4th September 2018

Ian Gibb
Director Sustainable Development
Corangamite Shire Council
PO Box 84
Camperdown VIC 3260

via: planning@corangamite.vic.gov.au

Dear Ian,

Section 57A to amend Planning Permit Application PP2018/060
520 Meningoort Road, Bookaar - Use and Development of Land for a Renewable Energy Facility (Solar Farm) and Removal of Native Vegetation

We write in relation to the above planning permit application made by Bookaar Renewables Pty Ltd (the 'Applicant') for the proposed Bookaar Solar Farm (the 'Proposal') located on land at 520 Meningoort Road, Bookaar.

We understand that following discussions, Corangamite Shire Council have agreed that a Section 57A application under the *Planning and Environment Act 1987* be formally lodged as a result of new cultural heritage sensitivity mapping. This will result in a reduction to the site boundary and development area of planning permit application PP2018/060.

We are pleased to provide the following 57A application to amend the planning permit application PP2018/060 after notice of the application has been given.

In addition to this letter addendum to the 'Planning Report for Planning Permit Application', dated July 2018, accompanying this application is:

- A completed Request to Amend an Active Planning Permit application form (provided under separate cover from the Applicant).
- Enclosure 1 – Updated maps from the Planning Report.
- Enclosure 2 – Ecology & Heritage Partners letter (dated 31 August 2018).
- Enclosure 3 – Original Planning Report

Background

As advised on 22 August 2018 by Dan Cummins from Aboriginal Victoria, new cultural heritage sensitivity mapping came into effect under the *Aboriginal Heritage Regulations 2018* on 23 May 2018. This new mapping was introduced after Ecology and Heritage Partners had prepared the Preliminary Cultural Heritage Study of the Site and was therefore not considered in the report. The updated mapping identifies a new area in the northeast corner of the Site as having cultural heritage sensitivity.

Consistent with the approach to avoid the site's constraints, a decision has been made by the applicant to fully avoid the new area of cultural heritage sensitivity. Accordingly, the Site area of the solar farm has been reduced to ensure that the new area of cultural heritage sensitivity is avoided and an additional 100 metre buffer has been included, meaning that no works in relation to the proposed development will take place within this area.

Accordingly, a requirement to carry out a Cultural Heritage Management Plan (CHMP) is not triggered by the application. This was confirmed by Ecology and Heritage Partners (31st

TRACT CONSULTANTS PTY LTD
ACN 055 213 842
AS TRUSTEE FOR THE
TRACT CONSULTANTS UNIT
TRUST ABN 75 423 048 489
LEVEL 6, 6 RIVERSIDE QUAY,
SOUTHBANK, VIC 3006
AUSTRALIA
TELEPHONE 61 3 9429 6133
melbourne@tract.net.au
www.tract.com.au

MELBOURNE BRISBANE
SYDNEY ADELAIDE GEELONG

QUALITY ENDORSED COMPANY
ISO 9001 LIC NO 2095

August 2018) that '*if the area of cultural heritage sensitivity was avoided completely by all works associated with the proposed Solar Farm then a mandatory CHMP would not be triggered*'.

To assist Council with finalising their assessment we identify the following specific changes to the Planning Report. We understand Council has agreed to accept this as an addendum to the Planning Report.

Addendum to Planning Report

Figure/Chapter Number	Page No.	Change
Figure 1 – Aerial Plan	5	Replace with Attachment 1
Figure 2 – Location Plan	8	Replace with Attachment 2
Figure 3 – Neighbouring Residential Dwellings	9	Replace with Attachment 3
Figure 8 – Evolution of development 'footprint'	18	Replace Map 1 (in Figure 8) with Attachment 11 Replace Map 2 (in Figure 8) with Attachment 7 Replace Map 3 (in Figure 8) with Attachment 8 Replace 3rd dot point beside Map 1 with: • "Areas of Aboriginal cultural heritage sensitivity, including additional areas identified under new mapping which came into effect on 23rd May 2018."
Figure 12 – Zoning Map	29	Replace with Attachment 4
Figure 13 – Meningoort Road – Extent of Council-owned classification	31	Replace with Attachment 1
Figure 14 – Planning Overlay Plan	32	Replace with Attachment 5
Figure 15 – Areas of cultural sensitivity	33	Replace with Attachment 6
Figure 21 – Residual Constraints Map	52	Replace with Attachment 7
Figure 22 – Development Footprint (excluding all identified constraints)	53	Replace with Attachment 8
Figure 24 – Location of neighbouring dwellings	64	Replace with Attachment 3
Chapter 5.1.3 – *Area of Cultural Heritage Sensitivity*	32	Replace text with: "The Property is identified as being within, or affected by, areas of cultural heritage sensitivity as defined within the

Figure/Chapter Number	Page No.	Change
		Aboriginal Heritage Regulations 2007 and the *Aboriginal Heritage Regulations 2018*. The Site area of the Proposal was specifically positioned outside any identified areas of cultural heritage sensitivity by the 2007 regulations. As the new 2018 regulations identify further areas of cultural heritage sensitivity within the Site, the site area has been altered to avoid this area. On this basis, a Cultural Heritage Management Plan (CHMP) is not required for this application. Refer to **Figure 15**. Further discussion on cultural heritage matters are found in Chapter 6.2.4."
Chapter 6.2.4 – *Policy, Guidance and Methodology*	54	Text to be inserted into 2nd paragraph, after 1st sentence: "New Aboriginal Heritage Regulations 2018 came into effect on 23 May 2018 after the '*Preliminary Cultural Heritage Study*' by Ecology and Heritage Partners had been prepared, which resulted in a change to the cultural heritage sensitivity mapping in the area. Ecology and Heritage Partners have prepared an '*Addendum to the Preliminary Cultural Heritage Study*' which confirms that provided the newly mapped area of cultural heritage sensitivity is avoided completely by all works associated with the proposed Solar Farm then a mandatory CHMP is not triggered."
Chapter 6.2.4 – *Key Findings*	55	Insert after 6th paragraph: "New Aboriginal Heritage Regulations 2018 came into effect on 23 May 2018 after the *Preliminary Cultural Heritage Study* by Ecology and Heritage Partners had been prepared. These new regulations changed the cultural heritage sensitivity mapping, which included the northeast corner of the Site. However the '*Addendum to the Preliminary Cultural Heritage Study*', confirms that if this new area of cultural heritage sensitivity is avoided completely by all works associated with the proposed Solar Farm then a mandatory CHMP is not triggered."

Figure/Chapter Number	Page No.	Change
Chapter 6.2.4 – *Site Heritage Conclusion*	55	Replace all text with: "The assessment undertaken by Ecology & Heritage Partners confirms that no registered Aboriginal Places under the *Aboriginal Heritage Regulations 2007* are located within the Site. However, the new *Aboriginal Heritage Regulations 2018* has resulted in cultural heritage sensitivity mapping affecting a small section of the north-eastern corner of the Site. As a result, the Site Boundary of the solar farm has been changed to avoid this area. Ecology and Heritage Partners have confirmed in the '*Addendum to the Preliminary Cultural Heritage Study*' that if this area of cultural heritage sensitivity is avoided completely by all works associated with the proposed Solar Farm then a mandatory CHMP is not triggered. The avoidance of any area of cultural heritage sensitivity as part of the site design ensures that Aboriginal sites and significant cultural landscapes are conserved in accordance with Corangamite Shire's Vision and Strategic Framework Plan (Clause 21.03). Furthermore, it is submitted that the assessment undertaken by Ecology & Heritage Partners ensures that any potential impact upon Aboriginal cultural heritage by the Proposal has been sufficiently considered in accordance with the requirements of Clause 52.42 (Renewable Energy Facilities [other than wind energy facility and geothermal energy extraction])."
Figure 23 – Overall Constraints Map	56	Replace with Attachment 9
Appendix B – Context Plan	Figure 1 of Appendix B	Replace with Attachment 10
Appendix B – Neighbouring Dwellings	Figure 2 of Appendix B	Replace with Attachment 3
Appendix B – Overlay and Neighbouring Dwellings	Figure 4 of Appendix B	Replace with Attachment 11
Appendix B – Residual Constraints	Figure 5 of Appendix B	Replace with Attachment 8

Figure/Chapter Number	Page No.	Change
Appendix B – Net Developable Area	Figure 6 of Appendix B	Replace with Attachment 8
Appendix B – Overall Constraints	Figure 7 of Appendix B	Replace with Attachment 9

Conclusion

Based on the Applicant's response of reducing the Site area to avoid further areas of sensitivity, the changes as outlined above are considered to be purely administrative and non-material. As such, the overall conclusions of the assessment have not changed and it is confirmed that the proposal will not result in an impact on Aboriginal cultural heritage.

Furthermore, it is confirmed that the changes outlined above representing the full application to amend the planning application, does not alter or affect any other planning matters as set out in the original Planning Report.

In accordance with Subsection 3a of Section 57A of the *Planning and Environment Act 1987*, a request must *'be accompanied by the prescribed fee (if any)'*.

If you have any questions regarding the above matter, please don't hesitate to contact me on [redacted]

Yours sincerely,

Jackie Kirby
Associate
Tract Consultants Pty Ltd

enc.

Enclosure 1 – Updated maps from the Planning Report

Attachment 1 Aerial Plan

Attachment 2 Context Plan

Attachment 3 Neighbouring Dwellings

Attachment 4 Zoning Map

Attachment 5 Planning Overlay Plan

Attachment 6 Cultural Sensitivity

Attachment 7 Residual Constraints

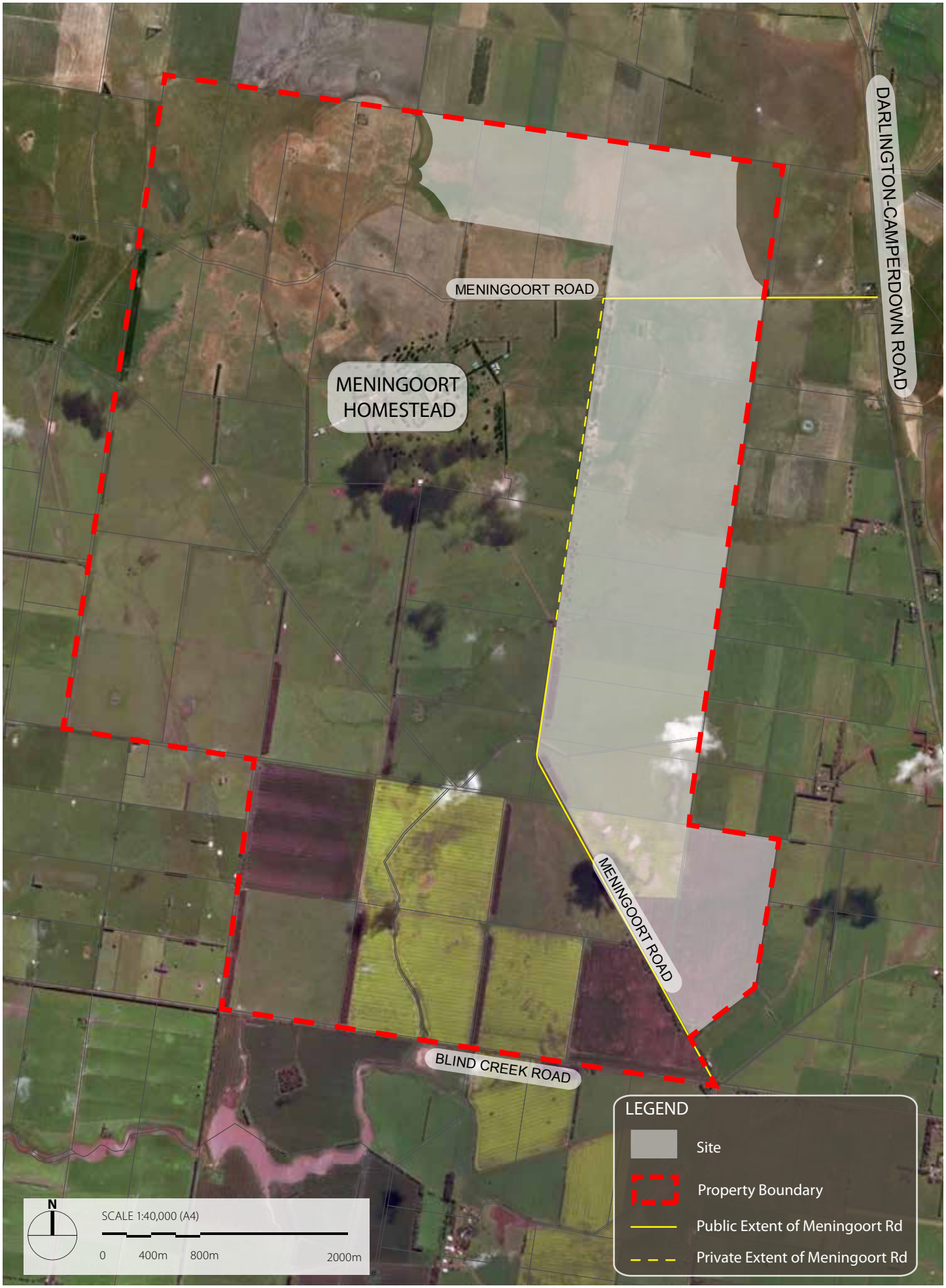
Attachment 8 Development Footprint

Attachment 9 Overall Constraints

Attachment 10 Context Plan

Attachment 11 Overlay & Neighbouring Dwellings

Attachment 1



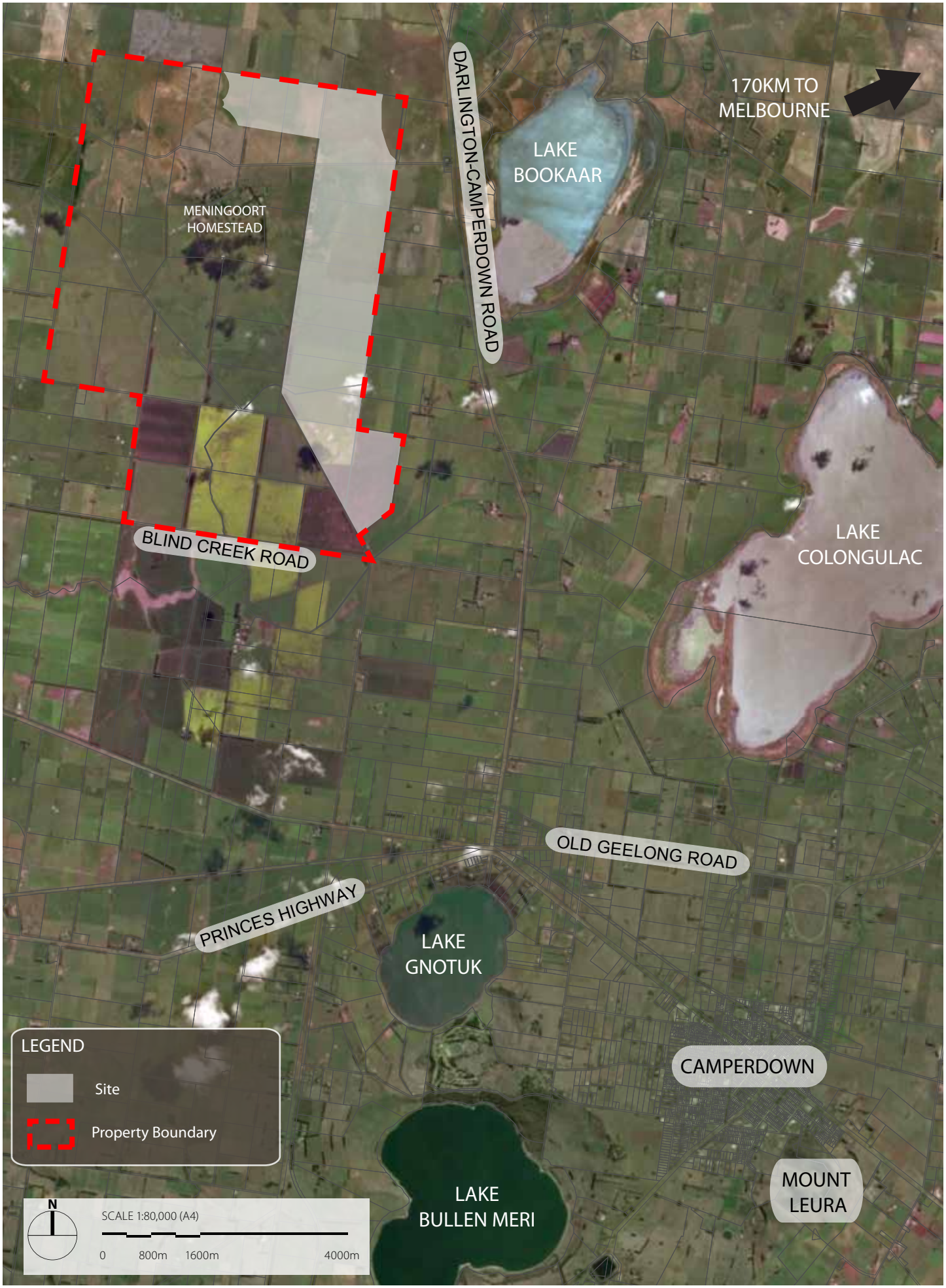
Aerial Plan

520 Meningoort Road, Bookaar

PROJECT_DRG NO 0316-0492-00_D001-00 REV 02 DRWN RC CHKD JK APPROV AT DATE 03.09.2018

Tract

Attachment 2



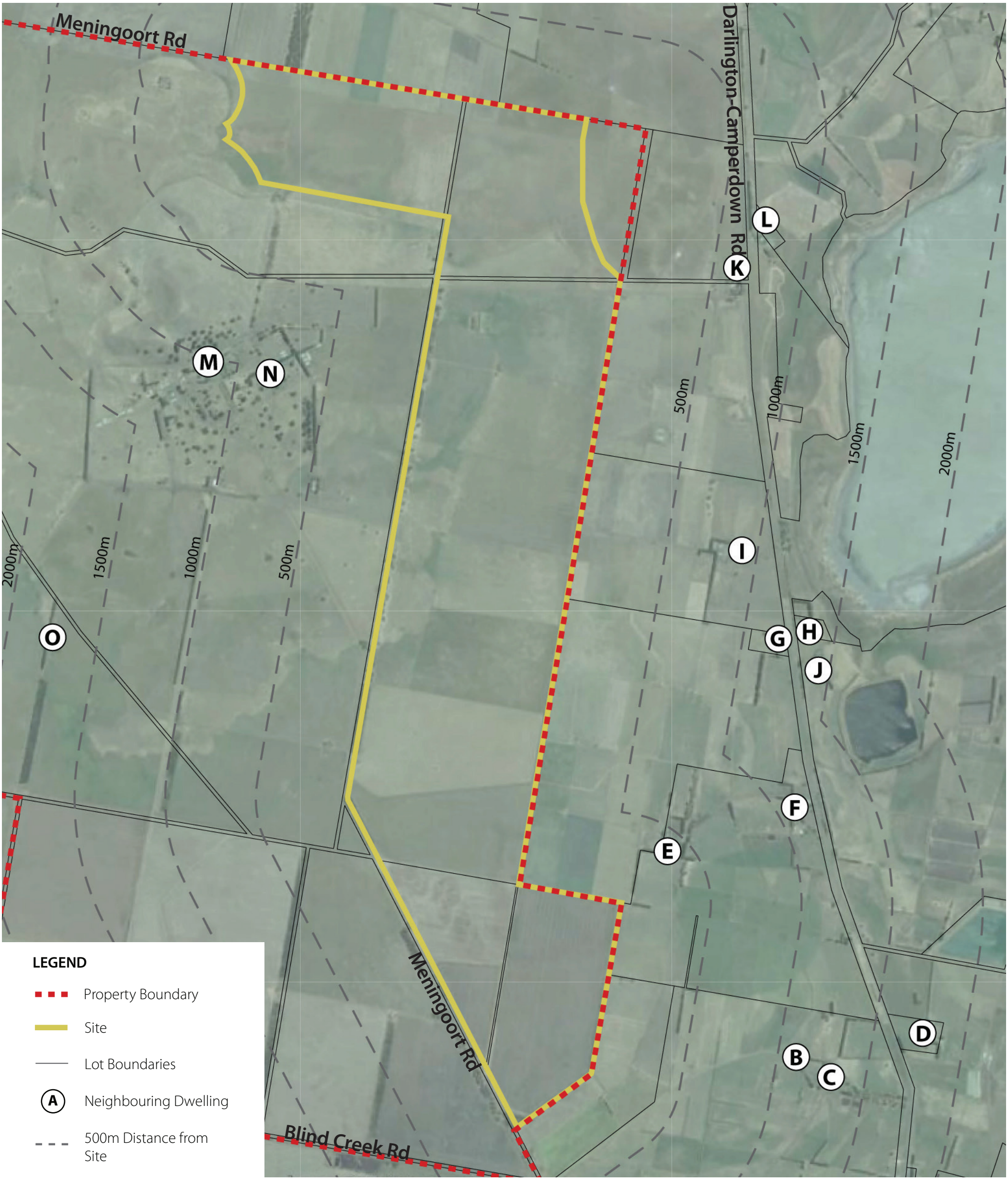
Context Plan

520 Meningoort Road, Bookaar

PROJECT_DRG NO 0316-0492-00_D004-00 REV 02 DRWN RC CHKD JK APPROV AT DATE 03.09.2018

Tract

Attachment 3



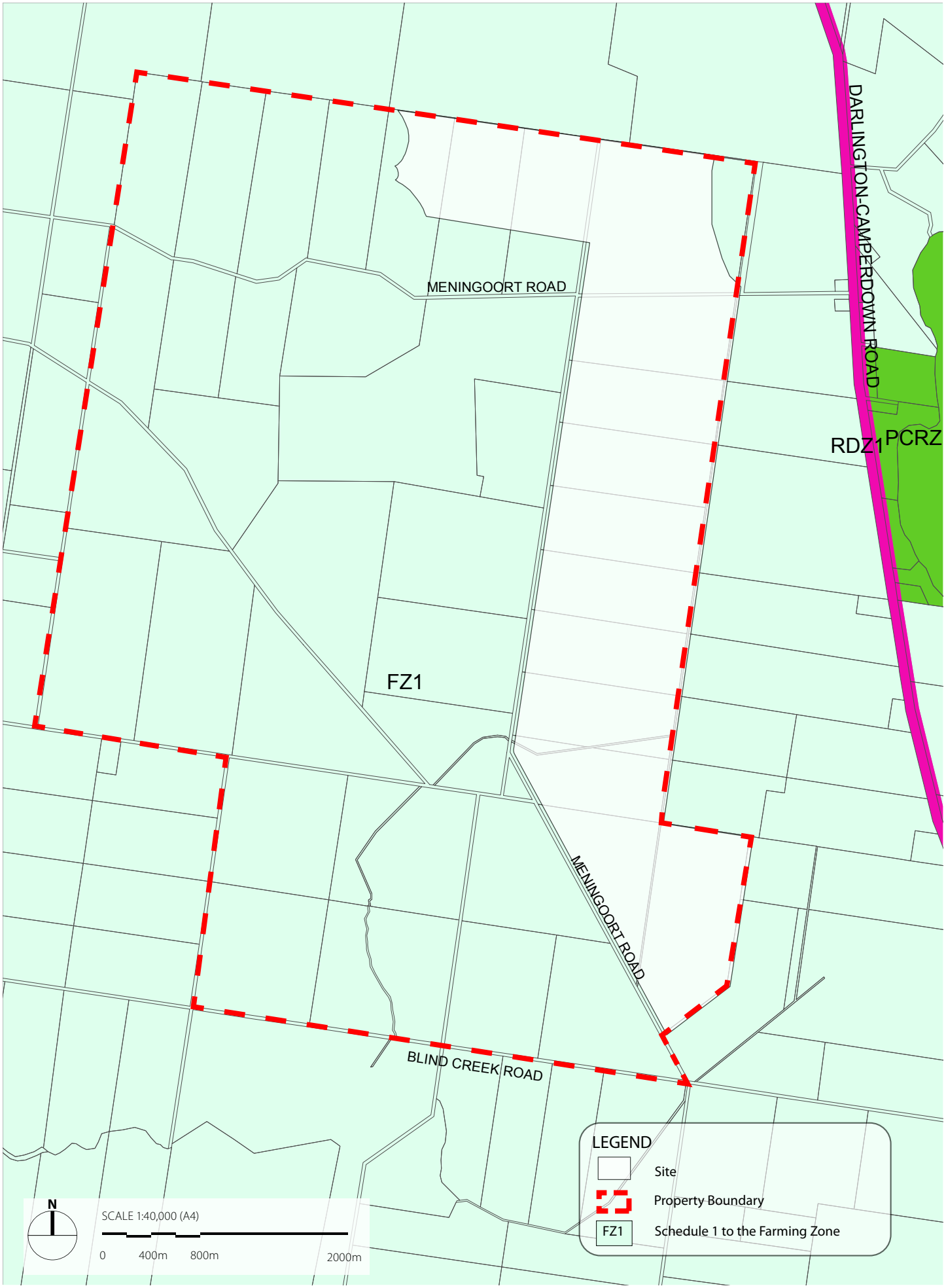
Neighbouring Dwelling

Meningoort Road, Bookaar

PROJECT_DRG NO 0316-0492-20_D001 REV 02 DRWN EM CHKD JK APPROV AT DATE 03.09.2018

Tract

Attachment 4



Zone Plan

520 Meningoort Road,
Bookaar

PROJECT_DRG NO 0316-0492-00_D001-00 REV 02 DRWN RC CHKD JK APPROV AT DATE 15.05.2018

Tract

Attachment 5

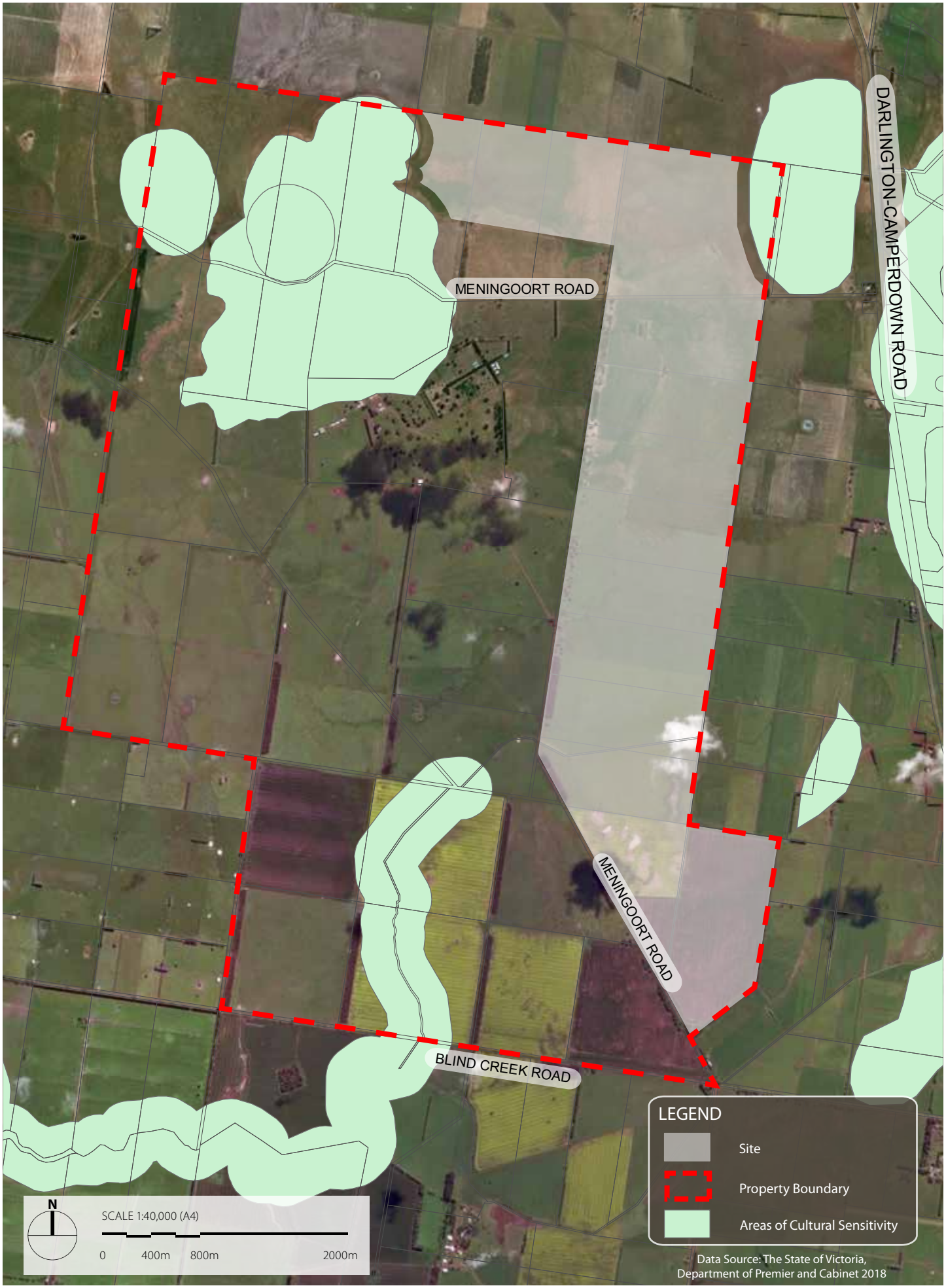
Planning Overlay Plan

520 Meningoort Road,
Bookaar

PROJECT_DRG NO 0316-0492-00_D002-00 REV 02 DRWN RC CHKD JK APPROV AT DATE 03.09.2018

Tract

Attachment 6



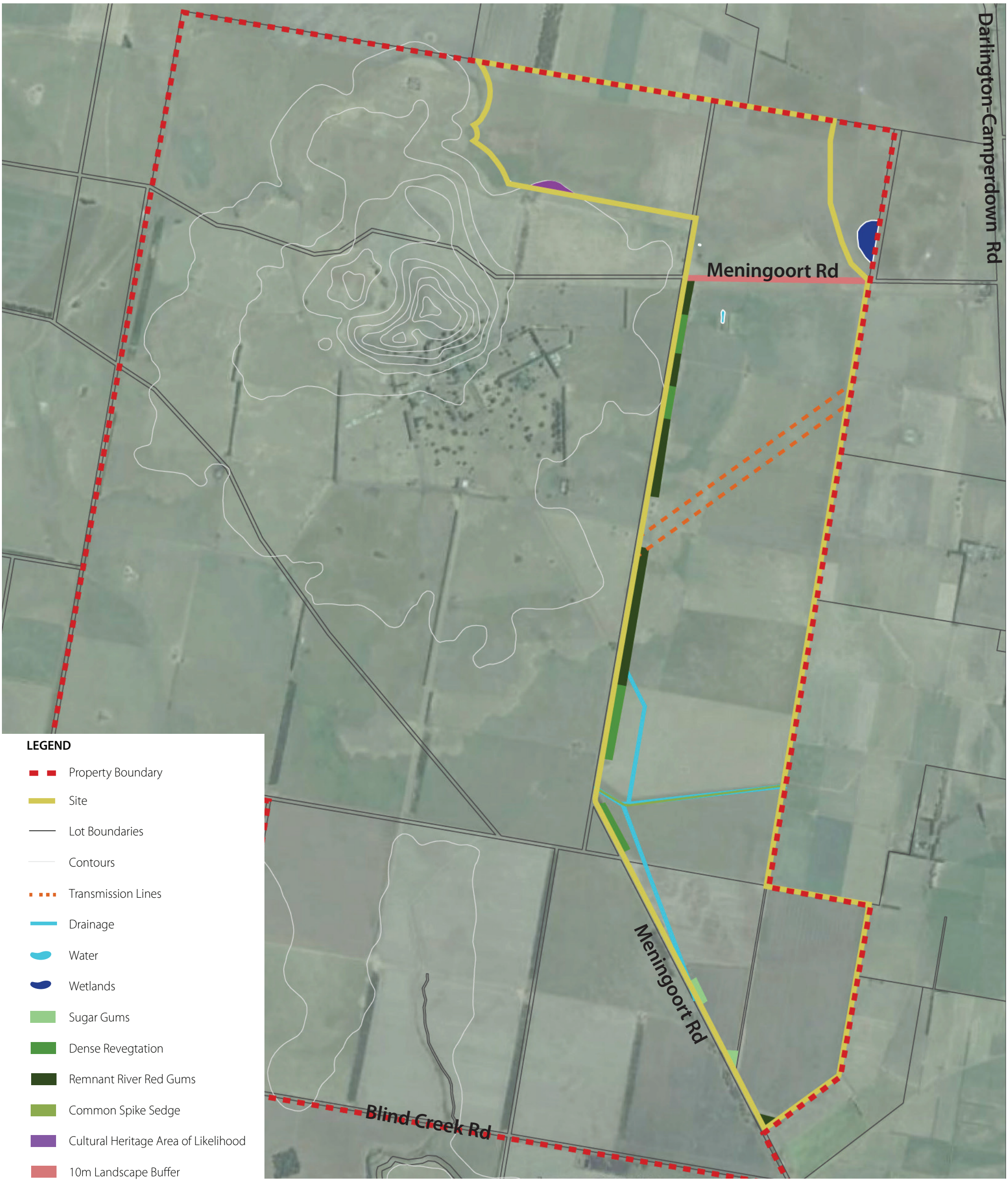
Areas of Cultural Sensitivity

520 Meningoort Road,
Bookaar

PROJECT_DRG NO 0316-0492-00_D003-00 REV 02 DRWN RC CHKD JK APPROV AT DATE 03.09.2018

Tract

Attachment 7



N

SCALE 1:20,000 (A3)

0 200m 400m 1000m

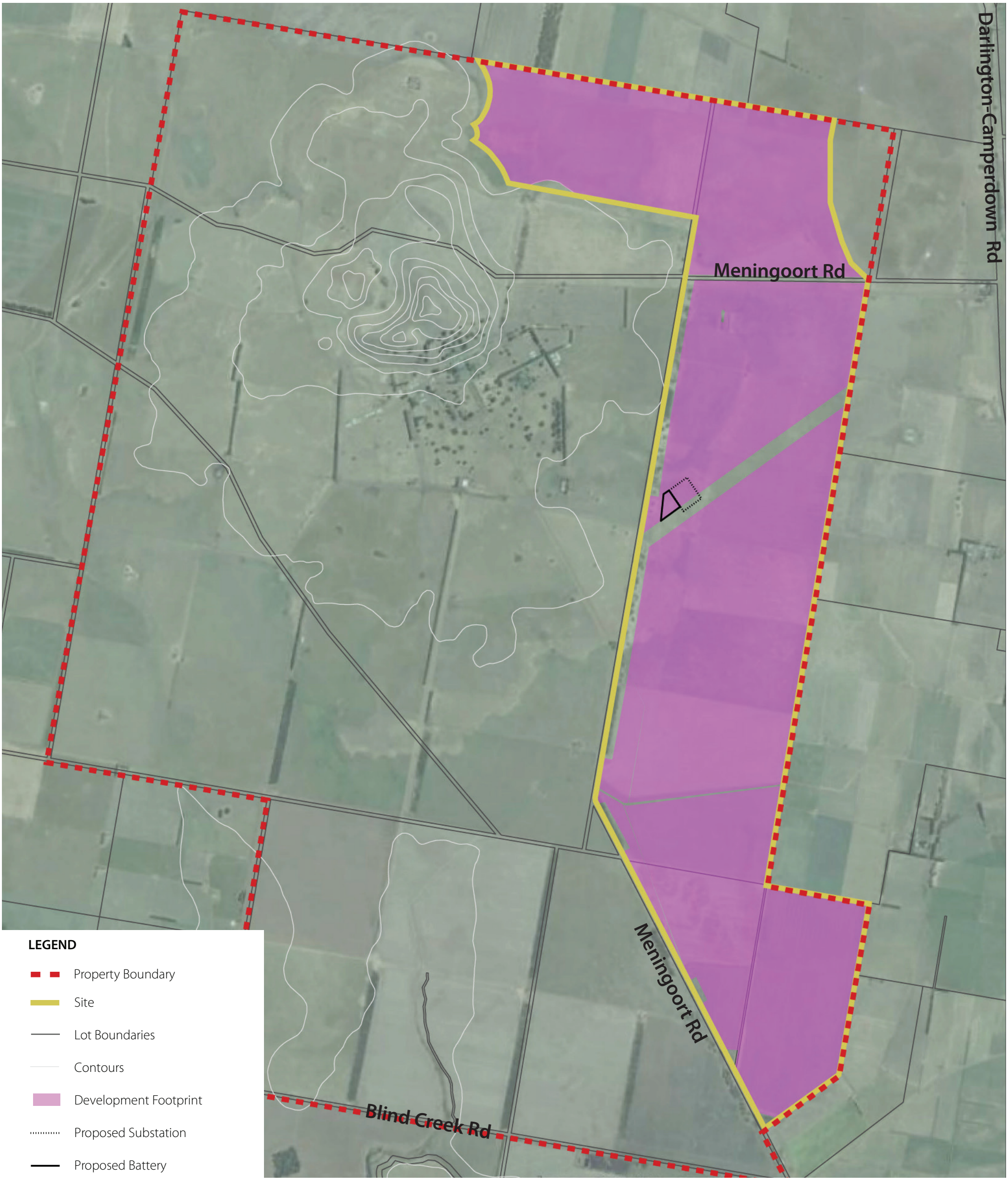
Residual Constraints

Meningoort Road, Bookaar

PROJECT_DRG NO 0316-0492-20_D001 REV 02 DRWN EM CHKD JK APPROV AT DATE 03.09.2018

Tract

Attachment 8



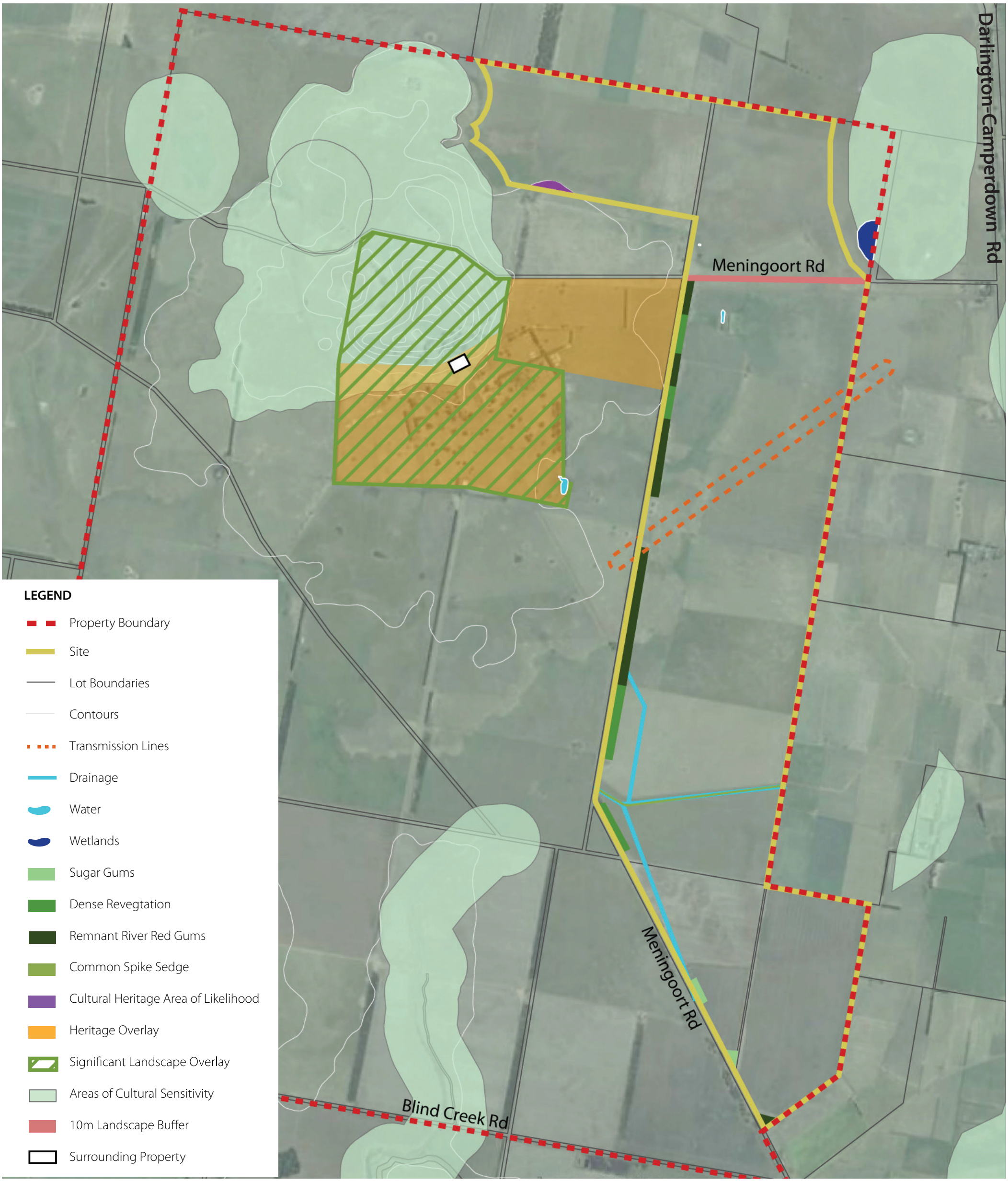
Net Developable Area

Meningoort Road, Bookaar

PROJECT_DRG NO 0316-0492-20_D001 REV 02 DRWN EM CHKD JK APPROV AT DATE 03.09.2018

Tract

Attachment 9



N

SCALE 1:20,000 (A3)

0 200m 400m 1000m

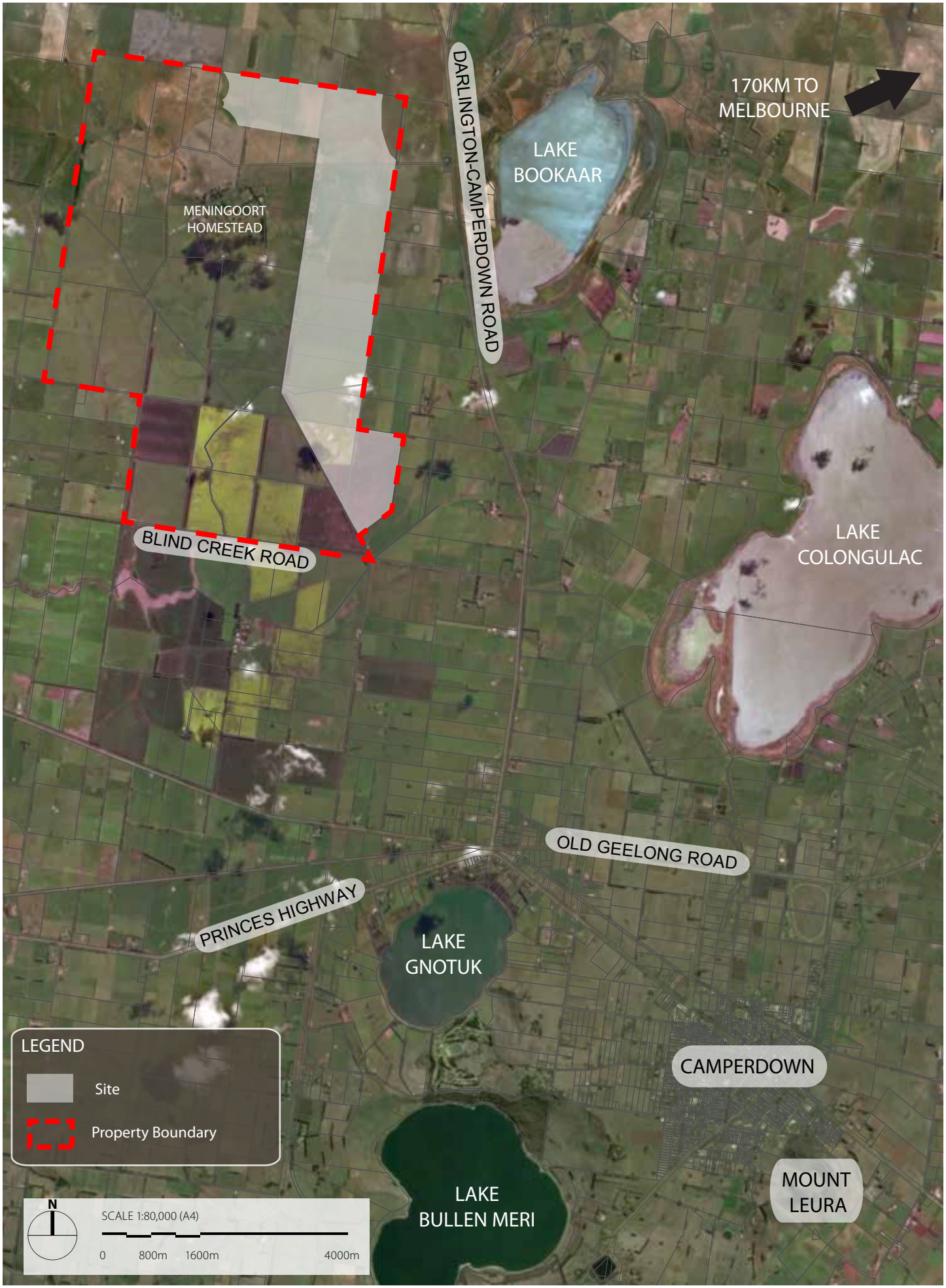
Overall Constraints

Meningoort Road, Bookaar

PROJECT_DRG NO 0316-0492-20_D001 REV 02 DRWN EM CHKD JK APPROV AT DATE 03.09.2018

Tract

Attachment 10



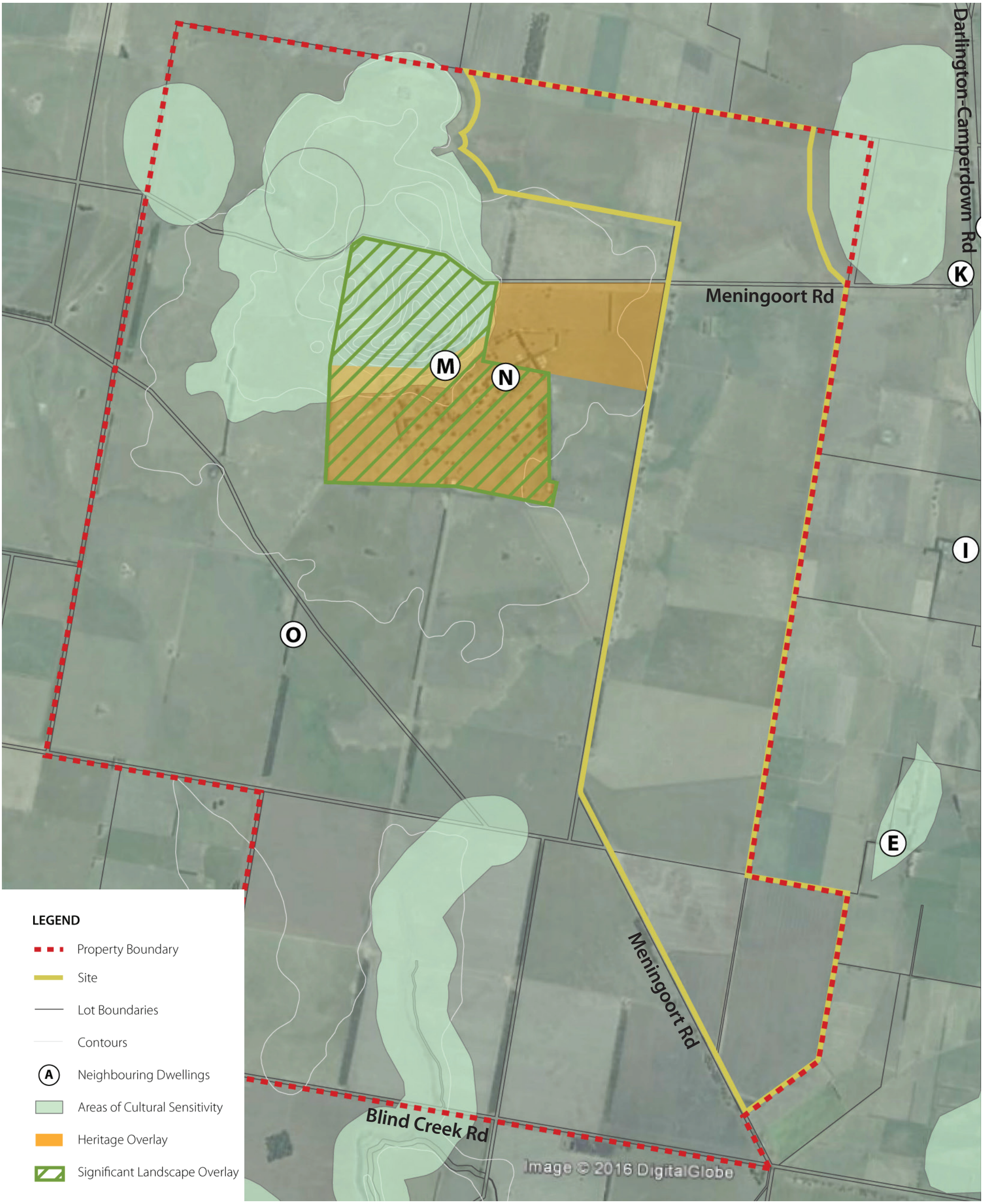
Context Plan

520 Meningoort Road, Bookaar

PROJECT_DRG NO 0316-0492-00_D004-00 REV 02 DRWN RC CHKD JK APPROV AT DATE 03.09.2018

Tract

Attachment 11



Overlay and Neighbouring Dwellings

Meningoort Road, Bookaar

PROJECT_DRG NO 0316-0492-20_D005 REV 02 DRWN EM CHKD JK APPROV AT DATE 28.06.2018

Tract

Enclosure 2 – Ecology & Heritage Partners letter (dated 31 August 2018)

Richard Seymour
Infinergy

31 August 2018

Reference 6189

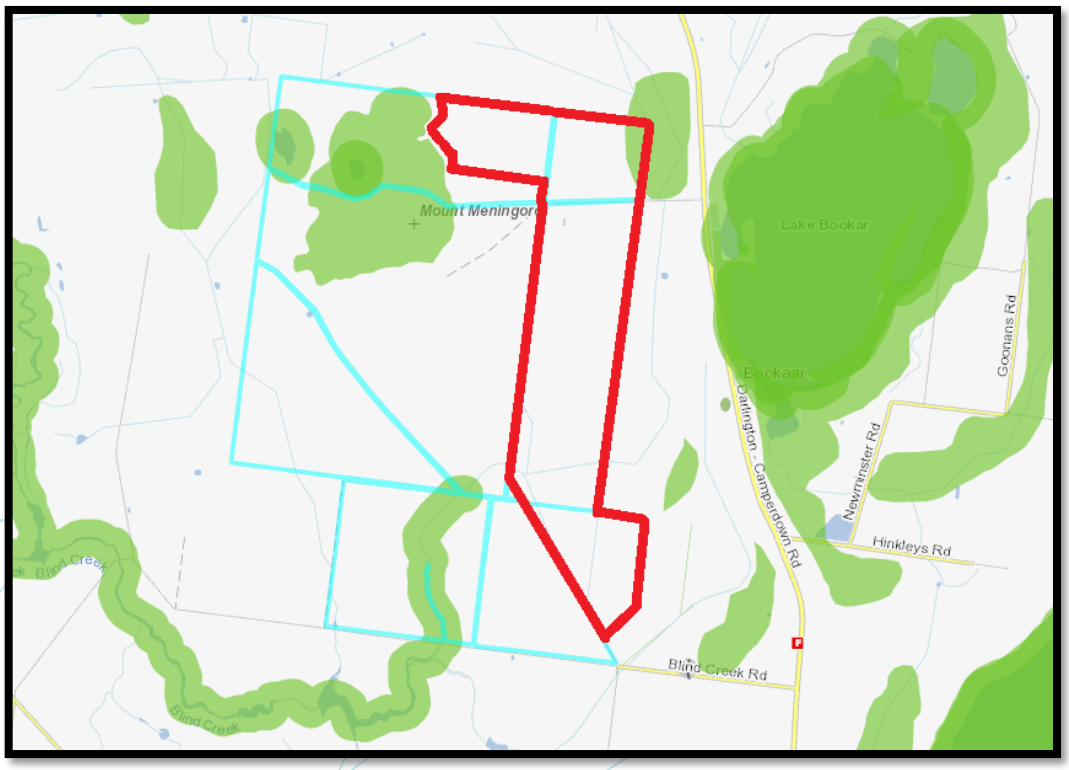
Dear Richard,

Re: Bookar Solar Farm and Aboriginal Heritage : Addendum to the Preliminary Cultural Heritage Study

Thank you for asking me to examine the issue of the activity area boundary in regard to the proposed Bookar Solar Farm and the requirement for an Aboriginal Cultural Heritage Management Plan (CHMP) under the *Aboriginal Heritage Act 2006*. This letter serves as an addendum to the preliminary Cultural Heritage Study prepared by Ecology and Heritage Partners in 2018.

The original proposal for the Bookar Solar Farm did not contain any areas of 'cultural heritage sensitivity' (as per the Aboriginal Heritage Regulations) and therefore the requirement for a mandatory CHMP was not triggered.

MAP 1: New area of Cultural Heritage Sensitivity – in green – north east corner



The Aboriginal Heritage Regulations have since changed and an area of cultural heritage sensitivity is now present within the north east activity area boundary of the proposed solar farm. This area of sensitivity is not an existing Aboriginal heritage place, but an area of land that has been identified under the regulations as having higher potential to contain Aboriginal heritage.

I have spoken about this matter at length with Dr Dan Cummins, Senior Cultural Heritage Officer – Major Projects and Heritage Operations at Aboriginal Victoria on Friday August 24th. Dr Cummins advised me that if the area of cultural heritage sensitivity was avoided completely by all works associated with the proposed Solar Farm then a mandatory CHMP would not be triggered.

My discussion with you last week on Friday August 24th indicated that you can completely avoid the area of cultural heritage sensitivity. The boundary of the activity area (shown in red on the map) can be changed to ensure this.

Upon viewing the changes and based on my discussion with Dr Cummins, I am of the opinion that a mandatory CHMP is now not required under the *Aboriginal Heritage Act 2006* as there is no trigger and the area would not be impacted.

I am happy to discuss further with anyone at council as required.

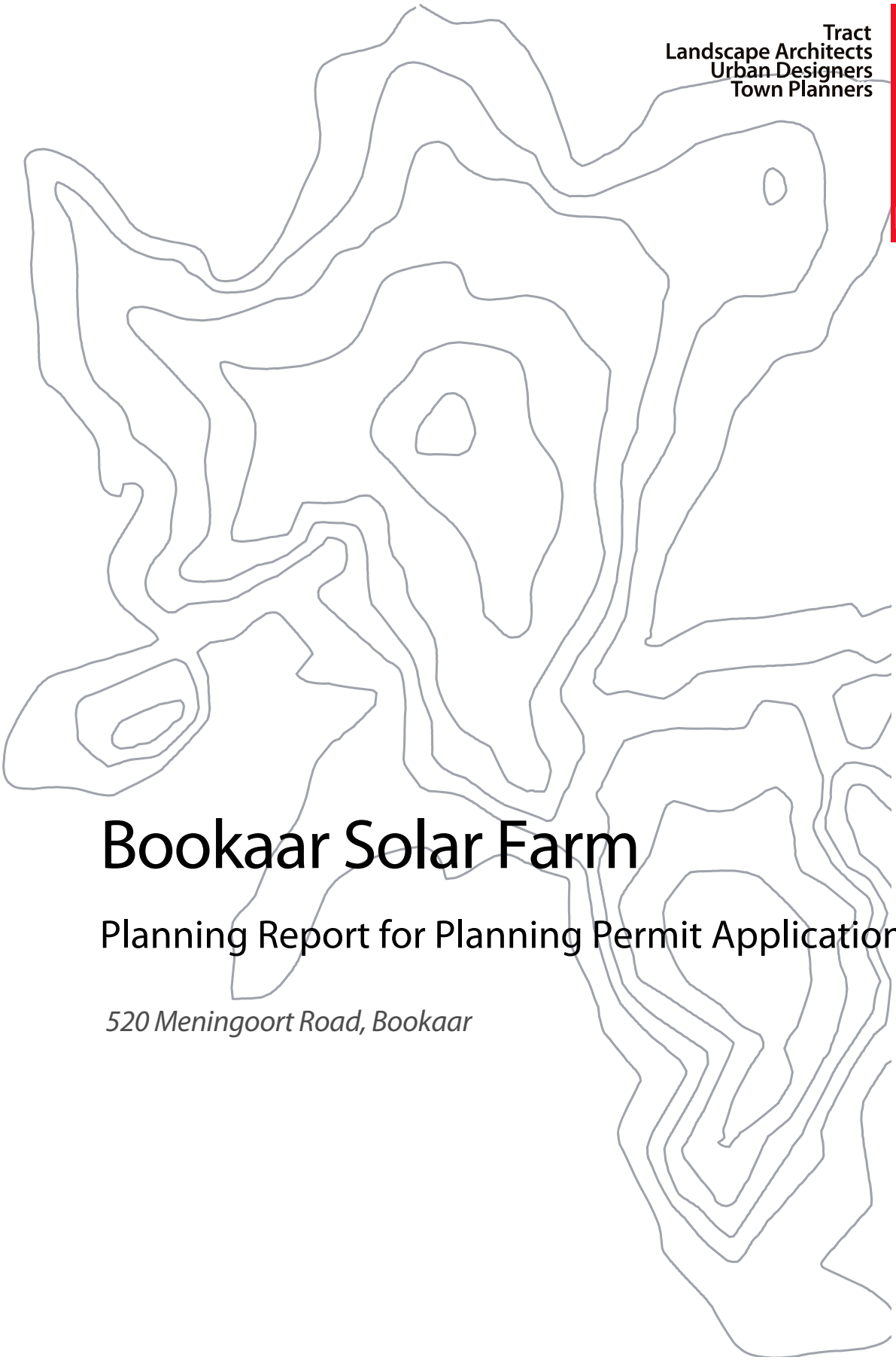
Kind regards

Oona Nicolson
Director / Principal Heritage Advisor
Ecology and Heritage Partners Pty Ltd

Tract

Enclosure 3 – Original Planning Report

Tract
Landscape Architects
Urban Designers
Town Planners



Bookaar Solar Farm

Planning Report for Planning Permit Application

520 Meningoort Road, Bookaar

Prepared on behalf of Bookaar Renewables Pty Ltd

0316-0492-20 D001 PLANNING REPORT (BOOKAAR SOLAR FARM)_05.07.2018.DOCX

Level 6, 6 Riverside Quay
SOUTHBANK VIC 3006
Phone: (03) 9429 6133
www.tract.com.au

Executive Summary

Background

Applicant	Bookaar Renewables Pty Ltd
Address	520 Meningoort Road, Bookaar
Lot Description	Various – refer to Chapter 2 of report

Relevant Planning Controls

State Planning Policy Framework	Clause 11.11 – Great South Coast Clause 13.05 - Bushfire Clause 14.01 - Agriculture Clause 19.01 – Renewable Energy
Local Planning Policy Framework	Clause 21.01 – Municipal Profile Clause 21.03 – Vision and Strategic Framework Plan Clause 22.02 - Environment Clause 22.03 – Economic Development Clause 22.06 - Heritage
Zone	Farming Zone – Schedule 1
Overlays	Heritage Overlay* Significant Landscape Overlay* **Site located outside area included within overlays.*
Particular Provisions	52.06 – Car Parking 52.17 – Native Vegetation 52.42 – Renewable Energy Facility (Other Than Wind Energy Facility and Geothermal Energy Extraction)

Permit Application Details

Description of the Proposal	200MW Solar Farm and supporting elements
Permit requirements	Use of the land for a Renewable Energy Facility (Solar Farm) within the Farming Zone Buildings & Works within the Farming Zone Removal of native vegetation (Clause 52.17)

Quality Assurance - Report Record

Project Name	Bookaar Solar Farm - 520 Meningoort Road, Bookaar
Document Number	D001
Prepared By	Jackie Kirby
Reviewed By	Adam Terrill
Approved By	Adam Terrill
Date of Issue	July 2018

Contents

Appendices

List of Tables

1 INTRODUCTION

Tract Consultants Pty Ltd have prepared this application on behalf of Bookaar Renewables Pty Ltd (the 'Applicant') in relation to a planning permit application for a proposed solar farm (the 'Proposal') located on land at 520 Meningoort Road, Bookaar (the 'Property'). This large rural holding is currently used for cropping, cattle and sheep grazing and is located approximately 10 kilometres north-west of Camperdown.

The Proposal's purpose is to supply electricity to the National Electricity Market (the 'NEM') through the generation of electricity utilising photovoltaic (PV) panels. The Proposal will connect to the NEM via an onsite connection on the 220kV line that traverses the Site.

The generation capacity of the Proposal would be approximately 200 MW and would produce approximately 420 GWh of clean electricity annually over a project lifespan of 30 years. The Proposal would supply clean energy to power the equivalent of 80,000 average Victorian homes each year. Importantly, the Proposal would offset approximately 450,000 tonnes of Carbon Dioxide (CO_2) annually[1], making a significant contribution to Victorian, Australian and International emissions targets.

In addition to the environmental benefits, the Proposal would generate employment and contribute to the economic growth of the Corangamite Shire, providing diversification of land use and diversification of energy generation in the region.

This report accompanies an application to the Corangamite Shire Council for:

- Use of the land for a Renewable Energy Facility (Solar Farm) within the Farming Zone (Clause 35.07-1);
- Buildings & Works within the Farming Zone (Clause 35.07-4); and
- Removal of native vegetation (Clause 52.17).

1.1 The Site and Property

The Proposal Site, which encompasses the solar farm and supporting infrastructure as described in Chapter 3 is located at 520 Meningoort Road, within a larger landholding known as Meningoort. The landholding accommodates the Victorian Heritage Listed Homestead Meningoort, which is a substantial Bluestone House located approximately 1 km from the Site.

Under the Proposal, all land within the wider landholding would remain undisturbed and continue to be used for agriculture. For the purposes of this report, the:

- 'Site' is the part of the Property that pertains to this planning application; and
- 'Property' is the entire landholding known as Meningoort.

Figure 1 illustrates the extent of the Site and the wider Property. They are described in detail in Chapter 2, including their wider context.

[1] *Based on the current emission figures of 1.08kg CO2-equivilent/kWh, Department of the Environment and Energy, 2017, National Greenhouse Accounts Factors: https://www.environment.gov.au/system/files/resources/5a169bfb-f417-4b00-9b70-6ba328ea8671/files/national-greenhouse-accounts-factors-july-2017.pdf, accessed on May 21st 2018.*

Figure 1 – Aerial Plan

1.1.1 The Applicant

Bookaar Renewables Pty Ltd (the 'Applicant') is a Joint Venture company formed between Infinergy Australia Pty Ltd and the Landowner. Infinergy Australia has a strong focus on solar development in Australia. The development team has over 15 years' experience developing, owning, and operating renewable energy developments.

1.2 Background

The submission of this planning application follows several pre-application discussions with Corangamite Shire Council's planning department, a briefing to Councillors held on the 10th April, 2018 and a public information session held on the 18th April, 2018. These sessions provided an opportunity for Councillors and the community to view and comment on the Proposal and are discussed further in Chapter 4.

The decision to proceed with a solar farm at the Site follows a history of Site assessment of various forms of energy development. It was ultimately chosen to develop a solar farm, as this type of development best fits with the Site and wider region, and was considered to have less environmental impacts compared to other options.

This planning application also follows an extensive period of technical investigation to determine the positioning and extent of the solar farm within the Property. This was aimed at avoiding any areas of sensitivity or potential unreasonable impact. This site-responsive design approach has resulted in a Proposal with no significant impacts on landscape values, flora and fauna, heritage places, and on the availability of agricultural land.

1.3 Report Structure

The structure of this planning report is as follows:

- Chapter 1: Introduction
  Provides an overview of the Proposal and sets out the permit application.
- Chapter 2: Site and Surrounds
  Provides and overview of the Property, the Site as well as the surrounding area within Corangamite.
- Chapter 3: The Proposal
  Provides a description of the key elements of the Proposal, as well as an overview of its development, operation and subsequent decommissioning.
- Chapter 4: Stakeholder and Community Consultation
  Provides an overview of the consultation steps undertaken by the Applicant in relation to the assessment and design process of the Proposal.
- Chapter 5: Planning Policy and Controls
  Sets out the relevant, State, and local policy and planning controls that the Proposal should be determined against.
- Chapter 6: Planning Assessment and Key Issues
  Provides a detailed response to the requirements of relevant policy and planning controls, as well as a summary of each technical assessment carried out in support of this planning application.
- Chapter 7: Conclusion
  This chapter provides a summary of the Proposal and its acceptability in terms of relevant planning policy.

It contains the following appendices:

- Appendix A: Project Description, prepared by Infinergy Australia Pty Ltd.
- Appendix B: Figures.
- Appendix C: Community Consultation Information Boards, Infinergy Australia Pty Ltd.

Finally, this planning application is supported by the following technical documents which are to be read in conjunction with the planning report:

- '*Indicative Layout*', prepared by RINA Consulting.
- '*Typical view of tracking structure and panels*', documentation provided by Soltec.
- '*Ecological Due Diligence*', prepared by Ecology and Heritage Partners Pty Ltd.
- '*Preliminary Cultural Heritage Study*', prepared by Ecology and Heritage Partners Pty Ltd.
- '*European Heritage Advice*', prepared by GJM Heritage.
- '*Landscape & Visual Impact Assessment*', prepared by Tract Consultants.
- '*Transport Impact Assessment*', prepared by OneMileGrid Traffic Engineering.
- '*Solar Photovoltaic Glint and Glare Study*', prepared by Pager Power.
- '*Hydrology, Drainage and Flood Advice*', prepared by EcoLogical Australia.

2 SITE & SURROUNDS

The Property is located at 520 Meningoort Road, Bookaar in south-western Victoria, approximately 170 kilometres south-west of Melbourne. The Property is formally comprised of 50 lots which are described as follows.

Property

The Property formally comprises:

- Lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32 and 33 on Title Plan 844741K.
- [Being lots 16, 17, 17A, 18, 19, 19A, 20, 20A, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 37A, 38, 39, 40, 41, 42, 43A and the drain reserve on Plan of Subdivision 004819.]
- Lots 44, 45, 46, 47, 48, 49, and 50 and Reserve 3 on Plan of Subdivision 004677.
- Reserve 1 on Plan of Subdivision 004678.

Site

The Site formally comprises 12 lots as follows:

- Lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 (part), 11 (part) and 12 (part) on Title Plan 844741K. [Being lots 16, 17, 17A, 18, 19, 19A, 20, 20A, 21, 22 (part), 23 (part) and 24 (part), and the drain reserve on Plan of Subdivision 004819.]

Full copies of all Certificates of Title accompany this planning application.

A caveat (T832695K) was placed over the land in 1995 which claims an interest in the land and states:

> '*The Caveator claims the estate or interest specified in the land described on the grounds set out and forbids the registration of any person as proprietor of and of any instrument affecting the estate or interest to the extent specified*'.

This caveat has no implications in terms of the planning permit being sought.

2.1 Context

The Site is situated in the local area known as Bookaar, which is located within the Corangamite Shire and lies approximately 10km north-west of the town of Camperdown (refer to **Figure 2**). The Corangamite Shire is part of the wider South-Western District of Victoria.

Most of the landscape of the South-Western District of Victoria (including the Site and the surrounding area), has been shaped by volcanic activity and is characterised by flat to undulating basaltic plains scattered with volcanic features including numerous volcanic cones (Mt Elephant, Mt Laura, Mt Meningoort) and lakes which together create a unique and important landscape (described in more detail in the accompanying Landscape and Visual Impact Assessment). The characteristics of this volcanic landscape, particularly the fertile basalt soils have made the South West of Victoria, including the Site, an area of quality agricultural production which has shaped the rural landscape experienced today.

The Site and the surrounding area are characterised by agricultural land use including grazing and farming activities. The area is punctuated with scattered farmhouses, sheds, windbreaks (tree lines) and fences that divide the landscape into a board patchwork of distinctive paddocks. In addition, numerous lakes dot the landscape, the closest of which is Lake Bookaar which is a designated RAMSAR wetland and lies approximately one kilometre to the east of the Site.

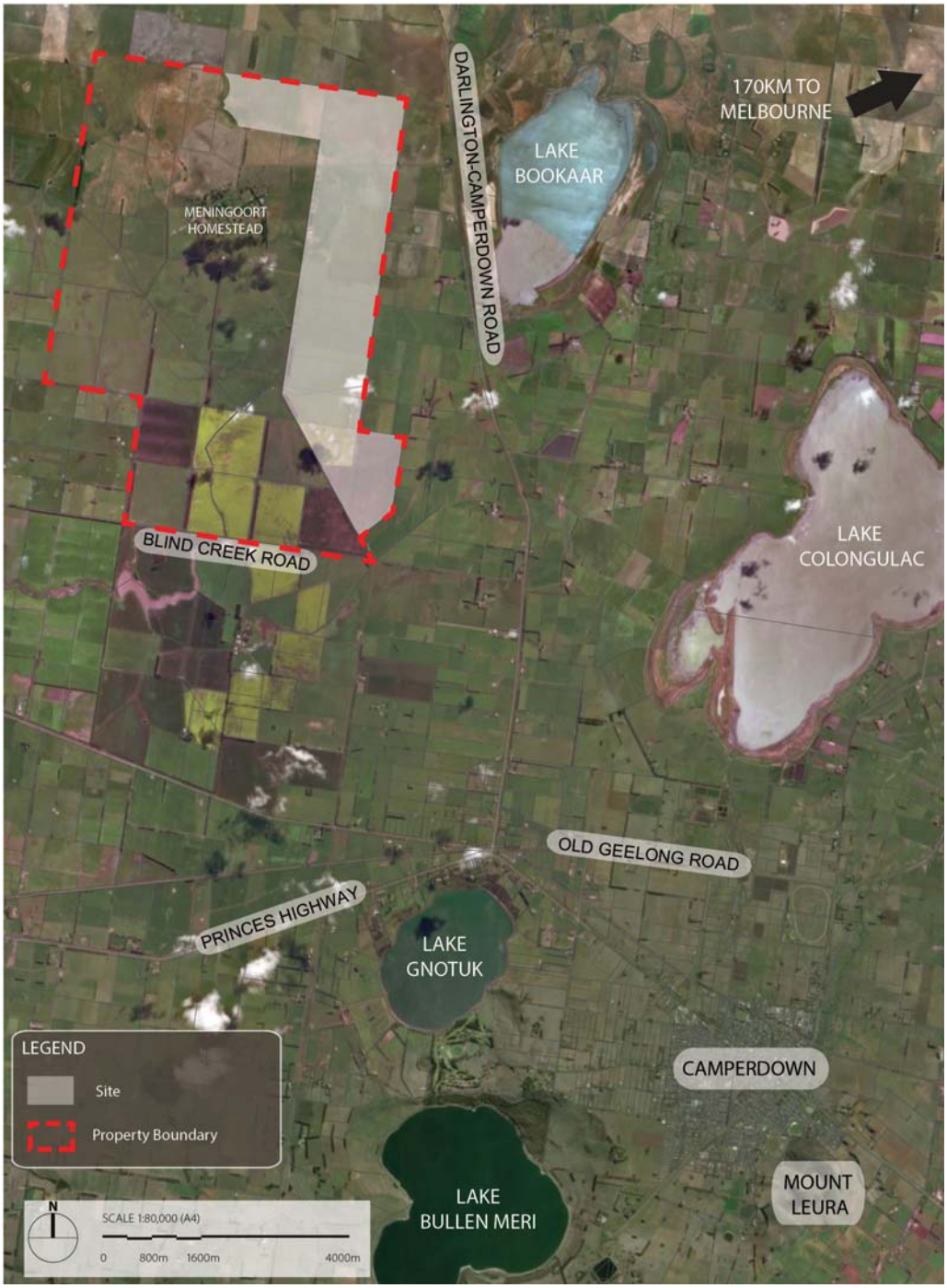


Figure 2 – Location Plan

Figure 3 (below) shows the location of residential dwellings in the area, and the distance of these properties from the Site. The closest residential dwelling ('E') is located just less than 500 metres from the Site. Dwellings 'M' and 'N' are the Meningoort Homestead located within the Property (occupied by the involved landowners) which are located approximately 800 metres from the Site.

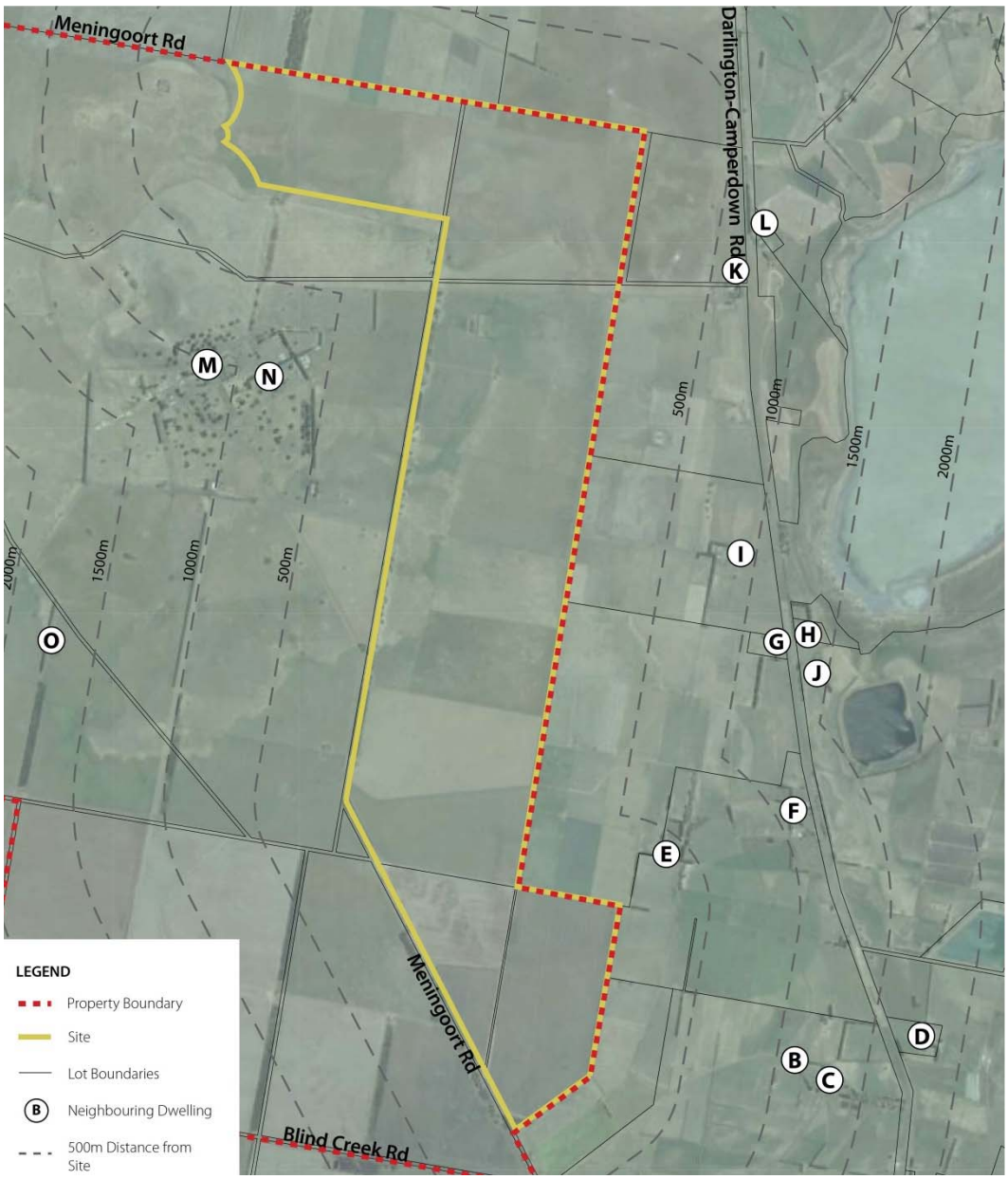


Figure 3 – Neighbouring Residential Dwellings

2.2 Property and Site Description

The Property is approximately 2,100 hectares in size and is predominately used to graze sheep and cattle, except for a section of land in the south-east corner which is currently used for cropping.

The Property is dominated by Mount Meningoort which is a volcanic cone that sits in its centre. The homestead, known as 'Meningoort', is situated at the base of Mount Meningoort overlooking the southern extent of the landholding. The homestead includes an adjoining garden and a number of outbuildings all of which are listed on the Victorian Heritage Register (Ref no. H300). The homestead is a grand, single-storey, bluestone Italianate building which dates back to 1851, and is considered to be of architectural, historical and scientific (horticultural) significance to the State of Victoria (refer to the accompanying '*European Heritage Advice*').

The rest of the Property is generally flat and dominated by improved open pastures and characteristic tree lines along some fence lines. The Property slopes gently in a southerly direction with a more undulating section of land located in the north east corner.

A tributary to Blind Creek originates within the Property boundary, and connects to the network of artificial drains, which have been constructed to drain excess water from western and southern areas of the Property (refer to '*Hydrology, Drainage and Flood Advice*').

In addition, a high voltage transmission line suitable for distributing electricity generated by the Proposal transects the site connecting the Terang and the Ballarat substations of the NEM.

The Site for the Proposal has been carefully selected to avoid any sensitive areas identified within the Property boundary (through technical studies conducted to support this application) and to ensure access to the high voltage lines that run across the Property. Furthermore, in consultation with the Landowner, the Applicant has selected the land with the lowest agricultural value within the wider Property to locate the Site so the most productive areas of the Property remain unaffected by the Proposal.

The final location of the Site is shown on the Overall Constraints map (included at **Appendix B** – Figures) and illustrates how the Proposal has been located outside constraints identified within the wider Property. A further explanation of the site selection process is discussed in Chapter 3.6.

Photo 1: View north west showing Meningoort Road access.

Photo 2: View east toward general location of proposed farm.

Photo 3: View towards the north west of a significant part of the Drainage line network that runs through the Site.

2.2.1 Native Vegetation

The majority of the Site is devoid of native vegetation owing to its long history of agricultural use. However, the Site does contain some areas of River Red-gums along the western boundary, Common Spike-sedge within a small section of drainage line, and a modelled wetland in north-east corner of the Site (refer Chapter 3.3 for more detail).

A number of corridors of vegetation planted as wind breaks exist across the Property, but do not represent remnant native vegetation as defined under the Corangamite Planning Scheme. There is also a mix of introduced and planted native vegetation surrounding the Meningoort Homestead as part of its gardens.

3 THE PROPOSAL

3.1 Overview

The Proposal involves the installation of PV panels and supporting infrastructure. It will have a combined generation capacity of approximately 200MW, and is proposed to operate over a 30 year period. The elements of the Proposal are detailed in Chapter 3.2.

The market for solar panels is dynamic with technology changing quickly. The final scale of development will aim to maximise generation capacity based on the constraints identified though the assessment process, and the final choice of solar panel. As such, the final scale of development could be greater than 200 MW however, any design would be contained within the identified Development Footprint (refer to the discussion below and at Chapter 3.5).

The final siting and layout of the various elements of the Proposal will be determined as part of a detailed design process following confirmation of planning approval. This cannot be resolved until after planning approval when detailed procurement studies are conducted and grid connection agreements are completed.

As a result of assessing potential impacts to support this application, a maximum developable area or 'footprint' has been identified. This provides flexibility in accommodating relatively minor changes to the layout and design within the Development Footprint. Any changes to the siting and layout as a result of detailed design will continue to avoid identified constraints and sensitive areas, not exceed the physical dimensions of the infrastructure considered, and meet conditions set out under any planning permit. Accordingly, the assessments forming part of this application can be considered a 'worse case' scenario.

3.2 Key Elements of the Proposal

The Proposal includes the following supporting infrastructure:

- Solar panels;
- Inverters;
- Substation;
- Battery;
- Site office, associated maintenance buildings and parking;
- Temporary construction compound and laydown area;
- Access tracks;
- Electrical cabling including trenching;
- Vegetation Screen;
- Firebreaks;
- Drainage channels; and
- Fencing.

An Indicative Layout is included as part of this application which illustrates how the solar farm is generally proposed to be laid out (see supporting document '*Indicative Layout*'). A technical description of the Proposal prepared by the Applicant is also included at **Appendix A** – Project Description, Infinergy Australia Pty Ltd.

A solar farm is not a permanent development, and can be regarded as a long term temporary reversible land use. It has a limited life-span (30 years) with structures that sit lightly on the land. Ground disturbance is very low and would principally involve the installation of piles to support the panels and cable trenching. Where possible, trenches will be located alongside/underneath internal access tracks to minimise ground disturbance.

3.2.1 Solar Panels

The Proposal includes approximately 700,000 solar panels[2], each measuring approximately 2m x 1m. These would be supported by a mounting system installed on piles driven into the ground. A plan illustrating a typical view of a tracking structure and solar panels accompanies this planning application.

The solar panels would be fitted to either, or a combination of:

- A single-axis tracking system - tracking the sun from east to west as it moves throughout the day. At solar noon, panels face directly upwards. In the evening they face 60 degrees to the west and vice versa in the morning; and/or
- Fixed tilt frames - orientated so the panels face upwards at approximately 25 to 30 degrees in a north, north-west or north-easterly direction.

Figure 4 below shows a typical tracking array solar farm, inverters can be seen within the panel areas. Panels could have a maximum height of 4m. For the purposes of this application, and in particular in consideration of potential visual impacts as part of the Landscape and Visual Impact Assessment, a 4m height has been assumed and would not be exceeded by the final chosen tracking system and panel.

Figure 4 – Example of a fully assembled tracking array solar farm showing inverter housing (Source: Nextracker Australia).

3.2.2 Inverters

The Proposal includes approximately 60 central inverters located throughout the Site. They would be placed together in groups of two units or singularly. Each unit is likely to be between 2 and 3 MW in capacity. **Figure 5** shows the typical distribution of inverters in relation to the solar panels in the indicative layout.

Inverters are typically housed in containers or located on platforms. A double inverter measures approximately 12.2 m (l) x 2.9 m (h) x 2.5 m (w). For the purposes of this application and in particular in consideration of potential visual impacts as part of the Landscape and Visual Impact Assessment, a double-size inverter has been assumed. The final location of inverters would be determined in the detailed design process.

[2] *Subject to final detailed de2sign*

3.2.3 Substation

The Proposal includes a single substation which would connect the panels to the national electricity grid through the on-site high voltage 220kV overhead transmission line (the Terang-Ballarat line). The substation would be built as close as possible to the existing transmission line, in the location shown on the Indicative Layout (refer **Figure 5** for extract). The substation will measure approximately 125 m by 140 m, and the height of buildings would not exceed eight (8) metres. Parking for service vehicles would be provided adjacent to the substation. Grid connection feasibility studies have been undertaken, and a connection application for electricity generation to the National Electricity Market (NEM) will subsequently be made to the Australian Energy Market Operator (AEMO) following receipt of a planning permit.

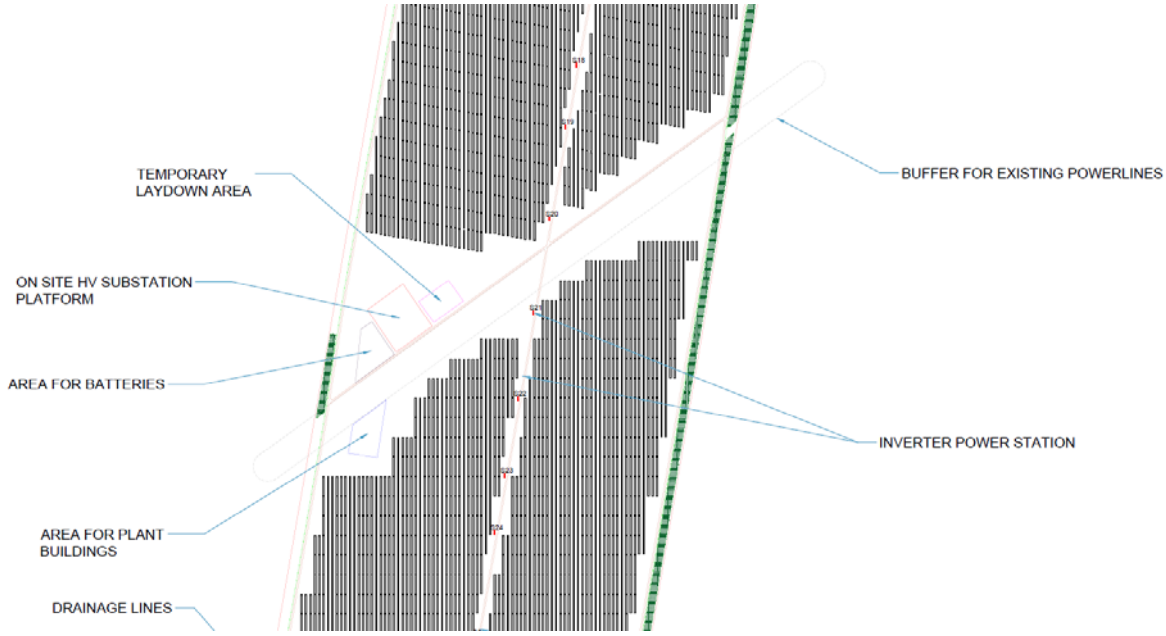


Figure 5 – Extract of Indicative Layout showing location of Substation, Site Office and battery area.

3.2.4 Battery

As shown in **Figure 5**, the Proposal has been designed to allow the connection of a battery storage facility to store electricity during peak operation periods and to release electricity during periods of high grid demand. The battery storage area would be located within the area denoted on **Figure 5**, and would likely be 4m high, however has been accessed as being up to 8m high in the Landscape and Visual Impact Assessment, in order to present a worst case scenario and accommodate potential advances in technology. Storage facilities are scalable and typically are housed within shipping containers, or look similar to shipping containers. A typical battery storage solution is shown in **Figure 6.**

Figure 6 – Typical battery storage facility (Image courtesy of Infinergy UK)

3.2.5 Site Office, Associated Maintenance Buildings and Parking

Adjacent to the substation would be support buildings and associated car parking required for the life of the Proposal (**Figure 5** denotes locations). An area of approximately 100 x 100 metres would be set aside and may include:

- Office building, consisting of office, toilets, showers, staff room and kitchen;
- Maintenance building;
- Communications equipment and communications tower (lattice type tower similar to a mobile mast and up to 20m high – the requirement for the communication tower would be established at the time of grid offer);
- Up to 3 storage buildings/sheds;
- Water storage;
- A septic tank; and
- A workshop.

The buildings would accommodate the maximum number of staff that would be required during the operational life of the solar farm (8 – 12 staff). Water for the support buildings would be supplied to site by commercial contactors and stored in on site water tanks. Staff parking will be adjacent to the buildings and there would be parking to accommodate 15 vehicles.

3.2.6 Temporary Construction Compound

A temporary construction compound required to facilitate the construction and decommissioning phases of the solar farm would include:

- Temporary construction offices;
- Car and bus parking areas;
- A staff amenity block (including portable toilets, showers and a kitchen) designed to accommodate peak staff numbers during the construction period; and
- Laydown areas.

All land required for the temporary construction compound, if not used as part of the final solar farm, would be restored to its current condition.

3.2.7 Site Access

Vehicle access to the Site is proposed via the following route during both the construction phase and ongoing operation of the Proposal:

- Darlington-Camperdown Road; onto
- Blind Creek Road; and onto
- Meningoort Road.

Figure 7 shows the proposed location of the access gate, access routes and the extent of paved road.

During the construction period, it is anticipated that deliveries will be required from a combination of vehicles from vans through to semi-trailers, as well as a small number of larger sized vehicles. The Traffic Impact Assessment has projected a total of 16 trucks that may be required to travel to the Site across a typical day during construction (refer the '*Traffic Impact Assessment*'). During the ongoing operation of the Proposal, it is anticipated that vehicle access would be minimal, typically up to a maximum of 12 vehicles each day.

To assist with the operation of the intersection of the Darlington-Camperdown Road and Blind Creek Road during the construction period, the Traffic Impact Assessment has recommended that gravel shoulders be constructed on the Darlington-Camperdown Road side of the intersection to provide a safe passing area for vehicles turning onto Blind Creek Road. Specific approval will be sought from VicRoads for the design and construction of the proposed intersection upgrade. A detailed Traffic Management Plan (TMP) will be prepared to facilitate its operation, as well as the delivery of large infrastructure during the construction period (i.e. transformer, substation and battery).

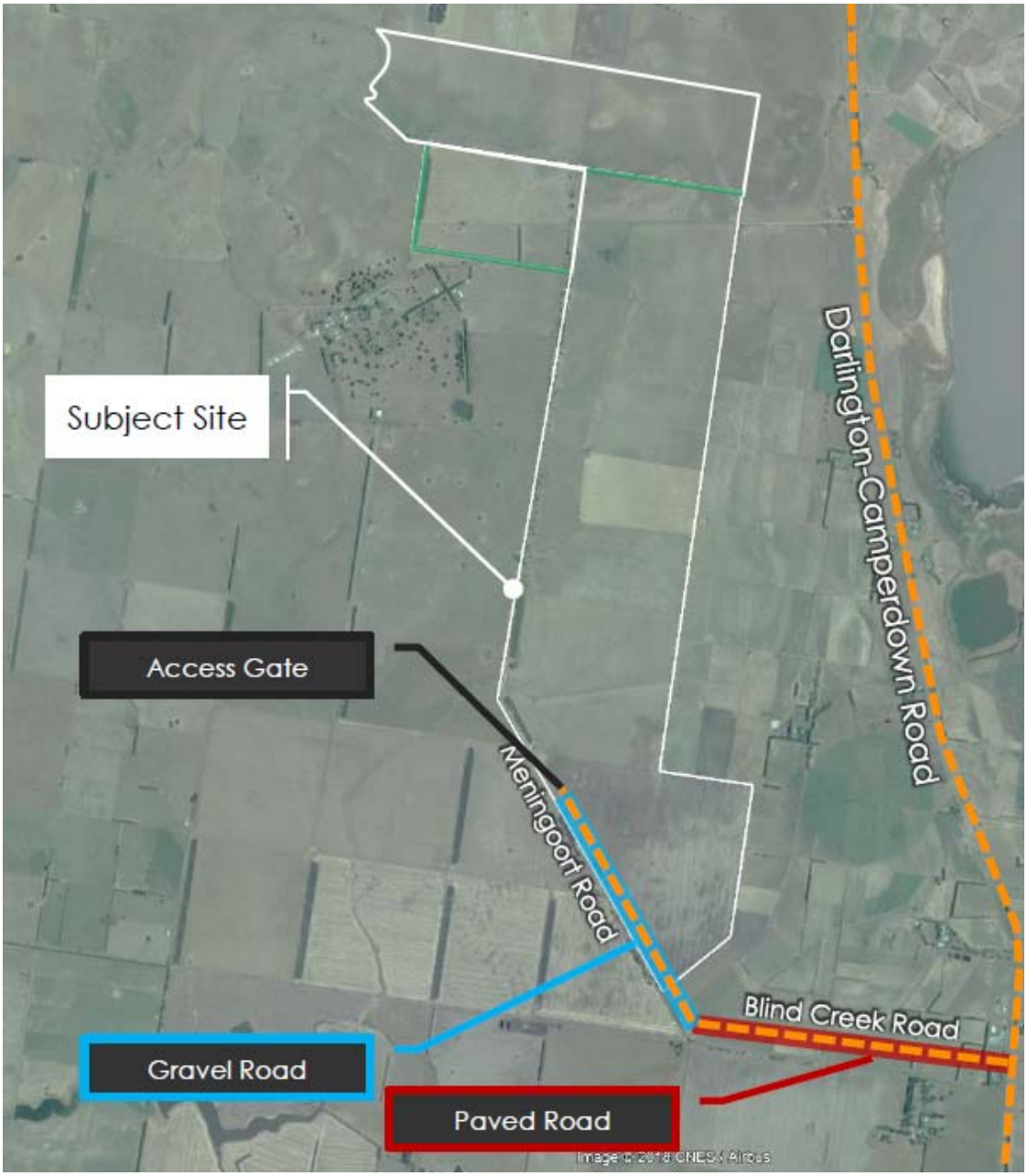


Figure 7 – Proposed Access Route (Source: Figure 6 of OneMileGrid's Transport Impact Assessment).

3.2.8 Internal Tracks

The Proposal includes the construction of a network of internal access tracks to allow maintenance vehicle access to the solar panels. Access tracks typically consist of 4m wide gravel roads, similar in size and form to normal farm tracks. Where these tracks cross drainage lines, small culverts may be used to ensure drainage is not impeded.

The network of internal access tracks that are likely to be requited to support the Proposal are shown on the '*Indicative Layout'* plan included as part of this application. Their exact location will be finalised during the detailed design phase post consent.

3.2.9 Other Infrastructure

Other elements of the Proposal include:

- Electrical cabling and associated trenching – 33kV electrical cabling connecting the panels and the substation, installed at the surface or underground in shallow trenches.
- Vegetation Screening – corridors of native vegetation indigenous to the area and chosen to create effective screening and join with existing screening on the western and southern boundaries of the Site. Screening will be 20m wide and consist of 4 rows. Its location is determined as illustrated on the '*Indicative Layout*'.
- Firebreaks – a 5m corridor of low flammable material or areas, designed to break or slow the spread of fire, typically achieved through soil ploughing or grass mowing. The firebreak would be within the site boundary and may include areas of track (see 6.2.6 for further detail).
- Drainage channels – for example shallow channels created throughout the Site designed to improve the drainage and avoid pooling of water.
- Boundary Fencing – Either typical farm post and wire fencing at 1m high or higher wire security fencing at 2m high provided in muted tones on the inside of the Vegetation Screen. There will also be fencing (1 m high) around the small areas of Red River-Gums on the site's western boarder to encourage regeneration and biodiversity improvements (see Chapter 6.2.3).

3.3 Construction and Operation Plans

It is proposed that each stage of the Proposal would be accompanied by the requisite management plans (and sub plans as appropriate):

- Construction Environmental Management Plan (CEMP)
- Operational Environmental Management Plan (OEMP)
- Decommissioning Environmental Management Plan (DEMP)
- Traffic Management Plan (TMP)
  - It is considered that a full TMP would be put in place for both the construction and decommissioning phases, but would not be required for the operational phase
  - A separate TMP would be put forward to manage the improvements to the local gravel shoulders be constructed on Darlington-Camperdown Road (see Chapter 6.2.9)

It is considered the requirements for management plans, would be outlined in appropriately worded conditions to any planning approval.

3.4 Removal of Native Vegetation

The majority of the Site is devoid of native vegetation owing to its long history of agricultural use. However, the Site does contain some areas of River Red-gums along its western boundary, the Common Spike-sedge along part of a drainage line, and a modelled wetland to its north-east. (refer **Figure 8** [part 2]). The River Red-gums and wetland have been avoided through careful site design.

It is proposed to construct up to two culverts over the drainage line containing the Common Spike-sedge. This will result in the removal of some of the Common Spike-sedge (a maximum of approximately 40m^2). Therefore, a planning permit for removal of native vegetation is required under Clause 52.17 (Native Vegetation). The exact location or extent of vegetation that may be required to be removed will be determined as part of the detailed design process post-consent. Once the location of the culverts and subsequent removal of vegetation is determined, it is proposed to carry out a further assessment to determine the offsets that may be required. It is considered that the requirement to follow the offset process for the removal of no more than 40m^2 of Common Spike-sedge will be detailed in a suitable condition of planning approval.

3.5 Employment

Construction of the Proposal is expected to take place over a 12 month period requiring up to 150 staff. During the operational phase, there would be approximately 8 to 12 full time staff who would routinely visit the Proposal in standard vehicles to carry out the following activities:

- Monitoring of solar production;

- Export of solar energy to the National Electricity Market;
- Maintenance of all plant and equipment;
- Routine security inspections;
- Vegetation monitoring and management; and
- Erosion monitoring.

Any major maintenance works may require larger trucks and equipment to be deployed on a case-by-case basis.

3.6 Design Process

In defining the Site in which the Proposal would be located, the Applicant and project team undertook a 'footprint evolution' exercise in which opportunities and constraints were identified and addressed. The diagram in **Figure 8** provides an overview of the evolution of the Site and ultimately the Development Footprint identified for the Proposal (detailed plans are provided at **Appendix B**).

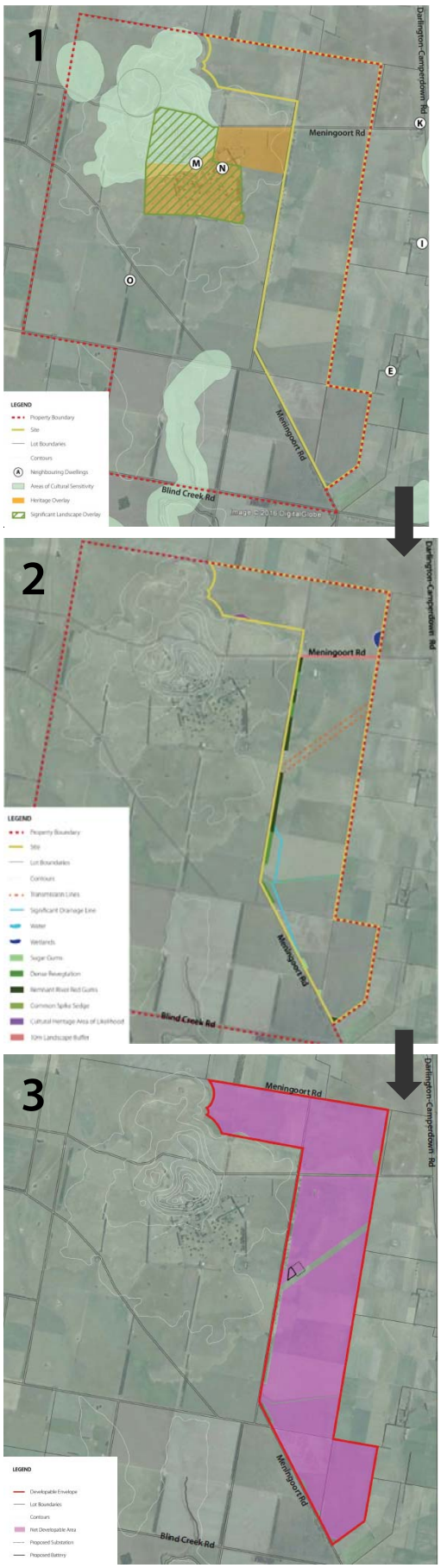


Figure 8 – Evolution of development 'footprint'

The first stage identified the various constraints and areas of sensitivity on the overall Property. These included:

- Consideration of the highest quality agricultural land and potential size of the Site;
- Planning Overlays (Heritage Overlay and Significant Landscape Overlay);
- Areas of Aboriginal cultural heritage sensitivity;
- Location of residential properties;
- Consideration of infrastructure – roads and electricity lines; and
- Suitability of topography.

The second stage involved full assessment of constraints within the Site boundary. These included:

- Aboriginal areas of likelihood;
- Wetlands, farm dam, and the drainage network (and hydrology);
- Native vegetation including identification of remnant River Red Gums and the Common Spike-sedge;
- Other vegetation and Ecology;
- Access;
- Potential Historical Heritage and Cultural Heritage; and
- Existing infrastructure within the Site.

As a Consequence of stages 1 and 2, a net developable area was identified. This area was then assessed further to ensure that infrastructure placement within it would not result in unacceptable environmental effects outwith the Site, by consideration of potential:

- Landscape effects;
- Glint and Glare effects;
- Hydrology effects;
- Heritage effects and
- Amenity effects.

The approach adopted and summarised in **Figure 8** was of avoidance first and formost. The size of the Property and the amount of land available with suitable flat terrain provided the flexibility to accommodate a large-scale solar farm whilst avoiding key constraints and allowing existing vegetation and waterbodies to remain undisturbed. It also provided the opportunity to avoid any encroachment into the heritage area including and surronding the Meningoort Homestead, and into important viewsheds to and from the Homestead.

The culmination of this process is the definition of an area within which the Proposal would be built, a 'Development Footprint', which provides a degree of flexibility in which the final design can be optimised to utilise best in class technology, while ensuring that environmental effects are acceptable. By adopting this approach, the assessment represents a worst case scenario in line with best practice assessment principles and reduces the likelihood of needing to seek modification approvals for minor layout changes.

The '*Indicative Layout*' accompaning this report demonstrates how the Proposal design is able to respond to the constraints shown. As noted in Chapter 3, the location of key supporting infrastructure; the substation; battery; and support buildings would be built within the areas defined in the '*Indicative Layout*'. The final location of inverters, trackers, and internal tracks will be confimed during detailed design. The level of impacts or effects would not exceed that deailed in this planing applcition, as 'worst case' scenarios with regard to the size and effect of infrastructure have been considerd.

4 STAKEHOLDER AND COMMUNITY CONSULTATION

4.1 Consultation

Effective community and stakeholder consultation provides communities and stakeholders with a clear understanding of a proposal as well as opportunities to provide feedback, to identify issues important to them and, as such, it is an essential part of the development process. Infinergy Australia has carried out consultation with the local community, stakeholders from the wider area and relevant Government Agencies in order to understand and respond to community and stakeholder concerns during the design and assessment process of this Proposal.

4.1.1 Consultation Objectives

Table 1 outlines how the consultation objectives for the Proposal were established. These objectives will be developed into a Community Consultation Plan (CCP) following approval for the construction and operational phases of the project.

Table 1 - Development of Consultation Objectives

Question	Considerations	Objectives
Who are the community stakeholders for the proposal?	Community stakeholders may come from groups within a range of geographical scales, for example: ■ Local residents; ■ Nearby districts or towns; ■ The Council area; ■ The wider State level; and ■ The National level.	■ Consultation needs to ensure that all geographical scales are considered in the development of stakeholder and community understanding; ■ Ensure those community groups that are potentially most affected by the Proposal are engaged with as a priority; and ■ Utilise discussions with the local Council and community to identify other stakeholders.
What could be the main issues associated with each group, and how can these issues be clarified?	■ Issues may be positive or negative depending on stakeholder perspective, and the potential impacts of the Proposal; and ■ Open and regular dialogue with interested and potentially impacted stakeholders allow an understanding of stakeholder perspectives over time.	■ Following the identification of stakeholders, the appropriate tools of communication need to be selected at a level that correlates to stakeholder interest and access; ■ Ensure that consultation with stakeholders is developed in a timely manner (at appropriate geographical scales) so that feedback can be incorporated into assessment and design; and ■ Ensure that project information is transparent and easy to understand.
What tools could be used to provide and receive information for each stakeholder group and what would be an effective communication strategy for each group?	■ Different stakeholder groups will favour different communication methods; and ■ All stakeholder groups will not necessarily be known at the beginning of the project lifecycle.	■ Use a wide variety of communication tools in order to ensure that all interested stakeholder groups can participate in the consultation process; ■ Invest in a wide range of mediums to facilitate ease of communication with the project team; and ■ Communication and consultation strategies must be adaptive to ensure they remain relevant as the Proposal develops.
How will consultation requirements change over time?	■ Stakeholders requirements will be different at different stages of the proposal; and ■ Consultation strategies will need to be engaged over the course of all project timescales.	■ Ensure that communication about project timelines is communicated effectively; ■ Ensure that the changing needs for communication of potentially affected stakeholders, particularly at the local level, or those that are deemed to have a high sensitivity to the Proposal are understood; and ■ Commit to maintaining effective communication through different project stages.

4.1.2 Consultation to Date

In consideration of the consultation objectives and the identification of key stakeholders, the Applicant has carried out a range of activities to ensure that the scope of the Proposal has been adequately communicated to relevant stakeholders.

Activities that have taken place are listed below and then expanded in the text that follows:

- Identification and consultation (ongoing) with neighbouring residents;
- Local Government consultation (ongoing);
- State Government consultation (ongoing);
- Public Information Session at Camperdown;
- Advertisements in the local media (Camperdown Chronical);
- Media coverage in the Camperdown Chronical as a response to Public Information Sessions;
- Establishment of a webpage (www.bookaarsolarfarm.com.au); and
- Provision of an email address through which stakeholders can contact the project team.

4.2 Community Consultation

4.2.1 Consultation - Neighbouring Residences

The feasibility process identified six (6) potentially affected neighbouring properties within 1km of the Site boundary where direct consultation would be appropriate. However, following a detailed site investigation, it was decided to expand the number of neighbouring properties for direct consultation to include properties up to approximately 1.5km from the Proposal.

A letter was hand delivered to all the identified properties, providing residents with details of the Proposal, an invitation to an information session along with contact details should they wish to contact the Applicant directly. The location of properties in relation to the Proposal are shown in **Figure 3**, while **Figure 9** provides a copy of the letter delivered to residents.

In addition to neighbouring residents, a further stakeholder group potentially affected by the Proposal was identified as the landowners or tenants of farmland adjacent to the site who may not live on the land but still reside within the local community. In light of this, the Applicant has also contacted these stakeholders directly in relation to the Proposal.

Pacific INFINERGY

09 April 2018

Bookaar Renewables Pty Ltd
44 Quayle Street
Sandy Bay, TAS 7001

info@infinergypacific.com E-mail
www.infinergypacific.com.au Internet

To the residents

Dear Sir / Madame

Proposed Solar Farm Development

This is a letter to inform you that Infinergy Pacific, on behalf of Bookaar Renewables Pty Ltd, is currently in the process of designing a solar farm proposed to be located on the property known as Meningoort.

The project location is within the shaded area denoted in the map below.

As a nearby resident, we would like to ensure that you are fully informed about our proposal as it evolves.

As such, our team will be available over the next three days (Tuesday 10th of April to Thursday 13th of April).

If you would like to discuss the proposal during this time please call or text me on:

0487 381 854

Or alternatively email me at:

r.seymour@infinergypacific.com

In addition, we will also hold a community open day on Wednesday 18th April between 4:00 and 7:00pm at the 'McCabe Room', 210-212 Manifold Street, Camperdown, which will provide a further opportunity to learn more about the proposal.

I hope to hear from you soon.

Yours Sincerely

Richard Seymour
Project Manager, Bookaar Solar Farm

Figure 9 – Bookaar Solar Farm – Consultation Letter

The key issues identified through consultation with the neighbouring residences are listed in **Table 2**, along with a summary of expected outcomes and mitigation responses as appropriate.

Table 2 - Summary of issues arisen through consultation with residents of nearby properties and adjacent farmers

Receptors	Main issues/concerns raised	Summary of issue and mitigation response
Residential properties	1. Concern raised about operational noise	The operational noise level of solar farm infrastructure is limited. The two main components that generate low levels of noise are the sub-station, and the inverters which will be scattered throughout the development (refer **Figure 5**). To ensure residential amenity in relation to noise the Proposal has adopted a design principal that all infrastructure related to the Proposal is placed at least 350m from any residence. Indeed, the closest neighbour is just under 500m from the Proposal boundary. There will be no operational noise impacts from the Proposal.
	2. Concern raised about Landscape and Visual Impacts	The *Landscape & Visual Impact Assessment* concluded that surrounding residents (**Figure 3**) would have limited views of the Proposal (mainly from driveways), but intervening vegetation would mostly screen these views and impacts are low. To mitigate potential impacts, the Applicant has incorporated a vegetation screen into the Proposal to be planted along the entire western, southern and eastern boundaries (excluding those areas that are currently), as well as partial planting of the northern boundary of the Site (refer to '*Indicative Layout*'. Details of the *Landscape & Visual Impact Assessment* can be found in Chapter 6.2.1.
	3. Concern about reflection	The *Solar Photovoltaic Glint and Glare Study* demonstrates that while it is possible that glint and glare could occur at some properties less than 1,000m from panel infrastructure, the modelled levels are not significant and would not require mitigation. However, the vegetation screen proposed to screen views of the Proposal will mean that any glint and glare impacts, as limited as they may be, will be fully mitigated (See Chapter 6.2.2 for further detail).
Adjacent Farmers	1. Concern about fire risk.	Other issues included whether fire risk would increase as a consequence of the Proposal, particularly in relation to fuel load. As detailed in Chapter 6.2.6, the Proposal would include the following design features to mitigate fire risk: ■ The Proposal would ensure that fuel levels within rows are actively managed to reduce fire risk. This would be carried out through either grazing, slashing and/or limited spraying as required and will be detailed further in the Operational Environmental Management Plan (OEMP); ■ The Proposal would include a firebreak around the perimeter of the solar farm as illustrated in '*Indicative Layout*' as the perimeter track. The firebreak is nominally 5m wide and will be subject to agreement with the County Fire Authority (CFA); ■ A 20,000ltr water tank would be installed onsite for the sole purpose of fire protection. Access to the tank would be agreed with the CFA; and ■ The Proposal would be earthed appropriately to protect equipment from lighting strike.
	2. Impact to drains as a consequence of the Proposal.	The Proposal will not change the overall hydrological flows through the exit points of the existing drains on Site. However, within the Site (depending on the final design of the solar farm) it may be necessary once the final design of the solar farm is determined (post approval) to install additional drainage to ensure that equipment onsite does not impede or alter flows across the Site. It is noted, that the Applicant recognises its obligation to ensure that existing, as well as any additional drainage, is maintained to ensure optimal flows.
	3. Additional Flood Risk as a consequence of the Proposal.	There will be no increase in flood risk or the magnitude of any flood event at the site or in the downstream catchment as a consequence of the Proposal (See Hydrological Assessment and Chapter 6.2.7 for further detail).

4.2.2 Consultation - Local Organisations

An open information session for the Proposal was held in Camperdown on the 18th April 2018 (McCabe Room, Manifold Street). The location of the information session was chosen due to its proximity to the Proposal Site (approximately 7km). The event was advertised in the local newspaper, and a copy of the advertisement is provided in **Figure 10**.

Over 25 people, all of whom were local residents, attended the session between 4 and 7pm on the day. Attendees were presented with a series of information boards (**Appendix C**) that summarised the Proposal, providing details of the design and the assessment process. The project team, including the lead landscape architect, were on hand to answer questions, and to listen to feedback and suggestions.

At the information session, the majority of people were either supportive of the Proposal or showed interest without expressing either their positive or negative views. In particular, a large number of attendees spoke of their enthusiasm in relation to the potential for local jobs. As such, the Applicant will commit to ensure that local contractors, suppliers, and workers are utilised wherever feasible during all phases of the development. This will include a requirement that the construction company commissioned to build the solar farm would ensure local contractors, suppliers, and workers are provided with timely information regarding potential opportunities.

At the end of the session, attendees were provided details of the Proposal website along with contact information should they have any further questions. The website will be updated regularly and will include a copy of this application post submission.

Advertisements

In order to promote attendance at the information sessions, the session and details of the Proposal were advertised as follows:

- Advertised in the Camperdown Chronical, on the 13th and 17th of April 2018 (**Figure 10**); and
- A letter was hand delivered to 18 residents in the vicinity of the site (**Figure 9**).

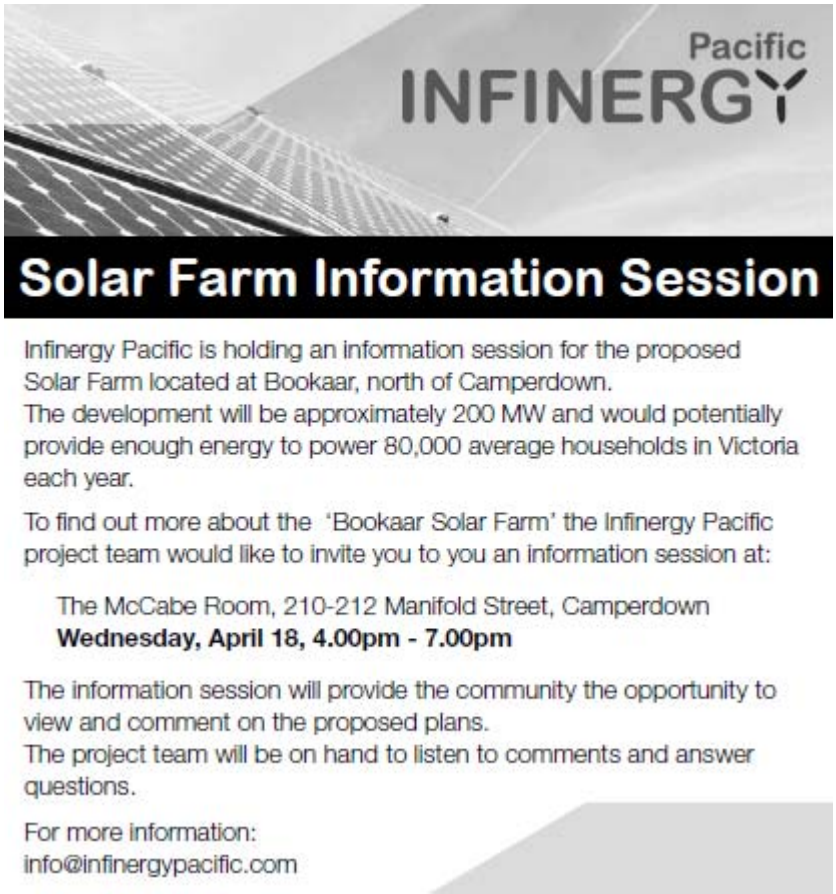


Figure 10 – Newspaper Advertisement in the Camperdown Chronical

Bookaar Solar Farm webpage and email address

A webpage has been established (www.bookaarsolarfarm.com.au) in order to provide information and promote communication and consultation relating to the Proposal. The website provides a clear description of the Proposal along with a 'news' page with up-to-date information about the status of the Proposal. A copy of the Application and the supporting documents will be uploaded to the website once it has been submitted and accepted for consideration by Corangamite Shire Council.

Local Government Consultation

Corangamite Shire Councillors were formally briefed in a presentation on the 18th April 2018. Councillors were given the opportunity to comment on the Proposal and ask questions about issues that concerned them, or raise points which they would like to be addressed in the planning application.

State Government Consultation

Introductory discussions have taken place with the Victorian Government's Department of Environment, Land, Water and Planning.

4.3 Agency Consultation

The applicant has carried out several pre-application meetings with the Planning Department of the Corangamite Shire Council over the two years leading up to this application. Tract Consultants also attended a 'scoping' meeting on 25th August 2015, where the topics for assessment were discussed.

Other direct agency consultation includes:

- Providing the regional VicRoads office with a copy of the Transport Impact Assessment for comment; and
- Consultation with Heritage Victoria by GJM Heritage on behalf of the Applicant.

4.4 Ongoing Stakeholder Consultation

In addition to the consultation activities summarised above, and in line with the consultation objectives set out in Table 1, the Applicant is committed to continued community and stakeholder consultation with respect to the Proposal as it moves through each of the phases of development.

5 PLANNING POLICY AND CONTROLS

This Chapter identifies the planning controls that apply to the Property as relevant to the Proposal. It also identifies and summarises State and local planning policy as set out in the Corangamite Planning Scheme that are relevant to both its location within Corangamite Shire, and the proposed use as a renewable energy facility.

In addition to State and local policy guidance, it is also important to identify the relevant Particular Provisions contained within the Planning Scheme which provide guidance and in some instances, permit triggers.

Finally, this Chapter identifies other planning considerations outside the Corangamite Planning Scheme that provide a broader context for renewable energy facilities at the federal and State level.

Whilst this Chapter outlines the relevant planning controls and assesses their application and relevance, the following Chapter (6) provides a merits assessment of the Proposal against the key issues identified in these controls, including conclusions with respect to compliance. This chapter has been ordered to reflect the relative importance of the control or policy to a decision under the *Planning and Environment Act 1987* by Corangamite Shire Council.

Figure 11 below graphically summarises the planning controls and policy framework under the Corangamite Planning Scheme. It is noted that some of the controls which apply to the broader Property do not affect the Site.

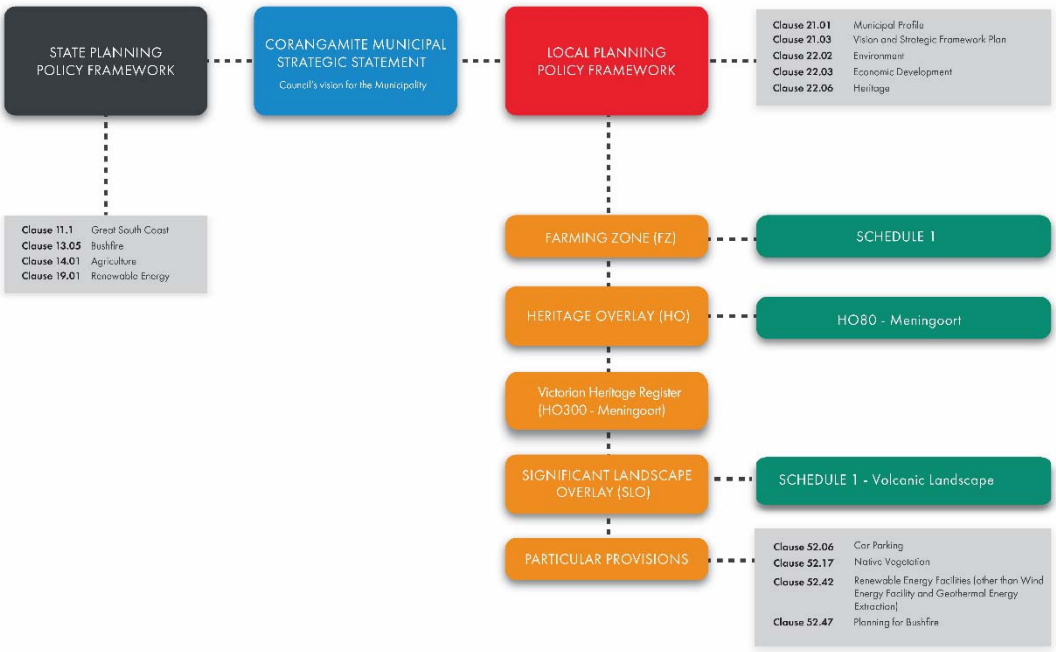


Figure 11 – Planning Policy Framework Diagram

5.1 Planning Controls

The primary planning controls that affect the Property are zones and overlays under the Corangamite Planning Scheme, which are explained below. As discussed in Chapter 3.5, the Site has been chosen and the Project specifically designed to avoid the planning overlays which affect the broader Property, reducing impacts and avoiding the need for additional planning considerations.

5.1.1 Zoning

The Site is wholly included within the Farming Zone (Clause 35.07) (refer **Figure 12**). Only the provisions of the Farming Zone which are considered as relevant to the Proposal are discussed below.

The Farming Zone seeks to protect existing productive agricultural land from inappropriate development and ensure its ongoing viability. The zone also seeks to ensure the use and development of land within the Farming Zone is based on comprehensive and sustainable land management practices and infrastructure provision. Use and development within the zone is encouraged to retain employment and populations that support rural communities.

A renewable energy facility (other than wind energy facility) is a 'Section 2' use (planning permit required) subject to meeting the requirements of Clause 52.42 (Renewable Energy Facilities [other than wind energy facility and geothermal energy extraction]). If these requirements are satisfactorily met as determined by the Responsible Authority, the Proposal can be considered under Section 2.

Clause 52.42-2 outlines a range of application requirements that must accompany an application for a renewable energy facility, where appropriate. **Table 3** responds to each of the requirements found under Clause 52.42-2 and confirms how or where this has been addressed.

It is considered that the planning application as submitted adequately satisfies the application requirements as prescribed within Clause 52.42-2 and can be considered by the Responsible Authority.

Table 3 – Assessment against Application Requirements of Clause 52.42

Application Requirement under Clause 52.42	Compliance
A site and context analysis, including: ■ *A site plan, photographs or other techniques to accurately describe the site and the surrounding area.* ■ *A location plan showing the full site area, local electricity grid, access roads to the site and direction and distance to nearby accommodation, hospital or education centre.*	Refer to Chapter 2.of this Planning Report (Site & Surrounds). Additional site and context analyses have been undertaken within each of the supporting technical reports.
A design response, including: ■ *Detailed plans of the proposed development including, the layout and height of the facility and associated building and works, materials, reflectivity, colour, lighting, landscaping, the electricity distribution starting point (where the electricity will enter the distribution system), access roads and parking areas.*	A plan showing the Indicative Layout and typical solar farm infrastructure is included with the application and is to be read in conjunction with the description included in Chapter 3.2 of this Planning Report (Key Elements of the Proposal). This provides information in relation to the layout and height of the facility and associated building and works, the electricity distribution starting point (where the electricity will enter the distribution system), access roads and parking areas. It is considered that in line with various recommendations of the technical reports, further details of landscaping and the like, can be appropriately secured as part of the post consent detailed design process using an appropriately worded permit condition.
■ *Accurate visual simulations illustrating the development in the context of the surrounding area and from key public view points.*	Refer to Appendix A of the *Landscape & Visual Impact Assessment*, prepared by Tract Consultants.
■ *The extent of vegetation removal and a rehabilitation plan for the site.*	Refer to Chapter 6.2.3 of this Planning Report (Flora and Fauna) and the *Ecological Due Diligence* prepared by Ecology and Heritage Partners. Noting that the majority of the site contains no native vegetation, it is proposed to construct up to two culverts over the Blind Creek drainage line which will result in the removal of a very small area of Common Spike-sedge (40m2).
■ *Written report and assessment, including:* ■ *An explanation of how the proposed design derives*	Refer to Chapter 3.5 (Design Process) of this Planning Report for a discussion on how the

from and responds to the site analysis.	Proposal responds to the site analysis.
■ *A description of the proposal, including the types of process to be utilised, materials to be stored and the treatment of waste.*	Refer to Chapter 3.0 of this Planning Report (The Proposal). For waste, refer to Chapter 6.2.8 (Amenity).
■ *Whether a Works Approval or Licence is required from the Environment Protection Authority.*	A Works Approval or Licence is not required from the Environment Protection Authority.
■ *The potential amenity impacts such as noise, glint, light spill, emissions to air, land or water, vibration, smell and electromagnetic interference.*	Refer to Chapters 6.2.2 (Glint and Glare) and 6.2.8 (Amenity) of this Planning Report. Please also refer to the detailed *Solar Photovoltaic Glint and Glare Study*, prepared by Pager Power.
■ *The effect of traffic to be generated on roads.*	Refer to Chapter 6.2.9 (Traffic and Car Parking) of this Planning Report and the *Transport Impact Assessment*, prepared by OneMileGrid Traffic Engineering.
■ *The impact upon Aboriginal or non-Aboriginal cultural heritage.*	Refer to Chapters 6.2.4 (Cultural Heritage) and 6.2.5 (European Heritage) of this Planning Report. Please also refer to the *Preliminary Cultural Heritage Study* prepared by Ecology and Heritage Partners and *European Heritage Advice* prepared by GJM Heritage.
■ *The impact of the proposal on any species listed under the Flora and Fauna Guarantee Act 1988 or Environment Protection and Biodiversity Conservation Act 1999.*	Refer to Chapter 6.2.3 of this Planning Report (Flora and Fauna) and the *Ecological Due Diligence* prepared by Ecology and Heritage Partners.
■ *A statement of why the site is suitable for a renewable energy facility including, a calculation of the greenhouse benefits.*	Refer to Chapter 6.1.1 (The Appropriateness of the Proposed Land Use) of this Planning Report. As detailed in Chapter 1, the solar farm will generate approximately 420 GWh of clean electricity annually over a 30 year lifespan, which would offset approximately 450,000 tonnes of CO_2 annually.
■ *An environmental management plan including, a construction management plan, any rehabilitation and monitoring.*	It is proposed to prepare detailed Construction and Operational Environmental Management Plan's as part of the detailed design phase following any permit approval. It is requested that this be secured through an appropriately worded condition on the permit.

As the Proposal requires buildings and works to be undertaken at the Site (as described in detail in Chapter 3), a planning permit is also required under Clause 35.07-4 of the Farming Zone for any 'Buildings and Works' associated with a Section 2 use.

Figure 12 – Zoning Map

An additional permit trigger for Buildings & Works is contained under Clause 35.07-4 of the Farming Zone (third dot point). This specifies that a permit is required to construct or carry out any of the following (emphasis added):

'A building which is within any of the following setbacks:

- *The setback from a Road Zone Category 1 or land in a Public Acquisition Overlay to be acquired for a road, Category 1 specified in a schedule to this zone or, if no setback is specified, 50 metres.*
- *The setback from any other road or boundary specified in a schedule to this zone.*
- *The setback from a dwelling not in the same ownership specified in a schedule to this zone.*
- *100 metres from a waterway, wetlands or designated flood plain'.*

The Site is subject to Schedule 1 of the Farming Zone which sets out specific requirements as described in the points above, specifically minimum setbacks. These setbacks are summarised in Table 4 as taken from Schedule 1 of the Farming Zone.

Table 4 – Setbacks as specified in Schedule 1 of the Farming Zone

	Land	Distance
Minimum setback from a road (metres).	RDZ1 or PAO for road	100 metres
	RDZ2	40 metres
	Other road	20 metres
Minimum setback from a boundary (metres).	All land	5 metres
Minimum setback from a dwelling not in the same ownership (metres).	All land	100 metres

The Site has frontage to Meningoort Road, which is both a private road and a public (Council-managed) road. The private component of Meningoort Road is owned by the landowners of the Property. Meningoort Road runs through the Property and provides access to the homestead from Blind Creek Road to the south and Darlington-Camperdown Road to the east. **Figure 13** shows the extent of Meningoort Road as a designated Council-owned road, indicated in yellow.

No buildings are proposed to be located within the setback distances specified for a public road, a property boundary or a wetland. The inverters (which may be housed in structures like shipping containers) are located centrally to the Site while the proposed substation and batteries are located adjacent to the private component of Meningoort Road well beyond any specified setback distances set out under Schedule 1 as referred to in Clause 35.07-4. Furthermore, the Site is located in excess of 100 metres from the closest dwelling.

These setbacks under Schedule 1 are not requirements that must be complied with, but simply determine the need for an additional permit for Buildings and Works under the Farming Zone. As no buildings are proposed to be constructed within the setbacks specified, there are no additional permits required for Buildings & Works under Schedule 1 of the Farming Zone.

In summary, having regard to the purposes of the Farming Zone to protect agricultural land and encourage employment and populations that support rural communities (as discussed above), it is considered that the Proposal complies with the zone. Further discussion of the acceptability of the land use and the impact on agricultural land is found in Chapter 6.1.1.

Figure 13 –Meningoort Road – Extent of Council-owned classification

5.1.2 Overlays

As discussed in Chapter 3.5, the location for the Proposal has been intentionally selected to fall outside any planning overlays under the Corangamite Planning Scheme.

The Property is subject to a number of planning overlays under the Corangamite Planning Scheme. These are the:

- *Heritage Overlay* (HO) at Clause 43.01 which relates to the heritage values attributed to Meningoort Homestead and surrounds. The policy seeks to ensure that development does not adversely affect the significance of heritage places, including the potential to affect the appearance of the heritage listed area.
- *Significant Landscape Overlay* (SLO) at Clause 42.03 which seeks to identify, conserve and enhance the character of significant landscapes. Schedule 1 of the SLO applies to the prominent volcanic cone that is central to the Property. It relates to the Volcanic Landscape Area which recognises the unique landscapes and features such as crater lakes and scoria cones.

Importantly, whilst these overlays apply to the Property they do not affect the Site (refer **Figure 14**). Accordingly, no planning permit is triggered under these overlays, and they are therefore not relevant to a decision in relation to this application.

However, the indirect implications of the Proposal on the landscape values of the volcanic cone on the Property and the heritage values of the Homestead are discussed in Chapter 6.2.5.

Figure 14 – Planning Overlay Plan

5.1.3 Area of Cultural Heritage Sensitivity

The Property is identified as being within, or affected by, areas of cultural heritage sensitivity as defined within the *Aboriginal Heritage Regulations 2007*. The Site area of the Proposal has specifically been positioned outside any identified areas of cultural heritage sensitivity. On this basis, a Cultural Heritage Management Plan (CHMP) is not required for this application. Refer to **Figure 15**.

Further discussion on cultural heritage matters are found in Chapter 6.2.4.

Figure 15 – Areas of Cultural Sensitivity

5.2 State Planning Policy

The State Planning Policy Framework (SPPF) is set out at clauses 10-20 of the Corangamite Planning Scheme.

Overall, the SPPF highlights the Victorian Government's commitment to building a strong renewable energy industry, creating jobs, attracting investment and reducing greenhouse gas emissions. It also supports the expansion of renewable energy facilities in Victoria as a critical element in meeting the State's targets requiring that 25 per cent of electricity generated in Victoria will come from renewable energy sources by 2020 and 40 per cent by 2025[3].

[33] Victorian Government's *Renewable Energy Action Plan, 2017*

Renewable energy is explicitly recognised within the SPPF at Clause 19.01 (Renewable Energy). It promotes '*the provision of renewable energy facilities in a manner that ensures appropriate siting and design considerations are met*'. This clause includes guidance when considering applications for renewable energy, and states that consideration must be given to the economic and environmental benefits to the broader community. It also requires consideration of the need to minimise the effects of a development on the local community and environment.

The importance of a diversified economy within the Great South Coast regional area is highlighted under Clause 11.11-1 (Great South Coast) which seeks to '*support and facilitate the development of energy facilities in appropriate locations where they take advantage of existing infrastructure and provide benefits to the regional community*'.

The need to protect landscapes for their character and identity is recognised at Clause 12.04 (Landscapes). This clause seeks to '*recognise the natural landscape for its aesthetic value'* and *'ensure natural key features are protected and enhanced'*.

The protection of productive farmland is identified as being of strategic significance in the local or regional context under Clause 14.01 (Agriculture), as is the encouragement of sustainable agricultural land use. Specific strategies include resisting permanent changes in land use that would facilitate the unplanned loss of productive agricultural land.

The Property is located within a designated bushfire prone area (but not under a Bushfire Management Overlay), therefore bushfire planning at Clause 13.05 (Bushfire) is applicable. This policy prioritises the protection of human life over all other policy considerations within the Corangamite Planning Scheme.

In summary, State Planning Policy provides strong and explicit policy support for a renewable energy facility such as a solar farm, especially one that through appropriate siting and design has avoided sensitive areas and has a low impact on the surrounding environment. Taking into account the economic contribution of the Proposal to both employment and growth, and the negligible temporary loss of the agricultural land, it is considered that the Proposal furthers and complies with the objectives of the SPPF.

5.3 Local Planning Policy

The Local Planning Policy Framework (LPPF) outlines the policy objectives of the Corangamite Shire Council to guide use and development of land.

The Municipal Strategic Statement at Clause 21 outlines the key characteristics of the Corangamite Shire. Clause 21.01 (Municipal Profile) and Clause 22.03-1 (Vision and Strategic Framework Plan) identify agriculture as a dominant land use in the Shire, and as '*the single most important industry in the Shire'*.

Council's proposed Municipal Profile (Amendment C45), states that agricultural production and processing, along with their ancillary services, are the largest economic drivers for the municipality, employing approximately 32.5% of the working population and contributing 19% of the State's overall agricultural production.

The proposed Regional Profile identifies a number of challenges for the region including:

- '*Managing competing demands for agricultural land; and*
- *Maximising the potential benefits of energy production, while managing the impacts on amenity, roads and environment*'.

Landscape and Tourism are also highlighted as key aspects of the Corangamite Shire in Clause 21.01 (Municipal Profile). The importance of significant natural landscape features in the municipality is raised and particular note is given to the volcanic cones within the municipality, like those that are present on part of the Property, but not the Site. Clause 21.03-1 (Vision and Strategic Framework Plan) identifies the need to protect such volcanic landscapes, as well as '*substantial heritage assets'*.

The protection and enhancement of heritage buildings and places is established within Council's Vision and Strategic Framework Plan (21.03) and seeks to ensure that development appropriately responds to places of heritage significance. It also seeks to conserve Aboriginal sites and significant cultural landscapes.

Corangamite Shire's policy in relation to environmental matters is outlined at Clause 22.02 (Environment). This includes Clause 22.02-3 (Wetland Areas) which seeks to ensure that the role and function of wetland areas are considered in planning decisions in respect to any proposed development on or adjacent to a wetland area. Similarly, Clause 22.02-4 (Biodiversity) seeks to ensure that the use and development of land considers the need to protect and enhance biological diversity.

Local policy that addresses economic development within the Shire is found at Clause 22.03 (Economic Development). Specifically, Clause 22.03-1 (Agriculture) sets out economic development objectives in relation to agriculture. A key objective is '*to support the diversification of agriculture and to protect the natural and physical resources upon which agricultural industries rely*'.

All land within the Corangamite Shire that is subject to the Heritage Overlay is subject to local policy Clause 22.06 (Heritage). It is noted that the Site area specifically excludes any land included within the Heritage Overlay. Notwithstanding this, the policy seeks to ensure that '*new buildings or works do not adversely affect views and vistas toward, from and within heritage landscapes*', is of relevance to the Proposal.

Further discussion on potential landscape impacts are found at Chapter 6.2.1, impacts on European heritage are found at Chapter 6.2.5, and potential flora and fauna impacts are found at Chapter 6.2.3.

In summary, having regard to the Proposal's careful site design that has avoided impacts on significant landscape, heritage and environmental values, its economic benefits and negligible impacts on high quality agricultural land, the Proposal is considered to accord with the LPPF.

5.4 Particular Provisions

5.4.1 Car Parking (Clause 52.06)

Any new land use must provide car parking according to the rates identified at Clause 52.06 (Car Parking) of the Corangamite Planning Scheme. This seeks to ensure parking is provided having regard to the demand likely to be generated, the activities on the land and the nature of the locality.

The use of land for a solar farm is not specified in Table 1 of Clause 52.06-5. Therefore as Clause 52.06-6 specifies, car parking spaces must be provided to the satisfaction of the Responsible Authority before the new use commences.

The Proposal includes the provision of approximately 15 spaces, which is a number identified and supported by the '*Traffic Impact Assessment*' that accompanies this report. Accordingly, it is considered that the Proposal complies with this provision. Further discussion on car parking is found at Chapter 6.2.9.

5.4.2 Native Vegetation (Clause 52.17)

Planning controls relating to Native Vegetation are found at Clause 52.17 (Native Vegetation). This clause seeks to ensure that there is no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation, and to minimise land and water degradation. The principles of avoid first, minimise second and offset as a last resort are directed under the provision.

A planning permit is required under this clause for the removal of native vegetation, which is a permit trigger in the application.

Although the majority of the Site contains no native vegetation, the site responsive design of the Proposal has avoided the small areas of remnant vegetation, limiting the native vegetation to be removed as a consequence of the Proposal. It is considered that that any offset required can be provisioned through an appropriately worded condition on any permit.

Further discussion on native vegetation found at Chapter 6.2.3, demonstrates that the Proposal follows the principles of 'avoid, minimise, and offset' and therefore accords with this provision.

5.4.3 Renewable Energy Facility (other than wind energy facility and geothermal energy extraction) (Clause 52.42)

Detailed requirements relating to renewable energy facilities such as the Proposal are found at Clause 52.42, which are directly relevant to the Proposal.

The purpose of this provision is to facilitate renewable energy facilities in appropriate locations, whilst ensuring they cause minimal amenity impacts to the surrounding area. The clause specifies the information and accompanying assessments that must be submitted with any application for a renewable energy facility.

As Clause 52.42-3 highlights, the Responsible Authority must consider amenity issues associated with the Proposal in terms of:

- Noise
- Glint
- Light spill
- Vibration
- Smell, and
- Electromagnetic interference.

The impact the solar farm may have on significant views and the natural environment must also be considered as well as the need for any traffic management measures.

A full discussion of the location of the information requirements outlined in this clause is found at **Table 3**. Chapter 6.2.8 provides an assessment of the Proposal against the applicable issues identified in this provision. Having regard to the conclusions of these chapters, it is considered that the Proposal complies with this provision.

5.4.4 Planning for Bushfire (Clause 52.47)

This clause seeks to facilitate the State-wide bushfire planning provisions in Clause 13.05 (Bushfire). A key objective under this clause is to ensure that the development of land prioritises the protection of human life and strengthens community resilience to bushfire.

Further to this, the clause specifies a range of objectives, approved and alternative measures, and decision guidelines to assist authorities in assessing planning applications to ensure developments are located, designed and constructed in a manner that appropriately responds to bushfire hazard.

As the Site is not affected by a Bushfire Management Overlay, the Particular Provision at Clause 52.47 is not relevant to the Proposal.

5.5 Other Considerations

5.5.1 Australian Renewable Energy Target (RET)

The Federal Government's Renewable Energy Target (RET) is a legislated target designed to ensure that at least 33,000 gigawatt-hours or 23.5 per cent of Australia's electricity comes from renewable energy sources by 2020.

The RET is designed to encourage investment in the renewable energy sector through the creation of tradable certificates which wholesale purchasers of electricity must buy to meet their renewable energy obligations, or be liable to a fine. In order to meet the current and future demand for renewable energy, the renewable energy sector across the country needs to expand.

Whilst this is not a relevant planning consideration, the RET provides important commercial context to the Proposal, and highlights overarching Federal Government support for renewable energy.

5.5.2 Victorian Renewable Energy Targets (VRET)

The Victorian Government has committed to renewable energy targets legislated by the *Renewable Energy (Jobs and Investment) Act 2017,* known as VRET. These targets aim to have renewable energy account for 25% of the states total energy by 2020, and 40% by 2025.

Whilst this is not a relevant planning consideration, the VRET provides important commercial context to the Proposal, and highlights the State Government's support for renewable energy. In order to achieve these targets, more renewable energy facilities will need to be built across Victoria.

5.5.3 Environment Protection and Biodiversity Conservation Act 1999 (EPBC)

Referral is required under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC) if a proposed action is likely to have a significant impact on a matter of national environmental significance. Matters of national environmental significance include (among many things) wetlands of international importance, nationally threatened species and ecological communities and migratory species. Consideration must also be given to whether a proposed action is likely to have a significant impact on the environment on Commonwealth land (for actions outside Commonwealth land).

The Preliminary Cultural Heritage Study confirms that there are no known Matters of National Environmental Significance (MNES) identified within the study area and the Ecological Due Diligence confirms that the proposed development is unlikely to have a significant impact on any MNES. As such, a referral to the Commonwealth Environment Minister is not required regarding matters listed under the *EPBC Act*.

5.5.4 Environment Effects Act 1978

Under the Victorian *Environment Effects Act 1978*, matters that may have a significant impact on the environment must be referred to the Minister for Planning requesting a decision on whether an Environmental Effects Statement (EES) is needed.

Having regard to the criteria outlined in the 'Ministerial Guidelines for Assessment of Environmental Effects under the Environment Effects Act 1978', it is considered that an EES referral is not required, because:

- The Site predominantly consists of cleared agricultural land, contains no areas of environmental significance, and the Proposal will not have a significant impact on biodiversity. Removal of vegetation is very minimal (where not already avoided) and will be able to be offset.
- With effective mitigation measures, the Proposal is considered to have a low landscape impact and an overall low visual impact on the landscape setting. New planting and existing landscape features will effectively screen any land use changes over time.
- Potential effects on residential amenity, occurring as a result of construction and operational phases of the project, can be effectively managed by conditions on the permit, in particular, appropriate Construction and Operational Environmental Management Plans.
- Potential environmental effects of the project can be adequately assessed and formal public input enabled through the planning approval process under the *Planning and Environment Act 1987*.

6 PLANNING ASSESSMENT AND KEY ISSUES

This chapter provides a detailed assessment of the Proposal against the policies and controls identified in Chapter 5, and discusses the key issues relevant to a planning permit decision under the Corangamite Planning Scheme.

A number of technical reports, as listed in Chapter 1, have been prepared to accompany this application. This chapter provides a summary of the conclusions of these reports and discusses, where needed, any mitigation measures required to reduce any residual impacts of the Proposal.

The *Planning and Environmental Act 1987*, and the Corangamite Planning Scheme, requires the decision maker to determine '*net community benefit*' after considering the policy support for a proposal against its impacts.

Federal and State policy places a strong emphasis on meeting renewable energy targets and the Proposal clearly provides a positive contribution to the supply of renewable energy. In line with State planning policy, it is recognised that this contribution needs to be balanced with the careful consideration of potential impacts associated with the Proposal.

6.1 Key Planning Issues

The key planning matters identified as being relevant to the planning assessment have been driven by the proposed use as a solar farm, but also the site context and discussions with Council. In undertaking an assessment of the Proposal, it was determined that the following planning matters were relevant:

- Proposed Land Use
- Visual impact
- Glint and Glare
- Flora and Fauna
- Cultural Heritage
- European Heritage
- Bushfire and Electrical Fire Management
- Flood Management
- Amenity
- Traffic and Car Parking

6.1.1 The Appropriateness of the Proposed Land Use

Relevant Policy

The appropriateness of a solar farm, as a discrete use of land, is a key consideration for this planning application. A decision on the acceptability of a land use must be made having regard to the purposes and decision guidelines of the zone, and the degree of support for the proposed land use in both the SPPF and LPPF.

As discussed in Chapter 5.2 and 5.3, it is clear that renewable energy facilities, as a use of land, enjoy strong policy support, with explicit statements of support found in Clause 19.01 (Renewable Energy), highlighting the need to 'promote' and 'facilitate' such uses.

The Farming Zone, as detailed in Chapter 5.1.1, contains a number of purposes which are instructive in understanding the acceptability of the proposed land use. Further, the SPPF (detailed in Chapter 5.2) and the LPPF (detailed in Chapter 5.3), highlight issues that any proposed land use must meet or address to be considered acceptable in its location.

Having regard to the zone purposes and policy guidance, the key tests for this application are how the proposed land use:

- Protects productive agricultural land;
- Responds to environmental issues;

- Demonstrates sensitive siting and design; and
- Contributes economically and retains employment.

These are addressed below.

Agricultural Land

In considering the suitability of the Site for the proposed use, and in determining the overall benefits to the community, consideration has been given to the potential impact on the ongoing use of the land as an agriculture enterprise, which is identified in the Corangamite Planning Scheme as '*the single most important industry in the Shire*' and the largest economic driver for the municipality.

The impact on agriculture needs to be considered both in terms of:

- the impact on the agricultural use of surrounding land (including at the Shire Level); and
- the impact on the agricultural use of the Site.

While the Proposal represents a change in land use at the Site, the agricultural use of the wider Property and the surrounding land will remain unaffected. This is principally due to the fact that well designed solar farms do not result in offsite impacts. As such, the Applicant has used an iterative design approach to ensure that no offsite impacts result as a consequence of the construction, operation or decommissioning of the Proposal. Chapter 3.5 describes the design process in detail and the technical reports that support this application conclude that there will be no offsite impacts that would affect agricultural land use at the Property or in the surrounding area as a consequence of the Proposal.

In removing the Site from its current agricultural use, the impact on the wider agricultural industry in the Corangamite Municipality needs to be considered in context. The Site area is 605 hectares of a wider Municipality of approximately 372,000 hectares of farming land, representing a potential loss of agricultural land of 0.2%. In terms of the broader Western District, the contribution of the Site would be even less. In addition, it should be noted that a solar farm is a wholly reversible land use that would not alter the agricultural values of the Site once removed. As such, the Proposal should be considered as a long term but temporary change in land use. Once the solar farm reaches its stated lifespan of 30 years, it will either be rebuilt with new equipment or decommissioned, requiring all above ground infrastructure to be removed and the site restored to its pre-development condition.

In relation to the impact on the agricultural use of the Site, solar farms may not necessarily remove the land on which they sit from agricultural production. Whilst the choice of agricultural pursuits is narrowed, the Site could be grazed by small livestock (such as sheep) which can successfully coexist with solar panels during the operational phase of the Proposal. The use of livestock could also be used to manage vegetation and fire risk at the site, potentially reducing the need for chemical control. It should be noted that livestock would need to be excluded from the Site during both the construction and decommissioning phases of the Proposal; however, this represents a small fraction of the lifetime of the Solar Farm (approximately 12 months for the construction phase).

As part of the site selection process, the Applicant in consultation with the Landowner, has chosen the least productive land within the wider Property to locate the Proposal. As such, the Site represents the lowest quality agricultural land within the Property, owing to its heavy soils which can become waterlogged following rain events, resulting in crop damage or requiring the relocation of grazing livestock while pastures recover or are replanted.

A key consideration under the zone is whether the proposed use or development will adversely affect soil quality. As solar farms are designed to sit lightly on the land with minimal ground disturbance, and do not generate pollutants, the impact on soil quality would be negligible (refer to Chapter 6.2.8).

Environmental Issues

In considering proposals for renewable energy, consideration should be given to the environmental benefits of renewable energy generation through greenhouse gas displacement, while also considering the need to minimise the effects of a proposal on the environment.

The purpose of a PV Solar Farm (as described in this Proposal), is to generate electricity from the sun's energy. Unlike conventional carbon intensive power stations, solar farms do not produce carbon dioxide (CO_2) as a by-product of electricity generation. As such, they present a viable option to displace greenhouse gases associated with electricity generation. It is estimated that the Proposal will generate approximately 420 GWh of clean electricity annually over its 30 year lifespan, supplying clean energy to approximately 80,000 average Victorian homes each year. This would displace approximately 450,000 tonnes of Carbon Dioxide (CO_2) annually, making a contribution to Victorian, Australian and International goals to reduce greenhouse gas emissions and the impacts of climate change.

As demonstrated in Chapter 4.1.2, the Site is not subject to any environmental overlays, nor are there any strategic planning studies that identify the Site as having significant environmental values.

The environmental studies which have been conducted to support this application demonstrate that there are no unacceptable environmental impacts that would arise as a consequence of the Proposal. A detailed discussion of these studies and potential impacts is provided in Chapter 6.2.8 below.

However, although not significant, it should be noted that while the flora and fauna assessment found that the Site is mostly devoid of native vegetation owing to its long history of agricultural use, a very small area of native vegetation will need to be removed in order to construct culvert crossings across the main drainage line that transects the site. In addition, a small wetland has been identified in the north east corner of the Site, which has been avoided through careful site design.

Siting and Design

An important consideration in the acceptability of the land use is site selection and, having chosen a site, the specific design of the Proposal.

The Property, and specifically the Site, has the following characteristics that make it an appropriate location for the establishment of a solar farm:

- Flat topography;
- Onsite transmission lines to connect the development into the national grid;
- Limited views to the Site from surrounding properties and the wider area;
- Sufficient buffers from neighbouring properties;
- Solar resource;
- Good site access over the existing road network;
- Suitable geology; and
- Few environmental constraints.

Large portions of the Site are flat, providing an ideal location for a solar farm, both in terms of efficient use of land and in ensuring that potential visual impacts associated with the Proposal are low.

The Site is traversed by an existing on-site high voltage transmission line (the Terang-Ballarat 220 kV line) providing direct access to the national electricity grid and avoiding the need for additional transmission lines to connect the Proposal at an offsite location. In addition, it should be noted that transmission lines are a limited resource found in only in some parts of Victoria, meaning their presence on Site is a major benefit to the Proposal.

An assessment of the road network indicates that existing access routes to the site can be utilised to support all phases of the development avoiding the need to extend or substantially modify the road network (Chapter 6.2.9).

The Site has few recognised environmental values, and enjoys significant buffers from neighbouring dwellings to ensure that amenity at these locations are not adversely affected by the Proposal. The design of the Proposal has specifically addressed the constraints identified through the environmental assessments (refer Chapter 3.5), leading to an iterative design process that firstly identifies methods to avoid effects, then identifies measures that seek to minimise effects. Key to this process is the avoidance of the Significant Landscape Overlay and Heritage Overlay that are located within the wider Property boundary. In addition, the Proposal has been located on land with the lowest agricultural value within the Property.

Detailed consideration has been given to address the few residual impacts that would result as a consequence of the Proposal, with mitigation recommended on how these can be minimised or eliminated, such as the addition of the Vegetation Screen around the majority of the Site's periphery. Where necessary, mitigation measures are outlined in each of the technical summaries that follow in this Chapter.

Economic and Employment Factors

The Proposal represents a major investment in renewable energy generation in Victoria, and would provide economic stimulation and increased energy security to the region, and more broadly to Victoria. The Proposal will add to energy supply in Victoria, assisting in meeting growing demand for energy and reducing energy prices. The Proposal will also have the effect of diversifying electricity generation, which coupled with a proposed battery, would result in an increase in the reliability of the electricity network.

The Proposal is expected to generate up to 150 jobs over approximately 12 months during the construction phase of the development, and approximately 8 to 12 full time jobs during operation. This may include opportunities for electricians, earthworks contractors, builders, fencers, landscapers, signage contractors and nursery workers.

This represents a small but significant contribution to the local economy, and would assist in the Shire's efforts to generate population growth through job creation. The development of the Proposal would also assist in positioning Corangamite Shire as participants in the renewable energy industry, presenting marketing benefits and expanded economic development opportunities.

There would also be flow-on effects to the local economy during the construction and operation period with construction staff utilising local goods and services, such as housing, retail, health and hospitality services. This will assist in supporting local business and provide pathways for new business opportunities both in Corangamite Shire and across Victoria.

A further benefit of the Proposal is the diversification of the landowner's potential income stream. This can assist in additional investment into the remainder of the Property, along with providing economic resilience in the ever challenging agricultural environment.

Land Use Conclusion

The proposed land use enjoys strong and explicit policy support, and has been found to protect agricultural land, offer environmental and economic benefits, and presents as a site responsive design approach. Accordingly, it is considered to be an acceptable land use under the Corangamite Planning Scheme.

6.2 Key Potential Impacts

6.2.1 Visual Impact

In order to assess potential impacts of the Proposal on the surrounding landscape and its visual receptors, a detailed *Landscape and Visual Impact Assessment* (LVIA) has been undertaken by specialist landscape architects, Tract Consultants. The full report accompanies this Planning Report and is summarised in the following section.

Policy, Guidance and Methodology

Potential impacts of the Proposal on significant views, including visual corridors and sightlines, is a relevant consideration in assessing solar farms in Victoria as set out under the Decision Guidelines contained at Clause 52.42-3 (Renewable Energy Facility [other than wind energy facility and geothermal energy extraction])'. Further, both the SPPF (refer Chapter 5.2) and LPPF (Chapter 5.3) highlight the need to protect landscapes for their aesthetic values and to benefit tourism, and Clause 42.03 (Significant Landscape Overlay) recognises land adjacent to the Site.

Despite this support, there is no guidance under the planning system in Victoria in relation to how potential impacts on significant views are assessed. In this absence, the LVIA applies an overall methodology to the study based on principles outlined in '*Guidelines for Landscape and Visual Impact Assessment - third edition*' (Landscape Institute & Institute of Environmental Management & Assessment, Spon Press, April 2013). This represents a 'best practice' approach within the United Kingdom and has been extensively trialled since 1995 on a range of project types including extractive industry projects, wind farms, property and infrastructure development. This methodology also forms the basis of VicRoads landscape and visual impact assessment process and is considered to provide a robust approach.

The LVIA at Section 3 'Study Methodology' outlines in further detail the methodology and assessment process adopted and provides justification in adopting this methodology. The figure below illustrates the assessment process adopted in the LVIA:

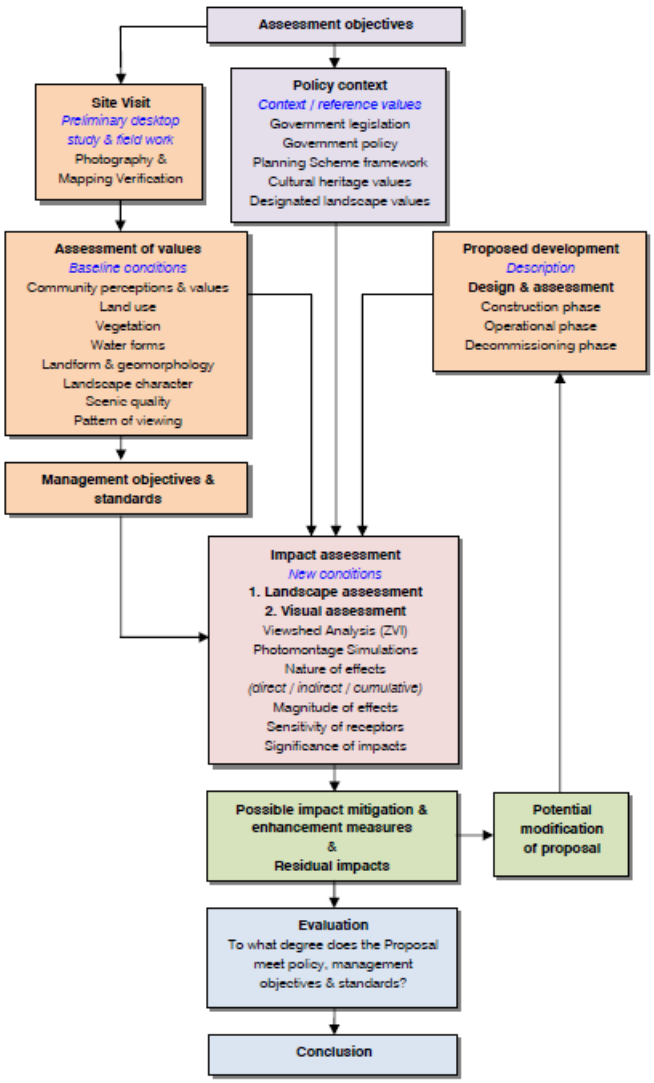


Figure 16 – Landscape and Visual Impact Assessment Process (Source: Figure 6, LVIA, Tract Consultants).

Landscape Character, Study Area and Viewpoint selection

As identified in **Figure 17**, a Study Area of 20km from the Site was identified for full assessment, although consideration was also given to elevated viewpoints up to 28km away, most notably Mt Elephant. Baseline conditions within the Study Area were determined through both a landscape character assessment, which placed the Study Area within the South West Victoria Landscape Character Type (Western Plain LCT), and through a visual assessment based on representative viewpoints.

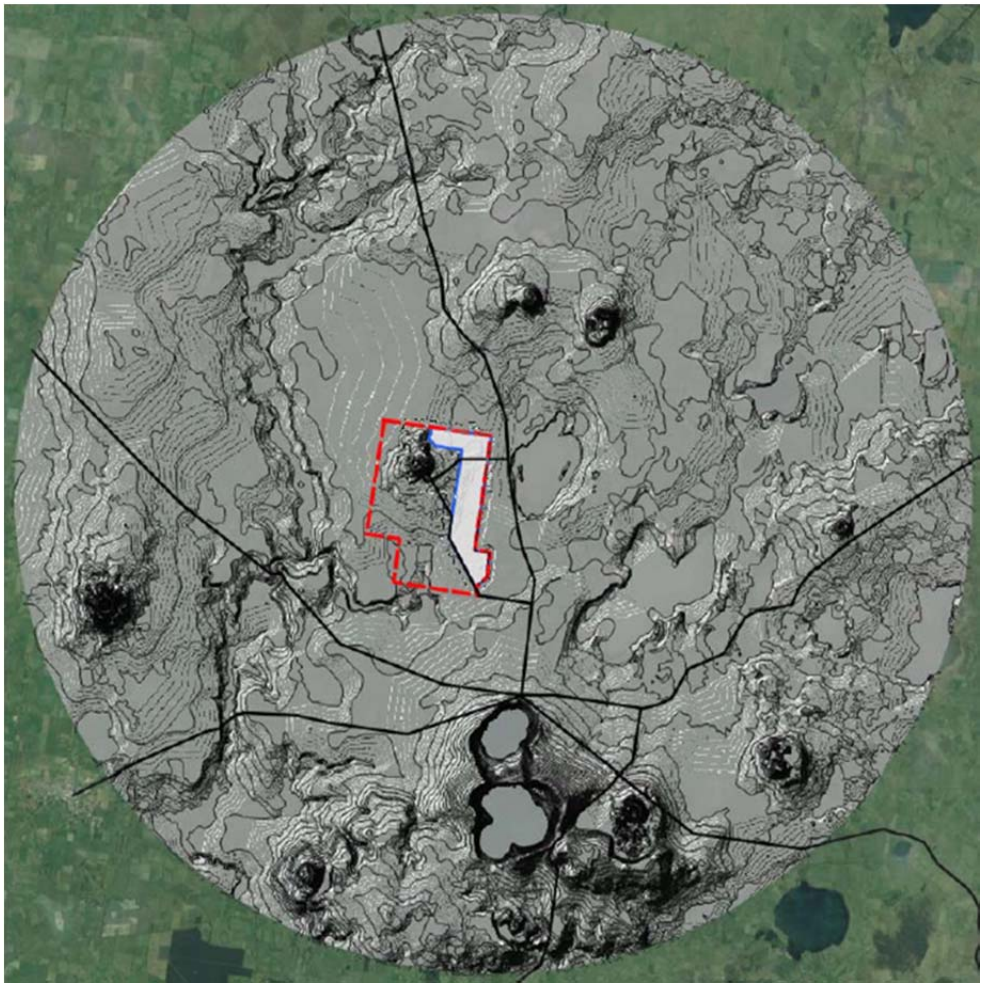


Figure 17 – Digital Terrain Motel to 20km radius (Source: Figure 7, LVIA, Tract Consultants)

Potential viewpoints for further detailed study and photomontage representation within the Study Area were selected following consultation with Corangamite Shire Council and based on the following criteria:

- Locations identified through the Zone of Theoretical Visibility (ZTV) modelling process as being the most likely areas of possible visual impact;
- Public accessibility of receptor locations that best represent areas of known sensitivity;
- Viewpoints assessed as being able to present likely 'worst case' visual impact scenarios; and
- Ability of viewpoints to represent four main receptor groups identified from the ZTV analysis and site visits:
  - Main road travellers (Receptor Group A);
  - Private houses, internal access roads or driveways (Receptor Group B); and
  - Elevated locations & designated Lookouts, elevated residential properties in Camperdown (Receptor Group C).

The following four viewpoints (VP) (as shown in **Figure 15**), were chosen as a result of this process:

- VP01- View from Camperdown-Darlington Road (receptor group A);
- VP02- View from Princes Highway (receptor group A);
- VP03- View from Meningoort Homestead (receptor group B); and
- VP04- Camperdown Botanic Garden Lookout (receptor group C).

The assessment has also ensured due consideration to any potential impact on the heritage values of the Meningoort Homestead from a landscape and visual perspective.

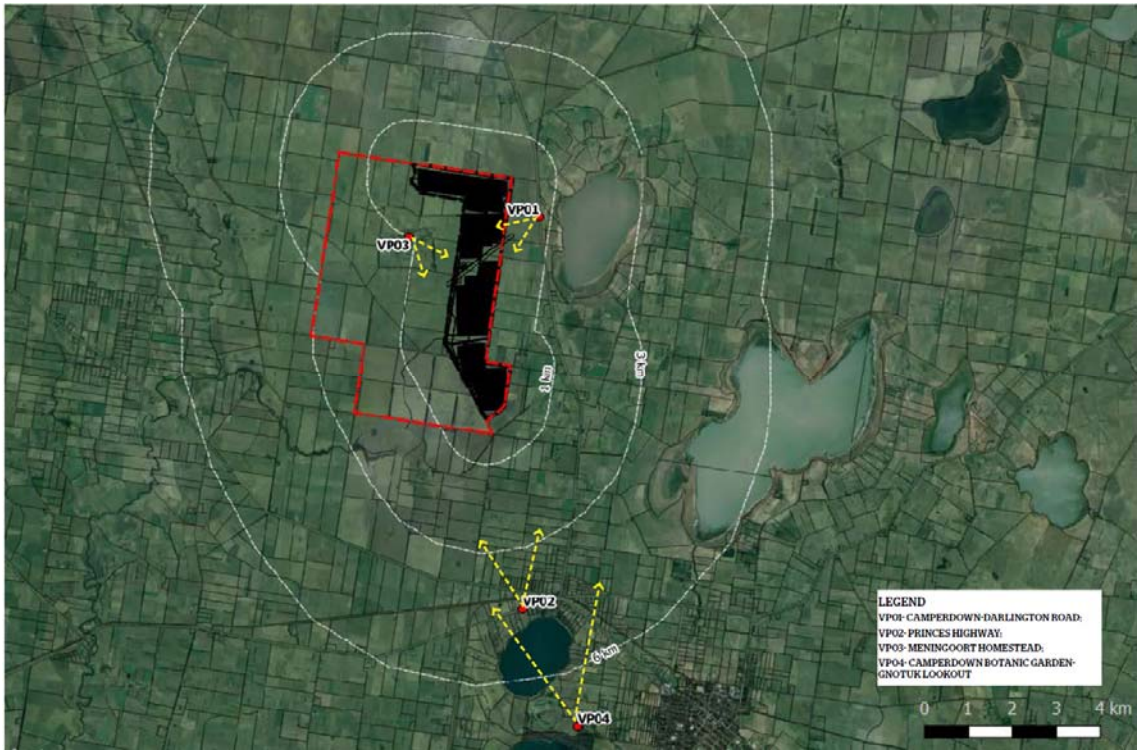


Figure 18 – Identified Viewpoints (Source: Figure 5.1 of Appendix A, Tract Consultants LVIA).

Key Findings

Overall, the assessment found that the Proposal is located within a rural area, characterised by a patterned landscape of paddocks with windrow plantations and scattered tree planting. The landscape has the capacity to absorb low scale land use and visual changes of the type associated with the Proposal, particularly from nearby low level viewpoints where views to new features can be managed effectively by existing and new vegetation screening.

Unmitigated views from adjacent properties within the surrounding area are mostly screened by existing vegetation, with some visibility from access roads and driveways. This results in an overall low impact on residential receptors near the Proposal, which is reduced further through proposed mitigation (see below).

Distant elevated viewpoints are likely to retain views of the Proposal, but at the distances involved, any land use changes within the wider landholding are likely to be seen as a part of the larger regional landscape mosaic, and not as a significant adverse impact on the landscape character or scenic qualities of the location.

While the overall visual impact of the Proposal has been determined as low on both landscape and surrounding key viewpoints, a range of mitigation measures have been recommended to further minimise the level of residual impacts. These are recommended to be considered as part of the detailed design process:

1. **Vegetation Screen** - A dense four (4) metre high vegetation screen on the periphery of the Proposal (See '*Indicative Layout*') would completely mitigate visual impacts in the surrounding flat landscape, and appear as a normal component of the regional agricultural landscape. Therefore, implementation of a native planting buffer including ground covers, shrubs and trees to be planted at early stages of construction is recommended to be considered. This height assumes around 8 year's growth of a mixed native plantation which is a deliberately conservative figure. Over time the height of screen planting would increase to >10m and provide significantly more visual screening potential.
2. **Colours and finishes** - Reduction/treatment of all exposed metal or reflective surfaces and using colour treatments that blend with the surrounding landscape and avoid colour contrasts. For example, the colour of the battery house is a key consideration in order to blend into the backdrop vegetation (dark grey is likely to be a visually recessive colour that could be considered at the detailed design stage).

3. **Design of lighting for minimal offsite impact** - Lighting will be on-demand only with minimal security lightning that is restricted to four (4) metres in height and downwards facing for any lights that are not motion activated.

Table 5 below summarises potential impacts of the Proposal as determined by the landscape and visual impact assessment.

Table 5 – Summary of Potential Visual Impacts

Receptor	Summary of Potential Impacts	Residual Impacts following Mitigation
■ **Landscape**	**Low impact** due to the relative low sensitivity to change of the surrounding landscape, existing features of the landscape (screening windbreaks and vegetation, and high tension powerline infrastructure); and that sensitive parts of the landscape are separated from the Proposal.	The proposed boundary planting of the Vegetation Screen would reduce impacts further resulting in a **low impact.**
■ **VP01- Camperdown-Darlington Road**	**Low impact** due to existing vegetation and the flat nature of the land limiting extensive views of the Proposal.	The proposed boundary planting of a Vegetation Screen would further mitigate visual impacts resulting in a view that would appear as a normal component of the regional agricultural landscape. **No impact.**
■ **VP02- Princes Highway**	Discernible to no views of the Proposal resulting in **negligible to no impact.**	**No impact.**
■ **VP03- Meningoort Homestead (representative of residential receptors surrounding the Proposal)**	**Low impact in** the short term due to limited visibility. Noting that, unmitigated, the existing garden and vegetation on the eastern side of the Homestead provides a substantial visual buffer towards the Proposal which will reduce visibility over time.	**Low impact reducing overtime** as the proposed Vegetation Screen combines with existing vegetation to obscure views.
■ **VP04 - Camperdown Botanic Garden Lookout**	**Low impact**. The nature of the impact on this receptor is not considered significant given the existing large scale rural landscape, and its ability to absorb changes that fit within the existing colours and patterns.	**Low impact.**

Other key findings of the LVIA include:

- The Proposal does not include any landform changes;
- The existing powerline which crosses the proposed Site eliminates the need for a new transmission line and minimises the visual impacts associated with the Proposal;
- Ancillary facilities including the battery, substation and telecommunication tower are located near the existing powerline; and

- The presence of an existing vegetation buffer on the perimeter of the Site assists in mitigating predicted low impacts on views to the Proposal, and would be integrated into the proposed vegetation screening.

Conclusion

In accordance with the decision guidelines set out under Clause 52.42 (Renewable Energy Facility [other than wind energy facility and geothermal energy extraction]), which is the key guiding policy in terms of assessing potential impacts of the Proposal, the LVIA has carefully considered potential impacts on significant views, including visual corridors and sightlines.

The detailed technical assessment has found that the impact of the Proposal is low, and together with the proposed mitigation measures, the impact of the Proposal is considered to be acceptable.

The LVIA also confirms that the Proposal is acceptable having regard to other relevant planning policy contained within the Corangamite Planning Scheme.

Significant Landscape Overlay

Although the Site falls outside the Significant Landscape Overlay (SLO) applied to the broader Property, consideration has been given to the impact on the visual and environmental quality of the identified volcanic features. Section 8 of the LVIA indicates:

> *The regional volcanic plains landscape is characterised by relatively flat to gently undulating terrain with intermittent volcanic cones and lake formations. On a comparative basis, the landscape of the proposed development site represents an area of relatively low scenic quality given its flat terrain, simple, repetitive plantation forms and the presence of a major power line easement through the centre of the site.*

Selection of the Site area took into account the topography of the broader Property and specifically sought to avoid the high scenic quality attributed to the prominent volcanic cone by locating the solar farm outside of the overlay and on the flattest terrain to ensure visual impact is minimised.

State Planning Policy

Careful consideration of the placement of the Proposal within the landscape setting as determined within the LVIA assists in meeting State planning policy at Clause 12.04 (Landscape) and Clause 11.11-1 (Great South Coast) by facilitating the development of an energy facility in an appropriate location.

Local Planning Policy

The LVIA demonstrates that the Proposal meets several local planning policies:

- The Proposal complies with Council's Municipal Profile at Clause 21.01 and Council's Vision and Strategic Framework Plan at Clause 21.03-1. The impact on significant landscape features is low and in conjunction with the recommended mitigation methods, supports the important role of landscape features in the municipality. As discussed above, in relation to the Significant Landscape Overlay, existing volcanic landscapes will be protected.
- The Proposal meets the requirements of Clause 21.03 (Council's Vision and Strategic Framework Plan) in protecting and enhancing 'substantial heritage assets' such as heritage buildings and places, and with the proposed mitigation methods, appropriately responds to places of heritage significance.
- Although not applicable to the Site (as it specifically excludes any land included within the Heritage Overlay), the LVIA demonstrates that buildings and works associated with the Proposal do not adversely affect views and vistas toward, from and within heritage landscapes in accordance with the requirements of local policy Clause 22.06 (Heritage).

6.2.2 Glint and Glare

Pager Power have undertaken a *Solar Photovoltaic Glint and Glare Study* to assess potential glint and glare impacts of the Proposal. A glint and glare study considers the potential for solar reflection from the panels to cause amenity impacts or nuisance to nearby sensitive receptors, such as dwellings or motor vehicles. The full report accompanies this Planning Report and is summarised in the following section.

Policy, Guidance and Methodology

Clause 52.42 (Renewable Energy Facilities [other than wind energy facility and geothermal energy extraction]) requires the consideration of the potential amenity impacts associated with glint.

There is no prescribed guidance with respect to glint and glare assessment methodology in Victoria. As such, the report has adopted a desktop based methodology based on the consideration of the distance that glint and glare effects can be significant (up to 1km), combined with a 'bare earth model[4]' that predicts potential glint and glare effects based on panel location and orientation, the geometry of the sun, and the potential receptor location. It has also considered guidelines from the UK and the USA.

The assessment methodology is based on guidance, studies, previous discussions with stakeholders and Pager Power's practical experience.

The study considered all potential receptors within 1km from the Site boundary which included 5 properties (potential residential amenity effects) as well as a stretch of the Darlington-Camperdown Road (potential road safety effects). Refer to **Figure 19** and **Figure 20** respectively for the location of the residential receptors and road location. Other roads within one (1) kilometre of the Proposal were not assessed given their local road status and low traffic volume.

The results of the Glint and Glare assessment have also been considered within the LVIA report, as is summarised in Chapter 6.2.1 above.

[4] *A 'Bare Earth Model' only considers the topography of the land and not built or other objects on it, for example vegetation.*

Figure 19 – Location of dwellings that could theoretically experience a solar reflection (Source: Figure 13 of Pager Power Glint and Glare Study).

Figure 20 – Section of Darlington-Camperdown Road that could theoretically experience solar reflection (Source: Figure 12 of Pager Power Glint and Glare Study).

Key Findings

Residential Receptors – residential amenity impacts

In terms of residential amenity, a low to moderate impact is expected (at worst) with solar reflections possible at five (5) of the 16 receptors assessed based on the modelling. Through subsequent Site Visits to ground truth the results, it is concluded that extensive vegetation shelter belts already planted obscure each of the potentially affected properties from views of the Proposal. As such, these properties would not experience effects as a consequence of the Proposal.

Road receptors – road safety impacts

Solar reflection is found to be theoretically possible along approximately 2.6km of the Darlington-Camperdown Road. However, the overall potential impact upon road users with respect to safety is predicted to be low (at worst), given reflecting panels would mostly be visible in views perpendicular to the road, and due to the screening effects of existing intervening vegetation.

Elevated Viewpoints – LVIA impacts associated with Glint and Glare

All three elevated viewpoint, considered as part of the LVIA as sensitive locations (Mt Laura, Camperdown Botanic Gardens and Mt Elephant) are greater than 7km from the Proposal and therefore are considered substantially outside the maximum distance that reflection as a consequence of a solar farm could result in a significant effect. As such there would be no Glare or Glint impact at these viewpoints.

Proposed Mitigation and Enhancement Measures

The '*Solar Photovoltaic Glint and Glare Study*' concludes that there are no significant effects expected as a consequence from the Proposal. There is therefore no requirement for mitigation to reduce impacts on any of the receptor groups summarised above. It is noted that, once established, the vegetation screen that forms part of the Proposal would remove any residual (but not significant) glint and glare effects within 1km distance from the Site boundary.

Glint and Glare Conclusion

In accordance with the application requirements and decision guidelines contained within Particular Provision Clause 52.42 (Renewable Energy Facilities [other than wind energy facility and geothermal energy extraction]), a *Solar Photovoltaic Glint and Glare Study* has been undertaken for the Proposal. This assessment concludes that no significant impacts are predicted and that predicted worst case glint and glare effects are acceptable.

It is therefore submitted that the Proposal in relation to glint and glare is acceptable having regard to relevant planning policy contained within the Corangamite Planning Scheme.

6.2.3 Flora and Fauna

Ecology and Heritage Partners have undertaken an '*Ecological Due Diligence*' to assess the flora and fauna values of the Site and to identify mitigation and enhancement measures, including vegetation offsets. The full report accompanies this Planning Report and is summarised in the following section.

Planning Policy and Guidance

The assessment methodology was informed by relevant Commonwealth, State and Local Planning Policy and guidance (detailed in the report), and included:

1. A desktop Assessment:
   - Including relevant literature, online resources, database and policy review;
2. A Site Assessment:
   - Recording of Flora and Fauna species;
   - Assessment of overall condition of vegetation and habits;
   - Vegetation Class Mapping; and
   - Native Vegetation Assessment;
3. Results; and
4. Assessment of results in terms of Policy and Planning requirements.

Key Findings

Native Vegetation

The Site contains Remnant River Red-gums in small sections along its western periphery, as well as Common Spike-sedge along a section of drainage line (refer **Figure 21**). It is not proposed to build infrastructure within the River Red-gum areas however, it is proposed to build 1 or 2 culverts (subject to final design) over a small area of the Native Common Spike-sedge (up to 40m^2).

The report concludes that '*based on the highly modified agricultural nature of the study area, landscape context and fact that no significant flora species have been recorded within it, significant flora species are considered unlikely to occur within the study area*'.

Planted and Introduced Vegetation

Four densely-planted fenced off revegetation areas are present along the western boundary, which appear to '*fill in the gaps*' between remanent River Red-gum patches. Two small isolated areas of Sugar Gum (native to South Australia) were also identified along the Site's south-western boundary. The design ensures that no infrastructure will be located within these planted areas.

Modified grasslands

The remainder of the Site, as well as the surrounding farm land, consists of modified grassland with no native species. There are no ecological constraints identified within this area. It should be noted that the entire study area also contains exotic grasses and herbs, including the noxious weeds Spear Thistle and Variegated Thistle.

Fauna

A wide range of birds were observed within the study area, with each of the three types of vegetation structures providing habitat for various types of birds. The report notes that the paddocks containing modified grasslands '*are likely to be used as a foraging resource by common generalist bird species which are tolerant of modified open areas*'. The Remnant River Red-gum areas provide habitat for both birds and other fauna, such as possums, bats and insects, although these were not observed during the field visit. The fenced off revegetation areas provide valuable foraging roosting and nesting habitat for mobile generalist fauna, including locally common birds and microbats. No significant species were observed during the field visit.

Communities

A number of ecological communities are known to occur within a 10 kilometre radius of the Site, including the Grassy Eucalypt Woodland of the Victorian Volcanic Plain which is Critically Endangered under the EPBC Act.

The report notes that '*none of these are however observed within the study site and are unlikely to be there due to the large agricultural disturbance that has occurred*'.

Wetland and Drainage System

A wetland system, including Lake Bookaar (an internationally important RAMSAR wetland), is located approximately one (1) kilometre east of the study area. An artificial dam with no ecological, a network of drainage lines, as well as a mapped wetland also exists within the Site.

With regard to the RAMSAR site, the report states that:

> *'it is unlikely that any runoff from the study area would enter Lake Bookaar and the wetlands, as the drainage line running parallel to the study area to the east, and the depressions along the study area's eastern boundary would likely intercept any water'.*

This point is reinforced in the accompanying hydrology advice prepared by EcoLogical Australia (ELA) which accompanies this application. It shows that the water flow within the onsite drainage system collects at the eastern boundary of the Site, and then flows south across the southern parts of the Site and into the tributary of Blind Creek that originates within the Property.

The southernmost section of the Site drains into a separate drainage line also flowing into a tributary of Blind Creek offsite.

The Development Footprint does not encroach onto the mapped wetland area and incorporates a 20 metre buffer to ensure minimal impact.

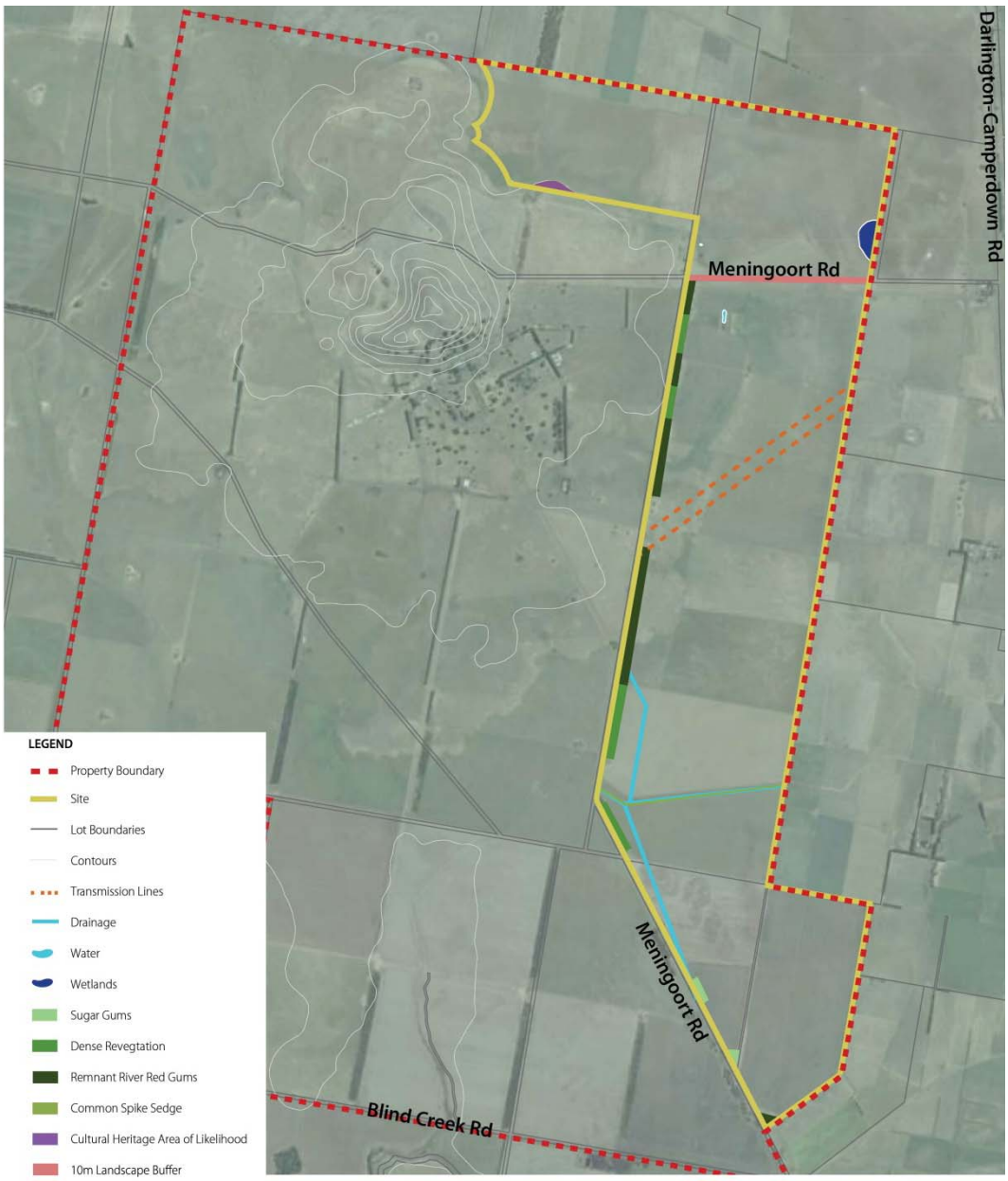


Figure 21 – Residual Constraints Map

Legislative and Policy Implications

The report concludes that the Proposal is unlikely to have a significant impact on any MNES therefore, a Commonwealth referral under the *EPBC Act* is not required. Furthermore, based on the presence of a largely modified landscape, no targeted surveys for the study area are recommended.

Similarly there are no implications for the Proposal under the following legislation:

- *Flora and Fauna Guarantee Act 1988 (Victoria);*
- *Wildlife Act 1975 and Wildlife Regulations 2013 (Victoria)*; and
- *Catchment and Land Protection Act 1994 (Victoria).*

The construction of up to two culverts over a significant drainage line could require offsetting of approximately 40m^2 under Clause 52.17 of the Corangamite Planning Scheme. The location of the culvert(s) will be determined in the detailed design phase and it is requested that the obligation to secure offsets be secured via an appropriately worded condition on the permit (although the report notes that given the small size, offsets may not be required).

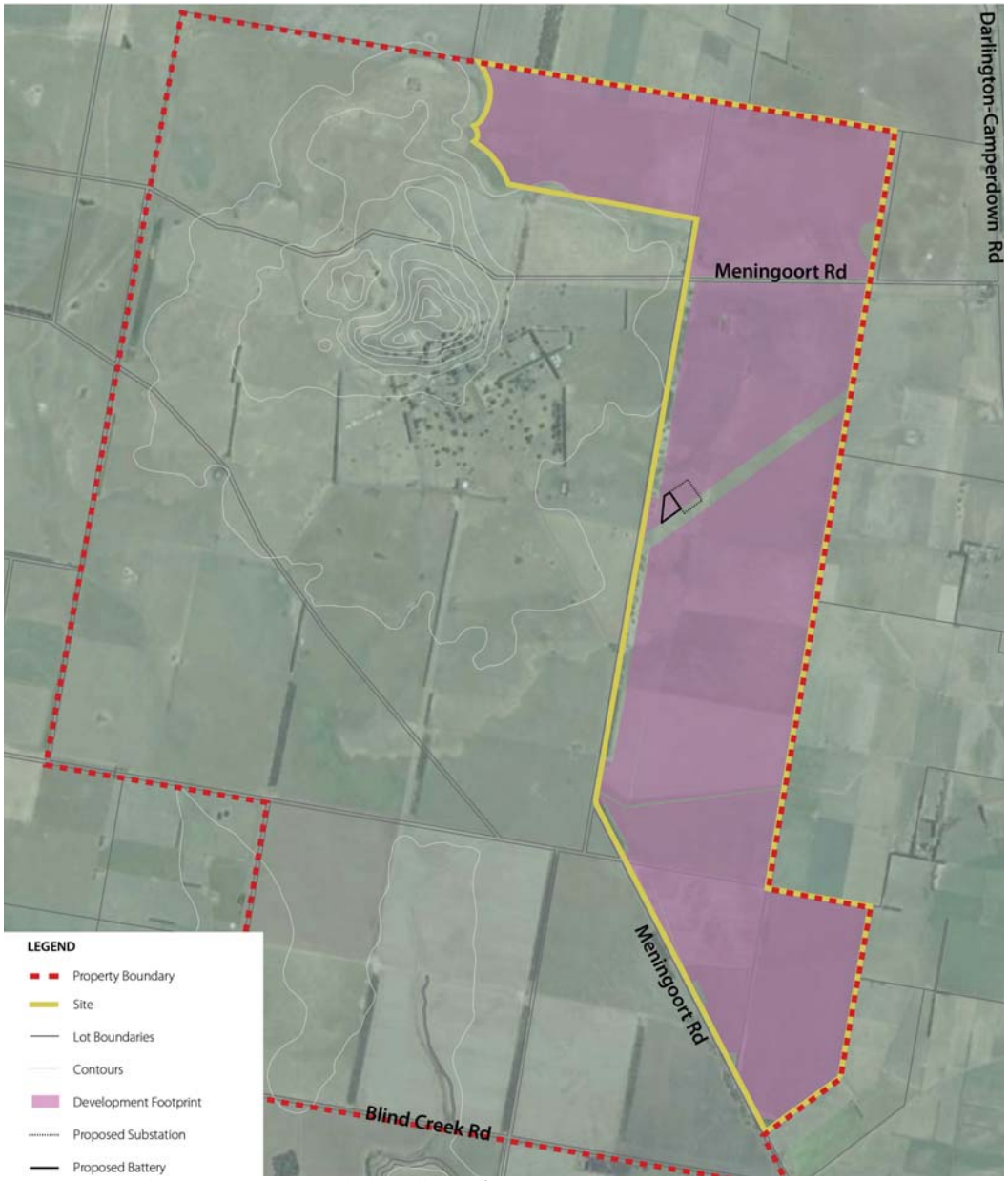


Figure 22 – Development Footprint (excluding all identified constraints)

Mitigation and Enhancement Opportunities

As illustrated in **Figure 22**, the extent of the solar farm has been designed to avoid most vegetation removal. The Development Footprint also does not encroach into the modelled wetland area and incorporates a 20 metre buffer.

While the Proposal has adopted an approach that avoids ecological impacts, the report identified a number of best practice mitigation activities that could reduce construction effects, as well as several opportunities for enhancement of existing ecology. Section 6.7 in the *Ecology Due Diligence Report* outlines mitigation measures in full, including indigenous revegetation, tree protection zones, and pollution control measures.

Pertinent to Clause 22.02-4 (Biodiversity) of the Corangamite Planning Scheme which prioritises the protection and enhancement of ecological values for developments, Table 6 below outlines the identified opportunities, as well as the Applicant's commitment to carrying these out.

Table 6 – Summary of Enhancement Measures

Mitigation / Enhancement activity	*Summary of activity*	*Commitment*
■ **Fencing off vegetation**	Fencing off the remnant River-red Gums to improve seedling establishment and reduce stress on existing trees would improve overall health and habitat.	■ The Proposal commits to the fencing (see Project Description, Chapter 3.2.9).
■ **Planting of perimeter vegetation screen.**	Continuation of the existing peripheral plantings would provide large biodiversity benefits in a landscape where relatively few shrubs and trees exist.	■ The Proposal commits to planting the Vegetation Screen. See 'Indicative Layout', as well as Project Description (Chapter 3.2.9).

Ecology Conclusion

In accordance with the application requirements and decision guidelines contained within Particular Provision Clause 52.42 (Renewable Energy Facilities [other than wind energy facility and geothermal energy extraction]), and the decision guidelines contained within the Farming Zone (Clause 35.07-6), an *Ecological Due Diligence* has been undertaken for the Proposal.

The identification of ecological constraints and the advice provided in the *Ecological Due Diligence* have informed the design of the Proposal with areas of ecological value almost entirely avoided. The majority of the Proposal would be located within a highly modified landscape with no native vegetation and of little ecological value. No significant flora and fauna species were recorded and targeted surveys are not required due to the Site's modified condition. A very small area of native vegetation would be required to be removed (up to 40sqm), which can be offset (if required).

The report has suggested a suite of mitigation strategies relating to the design and construction of the Proposal, as well as enhancement activities that will likely result in a net benefit to ecological values across the site.

Based on the above assessment and supporting *Ecological Due Diligence* technical report, it is submitted that the Proposal is acceptable from a fauna and flora perspective having regard to relevant planning policy contained within the Corangamite Planning Scheme.

6.2.4 Cultural Heritage

Ecology & Heritage Partners have undertaken a *Preliminary Cultural Heritage Study* to assist in identifying constraints on the overall Site and assist in avoiding any identified areas of value or sensitivity. Specifically, the study identifies Aboriginal and historical cultural heritage values that may be present and confirms any legislative requirement for a mandatory CHMP under the *Aboriginal Heritage Act* 2006.

The full report accompanies this Planning Report and is summarised in the following section.

Policy, Guidance and Methodology

Relevant planning policy in relation to Aboriginal cultural heritage is largely contained within Council's Vision and Strategic Framework Plan (Clause 21.03), which seeks to conserve Aboriginal sites and significant cultural landscapes. It is also an application requirement under Clause 52.42 (Renewable Energy Facilities [other than wind energy facility and geothermal energy extraction]) to consider the impact upon Aboriginal cultural heritage.

The *Preliminary Cultural Heritage Study* undertaken was informed by relevant Commonwealth, State and Local planning policy and guidance. The assessment methodology comprised of:

1. A desktop assessment:
   - Including a review of available literature using resources such as the Aboriginal Victoria (AV) and Heritage Victoria (HV) databases, as well as the Ecology and Heritage Partners' library of reports and knowledge of the area; and all relevant cultural heritage databases and mapping programmes;
2. A brief review of the land use for the study area;

3. A inspection of the Site by a qualified heritage advisor to identify any Aboriginal and/or historical cultural heritage within the study area; and
4. Results and Assessment:
   - Provision of information in relation to any implications of Commonwealth and State environmental legislation, as well as Government policy associated with the Proposal; and
   - Assessment of any opportunities and constraints associated with the Proposal.

Key Findings

Aboriginal Cultural Heritage
The desktop assessment shows that only two previously registered Aboriginal sites are within a 2km radius of the Site, and that no previously recorded Aboriginal sites are located within the Site itself, nor within 50m of the Site. However as previous archaeological assessments identified that the area within a 2km radius of the Site is sensitive to stone artefacts, and that this type of stone could be present in the study area, a field investigation was warranted.

No aboriginal artefacts were identified during the site inspection, which included an extensive examination of all mature native trees, and a search that found no caves, cave entrances or rock shelters.

A small section of the Site is identified as a '*cultural heritage area of likelihood*' due to its potential to retain archaeological deposits (refer to **Figure 21** – area identified in purple). However, as this area of archaeological likelihood is not a mapped area of cultural heritage sensitivity, it does not fulfil the requirements for a mandatory Cultural Heritage Management Plan (CHMP). Therefore, no part of the Site triggers the need for a mandatory CHMP. Notwithstanding this, the design of the Proposal will completely exclude this area from the Development Footprint in order to minimise any potential impacts to cultural heritage values.

The assessment confirms that no registered Aboriginal Places and no mapped area of cultural heritage sensitivity under the *Aboriginal Heritage Regulations 2007* are located within the Site.

Historical Heritage
The historic heritage assessment found no evidence of historical heritage on the Site. Specifically, no areas of historical archaeological likelihood were identified during the site inspection.

Please note that an assessment of potential effects of the Proposal on the heritage values associated with the adjacent Meningoort Homestead (Victorian Heritage Register, H0300) can be found in Chapter 6.2.5 below.

Mitigation
No specific mitigation measures are proposed due to the avoidance of cultural heritage areas of sensitivity, areas of likelihood, and the lack of any meaningful findings from the site assessment.

Site Heritage Conclusion

The assessment undertaken by Ecology & Heritage Partners confirms that no registered Aboriginal Places and no mapped areas of cultural heritage sensitivity under the *Aboriginal Heritage Regulations 2007* are located within the Site. The avoidance of any area of cultural heritage sensitivity as part of the Proposal's site design ensures that Aboriginal sites and significant cultural landscapes are conserved in accordance with Corangamite Shire's Vision and Strategic Framework Plan (Clause 21.03).

Furthermore, it is submitted that the assessment undertaken by Ecology & Heritage Partners ensures that any potential impact upon Aboriginal cultural heritage by the Proposal has been sufficiently considered in accordance with the requirements of Clause 52.42 (Renewable Energy Facilities [other than wind energy facility and geothermal energy extraction]).

6.2.5 European Heritage

The Site sits outside of the extent of the Victorian Heritage Register (VHR) Overlay under the *Heritage Act 2017* (VHR H0300) and Corangamite Shire's local Heritage Overlay (HO80), both of which identify the 'Meningoort' homestead as a significant heritage place (refer **Figure 23**). Therefore, no approval is required under the *Heritage Act 2017*, nor is a permit required under the Heritage Overlay.

However, due to the proximity of the registration and overlay to the Site's boundary, specialist heritage consultant, GJM Heritage was commissioned to undertake an assessment of any potential impacts of the Proposal on the cultural heritage values of 'Meningoort'. Refer to '*European Heritage Advice*' prepared by GJM Heritage which accompanies this Planning Report. This is summarised in the following section.

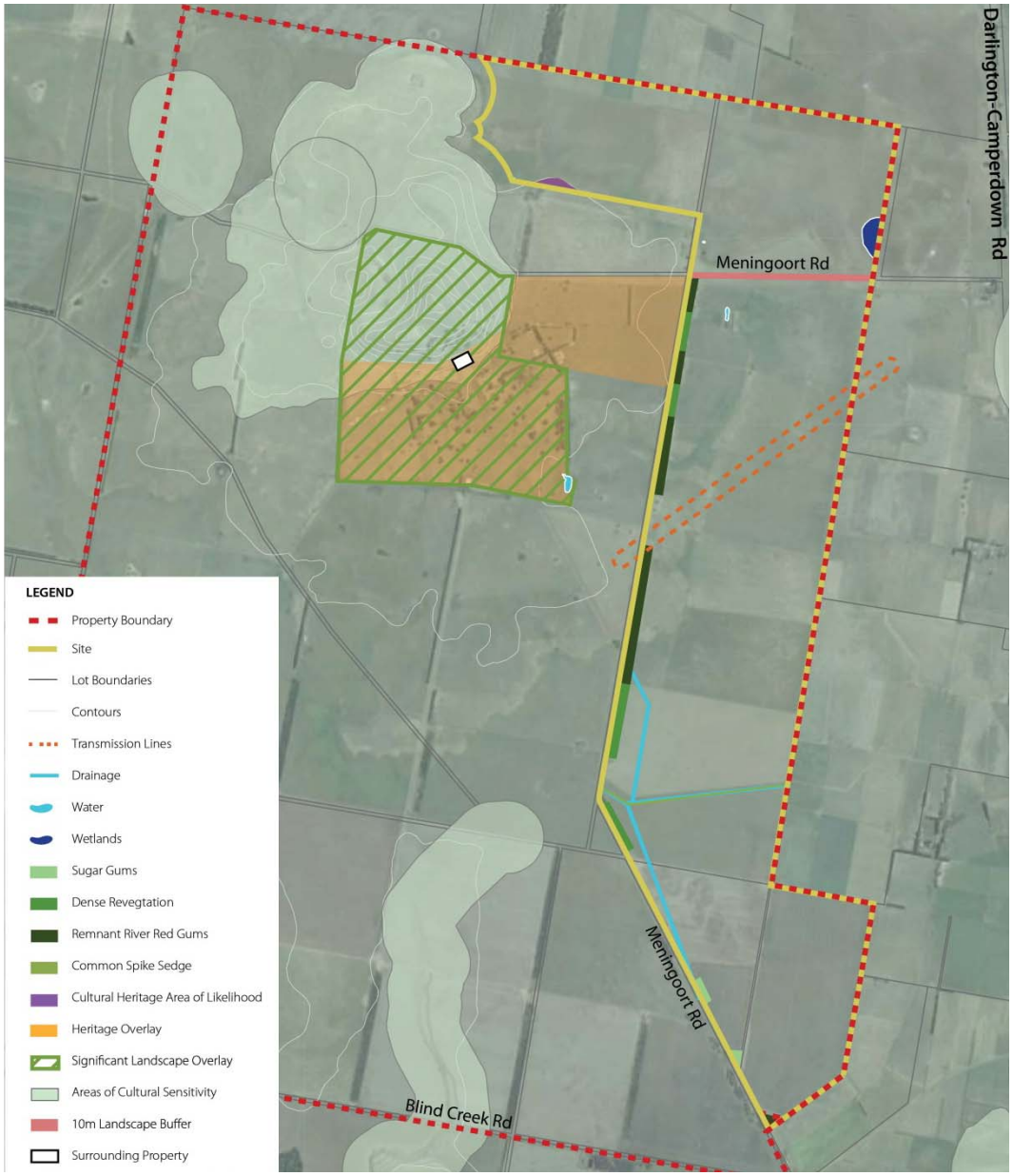


Figure 23 – Overall Constraints Map identifying proposed developable envelope

Policy, Guidance and Methodology

Whilst no planning permit under the Heritage Overlay or heritage permit under the *Heritage Act 2017* is required, the indirect implications of the Proposal on the heritage values of the Homestead have been considered, as required under relevant planning policy. This includes Corangamite Shire's Vision and Strategic Framework Plan (Clause 21.03) which identifies the need to protect '*substantial heritage assets*', as well as protect and enhance heritage buildings by seeking to ensure that development appropriately responds to places of heritage significance.

It is also an application requirement under Clause 52.42 (Renewable Energy Facilities [other than wind energy facility and geothermal energy extraction]) to consider the impact upon non-Aboriginal cultural heritage.

The assessment process undertaken by GJM Heritage consisted of:

- An assessment of the heritage status and significance of 'Meningoort' through a desktop based assessment as well as a site visit; and

- An assessment of the (potential) impact of the Proposal on the values of 'Meningoort'.

Key Findings

The assessment provides a summary of the statement of significance associated with 'Meningoort', concluding that it is of '*architectural, historical and scientific (horticultural) significance to the State of Victoria*'.

In terms of potential impacts of the Proposal on heritage values, the assessment concludes that:

- *The location of the proposed facility, a minimum of 1km away from the Homestead, will ensure that it has no impact on the physical fabric of the Homestead or associated outbuildings;*
- *The significant distance will also serve to minimise the visual impact of the proposed development on the 'park-like and picturesque' views to the Homestead;*
- *Key public views to the Homestead from the south-east (where the Homestead is oriented) will be unaffected;*
- *The impact of the proposed facility on views to the Homestead from the east (along the Darlington-Camperdown Road) will also be limited and further reduced by the introduction of continuous screening running the length of the eastern perimeter; and*
- *While visible from within the Meningoort property itself – and from the Homestead – the proposed facility does not impact on the central driveway or the strong visual axis to Mount Leura.*

Opportunities and Mitigation

The *Preliminary Cultural Heritage Study* suggested that there is an opportunity to highlight the historical occupation of Meningoort. This could be achieved through signage describing its heritage significance and its connection to past land use practices in the area. This has been discussed with the Property owners and agreed that there will be a sign erected near the entry to the Site, subject to agreement on the content. If a planning permit is required for the sign, this will be sought through a separate future application.

As discussed previously in Chapter 6.2.1, the introduction of the Vegetation Screen will combine with existing vegetation to further screen limited views of the Proposal, and to ensure views and vistas toward, from and within Meningoort are not adversely affected.

European Heritage Conclusion

Although the Site sits outside the local Heritage Overlay and extent of registration under the *Heritage Act 2017*, due to its close proximity, a heritage assessment was undertaken in order to understand any potential impacts of the Proposal on the heritage values associated with 'Meningoort'.

The Proposal's careful site design ensures that views and vistas toward, from and within heritage landscapes are not adversely affected and the Proposal avoids direct impacts on any heritage values. Furthermore, the assessment undertaken by GJM Heritage found that impacts are negligible, effectively mitigatable, and therefore acceptable.

In conjunction with the introduction of the Vegetation Screen, it is submitted that the Proposal is acceptable in terms of heritage related impacts, having regard to relevant planning policy contained within the Corangamite Planning Scheme. Based on the above, it is also submitted that this assessment has sufficiently addressed the requirements of Clause 52.42 (Renewable Energy Facilities [other than wind energy facility and geothermal energy extraction]).

6.2.6 Bushfire and Electrical Fire Management

This section provides an assessment of potential hazards associated with bushfire and electrical fire associated with the Proposal. This includes both the construction and operation phases of development. It considers the risk of damage to the solar farm from fires started elsewhere, and the risk of fire originating on the Site itself.

Policy, Guidance and Methodology

State planning policy at Clause 13.05 of the Corangamite Planning Scheme specifies that planning for bushfire risk should be considered on all land that is:

- Within a designated bushfire prone area;
- Subject to a Bushfire Management Overlay; or
- Proposed to be used in a way that may create a bushfire hazard.

The policy places a priority on the protection of human life and provides guidance for the assessment of bushfire hazard identification.

The Site is not subject to a Bushfire Management Overlay and as such, the Particular Provision at Clause 52.47 is not relevant to the Proposal. The Site does however sit within a Bushfire Prone Area and therefore consideration of Clause 13.05 is necessary.

In consideration of Clause 13.05, the Proposal does not involve any of the uses listed that specifically require bushfire risk assessment, therefore consideration is given to whether the proposed use and development will result in people congregating in large numbers.

The operation of the solar farm is considered to be a low intensity use of the land in terms of the number of people on site at any one time, with only approximately 8 to 12 full time staff on site during the operational phase. On this basis, the risk to human life (which is prioritised under Clause 13.05) can reasonably be considered to be low during the operational phase.

However, there could be up to 150 people at site during construction over a period of 12 months or more, and although the construction period does not pertain to the expected use of the site, its length of time and the number of people who could be on site warrant further consideration.

Existing Environment

The Site covers approximately 605 hectares of rural land, the vast majority of which has been cleared for grazing and sown with improved pastures. Most of the Property offers low fuel load (grasses). A number of small wooded areas exist around the western perimeter of the Site, which in one part is connected to a larger area of trees associated with the Homestead (Meningoort) adjacent to the Site (refer **Figure 21**). There are no heavily vegetated areas within the Site's boundary.

In the wider area, due to historic clearing for agriculture, vegetation cover is generally very low except for planted shelterbelts along road reserves, and along some paddock boundaries.

The Site is flat with a gentle gradient to the east and south, meaning that steep slope, which can contribute to the spread of fire, is not present.

Ground cover at the Site is dominated by grazed pastures and crops and while managed, it could be susceptible to grass fires in hot, dry and windy conditions. Existing onsite ignition sources include:

- Machinery operating in long grass;
- Lightning strikes;
- Agricultural activities; and
- Carelessly discarded cigarette butts.

The existing overhead electricity transmission lines also pose a potential hazard. AusNet Services is required to maintain line infrastructure to minimise fire risk.

Existing receptors and assets at risk from fire include two dwellings located within the Property, as well as a number of residences located between 500m and 1,500m from the Site (refer **Figure 24**), as well as surrounding farm land.

Construction Phase Risk

Potential ignition sources during the construction and decommissioning phases of the Proposal would include:

- Machinery movement in long grass;
- Hot work activities, including welders and grinders;
- The storage of waste and combustible materials onsite;
- Storage of flammable liquids;
- Electrical faults; and
- Lightning strikes.

Considering the sparse vegetation cover over the Site (see Chapter 6.2.3, Flora and Fauna), and other factors discussed above, it is considered unlikely that the Proposal would pose a significant bushfire risk. The bushfire hazard associated with the activities listed above is considered highly manageable through electrical equipment selection, appropriate access arrangements, fuel load reduction programs, safety protocols during periods of high fire risk and the implementation of an Emergency Response Plan (ERP), which would be a sub plan of the CEMP and OEMPs. It is considered that requirement for the ERP would be subject to a suitably worded planning condition.

Potential fire risk during decommissioning activities would be similar to those for construction phases.

Operational Phase Risk

As noted above, the operation of the Proposal is considered to be a low-intensive use of the land with the risk to human life considered to be low. Notwithstanding, a number of design mitigation features have been incorporated to ensure both protection of the infrastructure against potential bushfire risk from the wider area, and any fire resulting from within the Site. These measures are discussed in the following Mitigation Measures section.

Mitigation Measures

The following mitigation measures are proposed to reduce and manage the risk of fire, and reduce the impact of any fires within or surrounding the Site.

Design

- Electrical equipment selected for the 30 year life span of the Proposal would be designed to minimise the potential for ignition and certified to comply with relevant Australian Standards;
- A 20,000 litre water tank solely for the purposes of fire protection is proposed with access available for the Country Fire Authority (CFA) to use it for fire-fighting purposes; and
- Incorporation of a five (5) metre defendable space or firebreak around the solar farm inside the proposed perimeter fence, subject to agreement with the CFA on its final design. Although the provisions of Clause 52.47 (Planning for Bushfire) do not apply as the Site is not included within the Bushfire Management Overlay, it is proposed that the firebreak be designed taking into account the principles adopted for vegetation management for defendable spaces as set out in Table 6 of Clause 52.47. It will be ploughed, mown or grazed, and maintained over the life of the solar farm.

Access

- Maintenance of access tracks suitable for fire trucks throughout the Site with access provided to the CFA; and
- All access requirements stipulated by the CFA for access will be adhered to.

Fuel Reduction

- The fuel load across the Site will be monitored, and will be mechanically slashed, grazed or ploughed to reduce the risk of grass fires starting within the Site and ensuring that fires originating from outside the Site do not intensify as a consequence of entering the site; and
- Asset protection zones would also be designed and maintained around buildings and infrastructure to reduce the risk of fuel loads building up around sensitive assets. These management actions will be included in the CEMP, OEMP and DEMP.

Emergency Response Plan (ERP)

Management Plans will include an ERP for each stage of the development, and a copy will be provided to the CFA. This will allow the first responders to a fire to have ready access to information that details the effective control measures, and for these to be implemented quickly.

Safety Protocols

Protocols written in to the CEMP, OEMP and DMP, will include, but are not limited to:

- Basic training of all staff in the use of firefighting equipment on site;
- Firefighting equipment lists will be detailed in the Work Method Statements;
- Management procedures for hot works, smoking, and vehicle use off formal access tracks;

- Familiarisation tours of the site by the applicant for the CFA;
- The safe use and storage of fuel and flammable chemicals; and
- Daily monitoring of the Fire Danger Rating, and communication of any further mitigation measures required to all staff and contractors.

Fire Risk Conclusion

State planning policy at Clause 13.05 places a strong emphasis on the protection of human life over all other policy considerations. Careful consideration has been given to the design and siting of the Proposal with specific measures incorporated to minimise and reduce fire risk.

The risk to human life as a result of bushfire is considered to be minimal based upon the following:

- The risk of fire generated by solar farms in general is considered to be low owing to the safety mechanisms incorporated into modern solar panels;
- Low number of people on site during the operational phase of the solar farm;
- Existing conditions of the Site are already low-fire risk;
- The design, mitigation and safety measures proposed further reduce risk fire; and
- The presence of onsite staff, trained in firefighting, can assist in controlling any fires that occur on or near the site.

Accordingly, the Proposal is considered to be acceptable in terms of bushfire and electrical fire management under the Corangamite Planning Scheme.

6.2.7 Flood Risk and Drainage

In considering the effect of the Proposal on the surrounding area, technical advice has been prepared by Eco Logical Australia (ELA) which outlines the potential flood risk associated with the Proposal, and any impact on the existing drainage profile of the area. This advice accompanies this Planning Report and is summarised in the following section.

Policy and Guidance

The key guiding policy in terms of assessing potential impacts of the Proposal is Clause 52.42 (Renewable Energy Facility [other than wind energy facility and geothermal energy extraction]). The decision guidelines set out under this clause (at 52.42-3) require the Responsible Authority to consider, as appropriate:

> *The effect of the proposal on the surrounding area in terms of noise, glint, light spill, vibration, smell and electromagnetic interference.*

Although the decision guidelines do not specifically refer to the potential impacts on the surrounding area in terms of flood risk and drainage, this is considered relevant given the existing drainage profile of the Property with a drainage system which traverses the Site and on to adjoining properties.

The decision guidelines of the Farming Zone (Clause 35.07-5) also require consideration of drainage and flooding, particularly in the context of surrounding agricultural land. Specifically, these include (emphasis added):

- *Agricultural issues and the impacts from non-agricultural uses*
  - *The potential for the use or development to limit the operation and expansion of adjoining and nearby agricultural uses*
  - *The agricultural qualities of the land, such as soil quality, access to water and access to rural infrastructure.*
- *Design and siting issues*
  - *The impact of the siting, design, height, bulk, colours and materials to be used, on the natural environment, major roads, vistas and water features and the measures to be undertaken to minimise any adverse impacts.*
  - *The location and design of existing and proposed infrastructure including roads, gas, water, drainage, telecommunications and sewerage facilities.*

Corangamite Shire's local policy Clause 22.02 (Environment) and Clause 22.03 (Economic Development) also direct a decision maker to consider flooding and drainage.

Methodology

ELA undertook a high-level assessment of the flooding and drainage risks relevant to the Site and surrounding area in relation to the Proposal by undertaking a desktop drainage and flood-risk assessment.

Key legislation and policy relevant to such an assessment sits outside the Corangamite Planning Scheme and, as identified within ELA's advice, is guided by the *Water Act 1989*, the *Environment Protection Act 1970*, and the *Draft Victorian Rural Drainage Strategy 2017*.

Key Findings

The assessment undertaken by ELA states that the construction phase of the Proposal poses greater risk associated to flooding and drainage. Works would involve a range of activities that could disturb soils and potentially lead to sediment laden runoff, affecting local water ways, during rainfall events. On-site use of fuels and other chemicals also pose a risk of surface water contamination in the event of a spill. However with the use of appropriate on-site stormwater management, it is expected that drainage conditions would quickly return to normal post construction allowing surface penetration and/or run-off to occur in a typical manner. Potential risk to drainage or flooding during decommissioning activities would be similar to those for construction phases.

The assessment confirms that no significant change to the hydrological regime is anticipated to occur as result of the Proposal. This is due to the physical characteristics of solar farms which sit lightly on the land, and do not alter hydrological conditions beyond what are minimal effects on site. Although the panels themselves presents a large non-pervious surface, their shape and orientation and the separation distance between rows (up to 12m) would quickly return rainfall as runoff to the natural ground to allow surface penetration and/or run-off to occur in a typical manner.

Impervious areas associated with the Proposal are minimal (7-8% of the Site's Area) and comprise the substation, support buildings and inverter sites, with the latter located along access tracks that would also present as impervious areas. Furthermore, piles associated with the solar panels will cause minimal impediment to the overland flow path.

No significant increase in drainage or runoff from the existing drainage lines located in the south-west corner and southern section of the Site is anticipated, as no alterations to the existing hydrology is expected. Therefore, in terms of potential impact on downstream landholders, the advice states:

> *'There will be no significant impact to the neighbouring landholders located downstream to the Project Site as no alteration of existing hydrology is envisaged and the identified drainage flow paths will traverse downstream to the south and drain to Blind Creek'.*

Mitigation Measures

Potential impacts to the hydrological flows over the Site during the construction period can be controlled through best practice construction techniques which will be detailed within the CEMP (and the DEMP at the end of the Proposal's lifetime). Refer also to the discussion at Chapter 6.2.8 'Water'.

The Advice recommends that as part of the detailed design phase, drainage plans should incorporate a detailed survey of the land and the location of proposed impervious areas at the Site. Further, '*any modification of drains within the development footprint should not result in any significant changes to drainage flows outside of the Project Area*'. In addition there is a recommendation to consider the future impacts of climate change in the design. The Applicant commits to these recommendations as part of detailed design.

Conclusion

In accordance with the decision guidelines set out under Clause 52.42 (Renewable Energy Facility [other than wind energy facility and geothermal energy extraction]), the ELA assessment confirms that there will be no adverse impact on the surrounding area in terms of flood risk with no significant impact on neighbouring landholders.

Accordingly, in terms of flooding and drainage, this confirms that the operation of nearby agricultural uses will not be affected by the Proposal. Therefore, the Proposal complies with the decision guideline contained under the Farming Zone requiring consideration of potential impacts on existing adjoining and nearby agricultural uses.

The assessment also confirms that the existing agricultural qualities of the Site in terms of access to water will be unaffected, allowing the agricultural use of the land to be resumed following decommissioning. This ensures compliance with the relevant decision guidelines contained under the Farming Zone when considering potential impacts associated with the introduction of non-agricultural uses.

In terms of the design and siting guidelines contained within the Zone, the Proposal has specifically addressed constraints of the site (refer to Chapter 3.6), that first avoids any effects on existing water features. A small modelled wetland has been identified, and then avoided, in the north east corner of the Site. The small existing farm dam could be filled in, subject to final design.

Corangamite Shire's local policy Clause 22.02-3 (Wetland Areas) requires the role and function of wetland areas to be considered in planning decisions. The avoidance of the modelled wetland located in the north east corner of the Site, demonstrates that the role and function of wetland areas has been appropriately considered. Any additional drainage would be designed in a way that would ensure the continuation of existing flows into this area, as well ensuring that flows outside of the Site would not be altered.

In summary, the impact of the Proposal on the flooding and drainage characteristics of the Site have been considered and assessed to be negligible and therefore acceptable.

6.2.8 Amenity

Clause 52.42 requires an assessment to consider potential amenity impacts associated with the Proposal such as:

- Noise
- Glint
- Light spill
- Emissions to air, land or water
- Vibration
- Smell
- Electromagnetic interference

The following section briefly considers the Proposal against each of these topics.

Noise and Vibration

Operational noise level of infrastructure for solar farms is limited. The two main components that generate low levels of noise are the sub-station, and the inverters which will be scattered throughout the Proposal (refer **Figure 5**).

It is anticipated that substation infrastructure would generate a Nosie level of up to 81(dB), therefore requiring a separation distance of 160m to the nearest residential receptor.

It is anticipated that inverters could produce up to 97dB (the predicted noise from two inverters placed next to each other), therefore requiring a distance of up to 350m away from the nearest residential receptor.

To ensure residential amenity in relation to noise the Proposal has adopted a design principal that all infrastructure related to the Proposal is placed at least 350m from any residence. Indeed, the closest neighbour is just under 500m from the Proposal boundary. There will be no operational noise impacts that will result as a consequence of the Proposal.

Construction vehicle access is proposed via Blind Creek Road and Meningoort Road via the Darlington-Camperdown Road (refer **Figure 6**). Surrounding dwellings are substantially separated from Blind Creek Road and Meningoort Road to the south with noise associated with construction vehicles on these roads likely to be negligible (refer **Figure 24**).

Some dwellings directly front the Darlington-Camperdown Road to the east and may experience some noise from construction vehicles travelling to the Site. It is anticipated that construction vehicles will range from vans up to semi-trailers, as well as a small number of larger sized vehicles with a projected number of 16 trucks accessing the site across a typical day. It is noted that the 16 trucks are anticipated to be dispersed throughout the day with access to the site taking place during normal construction hours (excluding Sunday and public holidays). On this basis, it is anticipated that noise disturbance associated with larger construction vehicles travelling on the Darlington-Camperdown Road will be minimal. Notwithstanding this, it is recommended that suitable arrangements for construction vehicles can be detailed and secured within the Traffic Management Plan (TMP) via a condition included in any permit to ensure potential noise impacts on amenity are minimised.

In light of the discussion above it is considered that potential noise impacts on amenity are negligible. Potential impacts can be mitigated and/or would be negligible during the construction phase, and would not arise during the operational phase due to the design taking into account appropriate noise buffers. The Proposal is therefore assessed as being acceptable under Clause 52.42 in terms of noise amenity.

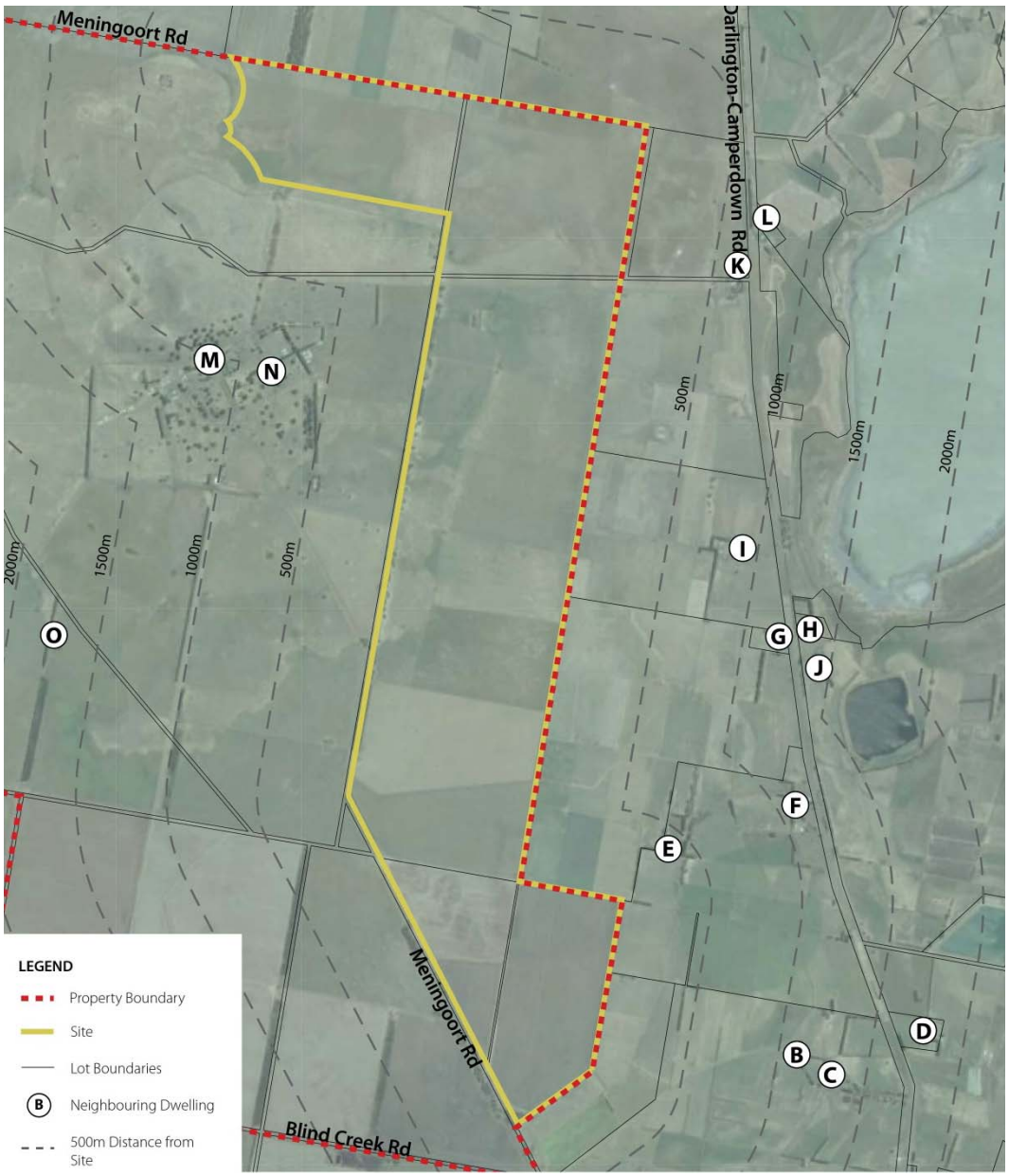


Figure 24 – Location of neighbouring dwellings

Glint and Glare

Potential amenity impacts associated with glint and glare has been considered within a Solar Photovoltaic Glint and Glare Study as discussed in Chapter 6.2.2 above. It is determined that nearby properties would not experience effects as proposed solar panels would not be visible from nearby dwellings. The proposed vegetation screen would ensure that any residual effects within gardens or from driveways, would also be negligible once the proposed vegetation screen becomes established.

Glint and Glare impacts on amenity are therefore assessed as being negligible and acceptable under Clause 52.42.

Light Spill

The issue of light spill was considered within the landscape assessment. It concluded that there would be no impact from light spill (See '*Landscape & Visual Impact Assessment*', Section 2.6 which provides details of the lighting arrangements).

Light spill is therefore assessed as being acceptable under Clause 52.42.

Emissions to air, land and water

Air

During the construction and decommissioning phases, dust generation would accompany excavation and earthworks as well as the movement of trucks and other work vehicles along internal unsealed access roads during the construction and decommissioning of the Proposal. Air emissions would also be produced from equipment and vehicle exhaust fumes. Without appropriate mitigation, these effects could reduce amenity at surrounding properties.

During the operational phase, the Proposal would have a positive impact on emissions to air, as greenhouse gas emissions would reduce through the displacement of traditional carbon intensive electricity generation.

It is considered that, with the implementation of effective mitigation measures relating to dust control and vehicle/plant emissions, emission impacts to air amenity would be acceptable under Clause 52.42. Mitigation measures to reduce dust emissions would include:

- The use of a water truck during dust generating activities;
- Limiting the extent of clearing and excavation; and
- Modifying activities if dust is observed leaving the Site towards nearby sensitive receptors.

Mitigation measures to reduce fuel emissions would include:

- Ensuring all vehicles and machinery that enter the site meet relevant standards for emissions; and
- Maintaining vehicles and plant in accordance with manufacturer's requirements to minimise emissions.

Mitigation measures would be included in a CEMP (and the DEMP). It is anticipated that the requirement for which will be written into an appropriately worded condition of consent.

Land

Solid wastes will be the main pollutant generated by construction activities. Solid wastes will include packaging, excavated material, metal and cable off-cuts, excess building materials, general refuse and other non-putrescible wastes. Ancillary facilities in the site compound would also produce sanitary wastes classified as general solid waste (putrescibles). Decommissioning effects are considered to be similar but would occur over a shorter period of time.

Waste streams during the operation of the Proposal would be very low. No waste streams would be associated with the generation of electricity using PV panels. There would be solid waste streams associated with maintenance activities and the solid waste generated as a consequence of having employees and/or contractors on site. Some materials such as, fuels, metals and lubricants may require replacement over the operational life of the Proposal.

The disposal of wastes to ensure no significant land pollution as a consequence of the Proposal will ensure that there are no negative impacts on amenity of nearby receptors. Waste reduction at all times would be based on the hierarchy of:

1. Reduce waste production;
2. Recover resources (including reuse, reprocessing, recycling and energy recovery); and
3. Dispose of waste appropriately.

Specific measures to be incorporated into the Waste Management Plan (WMP, anticipated to be a sub plan of the CEMP) would include, but would not be limited to, the following:

- Protocols to identify opportunities to follow the waste hierarchy - to ensure that waste is minimised, recovered, and disposed of appropriately, and also to ensure a culture of responsible waste management is upheld by staff;
- Quantification, classification, and tracking of all waste streams - to encourage waste reduction and minimise inter-contamination of waste streams;
- Controls on the disposal methods of all waste streams;
- Provision of recycling facilities onsite to reduce waste streams;
- Provision of a dedicated waste management area onsite; and
- Protocols on the transportation of waste, for example covered loads.

Water

The proposed works involve a range of activities that could disturb soils and potentially lead to sediment laden runoff, affecting local water ways (particularly drainage lines) during rainfall events (and consequently the amenity of those that depend on, or use the waterways). These activities include:

- Excavations for the construction of internal roads, substation, support buildings, construction compound, laydown and parking areas;
- Ground preparations associated with the installation of PV panels and inverters;
- Ground preparations for overhead cable installation; and
- Trenching for belowground cable installation.

The use of fuels and other chemicals on site pose a risk of surface water contamination in the event of a spill. Chemicals commonly used onsite would include fuels, lubricants and herbicides.

Operational impacts to surface water resources are considered negligible.

Potential effects to water, and impacts to amenity associated with these effects can be effectively mitigated. Protocols for erosion and sediment mitigation to protect water quality at the Site and beyond would be included in the CEMP.

With the implementation of mitigation, it is considered that impacts to amenity though water emissions can be avoided, and that the Proposal is therefore acceptable Clause 52.42.

Smell

There is limited potential to impact on amenity through smell as a result of activities associated with the construction, operation and decommissioning of the Proposal.

Electromagnetic Interference Amenity

Electromagnetic Fields (EMFs) consist of electric and magnetic fields. EMFs are produced by electrical equipment of all size and voltage, and also occur naturally. Electric fields are produced by voltage while magnetic fields are produced by current. EMFs exist close to wires and lines that carry electricity and electrical devices and appliances that are operating. EMFs dissipate quickly with distances over 10m, and exposure levels of 5,000 volts per metre (for an electrical field), and 1000 microtesla (for a magnetic field) are considered safe for public exposure at an exposure rate of 24 hours per day (NHMRC Interim Guidelines on the limits of exposure to 50/60Hz electric and magnetic fields[5]).

During the construction of the Proposal there is potential for exposure to EMFs by contactors working near the existing 220kV line. However construction activities (asides from the connection point and access), will not occur within the transmission line easements. Furthermore connection of electrical equipment and grid connection activities would only take place by qualified personnel and would be for limited periods. Decommissioning phase effects are anticipated to be similar.

Potential sources of EMFs associated with the Proposal during the operational phase include the Substation, the 33kV lines within the site, as well as other electrical gear at lower voltages. Given set back distances from the Site boundary to electrical equipment (at least 20m), levels of EMFs generated by the Proposal would be lower than the limits recommended in the NHMRC Guidance noted above ('EMFs Info, 2017[6]', provides distance calculations for EMFs for various electrical infrastructure). There would be no public access permitted within the Site.

Due to the dissipation rates mentioned above, and that solar farms do not contain moving parts (moving at a frequency that can result in electromagnetic interference), interference on external electrical equipment outside of the Site Boundary would not occur.

Electromagnetic Interference Amenity impacts are therefore considered to be negligible and acceptable under Clause 52.42.

[5] See https://pdfs.semanticscholar.org/5519/cb41475ee21722d2da7de5f9838eda776375.pdf, accessed on 26 June 2018.

[6] See http://www.emfs.info/

6.2.9 Traffic and Car Parking

A *Transport Impact Assessment* (TIA) has been undertaken by OneMileGrid traffic engineers to assess the traffic implications of the Proposal on the surrounding road network. The full assessment accompanies this Planning Report and is summarised in the following section.

Relevant Policy and Guidance

The decision guidelines contained under both the Farming Zone (Clause 35.07-6) and Clause 52.42 (Renewable Energy Facility [other than wind energy facility and geothermal energy extraction]) require an assessment to consider:

- The effect of the proposal on the surrounding area including the effect of traffic to be generated on roads; and
- Whether the proposal will require traffic management measures.

Requirements in relation to car parking are specified under Clause 52.06 (Car Parking), noting that a Solar Farm as a land use is not listed in the associated table of car parking rates.

As part of the assessment the Site has been inspected with due consideration of the Proposal, traffic data has been sourced, and relevant background reports have been reviewed.

Key Findings

The report noted that all traffic movements to and from the Site will use Meningoort Road, Blind Creek Road and the Darlington-Camperdown Road.

The report found that it is not anticipated that there will be any traffic impacts on the surrounding local road network or the arterial road network and intersections during the construction phase (subject to mitigation measures detailed below) or during operation of the solar farm. This is due to the low volume of traffic expected.

However, the level of traffic generated by the project during construction is likely to require some improvements to the Blind Creek Road intersection to ensure that vehicles can safely turn without impacting on through traffic. Furthermore, to assist with the operation of the intersection between Darlington-Camperdown Road and Blind Creek Road, the report recommended that local gravel shoulders be constructed on the Darlington-Camperdown Road to provide a potential passing area for turning vehicles.

In addition to the intersection upgrade, on-going monitoring and maintenance is recommended to ensure that the road is maintained safely and returned to its original condition once construction is complete.

In terms of the operational phase, projected traffic movements associated with up to 12 staff vehicles arriving and departing the site daily were assessed. This was anticipated to have a negligible impact on the surrounding road network.

On-site parking is proposed to meet the demands of staff during the construction and operational stages with an area available for one parking space per staff member. During the construction stage this equates to approximately 150 spaces and during the operational stage this equates to 15 spaces. The Proposal includes the provision of 150 spaces during the construction phase and 15 spaces for the operational phase, which are the numbers supported by the *Traffic Impact Assessment*. Accordingly, it is considered that the Proposal complies with Clause 52.06, and will not generate any off-site impacts.

Conclusion

In accordance with the decision guidelines contained within the Farming Zone, Clause 52.42 and 52.06, consideration has been given to traffic related impacts created as a consequence of the Proposal. Based on the above assessment and the supporting *Transport Impact Assessment*, it is not anticipated that there will be any significant traffic impacts. However, traffic management works have been recommended to assist with operation of the intersection between the Darlington-Camperdown Road and Blind Creek Road.

With the traffic management works proposed, it is submitted that the Proposal is acceptable in terms of traffic and car parking related impacts, having regard to relevant planning policy contained within the Corangamite Planning Scheme.

7 CONCLUSION

This report has assessed the proposed Bookaar Solar Farm against the relevant policy and controls of the Corangamite Planning Scheme. It has found that it enjoys strong policy support at a State and Local level and complies with the Farming Zone and the Renewable Energy Facility particular provision.

The report has also found that the Proposal will result in positive environmental and social outcomes for the region and the State more broadly. It will generate clean energy in a low impact manner and contribute to State, National and International efforts in reducing greenhouse gas emissions helping to avoid the dangerous impacts of climate change.

With an installed capacity of approximately 200 MW, the Proposal will generate approximately 420 GWh of electricity annually over a 30 year lifespan, supplying clean energy to the equivalent of 80,000 average Victorian homes each year. This equates to significant carbon savings due to the electricity displaced from current generation, which is heavily reliant on coal. It will provide major greenhouse gas benefits by offsetting approximately 450,000 tonnes of CO_2 annually.

The Proposal represents a significant step forward in advancing Victoria's renewable energy sector and directly contributes to meeting Victoria's renewable energy targets of 25% by 2020 and 40% by 2025.

In addition to the environmental benefits, the Proposal will provide increased energy security for businesses and the community, and will stimulate the local economy. It will make an important contribution to local employment and provides opportunities for local business.

This report has found that the physical characteristics of the Site lend it to being suitable for a solar farm. It is of sufficient size, flat terrain, and has relatively few constraints. The ability to exclude areas of sensitivity through careful site design is a key strength of the Proposal. Significant efforts have been undertaken to understand the opportunities and constraints associated with the Site, and to reflect these in the design of the solar farm.

In conclusion, the report has found that the impacts of the Proposal are generally low. Any residual impacts have been considered as part of the supporting technical studies with recommendations provided to ameliorate or minimise these impacts. Together with these mitigation measures, the impact of the Proposal is considered to be acceptable having regard to the Corangamite Planning Scheme.

The assessment undertaken in this Planning Report and the accompanying supporting technical reports have demonstrated that the Proposal complies with the Corangamite Planning Scheme and the relevant permits are respectfully sought.

APPENDIX A – PROJECT DESCRIPTION, INFINERGY AUSTRALIA PTY LTD

Bookaar Solar Farm

Project Description

Prepared by

Infinergy Pacific

May 2018

1 Introduction

1.1 Project Overview

The proposed Bookaar Solar Farm (the 'Proposal') would generate electricity through the conversion of solar radiation to electricity through the use of PV panels laid out across the proposal site in a series of modules, mounted on steel racks with piled supports. Other infrastructure on site would include electrical invertors, underground and/or above ground electrical cabling, telecommunications equipment, a substation including a battery, amenities and storage facilities, vehicular access and parking areas, along with security fencing and gates. A detailed description of the Proposal is provided in Section 2.

1.2 Project Setting

The Proposal is located on approximately 605 hectares of rural land 12.5 km north-west of Camperdown Township. The proposed Site for the Proposal is part of a larger property, and will be accessed from the Darlington-Camperdown Road via Meningoort Road.

Surrounding land uses are predominantly agricultural with scattered rural residential properties. The landscape character of the setting generally appears as a relatively flat volcanic plains landscape with scattered trees and windrow plantations, and some low volcanic cone landforms.

1.3 The Applicant

Bookaar Renewables Pty Ltd (the 'Applicant) is a Joint Venture company formed between Infinergy Australia Pty Ltd and the Landowner. Infinergy Australia has a strong focus on solar development in Australia. The development team has over 15 years' experience developing, owning, operating and manufacturing renewable technologies. The company possesses the in-house expertise along with the experience needed to design, develop, build and operate renewable energy schemes.

Infinergy Australia believes solar energy has an important role to play in addressing the combined threats of climate change and decreasing energy security, both of which are identified as key issues facing the electricity sector in Australia. In response to these threats, Australia has committed to renewable energy targets to ensure that approximately 23.5% of the electricity supply is derived from renewable sources by 2020 (DEE, 2015). Infinergy Australia is committed to making a significant contribution towards this target.

When assessing a renewable energy scheme, Infinergy Australia, in close consultation with statutory consultees and local communities, aims to put the right technology in the right place. This approach allows Infinergy Australia to design developments that are sympathetic to the local environment while maximising operational outcomes.

1.3.1 Generation Capacity

Early consultation with the network operator AEMO confirmed that there is spare capacity that would allow approximately 200 MW to be connected to the existing electricity transmission network the crosses the Site (the Terang–Ballarat 220 kV line). It should be noted that the Proposal may not end up with a firm 200kV connection following detailed grid studies and connection application to the National Electricity Network (NEM).

2 The Proposal

2.1 Proposal Description

2.1.1 Site Description

The Site comprises of approximately 605 ha and is currently operating as grazing land. It is mainly flat with ground levels increasing near the Meningoort Homestead in its north-western corner.

Meningoort Homestead is a heritage listed place that is sited on the south-east slope of Mount Meningoort outside the Site, directly facing Mount Leura.

The Site is an irregularly shaped block around 7km in length from north to south, and ranging in width from around 480m to around 2.8km. The average width of the site is 1.2km.

A 30 year land access lease has been negotiated for the life of the Proposal, and at the conclusion of the Proposal's operations, the Solar Farm would be decommissioned and the Development Footprint returned to a suitable condition to allow the resumption of agricultural activities.

A high voltage 220kV overhead transmission line crosses the proposed Site. The Proposal would connect into this line, known as the Terang-Ballarat 220kV line, via a new onsite substation which would be located towards the middle of the development and as close as possible to the Terang-Ballarat 220kV line.

2.1.2 Key Components of the Proposal

The Proposal involves the installation of PV panels with a combined generation capacity of approximately 200 MW. The Proposal includes the following elements:

- Solar arrays: which would be made up of approximately 700,000 solar panels supported by a mounting system installed on approximately 100,000 piles driven or screwed into the ground;
- The panels would be installed on either:
  - A fixed tilt system (oriented west to east); or
  - A single axis system (orientated north to south);
- Up to 60 central inverters located throughout the development (placed together in groups of two units or singularly, each unit would likely be between 2 and 3 MW);
- Above and/or below ground onsite cabling and electrical connections;
- Onsite access tracks;
- Substation (which would connect the Proposal to the NEM);
  - The substation would also have an area designated adjacent to it for battery storage (up to 1ha);
- Support buildings alongside the substation including communications equipment and communications tower (lattice type tower similar to a mobile mast and up to 20m high – the requirement for the communication to would be established at the time of grid offer);
- Perimeter fence (security fence approximately 2.5 m high);
- Fences around existing areas of remanet River Red-Gums;
- Vegetation screens for visual screening;

- Publically accessible signage in one location (to be determined) along Meningoort road explaining about the history of 'Meningoort'; and
- Firebreaks.

The final location of the elements listed above will be determined post consent through a detailed design process.

In addition to the key components outlined above, there would be a temporary construction compound required to facilitate the construction and decommissioning phases of the Proposal. The construction compound would include:

- Temporary construction offices;
- Car and bus parking areas;
- A staff amenity block (including portable toilets, showers and a kitchen) designed to accommodate peak staff numbers during the construction period; and
- Laydown areas.

All land required for the temporary construction compound, if not used as part of the array area, would be restored to its current condition.

The 200 MW layout for the Proposal is 'indicative'. The reasons for this are threefold:

- The market for solar panels is dynamic with technology changing quickly and it is the intention of the applicant to take advantage of any technology advances to ensure that the benefits of the Proposal are maximised;
- While the topography of the site, is suitable for solar development, detailed geotechnical studies will be required to determine the most suitable location for each of the solar farm components; and
- Grid availability into the transmission line is subject to change.

These aspects cannot be resolved until after consent when detailed procurement studies are conducted and grid connection studies are completed. As such, the Applicant has identified a Development Footprint within which all components of the Proposal would be accommodated. This application has been designed to assess the entire potential Development Footprint which provides a degree of flexibility in which the final design can be optimised to utilise best in class technology, while ensuring that environmental effects are acceptable. By adopting this approach, the assessment represents a worst case scenario in line with best practice assessment principles and reduces the likelihood of needing to seek modification approvals for minor layout changes.

2.1.3 Scale of Development

The final scale of the Proposal will be optimised within the Development Footprint during post-consent studies based on a combination of the most suitable technology at the time of procurement along with detailed geotechnical and grid connection studies. For this report the applicant has assumed a 200 MW design based on environmental constraints identified and the estimated capacity of the transmission line. A solar farm of this scale would result in a final output of approximately 420 GWh based on the solar resource at the Site, with an estimated capacity factor of 24%.

It should be noted that the final scale of development will aim to maximise generation capacity at the Site based on the constraints identified though the assessment process. As such, the

final scale of development could be greater than 200 MW, however any design would be contained within the Development Footprint, and would not exceed the maximum dimensions listed (i.e. a maximum panel height of 4m), nor the environmental effects identified.

2.1.4 Indicative Timeline

The Proposal would have a lifetime of 30 years as indicated in Table 1 below. It is estimated that the Proposal would take approximately 12 months to construct, and would be operational for approximately 28 years. Following the operational period, all above ground infrastructure would be removed from site which would take approximately 6 months.

Table 1: Indicative timeframe for project phases

Phase	Indicative Start	Indicative Period
Construction	July 2019	12 months
Operation	July 2020	~ 28 years
Decommissioning	2048	~ 6 months

2.1.5 Description of Solar Farm Key Components

Solar array

The solar array refers to the solar farm as a whole and would comprise of approximately 700,000 individual solar panels with a combined generation capacity of approximately 200 MWac.

The solar panels would be fitted to either or a combination of:

- Fixed tilt frames which would be orientated so the panels face upwards at approximately 25 to 30^0 in a north, north west or north easterly direction; or
- A single-axis tracking system which would track the sun from east to west as it moves throughout the day (see figures below).

The solar array would be supported by approximately 100,000 piles which would be mechanically driven or screwed into the ground. Figure 1 and Figure 2 below show examples of solar farms during construction. Figure 3 and Figure 4 illustrate an operational fixed array solar farm and an operational tracking solar farm respectively.

The solar array would be wired in ‘blocks’ that would be connected to inverters (likely to be around 2.75 MW in size each). Blocks would not necessarily appear as discrete entities but would appear as a series of continuous rows. In the case of a fixed tilt mounting system the rows would run west to east, while the single-axis tracking system would be installed in rows that are oriented north to south. The solar array would connect to the Substation through a series of 33 kV lines that would be above or below ground depending on local ground conditions.

Figure 1: Piles for a solar farm in place (image supplied by Infinergy UK)

Figure 2: Fixed array assembled before PV panels added (image supplied by Infinergy UK)

Figure 3: Fully assembled fixed array solar far (image supplied by Infinergy UK)

Figure 4: Fully assembled tracking array solar farm showing inverter housing (image courtesy Nextracker Australia, actual tracking system and inverters may differ). At solar noon panels face directly upwards. In the evening they face 60 degrees to the west and vice versa in the morning.

Inverters

PV panels produce Direct Current (DC) electricity which would be converted to Alternating Current (AC) at a number of central inverters. The inverters would be approximately 2.75 MW each, although other sized inverters are being considered (for example 2 M, 2.5 MW and 3MW). Inverters are typically housed in containers, or located on platforms, either singularly the size of a 20 ft container, measuring approximately 6.1 m (l) x 2.9 m (h) x 2.5 m (w), or doubly the size of a 40 ft container measuring approximately 12.2 m (l) x 2.9 m (h) x 2.5 m (w). Each inverter would also have:

- A 33 kV Medium Voltage (MV) transformer;
- Circuit breakers; and
- Communication equipment.

Inverters would be transported to site readymade and require little in the way of foundations, either attached to steel or concrete pilings approximately 1.6 m deep depending on ground conditions. Figure 5 and Figure 6 below illustrate examples of a double inverter and a single inverter respectively.

Figure 5: Double inverter container (image courtesy of SMA)

Figure 6: Single inverter container (image courtesy of SMA)

Onsite substation

The onsite Substation would be the point of connection to the existing 220 kV line that crosses the site. The final design specifications are subject to a grid connection agreement with AEMO and would contain the following items:

- One or two 220 kV transformers;
- High Voltage (HV) circuit breakers and switch gear;
- Metering equipment;
- Control room;
- Battery area up to 1ha and up to 8 m high situated adjacent to the Substation (battery components are modular and are typically housed within shipping containers, or look similar to this);
- Lattice communications tower up to 20 m high of lattice type construction (requirement subject to grid connection agreement);
- Low Voltage (LV) power connection;
- Overhead cables connecting the substation to the existing 220 kV line that runs through the site;
- Parking space for service vehicles;
- Perimeter fencing; and
- Perimeter screening if required.

The substation infrastructure and battery area, as described above would be built within the areas marked ‘substation’ and ‘battery’ on the ‘Indicative Layout’, and as close as possible to the existing transmission line. Buildings heights will not exceed 8 m. A micro siting allowance of 50 m is sought for the positioning of the substation and battery.

Support buildings

Adjacent to the substation would be support buildings for the Proposal. The Support Buildings and associated parking would take a maximum additional area of 100 m by 100 m and may include the following:

- Office building, consisting of office, toilets, showers, staff room and kitchen;
- Maintenance building;
- Up to 3 storage buildings/sheds;
- Parking (15 spaces);
- Water storage;
- A septic tank; and
- A workshop.

Onsite support buildings will comply with all relevant Australian building standards and regulations. They will be designed to accommodate the maximum number of staff that will be required during the operational life of the Proposal (8 – 12 staff). Water for the support buildings will be supplied to site by commercial contactors and stored in onsite water tanks. In addition, there will be a requirement for a 20,000 litre water tank solely for the purposes of fire protection. A micro-siting allowance of 50m is sought for the location of the support buildings.

Cables and cable trenching

All cables will be designed based on site conditions in accordance with relevant Australian and international standards. Subject to final design, cable trenches will contain:

- Below ground warning tapes;
- Below ground Polymeric cover strips;
- Electrical cables to export power;
- Electrical supply cables where necessary;
- Earthing cable;
- Communications and SCADA links; and
- Above ground warning signs.

Where possible, trenches will be located alongside/underneath internal access tracks to minimise ground disturbance as is indicated in the indicative cable trench design in Figure 7.

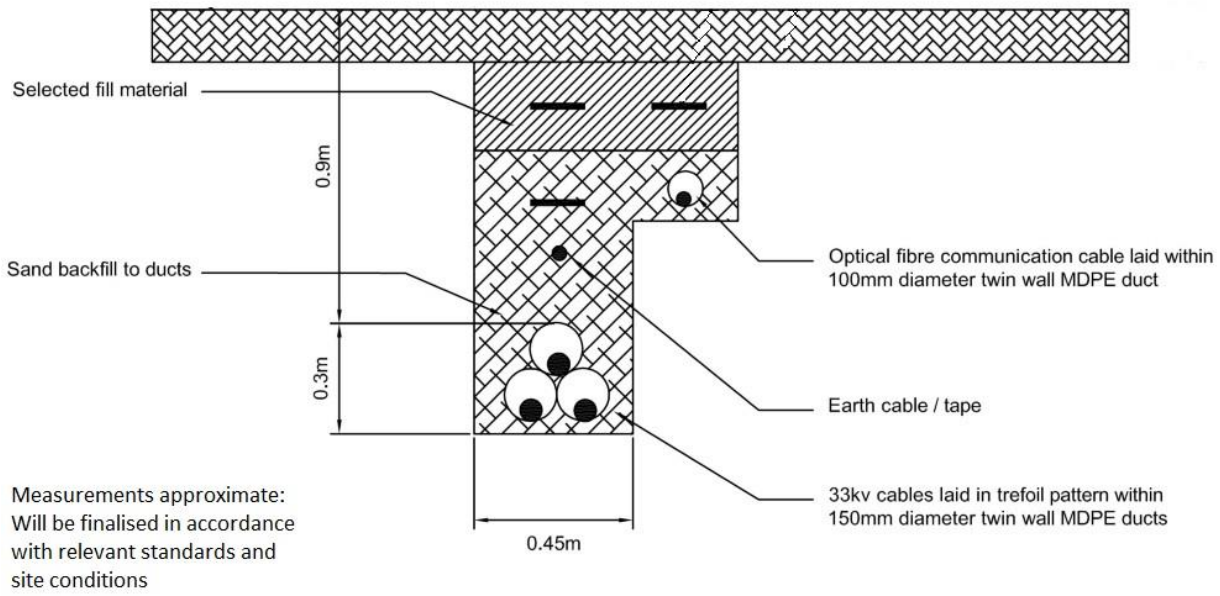


Figure 7: Indicative 33kV cable trench design

Site Access

The Site will be accessed from Meningoort Road as indicated on the '*Indicative Layout'*.

To ensure safety and security at the site, a perimeter fence up to 2.5 m high will be installed around the perimeter of the solar array to ensure entry into the site is controlled. Once operational, all access points will be gated. Within the Site there will be a CCTV security system.

Internal Tracks

Internal tracks would be constructed of compacted gravel to an approximate depth of 150 mm depending on soil conditions. Internal access tracks would be up to 4 m wide with intermittent wider stretches for passing, parking, and at corners. Small culverts over identified drainage lines would also be constructed.

Figure 8 depicts a typical internal track design.

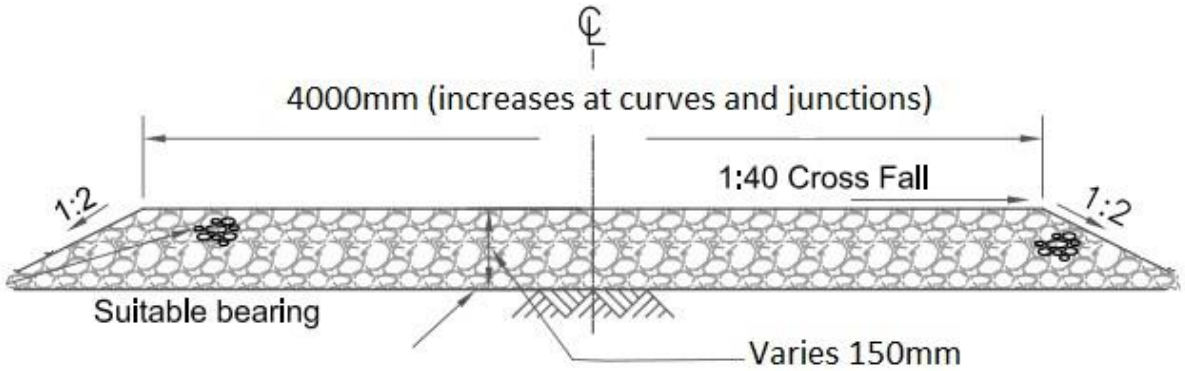


Figure 8: Typical track cross section

Vegetation Screen

As noted, there would be a 20m wide vegetation screen across parts of the perimeter of the Site in line with findings from the Landscape Impact Assessment. The vegetation screen would include a mix of native species chosen for their suitability for the area and has been designed to help screen the Proposal from neighbouring residences. The vegetation screen would incorporate existing heavily planted vegetation on the western side of the Site boundary and would also provide ecological benefits (see '*Ecological Due Diligence*'). The '*Indicative Layout*' shows where the position of the Vegetation Screen would be located.

Within the Construction Environmental Management Plan (CEMP) and the Operational Environmental Management Plan (OEMP), the Applicant will commit to protocols ensuring that the screening is effective throughout the project lifetime (for example that weeds are cleared to allow young trees to grow, and that establishing trees are watered to encourage healthy growth and ensure survival). If required, additional vegetation screening post construction may be planted in other areas of the Site.

Firebreak

A firebreak will be located around the Proposal inside the proposed perimeter fence. The firebreak is to ensure, as far as possible, that a fire that originates within the Site does not escape into the wider landscape or conversely ensure that the potential of a fire that originates offsite does not harm infrastructure within the Site.

The firebreak will be at least 5 m wide and will be ploughed, mown or grazed, and maintained in accordance with requirements of the County Fire Authority (CFA). The Firebreak is currently denoted by the area set aside as perimeter track in the 'Indicative Design'. Access to the Firebreak would be provided to, and arranged with, the CFA.

Drainage

Drainage channels may be required, particularly in eastern and southern parts of the Site – for example shallow channels created to improve the drainage and avoid pooling of water. The drainage will complement the existing drainage network and will be designed to ensure that there is no net difference to water flow, or quality at any of the two locations where drainage lines currently flow from the Site (see the 'Hydrology, Drainage and Flood Advice' that accompanies the main report).

2.1.6 Construction Phase

It is anticipated that the Proposal would take 12 months to construct.

Primary Construction Activities

The primary construction activities would be as follows although the particular order may change:

- Mobilisation; establishment of temporary construction compound and laydown areas;
- Vegetation Screen planting;
- Construction of internal tracks and culverts (as required);
- Construction of perimeter fence and establishment of firebreak;
- Establishment of Substation and Support buildings;
- Preparation of array area including any necessary earthworks (minimal earth works are expected in array areas);
- Installation of foundations piles and mounting system;
- Securing panels to the mounting system;
- Installation and connection of Inverter Containers;
- Trench digging, cable laying and/or cable stringing;
- Grid connection;
- Removal of temporary construction compound and facilities;
- Rehabilitation of disturbed areas of site; and
- Solar Farm Commissioning.

Overall solar farms sit lightly on the land. Ground disturbance is low and would be principally associated with the installation of piles to support the panels.

Other components that would impact directly on the site include access tracks, the substation, support buildings, the temporary construction compound and the perimeter fence.

Construction hours

It is applied that construction work would be undertaken within the following construction hours:

- Monday to Friday, 7am to 7pm; and
- Saturday, 8am to 5pm.

Any construction activities outside these hours would only be undertaken with the permission of relevant authorities and the notification of neighbours.

Construction resource requirements

Resource requirements and their likely sources are shown in Table 1 below. As far as possible local resources will be used for the construction of the Proposal.

Table 1: Resource requirements and sources for the Proposal

Resource	Detail	Likely Source
Plant and Machinery	Pile drivers, mobile crane, earth moving equipment, diesel generators, concreting equipment for Substation and Support buildings	Wider VIC for larger equipment; local where possible
Materials and equipment	Steel, gravel, sand, cables, trees for landscaping, solar panels, inverters, transformers	Gravel, sand, and landscaping equipment will be sourced locally; some materials and equipment, for example solar panels inverters and transformers are manufactured overseas
Labour	Variety of positions required depending on construction activity	Local and wider contracting staff
Accommodation	Accommodation for workers	Camperdown and wider region

2.1.7 Operational Activities

Operations

The operational period is expected to begin in the first half of 2020. Operational activities include:

- Monitoring of solar production – analysis of SCADA data;
- Export of solar energy to the National Electricity Market;
- Maintenance of all plant and equipment – visual inspections and/or engineering work as required, analysis of SCADA data; replacement of equipment as required;
- Security – remotely and through routine site inspections;
- Vegetation monitoring and management – routine vegetation management and monitoring in panel areas (small live stock may be permitted to graze within panel areas, for example sheep) and the vegetation buffer areas; and
- Erosion monitoring – routine monitoring for scarring beneath the panels and along access tracks and waterways.

During the operational period there would be approximately 8 to 12 full time staff who may routinely visit the solar farm to carry out activities as listed above. Travel would be in standard vehicles. Should there be a requirement for major maintenance work larger trucks and equipment may need to be deployed.

2.1.8 Decommissioning

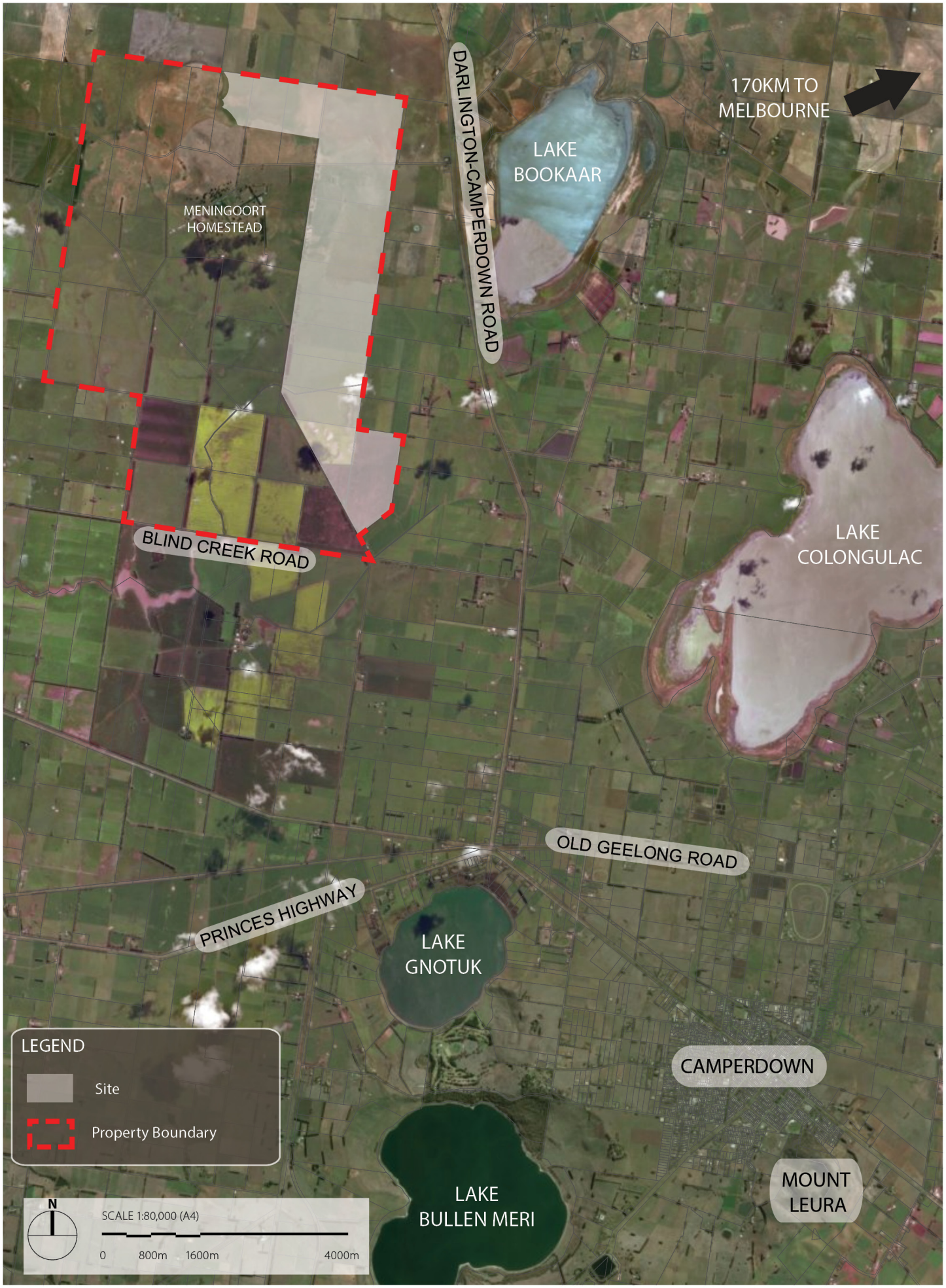
During decommissioning all above ground infrastructure would be removed to a level of at least 0.5 m below the surface and the site restored to its pre-development state.

Main activities include:

- Disconnection from the existing 220 kV onsite transmission line;
- Dismantling of the substation and support buildings;
- Removal of the solar arrays, piles and cabling;
- Removal of onsite tracks and fences unless agreed otherwise with the landowner; and
- All disturbed ground would be reinstated.

It is anticipated that decommissioning would take up to 6 months. Impacts would generally be similar in effect but shorter in duration than those experienced during construction.

APPENDIX B - FIGURES

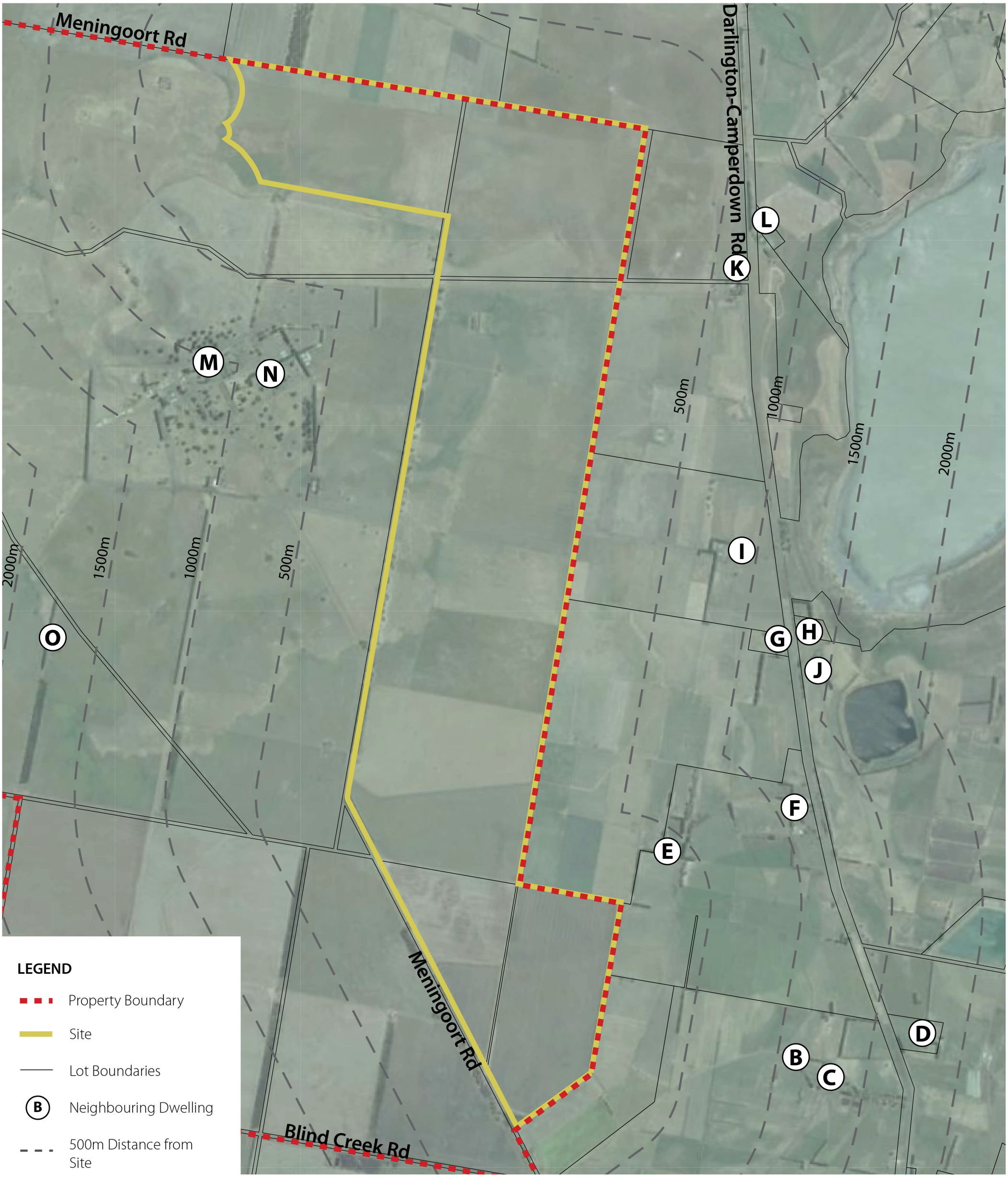


Context Plan

520 Meningoort Road, Bookaar

PROJECT_DRG NO 0316-0492-00_D004-00 REV 00 DRWN EG CHKD JK APPROV AT DATE 18.05.2018

Tract



LEGEND

- Property Boundary
- Site
- Lot Boundaries
- (B) Neighbouring Dwelling
- 500m Distance from Site

N

SCALE 1:20,000 (A3)

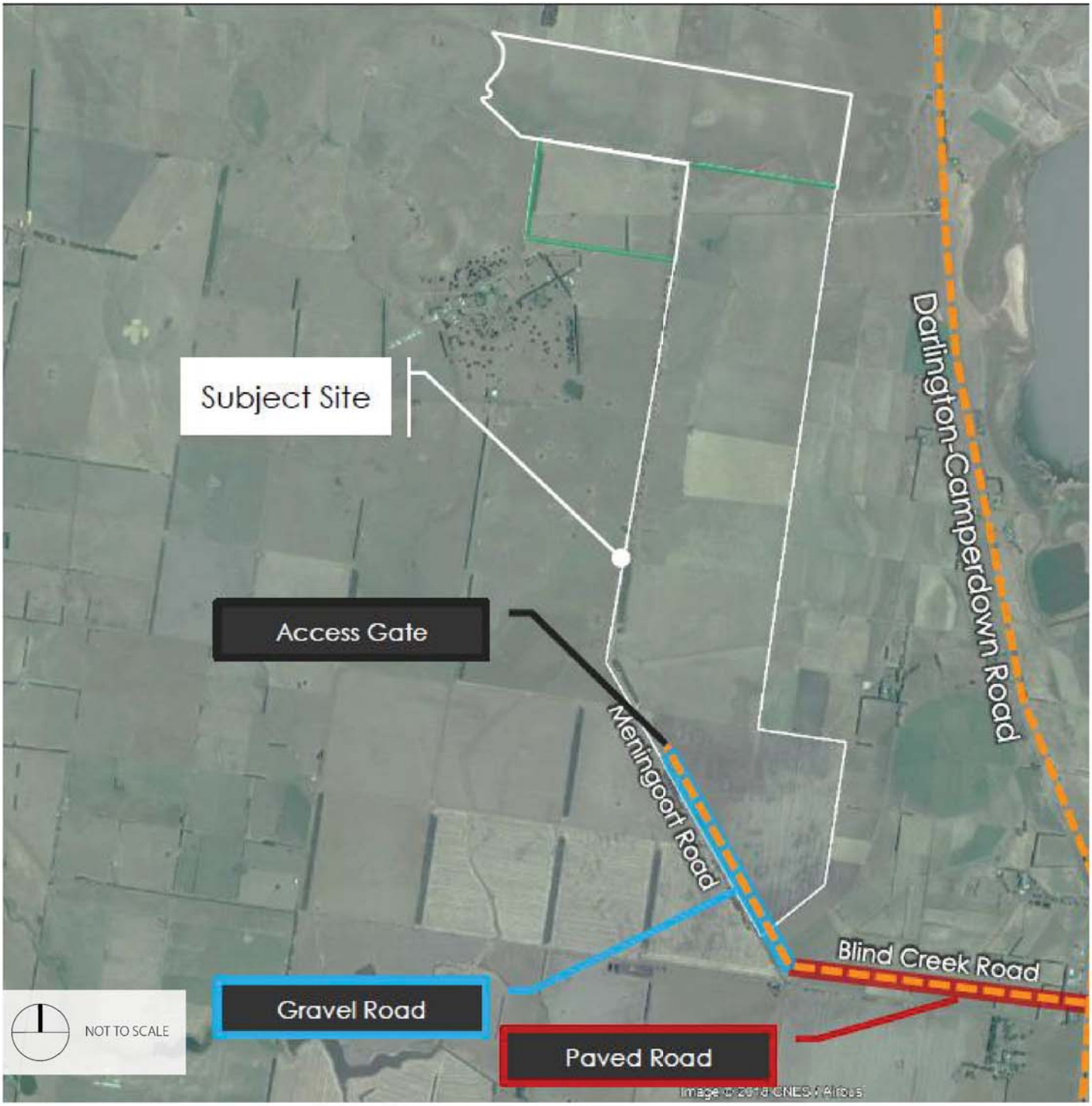
0 200m 400m 1000m

Neighbouring Dwelling

Meningoort Road, Bookaar

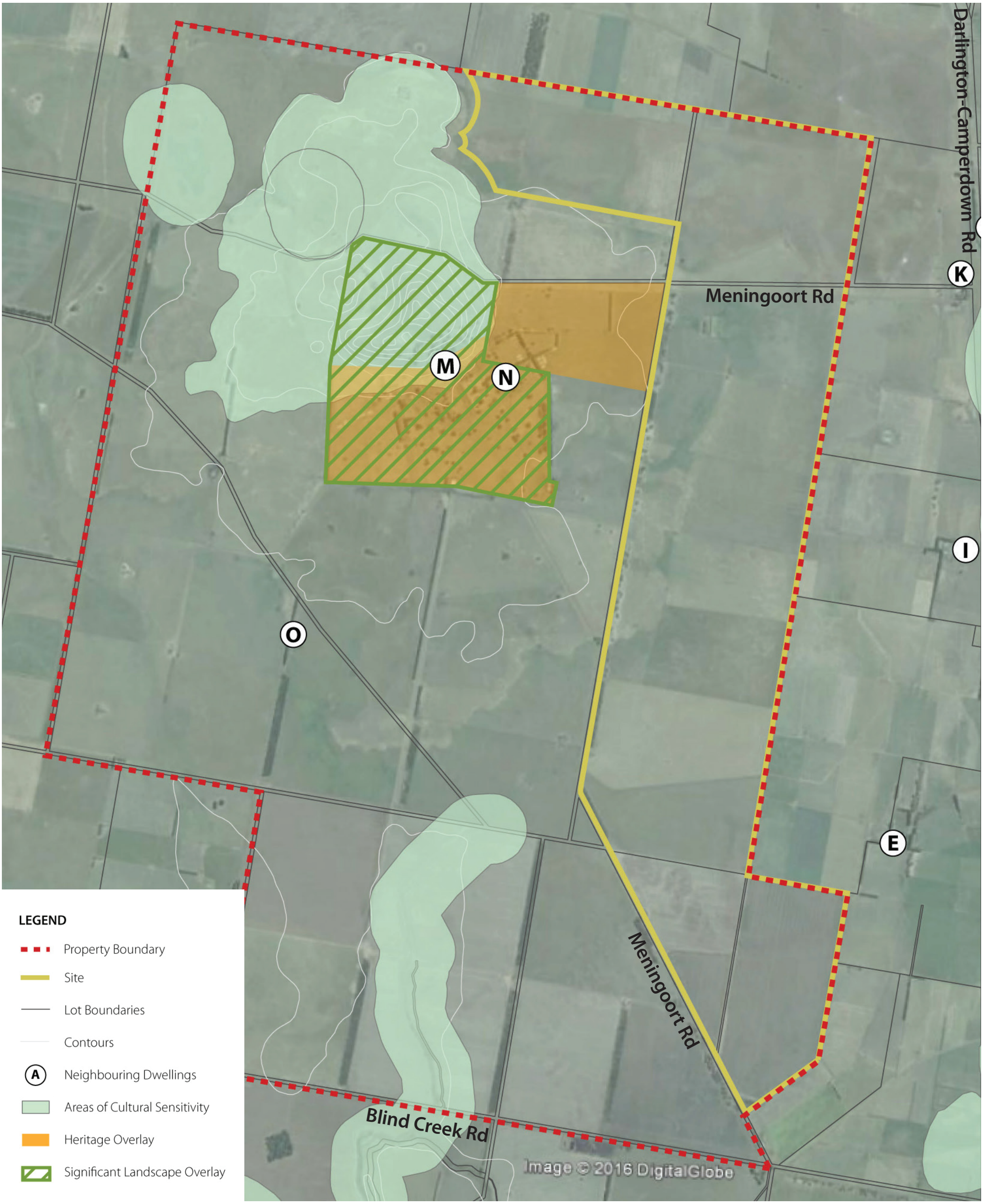
PROJECT_DRG NO 0316-0492-20_D001 REV 00 DRWN EM CHKD JK APPROV JK DATE 28.06.2018

Tract



Proposed Access Route (Source: Figure 6 of OneMileGrid's Transport Impact Assessment

520 Meningoort Road
Bookaar



LEGEND

- Property Boundary
- Site
- Lot Boundaries
- Contours
- (A) Neighbouring Dwellings
- Areas of Cultural Sensitivity
- Heritage Overlay
- Significant Landscape Overlay

N

SCALE 1:20,000 (A3)

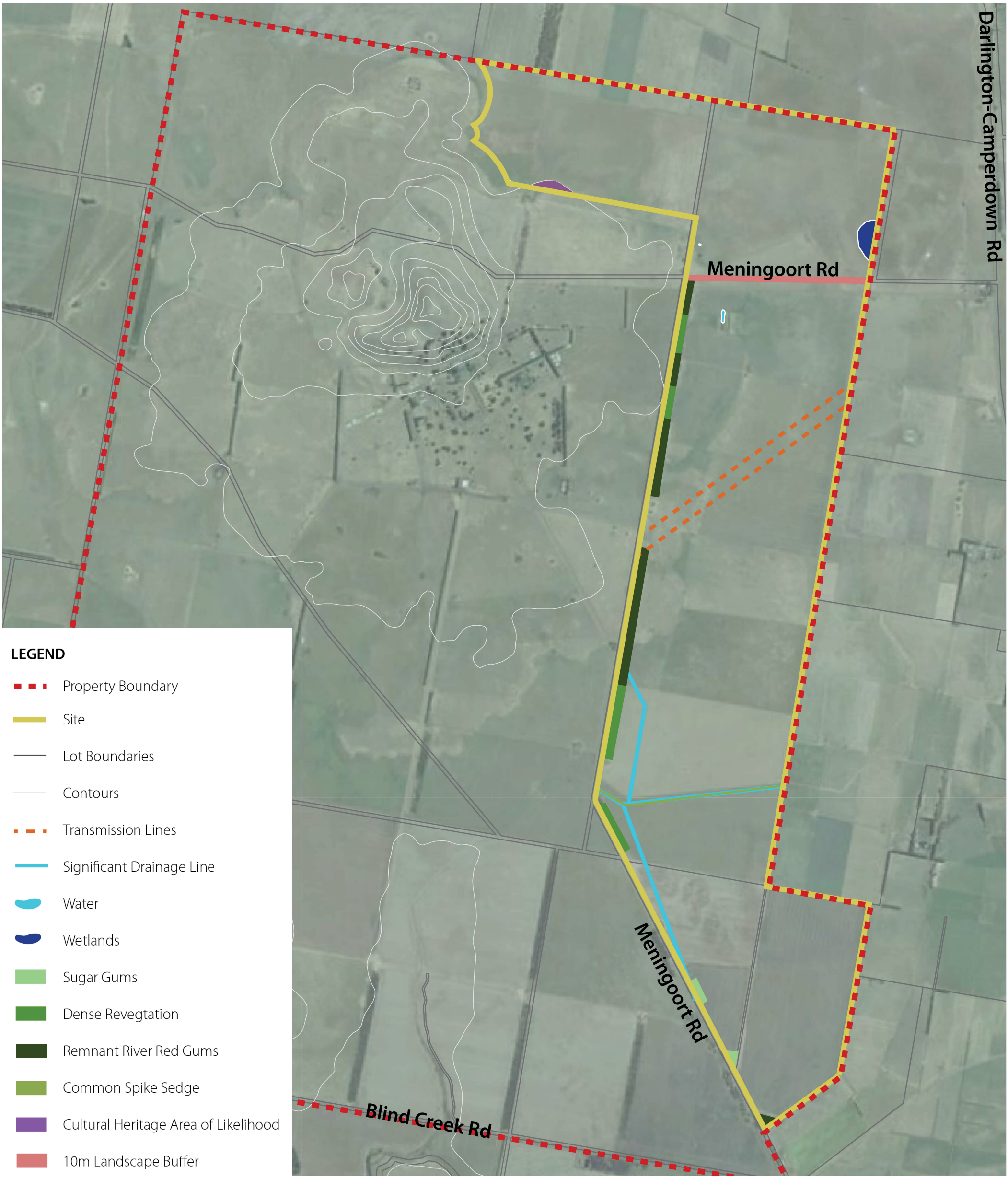
0 200m 400m 1000m

Overlay and Neighbouring Dwellings

Meningoort Road, Bookaar

PROJECT_DRG NO 0316-0492-20_D005 REV 00 DRWN EM CHKD JK APPROV JK DATE 28.06.2018

Tract



LEGEND

- Property Boundary
- Site
- Lot Boundaries
- Contours
- Transmission Lines
- Significant Drainage Line
- Water
- Wetlands
- Sugar Gums
- Dense Revegtation
- Remnant River Red Gums
- Common Spike Sedge
- Cultural Heritage Area of Likelihood
- 10m Landscape Buffer

N

SCALE 1:20,000 (A3)

0 200m 400m 1000m

Residual Constraints

Meningoort Road, Bookaar

PROJECT_DRG NO 0316-0492-20_D001 REV 00 DRWN EM CHKD JK APPROV JK DATE 28.06.2018

Tract

Darlington-Camperdown Rd

Meningoort Rd

Meningoort Rd

Blind Creek Rd

LEGEND

- Property Boundary
- Site
- Lot Boundaries
- Contours
- Development Footprint
- Proposed Substation
- Proposed Battery

N

SCALE 1:20,000 (A3)

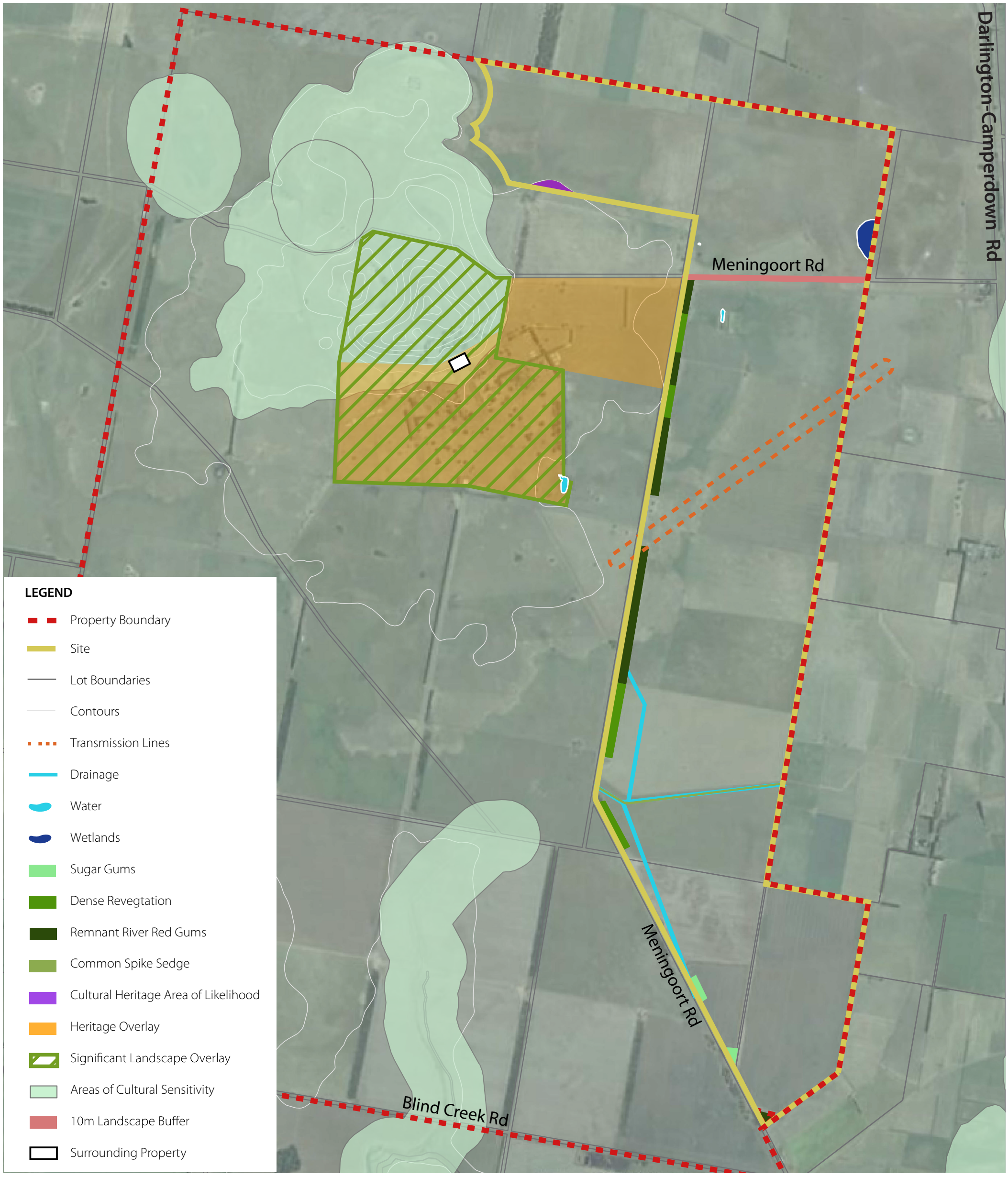
0 200m 400m 1000m

Net Developable Area

Meningoort Road, Bookaar

PROJECT_DRG NO 0316-0492-20_D001 REV 00 DRWN EM CHKD JK APPROV JK DATE 15.06.2018

Tract



N

SCALE 1:20,000 (A3)

0 200m 400m 1000m

Overall Constraints

Meningoort Road, Bookaar

PROJECT_DRG NO 0316-0492-20_D001 REV 00 DRWN EM CHKD JK APPROV JK DATE 15.06.2018

Tract

APPENDIX C – COMMUNITY CONSULTATION INFORMATION BOARDS, INFINERGY AUSTRALIA PTY LTD

BOOKAAR SOLAR FARM

Pacific INFINERGY

Bookaar Solar Farm

Welcome to our Community Information Session

Here you will find a selection of information boards outlining the proposal for the Bookaar Solar Farm. Please take your time to study the information and do not hesitate to speak with a member of the project team if you have any questions or comments.

Infinergy Pacific, on behalf of Bookaar Renewables Pty. Ltd., is currently in the process of developing a planning application for the proposed Bookaar Solar Farm. As part of this process we have conducted a full environmental assessment to evaluate the potential impacts of the development on the environment and identify any mitigation required to ensure the development is acceptable.

The Bookaar Solar Farm has been designed in response to the findings of this assessment. Environmental constraints have been avoided in the first instance or, where this is not possible, mitigating solutions have been identified.

The location of the proposed Bookaar Solar Farm, showing the existing 220kV power lines that cross the site

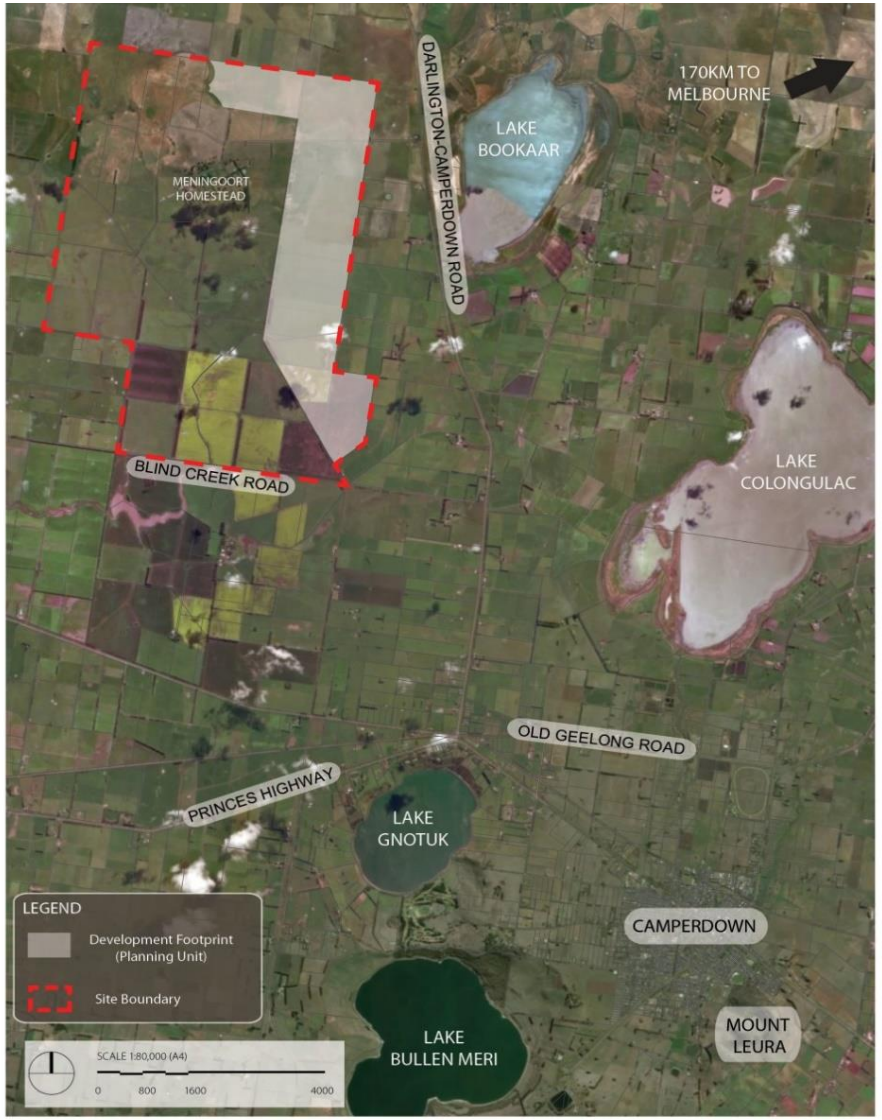
Bookaar Solar Farm

The proposal

- The proposal is to develop a solar farm with a generation capacity of approximately 200MW. It will be located on land approximately 1km west of lake Bookaar, 8km north of Camperdown.
- At 200MW, it is estimated that the solar farm will provide enough renewable energy to supply around 80,000 average Victorian homes annually.

Project Components

- Solar arrays: approximately 800,000 solar panels supported by a mounting system on piles, driven into the ground.
- The panels would be either:
  - single axis tracking panels (orientated north to south); or
  - fixed-tilt panels (orientated east to west).
- Up to 60 containerised central inverters located throughout the site.
- Access tracks, cabling and electrical connections.
- Substation (connects the solar farm to the national electricity grid).
- Battery.
- Support buildings located alongside the substation.
- Perimeter fence (approximately 2.5m high).
- Native vegetation buffers for screening.
- Temporary construction compound.



Context Plan
520 Meningoort Road, Bookaar

PROJECT_DRG NO 0316-0492-00_D004-00 REV 00 DRWN EG CHKD JK APPROV AT DATE 19.03.2018 Tract

The Technology

- Photovoltaic Panels (just like the ones that go on domestic houses) would either be mounted in a fixed tilted position or on a single axis tracking system that would track the sun during the day:
- **Tracking System** – A single axis tracking system orientates panels towards the sun throughout the day. In the morning panels would be orientated to the east at 60 degrees tracking the sun during the day towards the west. The maximum height of the tracking system at full tilt would be 4m above ground.
- **Fixed System** – A fixed tilt system utilises a frame between piles that would orientate panels at approximately 30 degrees towards the north.

Fixed system illustration

Tracking system illustration

Bookaar Solar Farm

Project need – Climate Change

- Human activity is resulting in the release of large volumes of greenhouse gases (GHGs) which trap the sun's heat in the atmosphere, which upsets the balance of the Earth's climate.
- The threat is acknowledged by scientists and politicians around the world, as illustrated by the historic global agreement to tackle climate change in November 2015 at the COP21 conference in Paris.

Australia's Commitments to $C0_2$ reduction

- At the Paris COP21 conference, Australia committed to reducing GHG emissions by 26-28% below 2005 levels by 2030.

Transforming Electricity Generation to reduce GHG emissions

- With energy generation from fossil fuel sources known to be a principal source of greenhouse gas emissions, the substitution of fossil fuels with renewable sources of electricity generation is accorded high priority at all levels of government.
- Electricity emissions make up approximately one third of Australia's total GHG emissions with the vast majority generated by ageing coal fired power stations.
- The Corangamite Planning Scheme Objective is '*to promote the provision of renewable energy in a manner that ensures appropriate siting and design considerations are met*'.

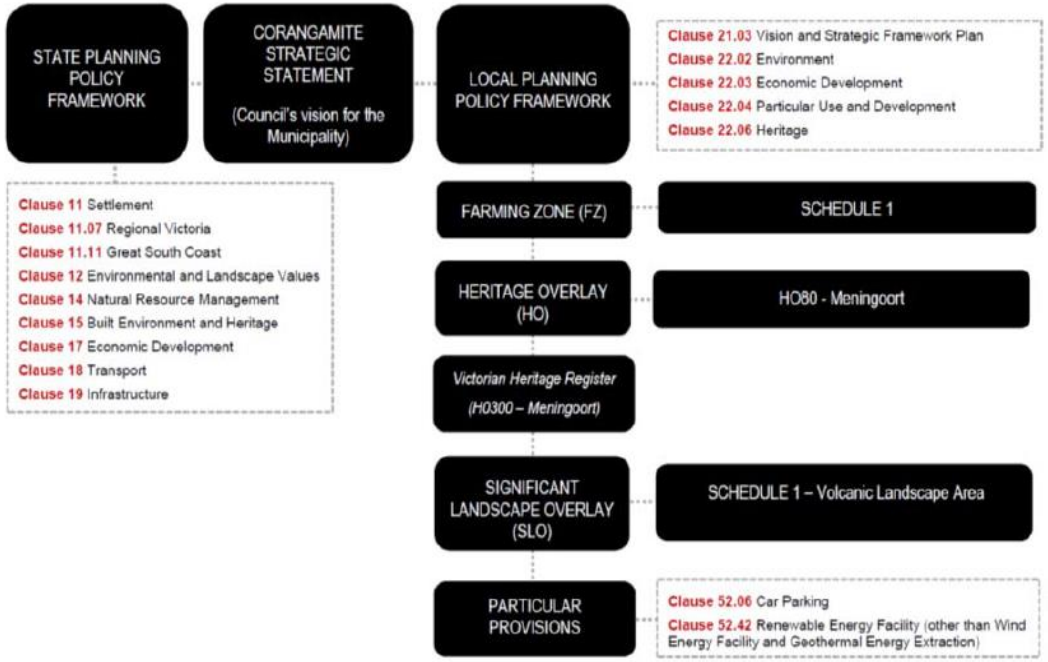
Bookaar Solar Farm

Site Selection: Why is the Bookaar site a good location for a solar farm?

- It has suitable land with appropriate topography and scale.
- A 220KV transmission line with capacity to export electricity from the proposed development to the national electricity network runs across the site.
- It has a good solar resource.
- Suitability in terms of environmental constraints. The site has a long history of agricultural cultivation, minimising potential for biodiversity, and heritage constraints.
- Close proximity to a major population centre (Melbourne and Geelong).
- The site was identified by Infinergy Pacific as a high-potential location in early 2016. A feasibility assessment determined the site as an ideal area to accommodate a solar farm. Subsequent environmental studies have confirmed its suitability.

Planning Framework and Process:

- Corangamite Shire Council is the Responsible Authority for an application.
- The planning application is being developed within the following framework:



Bookaar Solar Farm

Environmental Site Assessments

Key environmental assessments undertaken to support the design include:

- Landscape and Visual Assessment
- Ecology Assessment
- Cultural Heritage Assessment
- European Heritage Assessment
- Transport Assessment
- Glint and Glare Assessment
- Other assessments undertaken to support the design include:
    - Fire Risk Assessment
    - Electromagnetic Interference Assessment
    - Land use (loss of agricultural land) and socioeconomics
    - Greenhouse Gasses and Climate Change
    - Noise Assessment

Following Submission to Corangamite Shire Council, the assessment results will be available on the Bookaar Solar Farm Website: www.Bookaarsolarfarm.com

The site of the Proposed Bookaar Solar Farm.

Bookaar Solar Farm

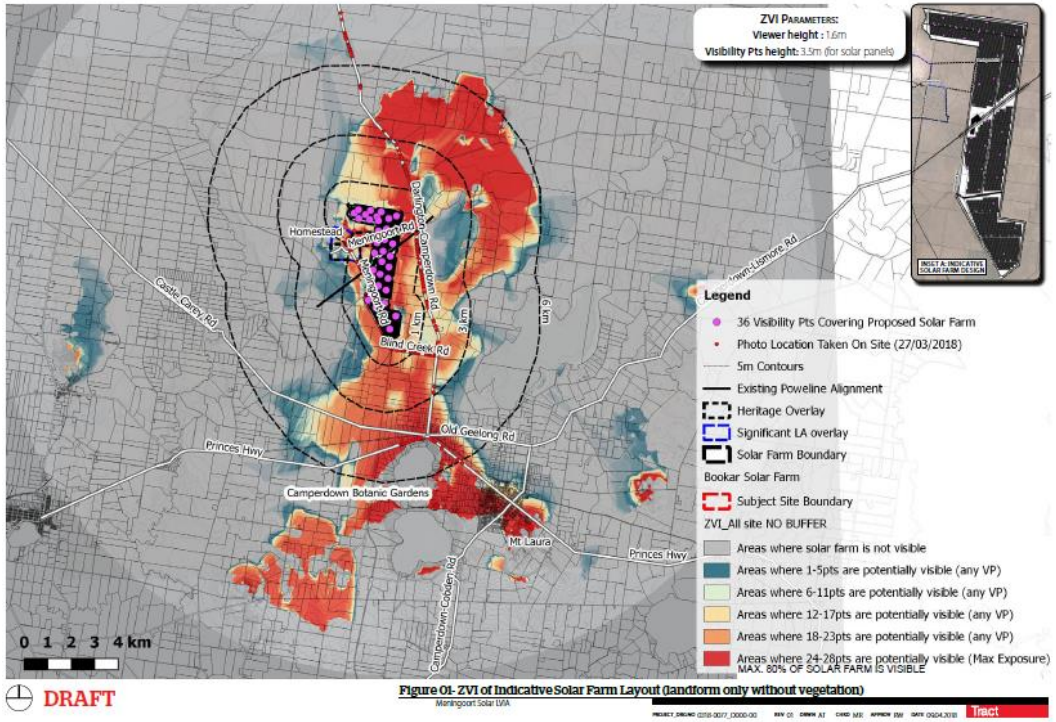
What will the Bookaar Solar Farm Look like?

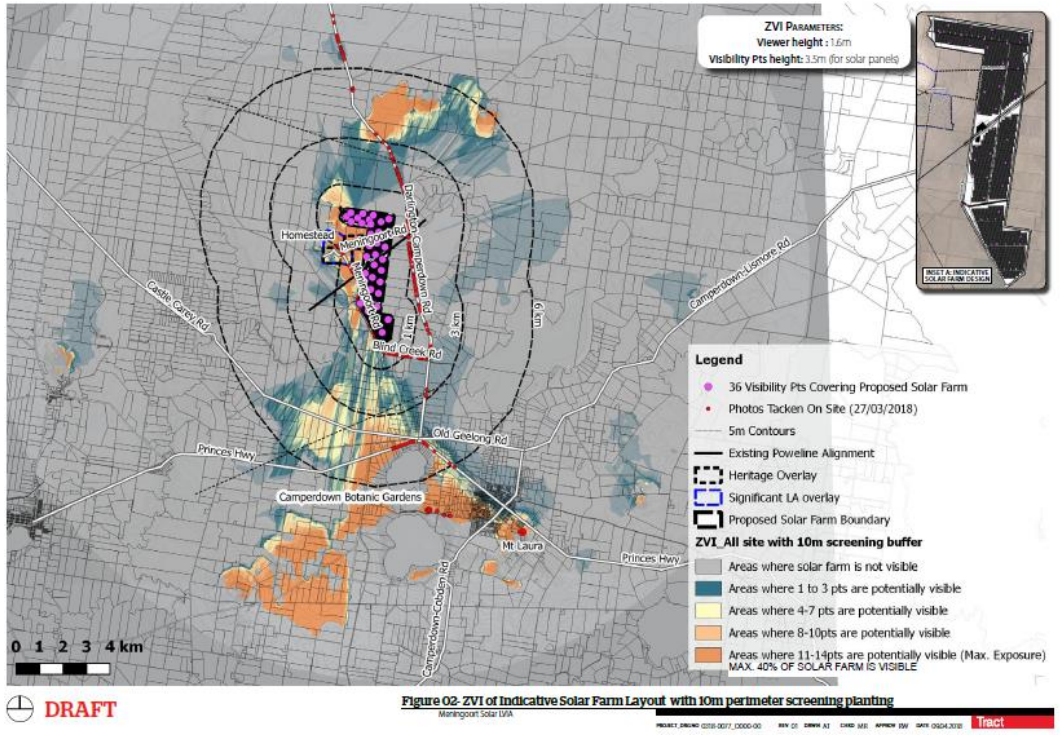
The following boards detail some of the work that has been undertaken to understand how the proposed solar farm will look in the landscape. In addition, illustrations of the key components of the proposal are provided.

A large scale solar farm using a tracking system

A containerised inverter

Bookaar Solar Farm – Visual Assessment

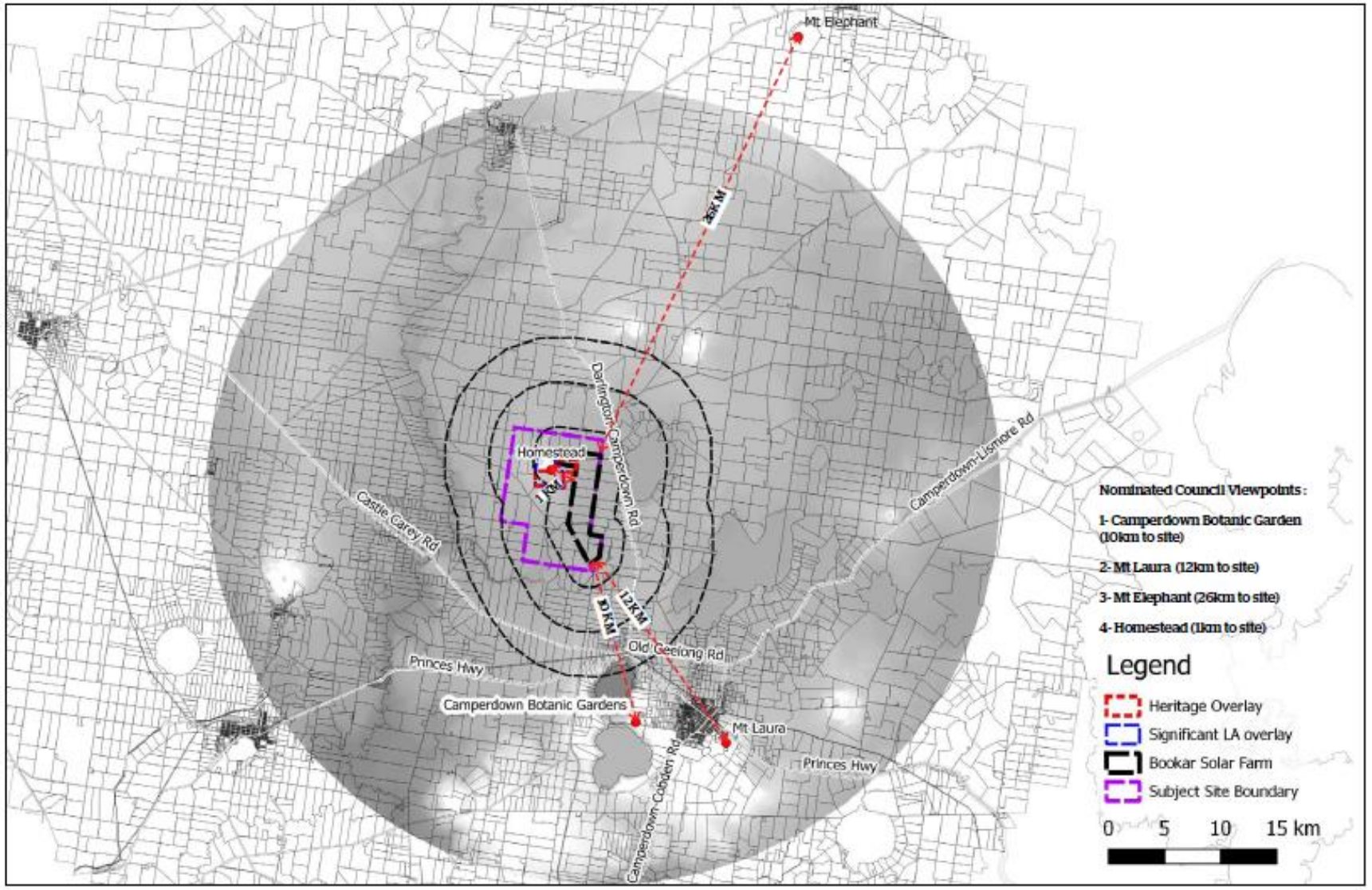




Zone of potential visual influence

The maps above provide a theoretical analysis of where the proposed development would be visible in the surrounding landscape. The first illustration shows where the development would be visible using a bare earth model (i.e. vegetation is not accounted for in determining visibility). The second illustration on the right shows the theoretical visibility of the proposal if vegetation screening is established around the perimeter of the site.

Bookaar Solar Farm – Visual Assessment



DRAFT

Figure 01-Council Nominated Viewpoints

Meningoort Solar LVIA

Tract

Council Nominated Viewpoints

The Council has nominated 3 key view points where the visual effects from the solar farm will be assessed. However we will also be considering potential effects from a number of locations surrounding the proposal including neighbouring residents.

Bookaar Solar Farm – Visual Assessment

Views towards the proposal

Example of a nearby locality looking towards the site.

View from Meningoort Rd looking to the site. The subject site is screened by the vegetation.

DRAFT

Photo Number DSC03223

Meningoort Solar LVIA

Bookaar Solar Farm – Landscape and Visual Assessment

Views towards the proposal

Example of a nearby locality looking towards the site.

Photo from Darlington Rd looking to the site. The subject site is partially screened by the vegetation.

DRAFT

Photo Number DSC03086

Maningort Solar LVIA

Tract

Bookaar Solar Farm – Landscape and Visual Assessment

Views towards the proposal

Example of an elevated locality looking towards the site.

View from Gnotuk Lookout looking to the site. The subject site is visible in the background.

DRAFT

Photo Number DSC03116

Meningoort Solar LVIA

Tract

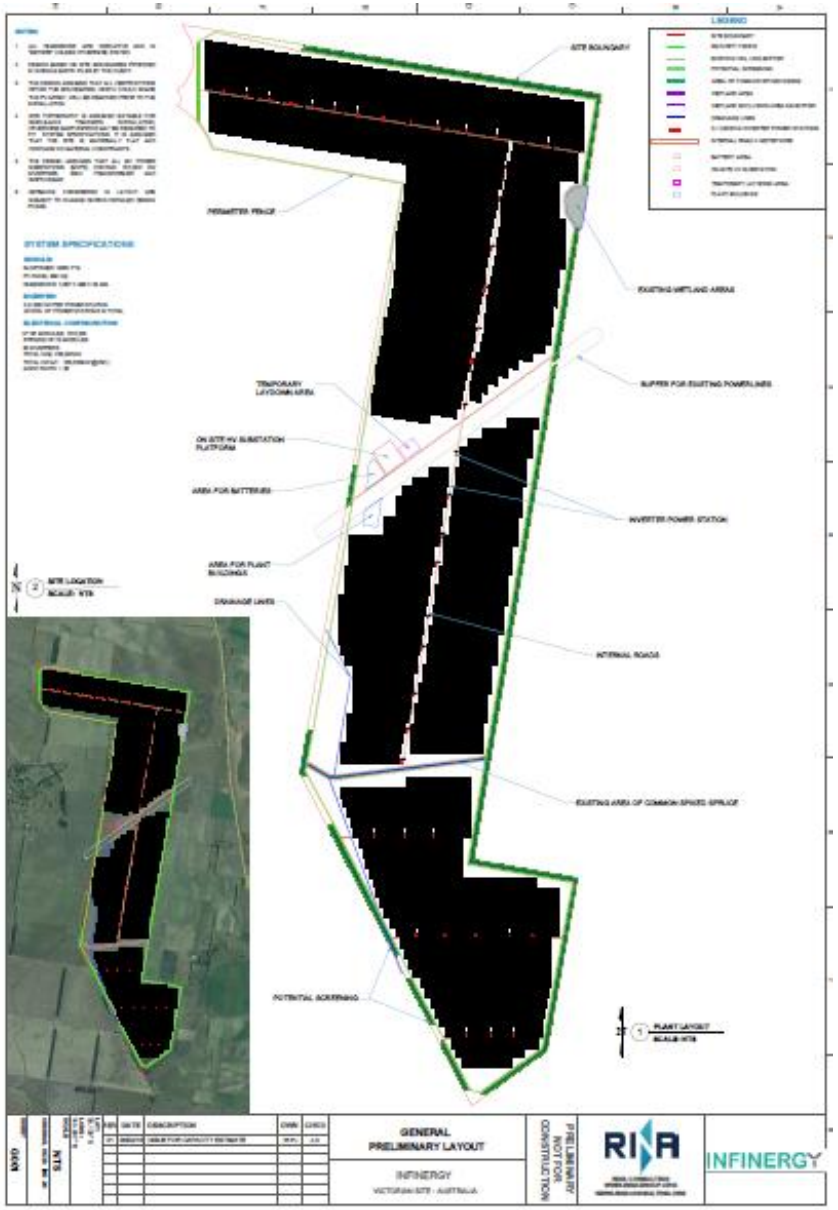
The proposal – Design evolution

Design

In conjunction with the assessment process, design work has focussed on the capacity of the site taking into account constraints identified as a result of specialist studies, site access and grid connection points.

The final design will be subject to an Engineering Procurement and Construction (EPC) process, which will mean that the solar farm will take advantage of any improvements in technology between now and building the development. However, the final footprint of the solar farm will be within the area identified through the assessment process.

The detailed design (right) represents our current thinking and provides a good indication of how the solar farm will look.



The proposal – Construction

Construction

- Construction activities will be planned to minimise impact and disruption to the local and wider community. Construction hours will typically be:
  - Monday to Friday 7am – 6pm
  - Saturday 8am – 1pm
  - Any construction outside standard hours would only be undertaken with the permission of relevant authorities and the notification of neighbours.
- Main construction activities:
  - Site establishment and preparation for construction (vegetation removal, fencing, preliminary civil works and drainage).
  - Installation of foundation poles and frames to support the solar panels.
  - Installation of the solar panels, underground and above ground cabling and the siting and connection of inverters.
  - Construction of the sub-station.
  - Connection of the solar farm to the national electricity grid.
  - Removal of temporary construction facilities and rehabilitation of disturbed areas.

Decommissioning

- During decommissioning, all above ground infrastructure would be removed to a level of 0.5 m below the surface. Key elements of decommissioning would include:
  - The disconnection of the solar farm's substation from the national electricity grid.
  - The removal of the solar panels and their supporting infrastructure.
  - Removal of any cabling (any cabling below 0.5m may be left in place). All site amenities and equipment would be removed and recycled where possible.
  - Fencing would be removed unless the landowner requests that it is retained.
- Decommissioning impacts would be similar in effect but of shorter duration than those experienced during construction. Decommissioning is expected to take up to 6 months.

Example of piles during the construction of a solar fam

Bookaar Solar Farm

Proposed Project timeline

(this timeline is indicative only)

Planning

- Councillor and local residents briefing (early April 2018)
- Community information session (mid April 2018)
- Lodgement (May 2018)
- Determination Q4 2018

Financing

- Grid connection contracts – completion early 2019
- Financing – completion mid 2019

Construction

- 12 -15 month construction programme
- Commence Construction - late 2019
- Complete Construction - late 2020

Operation

- The solar farm will aim to be operational by the beginning of 2021
- The development would be operational for 30 years after which it would be decommissioned and the site returned to its pre development status

Bookaar Solar Farm

Local Project Benefits

Local Project benefits would include:

- Direct and indirect employment opportunities during the construction and operation. This would include:
  - Up to 150 construction jobs
  - Between 8 and 12 full time jobs during the operational phase
- Direct business volume benefits for local services, materials and contracting businesses.
- The proposed Bookaar Solar Farm has been designed to reflect the environmental constraints of the site appropriately while maximising the amount of electricity generated.
- The development preserves the production values of the site as the proposal is wholly reversible at the end of the project life.

Broad Project Benefits

Broad Project benefits would include:

- The Bookaar Solar Farm would generate approximately 420 Gigawatt hours (GWh) of renewable electricity each year.
- At 200MW, it estimated that the solar farm would provide enough renewable energy to supply around 80,000 average VIC homes.
- It is estimated that the project would reduce annual greenhouse gas emissions by approximately 416,000 tonnes (CO_2 equivalent).
- There would be a reduction in transmission losses as electricity from embedded generation can be consumed closer to where it is produced.
- It is estimated that the proposal would indirectly save approximately 900,000 megalitres of clean drinking water annually by displacing electricity generated from coal-fired power stations.

Bookaar Solar Farm

Conclusion

In designing the proposed Bookaar Solar Farm, Infinergy Pacific presents a proposal that complies with relevant Commonwealth, State and Local planning requirements. It will:

- be sympathetic to landscape and environmental constraints identified through the Assessment process
- contribute to the reduction in GHG emissions and help in the transition toward cleaner electricity generation
- assist in meeting Commonwealth and Victorian Government carbon mitigation goals
- provide social and economic benefits to the local and broader community.

In light of these benefits, the low level of environmental impact and reversibility at decommissioning, the proposal is ecologically sustainable and economically and socially beneficial.

The Developer

- Bookaar Renewables Pty. Ltd., is a JV partnership between Infinergy Pacific and the McArthur Family.
- Infinergy Pacific is an Australian based Renewable Energy Company with a focus on the development of large scale solar farms.
- Our team has over 15 years' experience developing, owning and operating over 1000MW of renewable generation.
- In house, we have the expertise needed to design, develop and build renewable energy projects - the company is committed to helping meet the renewable energy targets in Australia whilst developing responsible projects. We aim to put the right size development in the right place.
- We are currently developing a portfolio of sites in Australia, for example Metz Solar Farm, a consented 120MW development currently under mobilisation for construction in NSW.

Further Information

If you have any questions after the information session, please don't hesitate to contact the project team: E-mail: info@infinergypacific.com
We will keep the project website updated and include an electronic version of our planning application on it. Please see www.bookaarsolarfarm.com