



Winterbourne Wind Farm

Scoping Report

7 September 2020

Project No.: 0526676

Document details	
Document title	Winterbourne Wind Farm
Document subtitle	Scoping Report
Project No.	0526676
Date	7 September 2020
Version	Final
Author	Thomas Buchan (TB), Nathan Lynch (NL), Amanda Antcliff (AA), Lachlan Giles (LG)
Client Name	WinterbourneWind Pty Ltd

Document history

Version	Revision	Author	Reviewed by	ERM approval to issue		Comments
				Name	Date	
Draft	1.0	TB	AA	Murray Curtis	19.12.19	Draft report for client review
Draft	2.0	TB	NL	Murray Curtis	11.03.20	Revised draft report for client review
Draft	3.0	TB	NL	Murray Curtis	01.04.20	Revised draft report for client review
Draft	4.0	TB	DMS	Murray Curtis	06.05.20	Revised draft report for client review
Draft	5.0	TB	DMS	Murray Curtis	06.05.20	Revised draft report for client review
Final	6.0	TB	DMS	Murray Curtis	04.06.20	For Issue to Client
Final	7.0	TB/LG	DMS	Murray Curtis	19.06.20	Revised Final report for client review
Final	8.0	TB/LG	DMS	Murray Curtis	25.06.20	For Issue to Client
Final	9.0	TB	DMS	Murray Curtis	07.09.20	Revised Final report for client review

Signature Page

7 September 2020

Winterbourne Wind Farm

Scoping Report



Thomas Buchan
Consultant



Amanda Antcliff
Principal Consultant



Danyil Skora
Project Manager



Murray Curtis
Partner

Environmental Resources Management Australia Pty Ltd

Level 15

309 Kent Street

Sydney NSW 2000

© Copyright 2020 by ERM Worldwide Group Ltd and/or its affiliates ("ERM").
All rights reserved. No part of this work may be reproduced or transmitted in any form,
or by any means, without the prior written permission of ERM.

CONTENTS

1.	INTRODUCTION	1
1.1	Objectives	1
1.2	Project Overview	2
2.	PLANNING FRAMEWORK	6
2.1	Applicable Commonwealth Legislation	6
2.1.1	Environment Protection and Biodiversity Conservation Act 1999	6
2.1.2	Native Title Act 1993	6
2.2	Applicable NSW Legislation	6
2.2.1	Environmental Planning and Assessment Act 1979	6
2.2.2	State Environmental Planning Policies	7
2.3	Local Planning Regulations	12
2.3.1	Walcha Local Environmental Plan 2012	12
2.3.2	Uralla Local Environmental Plan 2012	12
2.3.3	Other Policies	12
2.3.4	Development Control Plans	13
3.	PROJECT DESCRIPTION	14
3.1	Proponent	14
3.2	Setting	14
3.2.1	Zoning	14
3.2.2	Crown Land	15
3.2.3	Involved Landowners	18
3.3	Project Components	23
3.4	Staging	25
3.5	Options Analysis	25
4.	PROJECT JUSTIFICATION	26
4.1	Viability	26
4.2	Commitments to Renewable Energy	26
4.2.1	Federal Commitments	26
4.2.2	State Commitments	27
4.3	Wind Farm Benefits	27
4.4	Project-Specific Benefits	28
5.	STAKEHOLDER ENGAGEMENT	29
5.1	Consultation Objectives	29
5.2	Consultation Approach	29
5.3	Consultation and Engagement to Date	30
5.3.1	Background	30
5.3.2	Public Meetings and Information Sessions	30
5.3.3	Community Engagement during Project Initiation (Project Website, Newsletters and Flyers)	31
5.3.4	Face to Face Consultation	31
5.3.5	Stakeholder Briefs	32
5.3.6	Key Issues Raised	33
5.4	Ongoing Engagement and Consultation	34
5.5	Community Consultative Committee (CCC)	37
6.	ENVIRONMENTAL RISK ASSESSMENT	38
6.1	Environmental Risk Assessment	38
7.	PRELIMINARY ENVIRONMENTAL ASSESSMENT	44

7.1	Key Issues	44
7.1.1	Preliminary Landscape and Visual	44
7.1.2	Noise.....	49
7.1.3	Biodiversity.....	57
7.1.4	Heritage	62
7.2	Other Environmental Factors	66
7.2.1	Traffic and Transport.....	66
7.2.2	Aviation	70
7.2.3	Water and Groundwater.....	70
7.2.4	Soil and Landform.....	72
7.2.5	Air Quality and Dust.....	75
7.2.6	EMI / EMF / Telecommunications	75
7.2.7	Social and Economic	75
7.2.8	Hazards and Safety (including Bushfire).....	75
7.2.9	Waste.....	75
7.2.10	Blade Throw and Shadow Flicker	75
7.2.11	Human Health	75
7.2.12	Decommissioning.....	75
7.3	Cumulative Impacts	75
REFERENCES.....		78

APPENDIX A	STAKEHOLDER ENGAGEMENT AND CONSULTATION STRATEGY
APPENDIX B	PRELIMINARY LANDSCAPE AND VISUAL ASSESSMENT
APPENDIX C	BIODIVERSITY CONSTRAINTS ASSESSMENT
APPENDIX D	DESKTOP HERITAGE ASSESSMENT

List of Tables

Table 1-1	Wind Energy Guideline Requirements.....	2
Table 1-2	Scoping Report Requirements.....	2
Table 2-1	Applicable Legislation to the Project.....	8
Table 2-2	Applicable Policies to the Project.....	10
Table 3-1	Involved Landowners Proximate to the Project	18
Table 3-2	Indicative Turbine Specification (Current Technology)	23
Table 3-3	Indicative Turbine Specification (Future Technology).....	24
Table 3-4	Indicative Project Design – Components and Specification	24
Table 3-5	Project Staging.....	25
Table 5-1	Summary of Consultation Events.....	30
Table 5-2	Key Issues Summary	33
Table 5-3	Communication and Engagement Action Plan	35
Table 6-1	Preliminary Risk Assessment	40
Table 7-1	Predicted Noise Levels and Preliminary Compliance for Non-involved Landowners....	52
Table 7-2	Field Survey Summary (Spring Surveys - November 2019).....	58
Table 7-3	Known or Likely MNES within the Project Boundary	61
Table 7-4	AHIMS Database Search Details.....	63
Table 7-5	AHIMS Registered Site Types	63
Table 7-6	Statutory Heritage Register Search Summary.....	65
Table 7-7	Non-Indigenous Heritage Sites Summary	66
Table 7-9	Nearby SSD Renewable Energy Projects	76

List of Figures

Figure 1-1	Project Locality.....	4
Figure 1-2	Indicative Project Layout.....	5
Figure 3-1	Land Use Zoning.....	16
Figure 3-2	Crown Land.....	17
Figure 3-3	Involved Landowners	21
Figure 3-4	Non-Involved Landowners	22
Figure 3-5	Project Staging Map.....	25
Figure 7-1	Visual Magnitude Thresholds for Visual Assessment (The Visual Bulletin)	45
Figure 7-2	Residential Dwellings within Preliminary LVA Study Area.....	46
Figure 7-3	Zone of Visual Influence (ZVI) Analysis	48
Figure 7-4	Noise Bulletin Average Distances for Different Noise Standards	50
Figure 7-5	Preliminary Worst-case Noise Contour Map.....	54
Figure 7-6	Preliminary Wind Speed Based Compliance Assessment	55
Figure 7-7	Transport Route (Option 1)	68
Figure 7-8	Transport Route (Option 2)	69
Figure 7-9	Local Hydrology	71
Figure 7-10	Land and Soils Capability Mapping	73
Figure 7-11	Biophysical Strategic Agricultural Land (BSAL).....	74
Figure 7-12	Nearby SSD Renewable Energy Projects	77

Acronyms and Abbreviations

Name	Description
AHIMS	Aboriginal Heritage Information Management System
AWA	Australian Wind Alliance
BC Act	Biodiversity Conservation Act 2016
CCC	Community Consultative Committee
CSP	Community Strategic Plan Walcha 2027
DAWE	Department of Agriculture, Water and the Environment
DCP	Development Control Plan
DoEE	Department of the Environment and Energy
DP&E	Department of Planning and Environment
DPIE	Department of Planning, Industry and Environment
EEAP	Energy Efficiency Action Plan
EIS	Environmental Impact Statement
EPBC Act	Environmental Protection and Biodiversity Conservation Act 1999
EP&A Act	Environmental Planning & Assessment Act 1979
ERM	Environmental Resources Management Australia
ESD	Ecological Sustainable Development
DCP	Development Control Plan
GWh	Gigawatt hours
LEP	Local Environmental Plan
LGA	Local Government Area
MirusWind	MirusWind Pty Ltd
MNES	Matters of National Environmental Significance (EPBC Act)
MW	Megawatt
NEM	National Electricity Market
NSW	New South Wales
RAV	Restricted Access Vehicle
REA	NSW Renewable Energy Action Plan
RNE	Register of the National Estate
SEARs	Secretary's Environmental Assessment Requirements
SEC Strategy	Stakeholder Engagement & Consultation Strategy

Name	Description
SEED	Sharing and Enabling Environmental Data
SEPP	State Environmental Planning Policy
SSD	State Significant Development
TEC	Threatened Ecological Community
WHL	World Heritage List
Walcha LSPS	Walcha Local Strategic Planning Statement 2036
WalchaWind	WalchaWind Pty Ltd
WWPL	WinterbourneWind Pty Ltd
ZVI	Zone of Visual Influence

1. INTRODUCTION

WinterbourneWind Pty Ltd (WWPL) proposes to construct and operate the Winterbourne Wind Farm Project (WWF, or the project), a renewable energy development located to the north and east of Walcha in the Northern Tablelands of New South Wales (NSW).

WWPL is seeking State Significant Development (SSD) Consent under Division 4.7 of Part 4 of the *Environmental Planning & Assessment Act 1979* (EP&A Act) for the project.

As a first step in the SSD Consent process, WWPL engaged Environmental Resources Management Australia Pty Ltd (ERM) to prepare a Scoping Report (this report) in support of an application to the Secretary of the Department of Planning, Industry and Environment (DPIE) for Secretary's Environmental Assessment Requirements (SEARs). The SEARs will guide the preparation of an Environmental Impact Statement (EIS) for the project as part of a broader development application.

1.1 Objectives

The Scoping Report is a preliminary environmental assessment that has been prepared with the following objectives:

- Provide a description of the project based on all information available at the time;
- Identify the relevant strategic and statutory context;
- Summarise the results of early community engagement;
- Identify the scale and nature of potential project impacts; and
- Outline the proposed approach to further environmental assessment and community engagement.

This report has been prepared with due regard to, and in accordance with, the following guidelines:

- NSW Department of Planning, Industry and Environment - *Wind Energy Framework* – for State Significant Wind Energy Development (DPIE, 2019), comprising:
 - NSW Government - *Wind Energy Guideline* – for State Significant Wind Energy Development (DP&E, 2016a), dated December 2016 (Wind Energy Guideline).
 - NSW Government - *Wind Energy: Visual Assessment Bulletin* – for State Significant Wind Energy Development (DP&E, 2016b), dated December 2016.
 - NSW Government - *Wind Energy: Noise Assessment Bulletin* - for State Significant Wind Energy Development (DP&E, 2016c), dated December 2016.
 - NSW Government - *Wind Energy Framework Q&A's* - for State Significant Wind Energy Development (DP&E, 2016d), dated December 2016.
 - NSW DPIE – Standard SEARs (DP&E, 2016e), dated December 2016.
- DP&E Draft Environmental Impact Assessment Guidance Series - *Scoping an Environmental Impact Statement* (DP&E, 2017), dated June 2017 (Scoping Report Requirements).

A compliance matrix for this report and its adherence to the Wind Energy Framework and Scoping Report Requirements is presented in **Table 1-1** and **Table 1-2** below.

Table 1-1 Wind Energy Guideline Requirements

Requirement	Location
Describes the proposed wind energy project and its location in context (for example, it should identify the preliminary turbine layout, nearby dwellings, key public viewpoints and other key landscape features). Proponents should demonstrate the suitability of their chosen location and the viability of wind resources in that area.	Section 3.2 Section 4.1
Describes steps taken to assist potentially affected people and groups in understanding the proposed development and what it could mean for them.	Section 5
Describes the proposed overall approach to stakeholder consultation for the EIS development process.	Section 5
Includes the results and outcomes of early community consultation undertaken to date.	Section 5
Includes results of community consultation in relation to landscape values, and assesses the preliminary turbine layout against the preliminary assessment tools contained in the Visual Assessment Bulletin, including consultation with landowners.	Section 5, Appendix B
Identifies the key issues for the particular project.	Section 7.1
Provides a high-level assessment of the environmental impacts of the project (focusing on those key issues).	Section 7.1 and 7.2

Table 1-2 Scoping Report Requirements

Requirement	Location
Identify the relevant strategic and statutory context	Section 2
Describe the project	Section 3
Outline the proposed approach to assessment and community engagement, and summarise the results of any early community engagement	Section 5
Identify the scale and nature of the impacts of the project	Section 7

1.2 Project Overview

The project is situated approximately 425 kilometres (by road) from Sydney and 180 kilometres north-west of Port Macquarie. It is located ~75 kilometres north-east of Tamworth and ~35 kilometres south-south-west of Armidale within both the Walcha and Uralla Local Government Areas (LGAs).

The project boundary extends around an area of approximately 24,400 hectares, and is at an elevation of approximately 1,100 to 1,300 metres (above sea level), comprised of hills and ridgelines rising out of the Walcha Plateau. The project locality and an indicative layout is identified in **Figure 1-1** and **Figure 1-2** below.

The project land and surrounding area is generally used for grazing operations. The project land is primarily freehold, although a small number of Crown Roads are present within the project boundary. WWPL has not identified any mineral resources, mineral exploration licences or gas pipelines within the project boundary.

The project is proposed to consist of up to 126 wind turbine generator (turbine) locations with a combined maximum installed capacity of 700 megawatts (MW). A maximum tip height of 250 metres is proposed.

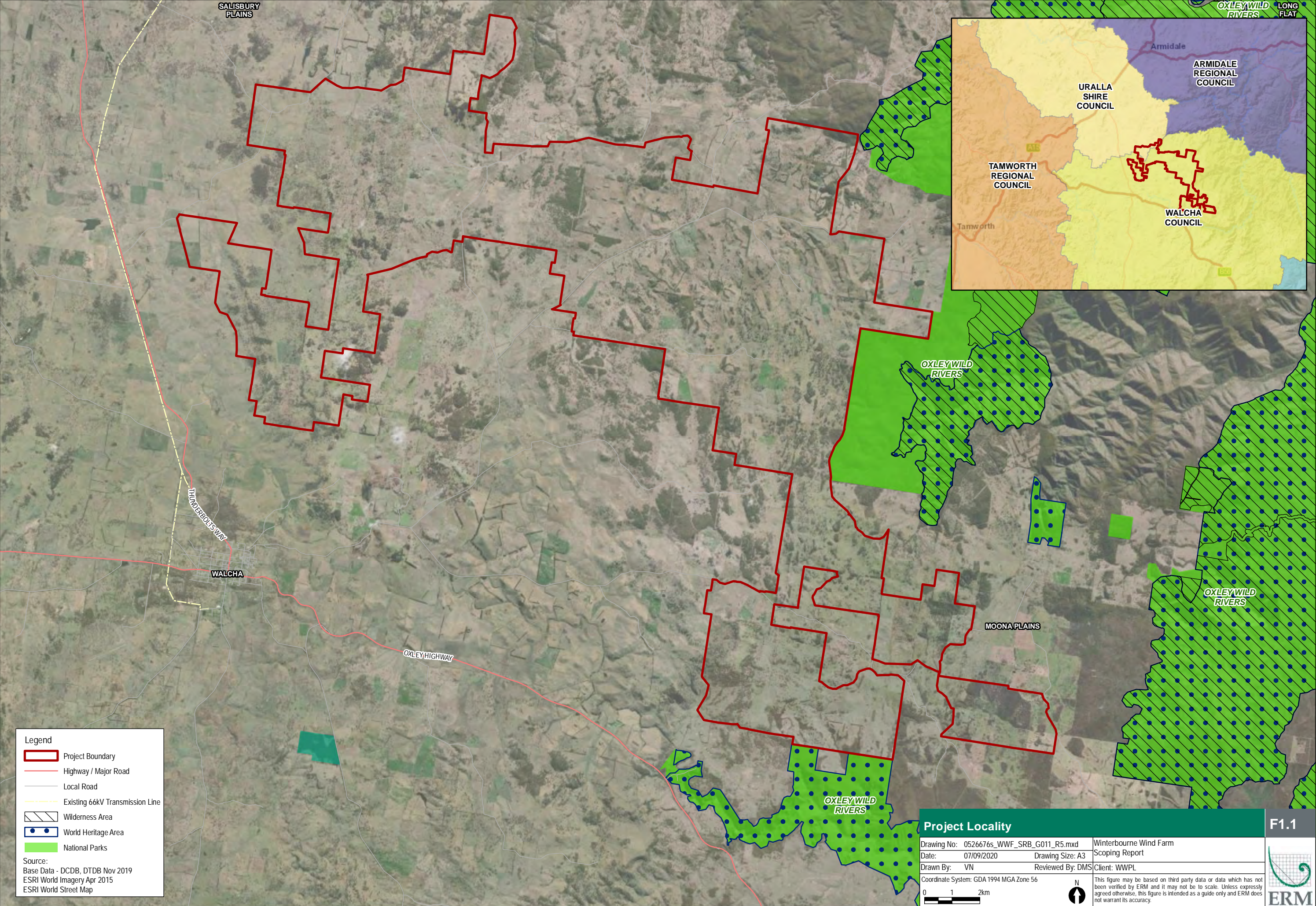
The project would also include:

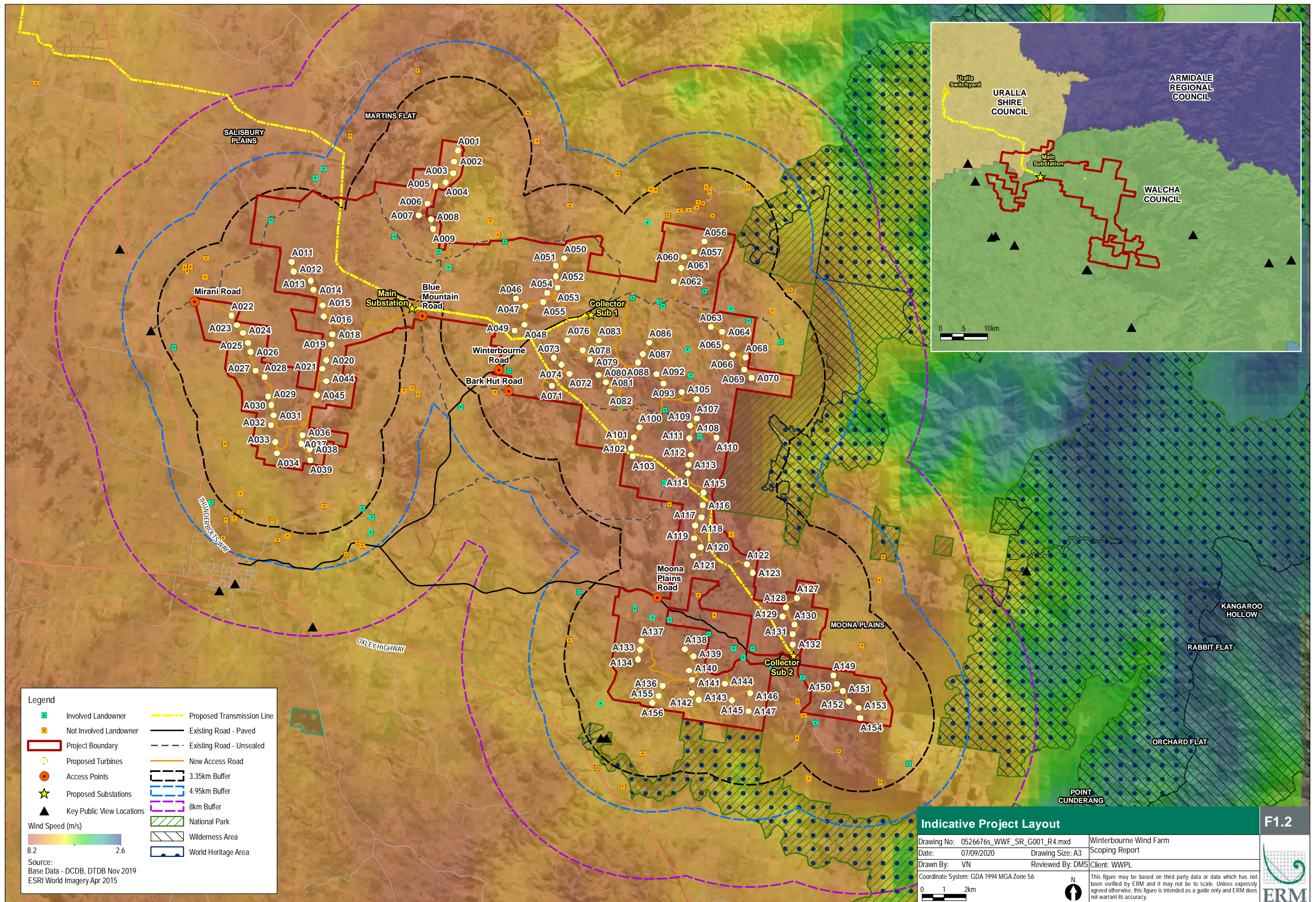
- An internal electrical reticulation network (both overhead and underground);
- Three on-site substations;
- New and upgraded access roads;
- Temporary construction facilities (including concrete batching plants); and
- Operation and maintenance buildings.

Large-scale battery storage is also proposed for the project to support stabilising the supply of electricity to the National Electricity Market (NEM). Indicatively, the battery unit would have 100 MW / 200 MWh capacity, and would utilise lithium ion technology.

The project is also proposed to include approximately 30 km of new 330 kV overhead transmission line running through the wind farm and continuing north-west from the project site. This new transmission line would connect to the existing grid network operated by TransGrid at a new switchyard which would be constructed approximately 7 km south of Uralla, NSW.

This switchyard location has also been proposed by WalchaEnergy as part of its Salisbury Solar Farm project, and has previously been referred to as the “Uralla Hub”. The proposed transmission line route and switchyard location are identified in **Figure 1-2** below.





2. PLANNING FRAMEWORK

This section provides a discussion of the federal, state, regional and local legislation and policies relevant to the development of the project.

2.1 Applicable Commonwealth Legislation

2.1.1 *Environment Protection and Biodiversity Conservation Act 1999*

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) provides for Commonwealth assessment and approval of proposals that may have a significant impact on any of the nine 'matters of national environmental significance' (MNES). The EPBC Act enables the Australian Government to join with the states and territories in providing a national scheme of environment and heritage protection and biodiversity conservation.

Approval from the Minister for the Commonwealth Department of Agriculture, Water and the Environment (DAWE) is required for any action that may have a significant effect on one or more MNES. If the Minister declares the action a "controlled action", the action must be subject to an impact assessment under Part 8 of the EPBC Act. Any proposed action that is expected to have an impact on MNES must be referred to the Minister for assessment under the EPBC Act, or assessed under the accredited process between the Commonwealth and the State of NSW.

The proposal was referred to the Minister for the Commonwealth DAWE in mid-2020, and was deemed a "controlled action". As such, the proposal will be subject to an impact assessment under Part 8 of the EPBC Act.

2.1.2 *Native Title Act 1993*

The Native Title Act 1993 (NT Act) facilitates the recognition and protection of native title. Under Section 13 of the NT Act, a person can apply to the Federal Court for a determination of native title. A review of the potential for native title will be undertaken for the project, however the NSW Sharing and Enabling Environmental Data (SEED) online mapping tool currently indicates there are no Native Title claims over the project site.

2.2 Applicable NSW Legislation

2.2.1 *Environmental Planning and Assessment Act 1979*

The relevant NSW planning legislation is the *Environmental Planning and Assessment Act 1979* (EP&A Act). The EP&A Act institutes a system of environmental planning and assessment within NSW and is administered by the Department of Planning, Infrastructure and Environment (DPIE).

Approval for the project is to be sought under the State Significant Development (SSD) provisions (Division 4.1) of Part 4 of the EP&A Act. Condition 8(ii) of the State Environmental Planning Policy (State and Regional Development) 2011 (State and Regional SEPP) declares development as SSD if the development is specified in Schedule 1 or 2. The project would be classified as 'Electricity generating works...' as defined under Schedule 1 of the State and Regional SEPP as:

"Development for the purpose of electricity generating works or heat or their co-generation (using any energy source, including gas, coal, biofuel, distillate, waste, hydro, wave, solar or wind power) that:

(a) has a capital investment value of more than \$30 million

Additional information is outlined in **Table 2-1** below.

The objectives of the EP&A Act include:

- Encouragement of the proper management of natural resources, including minerals, for the purpose of promoting the social and economic welfare of the community;

- Promotion and coordination of the orderly and economic use and development of land; and
- Encouragement of Ecologically Sustainable Development (ESD).

2.2.1.1 Application of Other Provisions of the EP&A Act

Section 4.41 of the EP&A Act lists authorisations which are not required for SSD projects that are authorised by a development consent, including:

- *Fisheries Management Act 1994*: a permit under Section 201, 205 or 219.
- *Heritage Act 1977*: an approval under Part 4, or an excavation permit under Section 139.
- *National Parks and Wildlife Act 1974*: an Aboriginal heritage impact permit under Section 90.
- *Rural Fires Act 1997*: a bush fire safety authority under Section 100B.
- *Water Management Act 2000*: a water use approval under Section 89, a water management work approval under Section 90 or an activity approval (other than an aquifer interference approval) under Section 91.

Further, under Section 4.42 of the EP&A Act, the following authorisations cannot be refused for an SSD project if they are necessary for the carrying out of a project which has been granted development consent, and must be substantially consistent with the SSD consent:

- *Fisheries Management Act 1994*: an aquaculture permit under Section 144.
- *Mine Subsidence Compensation Act 1961*: an approval under Section 15.
- *Mining Act 1992*: a mining lease.
- *Petroleum (Onshore) Act 1991*: a production lease.
- *Protection of the Environment Operations Act 1997*: an Environment Protection Licence under Chapter 3.
- *Roads Act 1993*: a consent under Section 138.
- *Pipelines Act 1967*: a licence.

A summary of the applicable state legislation is provided in **Table 2-1** below.

2.2.2 State Environmental Planning Policies

State Environment Planning Policies (SEPPs) are environmental planning instruments which address planning issues within the State. SEPPs typically provide for decision making authority to be vested in the Minister for Planning. A list of the SEPPs relevant to the project are summarised in **Table 2-2** below.

Table 2-1 Applicable Legislation to the Project

Legislation	Description	Relevance to the Project
Protection of the Environment Operations Act 1997	<p>The <i>Protection of the Environment Operations Act 1997</i> (POEO Act) is the primary piece of legislation regulating pollution control and waste disposal in NSW. The NSW Environment Protection Authority (EPA) is the regulatory authority for the project under the provisions of the POEO Act.</p> <p>Part 3.2 of the POEO Act provides guidance to licencing requirements for scheduled development work and scheduled activities, specifically including licences required for certain premises-based and non-premises-based activities, as outlined in Clause 48 and 49. Scheduled activities and their licencing thresholds are listed in Schedule 1 of the Act.</p>	<p>Schedule 1 activities requiring an environment protection licence (EPL) relevant to the project include:</p> <p><i>Schedule 1, Clause 17: "electricity works (wind farms)", meaning the generation of electricity by means of wind turbines.</i></p> <p>Based on the above requirements of Schedule 1 of the POEO Act, an EPL will be required for the project.</p> <p>Under the provisions of Section 4.42 of the EP&A Act, an EPL cannot be refused if it is necessary for carrying out SSD that is authorised by a development consent under Division 4 of the EP&A Act and is to be substantially consistent with any approved SSD project.</p>
Biodiversity Conservation Act 2016	<p>The <i>Biodiversity Conservation Act 2016</i> (BC Act) contains provisions relating to threatened species and ecological communities' listings and assessment. The <i>Biodiversity Conservation Regulation 2017</i> supports the BC Act.</p>	<p>The Biodiversity Assessment which will be prepared to accompany the EIS will provide a discussion of the management and protection of listed threatened species of native flora and fauna and threatened ecological communities (TECs), and assess biodiversity offsets consistent with the Biodiversity Offset Scheme.</p> <p>The project site is not currently mapped on the Biodiversity Values Map. However given the project is state significant development, entry into the Biodiversity Offset Scheme is triggered.</p>
Roads Act 1993	<p>The <i>Roads Act 1993</i> (Roads Act) provides the regulatory framework for undertaking various activities on public roads. The Roads Act is administered by Roads and Maritime Services (RMS) who has jurisdiction for major roads. Section 138 of the Roads Act prohibits a number of activities, such as conducting work in, on or over a public road, unless consent has been obtained from the appropriate road authority.</p>	<p>The project will require consent from the appropriate roads authority under Section 138 of the Roads Act for any works undertaken on public roads, which will be assessed within the EIS.</p> <p>Under the provisions of Section 4.42 of the EP&A Act, consent cannot be refused if it is necessary for carrying out SSD that is authorised by a development consent under Division 4 of the EP&A Act and is to be substantially consistent with any approved SSD project.</p>

Legislation	Description	Relevance to the Project
Heritage Act 1977	<p>The <i>Heritage Act 1977</i> protects the cultural and natural history of NSW with emphasis on historic (European) heritage items, including places, buildings, works, relics, moveable objects or precincts with significance to the State or a local area.</p> <p>It provides blanket protection for surface and sub-surface relics and for heritage items of state significance listed on the State Heritage Register. The Act defers to local planning instruments under the EP&A Act for the protection of items of local significant.</p>	A search of the NSW State Heritage Register was conducted on 22 October 2019. The search revealed that there are no State Heritage Listed items within the project boundary.
National Parks and Wildlife Act 1974	<p>The object of the <i>National Parks and Wildlife Act 1974</i> (NPW Act) is to consolidate and amend the law relating to the establishment, preservation and management of national parks, historic sites, certain other area, and the protection of certain fauna, native plants and Aboriginal objects.</p> <p>The recent biodiversity conservation and land management reforms repealed several existing Acts, including the animal and plant provisions of the NPW Act.</p>	A search of the Aboriginal Heritage Information Management Systems (AHIMS) on 22 October 2019 identified two artefact sites within the project boundary (AHIMS ID #24-4-0041 and #30-1-0019). Additional information is provided in Section 7.1.4 of this report.
Water Management Act 2000	<p>The <i>Water Management Act 2000</i> (WM Act) regulates the use and interference with surface and groundwater where a water sharing plan has been implemented. For areas outside the limits of water sharing plans, licensing provisions of the <i>Water Act 1912</i> (Water Act) are still in force.</p> <p>The project is located within the Macleay River catchment which falls within the jurisdiction of the Namoi Unregulated and Alluvial Water Sharing Plan.</p> <p>The provisions of water sharing plans apply where water supply for the project is to be accessed via surface water and/or groundwater.</p>	<p>Section 4.41 of the EP&A Act confirms that approved SSD does not require approvals under WM Act Section 89 (water use), Section 90 (water management work) or Section 91(2) (controlled activity), however Section 91(3) aquifer interference approvals are not exempt from requiring approval.</p> <p>NSW Aquifer Interference Policy (2012) explains the requirements for the administration of the water licensing and assessment processes for aquifer interference activities. Section 3.3 of the Policy identifies activities such as trenching, access tracks, building and work pads as activities defined as having minimal impact on water dependent assets.</p> <p>An assessment of the potential for the project to impact on aquifer interference activities in accordance with the Aquifer Interference Policy will be undertaken as part of the EIS.</p>

Legislation	Description	Relevance to the Project
Rural Fires Act 1997	<p>The main objectives of the <i>Rural Fires Act 1997</i> are to:</p> <ul style="list-style-type: none"> ■ Prevent, mitigate and suppress bush and other fires in NSW; ■ Coordinate bush fire-fighting and bush fire prevention throughout the State; ■ Protect people from injury or death and property from damage as a result of bush fires; and ■ Protect the environment. 	<p>A Section 100B bush fire safety authority is not required as the development does not involve subdivision for residential or rural residential development.</p> <p>Bush fire risk considerations will be discussed within the Hazards and Risk assessment prepared as part of the EIS.</p>

Table 2-2 Applicable Policies to the Project

Policy	Description	Relevance to the Project
SEPP (State and Regional Development) 2011	Clause 20 of Schedule 1 of SEPP State and Regional Development states that if a development for the purpose of electricity generating works (using any energy source, including gas, coal, biofuel, distillate, waste, hydro, wave, solar or wind power), has a capital investment value of more than \$30 million, it is considered to be SSD.	The project will have a capital investment value of more than \$30 million and therefore is classified as SSD under Part 4 of the EP&A Act.
SEPP (Infrastructure) 2007	Clause 34 of SEPP (Infrastructure) 2007 (Infrastructure SEPP) states that development for the purpose of electricity generating works may be carried out on any land in the prescribed rural, industrial or special use zones.	The project is entirely proposed on land in RU1 – Primary Production and is therefore permissible with consent as described in Section 2.3 below.
SEPP (Koala Habitat Protection) 2019	<p>SEPP (Koala Habitat Protection) 2019 replaces SEPP 44 – Koala Habitat Protection (SEPP 44). The Koala Habitat Protection SEPP includes a new definition of ‘core koala habitat’ and two maps to help protect koalas across NSW. In addition, the list of tree species listed under the SEPP has been expanded from 10 to 123, across nine distinct regions of NSW.</p> <p>The policy intent of SEPP 44 has been retained in the Koala Habitat Protection SEPP and the former SEPP will be repealed when the new SEPP commences on 1 March 2020.</p>	The project would, as far as practicable, aim to be consistent with the objectives of the SEPP and will be addressed within any Biodiversity Development Assessment Report (BDAR) prepared to support the EIS.

Policy	Description	Relevance to the Project
SEPP 33 – Hazardous and Offensive Development	<p>Assesses the potential hazards associated with the proposed development by providing definitions and guidelines for:</p> <ul style="list-style-type: none"> ■ Hazardous Industry; ■ Offensive Industry; ■ Hazardous storage establishment; and ■ Offensive storage establishment. 	A preliminary risk screening assessment will be undertaken in accordance with the SEPP 33 for the project at the EIS phase.
SEPP 55 – Remediation of Land	Under Clause 7 of SEPP No. 55 – Remediation of Land, a consent authority is required to consider whether a proposed development site is affected by soil or other contaminants before granting consent.	An assessment will be prepared as part of the EIS to determine the potential contamination risk associated with the project. The assessment will take into consideration historical land use that may have resulted in contamination within and surrounding the project boundary.

2.3 Local Planning Regulations

The project is located across two LGAs as shown in **Figure 3-1**. Wind turbines will be located within the Walcha Shire Council and Uralla Shire Council areas. Local Planning Regulations that apply to each of these council areas are discussed below.

2.3.1 Walcha Local Environmental Plan 2012

The relevant Local Environmental Plan (LEP) for the section of the project located within the Walcha LGA is the Walcha Local Environmental Plan 2012 (Walcha LEP). Under this plan, the land within the project boundary is zoned “RU1 – Primary Production”.

The permissibility of wind farm developments is governed by the relevant LEP and by the Infrastructure SEPP.

Clause 34 of the Infrastructure SEPP states that ‘electricity generating works’ may be carried out with development consent on any land within a prescribed rural, industrial or special use zone. RU1 is a prescribed rural zone. The proposed wind farm is thus permissible with consent.

The land use table in the Walcha LEP lists the class of developments that are permissible within each land zoning. The Walcha LEP does not list ‘electricity generating works’ as a permissible class of development in zone RU1. However, Clause 1.9 of the Walcha LEP states that the provisions of any SEPP will prevail over the LEP. Therefore, the development is permissible with consent in zone RU1 under Clause 34 of the Infrastructure SEPP.

The zone objectives encourage sustainable primary industry production and the diversification of primary industry enterprises appropriate for the area. Whilst the project boundary covers a large area, the project disturbance footprint will be relatively small, and will allow for traditional farming operations to continue. As such the project is compatible with this land zoning.

2.3.2 Uralla Local Environmental Plan 2012

The Uralla Local Environmental Plan 2012 (Uralla LEP) is the relevant LEP for the part of the project contained within the Uralla LGA. The land within the project boundary covered by the Uralla LEP is also zoned RU1 – Primary Production, and has objectives consistent with that of the Walcha LEP. As a result, the development is permissible with consent in zone RU1 under Clause 34 of the Infrastructure SEPP.

2.3.3 Other Policies

Careful consideration of the relevant Regional and Local Policies within the area will be undertaken as part of the EIS, to ensure the planning and development of the project aligns with the specific economic, environmental and social strategies and objectives outlined for the region, including (but not limited to) the following:

- New England North West Regional Plan 2036 (The Regional Plan) – provides the overarching framework to guide subsequent and more detailed land use plans, development proposals and infrastructure funding decisions for the New England North West region. The Regional Plan sets priorities and goals and provides a direction for regional planning decisions. Of particular relevance to the project is Goal 2 - “A diversified economy through the management of mineral and energy resources including renewable energy generation”.
- Draft Walcha Local Strategic Planning Statement 2036 (Walcha LSPS) – identifies key planning priorities, including Priority #8 – A Sustainable Environment, which aims to identify and promote wind, solar and other renewable energy production opportunities, and manage and support the transition to renewable energy.

- Community Strategic Plan Walcha 2027 (CSP) – The CSP is described as the future of the Walcha Local Government Area, and represents the vision, aspirations, goals, priorities and challenges for the community, developed by the community and implemented by Walcha Council. The project will help achieve relevant goals and strategies outlined throughout the CSP (e.g. CSP 6.4 - Walcha will increase the use and production of renewable energy).
- New England Development Strategy 2010 (The Strategy) - The Strategy outlines key land use policies and principles for the four LGAs within the region (including Uralla and Walcha) and provides the planning context for the preparation of LEP provisions. The project aligns with the Strategy's vision to support and facilitate economic development and a diverse economy (including agriculture and rural development, industry, and tourism) while maintaining and, where possible, enhancing environmental qualities.

2.3.4 Development Control Plans

2.3.4.1 Walcha Development Control Plan 2019

The Walcha Development Control Plan (Walcha DCP) has been prepared to support the controls contained within the Walcha LEP as per the provisions of Division 3.6 of the EP&A Act, which outline the purpose and guidance for preparation of a development control plan. Under Clause 11 of the SEPP (State and Regional Development) 2011, DCPs do not apply to SSD projects. As a result, the Walcha DCP does not apply to this project.

2.3.4.2 Uralla Development Control Plan 2016

The Uralla Development Control Plan (DCP) 2011 applies to the Shire of Uralla unless otherwise specified elsewhere in the DCP, amended by Council on 27 August 2012, 4 May 2015, 26 October 2016, 15 August 2016, and 6 September 2019. Under Clause 11 of the SEPP (State and Regional Development) 2011, DCPs do not apply to SSD projects. As a result, the Uralla DCP does not apply to this project.

3. PROJECT DESCRIPTION

This section provides a description of the project and its indicative design, layout and features. The project site and surrounding area are also described, expanding on information from **Section 1** of this report.

3.1 Proponent

WinterbourneWind Pty Ltd (WWPL) is the proponent for the Winterbourne Wind Farm project. In June 2019, Wind Power Invest (WPI), a wholly-owned subsidiary of global wind energy giant Vestas, acquired a 95% stake in WWPL from MirusWind Pty Ltd (MirusWind). MirusWind began developing concepts for the project in 2004.

Vestas designs, manufactures, installs, and services wind turbines across the globe. Over 113 GW of Vestas turbines have been installed in 80 countries since 1979, making Vestas one of the wind industry's largest and most successful companies. Vestas has been active in Australia since 2001 and employs nearly 500 staff in Australia and New Zealand involved in the sales, development, construction and maintenance of wind farms.

As part of an innovative community ownership and revenue sharing arrangement, the remaining 5% of WWPL is held by WalchaWind Pty Ltd (WalchaWind). Turbine hosts, easement owners and eligible project neighbours will be invited to become involved in this 5% ownership at no cost to them. In turn, WalchaWind has committed to sharing the benefits it receives 50%:50% with the broader Walcha community to ensure financial and social benefits to the community, and the long-term success of the project.

3.2 Setting

WWF is situated approximately 425 kilometres (by road) from Sydney and 180 kilometres north-west of Port Macquarie. It is located ~75 kilometres north-east of Tamworth and ~35 kilometres south-south-west of Armidale within both Walcha Shire Council and Uralla Shire Council areas. The proposed project is roughly bounded by Thunderbolts Way to the west, the Oxley Highway to the south, the Oxley Wild Rivers National Park to the east, and the Salisbury Plains to the north. The nearest proposed turbine location is approximately 6.5 km from the centre of the Walcha township.

The project boundary extends around an area of approximately 24,400 hectares and is at an elevation of approximately 1,100 to 1,300 metres (above sea level), comprised of hills and ridgelines rising out of the Walcha Plateau. The project land and surrounding area is generally used for grazing operations. The project locality and an indicative layout are shown in **Figure 1-1** and **Figure 1-2**.

The Oxley Wild Rivers National Park is located to the east and south of the project area. Overlapping some of the National Park, particularly through the gorge areas, is an area which has been identified as Gondwana Rainforest of Australia and is listed as a World Heritage Area. In addition, a portion of the National Park has been designated by NSW as Wilderness area. These three park designations overlap to a certain extent, particularly east of the proposed project area.

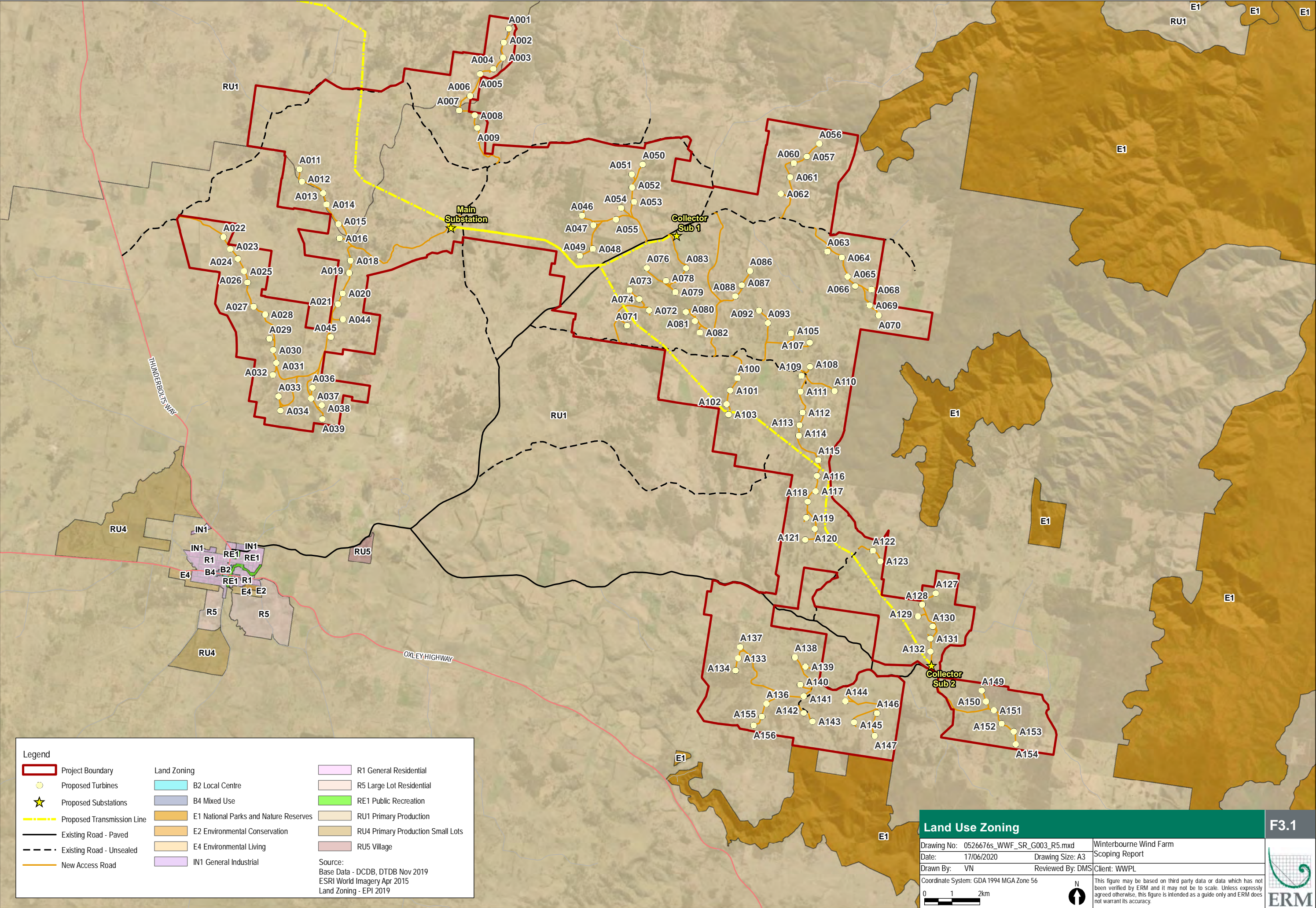
3.2.1 Zoning

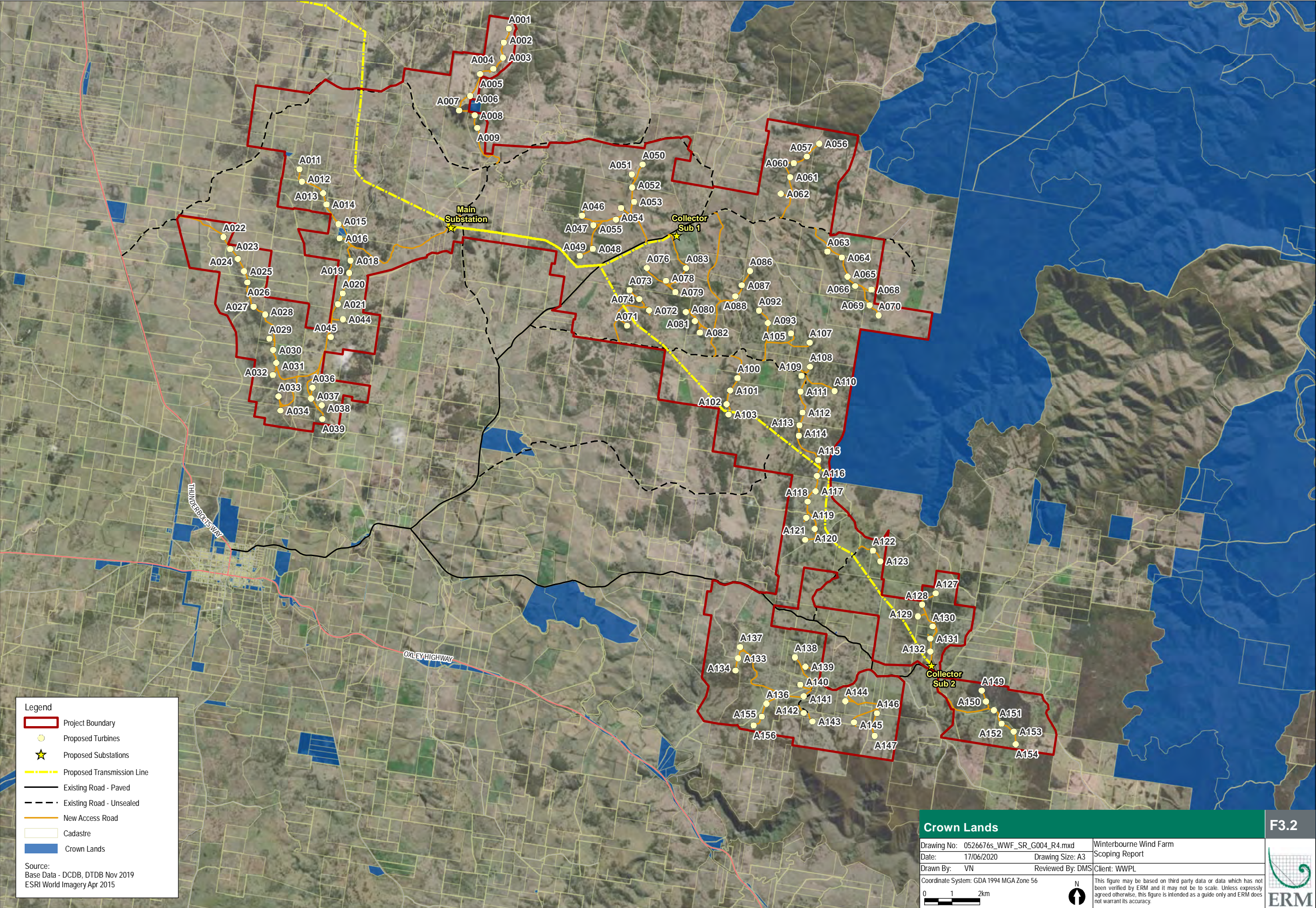
The proposed project boundary is located across two LGAs, including the Walcha Shire Council and Uralla Shire Council areas. The project site comprises land zoned RU1 – Primary Production, a rural zone primarily intended to promote sustainable primary industry production. The areas surrounding the project boundary are generally also zoned RU1 – Primary Production, with the exception of the E1 National Parks and Nature Reserve (Oxley Wild Rivers National Park) to the east of the project site, and a mixture of land uses within the Walcha town centre, approximately 6 km from the closest edge of the project boundary. The land use zoning within the project boundary is presented in **Figure 3-1**.

3.2.2 *Crown Land*

Crown land is known as all land which is not freehold title and is still held by the Crown. Crown land is regulated by the relevant State government legislation and certain requirements must be met before Crown land can be dealt with by, for example, being leased or sold. There are areas of Crown land near the project boundary, however there are no mapped areas of Crown land within the project boundary (with the expectation of a number of Crown roads), as outlined in **Figure 3-2**.

The project land is primarily freehold, although a small number of Crown Roads are present within the project boundary.





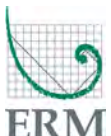


Legend

- Project Boundary
- Proposed Turbines
- Proposed Substations
- Proposed Transmission Line
- Existing Road - Paved
- Existing Road - Unsealed
- New Access Road
- Cadastre
- Crown Lands

Source:
Base Data - DCDB, DTDB Nov 2019
ESRI World Imagery Apr 2015

Crown Lands		F3.2
Drawing No: 0526676s_WWF_SR_G004_R4.mxd	Winterbourne Wind Farm	
Date: 17/06/2020	Drawing Size: A3	Scoping Report
Drawn By: VN	Reviewed By: DMS	Client: WWPL
Coordinate System: GDA 1994 MGA Zone 56		
0 1 2km		 This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.
		



3.2.3 Involved Landowners

A review of aerial photography, desktop searches, site inspections and ongoing community consultation has identified a total of 120 residential dwellings within ~5 km of any of the 126 proposed turbine locations. Of these 120 dwelling locations, 41 are classified as involved landowners who are actively participating in and associated with the project.

In addition, a review of aerial photography has identified 12 residential dwellings within approximately 2 km of the proposed transmission line route (not including any residences already identified as being within 5 km of a proposed turbine location). Of these dwellings, six are classified as involved landowners who are actively participating in and associated with the project.

Involved landowner dwellings and the relevant land holdings are identified in **Figure 3-3**. Details of each involved landowner and dwelling proximate to nearby turbines are provided in **Table 3-1**. Note that three of the involved residents are located outside of the ~5 km wind turbine boundary and one involved resident is located outside of the 2 km transmission line boundary, but have been included in **Table 3-1** for completeness.

Non-involved landowner dwellings within ~5 km of any of the current 126 turbine locations and ~2 km of the proposed 330 kV overhead transmission line is provided as **Figure 3-4**.

All host landowners within the project boundary and along the proposed overhead transmission line route from the main project substation location to the point of connection to the grid have been engaged and have indicated support for the project.

WWPL will lease land from host landowners for wind turbines, substations, maintenance buildings and other infrastructure. WWPL will register easements for all access roads, underground cabling and overhead transmission lines. It is not anticipated that any land subdivision will be required with any involved landowners, with the exception of land for the switchyard to be constructed at the proposed point of connection.

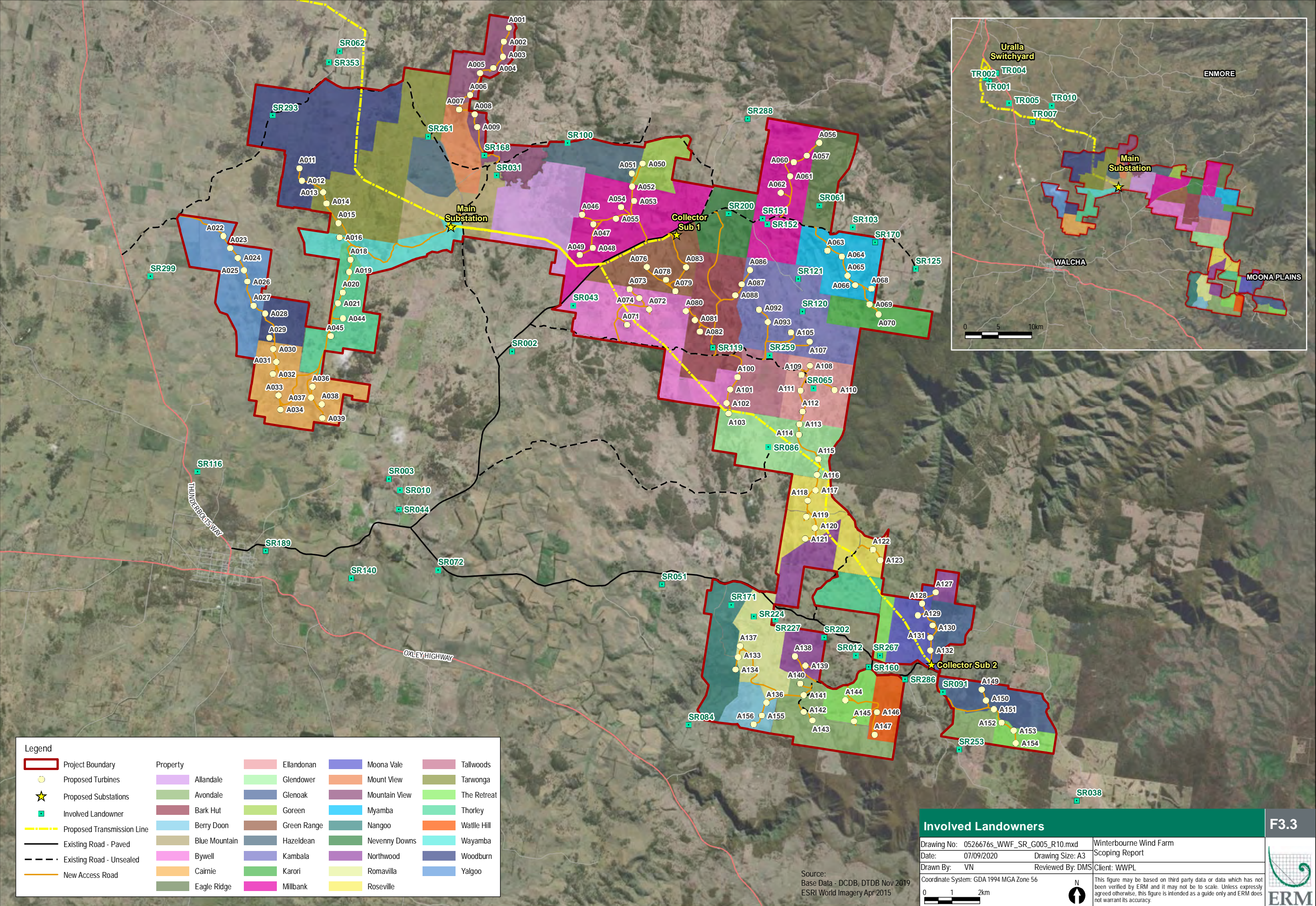
Targeted consultation will continue with both involved and non-involved landholders. The approach to consultation with nearby residents and the proposed ongoing consultation plan is summarised in **Section 5** and detailed in **Appendix A** of this Scoping Report.

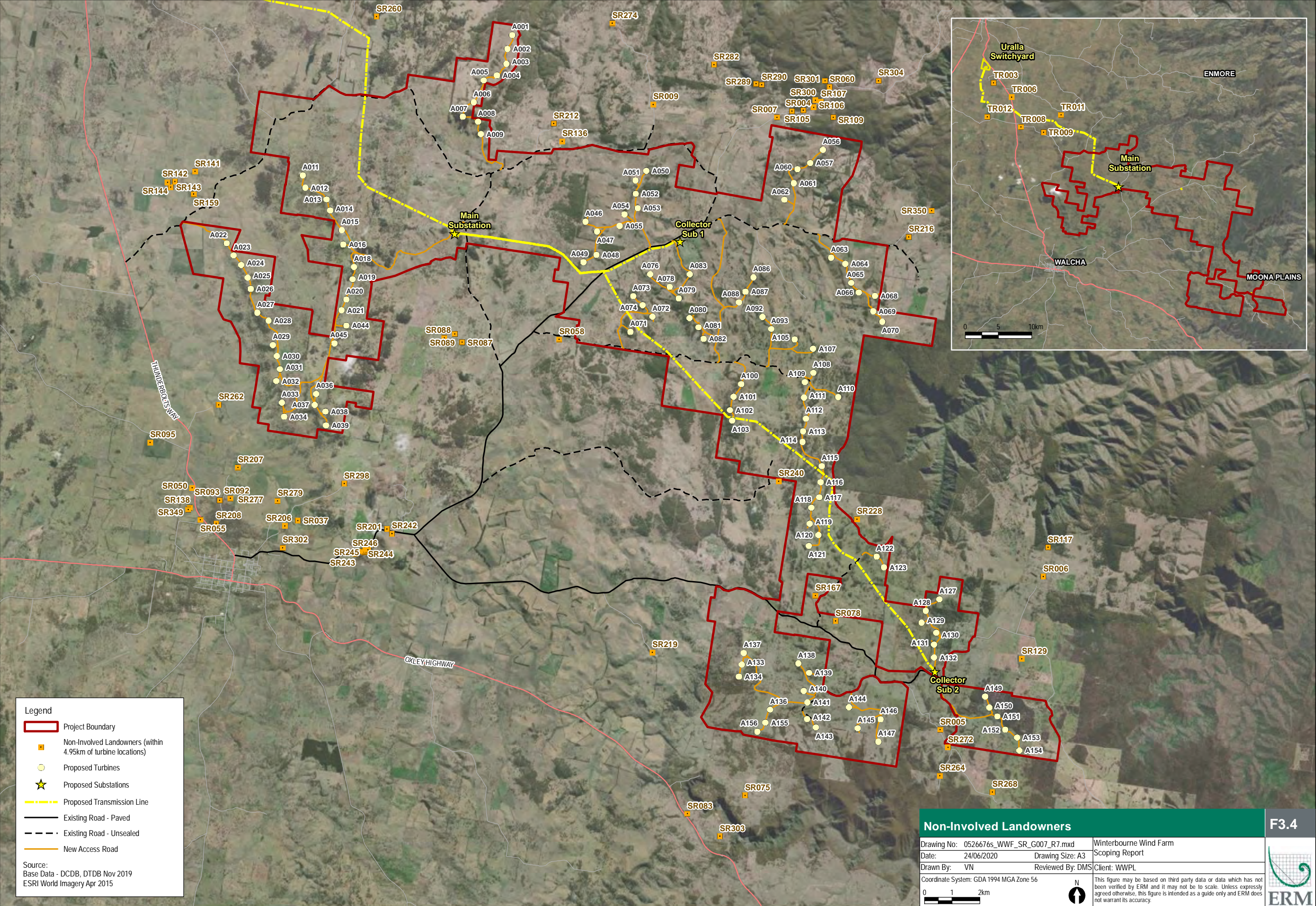
Table 3-1 Involved Landowners Proximate to the Project

ID	Property Name or Owner	GPS Co-ordinates (UTM Zone 56J, in metres)		Closest turbine to dwelling	Dwelling distance from the closest turbine / transmission line, kilometres
		Easting	Northing		
SR002	Allandale	375959	6579209	A071	4.25
SR003	Abbottsley	375958	6579208	A039	3.25
SR010	Auchen Dhu	371916	6574208	A039	3.82
SR012	Avondale	388366	6568246	A144	1.66
SR031	Blue Mountain	375398	6585552	A009	1.88
SR038	Brooklyn	396327	6563009	A154	3.02
SR043	Bywell	378160	6580858	A049	1.84
SR044	Cairnie	371875	6573511	A039	4.29
SR051	Coomooloo	381359	6570806	A137	3.58
SR061	Eagle Ridge	387048	6584466	A062	1.47

ID	Property Name or Owner	GPS Co-ordinates (UTM Zone 56J, in metres)		Closest turbine to dwelling	Dwelling distance from the closest turbine / transmission line, kilometres
		Easting	Northing		
SR062	Eastlake	369733	6590030	A011	4.46
SR065	Ellandonan	386835	6577879	A111	0.49
SR084	Glen Forres	382329	6565743	A156	2.34
SR086	Glendower	385205	6575756	A114	1.18
SR091	Glenoak	391501	6566924	A149	1.40
SR100	Hazeldean	377956	6586717	A051	2.56
SR103	Hole Creek	388250	6583682	A064	1.13
SR116	430 Thunderbolts Way	364615	6574870	A034	3.73
SR119	Bark Hut	383200	6579348	A082	0.74
SR120	Kambala 1	386425	6580639	A105	0.85
SR121	Kambala 2	386274	6581817	A063	1.47
SR125	Karori	390519	6582179	A068	1.75
SR151	Millbank	384996	6583992	A062	1.14
SR152	Millbank 2	385157	6583792	A062	1.24
SR160	Moona Vale	388814	6567825	A144	1.45
SR168	Mountain View	374958	6586279	A009	1.06
SR170	Myamba	389047	6583131	A064	1.30
SR171	Nangoo	383868	6570065	A137	1.50
SR200	Nevenny Downs	383771	6584162	A062	2.03
SR202	Northwood	387223	6568891	A139	1.22
SR224	Romavilla	384679	6569658	A137	1.18
SR227	Roseville	385460	6569552	A138	1.51
SR253	Sweetwater	392084	6564852	A152	1.81
SR259	Tallwood	385251	6579064	A105	1.13
SR261	Tarwonga	372931	6586956	A007	1.48
SR267	The Retreat	389226	6568250	A132	1.83
SR286	Wing Valley	390138	6567388	A132	1.38
SR288	Winterbourne	384455	6587591	A060	2.28
SR293	Woodburn	367330	6587710	A011	2.12
SR299	Yalgoo	362913	6581916	A022	2.99
SR353	Eastlake 2	369353	6589632	A011	3.97
SR072	Europambela	373293	6571329	A039	6.88

ID	Property Name or Owner	GPS Co-ordinates (UTM Zone 56J, in metres)		Closest turbine to dwelling	Dwelling distance from the closest turbine / transmission line, kilometres
		Easting	Northing		
SR140	Wattle Hill	370146	6571026	A039	5.86
SR189	6 Sugarloaf Rd	367060	6572009	A034	5.13
TR001	Talisker	356408	6599732	N/A	0.55
TR002	Bareena	356871	6599176	N/A	1.16
TR004	Tarana	357756	6600502	N/A	1.63
TR005	Queenlee	359497	6596041	N/A	0.98
TR007	Stoneleigh	362551	6593234	N/A	0.62
TR010	Blenmore	365013	6595725	N/A	2.27





3.3 Project Components

The project will consist of up to 126 turbine locations with a combined maximum installed capacity of 700 MW. A maximum tip height of 250 metres is proposed.

The project would also include an internal electrical reticulation network (both overhead and underground), three on-site substations, new and upgraded access roads, temporary construction facilities (including concrete batching plants), and operation and maintenance buildings. Large-scale battery storage is also proposed for the project to support stabilising the supply of electricity to the NEM. Indicatively, the battery unit would have 100 MW / 200 MWh capacity, and would utilise lithium ion technology.

The project will also include approximately 30 km of 330 kV overhead transmission line running through the wind farm and continuing northwest from the project site. This new transmission line would connect to the existing grid network operated by TransGrid at a new switchyard which would be constructed approximately 7 km south of Uralla, NSW. This switchyard location has also been proposed by WalchaEnergy as part of its Salisbury Solar Farm project, and has previously been referred to as the "Uralla Hub".

The proposed overhead transmission line will primarily run across private land, though it will be necessary to cross Thunderbolts Way and at least one smaller Council road. All host landowners along the transmission line route from the proposed main project substation location to the point of connection to the grid have been engaged and have indicated to WWPL that the proposed transmission line route is acceptable. The proposed transmission line route has been designed with a minimum 500 metre buffer from all residences (both involved and non-involved landowners).

The project will likely utilise Vestas turbines, and the Vestas V-162 5.6 MW (or larger) is currently preferred. Vestas may have future turbine options available and these may be considered by WWPL. Indicative turbine specifications for potential current and future turbine options are provided in **Table 3-2** and **Table 3-3**. Regardless, the project turbines will have a hub height of around 155 to 160 metres and a maximum tip height of 250 metres, the latter corresponding to the maximum tip height proposed for the project.

Construction of the project will require fixed or mobile concrete batching plant/s, but the location of these plants is unknown at this time. Furthermore, the locations and size of project offices / buildings and on-site substations for the construction and operational phases (e.g. maintenance) are unknown at this time. These features will be addressed as the wind farm design progresses and will be detailed in the EIS. Further information regarding the indicative project design, components and specifications are provided in **Table 3-4**.

Table 3-2 Indicative Turbine Specification (Current Technology)

Component	Feature	Specification
Wind turbine generator	Make / Model / Power	Vestas / V162 / 5.6 MW
	Blade Length (incl. nacelle)	81 metres
	Hub height	155 metres
	Tip height	236 metres
	Cut-In Wind Speed	3 metres per second (m/s)
	Cut-Out Wind Speed	24 m/s
	Maximum Sound Power Level	104 dBA

Table 3-3 Indicative Turbine Specification (Future Technology)

Component	Feature	Specification
Wind turbine generator	Make / Model / Power	Vestas / V180 / 6.4 MW
	Blade Length (incl. nacelle)	90 metres
	Hub height	160 metres
	Tip height	250 metres
	Cut-In Wind Speed	3 m/s
	Cut-Out Wind Speed	24 m/s
	Maximum Sound Power Level	Unknown

Table 3-4 Indicative Project Design – Components and Specification

Component	Feature	Specification
Energy generation	Wind turbine generators	≤126 turbines
		≤250 metre tip height
Electrical Reticulation Network	On-site substations	1 x 330 kV main substation and 2 x 132 kV collector substations
	Internal electrical reticulation network, underground and overhead 33 kV and 132 kV	~164 kilometres. Electrical reticulation will generally follow the access roads shown in Figure 1.2
	330 kV overhead transmission lines	~30 kilometres, connecting the project to a new switchyard near Uralla, NSW
	Switchyard	Switchyard and other electrical equipment providing connection to the existing 330 kV transmission network.
Battery storage	Large-scale battery storage	100 MW / 200 MWh lithium ion battery (indicative)
Access Roads	Access to site and turbines	A key project component and an indicative layout is provided in Figure 1.2
Temporary Construction Facilities	Temporary Construction Office and/or Building/s	Specifications are unknown at this time
Concrete Batching Plant	Temporary Concrete Batching Plant	Specifications are unknown at this time
Operation and Maintenance Building	Permanent Operations / Maintenance Office and/or Building/s	Specifications are unknown at this time
Laydown Areas	Construction and maintenance equipment and components	Multiple laydown areas would be required, however specific locations are unknown at this time

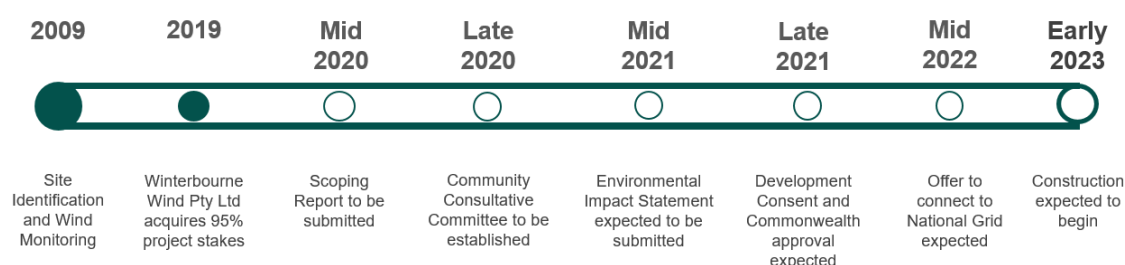
3.4 Staging

The anticipated staging of the project is summarised in **Table 3-5** and presented in **Figure 3-5**.

Table 3-5 Project Staging

Stage of Project	Estimated Date of Completion
Site Selection	Completed mid-2019
Project Feasibility	Completed end of 2019
Planning and Approvals Process	In progress – Aim for completion late-2021
Construction	Planned for 2023
Commissioning and Operations	Planned for 2025

Figure 3-5 Project Staging Map



3.5 Options Analysis

The design of the wind farm will require ongoing review during the Scoping Report and subsequent EIS process. These design revisions are by nature an iterative process, allowing for improvement in turbine siting based on information from wind monitoring, environmental assessment, landowner feedback and inclusion into the project (as involved landowners), and broader community consultation.

The design process and need for design revision is focused around three main principles:

- Minimising and/or avoiding negative environmental and social impacts;
- Maximising wind energy production; and
- Incorporating feasible and reasonable mitigation/management measures, safeguards and provisions (e.g. for compliance monitoring) into the construction and operational aspects of the project.

WWPL has made a number of design revisions and improvements during the Scoping Report process. These revisions were made based on the following factors:

- Results from the preliminary visual assessment, refer **Appendix B**;
- Results from the biodiversity constraints assessment, refer **Appendix C**;
- Feedback from involved landowners, including their preference for the number and specific placement of turbines within their land;
- Feedback from neighbouring “non-involved” landowners during the community consultation and stakeholder engagement process;
- Identification of unmapped tree conservation zones within the project boundary;
- Additional desktop wind resource analysis and energy yield mapping; and
- Other key principles and features described in the Wind Energy Guideline (DP&E, 2016a).

4. PROJECT JUSTIFICATION

This section provides a justification of the wind farm development addressing the suitability / viability of the site, State and Federal commitments to renewable energy, and high-level socio-economic effects.

4.1 Viability

The project is located within the New England Energy Zone which was identified as one of three priority renewable energy zones in the NSW Department of Planning, Infrastructure and Environment *Net-Zero Plan Stage 1: 2020-2030* (Net Zero Plan, March 2020). Wind resource monitoring conducted at the site since 2009 indicates that wind speeds are high and consistent, making the wind farm project viable in this location.

A 330 kV transmission line (Line 85) owned by TransGrid is located approximately 20 kilometres from the north-west corner of the proposed project boundary, allowing for potential connection of the wind farm to the existing grid network. The project will include approximately 30 km of 330 kV overhead transmission line, running through the wind farm and north-west from the project site, to connect the wind farm to the grid. This connection will occur via a new switchyard to be constructed adjacent to Line 85, approximately 7 km south of Uralla, NSW. This switchyard location and development is currently also proposed by WalchaEnergy as part of its Salisbury Solar Farm proposal.

The project boundary consists of many low peaks and ridgelines which provide suitable locations for the construction of wind turbines. There are existing access roads to and within the site, allowing for transport of turbine blades, towers and electrical equipment and movement of construction vehicles. However, some existing roads and infrastructure may need to be upgraded, and new access roads will need to be constructed within the site as part of the proposed project.

Though the population density is relatively low, there are a number of existing residences within the project boundary, and the proposed wind farm will be designed to minimize potential visual and noise impacts to landowners and tenants in the area. Much of the site is currently used for livestock grazing and has been cleared of trees and other vegetation, meaning the potential for impacts to flora and fauna is greatly reduced.

4.2 Commitments to Renewable Energy

4.2.1 Federal Commitments

Australia is one of 195 countries that signed on to the United Nations Paris Agreement on climate change (Paris Agreement). The Paris Agreement sets in place a durable and dynamic framework for all countries to take climate action from 2020, building on existing international efforts in the period up to 2020. The aim of the Paris Agreement is to limit emissions globally to net-zero in the second half of this century.

Australia has set a target to reduce emissions by 26-28 per cent below 2005 levels by 2030, which builds on the 2020 target of reducing emissions by five per cent below 2000 levels.

The current efforts to achieve this goal are reflected in the Renewable Energy Target (RET) Scheme. The RET was implemented in 2009 with an initial target of 44,000 GWh (later reduced to 33,000 GWh) of renewable energy generation by 2020.

There were 34 large-scale projects completed in 2019, increasing Australia's large-scale renewable energy capacity by 2.2 GW and generating \$4.3 billion in investment, and more than 4,000 new jobs (CEC, 2020).

The RET has been an extremely successful initiative that has, in part, driven a more than 50% reduction in the cost of large-scale wind and solar projects over the past 10 years.

4.2.2 State Commitments

In September 2013, the NSW Government released the NSW Renewable Energy Action Plan (REA) with a vision to secure an affordable and clean energy future for NSW. The REA was implemented alongside a separate Energy Efficiency Action Plan (EEAP) consisting of 30 actions to strengthen the energy efficiency market and aims to reach the following targets:

- Achieve 16,000 GWh in energy savings per year by 2020;
- Support 220,000 low income households to reduce energy use by up to 20 per cent by 2014; and
- Assist 50% of NSW commercial floor space to achieve a four-star NABERS energy and water rating by 2020 through the delivery of high-standard building retrofit programs.

Additionally, as identified above, the project falls within the New England Energy Zone as outlined in the Net Zero Plan. The Net Zero Plan outlines the NSW Government's approach to grow the economy, create jobs and reduce emissions over the next decade, including an investment in emissions reduction innovation, particularly within regional and rural NSW.

The Net Zero Plan aligns with the 'NSW Climate Change Policy Framework' (OEH, 2016), which commits NSW to the aspirational objectives of achieving net-zero emissions by 2050.

The project is consistent with the NSW Government's objectives and targets for the reduction of GHG emissions and investment in renewable energy technology, and supports regional investment and development.

4.3 Wind Farm Benefits

The Australian Wind Alliance (AWA) recently prepared a report called *Building Stronger Communities: Wind's growing role in regional Australia* (November 2019), which discusses the many ways wind farms deliver significant financial and social benefits to their host communities. The report also investigates how income and investment from wind farms flow to local communities in the windiest parts of Australia, from payments to landowners and community sponsorships through to community co-ownership and co-investment.

Some important notes from the AWA report have been summarised below:

- In Australia, there are currently 114 operational wind farms, with another 26 in construction and 70 in the pipeline (at the time of preparation of this Scoping Report).
- This year between \$24.5 and \$28.9 million will go directly into regional communities through payments to host landowners and wind farm Community Enhancement Funds (CEFs).
- From 2019, Community Enhancement Funds will make available \$4.7 million annually for community projects.
- The wind farms to date have created 5,700 jobs in regional areas with a further 13,300 indirect jobs created in local businesses that supply goods and services to the project.
- The construction phase of the new wind farms in the pipeline are predicted to deliver \$4.8 billion in economic activity.

Besides direct payments to host landowners, the report also notes that wind farms deliver significant local investment and financial contributions to local Councils, which directly support local community projects and services.

4.4 Project-Specific Benefits

The proposed project would deliver renewable, low-cost energy to the national grid, and will contribute to the NSW Government's net-zero emissions target by 2050.

WWF will provide a significant amount of the new generation capacity which will be required when the 2,000 MW Liddell Power Station located in the NSW Hunter Valley is retired as planned in 2023.

WWF will deliver significant benefits to the New England region and local communities, including:

- Significant investment in the New England region;
- Opportunities for local contractors and businesses;
- Up to 300 new jobs expected to be created during construction;
- Around 16 long-term service and maintenance jobs created during project operation; and
- Development of new skilled labour in the region within the growing renewable energy industry.

Construction and operation of the project will require a range of skills including engineering, trades (electrical, mechanical, construction), transport, building material providers, equipment operators, consultants and administrative staff.

As noted in **Section 3.1**, 5% of WWPL is held by WalchaWind. Turbine hosts, easement owners and eligible project neighbours will be invited to become involved in this 5% ownership at no cost to them. In turn, WalchaWind has committed to sharing the benefits it receives 50%:50% with the broader Walcha community. WWPL believe this model will deliver durable financial and social benefits to the community and ensure the long-term success of the project.

5. STAKEHOLDER ENGAGEMENT

Stakeholder Engagement will be managed in accordance with the Stakeholder Engagement & Consultation Strategy (SEC Strategy) prepared to support this Scoping Report (refer to **Appendix A**). The SEC Strategy documents the communications and consultation framework and activities that WWPL will undertake throughout project development, construction and operations. This strategy is intended to establish proactive communication and engagement with stakeholders in the community and help to ensure that their concerns or issues are clearly understood and resolved to the extent possible.

5.1 Consultation Objectives

The objectives of the SEC Strategy and consultation throughout the project are to:

- Identify stakeholders with an interest in the project;
- Develop a clear action plan for future engagement approaches across all stakeholder groups;
- Outline communication tools and channels;
- Provide clear, consistent and compelling messages about the benefits of the development;
- Identify opportunities for stakeholders and the community to raise concerns and provide feedback;
- Identify opportunities to build positive sentiment across local media, residents and stakeholders; and
- Identify opportunities to reduce the risk of community resistance to project timelines and budgets.

5.2 Consultation Approach

Engagement, transparency and benefit-sharing with the local community is critical to a successful project. Without a social licence to operate in the region, there can be no project.

This SEC Strategy (**Appendix A**) has been designed to enable community members to be part of the project planning and development process and to provide them with the opportunity to engage in a meaningful way. As part of the SEC Strategy, the following stakeholder groups have been identified:

- Primary stakeholder groups – host landowners, immediate neighbours, Indigenous communities and surrounding communities;
- Secondary stakeholder groups - Local community organisations and businesses, local council, state and federal elected members, representatives and agencies, and local media; and
- Tertiary stakeholder groups - Local schools, religious organisations, clubs, and national and state media.

A major focus of the SEC Strategy is to ensure that those with the potential to have the greatest impact are given every opportunity to provide early and meaningful feedback on the proposal. A variety of methods have been or will be implemented to facilitate community and stakeholder engagement, including:

- Letters and newsletters;
- Media releases (TBA);
- Emails;
- Community information phone line;
- Fact sheets;
- Website;
- Social media (Facebook and LinkedIn);

- Feedback surveys; and
- Community information booths.

5.3 Consultation and Engagement to Date

5.3.1 Background

A group of local landowners contacted MirusWind in late 2004 to discuss the potential for a wind farm development within the Walcha area. MirusWind undertook preliminary modelling to verify the wind resource, and in 2005 entered into licence agreements with 10 landowners. Preliminary design layouts were developed in consultation with the landowners for the initial Winterbourne Wind Farm, based on 1.5 MW wind turbines that were available at the time. In 2008, MirusWind entered into wind farm leases with approximately 7 landowners.

As part of project development, MirusWind and the landowner group developed a community benefit scheme which recognized the importance of involving project neighbours and the broader community in the project. The landowner group formed a company (WalchaWind Pty Ltd) which was created to hold five percent of the development company WinterbourneWind Pty Ltd. The benefits of this shareholding are intended to be distributed to a broad set of landowners, neighbours, and easement holders, as well as shared with the broader Walcha community.

5.3.2 Public Meetings and Information Sessions

A significant number of individual and group meetings and public information events have been conducted since 2004, first by MirusWind and more recently by WWPL and Vestas. Some of the more significant consultation events are summarised in **Table 5-1**.

Table 5-1 Summary of Consultation Events

Date	Consultation Activity
December 2004	Presentation to potential wind site landholders and local Councillors
2004 – 2008	Numerous meetings with founding landowner group members at Winterbourne
27 June 2006	Information Evening to discuss potential renewable energy development in the area
7 December 2009	Information Evening at Walcha Sports Club
24 February 2010	Wind project update to Walcha Environment and Planning
27 February 2012	Information Evening Walcha Sports Club
18 December 2016	Information Evening and Dinner for founding landowner group
22 November 2017	Information Evening at Walcha Sports Club
7 April 2018	Information Evening and Dinner for founding landowner group
9 April 2018	Information Evening and Dinner at Walcha Sports Club with Vestas
28 November 2018	Letter of support provided by Walcha Council for the WinterbourneWind development
2 December 2018	Information Evening and Dinner for founding landowner group
3 December 2018	Information Evening at Walcha Sports Club
8 March 2019	WalchaWind Founding members update and meeting

Date	Consultation Activity
22-23 March 2019	Information stall at the Walcha Show
7 April 2019	WalchaWind meeting about benefit sharing scheme
15 July 2019	Information Evening to discuss broader WalchaEnergy project
2 October 2019	Information Evening presentation by Vestas
28 November 2019	Landowner visit to Sapphire Wind Farm in Glen Innes, NSW
11 December 2019	Information Evening presentation by Vestas
13-14 March 2020	WalchaEnergy and Vestas host joint stall at the Walcha Show

5.3.3 Community Engagement during Project Initiation (Project Website, Newsletters and Flyers)

A website was launched in 2019 to make available transparent and up-to-date information about the proposed project, and to develop a channel for community members to ask questions and provide feedback. The project website hosts relevant information, including FAQs, regular project updates, fact sheets and a project video. Social media pages were also created on Facebook and LinkedIn to share news and engage a broader audience.

The Walcha News featured an article about the project in January 2020. At the same time, WWPL placed advertisements about the project in both local newspapers (Walcha News and the Apsley Advocate).

In addition to regular project updates on the website, an email newsletter was sent out in late March 2020 to all subscribers on the project mailing list. WWPL distributed a newsletter containing project updates and information to all residents in the 2354 postcode area (Walcha and surrounding suburbs) in early April 2020.

In late April 2020, WWPL sent a detailed letter providing project updates and a feedback survey to all residents within five kilometres of proposed turbine locations.

In early May 2020, WWPL sent letters to Walcha Council and Uralla Council providing a brief overview of the project, and notification about pending submission of this Scoping Report. WWPL also sent information letters to Matt Kean, MP (Minister for Energy and Environment), Rob Stokes, MP (Minister for Planning & Public Spaces), and Kevin Anderson, MP (Member for Tamworth).

5.3.4 Face to Face Consultation

The intention of the face-to-face meetings is to introduce the project to relevant stakeholders, community members and government agencies, to allow for questions and issues to be raised and addressed in real-time. This also provides a great opportunity to receive feedback on the project from a local community perspective. The following forms of face-to-face consultation have been undertaken to date:

- Two Landowner community sessions;
- Individual meetings with all landowners within the project boundary;
- Phone calls to all project neighbours located within 3.5km from a proposed turbine location, noting that health restrictions since March 2020 have prevented face-to-face meetings;
- Two meetings with Walcha Council;
- One meeting with DPIE (Planning);

- Two meetings with DPIE (Industry); and
- One meeting with Regional Development Australia Northern Inland (RDANI).

Additionally, WWPL was a proud sponsor of the 2020 Walcha Show, which was attended by approximately 3,000 visitors from Walcha and the surrounding region. WWPL hosted a project information stall for two days, allowing for conversations with hundreds of community members about the project. WWPL provided a range of resources to inform and engage the community, including project boards, fact sheets, an informative video, an interactive app, an iPad survey and giveaways. Through this effort, WWPL collected 40 responses to the community feedback survey. Most of these responses suggested a supportive view of the project and did not indicate any major concerns.

Face-to-face meetings with nearby residences will continue throughout project development, and in particular during preparation of the EIS, along with additional activities to engage the wider community where appropriate.

A summary of the key issues raised during consultation activities are presented in **Section 5.3.6**. Where possible, any feedback received has been incorporated into the preliminary design of the project.

5.3.5 Stakeholder Briefs

WWPL sent briefing letters (or emails) to a number of local, state and federal government agencies and stakeholders in May 2020. These communications provided an overview of the project and an indicative project map, along with references to particular issues which might be of relevance to the individual stakeholders.

Individual stakeholders and agencies contacted included:

- Walcha Council Mayor, Councillors and General Manager
- Uralla Council Mayor, Councillors and General Manager
- Hon Kevin Anderson MP, NSW Minister for Better Regulation and Innovation, Member for Tamworth
- Hon Matt Kean MP, NSW Minister for Energy and Environment, Member for Hornsby
- Hon Rob Stokes MP, NSW Minister for Planning & Public Spaces, Member for Pittwater
- Hon Angus Taylor MP, Minister for Energy and Emissions Reduction, Federal Member for Hume
- Hon Barnaby Joyce MP, Federal Member for New England
- Hon Sussan Ley MP, Minister for the Environment, Federal Member for Farrer
- Adjunct Professor John Davy, Independent Scientific Committee on Wind Turbines
- Andrew Dyer, National Wind Farm Commissioner
- Regional Development Australia
- NSW Office of Regional Development
- NSW Department of Planning, Infrastructure and Environment
- NSW Treasury
- NSW Local Land Services
- NSW Environmental Protection Authority
- Transport for NSW
- Fire and Rescue NSW
- Civil Aviation Safety Authority (CASA)

A number of these stakeholders have replied to WWPL by letter or email, noting their general support for the project and providing relevant contact details for further engagement. In particular, Uralla Council noted its support for the project and encouraged further engagement with the Council Manager for Planning & Development.

5.3.6 Key Issues Raised

Key issues and other noteworthy items provided during face-to-face meetings, information sessions and other consultative methods has been summarised in **Table 5-2**.

Table 5-2 Key Issues Summary

Consultation Topic	Feedback Received
Approval process and timing	<ul style="list-style-type: none"> ■ The community was interested to understand the project approval process and expected timing for development and operation. ■ Regular project updates were considered important, with newsletters being the most preferred method, followed by community information sessions and articles in the local newspaper.
Visible and audible amenity	<ul style="list-style-type: none"> ■ Nearby residents were interested to understand the proposed layout for wind turbines in the area and commented on the importance of placement of turbines. ■ Specific landscape characteristics that were noted as important include prominent hills and ridgelines, river corridors, water bodies, and open space in general. ■ Important landscape features or lookout points were noted to include the following: <ul style="list-style-type: none"> - Apsley Falls - Steep Drop Falls - Blue Mountain - Budds Mare and Riverside campgrounds <p>These features will be further considered in the assessment of visual impact during the EIS.</p> ■ Community members raised concerns around potential noise impacts during construction and operation.
Economic and social impacts	<ul style="list-style-type: none"> ■ The importance of community and family ties in the area were emphasised. ■ There was strong interest in local economic opportunities associated with the project, including jobs and tourism opportunities. ■ Supporting clean energy for future generations is considered important, as well as reductions in CO₂ emissions and locally-generated renewable energy. ■ People were interested in understanding the community ownership and revenue sharing arrangements, and the opportunities for funding of local projects through the community fund. ■ The influence on art in Walcha was stressed as important to the local community.
Traffic and transportation	<ul style="list-style-type: none"> ■ Concerns were raised around the impact of traffic on the local road network during construction stages.

Consultation Topic	Feedback Received
Decommissioning	<ul style="list-style-type: none">■ Members of the community discussed the decommissioning of wind turbines after the operational life of the project.
Other	<ul style="list-style-type: none">■ The impact of the project on land use or land values.■ The impact on potential bushfires, noting the recent bushfires in the area.■ The importance of sufficient battery storage was highlighted.■ The impact of health was raised as a concern.

5.4 Ongoing Engagement and Consultation

The project landowners have been supportive of the proposed project and will benefit from implementation of the project through an innovative ownership model and revenue sharing arrangement. WWPL will continue to engage with the local community and relevant local, state and federal stakeholders during project development to ensure the proposed project addresses any community concerns and meets community expectations. Details of the proposed ongoing engagement is provided throughout the Communication and Engagement Action Plan, which has been replicated from the SEC Strategy in **Table 5-3**.

Table 5-3 Communication and Engagement Action Plan

Project Phase	Objectives	Planned activities
Site selection <i>Completed Mid-2019</i>	<ul style="list-style-type: none"> Identify sites where infrastructure may be located Identify and categorise stakeholders Make initial contact to introduce the project <p><i>Level of influence: inform</i></p>	<ul style="list-style-type: none"> Gather phone numbers, addresses and emails Phone calls Face-to-face meetings <p><i>Targets primary stakeholders</i></p>
Project feasibility <i>Completed end-2019</i>	<ul style="list-style-type: none"> Finalise site selection Formalise engagement processes Inform community on what aspects of the project can be influenced by the community <p><i>Level of influence: inform</i></p>	<ul style="list-style-type: none"> Establish project website, 1800 number, and email Send out initial newsletter Landowner information sessions <p><i>Targets primary and secondary stakeholders</i></p>
Planning and approvals <i>In progress - 2020</i>	<ul style="list-style-type: none"> Provide ongoing communications and engagement Proactively seek views and feedback of the community to inform the final design <p><i>Level of influence: inform, consult and engage</i></p>	<ul style="list-style-type: none"> Face-to-face visits Phone calls Newsletters Updates on the project website Information booths at local events, such as the Walcha Show <p><i>Targets all stakeholder groups</i></p>
Construction <i>Planned for 2023</i>	<ul style="list-style-type: none"> Proactively keep community informed Actively address concerns by responding to complaints and enquires in a timely manner Using community feedback, seek to minimise or avoid impacts Maximise the opportunities for community members and businesses within the project <p><i>Level of influence: inform and consult</i></p>	<ul style="list-style-type: none"> Face to face visits Phone calls Site tours and briefings Complaints management processes Newsletters Updates on the project website Information booths and stalls at local events

Project Phase	Objectives	Planned activities
		<ul style="list-style-type: none"> ■ Develop community partnerships <p><i>Targets primary and secondary stakeholders</i></p>
Commissioning and operations <i>Planned for 2025</i>	<ul style="list-style-type: none"> ■ Intensive engagement as turbines go live ■ Build ongoing trust and confidence with community <p><i>Level of influence: inform, consult and involve</i></p>	<ul style="list-style-type: none"> ■ Face to face visits ■ Site tours and briefings ■ Complaints management processes ■ Media release ■ Updates on the project website <p><i>Targets all stakeholders</i></p>

5.5 Community Consultative Committee (CCC)

The purpose of a Community Consultative Committee (CCC) is to provide a forum for open discussion between representatives of the company, the community, the local council and other stakeholders on issues directly relating to the project's operations, environmental performance and community relations, and to keep the community informed on these matters. A CCC is not a decision-making or regulatory body; rather, it performs an advisory and consultative role.

As part of project development, WWPL will establish a CCC in consultation with DPIE. The CCC will be established during project development in accordance with the SEARs for the project. The CCC will consist of an independent chairperson, community members, local government representatives, and members of the project team.

DPIE will recruit suitable individuals for the independent chairperson from a pool of qualified candidates. The Planning Secretary of the Department (or nominated representative) will appoint the independent chairperson.

WWPL will seek expressions of interest for community and stakeholder representatives, and will place advertisements for these roles in local and regional media publications and other relevant avenues for no less than 28 days. Applications for the community representative roles will be reviewed by the independent chairperson, who will recommend suitable candidates to DPIE. The Planning Secretary of the Department (or nominated representative) will appoint the community representatives to the committee and will formally notify successful and unsuccessful candidates.

WWPL expects to establish a CCC in late-2020, subject to government health restrictions relating to the COVID-19 pandemic. WWPL anticipates that CCC meetings will be held approximately four times per year and more frequently while the development approval is being assessed. The minutes of meetings will be posted on the project website after each meeting.

6. ENVIRONMENTAL RISK ASSESSMENT

This section provides an assessment of potential environmental and social impact risks based on information collected to date at the site, at nearby sites, within the broader New England region and based on similar proposals in other regions.

The key potential issues associated with the proposed construction and operation of the project have been identified based on a preliminary assessment of the site and taking into account other wind farm developments in New South Wales. The risk assessment included a review of the Wind Energy Framework as well as the SEARs for recent wind farm projects.

Potential environmental and social impact risks may include issues related to:

- Visual amenity (including landscape and lighting);
- Noise and vibration;
- Biodiversity (flora and fauna);
- Aboriginal and historic heritage;
- Traffic and transport;
- Water and groundwater management;
- Soil and landforms;
- Air quality and dust management;
- Shadow flicker and blade throw;
- Telecommunications / EMI and EMF;
- Socioeconomic impacts;
- Hazards and risk (including bushfire);
- Waste management;
- Human health;
- Decommissioning; and
- Cumulative impacts.

The EIS will be prepared generally in accordance with the SEARs to be issued by DPIE in response to this Scoping Report, and will incorporate the issues outlined above. All assessments (including specialist assessments) will be completed taking into consideration experience from other wind farm projects, consultation with stakeholders, and industry best practice guidelines.

6.1 Environmental Risk Assessment

A preliminary environmental risk assessment has been prepared based on available information. The assessment separates the potential issues into two priorities:

- Key issues - addressed through preparation of a technical assessment and consultation with relevant agencies; and
- Other issues – addressed via a desktop assessment and consultation with relevant agencies (where applicable).

In relation to each risk, a level of assessment has been established by taking into consideration:

- The level of information already available about that issue;
- The extent to which site-specific assessment is required to define that issue;

- The likelihood of that issue occurring, and potential impacts of that issue if it did occur in consideration of standard industry controls; and
- The extent to which standard industry practice, statutory requirements, and standard consent conditions adequately address the issue.

Some environmental or social risks have been established as 'other' issues on the following basis:

- It is a risk which is well understood.
- Site-specific assessment is not required to understand the risk.
- It has previously been demonstrated to not affect the assessment of wind farm projects or the consent conditions relevant to them.
- It has previously been found not to be relevant to the assessment of wind farm projects.
- An industry standard approach is available which adequately addresses the issue and it is proposed that this approach will be included in the EIS.

Table 6-1 summarises the sources of impact, preliminary direct mitigation options, and proposed strategies for addressing each issue. The proposed assessment approach for Key and Other issues are discussed in detail in **Section 7.1** and **7.2**.

Table 6-1 Preliminary Risk Assessment

Issue	Potential Sources of Impacts	Mitigation	Issue Level	Assessment
Visual Amenity	<ul style="list-style-type: none"> ■ Loss of visual amenity for receivers and communities ■ Loss of visual amenity for key outlooks or tourism routes ■ Impact to scenic/landscape character ■ Shadow flicker disturbance ■ Cumulative visual impacts ■ Lighting impacts 	<ul style="list-style-type: none"> ■ Relocation of project components ■ Landscaping Measures (as required) 	Key Issue	<ul style="list-style-type: none"> ■ Specialist assessment by subject matter expert in accordance with the Visual Bulletin (DPE, 2016b) ■ Summary chapter in EIS
Biodiversity	<ul style="list-style-type: none"> ■ Clearing of vegetation during construction and maintenance ■ Loss or modification of habitat for terrestrial and aquatic species ■ Potential for spread of weeds through soil disturbance and traffic movement ■ Impact to threatened species or endangered ecological communities ■ Bird and bat strike through direct collision or barotrauma ■ Cumulative impacts 	<ul style="list-style-type: none"> ■ Relocation of project components ■ Appropriate environmental management procedures ■ Species-specific mitigation options ■ Biodiversity Offsets commitment ■ Biodiversity management and monitoring plans 	Key Issue	<ul style="list-style-type: none"> ■ Specialist assessment by subject matter experts ■ Summary chapter in EIS
Noise and Vibration	<ul style="list-style-type: none"> ■ Operational noise impacts on receptors, focusing on turbine aerodynamic and/or mechanical emissions ■ Construction noise impacts on receptors ■ Road traffic noise impacts on receptors ■ Vibration impacts on receptors ■ Cumulative impacts on receptors 	<ul style="list-style-type: none"> ■ Effective turbine selection, placement, and other noise reducing mitigation ■ Construction and Operational Noise and Vibration Management Plan(s) 	Key Issue	<ul style="list-style-type: none"> ■ Specialist assessment by subject matter expert in accordance with the Noise Assessment Bulletin (DP&E, 2016c), and other relevant noise and vibration policy/guidelines

Issue	Potential Sources of Impacts	Mitigation	Issue Level	Assessment
				<ul style="list-style-type: none"> Summary chapter in EIS
Cultural Heritage	<ul style="list-style-type: none"> Potential to impact Aboriginal (or other) objects or heritage values 	<ul style="list-style-type: none"> Relocation of project components Appropriate environmental management procedures Construction Heritage Management Plan 	Key Issue	<ul style="list-style-type: none"> Specialist assessment by subject matter experts Summary chapter in EIS
EMI / EMF / Telecommunications	<ul style="list-style-type: none"> Loss of communication signals Reduction in strength of broadcast signals (TV or radio) 	<ul style="list-style-type: none"> Relocation of project components Site specific mitigation 	Other issue	<ul style="list-style-type: none"> Specialist assessment by subject matter experts Summary chapter in EIS
Aviation	<ul style="list-style-type: none"> Interruption to existing air traffic 	<ul style="list-style-type: none"> Aviation lighting and navigation aids Consideration of defined air traffic routes 	Other issue	<ul style="list-style-type: none"> Specialist assessment by subject matter experts Summary chapter in EIS
Blade Throw and Shadow Flicker	<ul style="list-style-type: none"> Blade throw risks to nearby receptors or other turbines Shadow flicker can disrupt nearby receptors 	<ul style="list-style-type: none"> Standard practices apply 	Other issue	<ul style="list-style-type: none"> Specialist assessment by subject matter experts Summary chapter in EIS

Issue	Potential Sources of Impacts	Mitigation	Issue Level	Assessment
Traffic and Transport	<ul style="list-style-type: none"> Increased traffic on local and regional road network during construction and operation Road upgrades for RAV movements Construction traffic may contribute to road pavement deterioration Turbines may distract drivers Cumulative impacts 	<ul style="list-style-type: none"> Construction Traffic and Access Management Plan and road maintenance and upgrades, as required 	Other issue	<ul style="list-style-type: none"> Specialist assessment by subject matter experts Summary chapter in EIS
Air Quality	<ul style="list-style-type: none"> Construction dust impacts 	<ul style="list-style-type: none"> Standard practices apply Construction Air Quality Management Plan 	Other Issue	<ul style="list-style-type: none"> Chapter in EIS
Water and Groundwater	<ul style="list-style-type: none"> Availability of water for construction Water quality impacts 	<ul style="list-style-type: none"> Standard practices apply Construction Soil and Water Quality Management Plan 	Other Issue	<ul style="list-style-type: none"> Chapter in EIS
Soil and Landform	<ul style="list-style-type: none"> Erosion and sediment control Landform stability 	<ul style="list-style-type: none"> Construction Soil and Water Quality Management Plan 	Other Issue	<ul style="list-style-type: none"> Chapter in EIS
Hazards and Risk (including Bushfire)	<ul style="list-style-type: none"> Hazardous material storage Risk to human health Bushfire risk (and inability to combat bushfires due to turbine placement) 	<ul style="list-style-type: none"> Standard practices apply 	Other Issue	<ul style="list-style-type: none"> Chapter in EIS
Waste	<ul style="list-style-type: none"> Generation of recyclable and general waste Generation and disposal of refurbished blades 	<ul style="list-style-type: none"> Standard practices apply 	Other issue	<ul style="list-style-type: none"> Chapter in EIS
Social and Economic	<ul style="list-style-type: none"> Land use change Economic impacts Community concerns (i.e. access to information and project delays) causing action against project (e.g. community activist groups etc.) 	<ul style="list-style-type: none"> SEC Strategy Economic impacts are generally positive 	Other issue	<ul style="list-style-type: none"> Chapter in EIS

Issue	Potential Sources of Impacts	Mitigation	Issue Level	Assessment
Human Health	<ul style="list-style-type: none"> ■ Epilepsy triggers ■ Infrasound ■ EMF 	<ul style="list-style-type: none"> ■ Standard practices apply and demonstrated application of the principles of prudent avoidance 	Other issue	<ul style="list-style-type: none"> ■ Chapter in EIS
Decommissioning	<ul style="list-style-type: none"> ■ Decommissioning procedures ■ Rehabilitation 	<ul style="list-style-type: none"> ■ Standard practices apply 	Other issue	<ul style="list-style-type: none"> ■ Chapter in EIS

7. PRELIMINARY ENVIRONMENTAL ASSESSMENT

This section provides an assessment of the potential environmental and social impacts, and benefits of the project, including potential impacts to visual amenity, noise, biodiversity, traffic, cultural heritage, water, bushfire, and other relevant environmental topics.

7.1 Key Issues

7.1.1 Preliminary Landscape and Visual

Green Bean Design Pty Ltd (GBD) was commissioned by ERM on behalf of WWPL to undertake a Preliminary Landscape and Visual Assessment (Preliminary LVA) for the Winterbourne Wind Farm project.

The Preliminary LVA was prepared as required by DPIE in order to meet the objectives of the NSW Government *Wind Energy: Visual Assessment Bulletin* – for State Significant Wind Energy Development (DP&E, 2016b), dated December 2016 (the Visual Bulletin), specifically the Visual Bulletin requirements applicable to a new wind farm development application for SSD through the SEARs.

The Preliminary LVA has been prepared to consider a layout consisting of 126 wind turbine generator locations at a maximum tip height of 250 metres. The assessment has not considered the location or extent of ancillary infrastructure, including electrical infrastructure and access tracks. Ancillary infrastructure items and the proposed transmission line will be detailed and included in the Stage 2 EIS Assessment process.

This section provides a summary of the background, methodology, results and next steps discussed in the Preliminary LVA.

7.1.1.1 Background

The Visual Bulletin requires consideration of dwellings and key public viewpoints within the study area, which has been defined as a 3.4 km offset from proposed wind turbine locations. The 3.4 km offset is in accordance with the 'black line' illustrated in Figure 5 of the Visual Bulletin (Visual magnitude thresholds for visual assessment), as replicated in **Figure 7-1**.

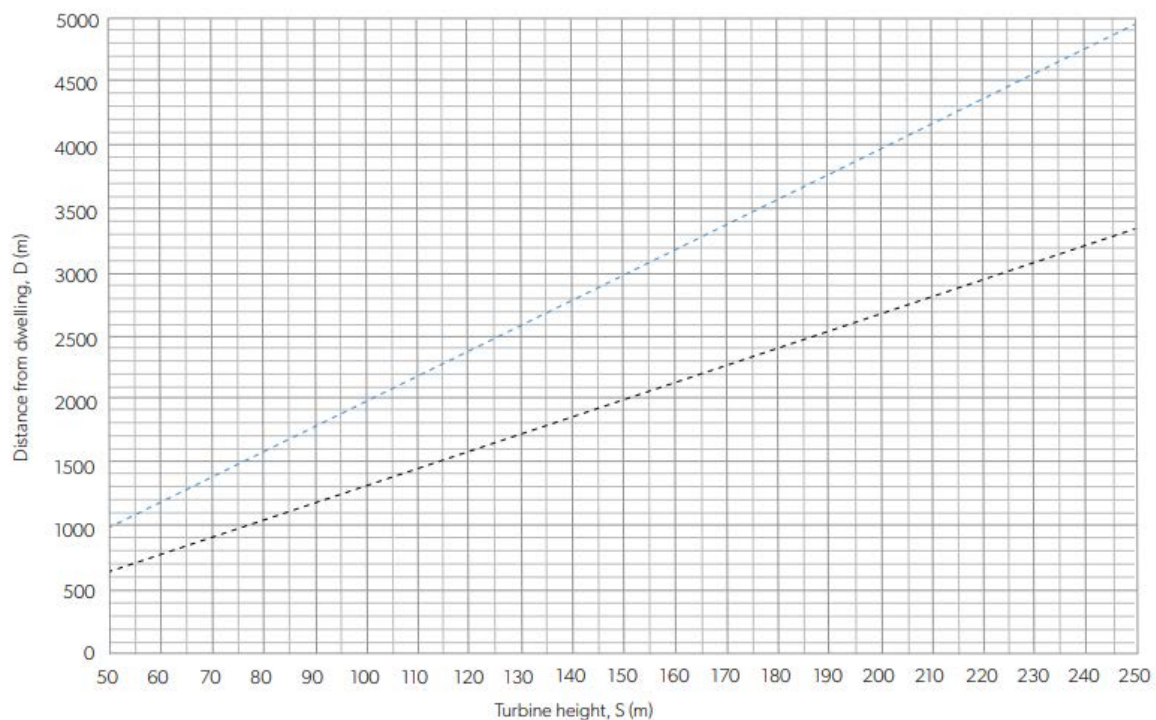


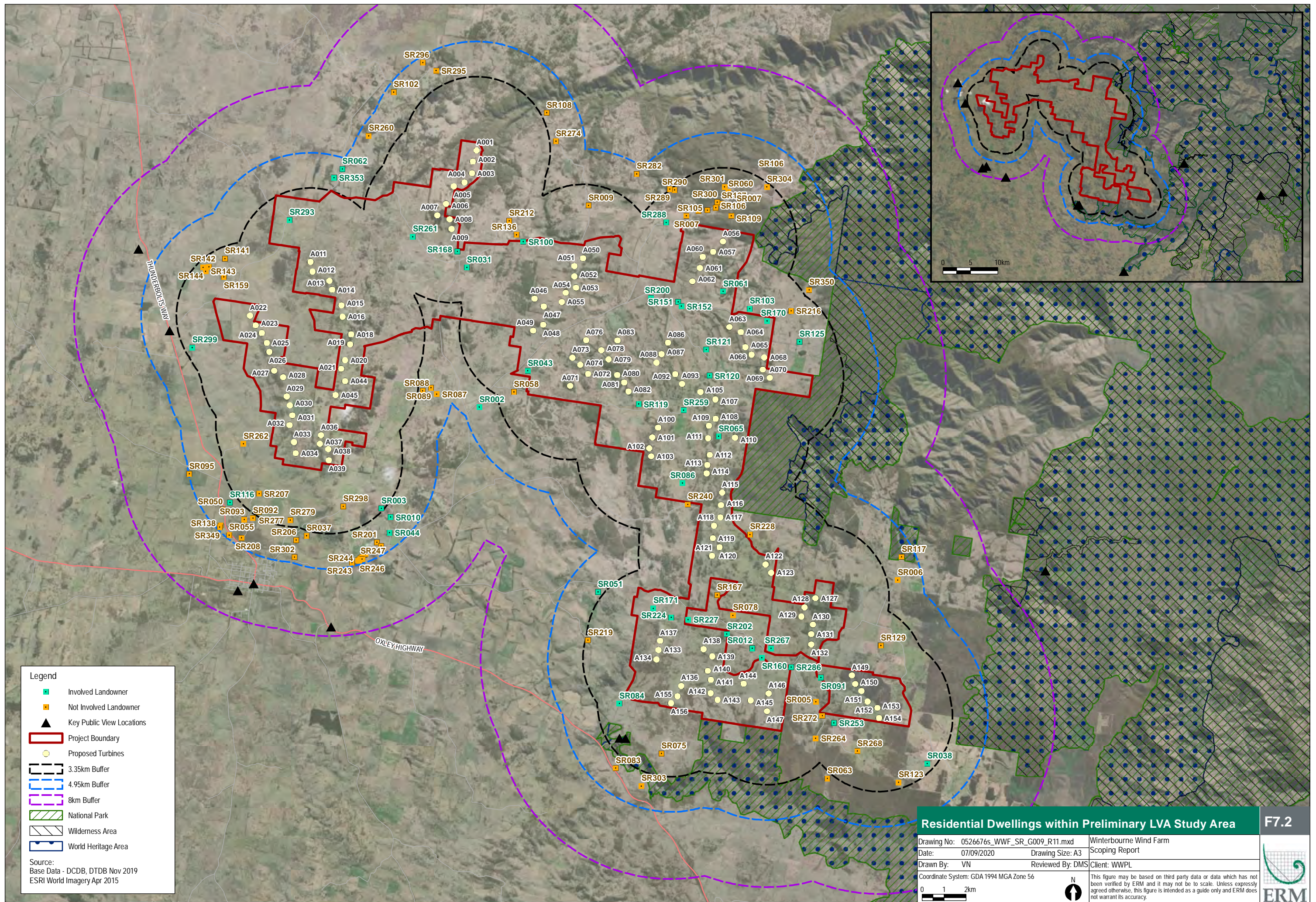
Figure 7-1 Visual Magnitude Thresholds for Visual Assessment (The Visual Bulletin)

A preliminary analysis of the study area within 3.4 km (below the black line) of the proposed wind turbine locations did not identify any key public viewpoints (e.g. dedicated lookouts, public spaces, recreational areas etc.) with direct or significant views toward the proposed wind turbines, and accordingly the preliminary analysis has focused on residential dwellings.

The Preliminary LVA also identifies the upper threshold for consideration of visual impacts at a distance of 4.95 km from the proposed wind turbine locations (the blue line illustrated in **Figure 7-1**), which will be further assessed in the Stage 2 EIS assessment.

The study area extends to 8 km for the application of the Multiple Wind Turbine Tool (refer Section 7 of the Preliminary LVA). A small number of view locations beyond 8 km have been added at the request of DPIE. These include dwellings, road corridors and urban development, as well as lookouts and campsites in National Parks.

Involved and non-involved landowners (residential dwellings) located below the blue line have been replicated from the Preliminary LVA in **Figure 7-2**.



7.1.1.2 Methodology

The assessment methodology for the Preliminary LVA consisted of the following:

- Review of the objectives of the Visual Bulletin and a site-specific scope of work created for the project;
- Community consultation sessions (i.e. attendance at the Walcha Show) to gather feedback about the local landscape values and the project;
- A scenic quality assessment of the local area focusing on landscape features, topography, vegetation cover and land use to assist in gathering feedback from the local community;
- Desktop analysis and a Zone of Visual Influence (ZVI) map to identify nearby receptors;
- Assessment of the draft wind turbine layout;
- Selection of 38 representative viewpoints to evaluate the visual impact of non-involved receivers within 4.95 km of proposed turbine locations;
- A preliminary landscape and visual assessment using the Visual Magnitude and Multiple Wind Farm Tools; and
- Identification of recommendations for further assessment to be captured in the EIS.

7.1.1.3 Assessment

Multiple Wind Turbine Assessment

The Multiple Wind Turbine Tool was used to assess the number of visible wind turbines or cumulative impacts resulting from multiple wind turbines from a selected viewpoint. There are no other wind farms in the vicinity of the project, however the tool was applied to assess multiple project-related turbines from a selected viewpoint.

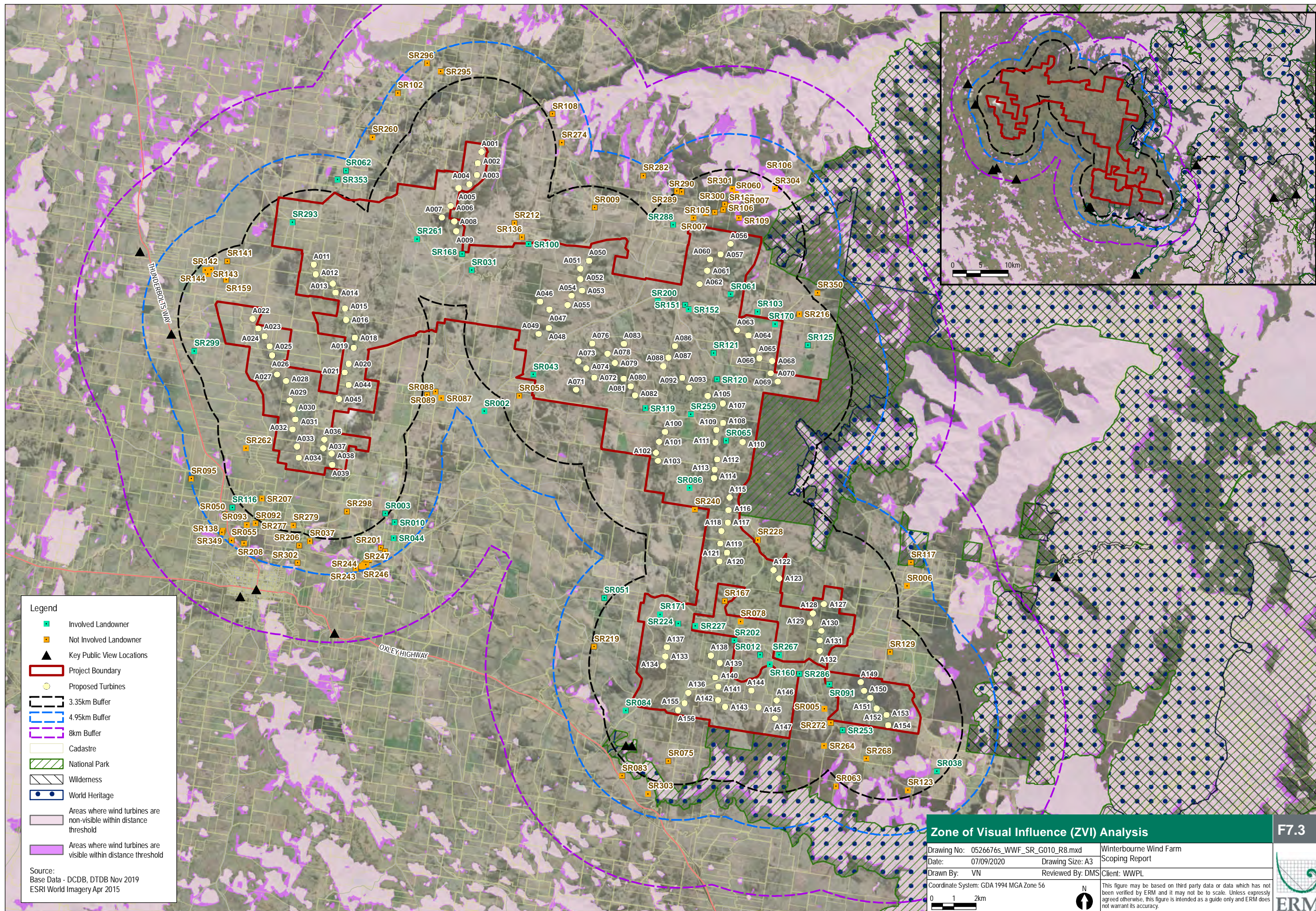
The Preliminary LVA identified 38 individual representative view locations which contain single or multiple non-involved residential dwellings within 4.95 km of the proposed wind turbine locations. Multiple residential dwellings have been incorporated into a single view location where dwellings occur within a 500 m radius of each other, as views from these locations would be very similar in most cases.

Of the 38 representative view locations:

- 12 dwelling view locations are predicted to have views towards wind turbines within three or more 60° sectors; and
- The remaining 26 dwelling view locations are predicted to have views toward wind turbines in either one or two 60° sectors.

The multiple wind turbine analysis for each representative viewpoint is shown in Figures 9.1 to 9.38 of **Appendix A**, and the results of the analysis are summarised in Table 2 of **Appendix A**.

Figure 7-3 also illustrates a ZVI analysis, which indicates areas of the landscape from which wind turbines will not be visible, or where only the blades of the turbines are visible (i.e. above the nacelle). The extent of screening illustrated in **Figure 7-3** relates to screening by landform only and does not account for vegetation (tree cover) within the landscape or surrounding residential dwellings.



7.1.1.4 Summary and Next Steps

The Preliminary LVA was prepared in accordance with the Stage 1 scope in the Visual Bulletin and specifically addresses the key steps for inclusion in the Scoping Report. The Preliminary LVA:

- Outlined the community consultation activities undertaken by WWPL and identified the key landscape features and characteristics that were found within and surrounding the project boundary;
- Noted the landscape features and locations of concern to the community and will further consider these within the Stage 2 EIS report; and
- Applied the preliminary assessment tools (magnitude and multiple wind turbine) to the preliminary wind turbine layout.

Further assessment and justification for placement of turbines in multiple sectors will be detailed in the EIS, along with a description of the mitigation and management measures being employed to reduce impacts. Further assessment may identify that factors such as topography, relative distance and existing vegetation may minimise the impacts of the project on nearby involved and non-involved residences.

The Preliminary LVA noted the proposed Tara Springs Wind Farm development would be located to the west of the proposed WWF project site. Whilst the proposed Tara Springs wind turbine locations were not publicly available during preparation of the Preliminary LVA, there is a possibility that a small number of dwellings located in the vicinity of the Thunderbolts Way road corridor may be located within 8km of wind turbines from each project. A comprehensive assessment of potential cumulative visual impacts will be carried out and included in the Stage 2 EIS report.

7.1.2 Noise

Nuisance, or an unacceptable level of noise amenity, may arise from uncontrolled construction and operational activities from wind farm projects. Noise may be associated with emissions from equipment and vehicles during construction and from wind turbine generators during operation. Operational noise may be a key consideration for residents who live near wind farm projects.

To assess potential operational emissions from the proposed wind project, a preliminary noise impact assessment has been conducted with due regard to and in accordance with the NSW Department of Planning and Environment - *Wind Energy: Noise Assessment Bulletin* - for State Significant Wind Energy Development (Noise Bulletin or DP&E, 2016c), dated December 2016, as applicable to the Scoping Report stage of works.

The Noise Bulletin provides advice about how noise impacts are assessed for large-scale wind energy development projects. It applies to all new SSD wind energy proposals (such as the Winterbourne Wind Farm project) seeking to obtain SEARs. The Noise Bulletin provides practical guidance to proponents, planners, regulatory authorities, acoustic specialists and the broader community on how to measure and assess environmental noise impacts from wind energy projects.

As stated in DP&E, 2016c the NSW Government has adopted the 2009 South Australian document *Wind farms – environmental noise guidelines* (SA 2009) to form the basis of the regulatory noise standard and assessment methodology that will apply to the project.

7.1.2.1 Methodology

Operational noise emissions were modelled using Brüel and Kjær's Predictor 7810 (Version 12) noise modelling software package to calculate noise levels using International Organisation for Standardisation (ISO) 9613 Part 2 - 1996 (ISO 9613:2, 1996) - *Acoustics - Attenuation of Sound during Propagation Outdoors - Part 2: General Method of Calculation*.

The Predictor software package allowed 3D elevation data to be combined with ground regions, water, foliage and receptor locations, to create a detailed representation of the site and surrounding area. The noise model allowed for the quantification of noise levels from multiple sources based on sound power levels emitted from each source. The model computed the noise propagation in the assessment area of influence to precisely quantify A-weighted decibels (L_{eq} , 10 minute in dBA) at all identified receptors.

Brüel and Kjær's Predictor 7810 (Version 12) software achieves the requirements of the International Organisation for Standardisation (ISO) 17534 - 2015 – (ISO 17534, 2015) - *Acoustics - Software for the Calculation of Sound Outdoors*, as achieved by the modelling software referenced in this report ISO 9613:2, 1996 noise propagation algorithms (international method for general purpose, 1/1 octaves) as applicable to the ISO9613:2, 1996 calculative algorithm.

Although the project is still in the early stages of development, detailed noise test data and specifications were available for a likely wind turbine that could be used as part of the project design. That data and the following conservative assumptions were adopted to predict worst-case noise propagation conditions:

- All 126 turbines operating concurrently as per the locations identified in **Figure 1-2**;
- Dwelling/receptor locations are identified in **Figure 3-3** and **Figure 3-4**. There are 120 receptors (within 5 km of a proposed turbine location) considered in the modelling, of which 79 are non-involved landowners;
- Hard "0.0" ground conditions (0 is hard, 1 is soft) despite the project boundary and majority of nearby receptors being situated on soft ground (grass) conditions; and
- Sound Power Level (L_w in dBA) data provided by Vestas for the V162 - 5.6MW turbine (155 metre hub height) operating in Mode 0 (blades with serrated trailing edges, that come standard for this turbine/mode) for wind speeds between cut-in and cut-out (3.0 to 24 m/s).

The data provided for this preliminary noise assessment is valid for a downwind reference position as defined according to IEC 61400-11:3. Applicable environmental conditions correspond to the standardized requirements as per IEC 61400-11. Blade condition is clean and undamaged.

Predicted L_{eq} noise levels were then compared to the base noise criteria (the lowest criteria that can apply to any receptor) described in the Noise Bulletin of 35 dBA for non-involved landowners. These noise criteria are established on the basis of a 24-hour period but noise predictions are made for a worst-case 10 minute interval as per SA 2009 guidance.

The average distances (indicative only) at which compliance can be achieved for a number of different noise standards from other Australian states and international jurisdictions is identified in **Figure 7.4** (Figure 15 of DP&E, 2016c). This figure demonstrates how stringent the noise limits defined by the Noise Assessment Bulletin and SA 2009 guidelines are in comparison to other jurisdictions. These distances are conceptual only and were modelled (DP&E, 2016c) using the ISO 9613.2 algorithm for three typical turbines directly upwind of receptors.

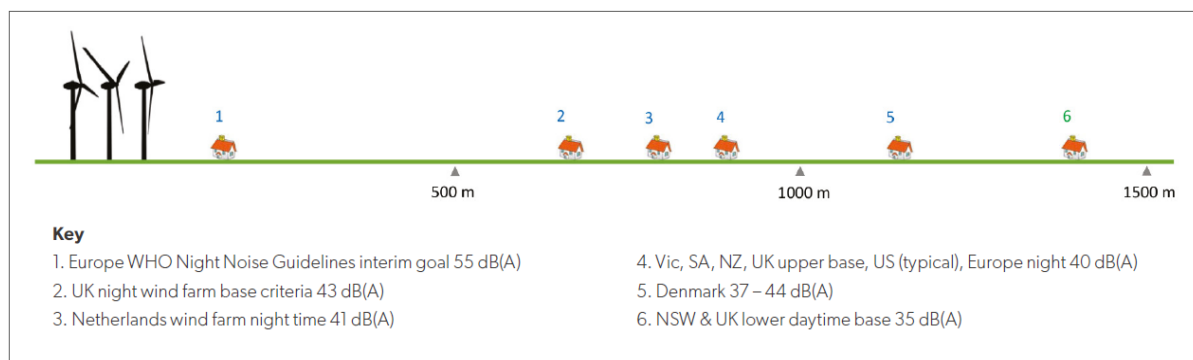


Figure 7-4 Noise Bulletin Average Distances for Different Noise Standards

7.1.2.2 Resultant Noise Levels

Based on the noise modelling methodology described above the L_{eq} , 10 minute noise levels (in dBA) have been predicted. The predicted worst-case noise levels (for receptors where predicted levels >30 dBA) and a preliminary compliance assessment (comparison of predictions to criteria for the closest and/or potentially most affected non-involved landowners) are presented in **Table 7-1**.

Any compliance values that exceed criteria are highlighted in **bold** typeset. A noise contour map for these worst-case operational conditions is presented in **Figure 7-5**.

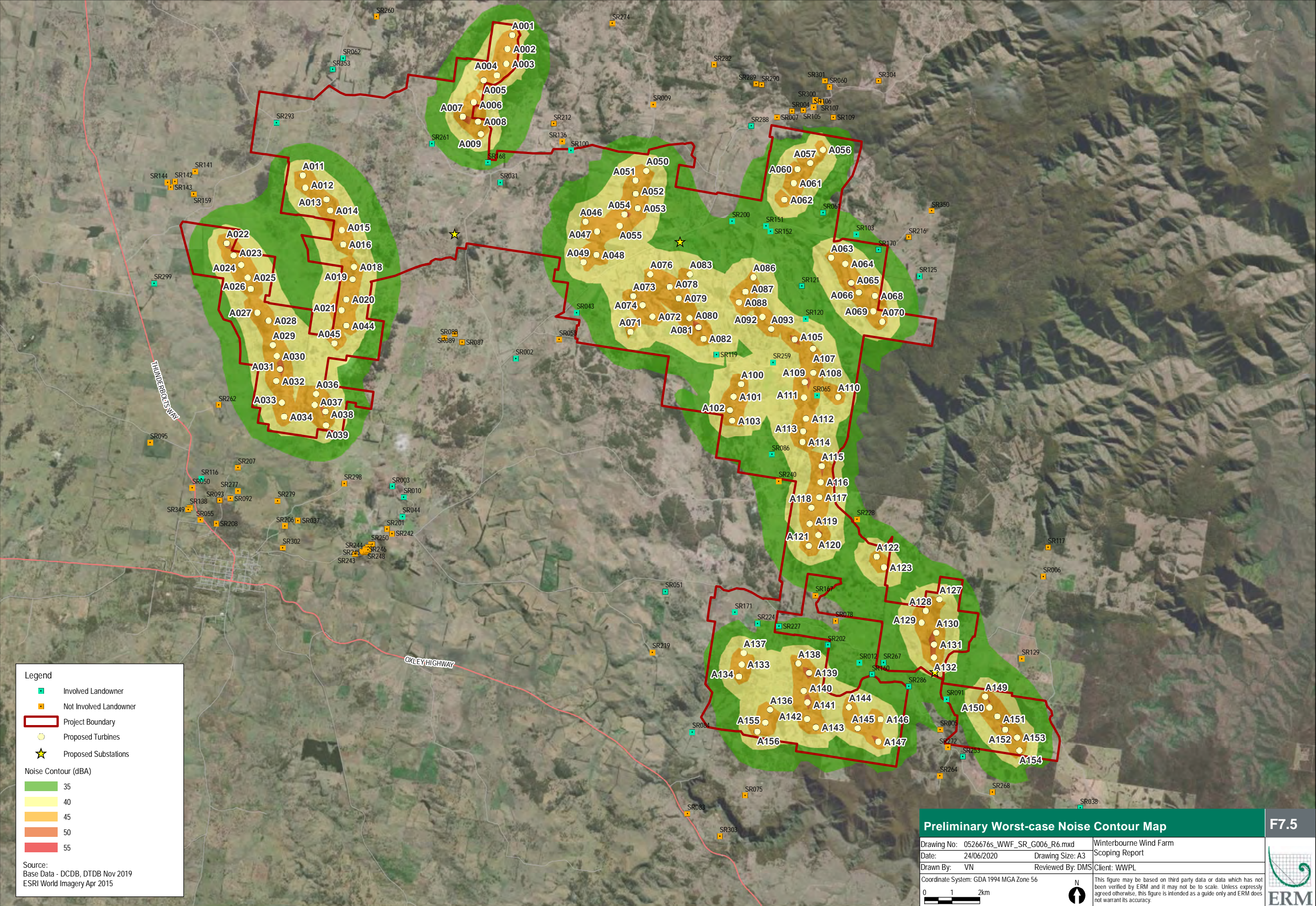
The results presented in **Table 7-1** are for the maximum rated L_W value (104 dBA) for the Vestas V162 - 5.6MW turbine operating in Mode 0, blades with serrated trailing edges. Wind speed based predicted noise levels and a preliminary compliance assessment is then shown in **Figure 7-6** for wind speeds between cut-in and cut-out.

Table 7-1 Predicted Noise Levels and Preliminary Compliance for Non-involved Landowners

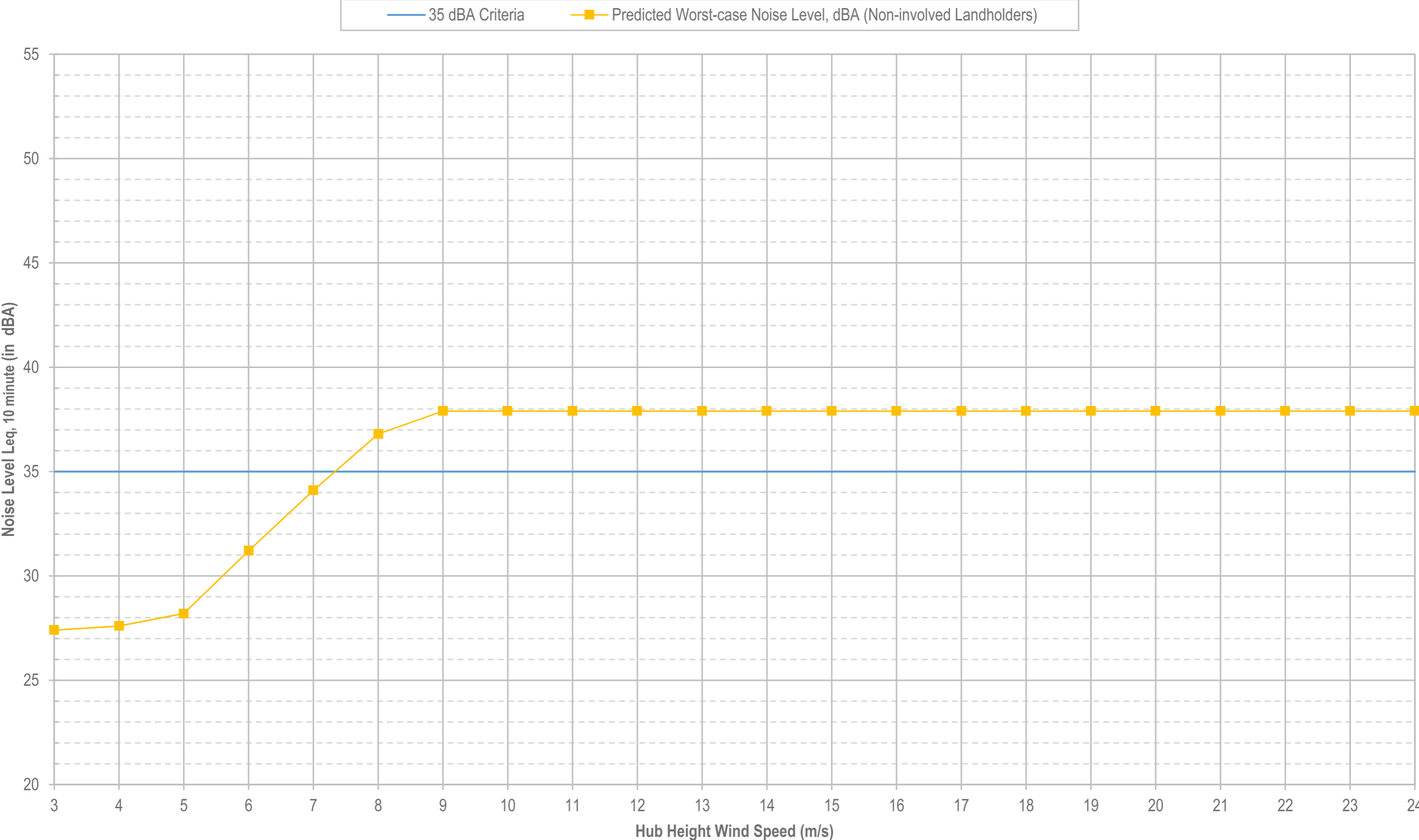
ID	Status	GPS Co-ordinates (UTM Zone 56J, in metres)		Approximate Elevation	Predicted Noise Level, dBA	Assessment Criteria, dBA	Comparison to Criteria, dBA	Above 35 dBA Criteria?
		Easting	Northing	Metres				
SR240	Non-Involved	385447	6574786	1172	37.9	35	2.9	Yes
SR228	Non-Involved	388270	6573420	1306	37.6	35	2.6	Yes
SR005	Non-Involved	391269	6565825	1175	35.3	35	0.3	Yes
SR078	Non-Involved	387491	6569749	1240	35.0	35	0.0	No
SR272	Non-Involved	386777	6570665	1230	34.7	35	-0.3	No
SR129	Non-Involved	391556	6565190	1215	34.6	35	-0.4	No
SR262	Non-Involved	394221	6568377	1123	33.3	35	-1.7	No
SR136	Non-Involved	365239	6577539	1059	33.1	35	-1.9	No
SR268	Non-Involved	377321	6587670	1031	32.9	35	-2.1	No
SR007	Non-Involved	377640	6587038	1020	32.8	35	-2.2	No
SR216	Non-Involved	393158	6563576	1258	32.6	35	-2.4	No
SR058	Non-Involved	385382	6587897	1045	32.2	35	-2.8	No
SR159	Non-Involved	390137	6583586	1070	31.8	35	-3.2	No
SR300	Non-Involved	377526	6579892	1118	31.6	35	-3.4	No
SR075	Non-Involved	364336	6585128	1110	31.0	35	-4.0	No
SR298	Non-Involved	386775	6588516	1110	31.0	35	-4.0	No

ID	Status	GPS Co-ordinates (UTM Zone 56J, in metres)		Approximate Elevation	Predicted Noise Level, dBA	Assessment Criteria, dBA	Comparison to Criteria, dBA	Above 35 dBA Criteria?
		Easting	Northing	Metres				
SR207	Non-Involved	384235	6563458	1014	30.5	35	-4.5	No
SR004	Non-Involved	380922	6588365	1056	30.4	35	-4.6	No
SR088	Non-Involved	369766	6574700	1103	30.4	35	-4.6	No

1. Results for non-involved receptors only where predicted noise levels are above 30 dBA.



Preliminary Wind Speed Based Compliance Assessment (126 WTG, Mode 0, GF0, Max Lw 104 dBA)



Preliminary Wind Speed Based Compliance

F7.6

Drawing No: 0526676s_WWF_SR_C001_R1.cdr	Winterbourne Wind Farm
Date: 18/06/2020	Scoping Report
Drawn by: VN	Reviewed by: DMS
	Client: WWPL
	This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.



7.1.2.3 Summary of Findings

Noise levels at three of the 120 non-involved receptors considered in the modelling are predicted to marginally exceed the 35 dBA base noise criteria. Noise levels (L_{eq} , 10 minute) vary at these three receptors between 35.3 and 37.9 dBA. Noise levels at an additional non-involved receptor is predicted to equal the 35 dBA base noise criteria. Noise levels at the remaining non-involved receptors are predicted to be below the 35 dBA base noise criteria. Noise levels (L_{eq} , 10 minute) at these remaining receptors range between <19 and 34.7 dBA.

The assessment summarised above is based on predicted worst-case noise levels and fixed 35 dBA base noise criteria (DP&E, 2016c) applicable to the Scoping Report stage. As shown in **Figure 7-6** noise levels from turbines rise as the wind speed at the site increases. However, an increase in wind speed typically results in an equal or greater increase in the background noise at receptor locations due to aerodynamic and foliage noise which may mask turbine noise (DP&E, 2016c). Accordingly, these compliance results may change with wind speed-based noise limits that reflect this anticipated increase in background noise with elevated winds.

Noise levels at all receptors will be assessed further during the detailed design of the project and subsequent detailed noise impact assessment that would be conducted for the EIS and include a baseline noise monitoring campaign to establish wind speed-based noise limits.

Further, a ground factor of 0.0 has been adopted for the preliminary modelling (0 is hard, 1 is soft) in alignment with the Noise Bulletin requirements for maximum and worst-case assumptions to be adopted at the Scoping Report stage. Prior to submission of the EIS, a site survey would be conducted to assess ground conditions near the most affected receptors and verify suitable ground factors for subsequent modelling.

Based on a review of aerial photography at the Scoping Report stage a ground factor of 0.5 to 0.8 would appear suitable for most of the modelling due to the agricultural grass land that is a feature of the area. A ground factor of 0.0 would appear suitable for the township of Walcha but received noise levels are already predicted to be very low at that area. A sensitivity analysis for a ground factor of 0.5 was completed during the Scoping Report stage and identified that noise levels would be reduced by 2.6 to 3.7 dBA (3.3 dBA on average) as a result. This sensitivity analysis indicates that noise levels would generally be at or below the base noise limit of 35 dBA for all non-involved land-holders using a ground factor of 0.5.

7.1.2.4 Outcomes

This preliminary assessment has focused on operational noise emissions from the wind farm, which is the main noise factor required for assessment at this stage of the project. The EIS noise impact assessment will provide further assessment of this factor as well as other noise related aspects of the project, as listed below:

- A baseline noise monitoring campaign to quantify existing noise conditions (and meteorological conditions) at select non-involved landholders. From this data, wind speed-based noise levels and limits would be established.
- Detailed noise modelling of the project's construction and operational phases, both of which will have been refined during the detailed design stages.
- Consideration of potential:
 - General construction and operational noise impacts to receptors within the potential area of influence of the project.
 - Road traffic noise impacts (construction and operational phases, with a focus on construction) to receptors within the potential area of influence of the project.
 - Vibration impacts (construction and operational phases, with a focus on construction) at receptors within the potential area of influence of the project.

- Cumulative operational noise impacts associated with other nearby wind farms or surrounding industry (if any).
- Recommendations for noise and vibration reducing mitigation, management measures, safeguards and/or provisions for monitoring.

7.1.3 Biodiversity

ERM conducted a Biodiversity Constraints Assessment to inform the Scoping Report for the project, as presented in **Appendix C**. This section summarises the methodology, results and recommendations presented in the Biodiversity Constraints Assessment.

7.1.3.1 Overview

The objective of this assessment was to identify and describe biodiversity values within the project boundary, and to determine preliminary recommendations for avoidance or mitigation of potential impacts or the requirement for additional assessment. The assessment was informed by a combination of a desktop assessment and fieldwork completed during spring 2019 (November), which included:

- Biodiversity Assessment Method (BAM) plot surveys; and
- Habitat and landscape values assessments.

It should be noted that a second biodiversity survey was conducted in summer 2020 (February) and the results of this survey are described in Appendix D of the Biodiversity Constraints Assessment Report.

7.1.3.2 Methodology

Desktop Review

The Desktop Review included a review of the following online resources:

- NSW Threatened Biodiversity Data Collection, including the Wildlife Atlas (BioNET), Vegetation Information System (VIS) database and threatened species profiles;
- Results of the Commonwealth Department of Environment and Energy (DoEE) Protected Matters Search Tool (PMST) identifying threatened species and communities with potential to occur within the locality (10 km buffer around the project boundary);
- NSW SEED mapping to identify Plant Community Types (PCT), threatened species or communities known or likely to occur; Mitchell Landscapes, map of Interim Biographic Regionalisation of Australia (IBRA) version 7;
- Atlas of Living Australia (ALA) Database; and
- Local government databases.

Field Surveys

Two ecologists undertook field surveys within the project boundary between 8 November 2019 and 21 November 2019, representing a total of 200 person hours. Due to logistical and safety limitations (e.g. bushfire risk) the survey effort was spatially restricted, as outlined in Figure 3.1 of the Biodiversity Constraints Assessment (**Appendix C**). In February 2020, four ecologists undertook field surveys within the project boundary representing a total of 480 person hours.

The summary below is based on the results of the November survey only; all other information is contained within the Biodiversity Constraints Assessment in Appendix C.

Spatially, the survey effort included all key infrastructure areas (e.g. proposed access tracks and turbine locations). A summary of the targeted and general survey methods undertaken as part of the Biodiversity Constraints Assessment is provided in **Table 7-2**.

Table 7-2 Field Survey Summary (Spring Surveys - November 2019)

Target	Survey Methods	Survey effort
Vegetation communities	BAM Plot Surveys	■ 15 BAM Plots
Habitat and landscape features	Habitat and Landscape Assessments	■ Opportunistically undertaken over the 12 day survey period
Bird	Waterhole Survey	■ Opportunistically undertaken over the 12 day survey period
	Bird of Prey Survey	■ Opportunistically undertaken over the 12 day survey period
	Diurnal Surveys	■ Opportunistically undertaken over the 12 day survey period
Reptile & Amphibian	Diurnal Surveys	■ Opportunistically undertaken over the 12 day survey period
Mammal	Camera Trapping	■ 3 Camera Traps ■ 432 hrs (6 days and 6 nights)
	Scat Surveys	■ Opportunistically undertaken over the 12 day survey period
	Diurnal Surveys	■ Opportunistically undertaken over the 12 day survey period

Likelihood of Occurrence

Consistent with the accepted approach for biodiversity assessment, ERM assessed the likelihood of occurrence of flora and fauna species, informed by desktop sources and the field survey results. Desktop sources identified a number of fauna and flora species listed under the EPBC Act and BC Act that have been recorded previously or are predicted to occur within a 10 km buffer of the project boundary. The likelihood of occurrence approach refines the desktop generated list using site-specific and specific-species habitat information. The preliminary likelihood of occurrence assessment is provided in Appendix C of the Biodiversity Constraints Assessment.

7.1.3.3 Biodiversity Values – Desktop Review

Threatened and Conservation Significant Species

Protected Matters Search Tool

The Protected Matters Search Tool was used to identify potential threatened and conservation significant species within a 10 km radius of the project boundary. A total of 42 conservation significant species were detected as potentially occurring within this radius, including various birds (listed as migratory species), flora, mammal, amphibian, and reptilian species.

BioNet

A BioNet search is able to identify all records of threatened species within a defined location within NSW (10 km radius of the project boundary). A total of 32 threatened species have been recorded within this radius, including various birds, flora and mammalian species. BioNet records indicate that there are Koala (*Phascolarctos cinereus*) and Austral Toadflax (*Thesium australe*) records within the Project Boundary.

Threatened Ecological Communities (TECs)

In accordance with state vegetation mapping data, and based on the vegetation communities present, it is possible that there are four threatened ecological communities (TECs) distributed throughout the project boundary. The TECs include:

- EPBC Act TECs:
 - New England Peppermint (*Eucalyptus nova-anglica*) Grassy Woodlands;
 - Box – Gum Grassy Woodland and Derived Grassland communities in NSW;
- BC Act TECs:
 - New England Peppermint (*Eucalyptus nova-anglica*) Woodland on Basalts and Sediments in the New England Tableland Bioregion; and
 - Box Gum Woodland in New England Tablelands.

Based on the state vegetation mapping data, a number of turbine locations are within or in close proximity (<100 m) to vegetation communities that could support TECs under the EPBC Act or the BC Act. However, further field vegetation mapping is required to determine the actual presence and extent of TECs at the site.

Native Vegetation and Landscape Features

Native vegetation and landscape characteristics for the current turbine locations (refer to **Figure 1.2**) are summarised in Table 4.4 of the Biodiversity Constraints Assessment. The project is located wholly within the New England Tablelands Bioregion and also wholly within the Walcha Plateau Sub-bioregion. The proposed turbines do not intercept any high biodiversity value areas as mapped by the NSW Biodiversity Values Map. Although the current project design and layout is indicative, two turbine groups are located approximately 100 m from high biodiversity value areas.

Areas within the project boundary have been subject to extensive clearing and are now regularly grazed by livestock. However, there are still some large to moderate sized vegetation patches scattered within the project boundary and many small vegetation patches and tree lines that maintain connectivity to the surrounding bushland, including the Oxley Wild Rivers National Park.

7.1.3.4 Biodiversity Values – Field Results

Flora and Vegetation Communities

A significant proportion of the area within the project boundary is characterised by non-native grasslands, resulting from vegetation clearing and livestock farming. A variety of *Eucalyptus* woodland and forest communities exist as tree lines and small, moderate and large patches. These communities are the dominant native extant vegetation communities in the project boundary. Paddock trees (*Eucalyptus* spp.) are common throughout the grasslands.

A total of 36 flora species were identified in the areas covered by the November 2019 BAM plot surveys and of the 36 species, 30 are considered native species. A full list of species recorded during the field surveys is provided in Appendix B of the Biodiversity Constraints Assessment.

One threatened flora species was identified during the field surveys (*Eucalyptus nicholli*). *Eucalyptus nicholli* was recorded 15 times as isolated individuals within the project boundary as well as six records as groups *Eucalyptus nicholli* (more than one individual present).

Threatened Ecological Communities

Two vegetation communities were identified during field surveys which conformed to the criteria of two TECs, including:

- New England Peppermint (*Eucalyptus nova-anglica*) Woodland on Basalts and Sediments in the New England Tableland Bioregion (BC Act) – Three vegetation patches (24.2 ha); and
- Box Gum Woodland in New England Tablelands (BC Act) – Six vegetation patches (14.4 ha).

Additional vegetation patches identified during field surveys aligned with the species composition and community structure of the TECs above, however additional assessment is required to determine if the vegetation patches had a predominately native understorey, which is a key criteria for these TECs.

Native Fauna

A total of 50 bird species and eight mammal species were recorded during the November 2019 field surveys. No reptile species or amphibian species were recorded during this survey.

Two threatened fauna species were identified, which included:

- Scarlet Robin (*Petroica boodang*) – BC listed threatened species; and
- Tiger Quoll (*Dasyurus maculatus*) – EPBC and BC listed threatened species.

In addition to these visual observation records, analysis of collected scats indicate that the following species occur within the project boundary:

- Koala (*Phascolarctos cinereus*) – EPBC and BC listed threatened species; and
- Greater Glider (*Petauroides volans*) – EPBC listed threatened species.

Introduced Species

Eight introduced flora species were identified during the field surveys. One of these introduced flora species, Sweet Briar (*Rosa rubiginosa*), is a restricted species in accordance with the NSW Biosecurity Act 2015 and considered a Noxious Weed in NSW.

Four introduced fauna species were identified during the November 2019 field surveys, including the Red Fox (*Vulpes vulpes*), Hare (*Lepus*), Common Starling (*Sturnus vulgaris*) and the European Rabbit (*Oryctolagus cuniculus*). These species are likely to have a negative impact on native species through predation, habitat degradation and resource competition.

Threatened and Migratory Species

Of the 50 threatened and migratory species listed under the EPBC Act and BC Act and considered in the constraints assessment, six are known to occur and 14 are considered likely to occur within the project boundary. There are also 18 threatened species considered to have the potential to occur within the project boundary. Threatened species that are known or considered likely to occur within the project boundary are detailed in Table 4.6 of the Biodiversity Constraints Assessment.

7.1.3.5 Matters of National Environmental Significance (MNES)

Based on the results of the desktop assessment and the field survey, a preliminary assessment of Matters of National Environmental Significance (MNES) within the project boundary has been provided in **Table 7-3** below (replicated from Table 5.1 of **Appendix C**).

Table 7-3 Known or Likely MNES within the Project Boundary

MNES	Relevance to the Project Boundary
World heritage properties	Gondwana Rainforests of Australia located within 3.5 km of project boundary
National heritage properties	
Wetlands of international importance	Not identified within the project boundary or within 50 km radius
Threatened species and ecological communities	<p>Known species include:</p> <ul style="list-style-type: none"> ■ Narrow-leaved Black Peppermint (<i>Eucalyptus nicholii</i>) ■ Tiger Quoll (<i>Dasyurus maculatus</i>) ■ Koala (<i>Phascolarctos cinereus</i>) ■ Austral Toadflax (<i>Thesium australe</i>) ■ Greater Glider (<i>Petauroides volans</i>) <p>Likely species include:</p> <ul style="list-style-type: none"> ■ Narrow-leaved Bertya (<i>Miniopterus orianae oceanensis</i>) ■ Beadle's Grevillea (<i>Grevillea beadleana</i>) ■ Brush-tailed Rock-wallaby (<i>Petrogale penicillata</i>)
Migratory species	No migratory species are likely to occur within the project boundary
Commonwealth marine area	Not identified within the project boundary or within 50 km radius
The Great Barrier Reef Marine Park	Not identified within the project boundary or within 50 km radius
Nuclear actions	Not applicable
Water resources	Not applicable

The findings of preliminary environmental investigations carried out to date have confirmed the presence of threatened species listed under the EPBC Act in the project boundary. As such, a separate referral has been made to the Australian Government Minister for the Environment, which deemed the project a 'controlled action' under the EPBC Act on 31 August 2020.

7.1.3.6 Preliminary Impact Assessment

The construction and operation of the project has the potential to cause impacts to threatened species and TECs listed under the BC Act and the EPBC Act, and these will need to be considered as part of the EIS to be prepared under Part 5 of the NSW EP&A Act. As the Biodiversity Offsets Scheme applies to Part 5 projects and based on the confirmed presence of biodiversity values within the project boundary, application of the BAM and the preparation of a BDAR will be required.

Species will be selected for further assessment by considering how they and their habitat might be affected by the project. In this instance the main potential impacts of the project (during construction and operation) that would need to be assessed include:

- Clearing of the following TECs:
 - EPBC Act TECs:
 - New England Peppermint (*Eucalyptus nova-anglica*) Grassy Woodlands.
 - Box – Gum Grassy Woodland and Derived Grassland communities in NSW.

- BC Act TECs:
 - New England Peppermint (*Eucalyptus nova-anglica*) Woodland on Basalts and Sediments in the New England Tableland Bioregion.
 - Box Gum Woodland in New England Tablelands.
- Loss of extant native vegetation communities and associated fauna habitat and the subsequent impacts to local population of native species, particularly threatened and migratory species.
- Increased habitat fragmentation.
- Mortality and injury of avian and microchiropteran species from turbine strikes.
- Mortality and injury from vehicle strikes and vegetation clearing.

Mitigation measures relevant to threatened species, TECs, native vegetation communities, species vulnerable to turbine strikes, hydrology and construction impacts will be addressed within the EIS. Given the potential disturbance within the project boundary, there is also a risk that weeds may be transported off-site. Mitigation measures to reduce the chance of weed spread will be considered within the EIS.

7.1.3.7 Recommendations and Next Steps

The desktop assessment and field surveys have highlighted a range of known and potential biodiversity constraints. To effectively avoid and minimise impacts associated with the project, the following management recommendations are suggested:

- Commit to a nil net loss of TECs within the project boundary;
- Minimise loss of existing native vegetation; and
- Aim to minimise habitat loss for threatened and migratory species within the project boundary.

The following steps are considered essential in ensuring an adequate assessment of biodiversity values is continued throughout future stages of the project:

- Conduct a detailed assessment of potential Koala habitat in accordance within the requirements of the Koala Habitat Protection SEPP;
- Prepare and submit a BDAR in accordance with the Biodiversity Assessment Methodology to address Matters of State Environmental Significance;
- Conduct detailed habitat mapping and native vegetation mapping for all direct impact areas (e.g. development footprint); and
- Conduct further targeted fauna and flora surveys for species considered likely or potentially occurring within the project boundary in accordance with relevant Federal or State survey guidelines.

7.1.4 Heritage

The following section provides a summary of the results and findings of the Desktop Heritage Assessment prepared and contained as **Appendix D** to this Scoping Report.

7.1.4.1 Aboriginal Cultural Heritage

Archaeological Background

The project boundary is situated within the traditional lands of the Anaiwan, Amaroo, and Dunghutti Peoples, who have lived in the region for more than 6,000 years. Occupation and movement of Aboriginal people within the Walcha district prior to European settlement is not well understood by researchers. Archaeological investigation of the Walcha Local Government Area (LGA) has been limited and relates largely to land within the National Parks. Recorded sites in the area include artefacts,

scarred trees, axe grinding grooves, stone arrangements and burial sites. Some of these sites are well known, including a carved tree, originally situated at 'Rosevale', which was donated to the Walcha Historical Association and now resides at the Amaroo Museum. This indicates an understanding in the community of the importance of these sites.

AHIMS Search Results

The Office of Environment and Heritage (OEH) Aboriginal Heritage Information Management System (AHIMS) database provides information concerning previously recorded Aboriginal sites in NSW. An extensive search of the AHIMS database was conducted on 21 October 2019, using the details provided in **Table 7-4**.

Table 7-4 AHIMS Database Search Details

Item	Detail
Client Service ID	458100
Datum	GDA Zone 56
Eastings	360307 to 403065
Northings	6557467 to 6594182
Buffer	1 km
Number Sites	35

A total of 35 sites were identified within the search area; of these, one occurs within the project boundary. The sites within the search area are varied in type, consisting of Artefact Scatters, Stone Quarries, Ceremonial Sites and Modified Trees. Many of the registered sites contain multiple site types in one location (e.g. Artefact and Grinding Groove).

The site within the project boundary (AHIMS ID #24-4-0041) is recorded as an artefact site. AHIMS #24-4-0041 is situated within the north-east of the project boundary, within an area which appears to consist of rolling hills, and is within 400m of a watercourse. The area appears to be on elevated plains, and there is evidence of former watercourses (dry creek beds) visible in aerial imagery.

The results of the full AHIMS search are summarised in **Table 7-5**.

Table 7-5 AHIMS Registered Site Types

Site Type	Total Number	Within Project Boundary
Aboriginal Ceremony and Dreaming	2	-
Artefact	22	1
Artefact, Grinding Groove	1	-
Burial, Aboriginal Ceremony and Dreaming	1	-
Ceremonial Ring (Stone or Earth), Stone Arrangement	1	-
Conflict	1	-
Grinding Groove	2	-
Modified Tree (Carved or Scarred)	1	-

Site Type	Total Number	Within Project Boundary
Ochre Quarry	1	-
Stone Arrangement, Burial	1	-
Stone Quarry, Artefact	2	-

Recommendations

Based on the results of the preliminary assessment, it is considered likely that areas within the project boundary contain evidence of past Aboriginal land use. Predictive modelling prepared at this stage of the process can assist in determining sensitive landscapes; however, it is acknowledged that more detailed investigation and assessment will be required to inform the next phase of project planning and design. In consideration of these factors, the following recommendations are made:

- Comprehensive investigation, to include pedestrian field survey, consultation with Aboriginal stakeholders, sensitivity mapping, and archaeological test excavation (as required) should be undertaken during the development application stage;
- The investigations are to be undertaken in accordance with all NSW legislation and relevant guidelines including the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (OEH 2011), the *Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010), and *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW, 2010);
- Results of the investigations are to be detailed in an Aboriginal Cultural Heritage Assessment Report (ACHAR), in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW, 2010); and
- Upon completion of the ACHAR, a Cultural Heritage Management Plan (CHMP) should be prepared to ensure appropriate management of any identified cultural heritage throughout the construction process.

7.1.4.2 Non-Indigenous Heritage

The proposed project area is located northeast of Walcha and encompasses pastoral land to the west of the Oxley Wild Rivers National Park. There are a large number of historical squatting pastoral runs surrounding Walcha and in proximity to the project boundary, indicating the significant European history that is found in this region. Over time, the larger runs were broken up to create smaller farms, many of which remain in operation today.

The Oxley Wild Rivers National Park (Oxley Wild Rivers NP) features World Heritage Listed (WHL) Gondwana Rainforests, as well as a number of Aboriginal and European historical sites. The Oxley Wild Rivers NP was established in 1986, at the time of recognition of the WHL Gondwana Rainforests, and was added to the National Heritage List (NHL) in 2007. Historically, the area encompassed by the Oxley Wild Rivers NP has been utilised for cattle grazing, and gold and antimony mining.

Statutory Heritage Register Searches

Table 7-6 provides a summary of the statutory heritage register searches conducted as part of the desktop Heritage Assessment. Additional information is provided in Section 2 of **Appendix D**.

Table 7-6 Statutory Heritage Register Search Summary

Register Name	Description	Findings
Commonwealth Heritage List	The Commonwealth Heritage List includes natural, Indigenous and historical heritage places owned or controlled by the Australian Government. Items on the list have satisfied the minister as having one or more Commonwealth Heritage values.	There are no Commonwealth Heritage listed places within or in proximity to the proposed works.
National Heritage List	The Australian National Heritage List contains natural, historic, and Indigenous places deemed to be of outstanding heritage significance to Australia. Before a site is placed on the list a nominated place is assessed against nine criteria by the Australia Heritage Council.	There are no National Heritage listed places within or in proximity to the proposed works.
State Heritage Register	The State Heritage Register is a list of places and objects of particular importance to the people of NSW. The register lists a diverse range of over 1,650 items, in both private and public ownership. To be listed, an item must be significant for the whole of NSW.	A search of the NSW State Heritage Register was conducted on 22 October 2019. The search revealed that there are no State Heritage Listed items within the project boundary.
Walcha Local Environmental Plan 2012	A search of the Walcha Local Environmental Plan (LEP) 2012 was conducted on 22 October 2019. The search identified no locally listed heritage sites within the project boundary.	The search noted two locally listed heritage items within proximity of the project boundary, as listed in Table 7.7 .
Uralla Local Environmental Plan 2012	A search of the Uralla Local Environmental Plan (LEP) 2012 was conducted on 15 June 2020. The search identified no locally listed heritage sites within the project boundary.	The search noted one locally listed heritage item within ~1.5 km of the proposed overhead transmission line, as listed in Table 7.7 .
Section 170 Heritage Registers	Section 170 of the Heritage Act requires all NSW state agencies to identify, conserve and manage the heritage assets owned, managed and occupied by that agency. In order to facilitate this, Section 170 heritage registers were established for all NSW government agencies. These registers are held and maintained by each state agency and updated as assets are acquired, altered, or decommissioned.	A search of the relevant Section 170 registers was undertaken on 24 October 2019. No Section 170 heritage places are located within the project boundary.

Non-Statutory Considerations

Register of the National Estate

The Register of the National Estate (RNE) is a non-statutory archive of natural, historic and Indigenous places and incorporates over 13,000 places. Originally compiled between 1976 and 2003 by the Australian Heritage Commission, the register is now maintained by the Australian Heritage Council. Since February 2012 the RNE has been maintained as a non-statutory listing. A search of the Australian Heritage Database was undertaken on 24 October 2019. This search identified no RNE listed places within the project boundary.

National Trust Heritage Register

The National Trust of Australia maintains a register of landscapes, townscape, buildings, industrial sites, cemeteries and other heritage places which the Trust determines to have cultural significance.

This register is non-statutory but provides an indication of places considered significant by the wider community. A search of the National Trust Heritage Register conducted on 24 October 2019 indicated there are no National Trust listed properties within the project boundary.

Heritage Summary

Table 7-7 provides an overview of the statutory and non-statutory heritage listings identified within the project boundary. The location of the identified heritage sites is also shown on Figure 3.1 of **Appendix D**.

Table 7-7 Non-Indigenous Heritage Sites Summary

Site Name	Register	Item ID	Description	Distance to Project Boundary	Significance Level
Winterbourne Ruins	Walcha LEP	A001	Ruins of the Winterbourne homestead. Severely damaged and deteriorating.	Adjacent (north-west)	Local
'Emu Creek' Property	Walcha LEP	I005	Pastoral property including homestead, out-buildings and woolsheds.	Adjacent (south)	Local
'Salisbury Court'	Uralla LEP	I14	Pastoral property including homestead and out-buildings.	~1.5 km from proposed overhead 330 kV transmission line and ~1.7 km from proposed point of connection to the existing transmission network	Local

Non-Indigenous Heritage Recommendations

Preliminary assessment has shown that there are no listed heritage items within the project boundary, although two local items are located in proximity to the project boundary. However, further assessment would be required to better establish the non-indigenous archaeological potential of the project area.

Based on this information, it is recommended that a non-Indigenous (Historical) heritage assessment be prepared as part of the EIS. The non-Indigenous heritage assessment report should consider built heritage and archaeology, as well as any intangible values held by the community or relevant stakeholders. Preparation of the non-Indigenous heritage report would involve detailed historical research, including analysis of historical aerial imagery, physical inspection of the relevant areas of the project boundary, and consultation with the Walcha and District Historical Society and any other relevant stakeholders.

7.2 Other Environmental Factors

7.2.1 Traffic and Transport

Construction of a wind farm project results in an increased volume of traffic, both of light-duty vehicles used to transport workers and materials and heavy vehicle movements to transport wind turbine towers, blades, nacelles and other equipment. Once the wind farm is constructed, traffic associated with ongoing operations of the power station is minimal and generally involves only light vehicle movements for operational personnel.

It is anticipated that major turbine components will be delivered to the Port of Newcastle and transported to the project site via the New England Highway. Two options for accessing the site have been identified to date:

- **Option 1** - Exit the New England Highway near Bendemeer onto the Oxley Highway (B56) and travel through the Walcha township, taking a left on Derby Street and a right on Jamieson Street after the Walcha Showground. From there, the site could be accessed via Emu Creek Road, by either Winterbourne Road or Moona Plains Road (both paved roads), and various unsealed roads (eg Blue Mountain Road, Bark Hut Road, Rowleys Creek Road, East Lynne Road, Mirani Road, and others). This option would potentially require reinforcement of some local bridges and the re-establishment of a roundabout in town, plus upgrades to local roads as required (refer to **Figure 7-7**).
- **Option 2** - Continue on the New England Highway towards Uralla and return to Walcha on Thunderbolts Way, turning left onto Jamieson Road to access Emu Creek Road, and subsequent local roads described above. This route does not require entry through the Walcha township but does require tight turns at the intersections of both the New England Highway and Salisbury St, and at Salisbury Street and Duke Street in Uralla. This route would potentially require upgrades to two bridge crossings (refer to **Figure 7-8**).

A detailed Traffic and Transport Impact Assessment (TTIA) will be included in the EIS and will assess these potential transportation routes for construction traffic generally in accordance with the *Guide to Traffic Generating Developments* (RTA, 2002), Road Design Guide and relevant Austroads Standards and *Austroads Guide to Traffic Management* (Austroads, No Date).

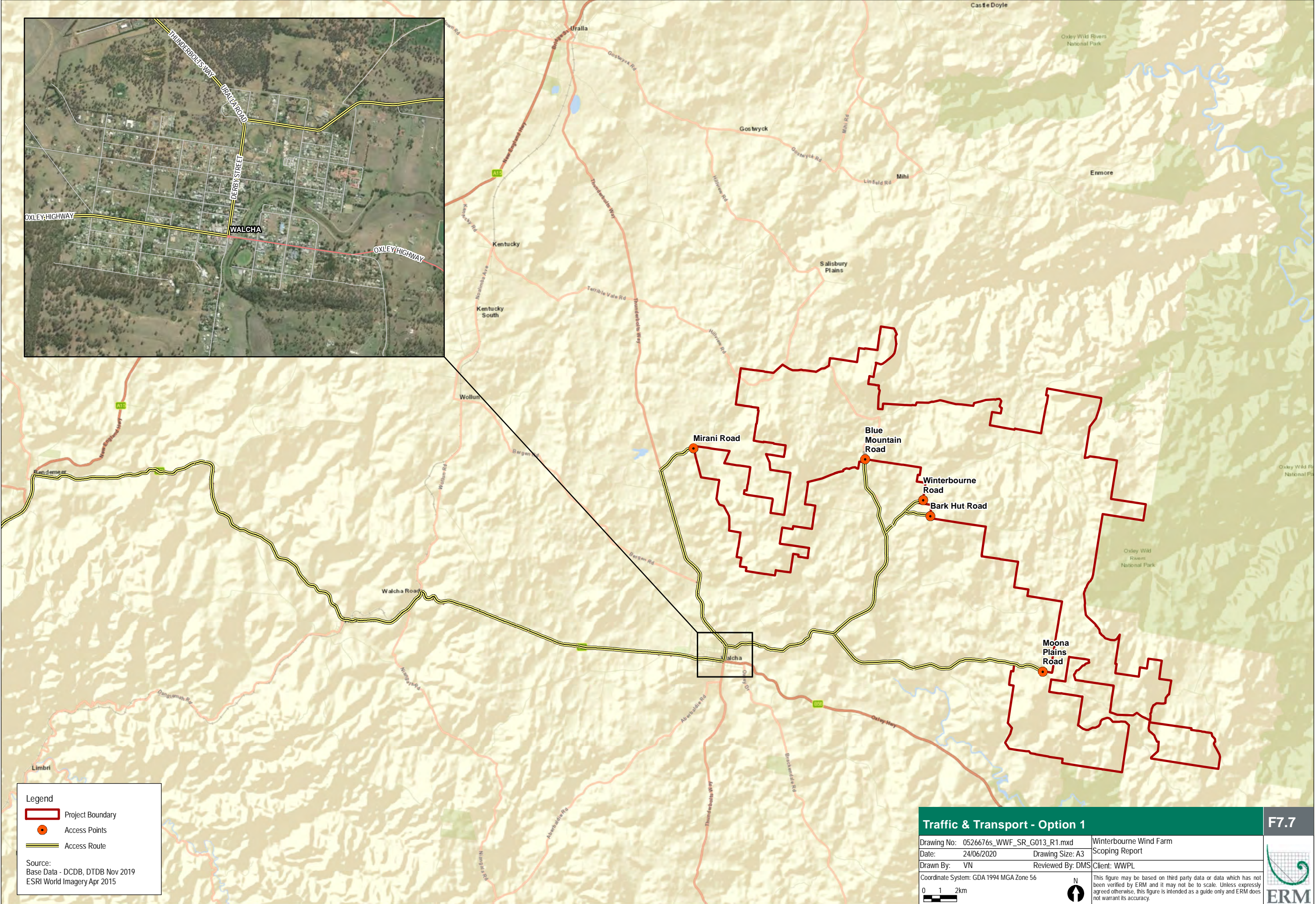
The scope of the TTIA will include:

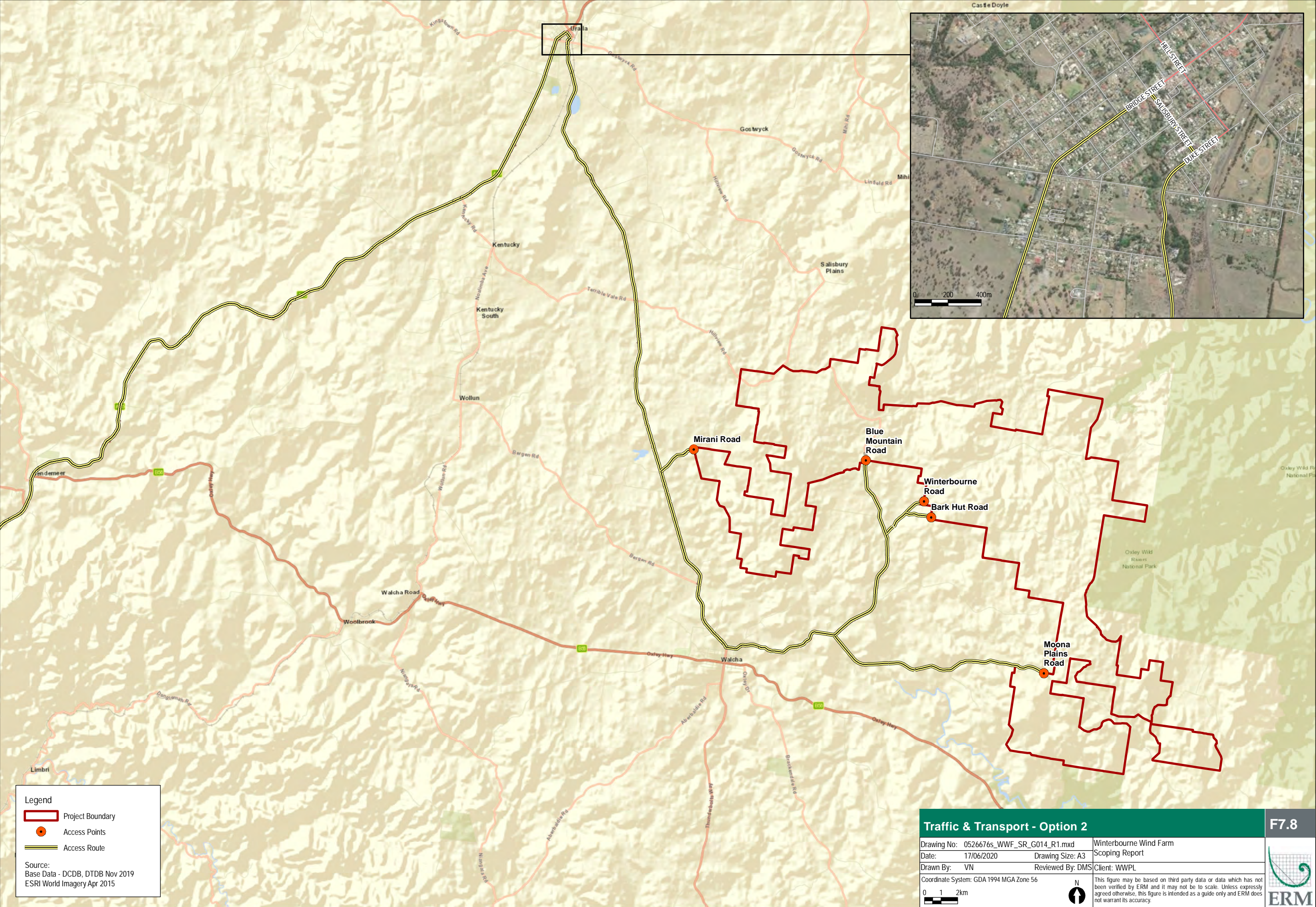
- Review of any previous traffic impact assessments undertaken for the surrounding area;
- Traffic counts in selected areas (if not available);
- The identification of mitigation and management measures, if required; and
- An assessment of likely project-alone and cumulative traffic impacts during the construction and operational phases of the project (including intersection performance, capacity, safety and site access).

Upgrades to local roads necessary to permit restricted access vehicles and heavy vehicle movements will be carried out prior to delivery of turbine components and maintenance of these roads will be ongoing through the construction phase of the project.

Other wind farm projects have been completed in the region, including White Rock Wind Farm and Sapphire Wind Farm, and these projects also transported wind turbine components from the Port of Newcastle and along the New England Highway. The transportation route for the proposed Winterbourne Wind Farm will have a significant overlap with the route used for these earlier projects.

WWPL has provided a high-level description of transport routes and traffic numbers to the Walcha Council engineering team. WWPL has not discussed transport options or traffic counts with Uralla Council to date. However, a commitment to the preparation of a transportation management plan in consultation with Walcha and Uralla Shire Councils and TfNSW, adopting relevant learnings from previous experiences, will also be included in the EIS to ensure the disruption to local communities is minimised.





7.2.2 Aviation

A preliminary review of aerodromes and aircraft landing areas within 30 km of the project boundary showed several private airstrips within and immediately adjacent to the project area, which are primarily used for aerial agriculture operations and potentially local transport. One larger aircraft facility (Walcha Airport Aerodrome) is located approximately 10 km southwest from the nearest proposed turbine location. The Walcha Airport Aerodrome is generally used for local flying but has been used recently by the Royal Australian Air Force (RAAF) for high altitude training exercises.

Regionally, the Armidale Airport is located approximately 32 km northwest of the closest proposed turbine location, and the Tamworth Airport is located approximately 75 km southwest of the closest proposed turbine location.

Aviation impacts will be assessed considering the local aviation operations and the Australian aviation regulations in accordance with the *National Airports Safeguarding Framework Guideline D: Managing Wind Turbine Risk to Aircraft* (DIRDC, 2012). The assessment shall consider potential impacts to aviation safety including wake / turbulence issues, need for aviation hazard lighting, and consideration of defined air traffic routes, heights procedures, radar and communications systems and navigation aids.

7.2.3 Water and Groundwater

The project is located within the Macleay River catchment. A number of small local creeks are present within the project area and these are shown on **Figure 7-9**. For much of the year these creeks may have no running water. There are no wetland areas or lakes (other than small farm dams) within the project area.

A water impact assessment will include a review of standard construction environmental management plans to ensure that impacts from mobilisation of sediment and pollutants generated during excavation, road works, transport of machinery, etc. will be adequately mitigated through avoidance, minimisation and management. The assessment will also quantify and identify sources of water required for construction and operation of the project and whether any licences under the Water Management Act are required.

A relevant assessment on the impacts to groundwater will also be included in the water impact assessment. The water impact assessment will be generally undertaken in accordance with the following guidelines and resources:

- Managing Urban Stormwater; Soils & Construction (Landcom, 2004);
- Guidelines for Controlled Activities on Waterfront Land (DPI Water, 2018);
- Relevant Water Sharing Plans (DPI Water); and
- Guidelines for Watercourse Crossings on Waterfront Land (DPI Water, 2012).



7.2.4 Soil and Landform

A soil and landform issues assessment will focus on soil disturbance from vegetation clearing, erosion from excavation work given the potentially erosion prone nature of the slopes of the site and rehabilitation where required.

The soil and landform impact assessment will generally consider the following guidelines:

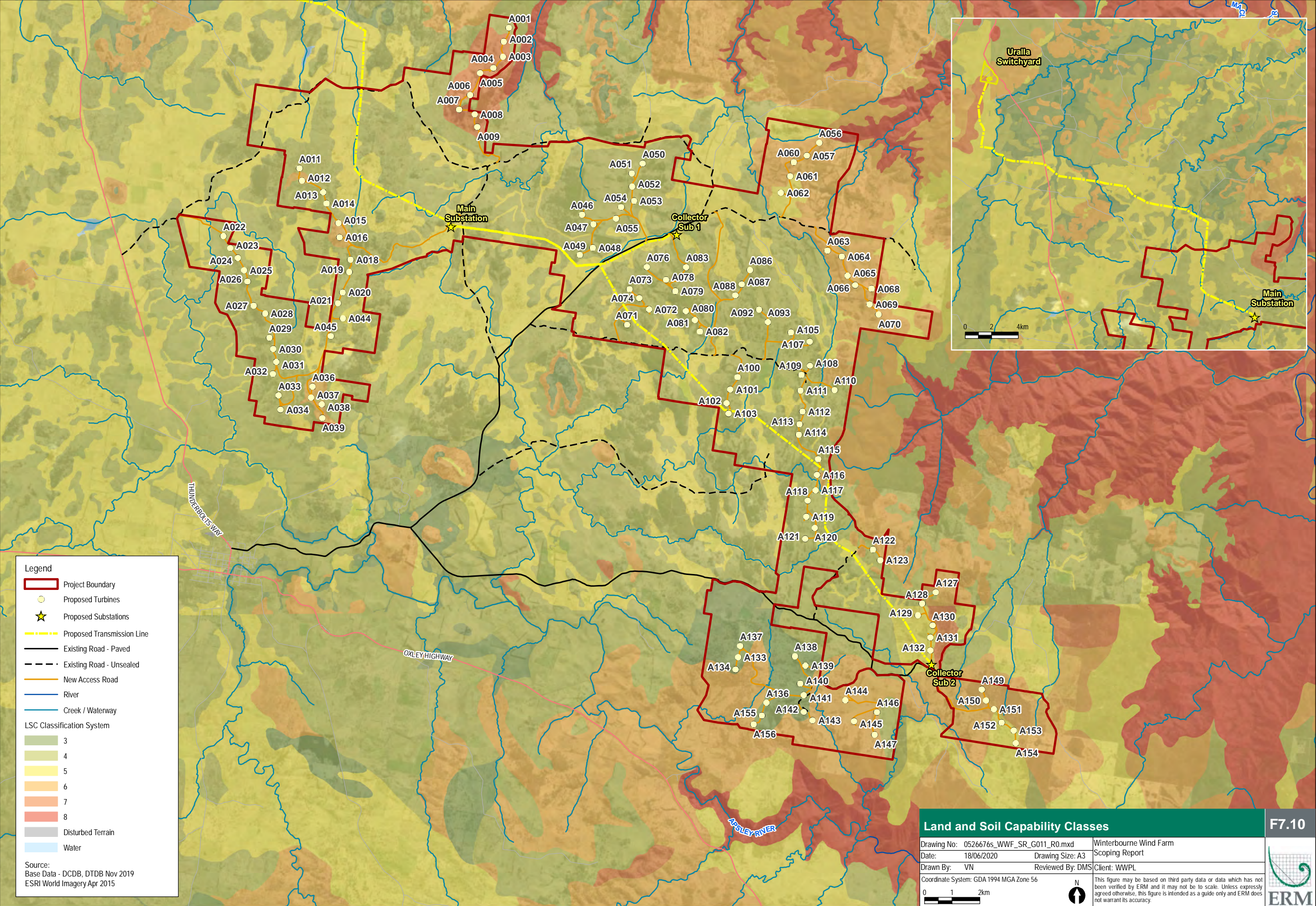
- Soil and Landscape Issues in Environmental Impact Assessment (OEH, 2000);
- Landslide Risk Management Guidelines (AGS, No Date); and
- Site Investigations for Urban Salinity (OEH, 2002).

A preliminary review of the Soil and Land Capability Mapping data for NSW (OEH, 2012) suggests that there are a range of the land and soil capability (LSC) classes within the project area. Broadly, land within the project area has been classified as either Class 4 or Class 5, though a small area of Class 2 land is present in the south of the project area. In addition, areas of Class 6 and Class 7 land are present in the south and north of the project area as well as adjoining the National Park along the eastern boundary of the project area. A map of soil classes in the vicinity of the project area is provided in **Figure 7-10**.

A search of the Australian Soil Classification (ASC) Soil Type Map of NSW (OEH, 2017), reveals that the site is largely dominated by the Kandosols soil type. They have strong texture contrast, and are mostly well-drained, permeable soils. Kandosols generally have low fertility and land use is restricted to grazing pastures.

The ASC Soil Type Map of NSW also revealed, to a lesser extent, the presence of Kurosols, Ferrosols, Rudosols and Tenosols.

A review of Biophysical Strategic Agricultural Land (BSAL) data shows that there is a small amount (~1,134 hectares) of BSAL mapped within the southeast corner of the project boundary. This is shown on **Figure 7-11** below.

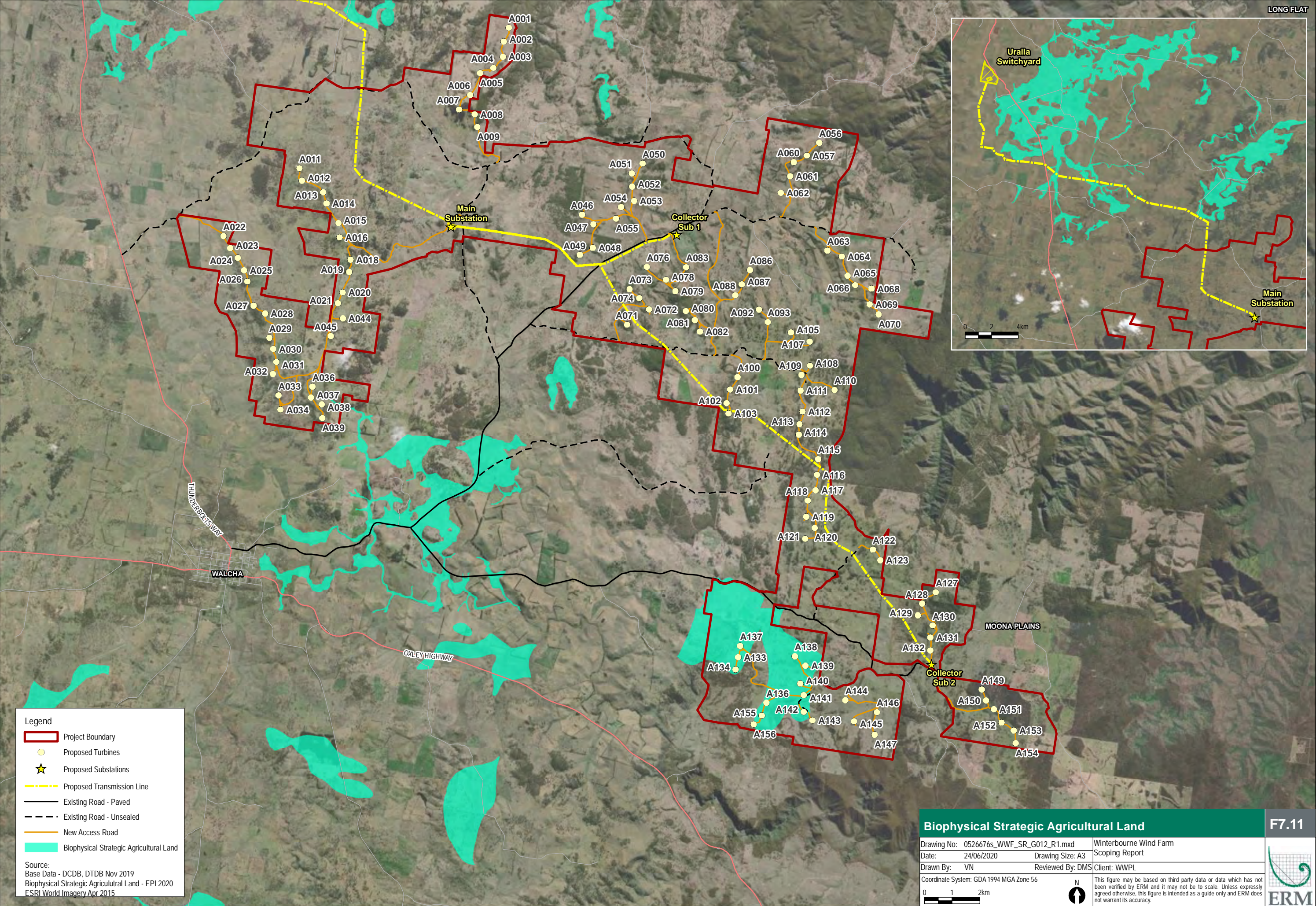


Legend

- Project Boundary
- Proposed Turbines
- Proposed Substations
- Proposed Transmission Line
- Existing Road - Paved
- Existing Road - Unsealed
- New Access Road
- River
- Creek / Waterway
- LSC Classification System
- 3
- 4
- 5
- 6
- 7
- 8
- Disturbed Terrain
- Water

Source:
Base Data - DCDB, DTDB Nov 2019
ESRI World Imagery Apr 2015

Land and Soil Capability Classes		F7.10
Drawing No: 0526676s_WWF_SR_G011_R0.mxd	Winterbourne Wind Farm	
Date: 18/06/2020	Drawing Size: A3	Scoping Report
Drawn By: VN	Reviewed By: DMS	Client: WWPL
Coordinate System: GDA 1994 MGA Zone 56		<p>This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.</p>
<p>0 1 2km</p> <p>N</p>		



7.2.5 Air Quality and Dust

Air Quality and Dust Management will be assessed as part of the EIS, generally in accordance with relevant NSW guidelines in relation to construction.

7.2.6 EMI / EMF / Telecommunications

An assessment of the potential impacts to telecommunications and electromagnetic interference will be undertaken as part of the EIS.

7.2.7 Social and Economic

A Social and Economic Assessment will review the impacts and benefits of the project for the region and State as a whole, including consideration of any increase in demand for accommodation and community infrastructure services.

7.2.8 Hazards and Safety (including Bushfire)

A hazard analysis and risk screening assessment will be undertaken for the project, which evaluates the likely risks to public safety, focusing on the transport, handling and use of hazardous materials and bushfire risk. The assessment also determines whether the project should be considered a hazardous or potentially hazardous industry under State Environmental Planning Policy 33 – Hazardous and Offensive Development (SEPP 33). Specifically, the EIS will include an assessment of the potential hazards due to inclusion of a battery storage unit at the site.

A Bushfire assessment will also be undertaken in accordance with the Rural Fire Service (RFS) *Guide for Bush Fire Prone Land Mapping*, vegetation based on vegetation type and potential risk.

7.2.9 Waste

This assessment will quantify and classify the likely waste streams to be generated during construction and operation and describe measures to manage, reuse, recycle and dispose of this waste in accordance with *Waste Classification Guidelines* (EPA, 2014).

7.2.10 Blade Throw and Shadow Flicker

A Blade Throw and Shadow Flicker Assessment will be prepared as part of the EIS which will describe the potential impacts associated with blade throw and shadow flicker to nearby residential receptors during operation of the project.

7.2.11 Human Health

A Human Health Assessment will be prepared as part of the EIS which will assess the potential for health impacts associated with the construction and operation of the project (including infrasound and interactions with electromagnetic fields (EMF)).

7.2.12 Decommissioning

The EIS prepared for the project will discuss the potential options associated with the decommissioning of the project upon completion of operations.

7.3 Cumulative Impacts

Cumulative impacts are often described as the potential for the proposed project to intersect and theoretically increase impacts in the locality as a result of cumulative environmental and social impacts with other existing or proposed developments (specifically wind farm projects).

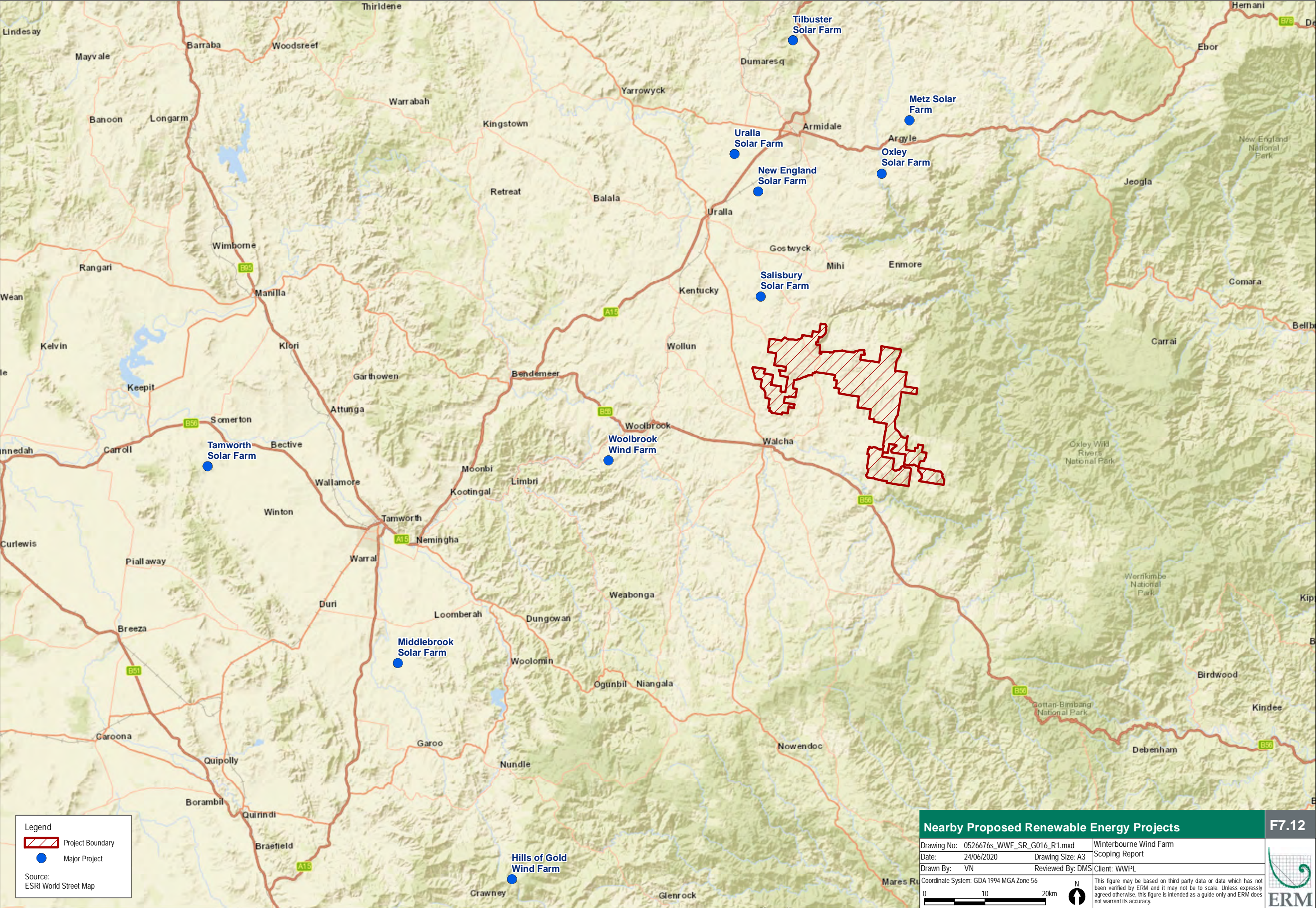
Further consideration of potential cumulative environmental and social impacts will be undertaken as part of the EIS prepared for the project, and as a minimum the following would be considered:

- MirusWind and Energy Estate Pty Ltd recently formed a joint venture known as WalchaEnergy Pty Ltd (WalchaEnergy) to develop other renewable energy projects in the Walcha area. WalchaEnergy submitted a Scoping Report for the Salisbury Solar Farm project, located northwest of the Winterbourne Wind Farm, in July 2019. This project (and other applicable WalchaEnergy projects) would be considered in the EIS based on all information that is publicly available or made available to the project at the time.
- UPC Renewables Australia has proposed the 720 MW New England Solar Farm project, to be built near Uralla and immediately to the north of the proposed Salisbury Solar Farm project. This project was granted planning approval in March 2020.
- RES Australia is investigating the possibility of developing a wind farm project on land between the communities of Bendemeer and Woolbrook in the New England region. RES Australia have been monitoring the wind resource at the site since 2018. An assessment of the wind resource and preliminary feasibility studies undertaken at the site has demonstrated that the “Tara Springs” site is suitable for the development of a wind farm project. Source: <http://www.tarasprings-renewableenergy.com/>. This project would be considered in the EIS based on all information that is publicly available or made available to the project at the time.

All proposed or approved SSD renewable energy projects located in the region surrounding the project are captured in **Figure 7-12** and details of their proposed capacity and their current project status are shown in **Table 7-9**. Active projects will be considered in the cumulative impact assessment as part of the EIS preparation.

Table 7-8 Nearby SSD Renewable Energy Projects

Project	Scale	Status
Tamworth Solar Farm	65 MW	Under Assessment
Middlebrook Solar Farm	500 MW	SEARs Issued May 2020
Hills of Gold Wind Farm	410 MW	SEARs Issued November 2018
Woolbrook Wind Farm	-	Withdrawn
Uralla Solar Farm	-	Withdrawn
New England Solar Farm	720 MW	Approved (March 2020)
Salisbury Solar Farm	600 MW	SEARs Issued August 2019
Tilbuster Solar Farm	300 MW	SEARs Issued October 2018
Oxley Solar Farm	300 MW	SEARs Issued August 2019
Metz Solar Farm	100 MW	Approved (July 2017)



REFERENCES

- Austrorads (No Date). **Austrorads Guide to Traffic Management** (Parts 1-13). Accessed at: <https://austrorads.com.au/network-operations/network-management/guide-to-traffic-management>.
- Australian Geomechanics (2007). **Australian Geoguide LR7 (Landslide Risk)**. Accessed at: <https://landsliderisk.org/resources/guidelines/>.
- Australian Heritage Database (2019). Accessed at <http://www.environment.gov.au/cgi-bin/ahdb/search.pl> on 24 October 2019.
- Australian Wind Alliance. **Building Stronger Communities. Wind's growing role in regional Australia**. Second Edition published November 2019.
- Clean Energy Council (CEC) (2020). **Clean Energy Australia Report**.
- Department of Infrastructure, Regional Development and Cities (DIRDC) (2012). National Airports Safeguarding Framework Guideline D: Managing Wind Turbine Risk to Aircraft.
- DPI Water (2012). Guidelines for Watercourse Crossings on Waterfront Land.
- DPI Water (2018). Guidelines for Controlled Activities on Waterfront Land.
- Hudson, S., Duncan, L., Kim, M., McKenzie, P., Townsend, L., Hudson, C., 'An Archaeological Survey of Southern New England Landcare Area including Armidale, Bundarra, Guyra, Uralla, Walcha & Inverell Regions of the New England Tablelands ', Southern New England Landcare, 2003, p.21.
- Landcom (2004). Managing Urban Stormwater; Soils & Construction.
- NSW Department of Planning, Industry and Environment (2017). **Scoping an Environmental Impact Statement. Draft Environmental Impact Assessment Guidance Series**.
- NSW Department of Planning, Infrastructure and Environment. **Net-Zero Plan Stage 1: 2020-2030**. March 2020.
- NSW Department of Planning, Industry and Environment, 2019. **New England Tableland Bioregion**. Accessed at <https://www.environment.nsw.gov.au/bioregions/NewEnglandTablelandBioregion.htm> on 24 October 2019.
- NSW Department of Planning, Industry and Environment - **Wind Energy Framework** – for State Significant Wind Energy Development (DPIE, 2019).
- NSW Department of Planning and Environment - **Wind Energy Guideline** – for State Significant Wind Energy Development (DP&E, 2016a), dated December 2016.
- NSW Department of Planning and Environment - **Wind Energy: Visual Assessment Bulletin** – for State Significant Wind Energy Development (DP&E, 2016b), dated December 2016.
- NSW Department of Planning and Environment - **Wind Energy: Noise Assessment Bulletin** - for State Significant Wind Energy Development (DP&E, 2016c), dated December 2016.
- NSW Department of Planning and Environment - **Wind Energy Framework Q&A's** - for State Significant Wind Energy Development (DP&E, 2016d), dated December 2016.
- NSW Department of Planning and Environment – **Standard Secretary's Environmental Assessment Requirements** (DP&E, 2016e), dated December 2016.
- NSW Office of Environment and Heritage (2016). **NSW Climate Change Policy Framework**.
- OEH (2000). Soil and Landscape Issues in Environmental Impact Assessment.
- OEH (2002). Site Investigations for Urban Salinity.

Road Transit Authority (RTA) (2002). Guide to Traffic Generating Developments.

Walcha Council 2019. **Sharing our Heritage** Strategic Heritage Action Plan (2019-2029). Accessed at <http://www.walcha.nsw.gov.au/f.ashx/Walcha-Strategic-Heritage-Action-Plan-Adopted-by-Council-June-2019.pdf> on 24 October 2019.

EPA (2014). Waste Classification Guidelines.

The New England Strategic Alliance. **New England Development Strategy**. April 2010.

Walcha Council. **Walcha Community Strategic Plan 2027**.

Walcha Council. **Draft Walcha Local Strategic Planning Statement 2036**.

APPENDIX A STAKEHOLDER ENGAGEMENT AND CONSULTATION STRATEGY

APPENDIX B PRELIMINARY LANDSCAPE AND VISUAL ASSESSMENT

APPENDIX C BIODIVERSITY CONSTRAINTS ASSESSMENT

APPENDIX D DESKTOP HERITAGE ASSESSMENT

ERM has over 160 offices across the following countries and territories worldwide

Argentina	The Netherlands
Australia	New Zealand
Belgium	Norway
Brazil	Panama
Canada	Peru
Chile	Poland
China	Portugal
Colombia	Puerto Rico
France	Romania
Germany	Russia
Guyana	Singapore
Hong Kong	South Africa
India	South Korea
Indonesia	Spain
Ireland	Sweden
Italy	Switzerland
Japan	Taiwan
Kazakhstan	Tanzania
Kenya	Thailand
Malaysia	UK
Mexico	US
Mozambique	Vietnam
Myanmar	

ERM's Sydney Office

Level 15
309 Kent Street
Sydney NSW 2000

T: +61 2 8584 8888

F: +61 2 9299 7502

www.erm.com