered to the landowner in accordance with the consent conditions.</p>	managed as far as practicable through screen planting in accordance with relevant consent conditions.
T15-1 Level 2	3.34km Turbine 8	0	4	3	VIZ 2	<p>Existing mitigation Landform and tree cover beyond the dwelling will screen views toward the majority of wind turbines from the dwelling and from various locations from the dwelling curtilage.</p> <p>Proposed mitigation</p>	The project is compliant with the Bulletin visual performance objectives for the VIZ 2 dwelling. Residual impacts will be managed as far as practicable through screen planting in accordance with relevant consent conditions.

Dwelling ID and Sensitivity Level	Closest turbine and turbine ID	Visible turbines below black line	Visible turbines between black line and blue line	Number of 60-degree sectors	Visual Influence Zone (VIZ)	Mitigation measures	Visual performance objectives compliance
						Screen planting (between the black and blue lines) will be offered to the landowner in accordance with the consent conditions.	
V20-1 Level 2	2.25km Turbine 7	5	4	2	VIZ 2	<p>Existing mitigation</p> <p>Landform and tree cover beyond the dwelling will screen views toward the majority of wind turbines from the dwelling from various locations from the dwelling curtilage.</p> <p>Proposed mitigation</p> <p>Screen planting (under the black line) will be offered to the landowner in accordance with the consent conditions.</p>	The project is compliant with the Bulletin visual performance objectives for the VIZ 2 dwelling. Residual impacts will be managed as far as practicable through screen planting in accordance with relevant consent conditions.

Dwelling ID and Sensitivity Level	Closest turbine and turbine ID	Visible turbines below black line	Visible turbines between black line and blue line	Number of 60-degree sectors	Visual Influence Zone (VIZ)	Mitigation measures	Visual performance objectives compliance
W8-1 Level 2	3.31km Turbine 12	0	6	1	VIZ 2	<p>Existing mitigation</p> <p>Mature trees to the north through to south west of the dwellings are likely to provide screening from the dwelling and curtilage.</p> <p>Proposed mitigation</p> <p>Screening (between the blue line and the black line) will be offered to the landowner in accordance with the consent conditions.</p>	<p>The project is compliant with the Bulletin visual performance objectives for the VIZ 2 dwelling. Residual impacts will be managed as far as practicable through screen planting in accordance with relevant consent conditions.</p>
W22-1 Level 2	4.30km Turbine 7	0	1 (blade only)	1	VIZ 2	<p>Existing mitigation</p> <p>There is minimal tree cover surrounding the dwelling or curtilage; however, views will be partially screened through topography rising to the north</p>	<p>The project is compliant with the Bulletin visual performance objectives for the VIZ 2 dwelling. Residual impacts will be managed as far as</p>

Dwelling ID and Sensitivity Level	Closest turbine and turbine ID	Visible turbines below black line	Visible turbines between black line and blue line	Number of 60-degree sectors	Visual Influence Zone (VIZ)	Mitigation measures	Visual performance objectives compliance
						<p>and north west of the dwelling.</p> <p>Proposed mitigation Screening will be offered to the landowner in accordance with the consent conditions.</p>	<p>practicable through screen planting in accordance with relevant consent conditions.</p>

Aviation Hazard Lighting

Further to addressing the Aviation Hazard Lighting (AHL) Visual Performance Objectives in the original LVIA, the Proponent has prepared a draft Obstacle Lighting Plan (refer Figure 8 for AHL locations).

Our desktop review of the draft Obstacle lighting Plan has confirmed 2 non-associated dwellings (P22-1 and P22-4) will be less than 2km from 2 wind turbines with AHL (T22 and T23). GBD note that dwellings P22-1 and P22-4 are subject to the offer of a neighbour agreement. Without a neighbour agreement wind turbines T22 and T23 may be removed or fitted with shielding in accordance with the Bulletin requirements.

The Proponent has met with Department of Defence representatives to clarify their request for obstacle lighting and has submitted a written request for feedback on:

- Whether the proposed wind turbine lighting plan would be acceptable
- Whether it would be acceptable to reduce the obstacle lighting intensity from medium (2000 candela) to low intensity (minimum 200 candela) and
- Whether it would be practicable to establish protocols that minimise the amount of time that the obstacle lights are energised – this might be on the basis of a photoelectric switch to energise the lights on the occurrence of low light conditions and not later than a fixed time (say 2300 h) or whenever the Restricted Area is active (after which time night flying is not likely to be conducted).

CASA has reviewed the draft lighting plan and considers that the plan would be acceptable for either 2000 candela or 200 candela red obstacle lights. CASA also considers that it would be acceptable to reduce the obstacle lighting intensity from medium (2000 candela) intensity to low (200 candela) intensity on the basis that there is limited background illumination.

GBD notes that whilst the Aviation Hazard Lighting conforms with the Visual Performance Objectives, further mitigation measures to be considered by the Department of Defence, including restricting AHL to meet operational and training activities, would largely mitigate the potential impact of AHL associated with the project.

Kind regards,



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