Planning Permit Application
Wimmera Plains Energy Facility

July 2020

Volume 1 - Main Document

Document Version Control

Version	Reason for Revision	Date	Prepared	Reviewed	Approved
#1		May 2020	TB	FC	KJ
#2	Removal of WTGs 45 and 46	July 2020	TB	FC	KJ

Preface

This document has been prepared as part of the application for a planning permit to develop a wind farm approximately 10 km north east of the township of Horsham in the Rural City of Horsham, Victoria.

This proposal is composed of the following four volumes:

- Volume One contains the planning permit application report;
- Volume Two contains the consultant reports;
- Volume Three contains proposed preliminary development plans; and
- Volume Four contains figures in a Map Book.

The following consultants have contributed to the preparation of this proposal:

Planning and Community Consultation
Energy Forms Pty Ltd

Cultural and Historical Heritage reporting
Green Heritage Compliance and Research Pty Ltd

Ecological Assessment
Ecology and Heritage Partners Pty Ltd

Geotechnical Review
Hardrock Geotechnical Pty Ltd

Geology and Hydrology
BayWa-re

Acoustic Assessment
Marshall Day Acoustics Pty Ltd

Acoustic Environmental Audit Report
Infotech Research pty ltd

Aeronautical Assessment
L & B Worldwide Australia Pty Ltd

Landscape and Visual Assessment
Green Bean Design Pty Ltd

Transport Assessment
IMPACT Traffic Engineering Pty Ltd

Contents

Figures

Tables

Glossary

AAV	Aboriginal Affairs Victoria
AHD	Australian Height Datum
AIS	Aeronautical Information Service
AMCA	Australian Media and Communications Authority
AMSL	Above Mean Sea Level
ARENA	Australian Renewable Energy Agency
BMP	Bushfire Management Plan
CASA	Civil Aviation Safety Authority
CEFC	Clean Energy Finance Corporation
CHMP	Cultural Heritage Management Plan
CO_2	carbon dioxide
CVU	Central Victorian Uplands
dB	Decibels
dBA	Decibels (A-weighted)
DELWP	Department of Environment, Land, Water & Planning
DHAA	Desktop Historical Archaeological Assessment
DTM	digital terrain model
EES	Environmental Effects statement
EHP	Ecology and Heritage Partners
EMI	Electromagnetic interference
EMP	Environmental Management Plan
EPBC	Environment Protection and Biodiversity Conservation Act
EPBC	Environment Protection and Biodiversity Conservation Act 1999
EVC	Ecological vegetation class
FFG	Flora and Fauna Guarantee Act 1988
Framework	Victoria's Native Vegetation Management: A Framework for Action
Future Energy	Future Energy Pty Ltd
FZ	Farming Zone
GBD	Green Bean Design Pty Ltd
GH	Green Heritage Compliance and Research Pty Ltd
GIS	Geographical Information System
Guidelines	Policy and planning guidelines for development of wind energy facilities in Victoria 2016
GWh	Gigawatt hours
Heritage Act	Aboriginal Heritage Act 2006
HHa	Habitat Hectare
HO	Heritage Overlay
IPCC	Intergovernmental Panel on Climate Change
km	Kilometre
kV	Kilovolt

LGCs	Large-scale Generation Certificates
LVIA	Landscape and Visual Impact assessment
m	Metre
MW	Megawatt
MWh	Megawatt hour
NASAG	National Airports Safeguarding Advisory Group
NASF	National Airports Safeguarding Framework
National Guidelines	Draft National Wind Farm Guidelines July 2010
NZS 6808:2010	New Zealand Standard 6808:2010 Acoustics
OLS	Obstacle Limitation Surface
PCHS	Preliminary Cultural Heritage Study
Photoshop CS3	Image editing software
RAAF	Royal Australian Air Force
RAP	Registered Aboriginal Party
RDZ1	Road Zone
RET	Renewable Energy Target
RSA	Rotor Swept Area
SLO	Significant Landscape Overlay
SPPF	State Planning Policy Framework
SRES	Small-scale Renewable Energy Scheme
SWVLAS	South West Victoria Landscape Assessment Study
VAHR	Victorian Aboriginal Heritage Register
VCAT	Victorian Civil and Administrative Tribunal
Vestas V162	Model turbine type
VHI	Victorian Heritage Inventory
VHR	Victorian Heritage Register
VVP	Victorian Volcanic Plain
WindPro	Wind Farm modelling software
Wind turbine or WTG	Triple blade horizontal axis wind turbine generator
ZVI	Zone of Visual Influence

About BayWa-Re Projects Australia Pty Ltd

BayWa-r.e. Projects Australia Pty Ltd began operations in Australia in 2017 through the acquisition of Future Energy Pty Ltd and its pipeline of wind farm projects. Future Energy was established in 2004 to develop, construct, own and operate renewable energy projects throughout Australia.

BayWa-r.e. has various projects under active development in Australia which include six wind and five solar projects as well as a hybrid project with capacities ranging from 7.2 MW to 300 MW.

Two of BayWa-r.e. wind projects and one solar project are currently under construction, namely the Ferguson Wind Farm, Diapur Wind Farm and Yatpool Solar Farm. Projects that are currently under development and received planning permits include Jung Renewable Energy Facility, a hybrid project comprising wind, solar and battery storage, Bendigo Solar Farm and Ouyen Solar Farm. For more information concerning these projects visit www.fergusonwindfarm.com.au , www.diapurwindfarm.com.au, www.bendigosolarfarm.com.au, www.jungrenewableenergyfacility.com.au.

BayWa-r.e. also owns currently operating Karadoc Solar Farm in north western Victoria and Hughenden Solar Farm in Queensland.

BayWa r.e also recognises that Victoria's regional communities have been significantly strained in recent times by the impacts of climate change, bushfire and COVID-19.While some of these impacts will take a long time to turn around it is worthwhile recognising the valuable contribution of the renewable energy industry in regional Victoria.

Wind farms, in particular, provide an important mechanism to generate sustainable and long term economic stimulus and jobs in regional communities. This is especially the case of larger projects, such as the Wimmera Plains Energy Facility.

This project represents a CAPEX investment of approximately $500M in regional Victoria. Overall economic stimulus to the broader Wimmera economy is forecast at approximately $33M. The Facility will require a workforce of around 280 people during the construction phase. In the longer term the project will employ 8 to 10 permanent direct employees and support to an estimated 25 full time indirect jobs in the local community.

The Wimmera Plains Energy Facility will generate sufficient electricity to power 202,000 Victorian households and will help lower power prices. We estimate that the project will abate approximately 1.178 million tonnes of CO_2 per annum.

For more information about BayWa-r.e. and specific projects please visit our website at www.baywa-re.com.au/en/wind-solar, call us on +61 3 9429 5629, or email us at info@baywa-re.com.au.

1 Introduction

This document comprises an application for a planning permit to use and develop part of the land described in Table 1 as a wind energy facility in accordance with Clause 35.07 – Farming Zone and Clause 52.32 the Rural City of Horsham Planning Scheme:

Table 1: Land Allotments

Allotment 1 Parish of Kalkee 1\TP240472.	Allotment 196 Parish of Jung Jung 196\PP2811.
Allotment 2 Parish of Kalkee 2\TP240472.	Allotment 195 Parish of Jung Jung 195\PP2811.
Allotment 1 Parish of Kalkee 1\TP515586.	Allotment 195A Parish of Jung Jung 195A\PP2811.
Allotment 1 Parish of Kalkee 1\TP663294.	Allotment 107 Parish of Kalkee 107\PP2820.
Allotment 2 Parish of Kalkee 2\TP663294.	Allotment 1 Parish of Kalkee 1\TP181102.
Allotment 224 Parish of Jung Jung 224\PP2811.	Allotment 189 Parish of Jung Jung 189\PP2811.
Allotment 227 Parish of Jung Jung 227\PP2811.	Allotment 190 Parish of Jung Jung 190\PP2811.
Allotment 1 Parish of Jung Jung 1\TP398880.	Allotment 2 Parish of Jung Jung 2\PS306972.
Allotment 1 Parish of Jung Jung 1\TP830187.	Allotment 99 Parish of Kalkee 99\PP2820.
Allotment 1 Parish of Jung Jung 1\TP567605.	Allotment 1 Parish of Kalkee 1\TP248895.
Allotment 2 Parish of Jung Jung 2\TP567605.	Allotment 193 Parish of Jung Jung 193\PP2811.
Allotment 2 Parish of Jung Jung 2\TP878608.	Allotment 191 Parish of Jung Jung 191\PP2811.
Allotment 2 Parish of Kalkee 2\PS746710.	Allotment 188 Parish of Jung Jung 188\PP2811.
Allotment 199 Parish of Jung Jung 199\PP2811.	Allotment 1 Parish of Jung Jung 1\TP160623.
Allotment 201 Parish of Jung Jung 201\PP2811.	Allotment 173 Parish of Jung Jung 173\PP2811.
Allotment 166 Parish of Jung Jung 166\PP2811.	Allotment 186 Parish of Jung Jung 186\PP2811.
Allotment 168 Parish of Jung Jung 168\PP2811.	Allotment 187 Parish of Jung Jung 187\PP2811.
Allotment 167 Parish of Jung Jung 167\PP2811.	Allotment 1 Parish of Kalkee 1\TP742692.
Allotment 172 Parish of Jung Jung 172\PP2811.	Allotment 1 Parish of Kalkee 1\TP675930.
Allotment 194 Parish of Jung Jung 194\PP2811.	Allotment 101A Parish of Kalkee 101A\PP2820.
Allotment 170 Parish of Jung Jung 170\PP2811.	Allotment 105A Parish of Kalkee 105A\PP2820.
Allotment 169 Parish of Jung Jung 169\PP2811.	Allotment 103 Parish of Kalkee 103\PP2820.

Ancillary to this use and development a planning permit is also being sought for the following activities:

- Use and development of a wind energy facility, use and development of a utility installation - Clause 35.07-1 (Farming Zone);
- Works within 100m from Road Zone Category 1, works which change the rate of flow or the discharge point of water across a property boundary - Clause 35.07-4 (Farming Zone);
- Use and development of a utility installation - Clause 36.04-1 (Road Zone);
- Construct or put up for display a business identification sign - Clause 52.05-2 (Signs);
- Remove, destroy or lop native vegetation, including dead vegetation - Clause 52.17 (Native Vegetation);
- Create or alter access to a Road Zone Category 1 - Clause 52.29-2 (Land Adjacent to a Road Zone Category 1);
- Use and development of land for a wind energy facility - Clause 52.32 (Wind Energy Facility); and
- This application also seeks approval of car parking spaces to the satisfaction of the responsible authority under Clause 52.06-6.

The proposed Wimmera Plains Energy Facility will consist of fifty-two turbines with a maximum tip height of up to 247 m agl and a minimum RSA height of 85 m agl. The site is located approximately 10 km north of the township boundary of Horsham Victoria and is bounded by Kalkee East Rd and Mokepilly Rd to the north, Dogwood Road, Dooen-North Rd and Kelly Rd to the west, Ladlows Road and Johns Rd to the south and Jung Wheat Road and Jung North Rd to the east —see Figure 1 for further detail. The facility will connect to the national electricity grid at the 220 kV power line which transverses the site. It is expected that the project will be completed within two years of securing development approval.

The structure of this document is as follows. Beginning with a detailed site analysis and project description in Section 2, community engagement conducted to date is summarised in Section 3, while in Section 4 the various potential impacts of the proposal are introduced and addressed, and in Section 5 the proposal is assessed against the provisions of the Rural City of Horsham Planning Scheme.

Volume 2 contains specialist consultant reports along with other relevant material pertaining to the application, while Volume 3 contains proposed development plans and Volume 4 contains figures.

2 Project Description

The proposed Wimmera Plains Energy Facility, the site on which it is located, and its immediate context are described in detail in this section.

2.1 Site Selection

The site envelope of the covers approximately 3,800 Ha of land located between 10 km and 30 km north - north east of Horsham, Victoria. - See Figure 1 for further detail. The predominant land use of the project site and its immediate surrounds is broad acre cropping.

This site has been identified as an ideal site for a wind energy facility for the following reasons:

- It receives undisturbed wind flow with strong, consistent wind speeds;
- It is relatively distant from residences, tourist attractions and major roadways;
- The predominant land use is cropping, meaning there will be minimal effects on sensitive flora or fauna;
- It is in close proximity to the national electrical grid; and
- It is well served by road infrastructure.

The site envelope is comprised of 44 parcels of land comprising 42 parcels of privately owned farming land and 2 parcels of crown land as well as part of 10 roads. These areas are shown in Figure 2 and 3.

It is important to note that only a very small part of the land defined by the site envelope will be impacted by construction works. The area proposed to be impacted by works, defined as the works area, is discussed in greater detail below.

Figure 1: Site Location

Wimmera Plains Energy Facility

Site Location

Legend

Project Area

N
W E
S

Scale at A3:
1:200,000

0 5 10 Km

Figure 2: Land Details

Wimmera Plains Energy Facility

Land Details

Legend

- Parcel hosting Development Footprint
- Crown Land
- Parcel

KALKEE SCHOOL ROAD
SHEARWOODS ROAD
SMITHS ROAD
JUNG WHEAT ROAD
BANYENA ROAD
DOGWOOD ROAD
DOOEN NORTH ROAD
HENTY HIGHWAY
WHYTES ROAD
BELLS ROAD
FINLAYSONS ROAD
KELLY ROAD
MAX JOHNS ROAD
JOHNS ROAD
WALSGOTTS ROAD
DROVERS ROAD
GREENHILLS ROAD
JUNG RECREATION RESERVE ROAD
LADLOWS ROAD
JUNG WEST ROAD
TUCKERS ROAD
DRUNG-JUNG ROAD
WILL-DOOEN ROAD

1\TP830187
1\TP398880
1\TP567605
2\TP878608
2\TP567605
227\PP2811
224\PP2811
190\PP2811
191\PP2811
99\PP2820
189\PP2811
193\PP2811
196\PP2811
199\PP2811
1\TP248895
188\PP2811
194\PP2811
195\PP2811
201\PP2811
195A\PP2811
2\PS306972
1\TP663294
1\TP742692
172\PP2811
168\PP2811
169\PP2811
167\PP2811
186\PP2811
187\PP2811
173\PP2811
2\TP663294
101A\PP2820
1\TP675930
1\TP160623
170\PP2811
166\PP2811
1\TP515586
107\PP2820
103\PP2820
105A\PP2820
1\TP240472
1\TP181102
2\PS746710
2\TP240472

N
W E
S

Scale at A3:
1:35,000

0 0.75 1.5 km

Bayware

Date: 04/28/2020

Figure 3: Planning Zones and Overlays

Wimmera Plains Energy Facility

Planning Zones and Overlays

Legend

- Limit of Development Footprint
- Development Footprint
- Cultural Heritage Sensitivity Area
- Parcel

Overlays

- BMO - Bushfire Management Overlay
- DDO - Design and Development Overlay
- DPO - Development Plan Overlay
- ESO - Environmental Significance Overlay
- LSIO - Land Subject to Inundation Overlay
- RXO - Road Closure Overlay

Planning Zones

- FZ - Farming Zone
- PCRZ - Public Conservation and Resource Zone
- PPRZ - Public Park and Recreation Zone
- PUZ1 - Public Use Zone Service and Utility
- PUZ4 - Public Use Zone Transport
- PUZ5 - Public Use Zone Cemetery/Crematorium
- RDZ1 - Road Zone Category 1
- SUZ - Special Use Zone
- TZ - Township Zone

N W E S

Scale at A3: 1:50,000

0 1.5 3 Km

Date: 07/11/2020

2.2 Existing Conditions

The project site is located in the Wimmera region of Victoria, in an area that is sparsely populated and dedicated almost entirely to broad acre cropping.

2.2.1 Land Use

The land bounded by the site envelope is used primarily for broad acre cropping. There are a number of dwellings and other buildings located within the site envelope which are associated with this farming activity. There are numerous private tracks and public roads located within the site area, and decommissioned sections of the now defunct Wimmera Mallee Channel Irrigation System. These features are shown in Figures 4.

The area immediately surrounding the site envelope is also dedicated primarily to broad acre cropping and some quarrying activity. Further afield there are small pockets dedicated to other land uses, such nature reserves and townships, however these areas make up a very small component of the broader region surrounding the Wimmera Plains Energy Facility, which is dominated by agriculture.

To the south of the project the Avonbanks Sand Mine is proposed. This sand mine is the subject of an EES. Wimmera Plains Energy Facility is planned on land located entirely outside the mine Project Area, mineral resource area and mine footprint as shown in See Figure 5.

2.2.2 Vegetation

The project has undergone an ecological assessment by Ecology and Heritage Partners. This assessment considered the potential for the project to impact native flora, fauna and vegetation. The key results of this aspect of the ecological assessment were:

- No flora or fauna species of national significance were recorded in the study area;
- Two flora species of state significance (Buloke and Buloke Mistletoe) as well as two flora species listed under the FFG Act (Fuzzy New Holland Daisy and Lemon Beauty-heads) were recorded in the study area. There will be no impacts to Buloke, Buloke Mistletoe or Lemon Beauty-heads. Impacts to Fuzzy New Holland Daisy will be limited to six specimens which and are not considered significant. One fauna species of state significance, the Black Falcon, was recorded in the study area, however it will not be significantly impacted by the Wimmera Plains Energy Facility;
- The study area contains 11.03 Ha of native vegetation and 439 scattered trees, 158 of which are Large Trees and 281 of which are Small Trees. Of this native vegetation, the project footprint will impact 0.288 Ha of vegetation in the Plains Savannah EVC of poor quality. The

offset requirement for this will be 0.034 General Habitat Units, with no Specific Habitat Units required;

- All scattered trees identified within the vicinity of the project footprint will be retained;
- Following point count bird utilisation surveys, a Level 1 Brolga Assessment, and two microbat surveys, it is considered that the potential impact of the Wimmera Plains Energy Facility on birds and bats will be low to negligible;
- There are no anticipated impacts to native terrestrial fauna; and
- The proposed activity is considered highly unlikely to significantly impact any EPBC Act listed species (threatened or migratory), ecological communities or any other matters of National Environmental Significance (NES). As such, an EPBC Act referral regarding these matters is considered unwarranted.

The environmental values of the site are shown in Figure 4 and Appendix 19, Volume 3. For a more detailed discussions of the flora and fauna values of the site refer to Section 4.

2.2.3 Cultural Heritage

There are no areas of cultural heritage sensitivity directly impacted by the project footprint. According to the Cultural Heritage Due Diligence Report there are no known historical heritage places located on the site, nor is it likely that any would be present. Nonetheless a voluntary Cultural Heritage Management Plan (CHMP) has been undertaken on the site.

2.2.4 Topography

Situated within the Wimmera Plains, the project site and its surrounds are relatively flat and lie at an elevation of between 130 m and 145 m AHD. The elevation contours of the site are shown in Figure 4.

2.2.5 Landscape

The viewshed of the Wimmera Plains Energy Facility is entirely contained within the Wimmera Plains. The landscape character surrounding the project site has been determined as a singular landscape unit which generally occurs within the 10 km of the proposed Wimmera Plains Energy Facility site. The landscape unit represents an area that is relatively consistent and recognisable in terms of its key landscape elements and physical attributes, which include a relatively limited combination of topography/landform, vegetation/landcover, land use and built structures (including settlements and local road corridors). The predominant landscape unit within and surrounding the project site has been identified as a level to very gently inclined and modified agricultural land with localised and specific characteristics which occur within the landscape unit, including:

- Landscape areas associated with the Barrett State Forest;
- Yarriambiack Creek and associated vegetative patterns extending alongside the creek line corridor; and
- Henty Highway corridor.

The landscape of the project site and its surrounds is discussed in greater detail in Section 4.

2.2.6 Geotechnical and Hydrological Conditions

A desktop geology and hydrology assessment report undertaken by the proponent concluded that, based on geological mapping by the Geological Survey of Victoria, the proposed energy facility lies within the Tertiary 'Parilla Sand' formation which is comprised of marine sands and silts. The Tertiary 'Parilla Sand' formation is characterised by topsoils comprising silt and sand to limited depths, underlain by moderately reactive clay grading to clayey sand soils at depth. According to the review, local geological conditions should not present any significant difficulties during construction.

The Tertiary "Loxton-Parilla" sands is the main aquifer of the Murray-Darling Basin and is highly saline. According to Visualising Victoria Groundwater, the groundwater table lies approximately 30 meters below the surface within the project area. A Geology and Hydrology Assessment report is included in Volume 2.

2.2.7 Dwellings

The potential impact of the project on nearby dwellings is closely related to the distance between them. The larger the distance between dwellings and wind turbines the lower the impact will be in terms of sound, shadow flicker, and landscape values. There are no non-stakeholder dwellings within 1 km of a proposed turbine location and 22 non stakeholders located between 1 km and 3 km of a wind turbine. The number and locations of dwellings in the vicinity of the Wimmera Plains Energy Facility are shown in Table 2 and Figure 6.

Table 2: Dwellings within 3 km of the Wimmera Plains Energy Facility

Distance from Nearest Turbine	Dwellings	Non-Stakeholder Dwellings	Stakeholder Dwellings
0–1 km	1	0	1
1-1.5 km	11	6	5
1.5 –2 km	7	5	2
2–3 km	15	11	4

The distance and bearing from each of these dwellings to the nearest turbine is shown in the table below.

Table 3: Distances and Bearing to Dwellings within 3 km of the Facility

House Number	Street Address	Distance from Nearest Turbine (m)	Bearing from Nearest Turbine (°)	Stakeholder Status
4	1797 HENTY HIGHWAY JUNG 3401	657	256	Stakeholder
3	530 BANYENA ROAD KALKEE 3401	1011	103	Stakeholder
18	2387 HENTY HIGHWAY JUNG 3401	1048	7	Stakeholder
1	1648 HENTY HIGHWAY DOOEN 3401	1120	192	Stakeholder
6	1507 HENTY HIGHWAY KALKEE 3401	1171	321	Stakeholder
5	1729 HENTY HIGHWAY JUNG 3401	1172	150	Non-stakeholder
63	466 KALKEE ROAD KALKEE 3401	1338	156	Stakeholder
61	719 DOOEN N ROAD KALKEE 3401	1377	78	Stakeholder
8	830 GREENHILLS ROAD JUNG 3401	1388	329	Non-stakeholder
7	826 GREENHILLS ROAD JUNG 3401	1452	322	Non-stakeholder
39	130 KALKEE EAST ROAD JUNG 3401	1473	61	Non-stakeholder
11	696 JUNG WHEAT ROAD JUNG 3401	1515	31	Non-stakeholder
58	553 JUNG NORTH ROAD JUNG 3401	1551	336	Stakeholder
14	382 JUNG WHEAT ROAD JUNG 3401	1593	320	Non-stakeholder
2	400 JUNG WHEAT ROAD JUNG 3401	1741	315	Non-stakeholder
19	232 SHEARWOODS ROAD JUNG 3401	1743	207	Non-stakeholder
12	1305 BANYENA ROAD JUNG 3401	1759	46	Non-stakeholder
10	552 JUNG NORTH ROAD JUNG 3401	1791	332	Stakeholder
38	65 RAY MILLS ROAD JUNG 3401	1904	128	Non-stakeholder
84	20 RULES EAST ROAD KALKEE 3401	2000	192	Non-stakeholder
22	209 LADLOWS ROAD DOOEN 3401	2026	290	Stakeholder
17	174 MOKEPILLY ROAD JUNG 3401	2040	21	Non-stakeholder
73	1200 BLUE RIBBON RD KALKEE 3401	2056	137	Non-stakeholder
60	896 BLUE RIBBON RD DOOEN 3401	2111	226	Stakeholder
71	1149 BLUE RIBBON RD KALKEE 3401	2215	154	Non-stakeholder
62	837 DOOEN N ROAD KALKEE 3401	2263	145	Stakeholder
40	447 BYRNEVILLE ROAD JUNG 3401	2293	94	Non-stakeholder
66	1324 BLUE RIBBON RD KALKEE 3401	2442	159	Non-stakeholder
16	373 SMITHS ROAD JUNG 3401	2562	355	Non-stakeholder
42	174 MOKEPILLY ROAD JUNG 3401	2652	42	Non-stakeholder
80	843 BLUE RIBBON RD DOOEN 3401	2864	229	Non-stakeholder
36	1050 DOOEN N ROAD KALKEE 3401	2910	169	Stakeholder
83	97 RULES EAST ROAD DOOEN 3401	2961	199	Non-stakeholder
15	402 SMITHS ROAD JUNG 3401	2963	352	Non-stakeholder

Figure 4: Existing Conditions

Wimmera Plains Energy Facility

Existing Conditions

Legend

- Scattered Large Tree
- Scattered Small Tree
- Scattered Natives
- FFG Act Protected
- 22 kV Powerline
- 66 kV Powerline
- 220 kV Powerline
- GWM Water Pipeline
- Decommissioned Water Channels
- Elevation
- Limit of Development Footprint
- Native Vegetation
- Cultural Heritage Areas
- Mining Quarry Licence Area
- Powerline Easement
- Parcel

Dwellings

- Stakeholder
- Non-stakeholder

Note: Refer to Development Plans for Site Infrastructure Layout over Existing Conditions.

N W E S

Scale at A3: 1:40,000

0 1 2 km

BayWare

Date: 04/28/2020

KALKEE EAST ROAD
RAY MILLS ROAD
SLEEPS ROAD
MOKEPILLY ROAD
BLUE RIBBON ROAD
KALKEE SCHOOL ROAD
SHEARWOODS ROAD
SMITHS ROAD
SMITHS ROAD
JUNG NORTH ROAD
JUNG WHEAT ROAD
BANYENA ROAD
BANYENA ROAD
DOGWOOD ROAD
HENTY HIGHWAY
WHYTES ROAD
BELLS ROAD
DOOEN NORTH ROAD
FINLAYSONS ROAD
KELLY ROAD
JOHNS ROAD
MAX JOHNS ROAD
WALSGOTTS ROAD
JUNG WHEAT ROAD
GREENHILLS ROAD
JUNG RECREATION RESERVE ROAD
RULES EAST ROAD
WAIL-DOOEN ROAD
LADLOWS ROAD
Kalkee Plantation
JUNG WEST ROAD
TUCKERS ROAD
DRUNG-JUNG ROAD
RAILWAY STREET

Figure 5: Avonbanks Mine

Wimmera Plains Energy Facility

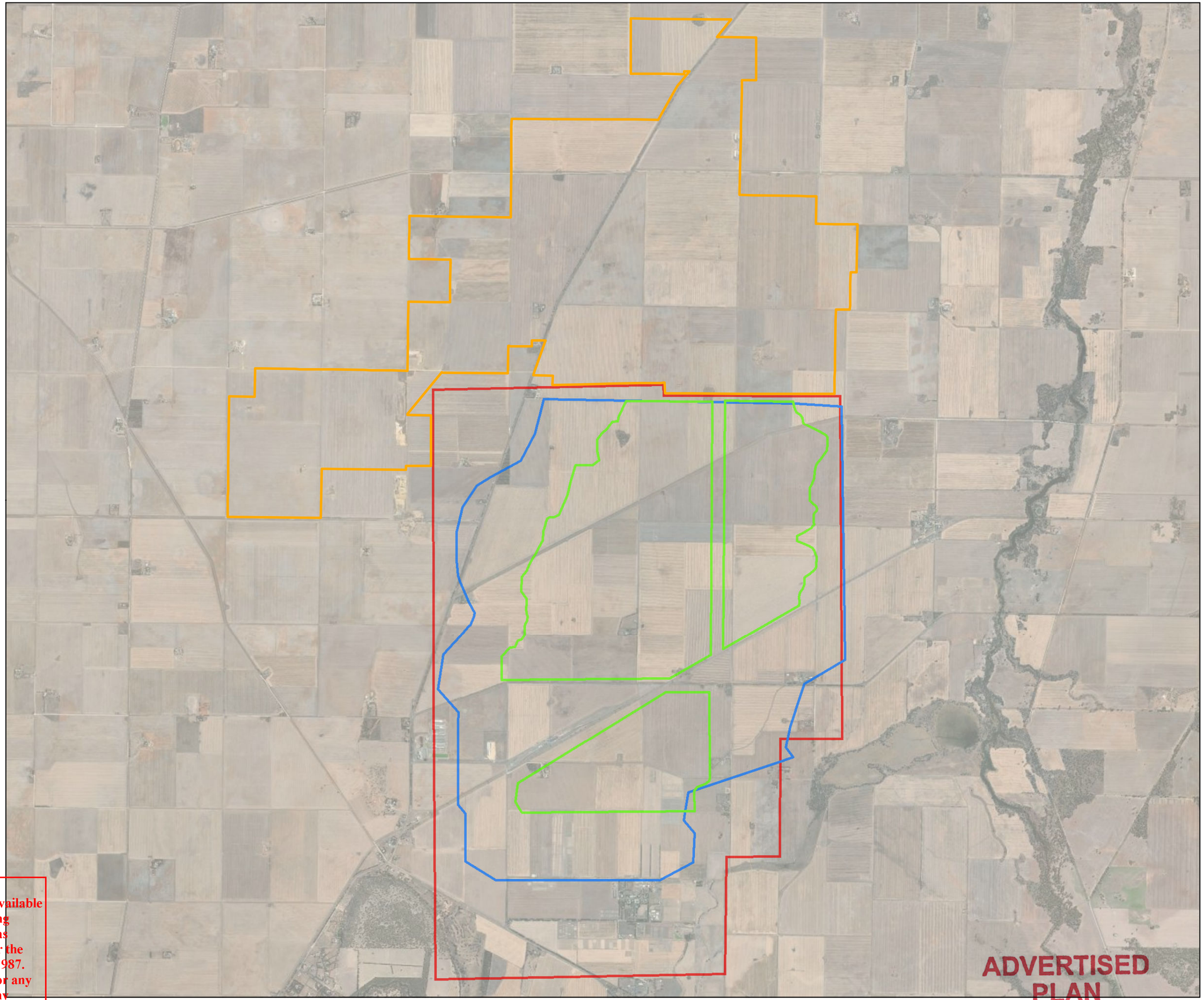
Avonbank Mineral Sands Mine Area

Legend

- Limit of Development Footprint

Avonbank Mineral Sands Mine Area

- Project Area
- Mineral Resource
- Preliminary Mine Footprint



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Scale at A3:
1:60,000

0 1.5 3 km

Date: 04/28/2020

Figure 6: Nearby Dwellings

Wimmera Plains Energy Facility

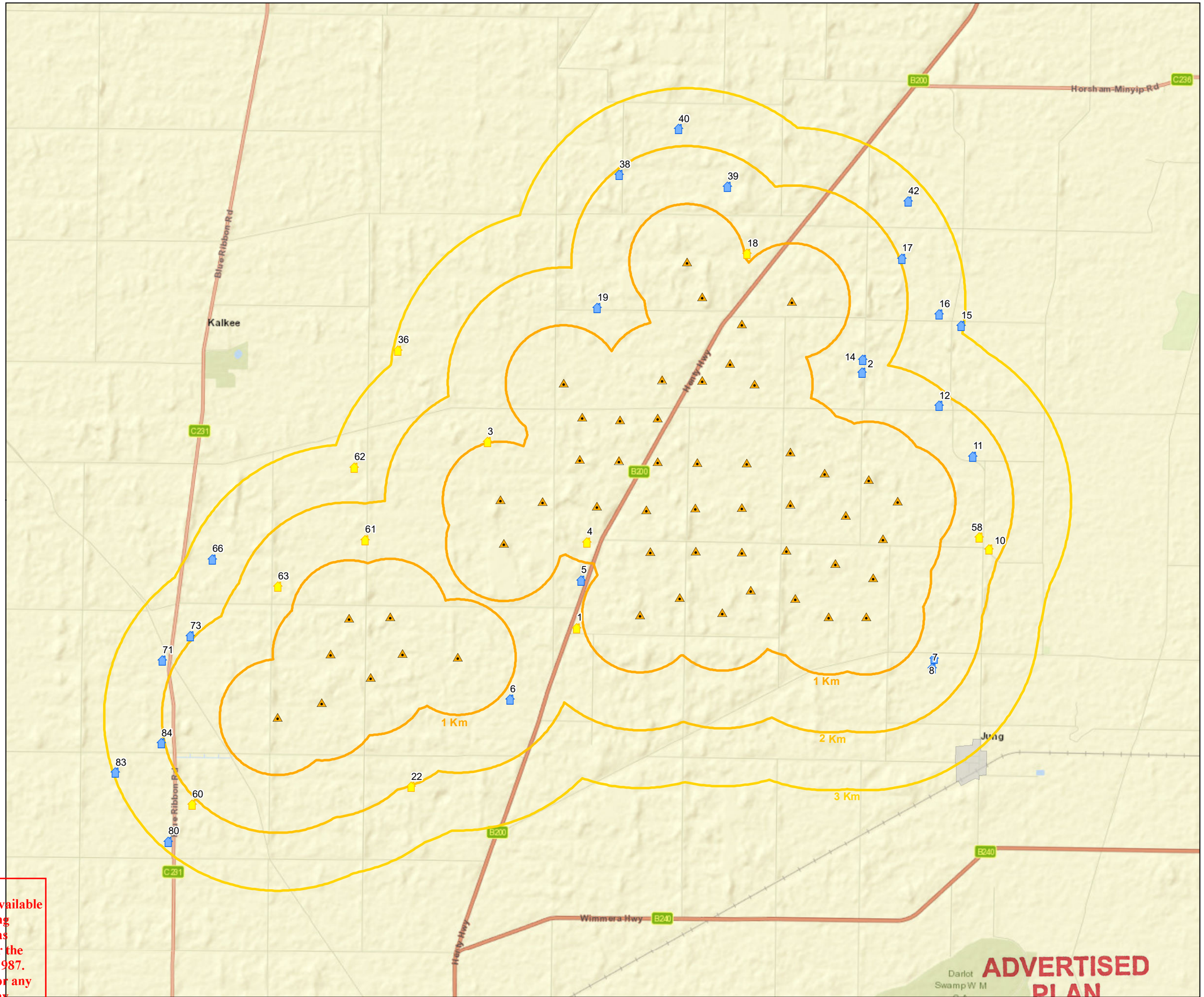
Nearby Dwellings

Legend

- Turbine Location

Dwelling

- Non-stakeholder
- Stakeholder



Date: 07/15/2020

2.3 Wind Energy Generators

For the purposes of preparing this application the turbine model used for modelling purposes was the Vestas V162 5.6 MW horizontal axis wind turbine generator. This turbine has a proposed hub height of 166 m agl and an RSA diameter of 162 m, making its maximum tip height 247 m and minimum blade ground clearance 85m agl. An elevation of the candidate turbine is shown below in Figure 7.

The final selection of wind turbine will depend upon intervening developments in policy, as well as technological and the economic developments. In the event that the final choice of turbine differs from the Vestas V162, the selected wind turbine generator will comply with the dimensions listed above, and all modelling will be redone on the basis of the final choice of turbine, with the Wimmera Plains Energy Facility to comply with all conditions of development approval.

Table 4: Wind Turbine Locations GDA94 MGA Z54

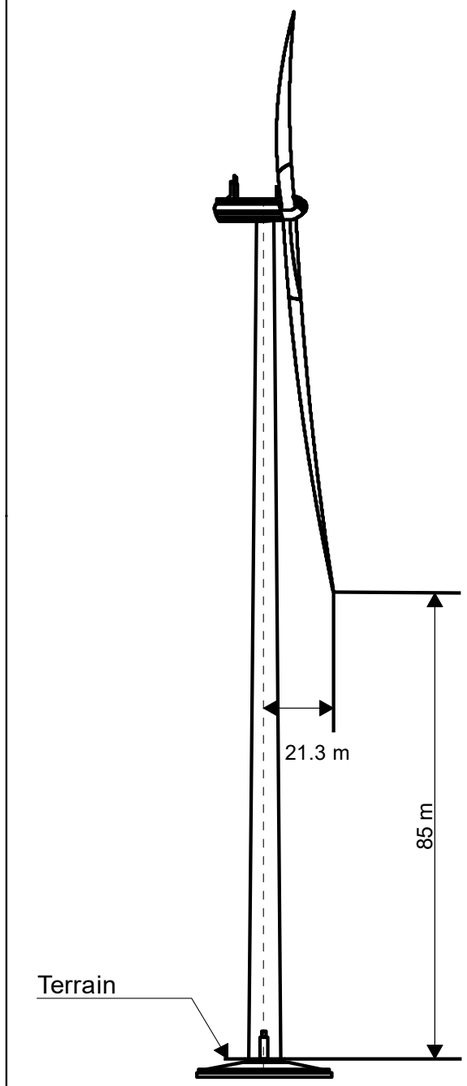
Wind Turbine No	Easting	Northing	Wind Turbine No	Easting	Northing
1	619688	5950302	28	616853	5954390
2	619038	5950302	29	617333	5954683
3	618466	5950616	30	618404	5955757
4	617696	5950763	31	617538	5955364
5	617200	5950371	32	616852	5955834
6	616467	5950635	33	616593	5956437
7	615777	5950339	34	616159	5954401
8	615957	5951427	35	614455	5954338
9	616748	5951442	36	614782	5953760
10	617536	5951419	37	615434	5953704
11	618309	5951457	38	616088	5953738
12	619157	5951224	39	615412	5953002
13	619810	5950981	40	614737	5953017
14	619974	5951652	41	615031	5952219
15	620230	5952297	42	614090	5952296
16	619337	5952057	43	613368	5952328
17	618376	5952252	44	613423	5951573
18	617543	5952192	45	Removed from Project	
19	616733	5952185	46	Removed from Project	
20	615893	5952147	47	611458	5950302
21	616080	5952987	48	610749	5950278
22	616771	5952972	49	610429	5949663
23	617626	5952957	50	611671	5949664
24	618379	5953147	51	611126	5949257
25	618970	5952782	52	610273	5948818
26	619730	5952674	53	609512	5948566
27	617761	5954323	54	612628	5949604

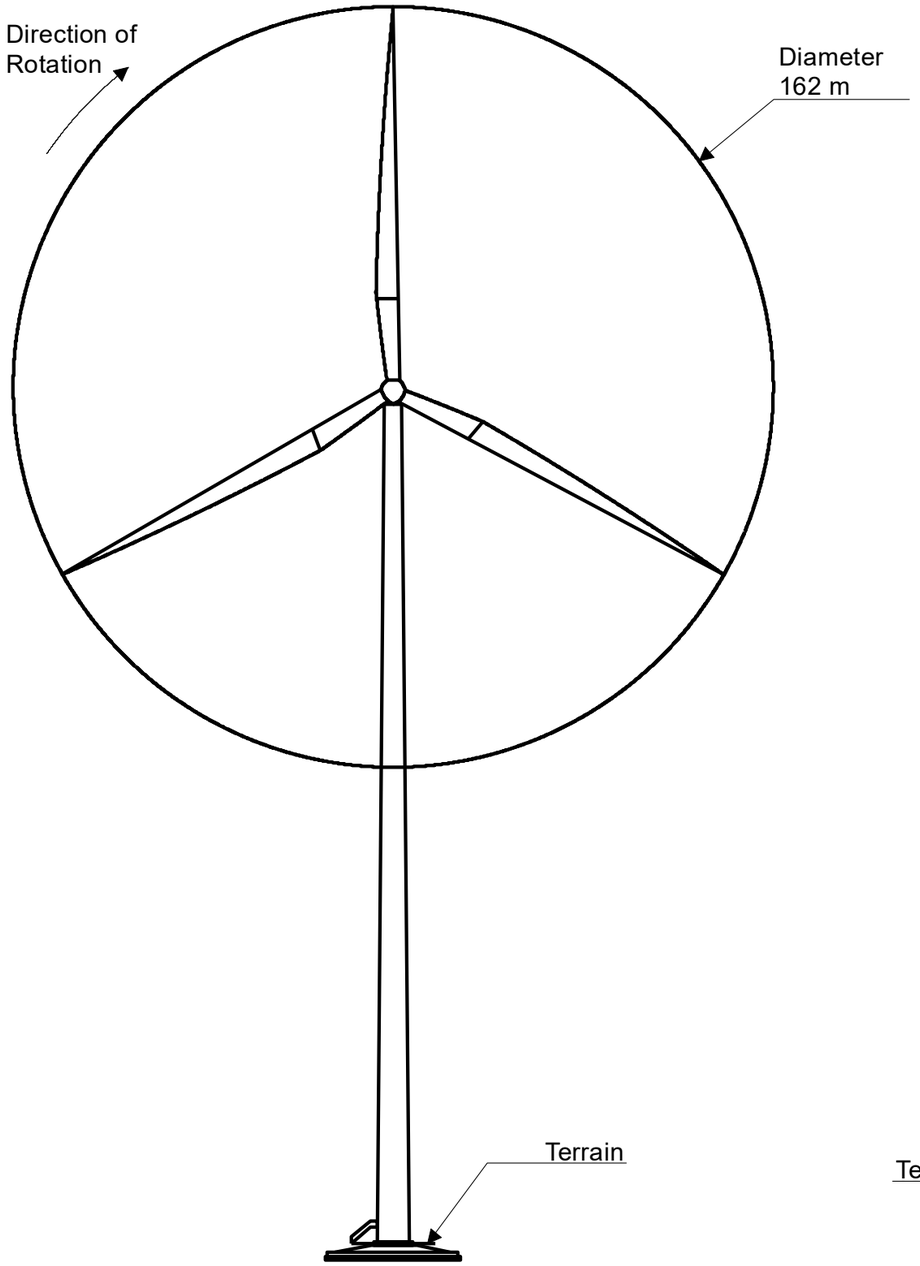
Figure 7: Elevation of Candidate Wind Turbine

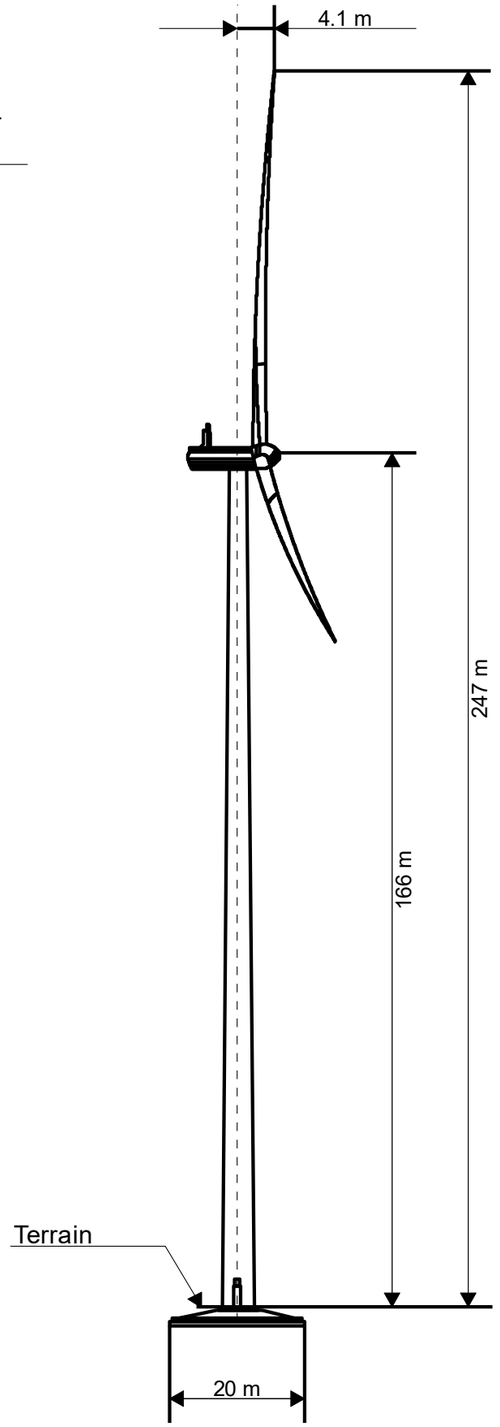
Wimmera Plains Energy Facility

Vestas V162 Turbine
Elevation Profile

NOT FOR CONSTRUCTION







NOT TO SCALE

Make: VESTAS
Model: V162
Capacity: 5.6 MW
Nacelle, Cooler Top/ Rotor Hub Material: Steel framed construction with fibreglass composite cover
Blade Material: Fibreglass composite
Tower Material: Steel
Foundation Material: Concrete with steel reinforcement
Stair Material: Aluminium
Colour and Finish of Stairs: Natural Aluminium
Colour and Finish of Turbines (nacelles, cooler tops, rotor hubs, blades and towers): "Light Grey (RAL 7035). {Industry Standard, Non-reflective}
Colour and Finish of Foundations: Cement Grey, Natural Concrete

Date: 05/14/2020

2.4 Transport Infrastructure

The project site is bisected by the Henty Hwy in a southwest-northeast direction. Three intersections on Henty Hwy will be used for transport of large infrastructure components such as turbine blades and towers. Turbine blades will be delivered to the south west corner of the site via Ladlows Road Accordingly, it is proposed that all other construction traffic and staff vehicles associated with the facility access the site via the Henty Highway. The proposed site entrances and access route to the site are shown in Figure 8. Transport infrastructure and potential impacts to local traffic are discussed in greater detail in Section 4.

2.5 Site Works

The proposed Wimmera Plains Energy Facility will consist of 52 wind turbines and associated infrastructure. This includes;

- Foundations;
- Access tracks;
- Hard stand areas;
- 4 monitoring towers;
- Construction compound areas;
- Substations;
- Two temporary concrete batching plants with temporary water supply infrastructure; and
- An overhead substation connection line and underground cabling.

All site works described in this section are shown in Figure 9. Preliminary detailed development plans showing the proposed site works can be found in Volume 3.

2.5.1 Turbine Foundations

Each turbine will require a foundation, which will consist of a 20 m x 20 m steel reinforced concrete slab. Following construction of the Wimmera Plains Energy Facility the turbine tower, a collar around the base and hardstand will remain to allow maintenance.

2.5.2 Access Tracks

The Wimmera Plains Energy Facility will require approximately 22.4 km of internal access tracks. Where possible these internal access tracks have been designed to follow existing farm tracks and/or fence lines used by the landowners of the site. The access tracks will be 5.5 m in width and will be constructed from locally sourced crushed rock. Once construction is complete the access track will remain in place and will be used by the landowner and facility maintenance crews. See Figure 9 for further detail.

2.5.3 Site Entrances

Three intersections of the Henty Highway and local roads will be utilised to allow heavy and oversized traffic associated with wind turbine components to access local roads within the site. Transport vehicles will enter the site from both north and south side of the Henty Highway and will use the following three intersections to turn into local roads:

- Henty Highway and Shearwoods Road;
- Henty Highway and Banyena Rd; and
- Henty Highway and Ladlows Rd.

To deliver the turbine components to their final locations within the site the oversized vehicles will make a turn at the following nine intersections of local roads:

- Ladlows Rd and Dooen North Rd;
- Dooen North Rd and Finlaysons Rd;
- Finlaysons Rd and Dogwood Rd;
- Banyena Rd and Dogwood Rd;
- Smiths Rd and Whytes Rd;
- Banyena Rd and Max Johns Rd;
- Max Johns Rd and Bells Rd;
- Bells Rd and Whytes Rd; and
- Shearwoods Road and Unnamed Road.

2.5.4 Local Roads

The following table lists the local roads that will require upgrading to engineered all weather roads of a suitable standard to accommodate the heavy vehicles required to construct the Wimmera Plains Energy Facility. See Figure 8 and 30 for further detail.

Table 5: Local Roads requiring Upgrade

Road Name	Length of Upgrade (m)
Shearwoods Road	1,003
Unnamed Road	843
Smiths Road	1107
Whytes Road	4,706
Max Johns Road	3,560
Dogwood Road	2,250
Banyena Road (west)	1,960
Bells Road	5,030
Finlaysons Road	3,603
Dooen North Road	2,586

Figure 8: Local Roads for Site Traffic

Wimmera Plains Energy Facility

Local Roads
for Site Traffic

Legend

- Turbine Location
- Land not included in the Project
- Parcel

Traffic Circulation

- Turbine Blade Transport Road Intersection
- Turbine Blade Transport Path
- Other Construction Transport Path
- Local Road requiring Upgrade to All Weather Road

Development Footprint

- Turbine Foundation
- Turbine Hard Stand
- Substation Area
- Construction Compound Laydown Area
- Batching Plant Area

N
W E
S

Scale at A3:
1:35,000

0 0.75 1.5 km

Figure 9: Site Plan

Wimmera Plains Energy Facility

Site Plan

Legend

- Turbine Location
- Proposed Jung Wind Farm Turbine Location
- 220 kV Transmission Line
- Limit of Development Footprint
- Land not included in the Project
- Crown Land
- Parcel

Development Footprint

- Access Track
- Turbine Foundation
- Turbine Hard Stand
- Substation
- Temporary Batching Plant Area
- Construction Compound Laydown Area
- Temporary Water Site Connection
- Underground Cable Reticulation
- Overhead Substation Connection
- Overhead Transmission Connection
- Underground Substation Connection
- Substation Connection Line Power Pole Location
- Proposed Met Mast Location
- 45,000 L Water Tank

N W E S

Scale at A3:
1:35,000

0 0.75 1.5 km

Date: 08/20/2020

2.5.5 Hard Stand Areas

Hard standing areas measuring approximately 50 m x 30 m will be established at the base of each turbine during the construction phase of the facility. At the completion of construction, the hard stand areas will remain in place for future maintenance activities. The edges of the hardstand and collar will be blended with surrounding paddock and covered with topsoil.

2.5.6 Construction Compound Areas

During construction two temporary construction compound areas each measuring 40,000 m2 will be located on the site. These areas will house a batching plant, the site office and amenities, parking, and storage of containers and other construction materials and components. Following completion of construction part of the staging area will be used to house the static water supply and operations and maintenance building, while the remainder will be reinstated. See Figure 11 and 12 for further detail.

2.5.7 Concrete Batching Plant

Two concrete batching plants will be required on site. The concrete batching plants will each require an area of approximately 0.75 Ha and will be adjacent to the construction compounds. Following completion of construction, the areas used for the concrete batching will be reinstated. See Figure 11 and 12 for further detail.

2.5.8 Temporary Water Reticulation

The temporary batching plants and dust suppression will require a water source. In consultation with GWM Water it has been determined that there is spare capacity of (400-600 kL/day) in the area for a water supply for the project site. This can be supplied by an existing 450 mm trunk main along Jung North Road. It is proposed to install a water meter on the trunk main and install temporary private infrastructure to site which will have three peak days storage spread across the two batching plant sites and have the ability to pump between sites. Installation of the pipeline will cross Henty Hwy by under road boring. See Figure 13 for further detail

2.5.9 Substations

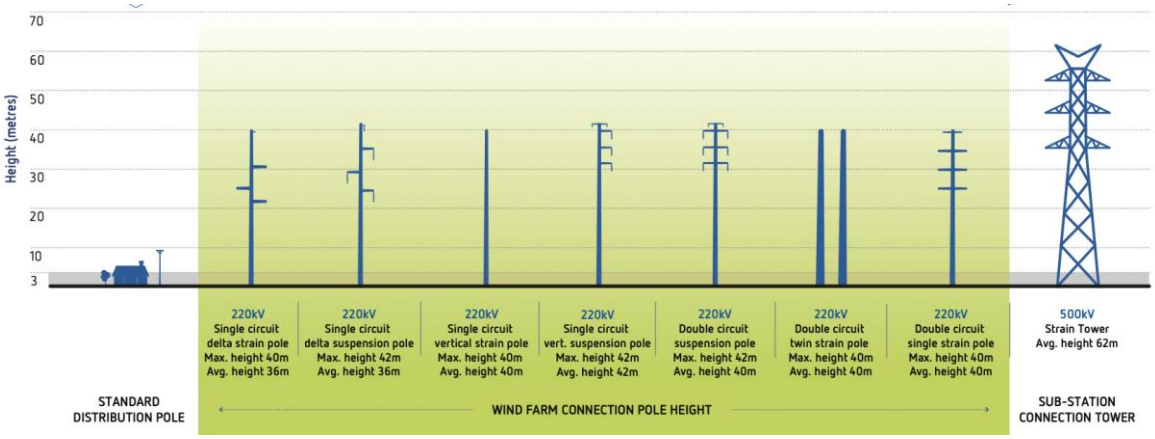
Two substations areas are proposed on the site each being 200 m x 100 m in size. The substations will collect electricity generated from wind turbines within their respective areas via underground cable reticulation.

The two substations will be connected to one another by an overhead power line and in smaller portion. Where the connection line crosses the existing 220 kV transmission line, the line will be diverted underground. See Figure 14 for further detail.

2.5.10 Substation Connection Transmission line

Electricity generated from the wind turbines will be collected at both substations. The main substation located near Bells Road on the east of Henty Highway is the connection point to the existing 220 kV transmission line and therefore will receive electricity from the substation near Dogwood Road on the west of the Henty Highway. The connection between the substations will consist of a 220kV overhead section of approximately 3,680 metres and an underground section of approximately 330 metres. The overhead section crosses Henty Highway at the intersection with Bells Road and runs parallel to Bells Road towards the main substation. The underground section starts 60 metres to the west of the existing 220 kV transmission line and terminates at the main substation. The transmission line conductors would be supported on a single tapered metal pole extending to a height of between 36m and 42m, as sown in the Figure below.

Figure 10: Indicative 220 kV transmission connection line



2.5.11 Underground Cable Reticulation

The wind turbine generators will be connected to the onsite substations via a network of underground cabling. This cable reticulation network will follow the routes shown in Figure 9 in trenches approximately 450 mm wide and 600 mm deep.

2.5.12 Electrical Grid Connection

The facility will connect into the electricity grid via the 220 kV overhead transmission line traversing the site. The location of the connection point will be adjacent to the main substation. An overhead connection will be constructed from the main substation near Bells Rd to the existing transmission line and will cross Whytes Rd. Indicative elevations of the onsite substation and overhead powerline are shown in Figure 14.

Figure 11: Construction Compound Detail West

Wimmera Plains Energy Facility

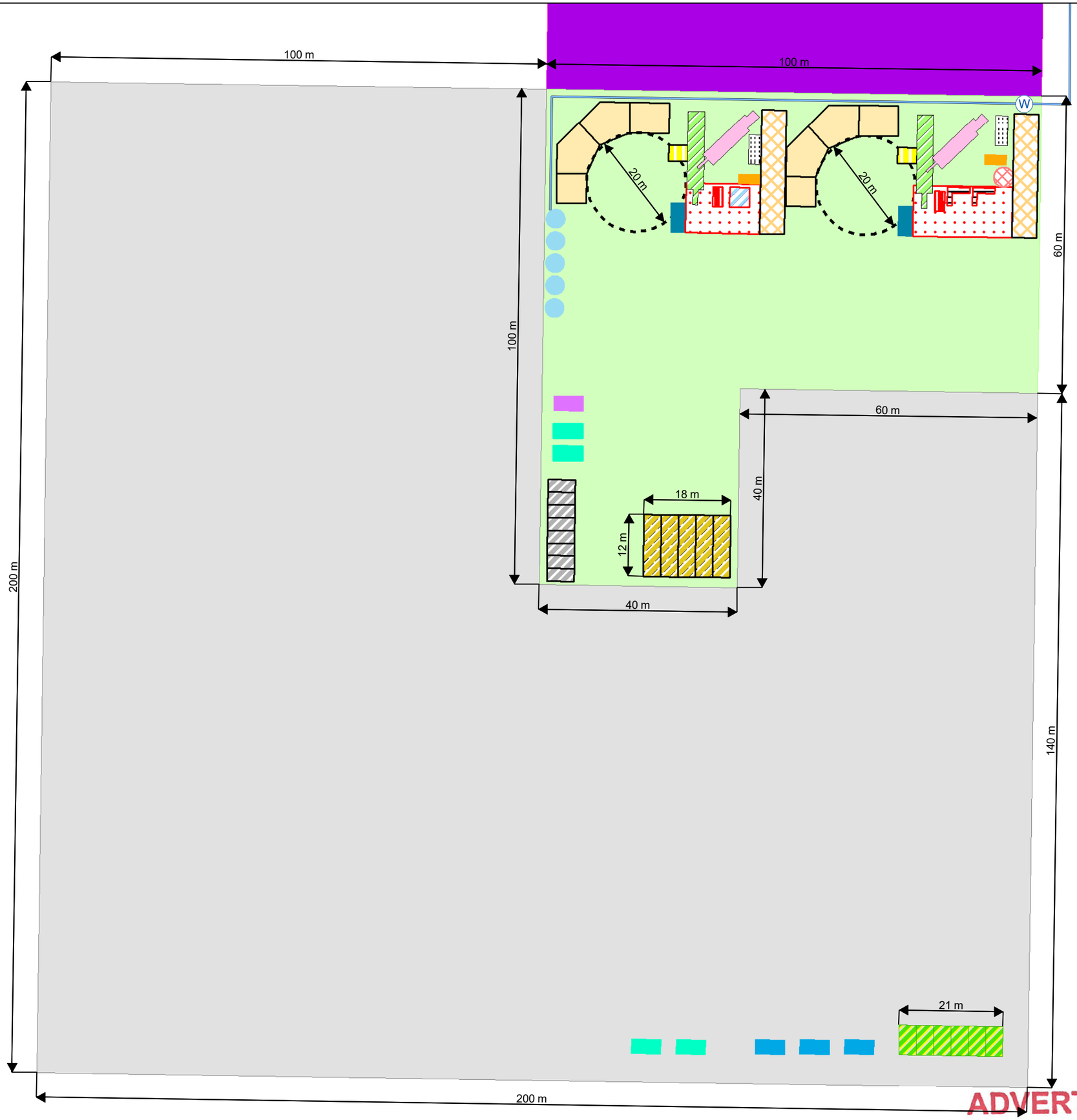
Construction Compound West

Development Footprint

- Substation
- Temporary Office
- Ablution
- Batching Plant
- Construction Compound Laydown Area
- Car Park

Indicative Batching Plant Layout

- Ablutions
- Admixture Store
- Batch Office
- Batching Plant Unit
- Car Bay
- Cement Silo
- FEL Ramp
- Generator
- Ground Bin
- Horizontal Silo
- Lunch Room
- Slump Stand
- Wet Area
- Stirrer Tank
- Tanker Area
- Truck Bay
- Washout box
- Water Tank
- Wedge Pit
- Temporary Water Pipeline
- (W) 45,000 L Static Water Tank



0 20 40 m

Figure 12: Construction Compound Detail East

Wimmera Plains Energy Facility

Construction Compound East

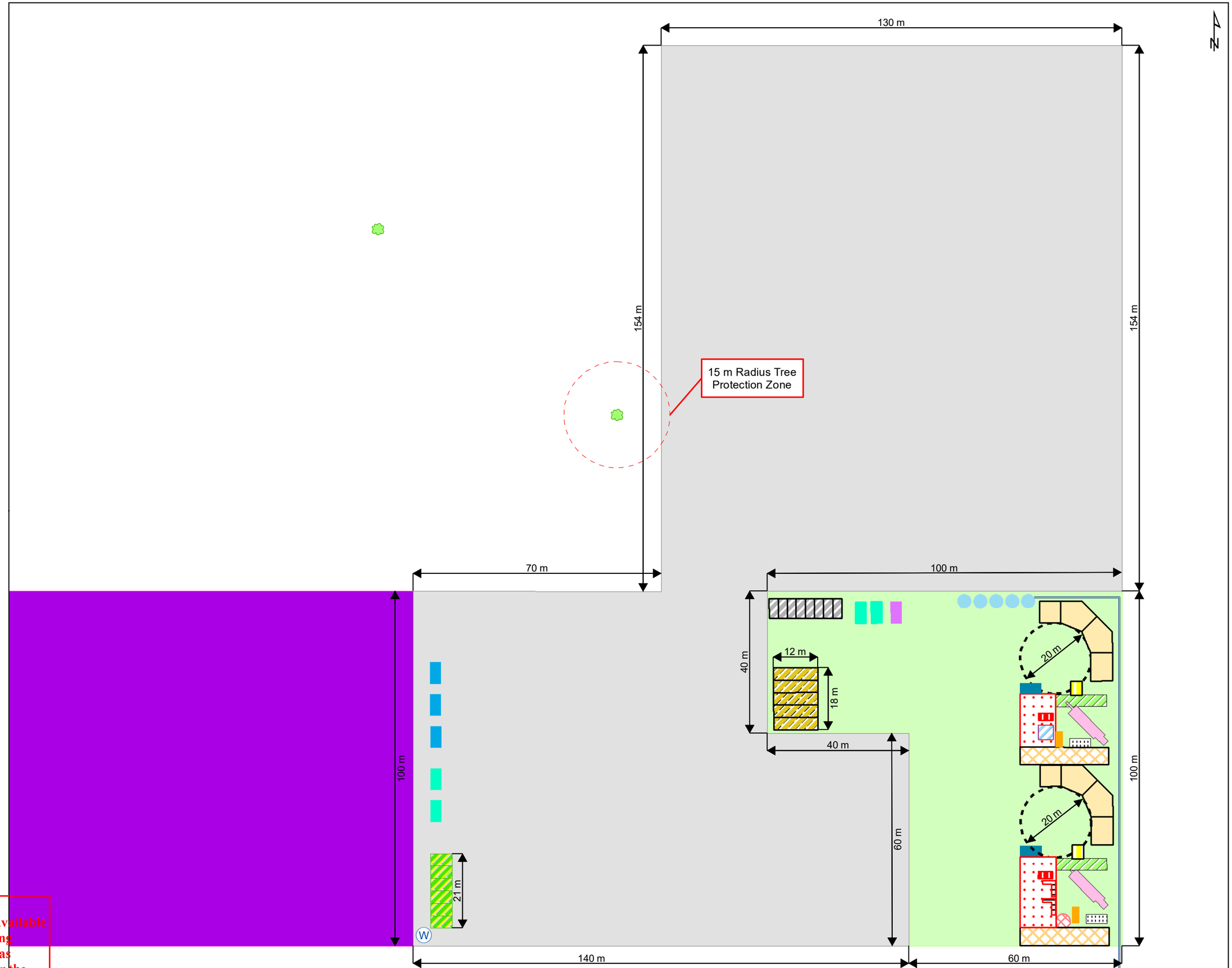
- Scatterred Tree

Development Footprint

- Substation
- Temporary Office
- Ablution
- Batching Plant
- Construction Compound Laydown Area
- Car Park

Indicative Batching Plant Layout

- Ablutions
- Admixture Store
- Batch Office
- Batching Plant Unit
- Car Bay
- Cement Silo
- FEL Ramp
- Generator
- Ground Bin
- Horizontal Silo
- Lunch Room
- Slump Stand
- Wet Area
- Stirrer Tank
- Tanker Area
- Truck Bay
- Washout box
- Water Tank
- Wedge Pit
- Temporary Water Pipeline
- (W) 45,000 L Static Water Tank



0 20 40 m

Date: 04/29/2020

Figure 13: Water Reticulation Plan

Wimmera Plains Energy Facility

Water Reticulation Plan
Designed in Consultation with GWM Water

Legend

- Limit of Development Footprint
- Vegetation (not impacted by water reticulation)
- Parcel

Development Footprint

- Substation Area
- Construction Compound Area
- Batching Plant Area
- Water Tank
- Temporary Site Water Pipeline 125 - 140 mm

GWM Water Pipeline

- 50 mm
- 80 - 150 mm
- 450 mm Trunk Main

N
W E
S

Scale at A3:
1:25,000

0 0.5 1 km

Bayware

Date: 05/04/2020

Figure 14: Indicative Substation Layout and Elevation

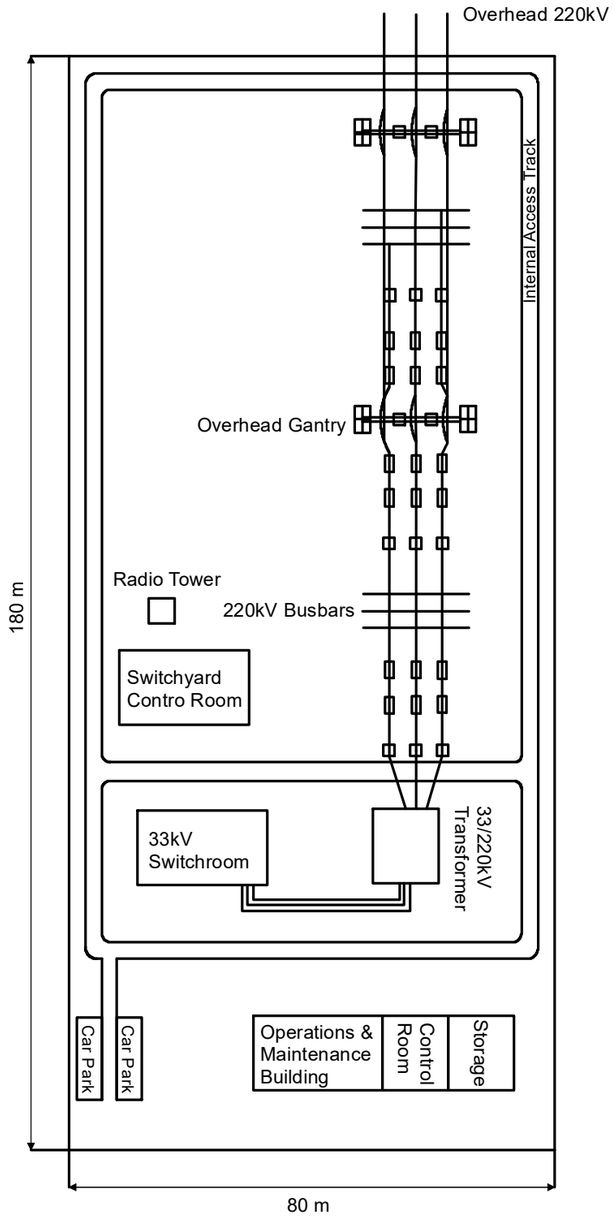
Wimmera Plains Energy Facility

220kV Substation

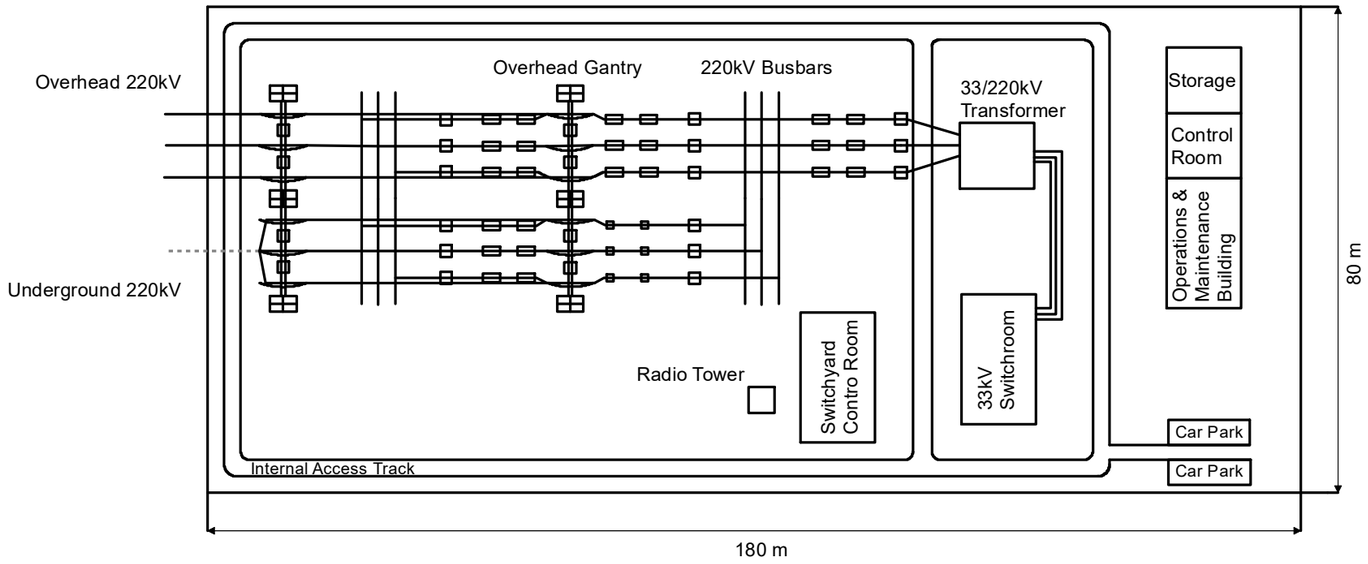
INDICATIVE LAYOUT AND ELEVATION PLAN

NOT FOR CONSTRUCTION

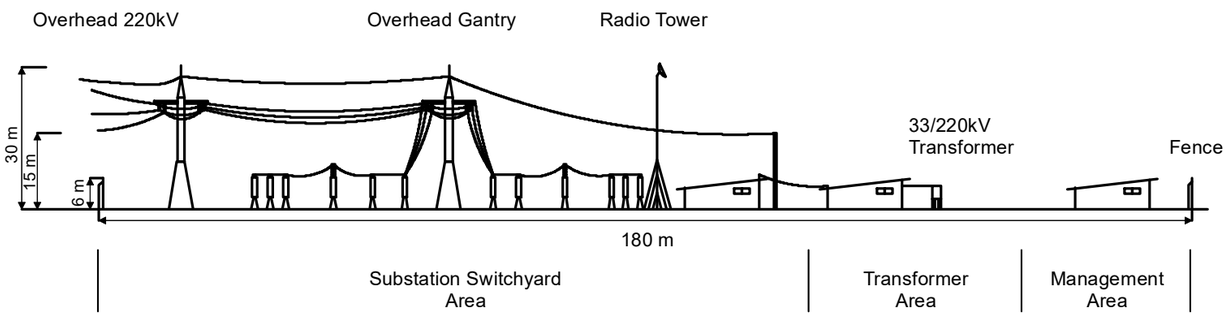
Substation West



Substation East



Elevation Profile



NOT TO SCALE

NOTE:
The substation layout is INDICATIVE ONLY.

2.5.13 Static Water Supply

In accordance with the CFA Emergency Management Guidelines for Wind Energy Facilities (CFA Guidelines) the facility will be provided with a permanent onsite static water supply. In consultation with the CFA it is proposed that two above ground water tanks with a volume of at least 45,000 L be situated adjacent to the substations at the construction compounds. A further two 45,000 L water tanks will be placed at the extremities of the Wimmera Plains Energy Facility. See Figure 9. Measures to minimize fire risk in accordance with the CFA Guidelines are discussed in further detail in Section 4.

2.6 Parking Areas

The Wimmera Plains Energy Facility will not require a designated parking area for its continued operation. Once construction is complete the vast majority of visits to the Wimmera Plains Energy Facility will be made by general maintenance staff using standard passenger vehicles who will be able to utilise the space beneath turbines for parking. Each Substation will provide eight parking places for maintenance purposes.

2.7 Signage

The Wimmera Plains Energy Facility will include one sign at the site access point at Bells Road east. The sign will be 1.5m x 2m and elevated approximately 1.5 from ground level.

2.8 Visual Reflectivity and Colour

It is now common practice to coat wind turbines in low reflectivity light grey RAL 7035 paint in order to reduce their visual impact on the landscape and against the sky. These finishes are selected by the chosen turbine manufacturer according to standard industry practice.

2.9 Monitoring Towers

The project will include 4 monitoring towers located to best capture the wind variables throughout the site. See figure 9. One of these monitoring towers is already installed adjacent to the proposed T20 and is 120m in height. This monitoring tower is painted red on the top one third and has marker balls on the guy wires as recommended by the NASF guideline D. The further 3 monitoring masts will be up to 160 m and also marked as recommended in the guidelines. See Volume 3, Figure 23

2.10 Aviation Obstacle Lighting

No aviation obstacle lighting is proposed. The Aeronautical Impact Assessment accompanying this application did not recommend the provision of lighting, noting that given the facility's location in close proximity to Horsham airport it is likely that CASA will require the fitting of obstacle lighting

enough to delineate the extent of the facility at night. For a more detailed discussion of aviation lighting see Section 4.

2.11 Setbacks

The proposed buildings and works outlined above have the following minimum setbacks from property boundaries and roads.

Table 6: Minimum Setbacks to Property Boundaries and Roads

Wimmera Plains Energy Facility Component	Distance to Nearest Property Boundary (m)	Distance to Nearest Road (m)	Distance to Nearest RDZ1 (m)
Substations	10	10	695
Foundation	58	71	126
Hard Stand	8	21	157
Staging Area	30	10	630
Power pole	27	7	100
Turbine	68	81.5	140
Monitoring Tower	6	135	423

2.12 Micro-siting

Prior to construction the proposed Wimmera Plains Energy Facility will undergo a detailed engineering design which may indicate a need for micro-siting of the turbines. Micro-siting is the process by which the original turbine layout is applied to the real landscape. This can involve moving turbine locations by distances of up to 100 m from their originally intended location.

Micro-siting can be necessary because turbine layouts are often designed at a desktop level and as such cannot take into account all on-site conditions such as local geotechnical bearing capacity or unknown latent conditions. In the event that a wind turbine or turbines are moved during the micro-siting process, no wind turbine generator will be moved more than 100 m from its permitted location, and all aspects of the Wimmera Plains Energy Facility will maintain compliance with the conditions of development approval.

2.13 Reinstatement

At the completion of construction access tracks and wind turbine hard stands will remain for the purposes of ongoing maintenance. The areas used for the concrete batching plants will be reinstated,

as will the former staging area except that required for the static water supply and access to this infrastructure. Reinstatement will consist of recovering such areas with topsoil and then spreading commercially available pasture seed mix over them.

2.14 Construction Timeline

Once development approval has been received and financial close achieved, the longest lead time items are typically the turbines themselves as well as the availability of the highly specialised cranes and crews needed to erect them. It is anticipated that construction of the Wimmera Plains Energy Facility will commence within two years of receiving development approval, while the construction process itself will take approximately two years from start to finish.

2.15 Operation and Maintenance

Like all modern wind farms, the Wimmera Plains Energy Facility will be remotely monitored 24 hours a day by the chosen maintenance provider. Under a long term maintenance agreement, routine scheduled maintenance will be undertaken on each turbine every six months. The maintenance function is likely to be carried out by local personnel who have received training from the turbine manufacturer. This maintenance will take approximately one day per turbine.

2.16 Decommissioning

The Lease Agreement in place with the landowners requires the owner of the Wimmera Plains Energy Facility to remove the turbines from the land at the end of the life of the wind farm. Before this time the owner and the landowner may agree to one of the following options:

- Continue maintaining and operating the wind farm;
- Upgrade the wind farm to more current technology; or
- Decommission the wind farm.

It is expected that a continuation or upgrade of the wind farm at the end of the lease period will require new permits and conditions. The procedure for decommissioning the wind farm will involve the removal of the wind turbine generators and reinstatement of wind turbine hardstands, while access tracks will remain to assist the landowner with farming activities. In accordance with the Guidelines the wind turbine footings will be covered with topsoil to return the area to pasture.

3 Consultation

As part of the process of proposing the Wimmera Plains Energy Facility, BayWa-r.e. has conducted a range of community engagement activities as described in this section.

3.1 Consultation plan

A full consultation plan has been prepared by Energy Forms. This is included in Volume 2. The purpose of the plan is to identify stakeholders and characterise the stakeholder groups in terms of their interests, concerns and consultation needs and potential to provide local knowledge. It also outlines the action plan for consultation with the community, Council and State Government agencies as well as the key messages for the project. A separate consultation register is also maintained so that all contacts can be recorded. A Consultation Outcomes report will accompany the Consultation Plan as an appendix.

3.2 Newsletters

In March 2019 BayWa-r.e. mailed a newsletter to all residents within a 5 km radius of the site. This newsletter included information about the proposed Wimmera Plains Energy Facility (then known as Jung Wind Farm Stage 2) including its location, the total number of turbines, their total height, and information about the developer of the BayWa-r.e. The newsletter also invited requests for house visits and provided contact details to enable residents to seek further information.

In April 2019 an information sheet was mailed out to the community. In this newsletter answers to frequently asked questions related to project timeline, required staff, noise, infrastructure, community benefits and others were provided.

Two more information sheets were sent out to the community, one in September and the other in December 2019. In essence these newsletters provided an update on the changes to the project layout due to the proximity of the Avonbanks mine.

Copies of all communication can be found in the Consultation Outcomes Report in Volume 2.

3.3 House Visits and Drop In session

In March 2019 a Drop In open day was held at the Jung Community Hall. This open day allowed local residents to raise questions about the Wimmera Plains Energy Facility on a one to one basis with BayWa-r.e. staff, as well as contributing specialist consultants. Questions and concerns raised during the open day were addressed both in person at the time and in subsequent correspondence if necessary.

In April, September and November of 2019 door to door house visits were conducted at houses within 3 km of the Wimmera Plains Energy Facility, and for those who contacted BayWa-r.e. and requested a visit. These visits allowed local residents to raise questions about the energy facility on a one to one basis with the project manager of the proposal. Questions and concerns raised during house visits were addressed both in person at the time of the house visit and in subsequent correspondence if necessary. Where the resident was not home a newsletter was left and contact details provided.

3.4 Community Benefits Scheme

As part of the Wimmera Plains Energy Facility development it is important to BayWa-r.e. that the local community also benefits directly from having a Wimmera Plains Energy Facility in their region. The landowners hosting the facility are all paid well for substations, wind turbines and access on their land.

As part of the development, BayWa-r.e. will initiate a community reference group made up of local community members who will guide the distribution of the proposed annual **Community Fund** which is equivalent to $1000 per wind turbine (approximately $52,000 per annum).

After construction is complete (from when all turbines are operational) the **Proximity Grade 1** benefit will include all habitable dwellings within 2 km of the Wimmera Plains Energy Facility. These will receive $1500 per annum for each wind turbine that is closer than 2 km to their house.

Additionally, after construction is complete (within 3 months after all turbines are operational), BayWa-r.e. will begin the process of implementing the **Proximity Grade 2** benefit which will include all dwellings within 3.6 km of a wind turbine. These will receive a rooftop solar panel system of 5 kW. If a dwelling is within 3.6 km of a turbine but already has solar panels the dwelling owner can nominate a relative's dwelling (not necessarily in the region) and a install solar system will be installed on their house. If neither of these options are appropriate the dwelling owner will be paid the equivalent value for the 5 kW system being $5,500.

A 5 kW solar system will supply the approximate equivalent of the average household requirement of free green electricity for the life of the Wimmera Plains Energy Facility.

3.5 Website

A dedicated project website, www.wimmeraplainsenergyfacility.com.au was created for the proposed Wimmera Plains Energy Facility in May 2020. Currently this website provides summary information about the project and contact details for the project proponent. At the appropriate time the complete

planning application will be uploaded to this website for download. The website has been set up to provide a point of contact for interested parties and will be regularly updated as the project progresses.

4 Project Impact Assessment

Various provisions of the Horsham Planning Scheme require applicants to address a range of potential impacts associated with wind farms. These potential impacts are identified in Clause 52.32 of the Horsham Planning Scheme and are also discussed at length in the *Policy and Planning Guidelines for Development of Wind Energy Facilities in Victoria (DELWP, November 2017)*. These impacts consist of:

- Visual impact;
- Impacts on native flora and fauna;
- Impacts on cultural and historical heritage;
- Noise levels at dwellings, school and places of accommodation;
- Shadow flicker levels at dwellings;
- Blade glint;
- Electromagnetic interference; and
- Aircraft safety; and
- Traffic impacts

Each of these potential impacts is addressed below.

4.1 Visual Impact

Under the provisions of the Rural City of Horsham proponents of wind farms are required to consider the potential visual impact of their proposal. Accordingly, a Landscape and Visual Impact assessment (LVIA) of the Wimmera Plains Energy Facility has been carried out and can be found in full in Volume 2. The results of this assessment are summarised in this section.

All modelling and assessment of landscape impact was based on the candidate turbine model. In the event that the ultimate choice of wind turbine generator differs to the Vestas V162, the Wimmera Plains Energy Facility will comply with all conditions of development approval.

4.1.1 Assessment Methodology

Assessment of the landscape and visual impact of the Wimmera Plains Energy Facility is based on a methodology that has been adopted in assessing visual impacts for infrastructure projects including wind farms as part of Environmental Effects Statements, Planning Permit Applications, and Environmental Impact Statements.

The methodology consists of a combination of quantitative and qualitative approaches to determine and assess the landscape and visual impact of the project. Quantitative approaches have been used in defining the viewshed, the zones of visual influence, the seen area analyses, and the preparation of

photomontages. Qualitative approaches have been utilised in describing the landscape character, assessing visual impact from viewpoints and describing the cumulative visual impact.

4.1.2 Viewshed

For the purpose of this LVIA the viewshed is defined as the area of land surrounding and beyond the project area which may be potentially affected by the wind turbines. In essence, the viewshed defines this LVIA study area. The viewshed for the proposed Wimmera Plains Energy Facility has been illustrated at a distance of 5 km extending across the landscape away from the wind turbines. The 5 km viewshed illustrates the location of the approved Murra Warra Wind Farm site to the north of the Wimmera Plains Farm site.

The distance of the viewshed can vary between wind farm projects and may be influenced and informed by a number of criteria including the height of the wind turbines together with the nature, location and height of landform that may limit and influence the extent of wind farm visibility.

It is important to note that the wind turbines would be visible from some areas of the landscape beyond the 5 kilometre viewshed; however, within the general parameters of normal human vision, a wind turbine at a maximum height of 247 metres to the tip of the rotor blade would occupy a relatively small proportion of a person field of view from distances in excess of 5 kilometres and result in a relatively low level of perceived visual significance.

4.1.3 Assessment of Visual Impact

The overall impact of the Wimmera Plains Energy Facility on the features identified was determined by considering the combination of receiver sensitivity and the magnitude of visual effects.

4.1.3.1 Sensitivity of Visual Receivers

Judging the sensitivity of visual receivers needs to take account of the occupation or activity of people experiencing the view at particular locations and the extent to which their attention or interest is focussed on views within and surrounding the Wimmera Plains Energy Facility site.

4.1.3.2 Magnitude of Visual Effects

Judging the magnitude of the visual effects needs to take account of:

- The scale of the change in the view with respect to the loss or addition of features in the view and changes in its composition, including the proportion of the view occupied by the proposed development
- The degree of contrast or integration of any new features or changes in the landscape with the existing or remaining landscape elements and characteristics in terms of form, scale and mass, line height, colour and texture; and

- The nature of the view of the proposed development, in terms of the relative amount of time over which it would be experienced and whether views would be full, partial or glimpses.

The results of this analysis are summarised below.

4.1.3.3 Key Views and Visual Impacts

The Horsham Planning Scheme identifies key view situations within the municipal area that are subject to planning considerations with regard to their potential visual amenity value. These locations include:

- Mount Arapiles and
- Grampian & Black Range Environs.

The location of Mount Arapiles and the Grampian & Black Range Environs are located within the order of 40 km from the proposed facility. At this distance it is unlikely that the proposed Wimmera Plains wind turbines would result in any significant level of visual impact and would not be readily discernible depending on climatic conditions.

Table 7: Visual impact grading Key Views

Sensitivity of visual receiver	High
Magnitude of visual effects	Negligible
Visual Impact	**Negligible**

4.1.3.4 Views from Regional Cities, Townships and Localities

Regional Cities, Townships and Localities within the landscape surrounding the Wimmera Plains Energy Facility include:

- Horsham (around 12.5 km south of the facility)
- Jung (around 3 km south east of the wind facility)
- Dooen, Dooen Hotel (around 6.5 km south of the facility) and
- Murtoa (around 11 km south east of the facility).

Whilst wind turbines are theoretically visible over these distances between populated areas and the wind turbines, views toward the wind turbines would be partially restricted by development and built structures within urban areas. Potential views toward the wind turbines would also tend to be disrupted by discrete areas of vegetation both within and beyond urban and peri-urban areas.
It is considered unlikely that the wind turbines and associated infrastructure would have any significant visual impact on people within regional cities, ownerships and localities surrounding the proposed wind turbines.

Table 8: Visual Impact Grading Regional Cities, Townships and Localities

Sensitivity of visual receiver	High
Magnitude of visual effects	Negligible
Visual Impact	**Negligible**

4.1.3.5 Views from Highways and Local Roads

The main roads in the vicinity of the wind farm include the Henty Highway as well as a number of local roads largely orientated in north to south and east to west grids. The Wimmera plains wind turbines would only be partially visible from some sections of the Henty Highway and views from some local roads would be influenced by vegetation and tree planting alongside road corridors. The dynamic and constantly changing nature of views from vehicles travelling along local roads would also tend to be transitory in nature and generally short term; however, views from local roads are likely to offer proximate and direct views toward each wind turbine. As the sensitivity of receivers travelling along highways and local roads tends to be low, in combination with the generally short duration of views, the overall visual impact from the highway is likely to be low and moderate from local roads with proximate views.

Table 9: Visual impact grading (highways)

Sensitivity of visual receiver	Low
Magnitude of visual effects	Low
Visual Impact	**Low**

Table 10: Visual impact grading (local roads)

Sensitivity of visual receiver	Low
Magnitude of visual effects	Moderate
Visual Impact	**Moderate**

4.1.3.6 Views from Agricultural Land

The proposed Facility may have the potential to impact people engaged in predominantly farming activities, where views toward wind turbines occur from surrounding and non-associated agricultural areas. Ultimately the level of 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 vegetation within individual properties. Whilst views toward the turbines would occur from a wide area of surrounding rural agricultural land, the LVIA has determined that the sensitivity of visual impact is less for those employed or carrying out work in rural areas compared to potential views from residential dwellings;

however, the sensitivity of individual view locations would also depend on the perception of the viewer.

Table 11: Visual impact grading agricultural land

Sensitivity of visual receiver	Low
Magnitude of visual effects	Moderate
Visual Impact	**Moderate-low**

4.1.3.7 View from Publicly Accessible Locations

Publicly accessible locations, other than road corridors, include various public open spaces, recreational areas, reserves or public meeting places. The majority of public open spaces and recreational areas are those associated and located within surrounding urban localities, where the influence of both distance and existing vegetative cover is likely to screen any potential views toward the Facility site.

Table 12: Visual impact grading publicly accessable locations

Sensitivity of visual receiver	Low
Magnitude of visual effects	Moderate
Visual Impact	**Moderate-low**

4.1.3.8 Views from dwellings within 5 km of the wind turbines

Existing residential dwellings are illustrated in Figure 5 and include dwellings on properties that are not associated with the proposed Facility development as well as those that are.

The site inspection noted that a number of residential dwellings within the landscape surrounding the wind turbines are screened by tree and/or windbreak shelter planting. It is possible that not all residential dwellings would have direct or significant views toward the proposed Wimmera Plains wind turbines.

4.1.3.9 Summary of residential visual effect (within 5 km of wind turbines)

This LVIA identified a combined total of 43 non associated residential dwellings within the Facility 5 km viewshed.

An assessment of residential dwellings determined:

- 1 of the 43 dwelling locations (R19) would have a High visual effect
- 4 of the 43 dwelling locations would have a Moderate to High to Low visual effect
- 16 of the 43 dwelling locations would have a Moderate visual effect
- 12 of the 43 dwelling locations would have a Low to Moderate visual effect and

- 10 of the 43 dwelling locations would have a Low visual effect.

The field assessment for the majority of residential receiver 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 of existing screening from private property.

4.1.3.10 Summary of Residential Visual Significance (beyond 5 km of wind turbines)

The majority of residential dwellings located beyond the 5 km wind turbine offset are unlikely to be significantly impacted by the facility. Residential dwellings beyond 5 km include varying degrees of tree planting within proximity to dwellings which may offer greater screening significance as distance from the wind turbines increases.

4.1.3.11 Substations and 220kV Transmission Line

The project will incorporate two substations connected by a single circuit 220kV transmission line. The substations will be located on existing agricultural land within the project site, one to the east of the Henty Highway corridor at the intersection of Whytes Road and Bells Road (north of wind turbine T11). The other substation will adjoin Dogwood Road to the west of the Henty Highway corridor (east of wind turbine T44). The substations will be connected by an overhead 220kV single circuit transmission line. From the eastern substation the transmission line will extend in a westerly alignment alongside Bells Road for approximately 2.76km. Spanning the Henty Highway corridor, the transmission line would then extend west for another 822m, spanning Dogwood Road to connect with the western substation. The transmission line conductors would be supported on a series of single tapered metal pole extending to height between 36m and 42m.
The substations, associated buildings and electrical infrastructure will not be out of character with other moderate to large scale agricultural and existing electrical infrastructure located within the landscape surrounding the project site.

This LVIA has considered and assessed key view locations within 3km of the substations and transmission line. The visual magnitude of the substation and transmission line structures would not result in significant visual effects from view locations beyond 3km.

The substation locations and the 220kV transmission line corridor are illustrated on Figure 9.

4.1.4 Cumulative Impact

A cumulative landscape and visual impact may result from a wind farm being constructed in conjunction with other existing or proposed wind farm developments or other large-scale infrastructure projects and may be either associated or separate to it.

Separate wind farm or other developments may occur within the established viewshed of the proposed Wimmera Plains Energy Facility or may be located within a regional context where visibility is dependent on a journey between each site or project viewshed.

Direct cumulative visual impacts may occur where two or more wind farms or other infrastructure developments have been constructed within the same locality and may be viewed from the same view location simultaneously.

The approved 2 Jung wind turbines would be located within the project site boundary. The Jung wind turbines would be visually contiguous with the Wimmera Plains wind turbines and viewed as associated elements with the Project, rather than separate to it.

The Wimmera Plains wind turbines are likely be visible from view locations where both the proposed Wimmera Plains and partially constructed Murra Warra wind turbines are visible within the same field of view. These view locations, including potential sensitive residential dwellings, would tend to be located either proximate to one of the wind farms and at a greater distance from the other, or more distant locations from either wind farm. It is therefore unlikely that direct views toward wind turbines within each wind farm would result in a significant magnitude of visual effect.

Indirect cumulative visual impacts may occur where two or more wind farms or other infrastructure developments have been constructed within the same locality, and may be viewed from the same view location but not within the same field of view (i.e. the viewer has to turn their head in order to view both wind farms).

Indirect views between the Wimmera Plains and Murra Warra wind turbines are likely to occur from view locations situated between both wind farms, where the most proximate views would be around 5 km to either site.

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

The Wimmera Plains and Murra Warra wind turbines would be visible from vehicles travelling north or south along sections of the Henty Highway, or from a combination of local roads either side of the highway. Views from vehicles would be transitory and generally short term.

Given the distance from the Kiata Wind farm and the proposed Rifle Butts Wind Farm there will be no cumulative impact from these wind farms.

Figure 15: Wind Farms in the Region

Wimmera Plains Energy Facility

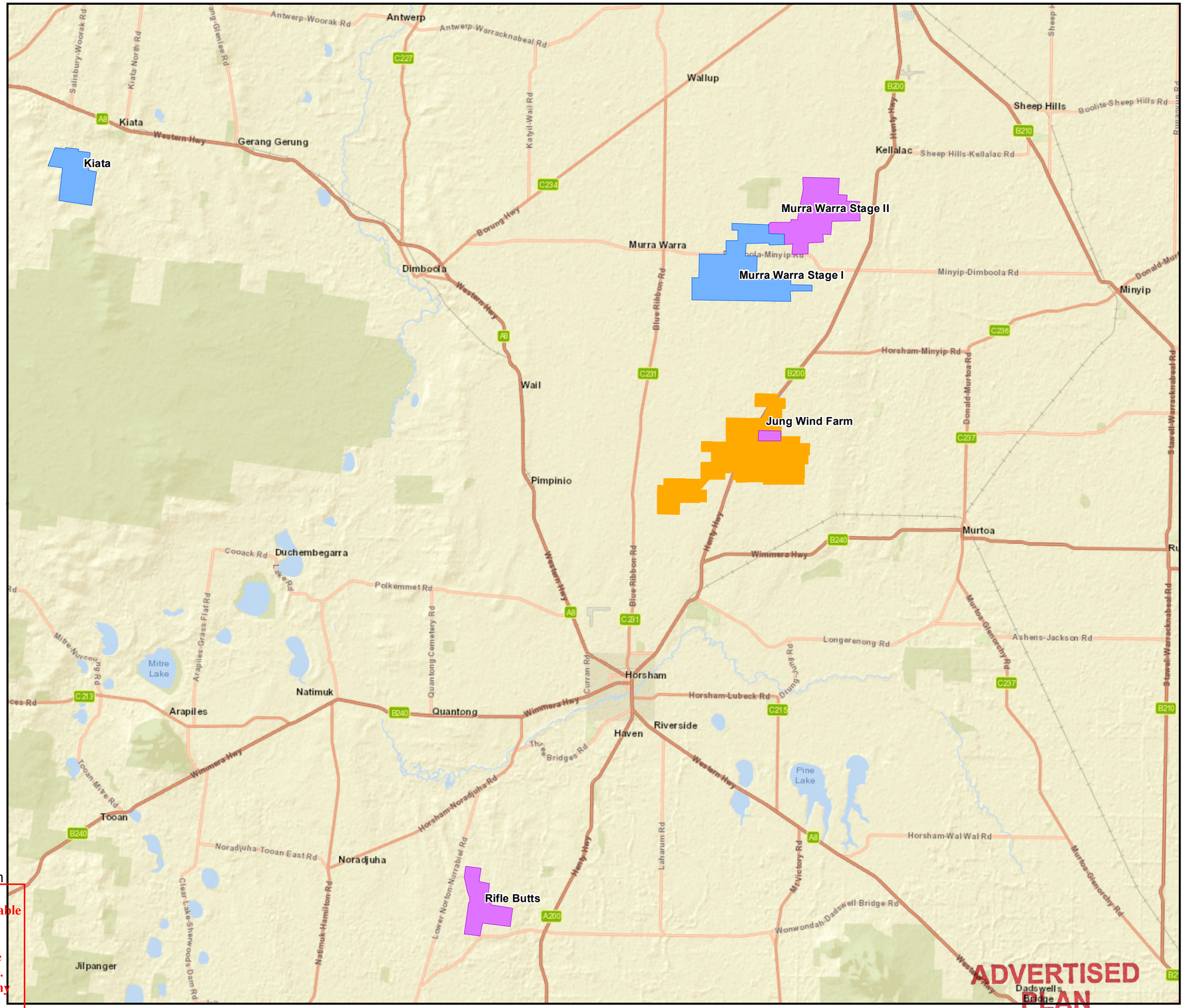
Wind Farms in the Region (Approved or Operating)

Legend

- Wimmera Plains Energy Facility

Wind Farms in the Region

- Operating
- Proposed



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Scale at A3: 1:250,000

0 7.5 15 Km

4.1.5 Landscape Mitigation

4.1.5.1 Mitigation Measures

The British Landscape Institute states 'the purpose of mitigation is to avoid, reduce, or where possible remedy or offset any significant negative (adverse) effects on the environment arising from the proposed development' (2012). In general mitigation measures would reduce the potential visual impact of the project in one of two ways:

- Firstly, by reducing the visual prominence of the wind turbines and associated structures by minimising the visual contrast between the wind turbines and the landscape in which they are viewed; and
- Secondly, by screening views toward the wind turbines from specific receiver locations. See 4.1.5.5 below.

Mitigation measures generally involve reducing the extent of visual contrast between the visible portions of the proposed structures and the surrounding landscape, and/or screening direct views toward the proposed wind turbines where possible.

4.1.5.2 Detail design

Mitigation measures during the detail design process should consider:

- Further refinement in the design and layout which may assist in the mitigation of bulk and height of proposed structures
- Consideration in selection and location for tree planting which may provide partial screening or backdrop setting for constructed elements (excluding wind turbine structures) and
- A review of materials and colour finishes for selected components including the use of non-reflective finishes to structures where possible.

4.1.5.3 Construction

Mitigation measures during the construction period should consider actions to:

- Avoid of temporary light spill beyond the construction site where temporary lighting is required and
- Progressively rehabilitate disturbed areas.

4.1.5.4 Operation

Mitigation measures during the operational period should consider:

- Ongoing maintenance and repair of constructed elements; and
- Replacement of damaged or missing constructed elements.

4.1.5.5 Off-site Landscaping Works

The majority of rural dwellings surrounding the wind turbines maintain tree planting and/or windbreaks around dwellings. The extent of windbreak planting reduces the potential visibility of the wind turbines from a number of dwelling view locations within the surrounding viewshed

Both on-site and offsite landscape works would be actively considered in order to reduce the visual impact of the wind turbines and associated ancillary infrastructure. A programme of landscape works would be documented in accordance with any relevant permit conditions.

4.1.6 Photomontages

Photomontages have been prepared to illustrate the general appearance of the proposed Wimmera Plains Energy Facility turbines following construction. Seven locations were selected to illustrate the proposed Facility from view locations in surrounding areas.

The photomontage locations were selected following a review of ZVI maps, together with a site inspection to identify potential representative viewpoints. The photomontage locations were selected from surrounding road corridors and at a range of distances between the viewpoint and wind turbine to illustrate the potential influence of distance on visibility. The photomontages are presented at around 80 degrees and a detailed 30-degree field of view. The 80-degree photomontage includes an extended panorama view to provide context within the photomontage. The 30-degree view angle photomontage illustrates a view within the human central cone of binocular vision and provides a greater level of detail.

The photomontages locations are illustrated in Figure 16 and photomontages presented in the following figures:

- Figure 17 Photomontage P1
- Figure 18 Photomontage P2
- Figure 19 Photomontage P3
- Figure 20 Photomontage P4
- Figure 21 Photomontage P5
- Figure 22 Photomontage P6; and
- Figure 23 Photomontage P7.

Each photomontage was generated through the following steps:

- A digital terrain model (DTM) of the proposed Facility site was created from a terrain model of the surrounding area using digital contours
- The site DTM was loaded into the Wind Pro software package

- The layout of the Wimmera Plains Energy Facility and 3-dimensional representation of the wind turbine was configured
- The location of each viewpoint (photo location) was configured in WindPro – the sun position for each viewpoint was configured by using the time and date of the photographs from that viewpoint
- The view from each photomontage location was then assessed in WindPro. This process requires accurate mapping of the terrain as modelled, relative to with that as seen in the photographs. The photographs, taken from each photomontage location were loaded into WindPro and the visible turbines superimposed on the photographs;
- The photomontages were adjusted using Photoshop CS3 to compensate for fogging due to haze or distance, as well as screening by vegetation or obstacles; and
- The final image was converted to JPG format and imported and annotated as the final figure.

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, a broader field of view is 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.

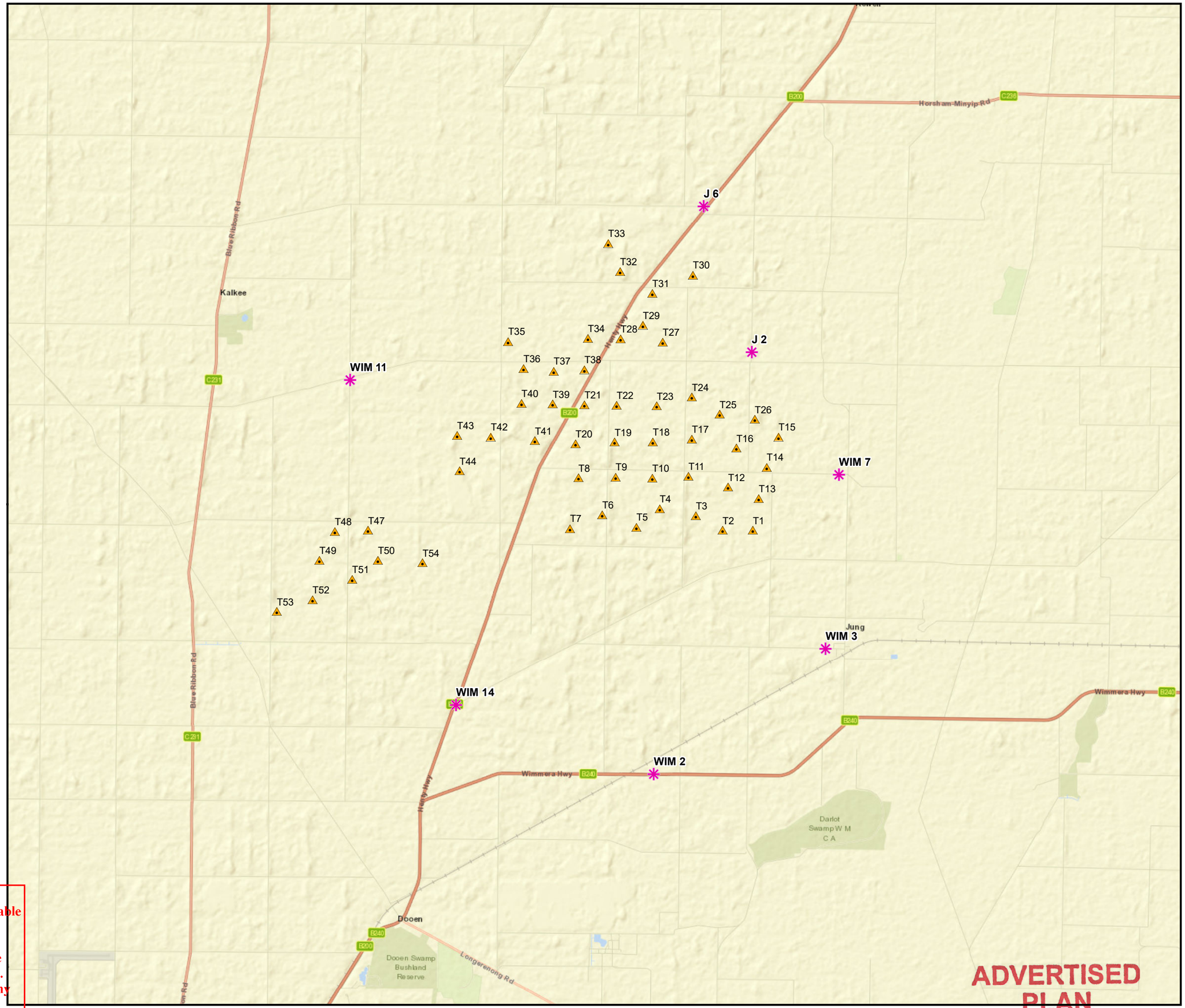
Figure 16: Photomontage Locations

Wimmera Plains Energy Facility

Photomontage Locations

Legend

- Turbine Location
- Photomontage Location



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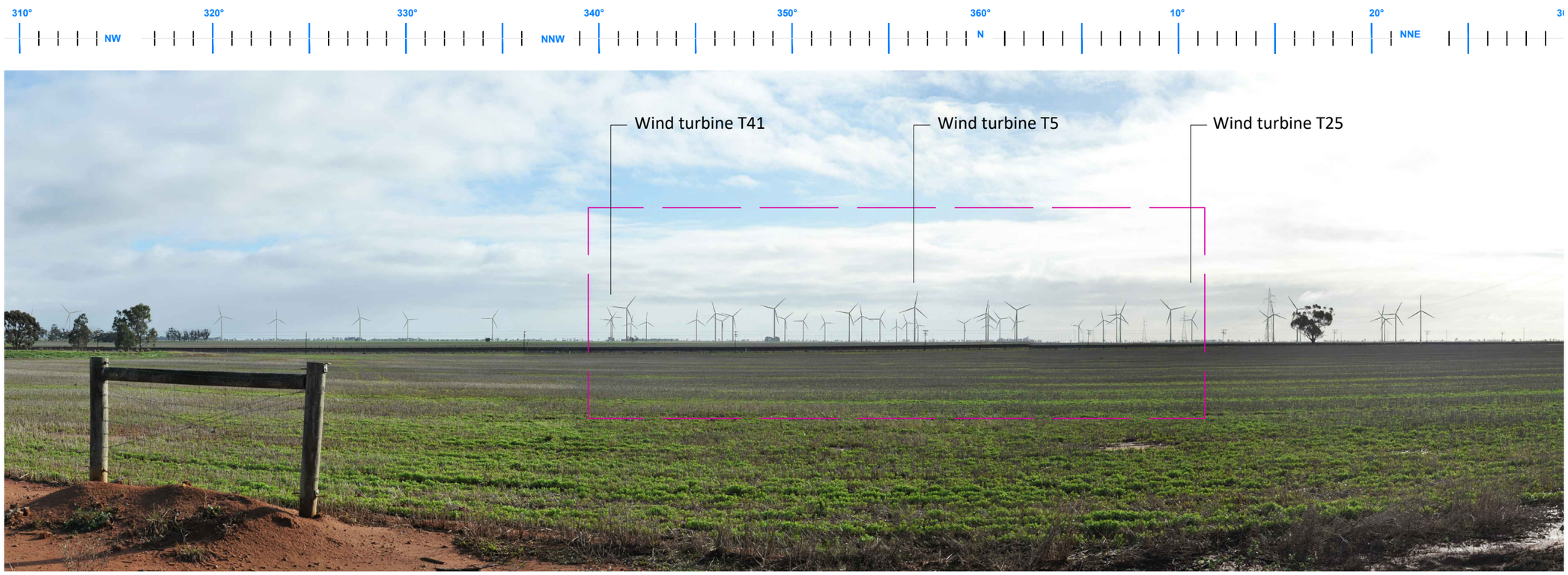
Scale at A3:
1:75,000

0 2 4 Km

Date: 07/17/2020

Figure 17: Photomontage 1



Photomontage P1 - Proposed view north west to north north east from the Wimmera Highway corridor. Approximate distance to closest wind turbine (T5) 5.3 kilometres.

Photomontage P1 - Detail view through 30 degrees

Extent of detail view

General Notes:

Coordinates:
Easting 617567, Northing 5945088

Photo date:
30th June 2019, 10.51am

Elevation:
147m Australian Height Datum

Camera:
Nikon D700, 50mm 1:1.4D Lens

Original Page Format - A3 Landscape

Photomontage P1 is illustrated at a view angle of around 80 degrees which is within the central, binocular field, of human vision.

Photomontage limitations

A photomontage can never show exactly what the wind turbines will look like in reality due to factors such as different lighting, weather and seasonal conditions which vary through time and the resolution of the image. Also a static image cannot convey turbine movement.

The images provided give a reasonable impression of the scale of the turbines and the distance to the turbines, but can never be 100% accurate.

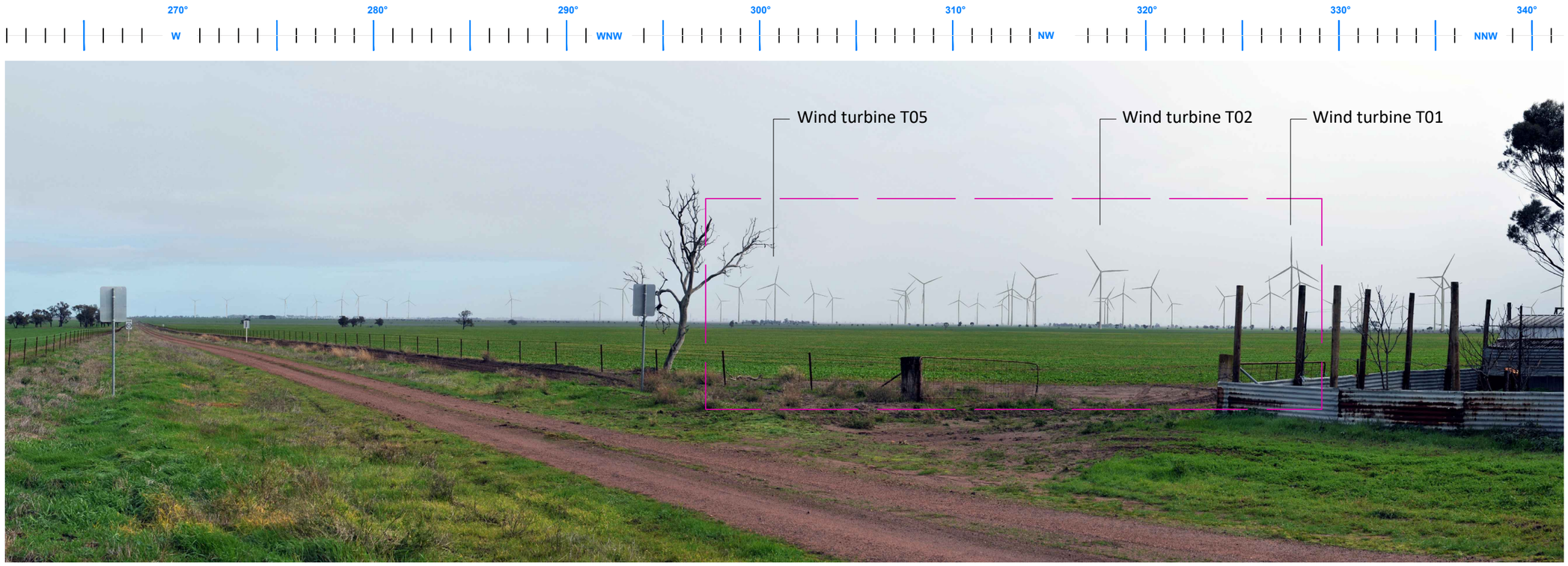
The viewpoints illustrated are representative of views in this location, but cannot represent visibility at all locations.

Photomontage P1

BayWa r.e.

Wimmera Plains Energy Facility LVIA

Figure 18: Photomontage 2



Photomontage P2 - Proposed view west to north north west from Jung West Road. Approximate distance to closest wind turbine (T01) 3 kilometres.

Photomontage P2 - Detail view through 30 degrees

Extent of detail view

General Notes:

Coordinates:
Easting 621241, Northing 5947770

Photo date:
11th June 2019, 11.16am

Elevation:
153m Australian Height Datum

Camera:
Nikon D700, 50mm 1:1.4D Lens

Original Page Format - A3 Landscape

Photomontage P2 is illustrated at a view angle of around 80 degrees which is within the central, binocular field, of human vision.

Photomontage limitations

A photomontage can never show exactly what the wind turbines will look like in reality due to factors such as different lighting, weather and seasonal conditions which vary through time and the resolution of the image. Also a static image cannot convey turbine movement.

The images provided give a reasonable impression of the scale of the turbines and the distance to the turbines, but can never be 100% accurate.

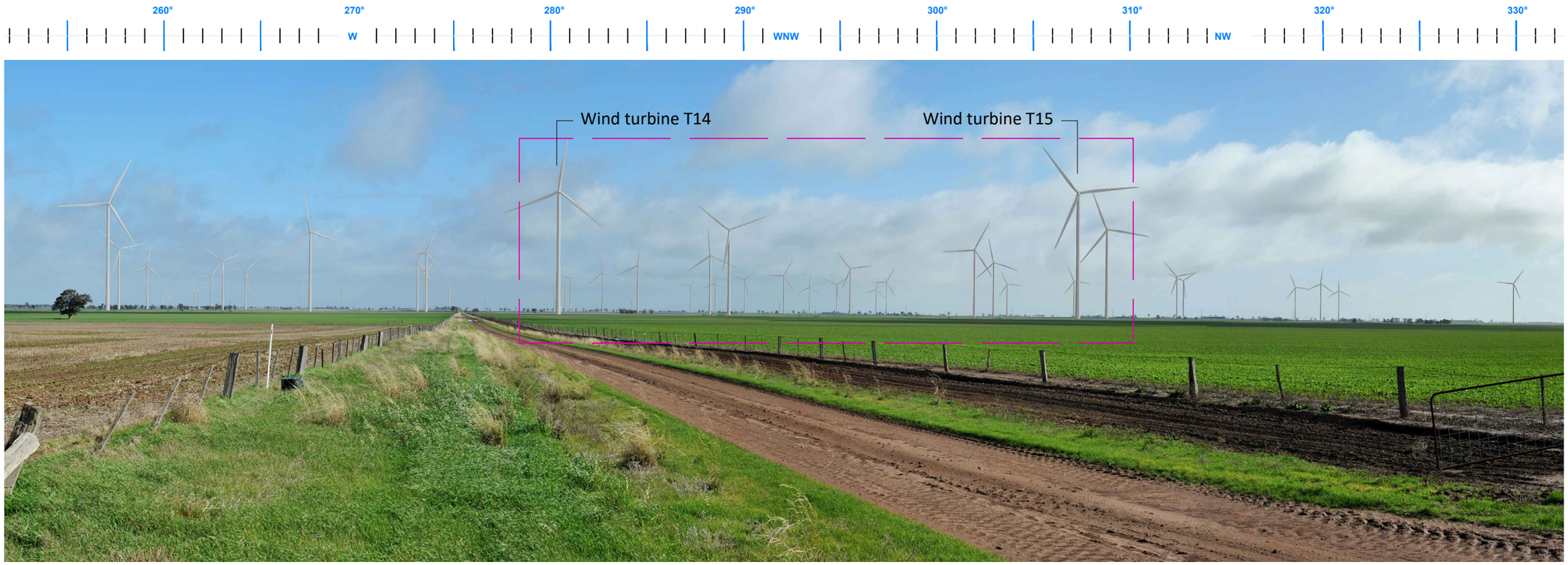
The viewpoints illustrated are representative of views in this location, but cannot represent visibility at all locations.

Photomontage P2

BayWa r.e.

Winnera Plains Energy Facility LVIA

Figure 19: Photomontage 3



Photomontage P3 - Proposed view west south west to north north west from Bells Road. Approximate distance to closest wind turbine (T15) 1.5 kilometres.

Photomontage P3 - Detail view through 30 degrees

Extent of detail view

General Notes:

Coordinates:
Easting 621523, Northing 5951487

Photo date:
30 June 2019, 11.26am

Elevation:
157m Australian Height Datum

Camera:
Nikon D700, 50mm 1:1.4D Lens

Original Page Format - A3 Landscape

Photomontage P3 is illustrated at a view angle of around 80 degrees which is within the central, binocular field, of human vision.

Photomontage limitations

A photomontage can never show exactly what the wind turbines will look like in reality due to factors such as different lighting, weather and seasonal conditions which vary through time and the resolution of the image. Also a static image cannot convey turbine movement.

The images provided give a reasonable impression of the scale of the turbines and the distance to the turbines, but can never be 100% accurate.

The viewpoints illustrated are representative of views in this location, but cannot represent visibility at all locations.

Photomontage P3

BayWa r.e.

Figure 20: Photomontage 4

Photomontage P4 - Proposed view east south east to south from Dooen North Road. Approximate distance to closest wind turbine 2.5 kilometres.

Photomontage P4 - Detail view through 30 degrees

Extent of detail view

General Notes:

Coordinates:
Easting 611085, Northing 5953509

Photo date:
30th June 2019, 2.08pm

Elevation:
139m Australian Height Datum

Camera:
Nikon D700, 50mm 1:1.4D Lens

Original Page Format - A3 Landscape

Photomontage P4 is illustrated at a view angle of around 80 degrees which is within the central, binocular field, of human vision.

Photomontage limitations

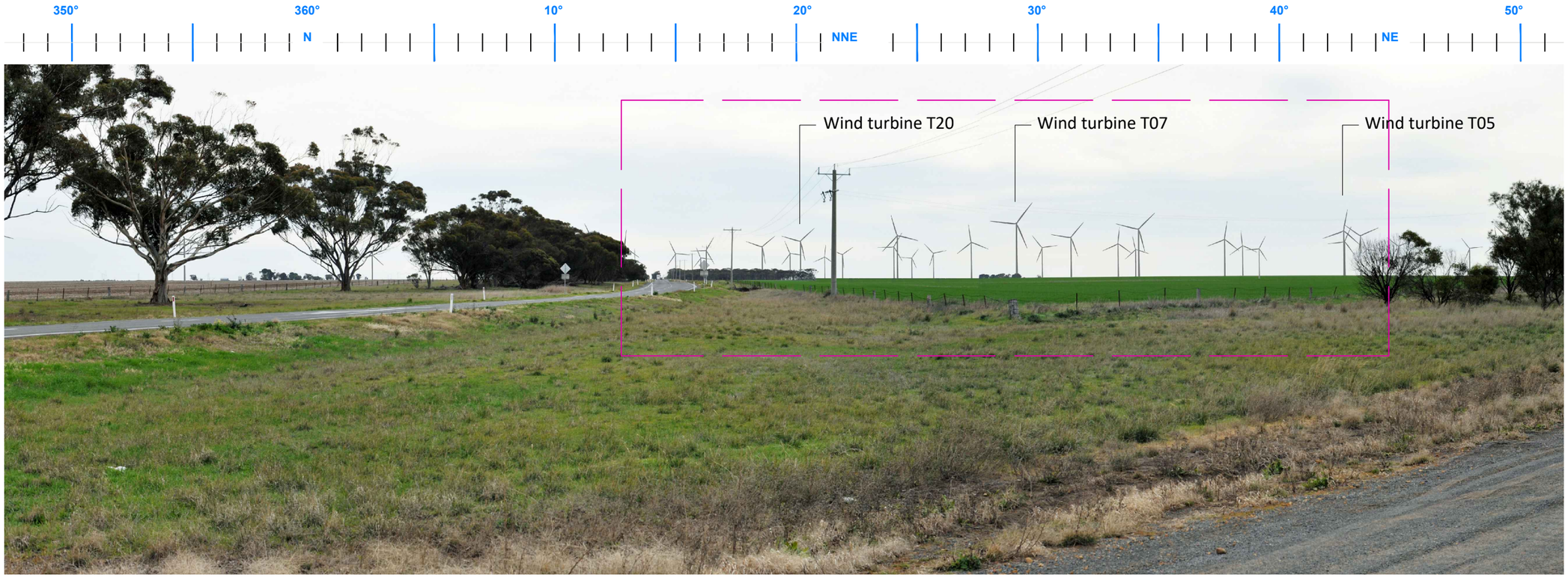
A photomontage can never show exactly what the wind turbines will look like in reality due to factors such as different lighting, weather and seasonal conditions which vary through time and the resolution of the image. Also a static image cannot convey turbine movement.

The images provided give a reasonable impression of the scale of the turbines and the distance to the turbines, but can never be 100% accurate.

The viewpoints illustrated are representative of views in this location, but cannot represent visibility at all locations.

Photomontage P4

Figure 21: Photomontage 5



Photomontage P5 - Proposed view north north west to north east from Greenhills Road. Approximate distance to closest wind turbine (T07) 4.5 kilometres.

Photomontage P5 - Detail view through 30 degrees

Extent of detail view

General Notes:

Coordinates:
Easting 613340, Northing 5946568

Photo date:
30th June 2019, 2.43pm

Elevation:
147m Australian Height Datum

Camera:
Nikon D700, 50mm 1:1.4D Lens

Original Page Format - A3 Landscape

Photomontage P5 is illustrated at a view angle of around 60 degrees which is within the central, binocular field, of human vision.

Photomontage limitations

A photomontage can never show exactly what the wind turbines will look like in reality due to factors such as different lighting, weather and seasonal conditions which vary through time and the resolution of the image. Also a static image cannot convey turbine movement.

The images provided give a reasonable impression of the scale of the turbines and the distance to the turbines, but can never be 100% accurate.

The viewpoints illustrated are representative of views in this location, but cannot represent visibility at all locations.

Photomontage P5

BayWa r.e.

Figure 22: Photomontage 6

Photomontage P6 - Proposed view south west to west north west from Jung Wheat Road. Approximate distance to closest wind turbine 2.2 kilometres.

Photomontage P6 - Detail view through 30 degrees

Extent of detail view

General Notes:

Coordinates:
Easting 619659, Northing 5954100

Photo date:
10th December 2017, 11.40am

Elevation:
136 m Australian Height Datum

Camera:
Nikon D700, 50mm 1:1.4D Lens

Original Page Format - A3 Landscape

Photomontage P6 is illustrated at a view angle of around 80 degrees which is within the central, binocular field, of human vision.

Photomontage limitations

A photomontage can never show exactly what the wind turbines will look like in reality due to factors such as different lighting, weather and seasonal conditions which vary through time and the resolution of the image. Also a static image cannot convey turbine movement.

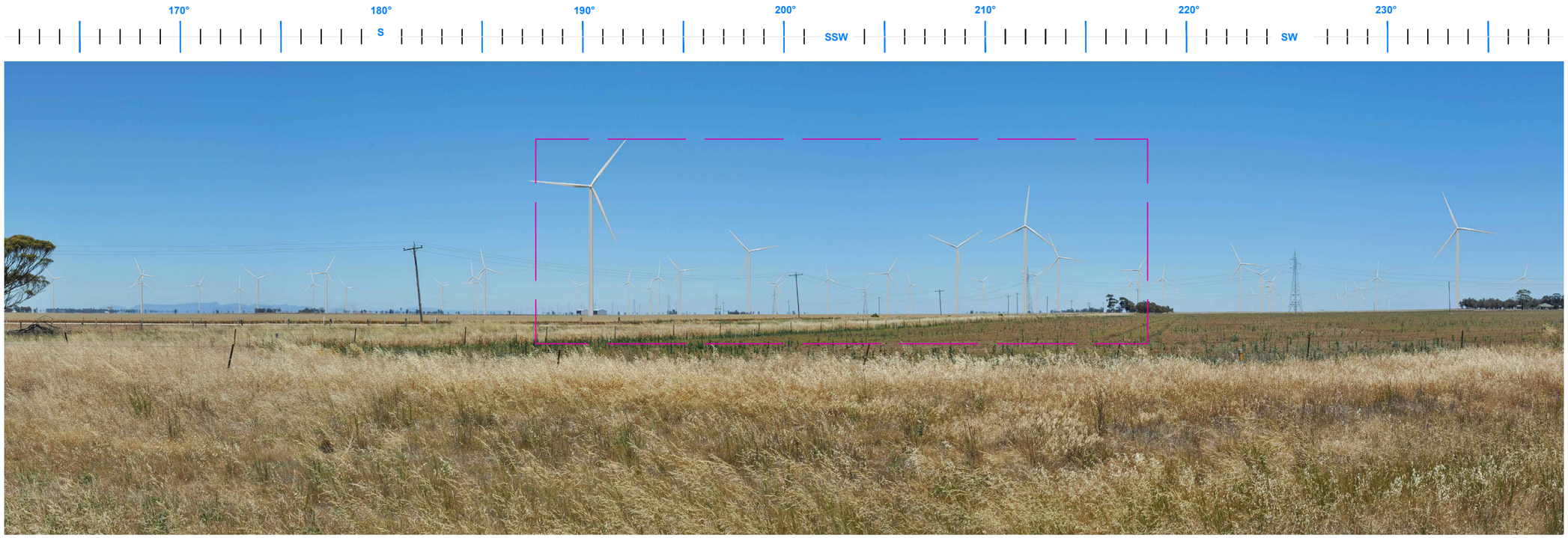
The images provided give a reasonable impression of the scale of the turbines and the distance to the turbines, but can never be 100% accurate.

The viewpoints illustrated are representative of views in this location, but cannot represent visibility at all locations.

Photomontage P6

BayWa r.e.

Figure 23: Photomontage 7



Photomontage P7 - Proposed view south to south west from Kalkee East Road. Approximate distance to closest wind turbine 3.6 kilometres.

Photomontage P7 - Detail view through 30 degrees

General Notes:

Coordinates:
Easting 618631, Northing 5957221

Photo date:
10th December 2017, 1.29pm

Elevation:
135 m Australian Height Datum

Camera:
Nikon D700, 50mm 1:1.4D Lens

Original Page Format - A3 Landscape

Photomontage P7 is illustrated at a view angle of around 80 degrees which is within the central, binocular field, of human vision.

Photomontage limitations

A photomontage can never show exactly what the wind turbines will look like in reality due to factors such as different lighting, weather and seasonal conditions which vary through time and the resolution of the image. Also a static image cannot convey turbine movement.

The images provided give a reasonable impression of the scale of the turbines and the distance to the turbines, but can never be 100% accurate.

The viewpoints illustrated are representative of views in this location, but cannot represent visibility at all locations.

Extent of detail view

Photomontage P7

BayWa r.e.

4.2 Flora and Fauna

Under the Planning Scheme of the Rural City of Horsham, proponents of wind farms are required to consider a number of factors pertaining to the potential impact of the proposal on significant flora, fauna and vegetation. Accordingly, Ecology and Heritage Partners (EHP) were engaged to conduct an ecological assessment to determine the environmental values of the site and the potential of the Wimmera Plains Energy Facility to adversely affect them. The resulting Ecological Assessment Report is contained in Volume 2.

4.2.1 Flora and Vegetation

The project has undergone an ecological assessment. Part of this assessment considered the potential for the project to impact native flora and vegetation. The key results of this aspect of the ecological assessment were:

- The study area contains 11.03 Ha of native vegetation and 439 scattered trees, 158 of which are Large Trees and 281 of which are Small Trees. The native vegetation identified was largely restricted to road reserves, while the scattered trees were dispersed throughout the study area;
- No nationally significant flora species were recorded within the study area;
- Two species of state significance were recorded within the study area, namely Buloke and Buloke Mistletoe. In addition, two further species listed under the FFG Act were identified in the study area, in particular Fuzzy New Holland Daisy and Lemon Beauty-heads, however these occurrences were restricted to the road reserves;
- The proposed activity is considered highly unlikely to significantly impact any EPBC Act listed species (threatened or migratory), ecological communities or any other matters of National Environmental Significance (NES). As such, an EPBC Act referral regarding these matters is considered unwarranted;
- As the ecological impacts of the proposed project will not meet any of the ecological thresholds listed in the EES Act, a referral under the EES Act is considered unwarranted;
- There will be no impacts to the two flora species of state significance identified in the study area. There will be a small impact to one FFG Act listed species, namely the Fuzzy New Holland Daisy (comprising six individual specimens), and as a result the project will require an FFG Act Permit to remove a protected species;
- The project footprint will impact 0.288 Ha of native vegetation and will therefore require a permit to clear 0.288 Ha of native vegetation in Location Category 2, with the application to fall under the Intermediate Assessment Pathway. The offset requirement for this permit will be 0.034 General Habitat Units, with no Specific Habitat Units required; and
- All scattered trees identified within the vicinity of the project footprint will be retained.

The flora and vegetation values discussed above are shown in Figure 4 and Appendix 19, Figure 3 to 17 in, Volume 3, together with the proposed development footprint.

4.2.1.1 Clearance of Native Flora and Vegetation

The study area contains 11.03 Ha of native vegetation, comprising of 7.64 Ha of Plains Savannah (EVC 826), 2.70 Ha of Plains Woodland (EVC 803) and 0.69 Ha of Plains Grassland (EVC 132). These patches of vegetation are shown in relation to the site envelope in Figure 4.

Of this native vegetation, the project footprint will impact 0.288 Ha of vegetation in the Plains Savannah EVC. Accordingly, the proposed use and development will require a permit to remove native vegetation pursuant to the provisions of Horsham Planning Scheme. The project footprint is located in Location Category 2 and falls into the Intermediate Assessment Pathway.

The clearing proposed is considered acceptable for two reasons: one, all reasonable efforts have been made to avoid and minimise clearance, and two, appropriate offset sites are available. These two considerations are discussed in turn below.

4.2.1.1.1 Efforts to Avoid and Minimise Clearance of Native Vegetation

The project footprint has been designed in response to the ecological data collected by Ecology and Heritage Partners. This information was used to redesign the preliminary project footprint in order to avoid and minimise impacts to environmental values. This included revision of turning locations, relocation of underground cabling, and realignment of access tracks. These measures have allowed the project footprint to avoid impacts to native trees and to minimise impacts to native vegetation.

Of the 11.03 Ha of native vegetation identified on site, the project will impact 0.288 Ha of low-quality Plains Savannah, leaving 10.73 Ha of the native vegetation and all the scattered trees untouched by the development. Moreover, the 0.288 Ha of vegetation proposed to be removed will be offset according to the Guidelines for the Removal, Destruction and Lopping of Native Vegetation.

4.2.2 Fauna

The project has undergone an ecological assessment conducted by Ecology and Heritage Partners. Part of this assessment considered the potential for the project to impact native fauna. The key results of this component of the ecological assessment were:

- No nationally significant fauna species were recorded within the study area;
- One state significant fauna species was recorded within the study area, namely the Black Falcon. However, it was found that, due to the availability of higher quality habitat in surrounding areas this

species is unlikely to make significant use of the site, and will therefore not be significantly impacted by the proposed Wimmera Plains Energy Facility;

- Of the 799 individual birds recorded within the study area, over 99% of specimens were observed flying below the Rotor Swept Area. Only 0.25% of individual bird sightings were observed at RSA height and these were the Black Falcon and Brown Falcon;
- A Level 1 Brolga Assessment was carried out for the project which found that the potential impact to Brolga was considered to be low to negligible due to the absence of breeding and flocking sites in the vicinity of the project;
- Microbat surveys using Anabat detectors were conducted in February and October of 2019. No significant bat species were identified during these surveys. Moreover, given the height of the Rotor Swept Area and the location of the Wimmera Plains Energy Facility in a predominantly cleared landscape, the potential impact of the Wimmera Plains Energy Facility on local bats is expected to be low;
- There are no anticipated impacts to terrestrial fauna;
- The proposed activity is considered highly unlikely to significantly impact any EPBC Act listed species (threatened or migratory), ecological communities or any other matters of National Environmental Significance (NES). As such, an EPBC Act referral regarding these matters is considered unwarranted;
- As the ecological impacts of the proposed project will not meet any of the ecological thresholds listed in the EES Act, a referral under the EES Act is considered unwarranted; and
- A Bird and Avifauna Management Plan should be prepared and endorsed prior to the commencement of construction.

Further information concerning potential impacts to fauna can be found in the Ecological Assessment Report included in Volume 2.

4.2.3 Construction Environmental Management Plan

While it is proposed that a small amount of native vegetation be removed as part of the proposed development, measures will be adopted to ensure that no further impacts to native flora, vegetation or fauna habitat occur during construction. The following management recommendations were made by Ecology and Heritage Partners in the ecological assessment, and will be incorporated into the Construction Environmental Management Plan:

- All areas of native vegetation not proposed to be impacted by the development will be protected by a vegetation retention zone shown on construction site plans;
- A construction environmental management plan will be developed and will include:

- A requirement that construction staff undergo a site induction which includes information about the environmental values of the site and the measures implemented in order to protect them;
- Measures to locate stockpiles and machinery at an appropriate distance from the environmental values of the site;
- Measures to tidy up and reinstate the site at the completion of construction;

- A weed management plan will be developed and will include requirements relating to the cleansing of vehicles prior to entering the site, the sourcing of weed free construction materials, and the completion of weed surveys; and
- A sediment and erosion management plan will be developed and will include measures to avoid offsite impacts to waterways and water bodies.

4.3 Geology and Hydrology

Under the provisions of the Rural City of Horsham proponents of wind farms are required to consider the potential impact of their proposal on local geology and hydrology. Accordingly, a desktop Geology and Hydrology Assessment Report and a field Geotechnical Assessment Report of the facility have been carried out and can be found in Volume 2. The results of the assessments are summarised in this section.

4.3.1 Local Geology

Wimmera Plains Energy Facility is situated in the Wimmera Marine, Aeolian & Alluvial Zone in the middle of the Wimmera Catchment which is a part of Murray Darling Basin geological area. This area of the catchment is characterised by Tertiary sediments known as “Parilla Sands” or “Loxton - Parilla Sands.” The bedrock consists of relatively consistent stratified layers, stretching to depths of 140 m, with a series of north - south trending strandline ridges laying on top of the cratonic bed rock of the East Australian Great Dividing Range.
The project site is in an area of a very subtle relief with a maximum slope expected to be below 2%. No strandline ridges mentioned above are contained within the subject site. There will be no large-scale cuts or fills required for the construction for the facility’s infrastructure or adjacent access tracks.

4.3.2 Local Hydrology

The Wimmera Plains Energy Facility will be situated within lowland part of the Wimmera River Catchment area, which makes up 3% of the Murray-Darling Basin area with groundwater table lying in depth of approximately 30 metres. It is worth mentioning that local bore water measurements have estimated a salinity level of greater than 14000 mg/L Total Dissolved Solids which is the highest salinity of the region. Given the depth of the water table, the risk of intercepting it during construction works is highly unlikely.

The topographical conditions of the site make it hydrologically featureless with no significant watercourses surrounding the site. The Yarriambiack Creek corridor, the closest waterway to the site, is more than 3 km to the east of the site and lays generally about 10 metres below the project site. Therefore, as modelled by Waterwatch Victoria it poses no threat of flooding during the lifetime of the facility. The decommissioned open irrigation channels within the site are being filled and mostly used as a part of surrounding farming land. They no longer serve their purpose of field irrigation nor serve neither as an instrument for local storm water diversion. The proponent will apply environmental construction measures to mitigate any possible adverse impacts of the construction works on both surface and groundwater resource.

4.4 Cultural Heritage

Under the provisions of the Rural City of Horsham, proponents of wind farms are required to address the potential impacts to cultural heritage. Accordingly, Green Heritage Compliance and Research Pty Ltd (GH) was engaged by Wimmera Plain Energy Facility Pty Ltd to prepare a set of documents to assess this matter. The results of this assessment are outlined below and the full reports are included in Volume 2.

4.4.1 Aboriginal Cultural Heritage

In Victoria, Aboriginal cultural heritage is protected by the Aboriginal Heritage Act 2006 (Heritage Act) and the Aboriginal Heritage Regulations 2007 (Heritage Regulations). Under this legislation Aboriginal cultural heritage is protected by requiring planning permit applicants to prepare Cultural Heritage Management Plans (CHMP) if and when their proposed actions pose a risk to Aboriginal cultural heritage. Under the Heritage Act actions are considered to pose a risk to Aboriginal cultural heritage, and therefore require the preparation of a CHMP, when they are both a “high impact activity” and occur in an “area of cultural heritage sensitivity”.

Green Heritage Compliance and Research Pty Ltd was engaged to conduct a Cultural Heritage Due Diligence Report. According to this assessment the proposed Wimmera Plains Energy Facility fails to satisfy both triggers as even though it counts as a high impact activity, no part of the activity area is an area of cultural heritage sensitivity—see Figure 24.

Notwithstanding the above, the due diligence report states that:

> *Given the large-scale nature of this project in conjunction with the lack of local and regional heritage and archaeological studies in proximity to the Activity Area, it is strongly recommended to prepare a voluntary CHMP in order to avoid harm to potential heritage values.*

Following these recommendations GH was been appointed to undertake a voluntary CHMP for the Wimmera Plains Energy Facility.

The full report is presented in Volume 2 and its main results outlined below.

4.4.1.1 Desktop Assessment:

The Desktop Assessment considered past archaeological studies, landforms, land use, historical and ethno-historical accounts and registered Aboriginal places within the specified Geographic Region to determine the Activity Area's level of potential to retain Aboriginal cultural heritage.

As the Desktop Assessment indicates that it is possible for Aboriginal Cultural Heritage to be present within the Activity Area, in accordance with Regulations 58 and 60 of the Aboriginal Heritage Regulations 2007 (amended 2016), a Standard Assessment must be carried out.

4.4.2 Historical Cultural Heritage

In Victoria historical cultural heritage is protected at two levels: state and local. State level protection is afforded by the Victorian Heritage Act 1995, which established the Victorian Heritage Register (VHR) for built heritage and the Victorian Heritage Inventory (VHI) for archaeological heritage. Permits are required for certain works to VHR places and consents are required for certain works on VHI places. Local government level protection for historical heritage is given under the Planning and Environment Act 1987 via the Rural City of Horsham. The planning control for heritage is the Heritage Overlay. Permits are required for certain works in areas covered by the Heritage Overlay.

Green Heritage Compliance and Research Pty Ltd was engaged to conduct a Cultural Heritage Due Diligence Report. As part of this assessment historical and archaeological register searches were conducted for the study area and its surrounds. The assessment concluded that:

- There are no Heritage Victoria permits or consents required for the Wimmera Plains Energy Facility development;
- There are no Heritage Overlay places within the Wimmera Plains Energy Facility development footprint; and
- There are no places of national or international heritage significance within the activity area and these levels of legislative compliance are not addressed.

Notwithstanding the above, the due diligence report states that:

- Given the large-scale nature of this project in conjunction with the lack of local and regional heritage and archaeological studies in proximity to the Activity Area, it is strongly recommended to prepare a voluntary Desktop Historical Archaeological Assessment (DHAA) in order to avoid harm to potential heritage values.

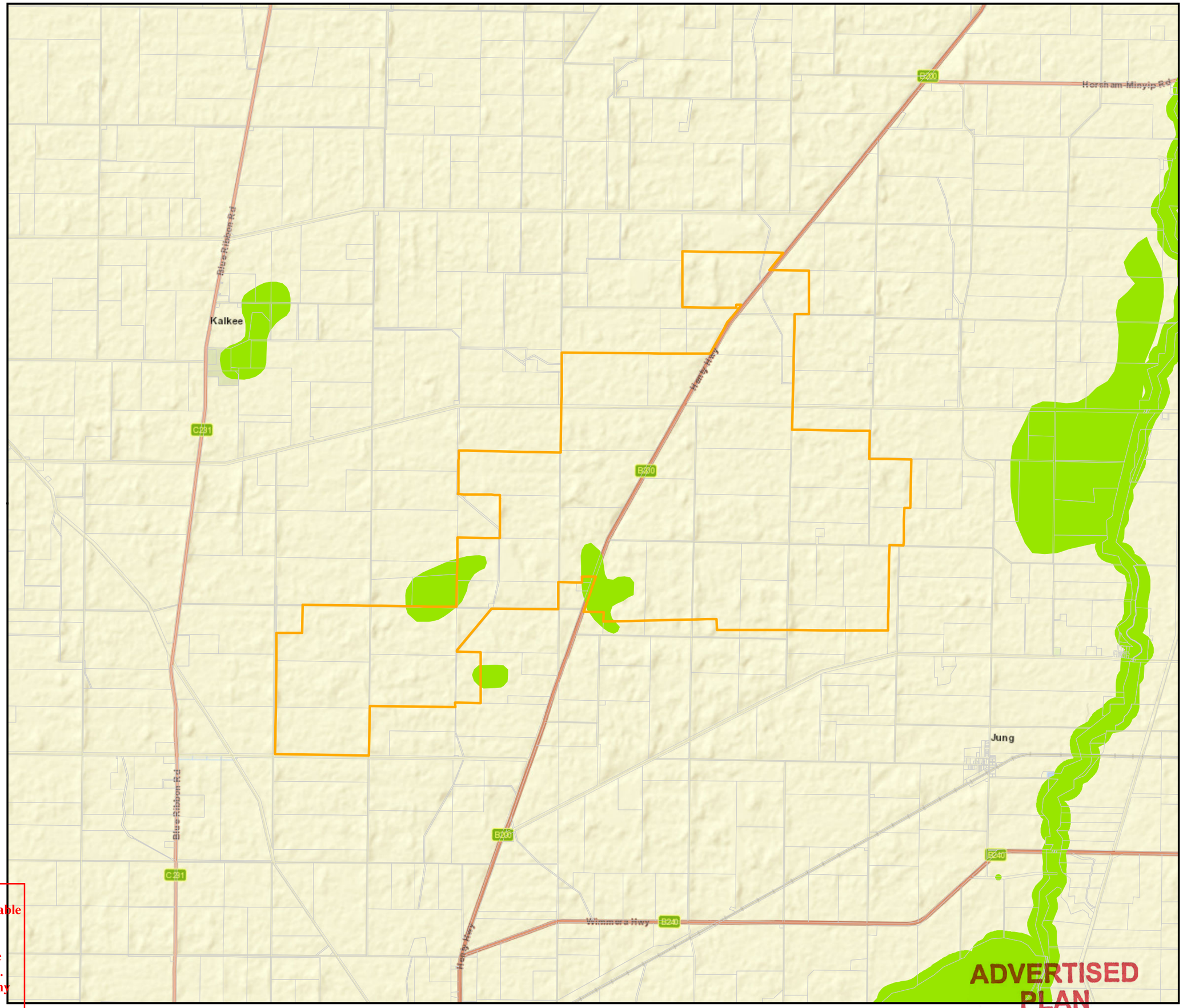
Figure 24: Areas of Cultural Heritage Sensitivity in the region of the Wimmera Plains Energy Facility

Wimmera Plains Energy Facility

Areas of
Cultural Heritage Sensitivity

Legend

- Limit of Development Footprint
- Cultural Heritage Sensitivity Area
- Parcel



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Date: 04/28/2020

4.5 Noise

Under the provisions of the of the Horsham Planning Scheme wind farm proponents are required to address the noise impacts of proposals in accordance with New Zealand Standard NZS 6808:2010 Acoustics – Wind Farm Noise (NZS 6808:2010). Accordingly, Marshall Day Acoustics was engaged to undertake a noise assessment in accordance with NZS 6808:2010. The results of this noise assessment are presented below. Further an environmental audit report of the pre-construction noise assessment has been assessed by an environmental auditor appointed under Part IXD of the Environment Protection Act 1970. The environmental audit report has verified that the acoustic assessment undertaken for the purpose of the pre-construction noise assessment report has been conducted in accordance with the New Zealand Standard NZS6808:2010. The full acoustic assessment and audit report can be found in Volume 2.

The noise assessment was prepared on the basis of the Vestas V162 turbine, which has a sound power level L_{WA} at 9 m/s of 105.0 dB at hub height which includes the addition of 1 dB to provide a margin for typical values of test uncertainty. In the event that the final choice of turbine differs from the Vestas V162, noise assessment modelling will be carried out for the final choice of turbine and the selected turbine model will comply with all other conditions of the development approval, including NZS 6808:2010.

4.5.1 Noise Criteria

NZS 6808:2010 is used to assess wind farm noise. The objective of NZS 6808:2010 is to avoid adverse noise effects of wind farms. NZS 6808:2010 defines the allowable noise limit of wind farms in the following terms:

> *As a guide to the limits of acceptability at a noise sensitive location, at any wind speed, wind farm sound levels (LA90(10 min)) should not exceed the background sound level by more than 5 dB, or a level of 40 dB LA90(10 min), whichever is the greater.*

According to NZS 6808:2010 a noise sensitive location means:

> *The location of a noise sensitive activity, associated with a habitable space or education space in a building not on the wind farm site.*

This definition of a noise sensitive location does not include buildings used for commercial or industrial purposes, but does include residential dwellings, schools, and hotels and motels.

Importantly, compliance with NZS 6808:2010 is consistent with wind turbine noise being audible at some locations for some of the time. The forwarding comments of NZS 6808:2010 note that:

Wind farm sound may be audible at times at noise sensitive locations, and this Standard does not set limits that provide absolute protection for residents from audible wind farm sound. Guidance is provided on noise limits that are considered reasonable for protecting sleep and amenity from wind farm sound received at noise sensitive locations.

There are provisions in NZS 6808:2010 for the application of a reduced noise limit for high amenity areas. This is discussed in Section 4.5.4.

Finally, the noise standard also considers special audible characteristics. Section 5.4.2 of NZS 6808:2010 requires that wind turbine sound levels with special audible characteristics (such as tonality, impulsiveness and amplitude modulation) shall be adjusted by arithmetically adding up to 6 dB to the measured level at the noise sensitive location. Notwithstanding this, however, the standard still requires that wind farms be designed with no special audible characteristics at nearby residential properties.

4.5.2 Preliminary Noise Predictions

Noise modelling was carried out at 34 noise sensitive locations in the vicinity of the Wimmera Plains Energy Facility. Preliminary noise predictions undertaken at these locations show that background noise at all non-stakeholder locations in the vicinity of the proposed Wimmera Plains Energy Facility is below 40 dB L_{A90}, and therefore comply with the requirements of NZS 6808:2010.

The results for each of these properties are presented in full in the Marshall Day report located in Volume 2. A noise contour map is presented in Figure 25 for the highest sound power levels at the hub height wind speed of 9 m/s. It is worth noting that this contour map has been prepared for 54 turbines and therefore there may be slightly more benign noise predictions when applying the 52 turbine layout as a result of the July 2020 layout revision.

4.5.3 Background noise monitoring

According to Section 7.1.4 of NZS 6808:2010, background noise monitoring should be carried out where wind farm sound levels of 35 dB $L_{A90(10\ min)}$ or higher are predicted for noise sensitive locations, when the wind turbines are at 95% rated power.

The results of noise modelling for the site indicates two non-stakeholder receivers (5 and 19) where the Wimmera Plains Energy Facility noise levels were predicted above 35 dB L_{A90}. As such, a survey of background noise levels in accordance with the method detailed in NZS 6808:2010 has been carried out at these two receivers and the results of this assessment are presented in the Marshall Day report located in Volume 2.

The noise assessment and background noise monitoring undertaken for the development has determined the applicable criteria to be 40 dB L_{A90} or the background noise level plus 5 dB at each wind speed, whichever is higher. Separate criteria have been defined for the night-time period. These results are presented on the tables below. The Wimmera Plains Energy Facility is designed to comply with these threshold requirements.

Table 13: All-hours period operational wind farm noise limits (dB L_{A90})

	Hub height wind speed (m/s)									
Receptor	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
5	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.5
19	40.0	40.0	40.0	40.0	40.0	40.0	41.0	42.8	44.4	45.9

Table 14: Night period operational wind farm noise limits (dB L_{A90})

	Hub height wind speed (m/s)									
Receptor	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
5	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
19	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.1	42.1

4.5.4 High amenity areas

To assess high amenity area considerations in accordance with NZS 6808:2010, a review of the land zoning around the Wimmera Plains Energy Facility has been carried out.

In terms of the extent of areas that require consideration of high amenity limits, the standard states that there is no need to consider noise sensitive locations outside the predicted 35 dB L_{A90} wind farm sound level contour. This is consistent with the minimum noise limit for high amenity areas being set at a value of 35 dB.

Based on the predicted noise level contours presented in Figure 25 below, and the zoning map for the area, all areas within the predicted 35 dB L_{A90} predicted contour are designated as Farming Zone.

Clause 35.07 of the Horsham Planning Scheme states the purpose of the Farming Zone as follows:

To implement the Municipal Planning Strategy and the Planning Policy Framework.

To provide for the use of land for agriculture.

To encourage the retention of productive agricultural land.

To ensure that non-agricultural uses, including dwellings, do not adversely affect the use of land for agriculture.

To encourage the retention of employment and population to support rural communities.

To encourage use and development of land based on comprehensive and sustainable land management practices and infrastructure provision.

To provide for the use and development of land for the specific purposes identified in a schedule to this zone.

Based on the stated purpose detailed above, the Horsham Planning Scheme does not specify the Farming Zone as promoting a higher degree of protection of amenity related to the sound environment.

Following guidance from the VCAT determination for the Cherry Tree Wind Farm, as required by the Victorian Guidelines, the high amenity noise limit detailed in NZS 6808:2010 is therefore not deemed to be applicable to residential receivers in the vicinity of the Wimmera Plains Energy Facility.

4.5.5 Environmental Audit Report

An environmental audit report under Part IXD, Section 53V of the Environment Protection Act 1970 has been prepared and is presented in Volume 2. This report found that the Environmental Noise Assessment complies with the requirements of the New Zealand standard.

Figure 25: Predicted Sound Power Levels

Wimmera Plains Energy Facility

Predicted Sound Power Levels

Legend

- Turbine Location

Dwelling

- Non-stakeholder
- Stakeholder

- 30 dBA
- 35 dBA
- 40 dBA
- 45 dBA

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Scale at A3:
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0 1 2 Km

Date: 04/30/2020

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

4.6 Shadow Flicker

Under the provisions of the Rural City of Horsham Planning Scheme, proponents of wind farms are required to consider the effect of the proposal on the surrounding area in terms of shadow flicker. Shadow flicker occurs when the movement of wind turbine blades creates a rotating shadow that appears as an intermittent, or flickering, shadow when experienced from a single vantage point in the vicinity of a wind turbine. Shadow flicker does not pose any risk of causing health effects; however, it does have the potential to adversely impact the amenity of nearby dwellings by subjecting residents to sharp contrasts of shade and light in short succession.

The Policy and Planning Guidelines for the Development of Wind Energy Facilities in Victoria, 2019 (WEF Guidelines) specify that

> *The shadow flicker experienced immediately surrounding the area of a dwelling (garden fenced area) must not exceed 30 hours per year as a result of the operation of the wind energy facility.*

The above applies to any pre-existing dwelling unless an agreement has been entered into with the relevant landowner waiving this requirement.

The Draft Australian National Wind Farm Development Guidelines, 2010 (National Guidelines) discuss the theory behind shadow flicker occurrence and lists the following modelling parameters for a worst-case scenario:

Table 15: Shadow Flicker Modelling Parameters

Model Parameter	**Description/Critical Value**
Distance of Influence (m)	265 x Max blade cord length 265 x 4.32 = **1145 m**
Shadow Flicker Limit (hours per year)	30
Receptor Height (m)	1.5
Minimum angle to the sun (deg)	3

The worst-case scenario consists on the following assumptions:

- The sun is shining all day, from sunrise to sunset;
- The rotor plane is always perpendicular to the line from the WTG to the sun; and
- The WTG is always operating.

A total of 34 dwellings have been identified and mapped within 3km of the Wimmera Plains Energy Facility, being 12 stakeholder properties and 22 non-stakeholder properties.

The shadow flicker as a result of the operation of the Wimmera Plains Energy Facility has been modelled using the WindPro software. The full report is presented in Volume 2 and the results are summarized in the table below.

Table 16: Shadow Flicker prediction results

Predicted Shadow Flicker (hours per year)	**Stakeholder**	**Non-stakeholder**	**Total**
<30	11	22	**33**
≥30	1	0	**1**
Total	**12**	**22**	**34**

All non-stakeholder dwellings are well below the 30 hours per year limit and therefore the Wimmera Plains Energy Facility is compliant with the guidelines.

Figure 26: Predicted Shadow Flicker (Hours/Year)

Wimmera Plains Energy Facility

Predicted Shadow Flicker

Legend

- Turbine Location

Dwelling

- Non-stakeholder
- Stakeholder

Hours per year, worst case

- 0.1 - 30.0
- 30.1 - 650.0

N W E S

Scale at A3:
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4.7 Blade Glint

Developments in non-reflective paints have ensured that blade glint is no longer considered to be a concern with modern wind farms.

4.8 Electromagnetic Interference

There are a number of critical services that depend upon the delivery of information via electromagnetic waves, or radio signals. In practice only two services have proven to be affected by wind farm developments, namely television broadcasting and microwave links.[1]

The switchover to digital television has effectively eliminated wind farms as the cause of interference to individual television reception, however they can still cause large scale interference to television broadcasting if located too close to a broadcast site. According to official data from the Australian Communications and Media Authority the nearest television broadcast site is 38.3 km from the proposed energy facility. At this distance, the Wimmera Plains Energy Facility will not be capable of causing large scale interference to television broadcasting—see Figure 27 below.

In the case of microwave links, wind farms have the potential to cause EMI via two mechanisms. Near field interference can be caused by wind farms if they are located too close to a transmitter or receiver, and path obstruction can occur when they are located within the second Fresnel Zone of a radio link. However, according to official data from ACMA the nearest microwave transmitter or receiver is 6.2 km from the project site — see Figure 28 below. Given the above distances, the Wimmera Plains Energy Facility is not expected to cause interference to microwave link activity via either mechanism.

A detailed Electromagnetic Interference Risk Assessment of the proposed Wimmera Plains Energy Facility has been included in Volume 2.

[1] Sengupta et al., 'Electromagnetic Interference from Wind Turbines.'

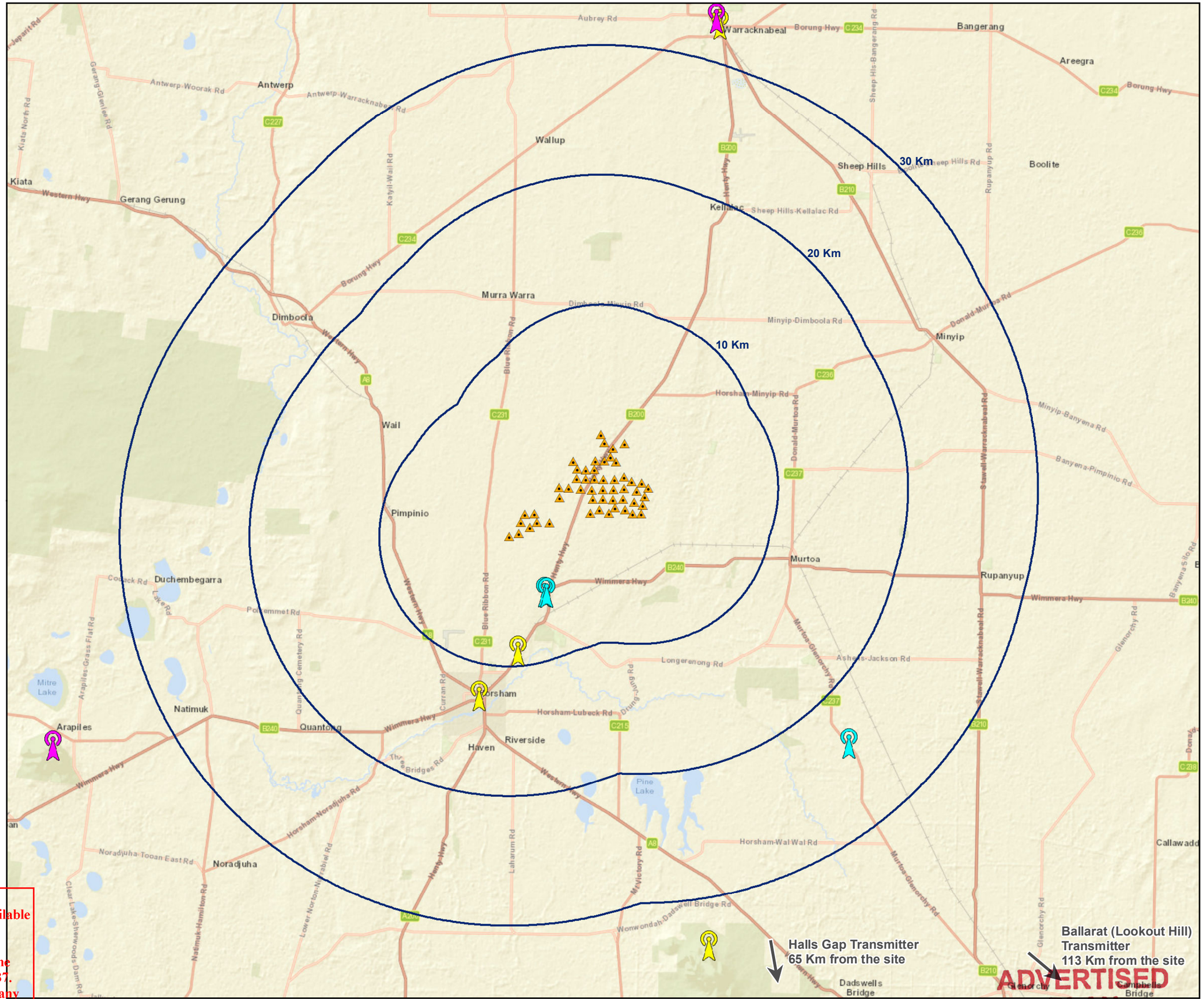
Figure 27: Television Broadcasting Sites in the Vicinity of the Wimmera Plains Energy Facility

Wimmera Plains Energy Facility

Television and Radio Broadcasting Sites in the Vicinity of the Facility

Legend

- Turbine Location
- DTV Transmitter
- AM Radio Transmitter
- FM Radio Transmitter



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0 7.5 15 km

Figure 28: Microwave Links in the Vicinity of the Wimmera Plains Energy Facility

Wimmera Plains Energy Facility

Microwave Links in the Vicinity of the Facility

Legend

- Turbine Location
- Microwave Towers
- Microwave Links

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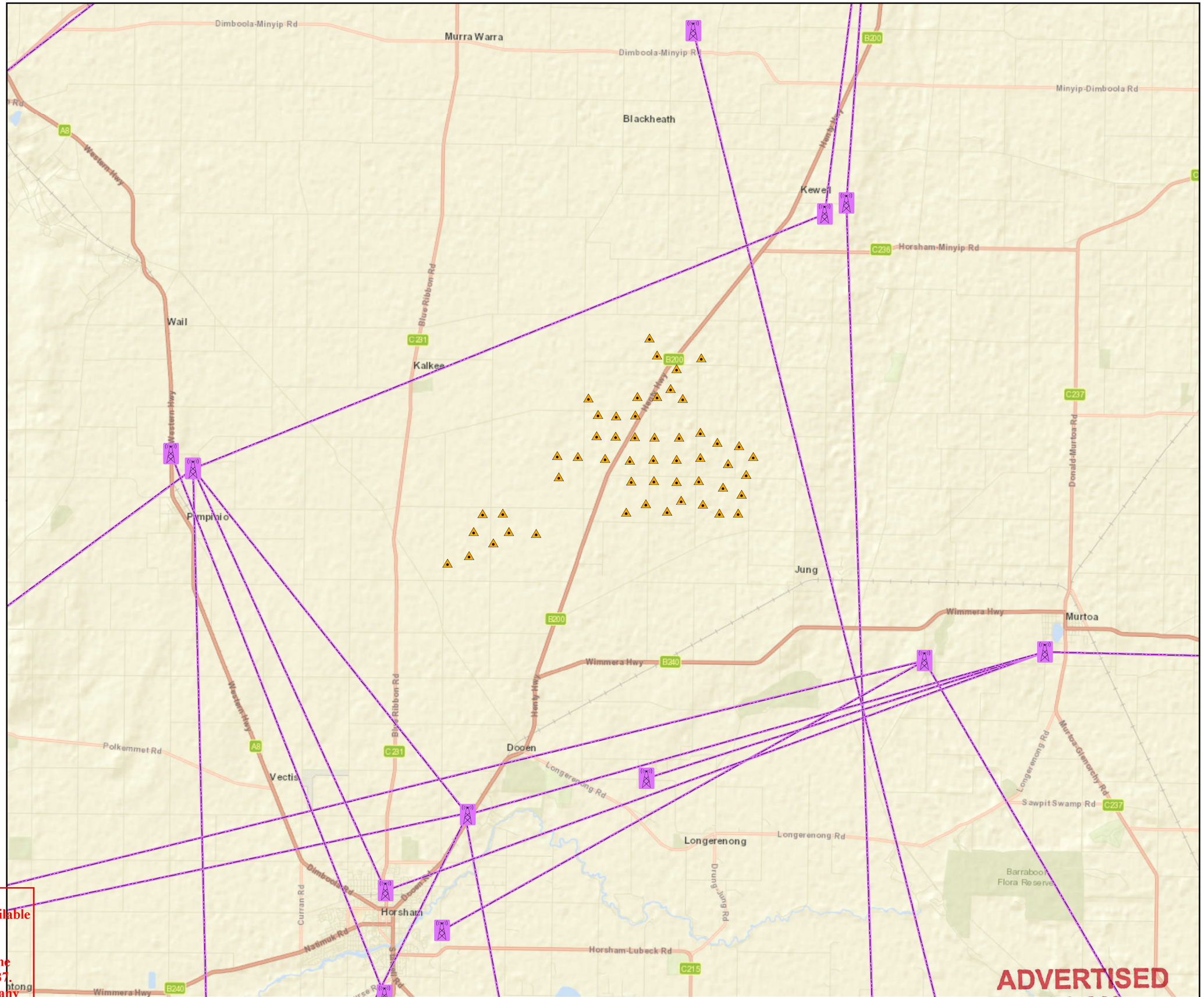


4.9 Aviation

The provisions of the Rural City of Horsham require project proponents to address potential impacts to aviation in consultation with the Civil Aviation Safety Authority (CASA).

As the statutory body responsible for aviation safety in Australia, CASA has the power to prohibit or restrict the construction of buildings, structures and objects that constitute a hazard to aircraft in the vicinity of an aerodrome, as well as to require such buildings, structures and objects to be marked and/or lit in order to minimise the risk to aviation. Currently CASA does not have power to regulate tall buildings that are not within the vicinity of an aerodrome.[2] While there is no clear definition of what constitutes the vicinity of an aerodrome, it is generally taken to be coextensive with the Obstacle Limitation Surface (OLS). The OLS are conceptual surfaces associated with runways that are designed to protect aircraft operations from unrestricted obstacle growth. Obstacles that infringe the OLS may be considered as "hazardous" and CASA may direct that they be lit or marked to make them conspicuous so that pilots can identify them and take appropriate action to avoid them. They would also need to be shown on Aeronautical Charts to assist pilots at the pre-flight planning stages so that they are aware of the obstacle environment around the airport.

There are two aerodromes with 30 km of the Wimmera Plains Energy Facility - See Figure 29. The Inner Horizontal Surface of the OLS for Horsham and Warracknabeal airports extends to 4 km from the airport's Aerodrome Reference Point (ARP) and therefore are not affected by the development. Aviation obstacle lighting is not proposed, however it is noted that due to the energy facility's location in close proximity to Horsham airport it is likely that CASA will require the fitting of appropriate obstacle lighting to enough turbines that can delineate the extent of the energy facility at night. This lighting can be provided with shielding that only permits the obstacle lights to be seen from above, therefore alleviating local population concerns regarding distracting lighting.

CASA, and more recently the National Airports Safeguarding Framework (NASF), have provided guidance to State and Territory authorities, local government decision makers, developers and airport operators as to the location and marking of buildings located away from aerodromes so as to ensure that new developments do not constitute a hazard to aviation. To this end CASA and NASF have published guidelines relating to the construction and marking of buildings located away from aerodromes. These are:

- Civil Aviation Safety Regulation (CASR) Part 139 Manual of Standards - Aerodromes;
- Aeronautical Information Publication (AIP) – including currently published Departure and Approach Procedures (DAP), Enroute Supplement (ERSA) and Enroute (ENR) charts;
- Airservices Australia's Airways Engineering Instructions – ATC Radar and Aviation Navigation Aid

[2] Aerosafe Risk Management, *Man Made Obstacles Located Away From Aerodromes—Risk Review Developed for CASA by Aerosafe Risk Management*, November 2009, see also Hart Aviation, *Wind Energy and Aviation Interests—A Study for Sustainability Victoria*, July 2009.

Building Restricted Areas and Siting Guidance (BRA);

- National Airports Safeguarding Framework, Guideline D: Managing the Risk to Aviation Safety of Wind Turbine Installations/Wind Monitoring Towers; and
- International Civil Aviation Organisation (ICAO) DOC 8168 Procedures for Air Navigation – Aircraft Operations (PANS OPS).

Chapter 2.2.2 of CASR AC 139-08(V2.0) Reporting of Tall Structures—March 2018 prescribes that developers, authorities and decision makers should report all structures that meet the following criteria to the Royal Australian Air Force (RAAF) Aeronautical Information Service (AIS):

- Structures 30 m in height located within 30 km of an aerodrome; and
- Structures 45 m in height located elsewhere.

In accordance with AC 139-08(V2.0), information pertaining to the proposed energy facility, including its height, location and development status, will be sent to the RAAF AIS.

AC 139-18(0) was repealed in September of 2008 as a result of a challenge to its legal validity.[3] Accordingly, it is no longer applicable to the planning approvals process of proposed wind farms.

The National Airports Safeguarding Framework, Guideline D: Managing the Risk to Aviation Safety of Wind Turbine Installations/Wind Monitoring Towers—July 2012 contains guidelines concerning the reporting, assessment and marking of wind farms in relation to aircraft safety. According to these guidelines CASA and Airservices must be informed of a proposal if it meets the following two criteria:

- The total height of turbines is greater than 150 m; and
- The proposal is located within 30 km of a certified or registered aerodrome.

As the proposed energy facility is to be greater than 150 m in height and is located within 30 km of a certified or registered aerodrome (Horsham and Warracknabeal Airports), information pertaining to the project, including its height, location and development status, will be sent to CASA and Airservices Australia, along with the Aeronautical Impact Assessment conducted by Landrum & Brown (discussed below). A copy of this correspondence is provided in Volume 2

[3] Aerosafe Risk Management, *Man Made Obstacles Located Away From Aerodromes—Risk Review Developed for CASA by Aerosafe Risk Management*, November 2009.

4.9.1 Aeronautical Impact Assessment

As the proposed energy facility will have an overall height greater than 150 m, and is located within 30 km of a declared aerodrome, an aviation compliance specialist, Landrum & Brown, was engaged to conduct an aeronautical impact assessment of the proposal.

The aeronautical assessment was conducted on the basis of maximum blade tip heights of the candidate turbine varying between 385 m and 395 m Above Mean Sea Level (AMSL), and therefore its findings amply cover the potential impact of the candidate turbine itself. The Aeronautical Impact Assessment found the following:

- As Horsham airport is within 30 km of the energy facility it is a requirement that the facility be referred to CASA, Airservices, RAAF and other aviation stakeholders in the region;
- The proposed facility will not encroach on the Obstacle Limitation Surfaces (OLS) of any airport, including the Horsham and Warracknabeal Airports;
- The proposed facility will infringe the 10Nm MSA of the Horsham Airport PANS OPS and will not infringe the PANS OPS of the Warracknabeal Airport. An assessment conducted by Airservices Australia who is the responsible design authority has determined that a NOTAM (Notice to Airman) will be required from Airservices to permanently raise the 10nm MSA from 2200ft to 2300ft for Horsham Airport. The NOTAM will be put in place prior to construction.
- The development will not infringe Lowest Safe Altitude (LSALT) protection surfaces of any Instrument Flight Rules (IFR) air route or Grid LSALT;
- The performance and operation of aviation navigation aids and Air Traffic Control (ATC) radar clearance surveillance systems will not be impacted; and
- It is unlikely Military Low Jet routes will be impacted.

The detailed Aeronautical Assessment of the proposed energy facility is included in Volume 2.

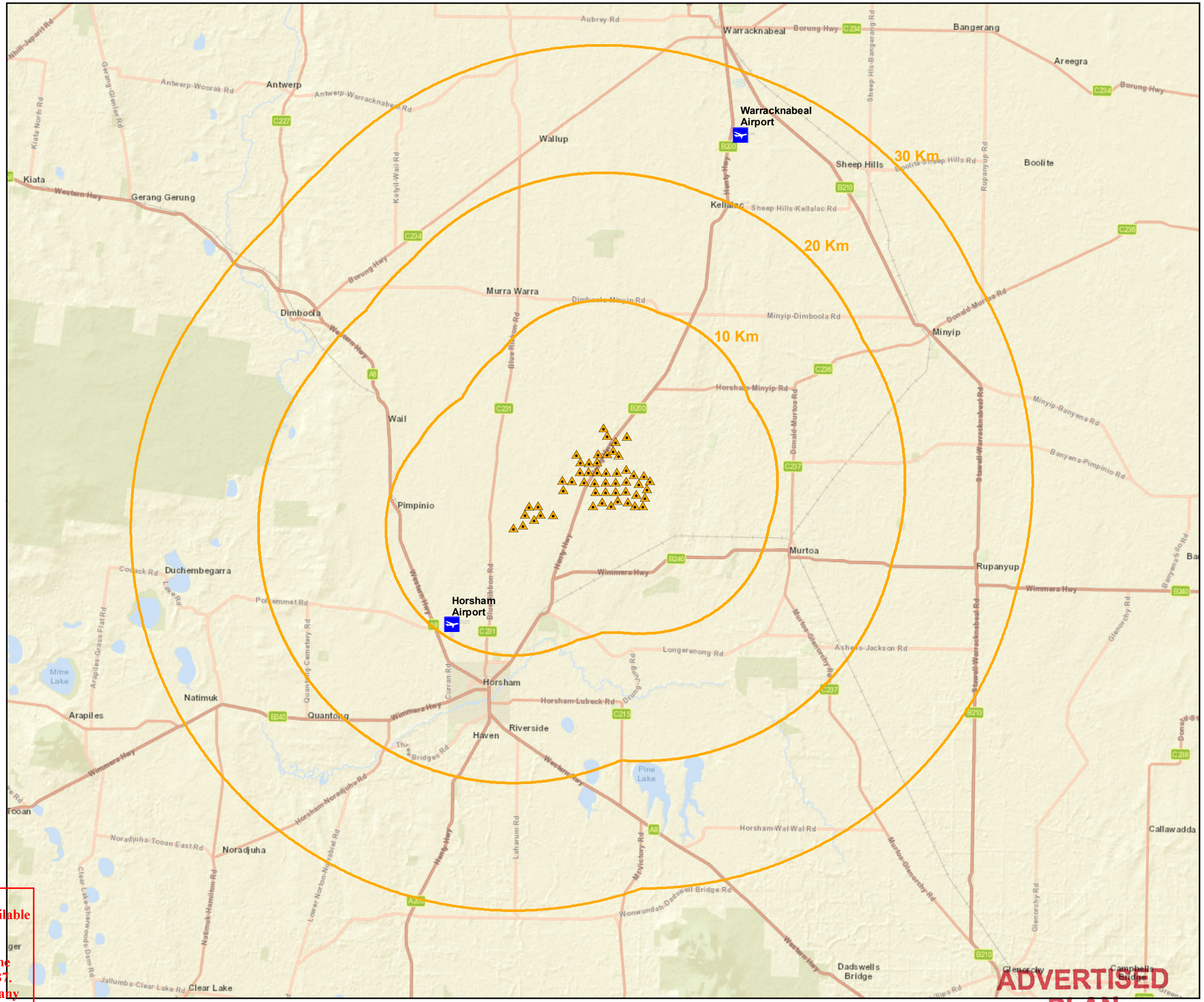
Figure 29: Declared Aerodromes in the Vicinity of the Wimmera Plains Energy Facility

Wimmera Plains Energy Facility

Declared Aerodromes in the Vicinity

Legend

- Turbine Location
- Aerodrome



4.10 Traffic Assessment

Under the provisions of the Rural City of Horsham Planning Scheme, project proponents are required to consider the proximity of the project site to sufficient road infrastructure, and to provide a concept plan of access road options. Further, as large infrastructure projects located in rural areas that are not always well served by road infrastructure, wind farms have the potential to have a significant impact on local roads and traffic movements. Accordingly, a Preliminary Transport Assessment for the proposed energy facility was conducted by Impact Traffic Engineers, the results of which are summarised in this section. For a more detailed discussion of potential transport related impacts refer to the Preliminary Transport Assessment included in Volume 2.

4.10.1 Access Route

The site is bisected by a major arterial road, the Henty Highway, dividing it into two areas – East and West. Given the size of the project area and spatial distribution of the project infrastructure, it is proposed that all construction traffic associated with the project will access the site via Henty Highway from both, north and south directions. The project infrastructure is located along local rural roads, two sealed and ten unsealed, which will provide access points to private parcels containing project development footprint.

The sealed local roads referred to are:

- Ladlows Road; and
- Banyena Road (east of Henty Highway)

The unsealed local roads referred to are:

- Dooen North Road;
- Finlaysons Road;
- Dogwood Road;
- Banyena Road (west of Henty Highway);
- Shearwoods Road;
- Unnamed Road (north from and perpendicular to Shearwoods Road);
- Smiths Road;
- Whytes Road;
- Max Johns Road; and
- Bells Road

It will be necessary to carry out upgrades to the abovementioned unsealed roads in order to facilitate effective delivery of construction materials and turbine components. Road upgrades will be limited to those sections of unsealed roads that are proposed to be used as part of the project. The listed local roads and extent of the upgrades proposed are shown in Figure 30.

Currently, Portland is the preferred port of entry for turbines and other major componentry. On this basis, an over-dimensional (OD) vehicle haulage route has been identified between the Port of Portland and the energy facility site based on the longest expected turbine component being an 81 m turbine blade.

From the Port of Portland this route heads north via Henty Highway through Heywood after which it turns northwest onto Princes Highway. After approximately 5 kilometres the transport route turns north onto Portland - Casterton Road and follows this road to Casterton where it heads east via Glenelg Highway. The route then stays on Glenelg Highway until it diverts left onto Coleraine - Edenhope Road north of Coleraine. The route follows this road to Harrow where it turns north onto Nhill - Harrow Road towards Nhill. On the southern edge of the Nhill township the route takes a right turn and continues through Nhill via Western Highway. In order to access the Henty Highway within the project site from both directions, the route splits into two branches at Dimboola.

The northern access route continues via Borung Highway after its intersection with Western Highway at Dimboola and after approximately two kilometres takes a right turn onto Dimboola - Minyip Road. This route enters Henty Highway by a right turn after approximately 28 kilometres.

The southern access route branches off the Western Highway approximately 8 kilometres southeast of Dimboola onto Wail-Dooen Road and shortly after turns to the east onto Wail - Kalkee Road. After approximately 8.5 km the route turns right onto Blue Ribbon Road and continues south towards the town of Horsham. Approximately 10 km north of Horsham the route takes a left turn onto Rules E Road which continues as Ladlows Road after its intersection with Wail - Dooen Road. Ladlows Road serves as one of the local roads accessing parcels with proposed project infrastructure and it also serves as an access road onto Henty Highway from the south.

The access route from Portland to the site including its northern and southern branches is shown on Figure 31 below.

4.10.2 Traffic Movements

Construction of the energy facility will require a large array of construction materials. Road base and hardstand construction materials will be sourced from the quarries onsite and adjacent to the site located at Finlaysons Road and shown in Figure 4. These suppliers may need to source additional material offsite and this is part of their normal operations.

In most cases other construction materials will be available from Horsham or the surrounding area. However, sometimes it will be necessary to have them transported from further afield. Sourcing materials from close to the facility has many obvious advantages, including reducing transport costs, minimising potential delays, and reducing impacts to local roads and traffic movements. Thus, though it is impossible to know in advance of

finalising construction contracts exactly where materials will be sourced from, all reasonable attempts will be made to source construction materials from the closest source to the project.

Other than standard passenger vehicles, the two vehicles types which will comprise the largest number of traffic movements during construction of the project are concrete material delivery trucks and the quarry trucks and trailers. It is anticipated that concrete material trucks will travel from established suppliers in Horsham and access the site via the Henty Highway – Finlaysons Road – Dogwood Road or Henty Highway – Bells Road. Trucks transporting road base from the onsite and adjacent quarries will distribute the materials via previously listed local roads into individual parcels. To accommodate both of the above vehicle types the mentioned unsealed rural roads within the site will require upgrading. These upgrades will improve the roads surface by the installation of an engineered all weather gravel road. In terms of permits, these vehicles will be PBS registered, which in general removes the need for permits as they are covered under the NHVR.

Table 17: Estimated Construction Traffic

Type of Vehicle	Total Vehicle Movements	Peak Daily Movements
Light Vehicle	15,072 total LV movements	Peak of 28 LV movements / day
Over Dimensional Vehicle	1,248 total OD movements*	Peak of 4 OD movements / day*
Heavy Vehicles	20,873 total HV movements*	Peak of 52 HV movements / day*
Total Vehicles	**37,193 total movements**	**Peak of 84 daily movements****

* Includes both loaded and unloaded trips, for each loaded trip there will be one loaded (return) trip, where the transport vehicle will be collapsed to regulation dimensions where applicable.
**Conservatively assumes all vehicle traffic peaks during the same period.
Note: There is a small difference between the figures on the table above and the Traffic Impact Assessment (TIA) prepared by *Impact Traffic Engineering Pty Ltd*, dated April 2020 and presented in Volume 2. This is due to the fact that the TIA has been prepared for 54 turbines and the table above has been revised for 52 turbines, in July 2020, to reflect the removal of turbines 45 and 46 from the project.

Apart from the delivery of concrete and base materials, the only other deliveries that have the potential to have major impacts on traffic movements are the over-dimensional loads. These will comprise delivery of construction machinery, the control building and the various turbine components. All over-dimensional deliveries will be delivered to the site from Adelaide, Portland, Geelong or Melbourne, and will therefore access the site via either northern or southern branch of the access route or directly via Henty Highway as determined suitable. Over-dimensional deliveries will be organised in consultation with VicRoads and Rural City of Horsham and will be managed by the transport and logistics company that wins the delivery contract.

Most heavy vehicle and light vehicle traffic will seek to leverage Henty Highway as a connection to the subject site construction compounds. The proposed development will generate up to 84 daily vehicle movements (42 round trips), comprising 28 light vehicles, 52 heavy vehicles and four (4) OD vehicles during the respective peak construction periods for each movement. Data sourced from VicRoads indicates that Henty Highway generally

carries in the order of 800 vehicles per day in the locality of the subject site. Classified as a rural arterial road, Henty Highway has an environmental capacity for up to 7,000 vehicles on a daily basis.

During the construction stage of the development Henty Highway is predicted to carry up to 880 vehicle movements on a daily basis. This level of traffic is comfortably within the environmental capacity of the road and will be comfortably absorbed by Henty Highway, with no long-term impact to its performance.

4.10.3 Capacity of Local Roads

Roads managed by VicRoads are designed to accommodate large volumes of heavy traffic and over dimensional loads. As such they are generally sufficient for the transport of turbine components and construction materials required to build a wind farm. By contrast, not all local roads are designed to accommodate heavy traffic and over-dimensional loads. As such it is necessary to consider the potential impacts of the energy facility construction process on these roads. In this section, two aspects crucial to the capacity of local roads to accommodate the facility construction process are considered. These are whether the road widths are sufficient and whether the intersection can accommodate the swept paths of the larger vehicles.

Twelve local roads will be used for the delivery of turbine components and construction materials. The relevant sections of the local roads identified above have the following seal widths:

- Shearwoods Rd: 6 m wide gravel road pavement;
- Smiths Rd: unsealed road with 4 - 5 m wide road pavement;
- Banyena Rd: east of Henty Highway constructed with a central seal 3 - 3.5 m wide, plus unsealed gravel shoulders 2.5 - 3.0 m on each side. To the west of Henty Highway, Banyena Rd is constructed with a gravel road pavement approximately 6 m wide;
- Bells Rd: unsealed gravel road pavement approximately 4 m wide;
- Finlaysons Rd: unsealed gravel road with 6 - 7 m wide road pavement;
- Ladlows Rd: constructed with a central seal pavement approximately 6 m wide and unsealed 1-2 m wide shoulders;
- Dooen - North Rd: unsealed gravel road with 5-6 m wide road pavement;
- Dogwood Rd: unsealed gravel road with a 6 -7 m wide road pavement;
- Max Johns Rd: unsealed gravel pavement of 4 - 4.5 m in width;
- Whytes Rd: unsealed road with a 3 - 3.5 m wide road pavement; and
- Unnamed Rd: a dirt track with no formal road pavement.

While it is difficult to know in advance, as a rural access roads that are used predominantly by local farming vehicles, it is anticipated that the volume of vehicles using the sealed local roads would not exceed 50 vehicles per day, and those using unsealed roads would not exceed 10 vehicles per day.

Three local roads serving as access routes to the project construction compounds with batching plants, Finlaysons Rd, Dogwood Rd to the west of Henty Highway and Bells Rd to the east, may expect a significant increase in daily traffic volume. The proposal is projected to generate in the order of 84 daily additional vehicle movements during the peak construction period, which will be somewhat split between the two compounds. Regarding the other local roads identified above which serve as access points to the turbine construction sites, apart from the 3 – 5 days during which concrete will be delivered to the foundations, it is anticipated that the construction will result in an increase in traffic of between 5 – 30 vehicle movements per day. However, for the vast majority of the construction process this number will be much lower, between 5 – 15 vehicles per day, and will not include heavy traffic. This does not represent a significant increase in the volume of traffic using these roads. Nevertheless, it is proposed that the unsealed roads identified above are upgraded to engineered all weather standard for the purposes of facilitating the construction process.

4.10.4 Swept Paths

There are several intersections that will need to accommodate heavy and over dimensional vehicles along the route from Portland. These are all investigated in detail in the preliminary traffic impact assessment in Volume 2.

In the vicinity of the project site, there are four key intersections which need to accommodate heavy and oversized vehicles and are within a RDZ1. In determining whether an intersection has sufficient capacity to accommodate these vehicles it is sufficient to consider the case of the vehicle with the largest turning circle. Vehicles transporting the turbine blades will have the largest turning circles and all other vehicles will be accommodated by existing or upgraded intersections required by the blade haulage. Impact Traffic Engineers were engaged to undertake an assessment of the four intersections (see the traffic impact assessment in Volume 2.) Impact assessed haulage of blades and found that following measures will be required to use the intersections:

- Henty Highway / Dimboola-Minyip Road: signs to be removed and central islands mounted. Gravelling required.
- Henty Highway / Shearwoods Rd:
- Henty Highway / Banyena Road: signs to be removed. Gravelling required.
- Henty Highway / Ladlows Road: signs to be removed. Gravelling required.

4.10.5 Traffic Management Plan

It is proposed that a detailed Traffic Management Plan be developed in consultation with the Horsham Rural City Council and VicRoads prior to construction. Among other things, the Traffic Management Plan should

include the following measures designed to reduce impacts on local roads and traffic movements during construction:

- Confirmation of the project construction timeframe and work stages;
- Confirmation of expected traffic volumes generated by the project for all stages or work;
- Identification/confirmation of the proposed haulage routes (for all HV and OD/OSOM movements);
- A mechanism to review identified haulage route road conditions prior to the commencement of works;
- Mechanisms/agreements (if deemed necessary) to maintain haulage route roads and road infrastructure, including local public roads used by site traffic during construction works and to reinstate roads to at least pre-construction conditions;
- Qualify any requirement for specific work stage construction traffic management plans; and
- Qualify and identify any relevant mechanisms for OD vehicle permits and traffic management requirements.

Figure 30: Local Roads for upgrade

Wimmera Plains Energy Facility

Local Roads requiring Upgrade

Legend

- Road requiring Upgrade
- Land not included in the Project
- Crown Land
- Parcel

KALKEE SCHOOL ROAD
SHEARWOODS ROAD
SMITHS ROAD
JUNG WHEAT ROAD
BANYENA ROAD
DOGWOOD ROAD
HENTY HIGHWAY
WHYTES ROAD
BELLS ROAD
DOOEN NORTH ROAD
FINLAYSONS ROAD
KELLY ROAD
MAX JOHNS ROAD
JOHNS ROAD
WALSGOTTS ROAD
DROVERS ROAD
GREENHILLS ROAD
LADLOWS ROAD
WARL-DOOEN ROAD
JUNG WEST ROAD
TUCKERS ROAD
DRUNG-JUNG ROAD

N
W E
S

Scale at A3:
1:35,000

0 0.75 1.5 km

Date: 04/26/2020

Figure 31: Proposed Access Route

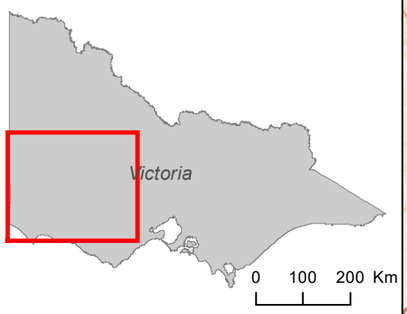
Wimmera Plains Energy Facility

Turbine Transport Routes

Legend

Transport Route

- Portland to Dimboola
- Northern Access
- Southern Access
- Project Area



N
W E
S

Scale at A3:
1:800,000

0 20 40 Km

4.11 Bushfire

The CFA Guidelines for Renewable Energy Installations February 2019 (CFA Guidelines) provide guidance to wind farm planners and developers as to appropriate fire safety measures for proposed wind farms.

The layout of the proposed Wimmera Plains Energy Facility has been developed in reference to the CFA Guidelines. Accordingly, all wind turbines are sited on open grassed areas and are spaced well in excess of the prescribed 300m separation in order to provide separation for fire suppression aircraft to operate in the event of an emergency.

The access tracks associated with the Wimmera Plains Energy Facility will be engineered all weather tracks designed to accommodate heavy vehicles and oversized loads and are therefore more than adequate for CFA vehicles. Moreover, each wind turbine will have a gravel buffer which will serve as both a fire safety measure and a truck turnaround for CFA fire trucks.

In order to assist with firefighting in the event of an emergency it is proposed that six above ground static water tanks will be sited throughout the project. Water tanks with a volume of 45,000 L (or greater) will be situated at each construction compound adjacent to the substations and at each corner of the Wimmera Plains Energy Facility. A further four water tanks of 25,000 L will be located at the corners of the Wimmera Plains Energy Facility. See Figure 9 for further detail.

Vegetation around site infrastructure including wind turbines and the control building will be managed during high fire danger periods.

A Fire Management Plan will be prepared prior to the commencement of construction in consultation with the CFA. This plan will outline in detail the measures proposed above, as well as worksite practices that will be adhered to during construction, and emergency management procedures for the operational period of the Wimmera Plains Energy Facility.

5 Planning

A planning permit is required under the following clauses of the Horsham Planning Scheme:

- Clause 35.07-1 (Farming Zone) Use and development of a wind energy facility, use and development of a utility installation;
- Clause 35.07-4 (Farming Zone) Works within 100m from Road Zone Category 1, works which change the rate of flow or the discharge point of water across a property boundary;
- Clause 36.04-1 (Road Zone) Use and development of a utility installation;
- Clause 52.05-2 (Signs) Construct or put up for display a business identification sign;
- Clause 52.17 (Native Vegetation) Remove, destroy or lop native vegetation, including dead vegetation;
- Clause 52.29-2 (Land Adjacent to a Road Zone Category 1) Create or alter access to a Road Zone Category 1;
- Clause 52.32 (Wind Energy Facility) Use and development of land for a wind energy facility; and
- This application also seeks approval of car parking spaces to the satisfaction of the responsible authority under Clause 52.06-6

A planning permit report has been prepared by Energy Forms to accompany this application. This report can be found in Volume 2. As set out in the planning report there are a number of Federal, State and Local Planning Policies that are considered relevant to the proposal. These include:

- Federal Policies
  - Renewable Energy Target (RET);
  - Environment Protection and Biodiversity Conservation Act 1999; and
  - Civil Aviation Safety Authority (CASA) Requirements

- State Policy
  - Aboriginal Heritage Act 2006;
  - Crown Land Reserves Act 1978 (Vic);
  - Flora and Fauna Guarantee Act 1988 (Vic);
  - Land Act 1958 (Vic);
  - Water Act 1989; and
  - Wildlife Act 1975 (Vic)

- Planning Policy Framework
  - Clause 11.03-5S Distinctive areas and Landscapes;
  - Clause 12 Environmental and Landscape Values;

- Clause 12.01 – 1S Protection of Biodiversity;
- Clause 12.01-1R Protection of Biodiversity – Wimmera Southern Mallee;
- Clause 12.01-2S – Native Vegetation management;
- Clause 12.05-2S Landscapes;
- Clause 13 Environmental Risks and Amenity;
- Clause 13.01-1S Natural hazards and climate change;
- Clause 13.02-1S Bushfire Planning;
- Clause 13.05-1S Noise Abatement;
- Clause 13.07-1S Land use compatibility;
- Clause 14.01-1S Protection of agricultural land;
- Clause 14.01-2S Sustainable agricultural land use;
- Clause 14.01-2R Agricultural productivity – Wimmera southern Mallee;
- Clause 14.03-1S Resource exploration and extraction;
- Clause 15.02-1S Energy and Resource Efficiency;
- Clause 15.03 Heritage;
- Clause 17.01-1S Diversified Economy;
- Clause 17.01-1R Diversified economy – Wimmera Southern Mallee;
- Clause 18.02-3S Road System;
- Clause 18.04 Airports;
- Clause 19.01 Energy Supply; and
- Clause 19.01-2S Renewable Energy
- Clause 19.01- 2R Renewable Energy – Wimmera Southern Mallee

Amendment VC148 was gazetted on 31 July 2018 and introduced the structure and thematic framework of the PPF, integrating state and regional policy. The amendment did not translate local planning policy into the framework. The next phase of implementation is to translate LPPF content into the new framework, which will complete the integration of all existing policy. This has not occurred yet.

As referenced under the transitional Clause 23.01 Relationship to the Planning Policy Framework, Clauses 21 and 22 (Local Planning Policy Framework) form part of the Planning Policy Framework. Where the planning scheme requires consideration of the Planning Policy Framework, that consideration must include Clauses 21 and 22.

- Local Planning Policy Framework
  - Clause 21.01 Municipal Strategic Statement;
  - Clause 21.03-1 Biodiversity Conservation and Habitat Protection;
  - Clause 21.03-2 Waterways;
  - Clause 21.03-3 Landscape;
  - Clause 21.03-4 Ecological Sustainable Development;

- Clause 21.04-3 Climate Change;
- Clause 21.04-4 Bushfire;
- Clause 21.05-1 Agriculture;
- Clause 21.05-4 Mining and Extractive Industry;
- Clause 21.06-2 Built Heritage;
- Clause 21.08-1 Industrial Land Development;
- Clause 21.09-4 Roads;
- Clause 21.10-1 Infrastructure Planning, Design and Construction; and
- Clause 22.01 Commercial Development Policy

- Guidelines
  - Policy and Planning Guidelines for Development of Wind Energy Facilities in Victoria, DELWP March 2019
  - Guidelines for Renewable Energy –Installations (CFA 2019)
  - Guidelines for the removal, destruction or lopping of native vegetation, DELWP December 2017

- Particular Provisions
  - Clause 52.05 Signs;
  - Clause 52.06 Car Parking;
  - Clause 52.17 Native Vegetation;
  - Clause 52.29 Land Adjacent to a Road Zone Category 1; and
  - Clause 52.32 Wind Energy Facility

Please refer to the planning report for an assessment of the application against these policies as well as the relevant decision guidelines where applicable. As stated in the planning report it is considered that a planning permit be issued for the project for the following reasons:

- The proposal is in accordance with the overall objectives and strategies of the Horsham Planning Scheme;
- The proposal is consistent with the State Planning Policy Framework and relevant Particular Provisions;
- The proposal is consistent with the Planning Policy Framework, Municipal Strategic Statement and relevant Particular Provisions;
- The proposal responds to the Policy and Planning Guidelines for the Development of Wind Energy Facilities in Victoria (March 2019);
- The proposal meets the decision guidelines of the Guidelines for the removal, destruction or lopping of native vegetation (December 2017);
- The application responds to the requirements of the Farming and Road Zones;

- The proposal will not impact on the agricultural uses within the area;
- The proposal responds to the site conditions;
- The proposal will not impact on the existing environmental values of the subject site or the adjoining or surrounding properties;
- The proposal will not have an unreasonable impact on the landscape;
- The proposal will result in an increase to the State's wind energy supply, and importantly assist in reducing the reliance on non-renewable energy; and
- The project will provide for a positive social impact through the delivery of Community and Neighbour Benefit Schemes

Overall the proposal strongly supports and promotes the policies and objectives of the Horsham Planning Scheme.