BIODIVERSITY MANAGEMENT PLAN

Avonlie Solar Farm

June 2021

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TABLE OF CONTENTS

FIGURES

TABLE

ACRONYMS AND ABBREVIATIONS

APZ	Asset protection zone
AS	Australian Standard
BDAR	Biodiversity Development Assessment Report
BC Act	*Biodiversity Conservation Act 2016 (NSW)*
BCS	Biodiversity, Conservation and Science Directorate within the Department, formally Office of Environment and Heritage (OEH)
BESS	Battery Energy Storage System
BMP	Biodiversity Management Plan
BS Act	*Biosecurity Act 2015 (NSW)*
CoC	Conditions of Consent
CWD	Coarse woody debris
Construction	The construction of the development, including but not limited to the carrying out of any earthworks on site and the construction of solar panels and any ancillary infrastructure (but excludes any upgrades to the public road network required under this consent, installation of fencing, artefact survey and/or salvage, overhead line safety marking and geotechnical drilling and/or surveying).
Council	Narrandera Shire Council
DPIE	(NSW) Department of Planning, Industry and Environment
Decommissioning	The removal of solar panels and ancillary infrastructure and/or rehabilitation of the site
EA	Environment Assessment, and Modification Reports
EEC	Endangered ecological community – as defined under relevant law applying to the proposal
EIA	Environmental impact assessment
EIS	Avonlie Solar Farm Environmental impact statement
EMS	Environmental Management Strategy

EPA	Environment Protection Authority (previously DECCW and/or OEH)
EPC	Engineering, Construction and Procurement Contractor
EP&A Act	*(NSW) Environmental Planning and Assessment Act 1979*
EPBC Act	*(Cwth) Environment Protection and Biodiversity Conservation Act 1999*
ERSED	Erosion and sediment control
ESCP	Erosion and Sediment Control Plan
FM Act	*(NSW) Fisheries Management Act 1994*
ha	hectares
HSE Advisor	Health, Safety and Environment Advisor
km	kilometres
m	Metres
m^3	Cubic metres
MW	Megawatts
NPW Act	*National Parks and Wildlife Act 1974 (NSW)*
NSW	New South Wales
OEH	(NSW) Office of Environment and Heritage, formerly Department of Environment, Climate Change and Water
O&M	Operations and maintenance
PCT	Plant community type
POEO Act	*Protection of the Environment Operations Act 1997 (NSW)*
RMM	Revised Mitigation Measures
RFS	NSW Regional Fire Service
RTS	Response to submissions
SoC	Statement of Commitments in Environmental Assessment
sp/spp	Species/multiple species
SWMS	Safe Work Method Statement
The Project	Avonlie Solar Farm

The Project Owner	Avonlie Solar Project Co Pty Ltd (ACN 636 108 597) as trustee for the Avonlie Solar Project Trust
Vegetation	Any native trees, shrubs or grassland
VEZ	Vegetation exclusion zone (different to APZ surrounding infrastructure)
WHSEMP	Work, Health Safety and Environmental Management Plan

1. INTRODUCTION

1.1. CONTEXT

This Biodiversity Management Plan (BMP) forms part of the Environmental Management Strategy (EMS) and the Work, Health Safety and Environmental Management Plan (WHSEMP) for Avonlie Solar Farm (the Project). This BMP includes details for construction and operational biodiversity monitoring required by the Conditions of Consent.

This BMP has been prepared to address the requirements of:

- New South Wales (NSW) Department of Planning, Industry and Environment (DPIE) Conditions of Consent (CoC) (Updated as of 24/11/2020).
- All applicable legislation during the construction and operation of the Project.
- Avonlie Solar Farm Environmental Impact Statement (EIS).

The EIS comprises the following documents:

- Avonlie Solar Farm Environmental Impact Statement (NGH, June 2018)
- Amended development application letter (RES, 21 February 2019)
- Response to Submissions (RTS) Report (NGH, June 2019) (including the Biodiversity Development Assessment Report (BDAR) V2.2)
- Subdivision Plan (as shown in Appendix 3 of the Development Consent).
- Avonlie Solar Farm Modification Report (NGH 8 October 2020, and additional information 5 November 2020).

The Response to Submissions Report included an updated summary of mitigation measures (referred to as the Revised Mitigation Measures (RMM)), which supersede the mitigation measures proposed in the EIS document.

Schedule 3 CoC 8, to be addressed in the BMP, states:

> *Following any construction or upgrading on the site, the Applicant must:*
> *(a) Restore the groundcover of the site as soon as practicable;*
> *(b) Maintain the groundcover with appropriate perennial species; and*
> *(c) Manage weeds within this groundcover.*

Schedule 3 CoC 9 states:

> *The Applicant must not clear any native vegetation or fauna habitat located outside the approved disturbance areas described in the EIS.*

Schedule 3 CoC 10 states:

> *Within two years of commencing the development under this consent, the Applicant must retire biodiversity credits of a number and class specified in Table 1 and Table 2 below, to the satisfaction of OEH, unless the Secretary agrees otherwise.*
>
> *The retirement of these credits must be carried out in accordance with the NSW Biodiversity Offsets Scheme and can be achieved by:*
> *(a) Acquiring or retiring 'biodiversity credits' within the meaning of the Biodiversity Conservation Act 2016;*
> *(b) Making payments into an offset fund that has been developed by the NSW Government; or*
> *(c) Funding a biodiversity conservation action that benefits the entity impacted and is listed in the ancillary rules of the biodiversity offset scheme.*

Table 1: *Ecosystem Credit Requirements*

Vegetation Community	PCT ID	Credits Required
Western Grey Box – White Cypress Pine tall woodland on loam soil on alluvial plains of NSW South Western Slopes Bioregion and Riverina Bioregion	80	76

Table 2: *Species Credit Requirements*

Species Credit Species	Credits Required
Sand-hill Spider Orchid (Caladenia Arenaria)	40
Oaklands Diuris (Diuris sp.)	40
Pine Donkey Orchid (Diuris tricolor)	21
A Spear Grass (Austrostipa wakoolica)	27
Superb Parrot (Polytelis swainsonii)	6
Major Mitchell Cockatoo (Lophochroa leadbeateri)	6

CoC 11 states:

> *Prior to commencing the development, the Applicant must prepare a Biodiversity Management Plan for the development in consultation with BCS, and to the satisfaction of the Secretary. This plan must:*
>
> *(a) Include a description of the measures that would be implemented for:*
> - *Protecting vegetation and fauna habitat outside the approved disturbance areas;*
> - *Managing the remnant vegetation and fauna habitat on site;*
> - *Minimising clearing and avoiding unnecessary disturbance of vegetation that is associated with the construction and operation of the development;*
> - *Minimising the impacts to fauna on site and implementing fauna management protocols;*
> - *Avoiding the removal of hollow-bearing trees during spring to avoid the main breeding period for hollow-dependent fauna;*
> - *Rehabilitating and revegetating temporary disturbance areas with species that are endemic to the area;*
> - *Maximising the salvage of vegetative and soil resources within the approved disturbance area for beneficial reuse in the enhancement or the rehabilitation of the site; and*
> - *Controlling weeds and feral pests; and*
>
> *(b) Include details of who would be responsible for monitoring, reviewing and implementing the plan, and timeframes for completion of actions.*

Schedule 4 CoC 2 states:

> *The Applicant must:*
>
> *(a) update the strategies, plans or programs required under this consent to the satisfaction of the Secretary prior to carrying out any upgrading or decommissioning activities on site; and*
>
> *(b) review and, if necessary, revise the strategies, plans or programs required under this consent to the satisfaction of the Secretary within 1 month of the:*
> - *submission of an incident report under condition 4 of Schedule 4;*
> - *submission of an audit report under condition 7 of Schedule 4; or*
> - *any modification to the conditions of this consent.*

1.2. BACKGROUND

The EIS assessed the impacts of the Project on biodiversity. A BDAR was prepared by NGH (June 2019) to support the EIS. A subsequent BDAR was prepared by NGH (September 2020) in response to Modification 1. Both reports were prepared under the Biodiversity Assessment Methodology (BAM) as part of the Biodiversity Offsets Policy for Major Projects. The CoC issued by DPIE and mitigation measures from the RMM detail the requirements of this BMP.

1.3. ENVIRONMENTAL MANAGEMENT SYSTEMS OVERVIEW

The overall Environmental Management System for construction of the Project is described in the EMS. This BMP is part of the environmental management framework for the Project. Mitigation and management measures identified in this BMP will be incorporated into site specific Safe Work Method Statements (SWMS) and Job Safety and Environmental Risk Assessments (JSEAs) as required.

Used together, the EMS, WHSEMP, BMP, SWMS, and JSEAs form management guides that clearly identify required environmental management actions for reference by personnel and contractors.

1.4. PROJECT DESCRIPTION

The proposed Project will accommodate up to 200 MW direct current (DC) of solar generated electricity. It includes the provision of energy storage (battery energy storage system – BESS) and peak demand resupply, which will have a maximum capacity of 100 MW / 100 MW hours.. The approved infrastructure layout is provided in Appendix A. Key components of the project include:

- Photovoltaic solar arrays ground-mounted on a single-axis tracking system.
- Power conversion units.
- A substation including an elevated busbar, switch room, a lightning protection system, current and voltage transformers and a dual connection into the existing TransGrid overhead transmission lines.
- Battery storage in a DC-coupled (direct current) arrangement, spread out across the site. .
- Operations and maintenance buildings with associated car parking.
- Access point to the site via Muntz Road.
- Underground and overhead cabling.
- Internal access tracks.
- Emergency lighting.
- CCTV system including infrared (non-visible) lighting.
- Security fencing.
- Subdivision of the property for the purpose of the substation and continued agricultural purposes.
- Clearing of vegetation.
- Road upgrades.
- Temporary facilities.

Details of the Project and the methodology for construction, operation and decommissioning phases are described at length in Section 2 of the EIS.

Three impact zones for the Project have been identified including:

Undisturbed: vegetation exclusion zones (VEZ) and areas outside the development footprint.

Directly impacted: Anywhere that is cleared for the development footprint, has infrastructure built on it or subject to earthworks, i.e. trenching, pilings driven into the ground.

Directly impacted native vegetation will be limited to areas identified in the BDAR including:

- PCT 80 - Western Grey Box – White Cypress Pine tall woodland on loam soil on alluvial plains of NSW South Western Slopes Bioregion and Riverina Bioregion
    - 0.8 ha of Good condition.
    - 0.3 ha of Good – immature overstory.
    - 0.3 ha of Moderate – Grazed understory.
    - 0.1 ha of Low condition.
    - 0.2 ha of Planted Vegetation.
    - 47 Scattered paddock trees
- PCT 158 Planted Oldman Saltbush- Category 1 Exempt Land
    - 0.9 ha of planted *Atriplex Nummularia*

PCT n/a – Exotic

- 523 ha of Exotic vegetation dominated by agricultural cropping.

Indirectly impacted: grassland areas:

- Shaded by panels.
- Grazed or mowed.
- Driven on during construction or operations.

1.5. PURPOSE OF THIS BMP

The purpose of this plan is to describe how impacts on biodiversity will be minimised and managed during construction and operation of the Project.

The Project Owner is ultimately responsible for the development and maintenance of all management plans. The Project Owner, therefore, commits to implementation of this BMP.

1.6. OBJECTIVES

The key objective of the BMP is to ensure that impacts to biodiversity are managed and are within the scope permitted by the planning approval.

To achieve the key objective, the Engineering, Procurement and Construction Contractor (EPC) and Operation and Maintenance (O&M) contractor will:

- Ensure documented controls and procedures are implemented during construction to avoid and minimise impacts to biodiversity adjacent to and within the project footprint.
- Ensure the 100% of the stated measures detailed in the RMM and CoC are implemented during construction and operation where relevant.
- Ensure measures are implemented to comply with all relevant legislation and approvals and licenses during construction and operation as described in Section 3 and Section 4 of this BMP.

1.7. TARGETS

The following targets have been established for the management of biodiversity impacts of the Project:

- Ensure 100% compliance with the relevant legislative requirements during construction and operation.
- Ensure 100% compliance with relevant requirements of the RMM and CoC during construction and operation.
- No disturbance to biodiversity outside the development footprint during construction and operation.
- Minimise disturbance to biodiversity within the project area during construction and operation.
- Priority weeds and environmental weeds within the development site will be controlled prior to the population reach a coverage of 5% of the area of the site.
- No native fauna mortality during clearing, construction or operation.
- Plain wire used instead of barbed wire on all fencing including livestock fencing, vegetation exclusion fencing and security fencing.
- No chemical (i.e. fuel, hydrocarbon or pesticide), sedimentation, dust or light pollution of endangered ecological communities or threatened species habitat during construction or operation.
- Rehabilitate all disturbed areas not required for the operation of the solar farm during construction or operation.

- Erosion will be managed and minimised through the implementation of the project Stormwater Management Plan as approved by DPIE.
- Revegetation of disturbed areas will have at least 70% groundcover across 85% of the site following construction and during operation. The trigger for revegetation maintenance will be <70% groundcover across 85% of the site following construction and during operation.
- Revegetation of disturbed areas should occur as soon as practicable and achieve establishment of ground cover as per above point within 6 months of completion of the development.

1.8. CONSULTATION

1.8.1. Prior to Modification 1

Following the granting of the Development Consent on 8 August 2019 a draft of the BMP was sent to DPIE and BCS (formally OEH) on 21 August 2019 for review and comment.

A response from BCS was received on the 11 September 2019. A response from DPIE was received on 9 October 2019. Those comments have been addressed, the comments and the intended changes are recorded in Appendix B.

A further response was received from BCS on 4 December 2019 on Final V1.0, 27 November 2019. Those comments have been addressed and are provided in a separate table in Appendix B.

1.8.2. Post Modification 1

Following approval of Modification 1 and the reissue of the consolidated consent in November 2020, a Request for Information (RFI) was received from DPIE. The RFI included comments which have been responded to and are included in a table in Appendix B.5.

Consultation also occurred with BCS as per the request by DPIE. The BMP Revision 3 was sent to BCS on 3rd March 2021 for review and comment. BCS provided a response on 16th March 2021. BCS are satisfied with the changes made to the BMP, which is detailed in their response and provided in Appendix B.6.

2. EXISTING ENVIRONMENT

2.1. FLORA IMPACTS

The site is dominated by cleared agricultural farmland. The habitat has been previously cleared of native vegetation and disturbed by grazing and cropping. Fragmented areas of grassy woodland occur within the project boundary and adjacent along roadsides. A paddock of planted Old Man Saltbush is also present alongside scattered native paddock trees.

The Project has been designed to minimise clearing of native woodland vegetation and threatened species habitats. In this regard, the development footprint comprises of 534 ha of the 802 ha subject land, primarily to minimise biodiversity impacts.

Threatened species surveys were carried out in spring 2018. Conditions were not favourable and species presence was assumed for *Caladenia arenaria* (Sandhill Spider Orchid), *Diuris sp*. (Oaklands Diuris) and *Austrostipa wakoolica* (A spear grass). Due to the lack of autumn rainfall in 2018 and 2019, no further surveys will occur, and species presence will remain assumed. SAII and AoS have been completed for these species in the BDAR.

An offset is required for all impacts of development on PCTs that are associated with:

(a) a vegetation zone that has a vegetation integrity score ≥15 where the PCT is representative of an endangered or critically endangered ecological community, or
(b) a vegetation zone that has a vegetation integrity score of ≥17 where the PCT is associated with threatened species habitat (as represented by ecosystem credits), or is representative of a vulnerable ecological community, or
(c) a vegetation zone that has a vegetation integrity score ≥20 where the PCT is not representative of a TEC or associated with threatened species habitat.

The impacts to native vegetation and associated habitat will be offset as per the CoC (Table 3-1).

2.1.1. Vegetation communities

The Project will disturb Endangered Ecological Communities (EEC). Around 1.9 ha of Inland Grey Box Woodland listed as EEC under the BC Act will be impacted.

Three Plant Community Types were identified within the project area during surveys including:

- PCT 76 - Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregion (0 ha impacted).
- PCT 80 - Western Grey Box – White Cypress Pine tall woodland on loam soil on alluvial plains of NSW South Western Slopes Bioregion and Riverina Bioregion (1.9 ha impacted).
- PCT 158 - Old Man Saltbush – mixed chenopod shrubland of the semi-arid (persistently dry) and arid climate zones (0.9 ha impacted)**.** A paddock of Old Man Saltbush (*Atriplex nummularia*) planted as fodder for sheep and cattle is present in the south east of the development site. For the purpose of the BAM Calculations, this vegetation was assigned the most representative which is PCT 158. This PCT was assigned as Category 1 Exempt Land.

A description of each of these PCTs follows in Table 2-1 below.

Table 2-1 Description of PCT in the development site

PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregion		
Vegetation formation	**Grassy Woodland**	
Vegetation class	Floodplain Transition Woodlands	
Approximate extent within development site	5.94 Ha occurs along the South-Western edge of the development site.	
Species relied upon for PCT identification	***Species name***	***Relative abundance***
	Grey Box (*Eucalyptus microcarpa*)	20%
	Creeping Saltbush (*Atriplex semibaccata*)	1%
	Climbing Saltbush (*Einadia nutans*)	1%
	Wallaby Grass (*Rytidosperma* sp.)	1%
Justification of evidence used to identify the PCT	Grey Box is the dominant overstory species in this vegetation community. Despite the understory being heavily grazed the overstory is relatively intact. One 20m * 20m floristic plot was undertaken in this community. There are five PCT's where Grey Box is a dominant overstory species that can occur the NSW South Western Slopes. These are PCT 76, PCT 80, PCT 81, PCT 82 & PCT 110. PCT 76 is considered to be the most appropriate PCT based on: • Grey Box as the only tree species occupying 90% of the canopy cover • Understory was highly degraded but species that were present are characteristic of this PCT (Listed above) • Location within the Lower Slopes IBRA subregion • Located on alluvial plain • Clay-Loam Soils • OEH mapping showing this PCT (Central Southern NSW_ADS40_VIS 3884). Based on these factors, PCT 76 was selected for this vegetation community	
TEC Status	Forms part of the *Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregion* EEC listed under the BC Act.	
Estimate of percent cleared in Bioregion	83%	

PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregion	
Examples	 Figure 2-1 Example of PCT 76 in the development site

PCT 80 Western Grey Box – White Cypress Pine tall woodland on loam soil on alluvial plains of NSW South Western Slopes Bioregion and Riverina Bioregion		
Vegetation formation	**Grassy Woodland**	
Vegetation class	Floodplain Transition Woodlands	
Approximate extent within the development site	14ha occurs along Muntz Road and Sandigo-Boree Creek Road 2.8ha occurs within the development site	
Species relied upon for PCT identification	***Species name***	***Relative abundance***
	Grey Box (*Eucalyptus microcarpa*)	10%
	White Cypress (*Callitris glaucophylla*)	20%
	Yellow Box (*Eucalyptus melliodora*)	5%
	Bulloak (*Allocasuarina luehmannii*)	<1%
	Desert Senna (*Senna artemisioides*)	2%
	Wingless Fissure-weed *(Maireana enchylaenoides*)	1%
	Corrugated Sida (*Sida corrugata*)	1%
	Spear Grass (*Austrostipa scabra*)	5%
	Purple Burr-daisy (*Calotis cuneifolia*)	<1%
	Rock Fern (*Cheilanthes sieberi*)	<1%
	(*Lomandra filiformis*)	<1%
	Wheat Grass (*Elymus scaber*)	1%

PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregion		
	Purple Love-Grass (*Eragrostis lacunaria*)	1%
	Curly Windmill Grass (*Enteropogon acicularis*)	5%
Justification of evidence used to identify the PCT	Seven 20m x 20m floristic plots were undertaken in this community. The overstory is dominated by White Cypress (*Callitris glaucophylla*) with scattered remnant Grey Box (*Eucalyptus microcarpa*). PCT 80 is considered to be the most appropriate PCT based on: • The co-dominance of White Cypress and Grey Box in the overstory • The presence of less dominant overstory species characteristic of this PCT (Yellow Box and Bulloak) • Understory species characteristic of this PCT (Listed above) • Location within the Lower Slopes IBRA subregion • Located on alluvial plain • OEH mapping showing this PCT in the area (Central Southern NSW_ADS40_VIS 3884) Based on these factors, PCT 80 was selected for this community	
TEC Status	Forms part of the *Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregion* EEC listed under the BC Act.	
Estimate of percent cleared in Bioregion.	83%	
Examples	 Figure 2-2 Example of PCT 80 along Muntz Road.	

PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregion	
	 Figure 2-3 Example of PCT80 within the development site

PCT 158 - Old Man Saltbush – mixed chenopod shrubland of the semi-arid (persistently dry) and arid climate zones.		
Vegetation formation	**Arid Shrublands**	
Vegetation class	Riverine Chenopod shrublands	
Approximate extent within the development site	42.2ha occurs in the South-Eastern Corner of the development site.	
Species relied upon for PCT identification	***Species name***	***Relative abundance***
	Old Man Saltbush (*Atriplex nummularia*)	50%
	Windmill Grass (*Chloris truncata*)	1%
	Curly Windmill Grass (*Enteropogon acicularis*)	1%
Justification of evidence used to identify the PCT	One 20m x 50m floristic plot was undertaken in this community. This is a constructed community and is not representative of the naturally occurring shrubland. For the purposes of the BAM Calculator, PCT 159 is considered to be the most appropriate PCT based on the dominance of Old Man Saltbush in the shrub layer.	
TEC Status	Does not form part of a TEC.	
Estimate of percent cleared in Bioregion.	92%	

PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregion	
Examples	 Figure 2-4 Example of PCT 158 within the development site  Figure 2-5 Example of PCT 158 within the development site

2.2. FAUNA IMPACTS

Two threatened fauna species were recorded during field survey including:

- Grey-crowned Babbler - *Pomatostomus temporalis temporalis* (listed as vulnerable under the BC Act).
- White-fronted Chat - *Epthianura albifrons* (listed as vulnerable under the BC Act).

Two fauna species, Superb Parrot – *Polytelis swainsonii* and Major Mitchell's Cockatoo - *Lophochroa leadbeateri*, were unable to be surveyed for, therefore these species were assumed to occur onsite.

Grey-Crowned Babbler

The Grey-crowned Babbler was recorded within the project area. Targeted surveys were not conducted for this species. The majority of Grey-crowned Babbler habitat will be retained, however 1.9 ha of foraging,

breeding and shading habitat for this species will be cleared. These species are accounted for in the ecosystem credit requirements of the development determined by the PCT.

White Fronted Chat

The Project would impact 1.9 ha of White-fronted Chat habitat. A flock of about 40 White Fronted Chats (*Epthianura albifrons*) were observed foraging within the harvested wheat field during the field surveys. They had been previously sighted foraging in the adjacent planted Old Man Saltbush (*Atriplex nummularia*) crop on three occasions during the site visits. 0.9 ha of this habitat will be impacted by the development.

Superb Parrot

This species was not observed onsite. Targeted surveys were not conducted for these species. Suitable habitat is present onsite, therefore this species was assumed to occur. Suitable habitat includes 25 HBTs. 0.25 ha of suitable nesting habitat for this species would be removed by the development.

Major Mitchell's Cockatoo

This species was not observed onsite. Targeted surveys were not conducted for these species. Suitable habitat is present onsite, therefore this species was assumed to occur. Suitable habitat includes 25 HBTs. 0.25 ha of suitable nesting habitat for this species would be removed by the development.

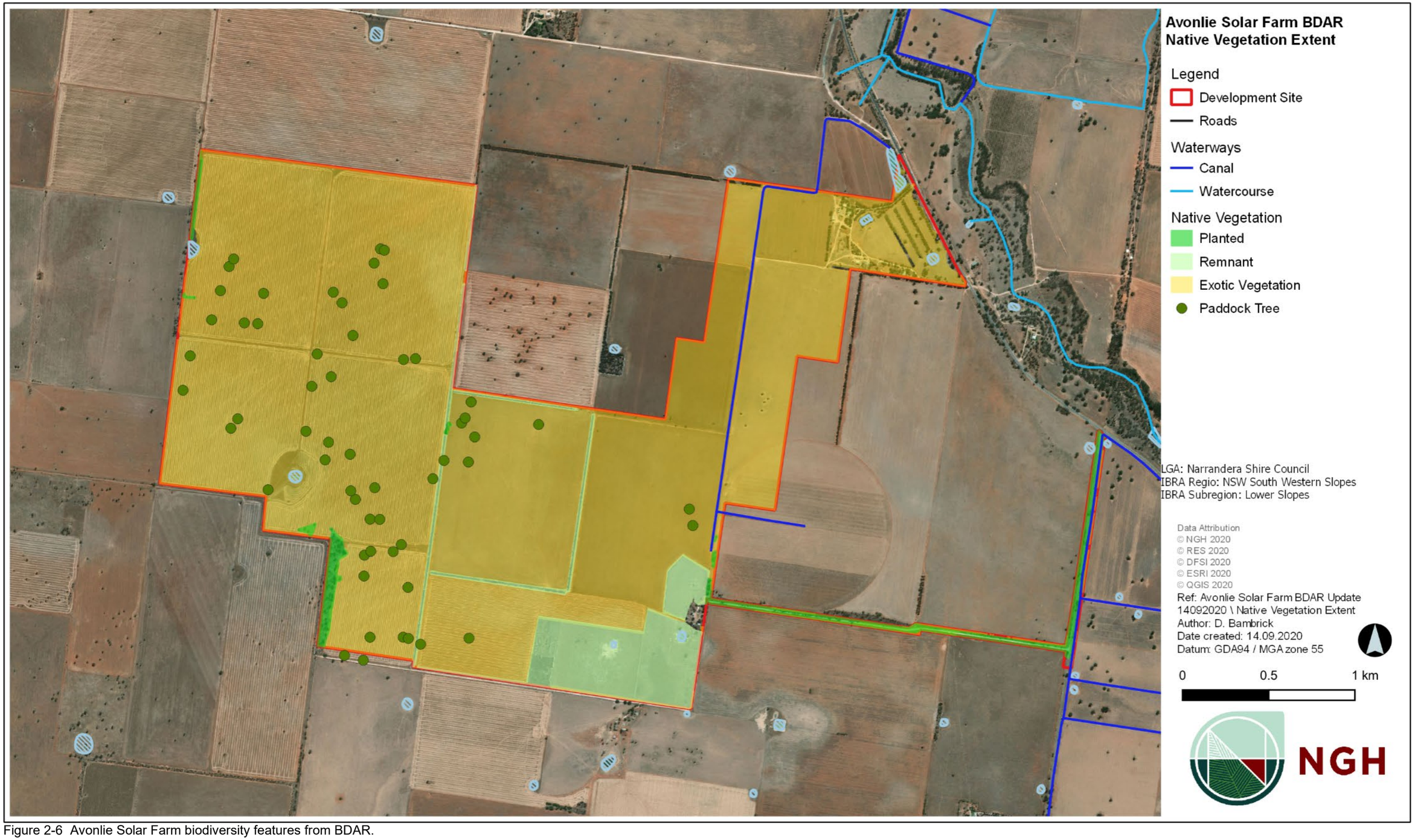


Figure 2-6 Avonlie Solar Farm biodiversity features from BDAR.

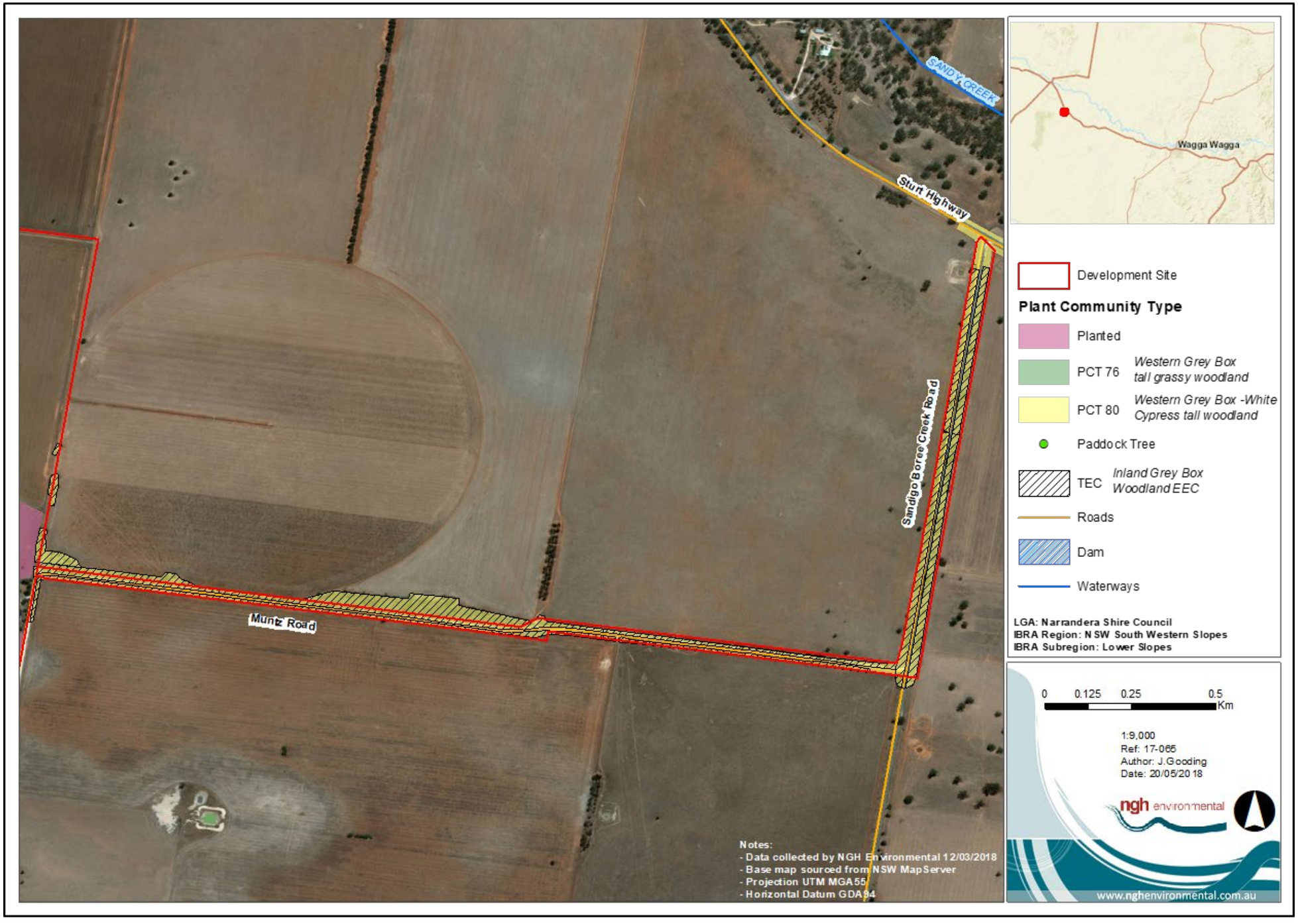


Figure 2-7 Avonlie Solar Farm biodiversity features from BDAR.

3. ENVIRONMENTAL REQUIREMENTS

3.1. RELEVANT LEGISLATION AND GUIDELINES

3.1.1. Legislation

Legislation relevant to biodiversity management includes:

- *Environmental Planning and Assessment Act 1979* (EP&A Act).
- *National Parks and Wildlife Act 1974* (NPW Act).
- *Biodiversity Conservation Act 2016* (BC Act).
- *Protection of the Environment Operations Act 1997* (POEO Act).
- *Fisheries Management Act 1994* (FM Act).
- *Local Land Services Act 2013.*
- *Biosecurity Act 2015.*
- *Pesticides Act 1999.*
- *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

3.1.2. Guidelines and standards

The main guidelines, specifications and policy documents relevant to this BMP include:

- NSW National Parks & Wildlife Service. 2001. *Policy for the Translocation of Threatened Fauna in NSW: Policy and Procedure Statement No. 9* Threatened Species Unit, Hurstville NSW.
- Relevant recovery plans, priority action statements and best practice guidelines.
- DECCW. 2008. Hygiene protocol for the control of disease in frogs.
- Australian Standard AS 4373 Pruning of Amenity Trees.
- Australian Standard 4970 – 2009 Protection of Trees.

3.1.3. Conditions of consent

Condition 11 of the Development Consent requires the development of a BMP to detail how construction and operation impacts on biodiversity will be minimised and managed. Specific conditions relating to biodiversity which detail specific requirements for mitigation and management measures are detailed in Table 3-1.

Table 3-1 Conditions of Consent (schedule 3).

Condition of Consent	Condition requirement	Location
Land Management		
Schedule 3 CoC 8	Following any construction or upgrading on the site, the Applicant must. (d) Restore the groundcover of the site as soon as practicable. (e) Maintain the groundcover with appropriate perennial species. (f) Manage weeds within this groundcover.	Section 6 Section 7 Section 10.6
Vegetation Clearance		
Schedule 3 CoC 9	The Applicant must not clear any native vegetation or fauna habitat located outside the approved disturbance areas described in the EIS.	Section 6 Section 7
Biodiversity Offsets		

<table>
<tr><th>Condition of Consent</th><th>Condition requirement</th><th>Location</th></tr>
<tr><td>Schedule 3
CoC 10</td><td>Within two years of commencing the development under this consent, the Applicant must retire biodiversity credits of a number and class specified in Table 1 and Table 2 below, to the satisfaction of BCS, unless the Secretary agrees otherwise.
The retirement of these credits must be carried out in accordance with the NSW Biodiversity Offsets Scheme and can be achieved by:
(d) Acquiring or retiring ‘biodiversity credits’ within the meaning of the Biodiversity Conservation Act 2016;
(e) Making payments into an offset fund that has been developed by the NSW Government; or
(f) Funding a biodiversity conservation action that benefits the entity impacted and is listed in the ancillary rules of the biodiversity offset scheme.
Table 1: Ecosystem Credit Requirements
<table>
<tr><th>Vegetation Community</th><th>PCT ID</th><th>Credits Required</th></tr>
<tr><td>Western Grey Box – White Cypress Pine tall woodland on loam soil on alluvial plains of NSW South Western Slopes Bioregion and Riverina Bioregion</td><td>80</td><td>76</td></tr>
</table>
Table 2: Species Credit Requirements
<table>
<tr><th>Species Credit Species</th><th>Credits Required</th></tr>
<tr><td>Sand-hill Spider Orchid (Caladenia Arenaria)</td><td>40</td></tr>
<tr><td>Oaklands Diuris (Diuris sp.)</td><td>40</td></tr>
<tr><td>Pine Donkey Orchid (Diuris tricolor)</td><td>21</td></tr>
<tr><td>A Spear Grass (Austrostipa wakoolica)</td><td>27</td></tr>
<tr><td>Superb Parrot (Polytelis swainsonii)</td><td>6</td></tr>
<tr><td>Major Mitchell Cockatoo (Lophochroa leadbeateri)</td><td>6</td></tr>
</table></td><td>Section 7.2</td></tr>
<tr><td colspan="3">Biodiversity Management Plan</td></tr>
<tr><td>Schedule 3
CoC 11</td><td>Prior to commencing the development, the Applicant must prepare a Biodiversity Management Plan for the development in consultation with BCS, and to the satisfaction of the Secretary. This plan must:
(a) Include a description of the measures that would be implemented for:
• Protecting vegetation and fauna habitat outside the approved disturbance areas;
• Managing the remnant vegetation and fauna habitat on site;
• Minimising clearing and avoiding unnecessary disturbance of vegetation that is associated with the construction and operation of the development;
• Minimising the impacts to fauna on site and implementing fauna management protocols;
• Avoiding the removal of hollow-bearing trees during spring to avoid the main breeding period for hollow-dependent fauna;
• Rehabilitating and revegetating temporary disturbance areas with species that are endemic to the area;
• Maximising the salvage of vegetative and soil resources within the approved disturbance area for beneficial reuse in the enhancement or the rehabilitation of the site; and
• Controlling weeds and feral pests; and
(b) Include details of who would be responsible for monitoring, reviewing and implementing the plan, and timeframes for completion of actions.
Following the Secretary’s approval, the Applicant must implement the Biodiversity Management Plan.
Note: If the biodiversity credits are retired via a Biodiversity Stewardship Agreement, then the Biodiversity Management Plan does not need to include any of the matters that are covered under the Biodiversity Stewardship Agreement.</td><td>This Plan</td></tr>
<tr><td>Schedule 4
CoC 2</td><td>The applicant must:
(a) update the strategies, plans or programs required under this consent to the satisfaction of the Secretary prior to carrying out any upgrading or decommissioning activities on site; and</td><td>Section 9</td></tr>
</table>

Condition of Consent	Condition requirement	Location
	(b) review and, if necessary, revise the strategies, plans or programs required under this consent to the satisfaction of the Secretary within 1 month of the: • submission of an incident report under condition 4 of Schedule 4; • submission of an audit report under condition 7 of Schedule 4; or • any modification to the conditions of this consent.	

4. EIS COMMITMENTS

Commitments to protect biodiversity over the life of the project, as developed through the EIA process, are summarised in the RTS Report (referred to as the RMM).

The RMM listed in Table 4-1 do not include and are in addition to the CoCs addressed in section 3.

Table 4-1 RMM to be implemented by the Project Owner and project contractors.

No.	Requirement	Location in the BMP
BD1	The following plans are to be prepared and approved by the relevant authorities: • Biodiversity Management Plan. • Construction Environmental Management Plan • Pest and Weed Management Plan • Erosion and Sediment Control Plan. These plans should include but not be limited to the relevant commitments below.	This BMP Section 10.3
BD2	• Hollow-bearing trees would not be removed during breeding and hibernation season (Winter to summer) to mitigate impacts on Superb Parrots, Major Mitchell Cockatoo and Corben's Long-eared Bat. • Old Man Saltbush Shrubland would not be removed during the breeding season (July to March) of the White-fronted Chat to mitigate impacts to this species. • Clearing of mature Grey Box species outside of the two individual trees marked within the BDAR is not permitted along Sandigo-Boree Creek Road and Muntz Road. • If clearing outside of these periods cannot be achieved, pre-clearing surveys would be undertaken by an ecologist or suitably qualified person to ensure no impacts to fauna would occur.	Section 6
BD3	Spring flora surveys by an ecologist/botanist along Muntz Rd and Sandigo-Boree Creek Rd for: • Caladenia arenaria (Sandhill Spider Orchids). • Diuris sp. Oaklands, D.L Jones 5380 (*Oaklands Diuris*). • *Austrostipa wakoolica* (A spear grass).	Section 2.1
BD4	Instigating clearing protocols including pre-clearing surveys, daily surveys and staged clearing in the presence of a trained ecologist or licensed wildlife handler during clearing events, including: • Pre-clearing checklist. • Tree clearing procedure.	Section 6 Section 10.1
BD5	Implementation of tree-clearing procedure including relocation of habitat features to adjacent area for habitat enhancement.	Section 6 Section 10.1
BD6	• Approved clearing limits to be clearly delineated with temporary fencing or similar prior to construction commencing. • No clearing or damage outside of the agreed development footprint/disturbance area along Sandigo-Boree Creek Road and Muntz Road. These limits are to be clearly delineated, as detailed above. • No stockpiling or storage within dripline of any mature trees.	Section 6 Section 10.1

No.	Requirement	Location in the BMP
	• In areas to clear adjacent to areas to be retained, chainsaws would be used rather than heavy machinery to minimise risk of unauthorised disturbance.	
BD7	The development and implementation of the Construction Environmental Management Plan (CEMP) will include measures to avoid noise encroachment on adjacent habitats such as avoiding night works as much as possible.	Section 6
BD8	Light shields or daily/seasonal timing of construction and operational activities to reduce impacts of light spill, including: • Avoid Night Works. • Direct lights away from vegetation.	Section 6 Section 7
BD9	• Daily monitoring of dust generated by construction and operation activities. Construction would cease if dust observed being blown from site until control measures were implemented. • All activities relating to the proposal would be undertaken with the objective of preventing visible dust emissions from the development site.	Section 6 Section 7
BD10	Prior to commencement of each phase, a Weed Management Procedure would be developed as part of the Biodiversity Management Plan for the proposal to prevent and minimise the spread of weeds. This would include: • Management protocol for declared priority weeds under the Biosecurity Act 2015 during construction, operation and decommissioning stages. • Weed hygiene protocol in relation to plant, machinery, and fill. The Weed Management Procedure would be incorporated into the Biodiversity Management Plan.	Section 6 Section 10.3 Section 10.4
BD11	Staff training and site briefing to communicate environmental features to be protected and measures to be implemented: • Site induction. • Toolbox talks.	Section 6
BD12	Preparation and implementation of Biodiversity Management Plan in consultation with Narrandera Shire Council would include protocols for: • Protection of native vegetation to be retained. • Best practice removal and disposal of vegetation. • Staged removal of hollow-bearing trees and other habitat features such as fallen logs with attendance by an ecologist. • Weed management. • Unexpected threatened species finds. • Rehabilitation of disturbed areas. • Rehabilitation and revegetation of linear corridors along Sandigo-Boree Creek Road to enhance connectivity value outside the development footprint.	This BMP Sandigo Boree Creek Road Planting Proposal (currently under negotiation with NSC)
BD13	An erosion and sediment control plan would be prepared in conjunction with the final design and spill management procedures would be implemented.	Section 6
BD14	Awareness training during site inductions regarding enforcing site speed limits. Site speed limits to be enforced to minimise fauna strike.	Section 6

5. ENVIRONMENTAL ASPECTS AND IMPACTS

The majority of the development footprint (534 ha) is covered by cleared agricultural land. The potential impacts of the Project on the three vegetation communities (PCT 76, PCT 80 and PCT 158) will be both direct and indirect. The direct impacts include access roads, inverter stations and other buildings, parking and solar panel piles. The indirect impacts include areas under panels, between panel rows and areas not being used, which would experience different levels of shading, rainfall and temperature.

Key aspects of the Project that will result in impacts to biodiversity have been described in the BDAR (Version 2.3).

Table 5-1 Potential biodiversity impacts as a result of the project

Impact	Frequency	Intensity	Duration	Consequence
Direct				
Habitat clearance for permanent and temporary construction facilities (e.g. solar infrastructure, compound sites, stockpile sites, access tracks, 10m defendable space)	Regular	High	Construction	• Direct loss of native flora and fauna habitat including 1.7 ha of native vegetation and 47 paddock trees. • Potential over-clearing of habitat outside of the development footprint. • Injury and mortality to fauna during clearing of fauna habitat and habitat trees. • Disturbance to fallen timber, dead wood and bush rock.
Asset Protection Zone maintenance	Regular	Moderate	Construction and operations	• Impact on ground-dwelling fauna.
Vehicle movements	Regular	Moderate to high	Construction and operations	• Patches of bare ground created by repeated tyre movements.
Indirect				
Edge and barrier effects	Regular	Moderate	Operations	• Colonisation by weeds, non-native plants and pest animals.
Management of grassland biomass by mowing	Regular	High	Operations	• Potential degradation of native grassland by increased biomass reducing native species germination.
Management of grassland biomass by grazing	Regular	High	Operations	• Potential degradation of native grassland by producing nutrient-rich patches from sheep waste under shaded panels. Nutrient enrichment may favour exotic annuals over natives.
Shading by solar panels	Regular	Moderate	Operations	• Changes in soil moisture. • Changes in species abundance by benefitting certain species over others (likely positive).
Accidental spills and contamination	Rare	Moderate	Construction	• Pollution of waterways.

Impact	Frequency	Intensity	Duration	Consequence
from construction activities (including compound sites)				
Earthworks	Regular	Moderate	Construction	• Erosion and sedimentation of waterways.
Noise	Regular	Low	Construction	• Construction machinery and activities may disturb local fauna.
Dust generation	Regular	Low	Construction	• Inhibit the function of plant species and communities, waterways.
Light spills during night works	Rare	Low	Construction	• Night works may alter fauna activities / movements.
Increased vehicle traffic	Regular	Low	Construction	• Increased potential for fauna mortality through vehicle strike.
General construction activities	Regular	Moderate	Construction	• Feral pest, weed and/or pathogen encroachment.
Vehicle movements	Regular	Moderate	Construction and operations	• Weeds spread to moderate or higher condition PCT 76 and 80 woodland.
Fencing	Regular	Low	Construction and operations	• Fauna fatalities.

6. BIODIVERSITY MITIGATION AND MANAGEMENT MEASURES

A range of mitigation requirements and control measures are identified in the CoC and RMM Specific measures and requirements to address impacts to biodiversity are outlined in Table 6-1. The measures have been listed to cover broad activities and as such there may be some repetition of mitigation measures.

Table 6-1 Biodiversity management and mitigation measures.

Measure/Requirement	Resources needed	When to implement requirement	Responsibility	Source of requirement
General				
Training will be provided to all personnel involved in construction and management phases of the Project, including relevant sub-contractors on procedures to avoid and minimise impacts to biodiversity through inductions, toolboxes and targeted training.	Site Induction Toolbox talks Training materials	Construction Operation	HSE Advisor	EIS
Develop and implement a Weed and Pest Management Plan. Details of appropriate eradication methods, appropriate disposal of weeds and protocol for collaboration with adjoining landholders are detailed in section of this BMP.	Pest and Weed Management Protocol (Section 10.3) Ecologist inspection, maps and advice as required Spraying contractor	Develop plans pre-construction Implement during construction Implement during Operation	Project Manager HSE Advisor Site Operations Manager	EIS
Develop and implement an Erosion and Sediment Control Plan in accordance with Landcom (2004), to minimise soil (and water) impacts.	Erosion and Sediment Control Plan and controls Monthly inspections	Develop plans pre-construction Implement during construction and operation	Project Manager HSE Advisor Site Operations Manager	EIS
Develop and implement a Construction and Environment Management Plan which will include measures to avoid noise encroachment on adjacent habitats such as avoiding night works as much as possible.	WHSEMP Program work for day periods EIS	Develop plans pre-construction Implement plans during construction	Project Manager HSE Advisor Site Operations Manager	EIS

Measure/Requirement	Resources needed	When to implement requirement	Responsibility	Source of requirement
Prior to commencing the development, the Applicant must prepare a Biodiversity Management Plan for the development in consultation with BCS, and to the satisfaction of the Secretary. This plan must: (c) **Include a description of the measures that would be implemented for:** • **Protecting vegetation and fauna habitat outside the approved disturbance areas.** • **Managing the remnant vegetation and fauna habitat on site.** • **Minimising clearing and avoiding unnecessary disturbance of vegetation that is associated with the construction and operation of the development.** • **Minimising the impacts to fauna on site and implementing fauna management protocols.** • **Avoiding the removal of hollow-bearing trees during spring to avoid the main breeding period for hollow-dependent fauna.** • **Rehabilitating and revegetating temporary disturbance areas with species that are endemic to the area.** • **Maximising the salvage of vegetative and soil resources within the approved disturbance area for beneficial reuse in the enhancement or the rehabilitation of the site; and** • **Controlling weeds and feral pests; and** (d) **Include details of who would be responsible for monitoring, reviewing and implementing the plan, and timeframes for completion of actions.** **Following the Secretary's approval, the Applicant must implement the Biodiversity Management Plan.** ***Note: If the biodiversity credits are retired via a Biodiversity Stewardship Agreement, then the Biodiversity Management Plan does not need to include any of the matters that are covered under the Biodiversity Stewardship Agreement.***	This BMP and the EIS Induction/Toolbox talks RTS including BDAR V2.3) CoCs (Section 3) Detailed infrastructure design ESCP Coarse woody debris (CWD) reuse protocol (Section 10.1) Pest and Weed Control Protocol (Section 10.3) Inspection and monitoring forms (Section 8.3, Figure 10-8, Figure 10-9). Vegetation Exclusion Zone Plans (VEZ) VEZ survey files (GIS). Surveyors Labourers Exclusion zone fencing materials and signs. Weed and pest Controllers	Develop plans pre-construction Implement during construction Implement during Operation	Project Manager HSE Advisor Site Operations Manager	CoC 11

Measure/Requirement	Resources needed	When to implement requirement	Responsibility	Source of requirement
Prior to determination spring flora surveys are to be conducted by an ecologist/botanist along Muntz Rd and Sandigo Rd for: • ***Caladenia arenaria* (Sandhill Spider Orchid).** • **Diuris sp. Oaklands, D. L. Jones 5380 (*Oaklands Diuris*). *Austrostipa wakoolica* (A spear grass).**	Survey not complete, presence assumed and accounted for in the Offset calculations.	Pre-construction	N/A	BDAR
Protection of native fauna habitat and native fauna				
Any fallen timber, dead wood and bush rock (if present) encountered on site will be left in situ or relocated to a suitable place nearby. Rocks will be removed with suitable machinery so as not to damage the underlying rock or result in excessive soil disturbance.	Induction and toolbox talk Vegetation Clearing Protocol (Section 10.1) Mapped VEZs	Develop plans pre-construction Implement during construction Implement during Operation	HSE Advisor Site Operations Manager	EIS
Native vegetation areas and hollow bearing trees to be retained will be delineated by fencing within VEZ and construction activities will be excluded from these areas. Clearing and construction contractors will be given inductions that make clear the importance of these areas and component species.	Induction/training materials This BMP Mapped project footprint and approved infrastructure locations (Appendix A) Vegetation Clearing Protocol (Section 10.1) Mapped VEZs Exclusion zone fencing (Appendix E)	Develop plans pre-construction Implement during construction Implement during Operation	HSE Advisor Site Operations Manager	EIS
Awareness training during site inductions regarding enforcing site speed limits.	Toolbox talks Induction materials	Develop plans pre-construction Implement plans during construction	HSE Advisor Site Operations Manager	EIS

Measure/Requirement	Resources needed	When to implement requirement	Responsibility	Source of requirement
Plain wire is to be used instead of barbed wire on all fencing including livestock fencing, vegetation exclusion fencing and security fencing.	Fence design plans	Develop plans pre-construction Implement during construction Implement during Operation	Project Manager HSE Advisor Site Operations Manager	EIS
Vegetation clearing protocols				
A Vegetation/tree Clearing protocol will be developed as required to: • **Include best practice methods for the removal of woody vegetation and non-woody vegetation.** • **Trees will be removed in such a way as not to cause damage to surrounding vegetation. Root systems of trees and shrubs to be removed will be retained in-ground to ensure surrounding ground layer vegetation is undisturbed and to prevent soil erosion.** • **Require that where work cannot avoid encroaching into the TPZ, it does not impinge on the structural root zones (SRZ) of trees to be retained.** • **Details for calculating the SRZs are provided within *Australian Standard 4970-2009 – Protection of trees on development sites*.** • **All trees to be removed should be disposed of in accordance with the CDW procedure** • **Vegetation clearing protocol includes staged habitat removal, and a requirement for an ecologist to be present during the felling of all hollow-bearing trees to ensure that potential impacts on fauna are minimized.**	Vegetation Clearing Procedure (Section 10.1) *Australian Standard 4970-2009 – Protection of trees on development sites* Induction and toolbox talk	Develop plans pre-construction Implement plans during construction	Project Manager HSE Advisor	EIS Agency submissions

Measure/Requirement	Resources needed	When to implement requirement	Responsibility	Source of requirement
• **Relocation of habitat features to adjacent areas for habitat enhancement** • **Relocate habitat features to adjacent areas for habitat enhancement** • **Ensure approved clearing limits are clearly delineated with temporary fencing or similar prior to construction commencing.** • **In areas to clear adjacent to areas to be retained, chainsaws would be used rather than heavy machinery to minimise risk of unauthorized disturbance.**				
A pre-clearing process will be implemented before clearing begins. Pre-clearing surveys will be carried out by an ecologist and will include general fauna surveys, general tree hollow inspections and dam/waterway inspections. Habitat trees will be clearly marked with flagging tape.	Qualified Ecologist Marking tape/spray Vegetation clearing procedure (Section 10.1)	Develop plans pre-construction Implement plans during construction	Project Manager HSE Advisor	EIS Submissions report
Hollow-bearing trees would not be removed during breeding and hibernation season (Winter to summer) to mitigate impacts on Superb Parrots, Major Mitchell Cockatoo and Corben's Long-eared Bat. **Old Man Saltbush Shrubland would not be removed during the breeding season (July to March) of the White-fronted Chat to mitigate impacts to this species.** **If clearing outside of these periods cannot be achieved, pre-clearing surveys would be undertaken by an ecologist or suitably qualified person to ensure no impacts to fauna would occur.**	Induction and toolbox talk Vegetation clearing protocol (Section 10.1) Site Ecologist	Develop plans pre-construction Implement plans during construction	Project Manager HSE Advisor	EIS Submissions report
No clearing of any native vegetation or fauna habitat located outside the approved disturbance areas described in the EIS.	Induction and toolbox talk This BMP Mapped project footprint and approved	Develop plans pre-construction Implement plans during construction	HSE Advisor	EIS

Measure/Requirement	Resources needed	When to implement requirement	Responsibility	Source of requirement
	infrastructure locations (Appendix A)			
The vegetation clearing protocol (Section 10.1) will be followed for all vegetation clearing.	Induction and toolbox talk Vegetation clearing procedure (Section 10.1)	Construction	HSE Advisor	EIS Submissions report
An unexpected threatened species finds procedure (Section 10.2) be followed where any unexpected fauna is encountered	Induction and toolbox talk Qualified ecologist This BMP	Develop plans pre-construction Implement during construction Implement during operations	HSE Advisor Site Operations Manager	EIS
Minimise construction impact extent				
Construction activities and storage of materials for boundary fencing should be wholly contained within the proposal area. Disturbance to road reserves other than access points identified in the EIS must not occur.	Induction and toolbox talk This BMP Mapped project footprint and approved infrastructure locations (Appendix A) Ground disturbance permit procedure Mapped VEZs Exclusion zone fencing	Develop plans pre-construction Implement plans during construction	HSE Advisor	EIS
Minimise clearing and avoid unnecessary disturbance associated with the construction and operation of the project.	Induction and toolbox talk This BMP Mapped project footprint and approved	Construction Operation	HSE Advisor Site Operations Manager	Agency consultation EIS Submissions report

Measure/Requirement	Resources needed	When to implement requirement	Responsibility	Source of requirement
	infrastructure locations (Appendix A) Ground disturbance permit procedure Mapped VEZs Exclusion zone fencing			BDAR
Develop a Weed Management Procedure would be developed as part of the Biodiversity Management Plan for the proposal to prevent and minimise the spread of weeds. This would include: • **Management protocol for declared priority weeds under the *Biosecurity Act 2015* during construction, operation and decommissioning stages.** • **Weed hygiene protocol in relation to plant, machinery, and fill.** **The Weed Management Procedure would be incorporated into the Biodiversity Management Plan.**	This BMP Pest and Weed management protocol (Section 10.3).	Develop plans pre-construction Implement plans during construction Implement during Operation	HSE Advisor Site Operations Manager	EIS
Direct impacts on native vegetation and fauna habitat				
Timing works to avoid critical lifecycle events such as breeding or nursing.	Induction and toolbox talks BDAR	Construction	Project Manager	BDAR (Section 8, Table 8-1)
Instigating clearing protocols including pre-clearing surveys, daily surveys and staged clearing, the presence of a trained ecological or licensed wildlife handler during clearing events	Induction and toolbox talks Pre-clearing checklist Tree Clearing Procedure (Section 10.1)	Construction	HSE Advisor	BDAR (Section 8, Table 8-1)
Relocation of habitat features (fallen timber, hollow logs) from within the development site.	BDAR Tree Clearing Procedure (Section 10.1)	Construction Operation (fallen timber only)	HSE Advisor Site Operations Manager	BDAR (Section 8, Table 8-1)

Measure/Requirement	Resources needed	When to implement requirement	Responsibility	Source of requirement
The proposed road upgrade along Sandigo-Boree Creek Road must be retained within the existing disturbance footprint of Sandigo-Boree Creek Road	BDAR Tree Clearing Procedure (Section 10.1)	Construction	HSE Advisor Site Operations Manager	BDAR (Section 8, Table 8-1)
Clearing of mature Grey Box species outside of the two individual trees marked within the BDAR is not permitted	BDAR Tree Clearing Procedure (Section 10.1)	Construction	HSE Advisor Site Operations Manager	BDAR (Section 8, Table 8-1)
Preparation and implementation of a Biodiversity management plan to regulate activity in regard to vegetation.	This BMP	Construction Operation	HSE Advisor	BDAR (Section 8, Table 8-1)
Indirect impacts on native vegetation and habitat				
Clearing protocols that identify vegetation to be retained, prevent inadvertent damage and reduce soil disturbance; for example, removal of native vegetation by chainsaw, rather than heavy machinery, is preferable in situations where partial clearing is proposed.	Induction and toolbox talk BDAR Clearing limits Correct tools (chainsaws)	Construction Operations	HSE Advisor Site Operations Manager	EIS BDAR (Section 8, Table 8-1)
Noise barriers or daily/seasonal timing of construction and operational activities to reduce impacts of noise.	Site induction Toolbox talks CEMP	Construction Operations	HSE Advisor Site Operations Manager	EIS BDAR (Section 8, Table 8-1
Light shields or daily/seasonal timing of construction and operational activities to reduce impacts of light spill.	Site induction Toolbox talks CEMP	Construction Operations	HSE Advisor Site Operations Manager	EIS BDAR (Section 8, Table 8-1
Adaptive dust monitoring programs to control air quality	Site Induction Toolbox talks CEMP	Construction Operations	HSE Advisor Site Supervisor	EIS BDAR (Section 8, Table 8-1

Measure/Requirement	Resources needed	When to implement requirement	Responsibility	Source of requirement
	Daily dust observations Water cart		Site Operations Manager	
Hygiene protocols to prevent the spread of weeds or pathogens between infected areas and uninfected areas	Site induction Toolbox talks CEMP	Construction Operations	HSE Advisor Site Supervisor Site Operations Manager	BDAR (Section 8, Table 8-1
Staff training and site briefing to communicate environmental features to be protected and measures to be implemented	Site induction Toolbox talks	Construction Operations	HSE Advisor Site Operations Manager	BDAR (Section 8, Table 8-1
Prescribed biodiversity impacts				
Sediment barriers and spill management procedures to control the quality of water runoff released from the site into the receiving environment	Erosion and Sediment Control Plan and controls WHSEMP Spill Management Procedure Monthly inspections	Construction Operations	HSE Advisor Site Operations Manager	BDAR (Section 8, Table 8-1
Staff training and site briefing to communicate impacts of traffic strikes on native fauna.	Site induction Toolbox talks	Construction Operations	HSE Advisor Site Operations Manager	BDAR (Section 8, Table 8-1
Screening vegetation				
Survey to identify and replace dead trees within vegetation screening zones.	EIS Landscape Plan	Early winter each year	HSE Advisor	EIS

Measure/Requirement	Resources needed	When to implement requirement	Responsibility	Source of requirement
			Site Operations Manager	Landscape Plan

7. SPECIFIC WORKS AND KEY ACTIONS REQUIRED

7.1. CONSTRUCTION ACTIVITIES

The schedule of work in Table 7-1 and Table 7-2 guides the key actions required for management of biodiversity for the Project.

Table 7-1 Schedule of construction works.

Project Phase	Potential disturbance	Key actions and mitigation	Performance Target
Construction site set up, construction of access.	• Disturbance to groundcover from vehicle movements. • Disturbance and removal of fauna habitat including woody debris. • Spread of weeds, particularly high threat exotic plants.	• Clearly delineate vegetation exclusion zones using temporary fencing, flagging tape, para-webbing or similar. • Disturbance to road reserves other than access roads identified in the EIS must not occur. • Inspect and clean plant and vehicles as per Traffic Management Procedure. • Implement ground disturbance permit procedure prior to any clearing activity. • Pre-clearing surveys will be carried out by an ecologist and will include general fauna surveys, general tree hollow inspections and dam/waterway inspections. Habitat trees will be clearly marked with flagging tape or spray paint. • Trees with hollows will not be removed between 1 September and 1 January, in order to mitigate direct impacts to threatened fauna during the breeding season. • Implement Vegetation Clearing Protocol for vegetation removal. • Place CWD in remaining vegetated areas where practicable. • Record clearing and ground disturbance • Install and maintain erosion and sediment (ERSED) controls.	• No native vegetation other than the approved 1.7 ha of Western Grey Box - White Cypress Pine tall woodland, 0.9 ha of planted Old Man Saltbush, and 47 paddock trees over exotic vegetation will be removed. • No mortality of native fauna during vegetation removal. • No chemical, dust or light pollution or siltation of aquatic ecosystems, wetlands, endangered ecological communities or threatened species habitat. • Maximise the salvage of vegetation and soil resources.
Internal road construction	• Erosion and sedimentation of drainage channels from levelling and bridge construction. • Disturbance to native fauna from lights and noise. • Disturbance of groundcover from stockpiles.	• Clearly delineate no go areas within the site that are not permitted to be disturbed using temporary fencing, flagging tape, para-webbing or similar. • Provide awareness training during site inductions and toolbox talks-emphasise the importance of groundcover. • Inspect and clean plant and vehicles as per Traffic Management Procedure.	• No native vegetation other than the approved 1.7 ha of Western Grey Box - White Cypress Pine tall woodland, 0.9 ha of planted Old Man Saltbush, and 47 paddock trees over exotic vegetation will be removed. • No dirty water leaves the site • Dirt tracking is minimised on sealed public roads.

Project Phase	Potential disturbance	Key actions and mitigation	Performance Target
	• Spread of weeds, particularly high threat exotic plants.	• Stockpiling and storage of materials will avoid the dripline (extent of foliage cover) of any native tree. • Implement Vegetation Clearing Protocol for vegetation removal. • Place CWD in remaining vegetated areas where practicable. • Record clearing and ground disturbance • Direct any lighting away from woodland vegetation. • Install and maintain ERSED controls	• Maximise the salvage of vegetation and soil resources.
Construction of solar farm infrastructure	• Erosion and sedimentation of drainage channels from levelling and bridge construction. • Disturbance to existing native fauna from lights and noise. • Disturbance of groundcover from stockpiles. • Spread of weeds, particularly high threat exotic plants.	• Clearly delineate no go areas within the site that are not permitted to be disturbed using temporary fencing, flagging tape, para-webbing or similar. • Provide awareness training during site inductions and toolbox talks- emphasise the importance of groundcover. • Stockpiles and storage of materials and machinery will avoid the dripline (extent of foliage cover) of any native tree. • Direct any lighting away from woodland vegetation. • Inspect and clean plant and vehicles as per Traffic Management Procedure. • Install and maintain ERSED controls. • Implement Vegetation Clearing Protocol for vegetation removal. • Place CWD in remaining vegetated areas where practicable. • Record clearing and ground disturbance	• No native vegetation other than the approved 1.7 ha of Western Grey Box - White Cypress Pine tall woodland, 0.9 ha of planted Old Man Saltbush, and 47 paddock trees over exotic vegetation will be removed. • Maximise the salvage of vegetation and soil resources.
Removal of temporary construction equipment	• Disturbance to existing native fauna from lights and noise. • Disturbance of groundcover from stockpiles. • Spread of weeds, particularly high threat exotic plants.	• Provide awareness training during site inductions and toolbox talks- emphasise the importance of groundcover. • Direct any lighting away from woodland vegetation. • Inspect and clean plant and vehicles as per Traffic Management Procedure. • Install and maintain ERSED controls.	• No native vegetation other than the approved 1.7 ha of Western Grey Box - White Cypress Pine tall woodland , 0.9 ha of planted Old Man Saltbush and 47 paddock trees over exotic vegetation will be removed. • Maximise the salvage of vegetation and soil resources.

7.2. OPERATIONAL ACTIVITIES

7.2.1 Security and maintenance

Operational traffic within the panel area will be minimal with approximately 3-5 vehicles based permanently at the site. Periodical infrastructure upgrades may be required and will generate additional traffic movements for short periods. DPIE will be contacted prior to any major upgrades or maintenance works and in the event of any incident affecting biodiversity.

Table 7-2 Schedule of operation works.

Project phase	Expected disturbance	Key actions and mitigation	Performance target
Biodiversity offsets- within two years of commencing the development	• Removal of 1.7 ha of PCT 80 • Loss of credit species habitat as a result of clearing.	• The expectation is to retire the biodiversity offset credits to the NSW Government offset fund in accordance with the NSW Biodiversity offsets Scheme as specified in the BDAR and Schedule 3 CoC 10: o 76 ecosystem credits for PCT 80 o 140 species credits	• Compliance with the *NSW Biodiversity Offsets Scheme*
Operation	• Minor ground disturbance from solar farm maintenance. • Disruption to the movement of native fauna. • Fauna mortalities due to contact with project infrastructure such as fences and panels. • Mowing and weed management. • Spread of high threat exotic plants. • Unsuccessful screening plantings.	• Awareness training for operational staff. • Record incidents of fauna mortalities and report threatened species encounters to BCS (OEH). • Inspect plant and vehicles as per procedures in the WHSEMP • Implement Weed Management Procedure. • Implement Animal Pest Management Procedure as required. • Survey screening plantings each winter and replace all dead trees.	• No native fauna mortalities. • Priority weed populations less than 5% of the site. • No dead trees within screening plantings.

8. COMPLIANCE MANAGEMENT

8.1. ROLES AND RESPONSIBILITIES

The Project Team's organisational structure and overall roles and responsibilities are shown in Figure 8-1.

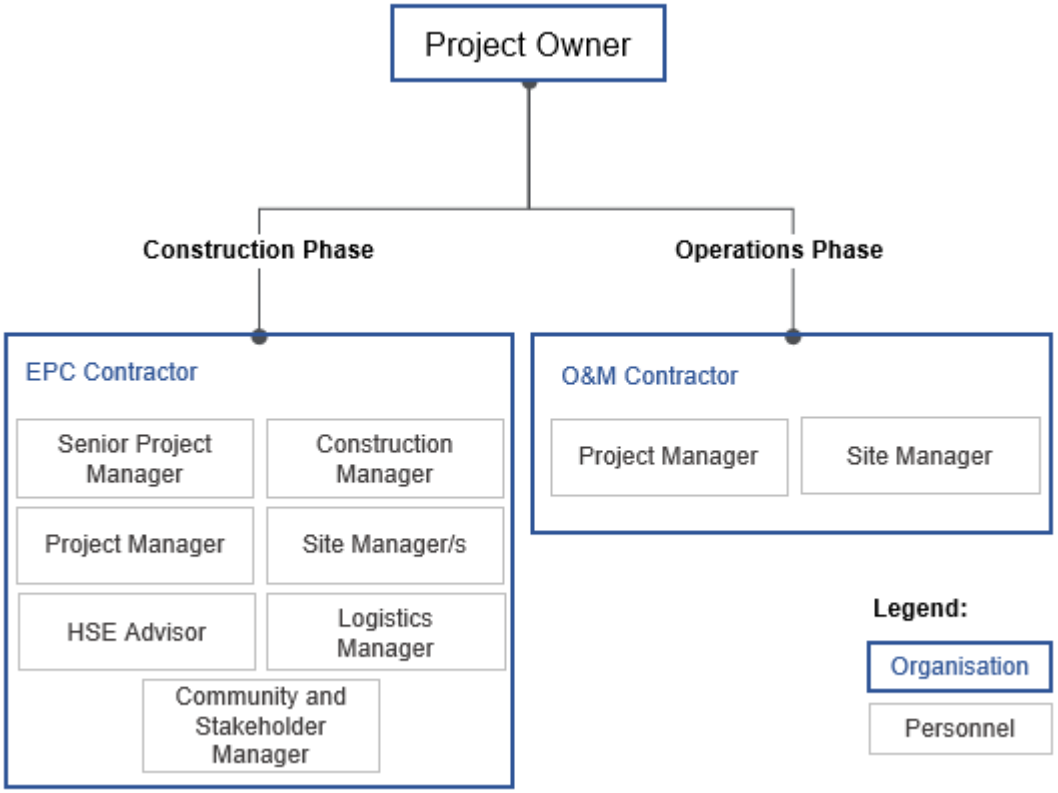


Figure 8-1 Organisational structure

Key responsibilities relating to managing biodiversity during construction are:

- The Project Owner is ultimately responsible for the development and maintenance of all management plans including the overarching environmental management strategy listed in the table of commitments (Section 4).
- The EPC Project Manager is responsible for ensuring onsite works occur in accordance with the BMP.
- The HSE Advisor manages the day-to day environmental management and records a running total of vegetation clearing within the development site. The HSE Advisor will oversee weed control and rehabilitation of the site.
- The Construction Manager and Site Manager/s are responsible for supervising construction workers and will ensure they are sufficiently trained in the protection of biodiversity and minimising disturbance detailed below.
- The Logistics Manager is responsible for implementing the Traffic Management Plan, which includes controlling and recording heavy vehicle movements onsite. Workers involved in installing solar infrastructure will be trained and directed to limit vehicle movements between the rows of panels.

Key responsibilities relating to managing biodiversity during operation are:

- The Project Owner is ultimately responsible for the development and maintenance of all management plans including the overarching environmental management strategy listed in the table of commitments (Section 4).

- The O&M Project Manager is responsible for ensuring onsite works occur in accordance with the BMP.
- The Site Manager will oversee bushfire management, weed control and rehabilitation of the site to achieve biodiversity outcomes.
- The Site Manager is responsible for supervising maintenance works and will ensure workers are sufficiently trained regarding protection of biodiversity and minimising disturbance.

8.2. TRAINING

All employees, contractors and staff working on site will undergo induction training covering procedures and protocols included within this BMP. Site induction provides an introduction to vegetation exclusion zones, traffic management hygiene and fauna handling protocols.

Staff and contractors will attend pre-start meetings at the beginning of each shift, which will include the details of any urgent biodiversity matters such as any breaches of protocols or procedures. Longer toolbox meetings will occur weekly as required, where staff and contractors will be made aware of any less urgent biodiversity matters and reinforce training on implementing protocols and procedures.

8.3. INSPECTIONS AND MONITORING

Inspections of sensitive areas and activities with the potential to impact biodiversity will occur monthly for the duration of construction and annually for the operation of the project.

Monitoring during construction will be monthly inspections of high disturbance areas, protected woodland areas and boundary fence lines. These monthly inspections will include:

- Details of Course Woody Debris (CWD) placement, recorded as it occurs.
- A review of any fauna killed or injured. Threatened fauna mortalities will be reported to BCS and the deaths of any birds resulting from contact with fences or solar panel will be recorded.
- Fauna relocations relating to vegetation clearing will be recorded.
- Areas of high and low threat exotic plants will be recorded and controlled on a seasonal basis.
- Any damage to boundary fence lines or no-go area exclusion barriers.

Biodiversity monitoring during operation will include:

- A quantitative assessment of groundcover will occur 6 months after completion of groundcover reseeding. If groundcover is less than 70% cover during this time, corrective actions will be required. This will include consideration of soil conditions such as compaction, frequency of traffic movements, low seedbank storage, lack of soil moisture and nutrient imbalance. If soil chemistry is the growth limiting factor, soil testing will be used to determine any need for amelioration.
- Feral animal and weed control surveys will occur on a seasonal basis.
- Screening plantings will be surveyed each winter and all dead trees replaced.

Trigger points for corrective action include:

- Damaged exclusion fencing/barriers or signage.
- CWD stacked, not distributed.
- Any storage or infrastructure located underneath driplines of trees.
- Presence of injured or deceased fauna.
- Groundcover achieves seed set across less than 70% of area.
- Observed feral animals or observations from neighbours.
- Any unsuccessful screening plantings.

A monitoring program summary is provided in Table 8-1.

Table 8-1 Monitoring program summary – minimum requirements.

Monitoring actions	Timing/Frequency	Responsibility	Decision trigger / adaptive response	Reporting
Pre-construction				
Inspection of vegetation exclusions zones marking and fencing (no-go zones) including individual trees.	At commencement of road upgrade works (for no go zones along site access roads) and at commencement of construction (for no go zones within the rest of the site).	HSE Advisor and Suitably qualified ecologist.	If fencing is damaged it is rectified.	Ecologist invoice/evidence of engagement On-site reporting Inspection Reports
During construction				
Visual inspection of vegetation clearance activities.	Daily by Supervisor until clearing is complete. Weekly environmental inspections	Site Supervisor HSE Advisor.	If lack of exclusion fencing leads to damage to retained vegetation, stop work and report non-compliance. Reinstate exclusion fencing as required. Non-compliance to be detailed at staff and contractor pre-start meetings at the beginning of each shift.	Inspection Reports HSE Manager to inform DPIE of non-compliance within 7 days. HSE Manager to inform DPIE immediately of incidents causing harm to threatened species, or ecological communities.
Maintain a log of salvaged animals and actions taken to relocate them.	As required	HSE Advisor	If threatened species are identified, then triggers a review and report.	Ecologist Report.
Inspections for fauna where excavations have been left overnight.	Daily as required.	HSE Advisor	No work to proceed until fauna removed from excavations.	On-site reporting.
Inspection of rehabilitation works during construction.	Monthly.	HSE Advisor	N/A	On-site reporting.
Survey before removal of tree vegetation. Hollows to be re-checked prior to clearing.	Before tree clearing commences on-site.	Suitably qualified ecologist.	Implement fauna handling procedure if native fauna is found roosting in hollows.	Brief memo prepared by Ecologist.

Survey before removal of tree vegetation. Hollows to be re-checked prior to clearing.				
Inspection of revegetated areas.	6 monthly after sowing complete.	Site Manager	Failed patches >20 m^2. Seed set across less than 80% of the area.	HSE Advisor Annual report to DPIE
During Operation				
Inspection of revegetated areas.	Annually during operations.	Site Operations Manager	Failed patches >20 m^2. Seed set across less than 80% of the area.	Internal reporting
Weed inspections	Six monthly	Site Operations Manager	Priority weed populations greater than 5% of the site. Targeted weed control, spraying, competition, grazing etc.	Internal reporting
Tree Planting Inspections	Six monthly	Site Operations Manager	All dead trees to be replaced in winter the following year.	Internal reporting

8.4. AUDITING

The Project Manager will maintain a compliance register for the Project to ensure audits and reporting requirements are met within scope and within set timeframes. The compliance register will include a list of CoCs and biodiversity commitments identified in the RMM and this BMP.

Audits (both internal and external) will be undertaken to assess the effectiveness of environmental controls, compliance with this BMP and compliance with other relevant approvals, licenses and guidelines including:

- Independent Environmental Audit within six months from the commencement of construction. This will be prepared in accordance with the relevant Independent Audit Post Approval requirements (DPIE 2018). A copy of the report will be submitted to DPIE and any other NSW government agency that requests it within 3 months of commencement of the audit.

Corrective measures or actions to improve the environmental performance of the Project recommended by auditors will be reviewed by the senior management team and incorporated into strategies, plans or programs required under by the Development Consent.

The recommendations of the Independent Environmental Audit must be implemented to the satisfaction of the Secretary.

8.5. REPORTING

Reporting requirements and responsibilities are documented in detail in the EMS.

The HSE Advisor will progressively monitor and document the clearing of native vegetation to ensure compliance. The HSE Advisor will inform DPIE of any non-compliance or incident within 7 days of occurrence.

Any additional mitigation or management measures relevant to biodiversity have been incorporated into Section 6 of this BMP as required.

Any independent environmental audit including the Project Owner's response to the recommendations will be made publicly available on the internet. Any other biodiversity matter will also be made publicly available as required by DPIE.

9. REVIEW AND IMPROVEMENT

This BMP will be reviewed every three years. Continuous improvement of this BMP will be achieved by the ongoing evaluation of performance against the BMP environmental policies, objectives and targets to identify opportunities for improvement.

The continuous improvement process will be designed to:

- Identify areas of opportunity for improvement of environmental management and performance.
- Determine the cause or causes of non-conformances and deficiencies.
- Develop and implement a plan of corrective and preventative action to address any non-conformances and deficiencies.
- Verify the effectiveness of the corrective and preventative actions.
- Document any changes in procedures resulting from process improvement.
- Make comparisons with objectives and targets.

Additionally, in accordance with Schedule 4 CoC 2:

- the BMP will be updated to the satisfaction of the Secretary prior to carrying out any upgrading or decommissioning activities on site; and
- the BMP will be reviewed, and, if necessary, revised to the satisfaction of the Secretary within 1 month of the:
    - submission of an incident report under condition 4 of Schedule 4;
    - submission of an audit report under condition 7 of Schedule 4; or
    - any modification to the conditions of consent.

10. PROTOCOLS AND PROCEDURES

10.1. VEGETATION CLEARING PROTOCOL

When undertaking vegetation clearing, the following process shown in Figure 10-1 must be followed to minimise the area of disturbance and the amount of vegetation to be cleared.

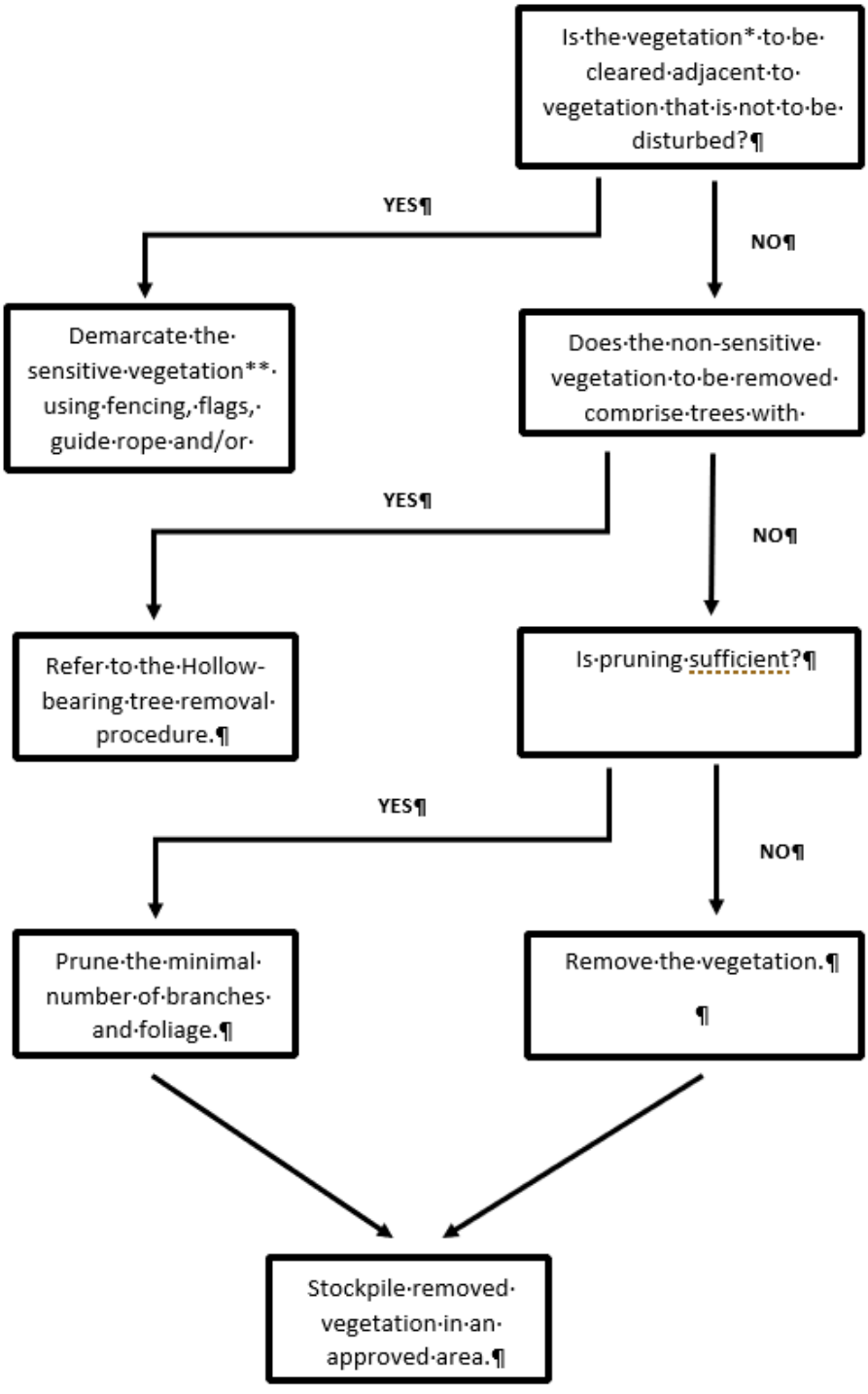


Figure 10-1 Vegetation clearance procedure.

10.1.1. Vegetation Exclusion Zones

Vegetation will be protected by exclusion zone fencing (fencing/para-webbing/bunting or similar) and signage (Figure 10-2, Figure 10-3 and Figure 10-4). Exclusion fencing will be positioned by surveyors in the field along defined boundaries for vegetation to be retained. Vegetation excluded zones are shown on Figure XX.

Figure 10-2 Example of para-webbing fencing.

Figure 10-3 Example of exclusion zone fencing.

Figure 10-4 Example of exclusion zone signage.

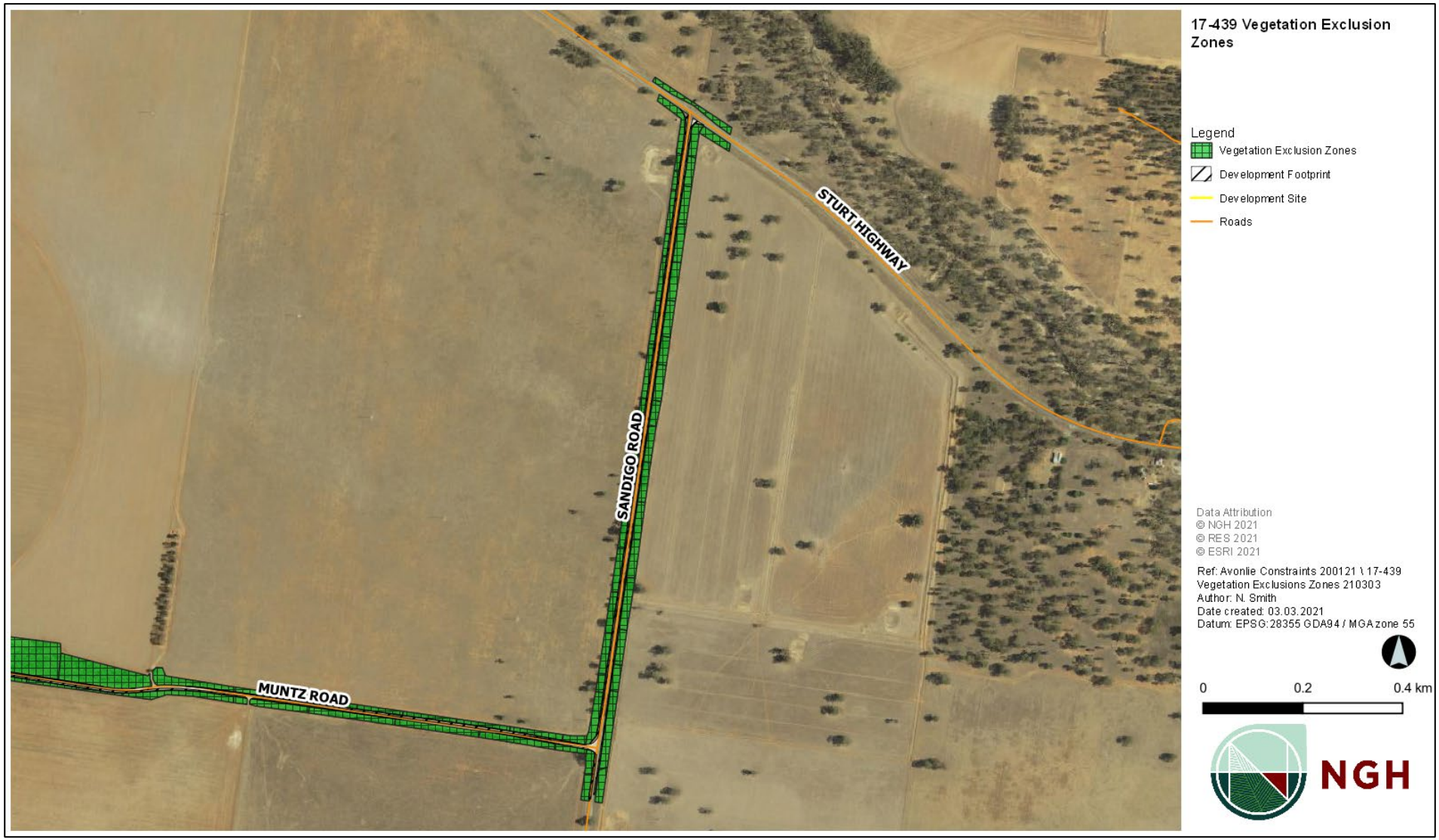


Figure 10-5 Vegetation exclusion zones along Sandigo and Muntz Roads.

Figure 10-6 Vegetation exclusion zone along Muntz Road and south-eastern corner of the development site.

Figure 10-7 Vegetation exclusion zones in the southern portion of the development site.

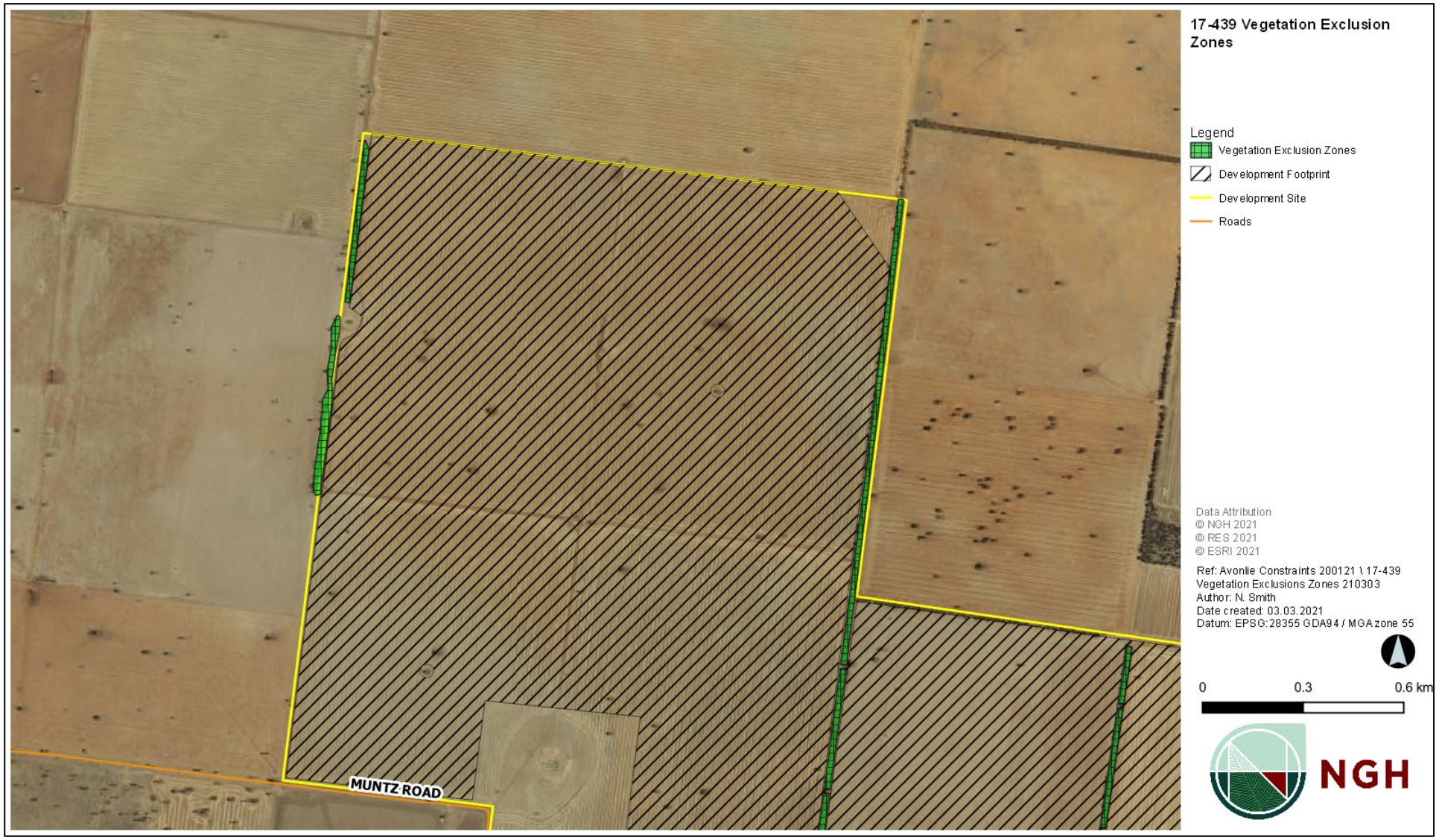


Figure 10-8 Vegetation exclusion zones for the northern portion of the development site.

10.1.2. Lopping, Pruning and Trimming Procedure

Heavy machinery should not be used for pruning or trimming. Appropriate tools to use are loppers, chain saws and vehicle mounted saws.

In the first instance, hollow bearing limbs should be retained. If this is not possible the hollow bearing limb should be inspected by the Project Ecologist / suitably qualified expert and placed in adjacent undisturbed vegetation to provide fauna habitat.

Tree limbs are to be removed using the three-cut method as shown below in Figure 10-9.

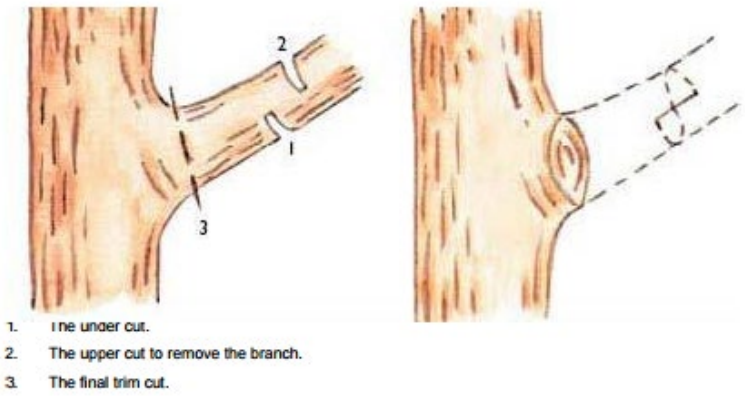


Figure 10-9 Tree cutting method.

10.1.3. Hollow-bearing Tree Removal Procedure

Hollow-bearing trees are important habitat features for a variety of native animals such as possums, gliders, birds and bats. Before clearing any hollow-bearing trees, it is important to consider if animals are present. The following procedure (Figure 10-10) is a guide to give animals an opportunity to escape a hollow-bearing tree prior to it being removed.

Figure 10-10 Hollow bearing tree removal procedure.

10.1.4. Removal of Trees Outside the Approved Clearing Limits

The approved clearing limit is the line between the vegetation to be removed and the vegetation to be retained. It will be shown on all design plans as required.

Where additional impacts to trees are proposed, the following process should be followed:

1. The Site Manager will notify the Project Manager of the location and need for the tree impact.
2. The Project Manager will consult the EIS documentation to confirm whether the tree is permitted to be removed under the Development Consent. Alternatives to removing the tree should also be investigated at this stage.
3. If the tree is not permitted to be removed, DPIE will be contacted for advice; a modification to the Development Consent may be required (~2-3 month process).
4. The Site Manager should await written confirmation from the Project Manager prior to recommencing works around the tree(s).

10.1.5. Re-use of Coarse Woody Debris

Felled timber greater than 600mm (primarily tree trunks) will generally be removed from site. Some felled timber greater than 200mm and less than 600mm will be used as CWD for habitat enhancement and to maximise the salvage of resources within the disturbance area for beneficial reuse. CWD can be used to enhance habitat values in existing vegetation and rehabilitated areas including derived native grassland (either in offset areas or areas adjoining impacted areas). CWD can provide:

- Habitat for micro invertebrates.
- Habitat for macroinvertebrates.
- Habitat for vertebrates using fallen timber for shelter, e.g. skinks, geckoes, dunnarts.
- Habitat for vertebrates using fallen timber for foraging, e.g. treecreepers, robins.
- A source of nutrients for native vegetation.
- Increased habitat complexity.

CWD will be placed within protected woodland areas as discrete logs rather than in piles to reduce fire risk and potential for use as shelter by feral animals such as foxes and rabbits. CWD will be placed at discrete intervals at densities to ensure that the CWD Benchmark for the receiving PCT (CWD benchmark for PCT 80 is 49 m in total length of fallen logs) is not exceeded. The density of CWD must take into account existing fallen timber. Removal, transportation and placement of CWD will be carried out in a manner that minimises disturbance to native vegetation, including the canopy, trees, shrubs, standing dead timber, fallen timber and groundcover, as well as topsoil.

CWD between 10 and 200mm in diameter will be chipped and used for disturbed area rehabilitation where practicable.

10.2. UNPLANNED THREATENED SPECIES FINDS PROCEDURE

This procedure depicted in Figure 10-11 is derived from information provided by the NSW Wildlife Information Rescue and Education Service (WIRES).

Any nests found in habitat features to be removed should be inspected by the Ecologist to determine whether fauna is using the nest, and whether relocation of the fauna and the nest to an adjacent area is viable.

As a general principle, any native animals found within the construction area should be avoided. Fauna should only be handled by a qualified ecologist or wildlife carer with relevant skills and experience (e.g. snake handling), and only when absolutely necessary.

Any onsite protected fauna found within a habitat feature to be removed should be captured and relocated according to the following steps. Any onsite protected fauna injured during a construction activity should be captures and a registered wildlife handler or veterinarian contacted.

Where the need for wildlife rehabilitation is required, RES should cover the cost of rehabilitation as far practicable including the cost of animal food or a suitable donation to a wildlife rehabilitation centre.

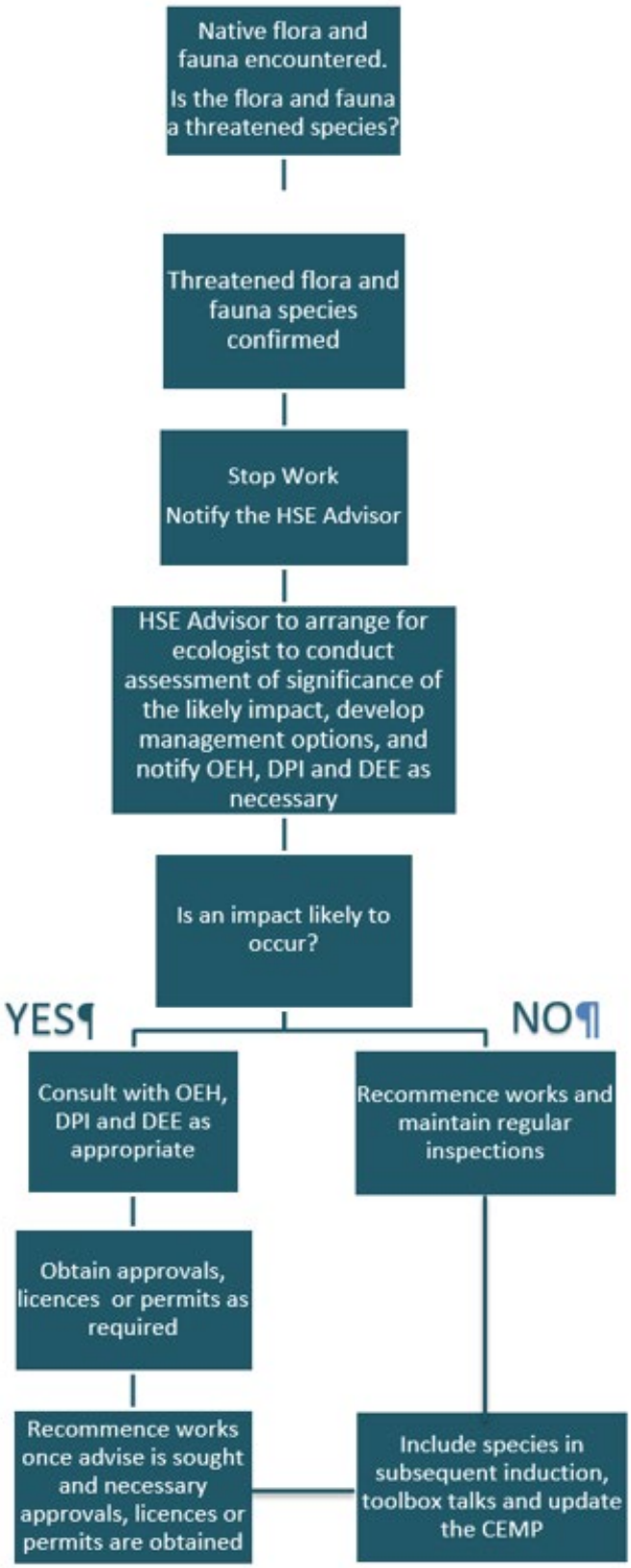


Figure 10-11 Threatened fauna encounter procedure.

Step 1

Remove any threat to the animal that could cause or exacerbate an injury.

Step 2

Use appropriate equipment to capture the animal (qualified fauna handler not required). This may include:

- Frogs: disposable gloves, disinfectant on hands and equipment between animals, disposable plastic bags (one per animal, one use only).
- Mammals: gloves, cloth bags/cotton pillow slips, up-to-date Australian Bat Lyssavirus vaccinations.

Step 3

Contain the animal to minimise stress. Gently place the animal in a holding box specifically designed for holding animals. Cotton pillowslips may be used to cover mammals, or mammals may be placed inside them. Boxes should be placed in a quiet, safe, dark location (not in a vehicle unless temperature is constantly monitored). Do not give the animal food or water.

Step 5

Call WIRES on 1300 556 686, who will provide advice on what to do until a trained WIRES rescuer can come to take the animal away. If you cannot contact WIRES, contact Lachlan Valley Vets on 02 6851 1100.

Step 6

Release fauna into similar habitats, as near as possible to their capture location. Diurnal (day-active) fauna should be released during the day of capture. Nocturnal (night-active) fauna should be released at or after dusk. Arboreal fauna should be slowly released from their bag onto the trunk of a tree, with bats and gliders placed on a tree with rough or peeling bark and hollows.

Step 7

Details of fauna captured and relocated should be recorded in the following register. Any injury or death of a threatened species should be reported to the HSE Advisor.

Table 10-1 Threatened species register.

Date	Species	Location and time captured	Location and time released	Behaviour and condition on release	Details of any injuries/death	Contact details of vet/wildlife handler if transferred to their care

10.3. PEST AND WEED MANAGEMENT PROTOCOL

The Project Manager or HSE Advisor will collaborate with adjoining landholders as required to control animal pests and exotic plant species that may traverse property boundaries.

10.3.1. Animal Pest Management Procedure

Due to perimeter fencing limiting entry to the project site by large mammal pests such as feral cats, foxes and rabbits, it is anticipated that most pest control activities will be limited to the control of small mammals such as rodents and invertebrates. Larger pest animals may however be present at the site early during the construction phase and may enter the site periodically through the main accessway.

Fox pest control (NSW Department of Primary Industries)

Reducing the impact of the red fox relies on a mixture of control techniques comprising poison baiting, shooting, trapping, fencing and guard animals. All these techniques have a short-term effect on local fox numbers. No single control method will be successful on its own and when foxes are removed from an area, reinvasion or immigration from existing untreated areas generally occurs within 2 to 6 weeks.

Control methods can be accessed from http://www.dpi.nsw.gov.au/biosecurity/vertebrate-pests/pest-animals-in-nsw/foxes/fox-control.

Rabbit pest control

The European rabbit is declared a noxious animal in NSW. Landholders are obliged to control rabbit populations on their land. The aim of control is to reduce the impact of rabbits on farm enterprises and the natural environment. The success of rabbit control should be determined more by how many rabbits remain than by how many rabbits have been removed. Rabbits have the ability to rapidly re-invade and recolonise areas following control, so control programs should involve as large a number of properties as possible. Set clear, attainable objectives for control work, taking account of available financial and physical resources.

Two broad rabbit control strategies are applied to rural land in NSW: the combination of poisons and harbour destruction in eastern areas with cooler climates, and extensive harbour destruction where ground conditions are suitable in western areas. There are three Stages of rabbit control:

- Stage 1- Initial reduction.
- Stage 2- Follow up control.
- Stage 3 Advanced control.

Control methods include:

- Monitoring of population density prior to deciding a control method.
- Poisons.
- Harbour destruction.
- Fumigation.
- Shooting.
- Trapping.

Further details regarding control methods can be accessed from

http://www.dpi.nsw.gov.au/biosecurity/vertebrate-pests/pest-animals-in-nsw/rabbits/rabbit-control.

Feral cat control

Feral cat control can be achieved by applying fox control techniques. Further information can be accessed from http://www.environment.gov.au/biodiversity/threatened/publications/factsheet-tackling-feral-cats.

Pesticide application record

Pesticide application will only be administered by authorised personnel wit ChemCert accreditation – AQF 3 in accordance with SafeWork requirements.

Pesticides will only be applied in accordance label instructions for that product.

A Pesticide Application Record (Figure 10-12) will be completed and public notifications made in accordance with relevant legislation, where pesticides are to be used in areas that could be accessed by members of the public.

Only pesticides registered for use near water may be used near any waterways.

Pesticide Application Record Sheet

NSW GOVERNMENT | Industry & Investment

Location, Applicator, Date of Application

Property/Holding: (residential address)					Date:
Applicator's Full Name:			Owner (if not applicator):		
Address:			Address:		
		Phone:			Phone:
Mobile:	Fax:	Email:	Mobile:	Fax:	Email:
Sensitive Areas (including distances, buffers): N / W / Treated Area / E / S			Comments (including risk control measures for sensitive areas):		

Host/Pest

Paddock Number/Name:	Paddock Area:	Order of Paddocks Sprayed:
Crop/Situation:	Type of Animals:	
Crop/Pasture Variety:	Age/Growth Stage:	
Growth Stage:	Mob/Paddock/Shed:	
Pest/Disease/Weed:	Animals — Number Treated:	
	Pest Density/Incidence: Heavy ❑ Medium ❑ Light ❑	

Application Data

Full Label Product Name:		Rate/Dose:	Water Rate L/ha:	
Permit No.:	Expiry Date:	Additives/Wetters:		
Total L or kg:	WHP:	ESI*:	Date Suitable for Sale:	
Equipment Type:		Nozzle Type:	Nozzle Angle:	Pressure:
Date Last Calibrated:	Water Quality (pH or description):			

Weather

Showers ❑ Overcast ❑ Light Cloud ❑ Clear Sky ❑

Rainfall (24 hours before and after)
Before: mm During: mm After: mm

Time (show time in this column)	Temperature °C	Relative Humidity (%)	Wind Speed	Direction	Variability (e.g. gusting)
Start					
Finish					

Comments:

* When using herbicides in mixtures with fungicides and insecticides, an ESI may apply to the non-herbicide component of the mixture.

Figure 10-12 Pesticide application record sheet.

10.3.2. Weed Management Procedure

High threat exotic plant cover in this BMP is defined under the Biodiversity Assessment Method Order 2017 (NSW Government 2017) as "plant cover composed of vascular plants not native to Australia that if not controlled will invade and outcompete native plant species. Also referred to as high threat weeds." Low threat exotic plant cover is defined in this BMP as all other exotic plants cover that does not typically outcompete native plant species.

Thirty-four species of exotic plant were recorded within the project area. High threat exotic plant cover recorded includes *Paspalum* dilatatum (Paspalum), *Xanthium spinosum* (Bathurst Burr), and *Carthamus lanatus* (Saffron Thistle). During construction, the project has the potential to spread weeds through the movements of heavy machinery and light vehicles.

Weeds will be controlled through:

- For more intensive infestations of weeds, the use of selective herbicides may be warranted to prevent seed set and promote weed control. The advice of an ecologist or agronomist will be sought to advise on the control of weed infestations.
- Any supplementary feeding of livestock will use treated or processed feed to remove viable seeds and prevent weeds being introduced to the site.

A detailed weed management procedure is provided below.

Invasive Weeds

The BMP lists the implementation of weed control measures to ensure invasive weed problems are not exacerbated. Weeds will be classified with reference to NSW WeedWise profiles. Once weeds are identified within the construction area, they should be marked up on relevant drawings.

Weed Inspection

The HSE Advisor will inspect the project area for weeds as required:

- Prior to clearing and grubbing.
- When a potential weed infestation has been identified.
- Before spring (around August) to identify high and low threat exotic plants before they go to flower and seed.

Weeds will be mapped following inspections including noting the specie(s) degree of infestation and capturing an image for monitoring purposes.

Weed Treatment

A general guide to weed control and management is presented above. More detailed information, including herbicide types and application rates, can be sought from an Ecologist or from the WeedWise website (http://weeds.dpi.nsw.gov.au/).

Herbicide Application Record

Herbicide application will only be administered by authorised personnel wit ChemCert accreditation – AQF 3 in accordance with SafeWork requirements.

Herbicides will only be applied in accordance label instructions for that product.

A Herbicide Application Record (Figure 10-13) will be completed and public notifications made in accordance with relevant legislation where herbicides are to be used in areas that could be accessed by members of the public.

Only herbicides registered for use near water may be used near any waterways.

NSW GOVERNMENT | Industry & Investment

Location, Applicator, Date of Application

Property/Holding: (residential address)					Date:
Applicator's Full Name:			Owner (if not applicator):		
Address:			Address:		
		Phone:			Phone:
Mobile:	Fax:	Email:	Mobile:	Fax:	Email:
Sensitive Areas (including distances, buffers): N / W / Treated Area / E / S			Comments (including risk control measures for sensitive areas):		

Host/Pest

Paddock Number/Name:	Paddock Area:	Order of Paddocks Sprayed:
Crop/Situation:	Type of Animals:	
Crop/Pasture Variety:	Age/Growth Stage:	
Growth Stage:	Mob/Paddock/Shed:	
Pest/Disease/Weed:	Animals — Number Treated:	
	Pest Density/Incidence: Heavy ❑ Medium ❑ Light ❑	

Application Data

Full Label Product Name:		Rate/Dose:	Water Rate L/ha:	
Permit No.:	Expiry Date:	Additives/Wetters:		
Total L or kg:	WHP:	ESI*:	Date Suitable for Sale:	
Equipment Type:		Nozzle Type:	Nozzle Angle:	Pressure:
Date Last Calibrated:	Water Quality (pH or description):			

Weather

Showers ❑ Overcast ❑ Light Cloud ❑ Clear Sky ❑

Rainfall (24 hours before and after)
Before: mm During: mm After: mm

Time (show time in this column)	Temperature °C	Relative Humidity (%)	Wind Speed	Direction	Variability (e.g. gusting)
Start					
Finish					
Comments:					

* When using herbicides in mixtures with fungicides and insecticides, an ESI may apply to the non-herbicide component of the mixture.

Figure 10-13 Herbicide application record sheet.

Follow-up Inspection

The HSE Advisor will ensure that a follow-up inspection is undertaken of identified weeds to ensure treatment was successful.

Where high threat weeds cannot be effectively destroyed prior to topsoil stripping, weed contaminated topsoil will be isolated and disposed of at an approved offsite licensed facility as directed by the HSE Advisor.

Ongoing Management and Monitoring

Monitoring of weeds will occur as part of the routine monthly inspections to determine effectiveness of management controls. The presence of any weeds and the necessary management actions will be noted on the Environmental Inspection Checklist (refer to EMS).

10.4. TRAFFIC MANAGEMENT PROCEDURE

10.4.1. Vehicle, Plant and Equipment Movement

All plant and vehicles entering the development site will be directed from the main entrance by signage to the project compound area to sign in. Heavy vehicle details will be recorded on the vehicle movements register overseen by the Logistics Manager.

All construction machinery will undergo a vehicle inspection check which will include an inspection for weed material. If required, vehicles will be brushed free of soil, seed and plant material prior to leaving the compound area. In dry conditions, this will be done by broom and shovel. In wet and muddy conditions this will be done using a high-pressure was down facility in a bunded area.

10.5. BUSHFIRE MANAGEMENT PROCEDURE

In order to minimise the risk of bushfire spreading from or within the Project, the HSE Advisor and Project Manager are responsible for ensuring that:

- A 10 m defendable space will be established around the perimeter of the solar panel area that permits unobstructed vehicle access, as per CoC 25, Schedule 3.
- The 10m defendable space and the solar panel area will be managed as an APZ. This APZ will be maintained on a seasonal basis including mowing prior to the commencement of fire danger season to < 50 mm and will be maintained at low levels throughout the year.
- A 20,000 L water supply tank fitted with a 65 mm Storz fitting will be located within the central compound adjacent to an internal access road.
- In the event of a fire in the vicinity of the Project, site personnel will assist RFS and emergency services staff. Operation Staff will be required to undertake bushfire training prior to commencement of their roles.

The APZ will be monitored as part of monthly site inspections.

10.6. REHABILITATION AND REVEGETATION PROTOCOL

Areas temporarily disturbed for the Project will need to be rehabilitated and revegetated as soon as practicable with the aim to achieve establishment of ground cover within 6 months of completion of the development. A ground cover survey will be conducted 6 months post completion of the development. Temporarily disturbed areas include grassland disturbed for piling installation, temporary laydown areas and cable trenches. The aim of the rehabilitation and revegetation is to stabilise the disturbed area. As temporary disturbance areas are limited to exotic understorey, the trigger for rehabilitation will be < 70% groundcover across 85% of the site following construction and during operation.

10.6.1. Topsoiling Where Topsoil Has Been Removed

Topsoil will be replaced on all areas from where it has been removed. Where possible, topsoil within the site will be reused, any imported soil will be 'weed free' certified. Prior to the application of topsoil, compacted areas will be tined or ripped to a depth of 150 mm where practicable to loosen the surface. Over the tined surfaces will be placed at least 30 cm of topsoil. Ensure the topsoil is free of rocks and sticks greater than 10 mm in diameter or 50 cm in length. Harrow the topsoil prior to sowing seed if the surface has set hard following rain. Apply lime and gypsum, where considered necessary, to the soil if chemical tests indicate that this would be advantageous/sodic.

Spray exotic plant growth occurring on topsoil stockpiles with a knockdown herbicide before spreading topsoil. More than one application of herbicide may be required. Apply the last application of herbicide not less than 4 weeks before spreading the topsoil or as per manufacturer's instructions.

Due to the climatic conditions (evaporation rates) native grassland establishment is best attempted over late autumn, winter or early spring. Wet summers are also able to maintain established perennial pasture growth in summer active species. Summer rainfall is less reliable than summer evaporation and as such revegetation is also less reliable. As such rehabilitation and revegetation should commence in late summer/early autumn as temperatures decrease and evaporation rates fall.

10.6.2. Broadcast Sowing

Undertake sowing using either:

(a) a tractor drawn seed drill to place seed at a depth of 5 mm or less; or

(b) a spreader followed immediately by a single pass with an unweighted diamond harrow.

Where safe to do so tractor passes with the seed drill or harrow will follow the finished surface contours. Distribute seed and fertiliser evenly over the areas to be sown at the rates specified below. Apply fertiliser concurrently with the seeding operation.

Calibrate the drill and monitor the seed and fertiliser application rates to ensure an even distribution over the areas sown, in accordance with the rates nominated. Maintain records of measurements and calculations to determine actual distribution rates for areas treated.

Dry sowing native species on small areas where machinery would be a hindrance can be achieved by mixing seed to sand at a ratio of 1:10 and spreading across the area by hand.

10.6.3. Hydromulching and Hydroseeding

Carry out hydromulching / hydroseeding within 5-10 days of completed soil preparation or, if delayed by the weather conditions, as soon as conditions permit.

Agitate continuously the slurry of seed, fertiliser, binder (60 kg/ha Guar gum) (and mulch) and water (35 kl/ha) to maintain a uniform consistency during application. Apply it to the sprayed slurry uniformly over the whole surface ensuring that all surfaces are sprayed from two directions to ensure complete coverage. The sprayed hydromulch layer within 48 hours of application must have a minimum thickness at any location of 5 mm when using sugar cane mulch, or 2 mm when using wood fibre or shredded paper.

Where straw (5t/ha) is used for mulch apply the straw mulch uniformly using a purpose-made blower unit. Incorporate the emulsion (bitumen) as a spray into the air stream of the mulch blower or apply it in a separate operation within 12 hours from the application of straw mulch. The straw mulch layer within 48 hours of application must have a minimum thickness at any location of 25 mm.

Do not apply hydroseeding / hydromulching and straw mulching if winds exceed 15 km/hr, temperatures exceed 37^{o}C, the surface is waterlogged; or during rain periods or when rain appears imminent.

10.6.4. Native Grass Sowing Rate

Where required a mixture of native and introduced pasture species may be used. Care should be taken to ensure sufficient plant densities. Native component species from PCT 76 and PCT 80 should be used for any direct seeding of bare ground triggering corrective action targets. The recommended seeding rate a is 2 kg/ha.

Native grass species identified within PCT 76 and PCT 80 within the NSW Vegetation Information System (VIS) are detailed in Table 10-2.

Table 10-2: Native grass species for revegetation

Common Name	Latin Name
PCT 76	
Ringed Wallaby Grass	*Austrodanthonia caespitosa*
Curly Windmill Grass	*Chloris truncata*
Rough Speargrass	*Austrostipa scabra subsp. falcata*
Knottybutt Grass	*Paspalidium constrictum*
Kangaroo Grass	*Themeda australis*
Plains Grass	*Austrostipa aristiglumis*
Bunch Wiregrass	*Aristida behriana*
Common Wheat Grass	*Elymus scaber var. scaber*
Snowgrass	*Poa sieberian*
PCT 80	
Rough Speargrass	*Austrostipa scabra subsp. falcata*
Small Flowered Wallaby-grass	*Austrodanthonia setace*

Common Name	Latin Name
Curly Windmill Grass	*Chloris truncata*
Wallaby Grass	*Austrodanthonia fulva;*
Ringed Wallaby Grass	*Austrodanthonia caespitosa*
Common Wheat Grass	*Elymus scaber var. scaber*
Bunch Wiregrass	*Aristida behriana*
Purple Wiregrass	*Aristida ramosa*
Purple Lovegrass	*Eragrostis lacunaria*

10.6.5. Revegetation Maintenance

Maintain all revegetated areas for 6 months after all sowing is complete or until Contract Completion, whichever occurs first. Water areas where and when directed by the HSE Advisor. Water by means of a fine spray which causes minimal disturbance to seeded areas.

Clear dead vegetation from areas showing poor growth or damage and replace all lost topsoil. Then recultivate and reseed the area. Control exotic plant cover where required with herbicide or hand removal.

10.7. GROUND DISTURBANCE PERMIT PROCEDURE

A ground disturbance permit process will be implemented during construction. The ground disturbance permit process is integral to communicate the distinction between vegetation protection areas and the ground disturbance footprints in which construction contractors will be working. This process is also vital to enable the construction contractor to track and control vegetation clearing on a daily, weekly, and monthly basis.

The ground disturbance permit process is managed by the HSE Advisor. The steps that will be implemented are detailed below:

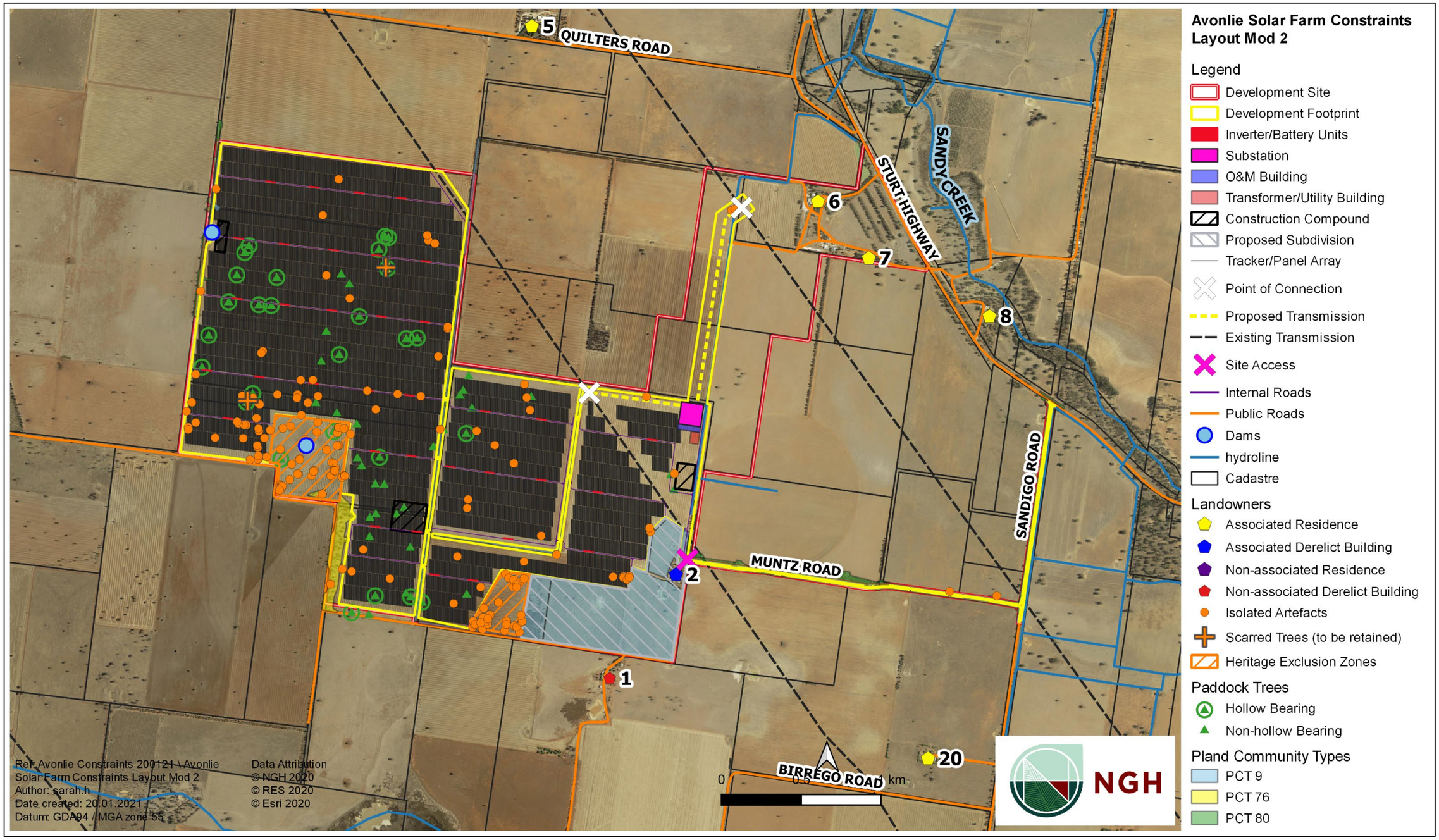
- Contractors are informed in their contract and site induction that all ground disturbing activities require them to obtain a ground disturbance permit prior to undertaking the work.
- The ground disturbance permit must be submitted to the HSE Advisor via email at least 48 hours before the work is undertaken.
- The HSE Advisor will compare the proposed ground disturbance area to the project footprint detailed in the current approved development design.
- The HSE Advisor will visit the site to digitally capture and demarcate VEZ.
- The HSE Advisor will either issue the permit unamended or contact the contractor for further clarification.

- Once the permit has been issued, the construction contractor may undertake ground works as per their contract.
- Once the work has been completed (date specified in the permit), the HSE Advisor will inspect the site, request any additional clean up or remediation activities and sign-off that the conditions of the permit have been met.

The HSE Advisor will then record the disturbed area as part of a running total disturbed area for the Project.

An example of a ground disturbance permit form is provided in Appendix F.

APPENDIX A APPROVED SITE LAYOUT


5
QUILTERS ROAD
6
7
8
STURT HIGHWAY
SANDY CREEK
SANDIGO ROAD
MUNTZ ROAD
2
1
20
BIRREGO ROAD
0
0.5
1 km
Ref: Avonlie Constraints 200121 \ Avonlie Solar Farm Constraints Layout Mod 2
Author: sarah.h
Date created: 20.01.2021
Datum: GDA94 / MGA zone 55
Data Attribution
© NGH 2020
© RES 2020
© Esri 2020
NGH
Avonlie Solar Farm Constraints Layout Mod 2
Legend
Development Site
Development Footprint
Inverter/Battery Units
Substation
O&M Building
Transformer/Utility Building
Construction Compound
Proposed Subdivision
Tracker/Panel Array
Point of Connection
Proposed Transmission
Existing Transmission
Site Access
Internal Roads
Public Roads
Dams
hydroline
Cadastre
Landowners
Associated Residence
Associated Derelict Building
Non-associated Residence
Non-associated Derelict Building
Isolated Artefacts
Scarred Trees (to be retained)
Heritage Exclusion Zones
Paddock Trees
Hollow Bearing
Non-hollow Bearing
Pland Community Types
PCT 9
PCT 76
PCT 80

APPENDIX B RESPONSE TO DRAFT BMP

B.1 BCS COMMENTS ON DRAFT (RECEIVED 11 SEPTEMBER 2019)

No.	Recommendation by OEH	Project Owner Response
1	The BMP should show the location of biodiversity values referred to in management measures or action statements and contain all the relevant biodiversity information from the BDAR	The location of all biodiversity values and features identified is provided in Figure 2-6 and Figure 2-7. Relevant biodiversity information from the BDAR has been provided in Section 2.
2	Present map(s) showing the location of approved disturbance boundaries, including detailed maps of the negotiated disturbance areas along the access road, and show the vegetation areas that lie outside these boundaries that will not be disturbed.	The location of approved disturbance boundaries and vegetation not to be disturbed is provided in Section 2, Appendix C and Appendix E.
3	Present map(s) showing the biodiversity values, vegetation and fauna habitat, for the development site at an appropriate scale, including locations of threatened species and ecological communities (as shown in figures in the Biodiversity Development Assessment Report attached to the EIS).	The location of biodiversity values, vegetation and fauna habitat is provided in Appendix A and Appendix C.
4	Present map(s) showing the location of temporary disturbance areas to be rehabilitated according to section 2.6 of the BMP. Where possible provide more specific information on the proposed species composition in the rehabilitation areas.	Temporary disturbance areas are limited to exotic understorey shown in Figure 2-6. A detailed rehabilitation protocol has been provided in Section 10.6.
5	Present map(s) showing the location of infrastructure as it relates to fauna habitat and vegetation referred to in Section 2.2 of the BMP e.g. security fencing, lighting.	The location of the approved infrastructure layout has been provided in Appendix A.
6	Summarise the baseline ecological data (vegetation communities (PCTs)) and threatened fauna habitat based on the results of the Biodiversity Development Assessment Report.	Relevant baseline ecological data from the BDAR has been provided in Section 2**.**
7	Tables should be revised to include activity, specific impacts to biodiversity, mitigation measures and ecologically-based completion criteria, and ensure they adhere to SMART principles.	A detailed table has been provided in Section 7 and includes activity, specific impacts to biodiversity, mitigation measures and ecologically-based completion criteria. Detailed mitigation measures identified in the EIS, the RTS, BDAR and CoC have also been provided in Table 6-1.
8	Address who will be conducting the monitoring	Staff responsible for conducting monitoring and inspections has been provided in Section 8.3.
9	Details regarding the recording on fauna on site, including species, locations, frequency and abundance.	Details regarding the recording on fauna on site, including species, locations, frequency and abundance has been provided in Section 10.2.

No.	Recommendation by OEH	Project Owner Response
10	If fauna are injured or dead on site, details regarding how the incident occurred should be recorded.	Details regarding how injured or dead fauna on site is to be handled is provided in Section 10.2.
11	Further details regarding temporarily disturbed areas to be rehabilitated, including • When will rehabilitation commence. • Measurements of success. • Weed management. • Replacement of unsuccessful plantings.	Details regarding the rehabilitation of disturbed areas has been provided in Section 6, Section 7, Section 8.3 and Section 10.6.
12	Maximising the salvage of vegetative and soil resources within the approved disturbance area – detail how and where salvage material is used.	Details of how and when soil and vegetation is to be salvage is provided in Section 7 and Section 10.6.
13	Who will monitor weeds, and how with this be monitored?	Staff responsible for monitoring weeds has been provided in Section 8.3.
14	How will vehicle movement be monitored for weed hygiene	A Pest and Weed Management procedure which details the cleaning of vehicles and plant before entering and exiting the project site. has been provided in Section 10.4.
15	Ensure the top wire of all site fencing is not barbed. This includes stock fencing, vegetation exclusion fencing and security fencing.	Details of the project description including security fencing is provided in Section 6.
16	Develop a pest animal management plan that includes monitoring and adaptive management.	A Pest and Weed Management procedure has been provided in Section 10.3.
17	Detail who is responsible for each management measure.	Detailed regarding the responsibility for each mitigation measure has been provided in Table 6 1.

B.2 BCS COMMENTS ON DRAFT (RECEIVED 4 DECEMBER 2019)

No.	Recommendation by OEH	Project Owner Response
1	No. 1. The BMP does not contain a Figure 2-8	Reference to Figure 2-8 has been deleted.
2	No. 2. Appendix E presents the Vegetation Exclusion Zones and must be listed against this point Appendix A Solar Farm layout map refers to a 'Terrestrial Ground Dependent Ecosystem' – clarify what this refers to	Reference to Appendix E inserted. Reference to Appendix A removed.
3	No. 4. Where are the temporary disturbance areas?	Reference to Figure 2-6 and explanation that temporary disturbance areas are limited to exotic vegetation.

No.	Recommendation by OEH	Project Owner Response
	While a rehabilitation protocol is presented in Section 10.6, Table 6-1 on page 17 refers to implementation during operation but it is not clear what is the ecological trigger for revegetation maintenance will be. 10.7.5 Revegetation maintenance provides generic guidance only. A revegetation target needs to be stated in section 1.7 (page 4).	Added revegetation target to Section 1.7.
4	No. 11 links to comment on No. 4 above. 'Measures of success' and process for 'replacement of unsuccessful plantings' need to be clearly described so the responsible officer knows what to do and can appropriately monitor and report.	Vegetation planting monitoring and mitigation included in Section 8.3.
5	No. 15. Table 6-1 refers to internal fencing, what about external/perimeter fencing and the stated target in section 1.7 of "No native fauna mortality during clearing, construction or operation"?	Plain wire to be used instead of barbed wire on all fencing within the development site. Added to target is Section 1.7.
6	Nos. 3, 5 - 10, 12 - 14, 16 & 17 have been adequately addressed.	No action required.
7	A stated target (section 1.7) is "No pollution of endangered ecological communities or threatened species habitat during construction or operation" (also Table 7-1 page 25) What does "no pollution" mean in this context? Be specific.	Definition of pollution expanded in Section 1.7. and Table 7.1.
8	Appendix D Sandigo Boree Creek Road planting proposal draft has not been provided. This will need to be finalised prior to revegetation of this area so the responsible officer knows what to do and can appropriately monitor and report.	This report has been completed and appended to the PDF version of this BMP (Appendix D).
9	Section 1.2, page 2 – incorrectly refers to FBA when it should be the BAM under the BC Act	The reference to FAB has been replaced with reference to BAM.

10	Table 6-1:
	• Protection of native vegetation and fauna habitat to be retained
	  ○ The line item about delineating areas of vegetation to be retained (page 18) should more clearly refer to Vegetation Exclusion Zones that are described in Section 10 and Appendix E.
	  ○ The line item on speed limits (page 18) is not related to direct impacts on vegetation, which is mostly about avoiding accidental clearing. Speed limits in the BDAR mitigation measures are about avoiding indirect impacts on fauna.
	• Direct impacts on native vegetation
	  ○ The first three line items are not related to direct impact on vegetation. They relate to the BDAR mitigation measures described as displacement of resident fauna through vegetation clearing and habitat removal. Either the line items belong elsewhere or the heading should be changed, as these
		Table 6-1 has been updated:
		• VEZ have been clearly referred to in relation to protection of native vegetation and fauna habitat. Reference made to Appendix E.
		• Changed the subheadings of "native vegetation and fauna habitat" to "native fauna habitat and native fauna" so speed limits are more relevant. Other subheadings adequately address vegetation and fauna habitat.
		• First three line items under direct impacts on native vegetation moved under more appropriate subheading for impacts on fauna.
		• Move dust line item form direct impact to indirect impact.

No.	Recommendation by OEH	Project Owner Response
	measures relate to managing impacts on fauna that result from clearing operations. • Direct impacts on native vegetation and fauna habitat. Dust is more of an indirect impact, as described in the BDAR Table 8-1.	
11	Table 8-1 provides a useful summary of minimum monitoring requirements.	No action required
12	Need to ensure that all figures are provided in a form that is easily accessible and easily understood and interpreted by all staff and contractors on site – i.e. electronic to enable zooming in and large hard copy printouts. There is a lot of detail on these figures (e.g. Appendix A). Also staff and contractors need to know where they are in relation to the road design in particular, so the figure on page C-II should be revised/supplemented with key that shows the location of all the subsequent maps on pages C-III to C-XV.	• Appendix A figure made larger. • Additional figure added to Appendix C, which clearly shows the locations of subsequent 13 road maps. • Drawing and shapefiles will be provided to EPC and Narrandera Shire Council to ensure that scalable maps are used during construction.
13	Sub-section numbering is out from page 36 onwards, i.e. 10.2.1 comes under 10.1 and so on, which is confusing for the reader and needs correcting.	Sub-section numbering rectified.

Jessie Whieldon

From: Andrew Fisher <Andrew.Fisher@environment.nsw.gov.au>
Sent: Wednesday, 11 September 2019 9:37 AM
To: De Smeth, Matthew (EXT) (SGRE ON APAC PR PD6)
Cc: Graham, Alexander (SGRE ON APAC PR PD6); Simon Stirrat
Subject: DPIE BC Response RE: Avonlie Solar Farm - Biodiversity Plan
Attachments: Avonlie_BMP_RevA_BCD SW comments.doc

Hi Matt,

Please find attached the draft Biodiversity Management Plan for Avonlie Solar Farm with some comments as track changes.
Apologies for the time taken to get this back to you.

In addition to the comments in the word document, the biodiversity management plan must be a stand-alone document.
It should show the location of biodiversity values referred to in management measures or action statements and contain all the relevant biodiversity information from the BDAR.
We recommend that the plan:

- Present map(s) showing the location of approved disturbance boundaries, including detailed maps of the negotiated disturbance areas along the access road, and show the vegetation areas that lie outside these boundaries that will not be disturbed.
- Present map(s) showing the biodiversity values, vegetation and fauna habitat, for the development site at an appropriate scale, including locations of threatened species and ecological communities (as shown in figures in the Biodiversity Development Assessment Report attached to the EIS).
- Present map(s) showing the location of temporary disturbance areas to be rehabilitated according to section 2.6 of the BMP. Where possible provide more specific information on the proposed species composition in the rehabilitation areas.
- Present map(s) showing the location of infrastructure as it relates to fauna habitat and vegetation referred to in Section 2.2 of the BMP e.g. security fencing, lighting.
- Summarise the baseline ecological data (vegetation communities (PCTs)) and threatened fauna habitat based on the results of the Biodiversity Development Assessment Report.
- Tables should be revised to include activity, specific impacts to biodiversity, mitigation measures and ecologically-based completion criteria, and ensure they adhere to SMART principles.

You should submit a revised version of this plan to the Planning & Assessment Division of the Department of Planning, Industry and Environment (the Department).

They will then refer it to us in the Biodiversity and Conservation Division of the Department (the former OEH) as part of the formal post-approval process.

If you have any questions about this please contact Simon Stirrat, Senior Conservation Planning Officer on 03 5021 8930 or via rog.southwest@environment.nsw.gov.au

Regards,
Andrew

Andrew Fisher
Senior Team Leader, Planning – South West

Biodiversity and Conservation Division | Department of Planning, Industry and Environment
T 02 6022 0623 | **M** 0427 562 844 | **E** andrew.fisher@environment.nsw.gov.au

512 Dean St, Albury NSW 2640
www.dpie.nsw.gov.au
Contact the South West Planning Team about biodiversity and Aboriginal cultural heritage planning and regulation matters by emailing rog.southwest@environment.nsw.gov.au.

The Department of Planning, Industry and Environment acknowledges that it stands on Aboriginal land. We acknowledge the traditional custodians of the land and we show our respect for elders past, present and emerging through thoughtful and collaborative approaches to our work, seeking to demonstrate our ongoing commitment to providing places in which Aboriginal people are included socially, culturally and economically.

From: De Smeth, Matthew (EXT) (SGRE ON APAC PR PD6) [mailto:Matthew.DeSmeth.ext@siemensgamesa.com]
Sent: Wednesday, 21 August 2019 9:01 AM
To: Andrew Fisher <Andrew.Fisher@environment.nsw.gov.au>
Cc: Graham, Alexander (SGRE ON APAC PR PD6) <Alexander.Graham@siemensgamesa.com>
Subject: Avonlie Solar Farm - Biodiversity Plan

Hi Andrew,

I was given your contact details by Richard Sharp from EH Partners as the person to contact regarding consultation with OEH on the Biodiversity Management Plan for Avonlie Solar Farm near Narrandera, NSW. Siemens Gamesa is the EPC contractor for the project which has recently been given final consent conditions and is due to start construction around the start of 2020. As part of our conditions relating to the Biodiversity Plan being developed for the project we are required to consult OEH on the plan.

I have attached the draft Biodiversity Management plan to this email and would appreciate if you could review it and provide some feedback on its contents. I would be happy to arrange a call to go through the plan if that would assist the Department's review of the plan.

Regards,

Matt de Smeth
Project Engineer – Solar

Siemens Gamesa Renewable Energy Pty Ltd
160 Herring Road
Macquarie Park NSW 2113, Australia
Mobile: +61 436 415 311
http://www.siemensgamesa.com

Jessie Whieldon

From: Andrew Fisher <Andrew.Fisher@environment.nsw.gov.au> on behalf of ROG South West Region Mailbox <rog.southwest@environment.nsw.gov.au>
Sent: Thursday, 7 November 2019 12:17 PM
To: Nicola Smith
Cc: Julie Gooding; Simon Stirrat
Subject: RE: Avonlie Solar Farm BMP

Hi Nicola,

We consider this approach to be appropriate.

We note that the species assumed present are those for which species credits are required in accordance with condition 10.

Please contact Simon Stirrat if you have any further questions about this.

Regards,
Andrew

Andrew Fisher
Senior Team Leader, Planning – South West

Biodiversity and Conservation | Department of Planning, Industry and Environment
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PO Box 1040, 512 Dean St, Albury, NSW 2640
www.dpie.nsw.gov.au
Contact the South West Planning Team about biodiversity and Aboriginal cultural heritage planning and regulation matters by emailing rog.southwest@environment.nsw.gov.au.

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From: Nicola Smith <nicola.s@nghconsulting.com.au>
Sent: Wednesday, 6 November 2019 4:51 PM
To: ROG South West Region Mailbox <rog.southwest@environment.nsw.gov.au>
Cc: Julie Gooding <julie.g@nghconsulting.com.au>
Subject: HPE CM: Avonlie Solar Farm BMP

Good afternoon Simon,

NGH will be working with RES and BEON to deliver the Biodiversity Management Plan for the Avonlie Solar Farm, Sandigo NSW, pursuant to conditions 8, 9, 10 and 11 of Schedule 3 of the Development Consent for SSD 9031.

As Julie Gooding goes on maternity leave at the end of this week, I will be managing the delivery of the management plan and working closely with Mitch Palmer, the Technical Lead for ecology at NGH.

Feedback on the BMP provided by DPIE on 9 October 2019 included clarification on *whether or not RES intends to verify the presence of threatened species that could not be verified prior to project approval (as seasonal conditions prevented confirmation).*

Threatened species surveys were carried out in spring 2018. Conditions were not favourable and species presence was assumed. Due to the lack of autumn rainfall in 2019, no further surveys will be undertaken and species presence will remain assumed.

SAII and AoS have been completed for the species.

Will BCD be satisfied with this approach if we provide it in the text of the management plan?

Thanks,
Nicola

NICOLA SMITH
ENVIRONMENTAL CONSULTANT
M. Phil (Phys Geog), B. Sc.
Please note I do not work Mondays

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BEGA · BRISBANE · CANBERRA · GOLD COAST · NEWCASTLE · SYDNEY · WAGGA WAGGA
WWW.NGHCONSULTING.COM.AU

FW: Avonlie Solar Farm - revised Biodiversity Management Plan

Nicola Smith
To Bridgette Poulton

Reply | Reply All | Forward | ...
Thu 5/12/2019 11:38 AM

Get Outlook for iOS

From: Andrew Fisher <Andrew.Fisher@environment.nsw.gov.au>
Sent: Wednesday, December 4, 2019 4:51:37 PM
To: 'Steven Reid' <steven.reid@res-group.com>
Cc: Michial Sutherland <michial.s@nghconsulting.com.au>; Amy Ziesing <amy.z@nghconsulting.com.au>; Simon Stirrat <Simon.Stirrat@environment.nsw.gov.au>; Iwan Davies <iwan.davies@planning.nsw.gov.au>
Subject: Avonlie Solar Farm - revised Biodiversity Management Plan

Steve,

The Biodiversity & Conservation Division of the Department has reviewed this revised Biodiversity Management Plan for Avonlie Solar Farm prepared by ngh consulting (Final V1.0, 27 Nov. 2019).

Noting the timeframe constraints we have not completed a comprehensive review, however we are satisfied that this is a significantly improved document.

If the few points outlined below are addressed, this plan will provide a useful framework to guide the management of biodiversity during the construction and management of this project.

Appendix B.1 gives a summary of how this revised draft addresses our previous comments. We have reviewed these and note the following aspects that require clarification:

Appendix B.1 BCD COMMENTS ON DRAFT

No. 1. The BMP does not contain a Figure 2-8

No. 2. Appendix E presents the Vegetation Exclusion Zones and must be listed against this point
Appendix A Solar Farm layout map refers to a 'Terrestrial Ground Dependent Ecosystem' – clarify what this refers to.

No. 4. Where are the temporary disturbance areas?
While a rehabilitation protocol is presented in Section 10.6, Table 6-1 on page 17 refers to implementation during operation but it is not clear what is the ecological trigger for revegetation maintenance will be.
10.7.5 Revegetation maintenance provides generic guidance only.
A revegetation target needs to be stated in section 1.7 (page 4).

No. 11 links to comment on No. 4 above. 'Measures of success' and process for 'replacement of unsuccessful plantings' need to be clearly described so the responsible officer knows what to do and can appropriately monitor and report.

No. 15. Table 6-1 refers to internal fencing, what about external/perimeter fencing and the stated target in section 1.7 of "No native fauna mortality during clearing, construction or operation"?

Nos. 3, 5 - 10, 12 - 14, 16 & 17 have been adequately addressed.

Other comments:

- A stated target (section 1.7) is "No pollution of endangered ecological communities or threatened species habitat during construction or operation" (also Table 7-1 page 25)
  What does "no pollution" mean in this context? Be specific.
- Appendix D Sandigo Boree Creek Road planting proposal draft has not been provided. This will need to be finalised prior to revegetation of this area so the responsible officer knows what to do and can appropriately monitor and report.
- Section 1.2, page 2 – incorrectly refers to FBA when it should be the BAM under the BC Act
- Table 6-1
  - Protection of native vegetation and fauna habitat to be retained

  The line item about delineating areas of vegetation to be retained (page 18) should more clearly refer to Vegetation Exclusion Zones that are described in Section 10 and Appendix E.
  The line item on speed limits (page 18) is not related to direct impacts on vegetation, which is mostly about avoiding accidental clearing. Speed limits in the BDAR mitigation measures are about avoiding indirect impacts on fauna.

  - Direct impacts on native vegetation

  The first three line items are not related to direct impact on vegetation. They relate to the BDAR mitigation measures described as displacement of resident fauna through vegetation clearing and habitat removal. Either the line items belong elsewhere or the heading should be changed, as these measures relate to managing impacts on fauna that result from clearing operations.

  - Direct impacts on native vegetation and fauna habitat

  Dust is more of an indirect impact, as described in the BDAR Table 8-1.
- Table 8-1 provides a useful summary of minimum monitoring requirements.
- Need to ensure that all figures are provided in a form that is easily accessible and easily understood and interpreted by all staff and contractors on site – i.e. electronic to enable zooming in and large hard copy printouts. There is a lot of detail on these figures (e.g. Appendix A). Also staff and contractors need to know where they are in relation to the road design in particular, so the figure on page C-II should be revised/supplemented with key that shows the location of all the subsequent maps on pages C-III to C-XV.
- Sub-section numbering is out from page 36 onwards, i.e. 10.2.1 comes under 10.1 and so on, which is confusing for the reader and needs correcting

I trust this assists you in moving forward with the project.

Regards,
Andrew

Andrew Fisher
Senior Team Leader, Planning – South West

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T 02 6022 0623 | **M** 0427 562 844 | **E** andrew.fisher@environment.nsw.gov.au
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NSW GOVERNMENT | Planning, Industry & Environment

The Department of Planning, Industry and Environment acknowledges that it stands on Aboriginal land. We acknowledge the traditional custodians of the land and we show our respect for elders past, present and emerging through thoughtful and collaborative approaches to our work, seeking to demonstrate our ongoing commitment to providing places in which Aboriginal people are included socially, culturally and economically.

B.3 DPIE CONSULTATION

Avonlie Solar Farm
Post Approval Review

Planning, Industry & Environment

Biodiversity Management Plan
Reviewed on 9 October 2019

Biodiversity Management Plan, condition 11, schedule 3	**Satisfactory (Yes/No/ Partial)**	**Comment**	**Action Required**	**Company Response**
Prior to commencing the development, the Applicant must prepare a Biodiversity Management Plan for the development in consultation with OEH, and to the satisfaction of the Secretary. This plan must:				
Consultation with OEH	No	- No evidence of consultation. - No figures as per OEH request. The BMP states that figures would be provided once the final layout plans are submitted to the Secretary. - Section 2 provides incorrect information and appears to be incomplete. Note: the baseline ecological data presented in the EIS (and referenced in the BMP) was updated through the RTS (including Appendix B revised BDAR and Appendix F road upgrades).	- Provide evidence of consultation and confirmation that OEH supports the BMP. - Include figures based on the approved development footprint (including the approved extent of the road upgrades as per Appendix F of the RTS). The detailed location of infrastructure is not required. The focus should be the disturbance area as a whole. - Clarify whether or not RES intends to verify the presence of threatened species that could not be verified prior to project approval (as seasonal conditions prevented confirmation).	- Evidence of consultation with OEH has been provided in Section 1.8 and Appendix B. - The approved project layout has been provided in Appendix A, and figures of biodiversity features identified in the BDAR are provided in Section 2.2. - Appendix F of the RTS has been provided in Appendix C. - Threatened species surveys were carried out in spring 2018. Conditions were not favourable and species presence was assumed. Due to the lack of autumn rainfall in 2019, no further surveys will be undertaken, and species presence will remain assumed. SAII and AoS have been completed for these species. This has been provided in Section 2.1.
(a) include a description of the measures that would be implemented for: • protecting vegetation and fauna habitat outside the approved disturbance areas;	No	- Section 3.1 includes basic information about signage and staff inductions. More detail required.	Include a description of the measures that would be implemented to achieve the: - requirements of all relevant conditions of consent;	- Detailed mitigation measures identified in the EIS, the RTS, BDAR and CoC have been provided in Table 6.1. Details regarding who will implement the measure, how it will be achieved has also been provided in Table 6.1.

Avonlie Solar Farm
Post Approval Review

Planning, Industry & Environment

Biodiversity Management Plan
Reviewed on 9 October 2019

• managing the remnant vegetation and fauna habitat on site; • minimising clearing and avoiding unnecessary disturbance of vegetation that is associated with the construction and operation of the development;		- Section 3.2 includes basic measures to manage impacts from lighting, dust, staff inductions. More detail required. - Section 3.3 states that disturbance boundary will be clearly marked, and a system of disturbance permits will be in place prior to clearing, staff inductions. More detail required.	- Revised safeguards and mitigation measures (Table 3-1 of the RTS); and - measures proposed in the revised BDAR. General: - The plan typically states that X will be undertaken, but insufficient detail is provided about how X will be achieved. - More detail is required about how the requirements will be achieved.	- Further detail regarding measures to manage impacts from lighting, dust, staff induction has been provided in Table 6.1. - Further detail regarding the marking of the approved disturbance boundary has been provided in Table 6.1, Section 7, Section 10.1 and Section 10.2.
• minimising the impacts to fauna on site and implementing fauna management protocols;		- Section 3.4 states fauna management protocol will be in place, staff will be inducted. - No fauna management protocol provided. More detail required.		- A threatened species find procedure has been provided in Section 10.3. This details how fauna is to be managed.
• avoiding the removal of hollow-bearing trees during spring to avoid the main breeding period for hollow-dependent fauna;		- Section 3.5 staff inductions and commitment not to clear hollow bearing trees. More detail required.		- Details regarding staff inductions and how staff will be informed to not clear hollow bearing trees is provided in Table 6.1 and Section 8.2.
• rehabilitating and revegetating temporary disturbance areas with species that are endemic to the area:		- Section 3.6 commits to planting grasses and shrubs characterised by Inland Grey Box-Woodland. More detail required.		- Details regarding planting of native grasses and shrubs characterised by Inland Grey Box-Woodland has been provided in Section 10.7
• maximising the salvage of vegetative and soil resources within the approved disturbance area for beneficial reuse in the enhancement or the rehabilitation of the site; and		- Section 3.7 commits to salvaging vegetation and soil resources. More detail required.		- Further detail regarding the salvaging of vegetation and soil has been provided in Section 7 and Section 10.2.
• controlling weeds and feral pests; and		- Section 3.8 BMM-25 needs to address vehicles and plant entering and *exiting* the site.		- A Pest and Weed Management procedure has been provided in Section 10.4 which details the cleaning of vehicles and plant

Avonlie Solar Farm
Post Approval Review

Planning, Industry & Environment

Biodiversity Management Plan
Reviewed on 9 October 2019

		- Commits to only using certified weed free soil, sand and rock on-site.		before entering and exiting the project site. - Rehabilitation and revegetation protocols detail weed free soils are required, refer to Section 10.7.
include details of who would be responsible for monitoring, reviewing and implementing the plan, and timeframes for completion of actions.	No	- Section 4 is inadequate, particularly in regard to monitoring.	- Consider 'incident' and 'non-compliance' (as defined by the consent). - Consider monitoring requirements (how will specific measures need to be monitored?), monitoring frequency (i.e. weekly, monthly, seasonal), monitoring methods (i.e. maintain logs, inspections) and corrective action.	- Key responsibilities for inspections and monitoring has been detailed in Section 8.3. This includes details of the frequency of monitoring and correction actions if targets are not achieved.
General comments:				
- BMP should also address conditions 8 (Land management), 9 (Vegetation Clearance) and 10 (Biodiversity Offsets) of Schedule 3'; - Refer to other approved solar BMPs for an example what is required. E.g. Darlington Point Solar, Metz Solar, Finley Solar				- Condition 8 has been addressed in Section 6, Section 7 and Section 10.7. - Condition 9 has been addressed in Section 6 and Section 7. - Condition 10 has been addressed in Section 7.2.

B.4 NARRANDERA SHIRE COUNCIL CONSULTATION

Meeting Minutes

Subject: RES & NGH Environmental Consulting / Narrandera Shire Council / Sandigo Road revegetation Consultation
Date: 31 October 2019
Time: 12:00pm

Attendees:

- Bruce McBean, Narrandera Shire Council – (BMCB)
- Helen Ryan, Narrandera Shire Council – (HR)
- Sarah Hillis, NGH Environmental – (SH)
- Steven Reid, RES – (SR)

Meeting Context

RES has established contact with Narrandera Shire Council (NSC) following a commitment made under the Response to Submissions to the Avonlie Solar SSD 9031 application. The commitment requires RES to consult with NSC in connection with the revegetation of the council owned Sandigo Road, which is due to be upgraded as part of the Avonlie Solar Farm development. RES and NGH met with NSC on site, on the morning of 31 Oct 19, to discuss the planting proposal and review the areas of the road reserve that were proposed for revegetation. Following the onsite meeting RES/NGH and NSC met at the council office to discuss further the proposal and bring HR into the discussion.

- BMCB, HR, SH and SR met to review NGH's initial planting proposal in more detail.
- SR explained the reason for the need to consult with NSC and the group reviewed the proposal for Sandigo Road.
- BMCB confirmed his views at the onsite visit to seeing no reason for the council not to support the proposal, noting the planned location of the planting would fall outside the safe road area of the road reserve.
- HR agreed that provided the roads team accepted the replanting did not create any safety issues for road traffic, then NSC would be supportive of the proposal. HR also noted the council would traditionally not be in favour of new planting along road corridors as this would be a maintenance issue in future years.
- BMCB and HR both noted that the replanting would need to be carried out at the most appropriate time as the current drought conditions would be unlikely to be able to support the establishment of new planting. HR suggested putting a time limit on delivery of the commitment, but this could be reviewed if the planting conditions were still unfavourable during that period.

- SH noted the species to be selected would be drought resistant, but accepted the cplanting onditions would still require to be more favourable before any replanting could be carried out by the Avonlie Solar farm project.
- SR noted this consultation would be included in the Biodiversity Management Plan as a commitment to carry out the replanting at a suitable time in the future. The detail of how and who would be worked out in due course.
- BMCB noted NSC's Parks & Gardens team, may be interested in quoting for the replanting work, when then opportunity arises.
- It was agreed a revised proposal would be forwarded by NGH the following week in which NSC written comments would be welcomed.
- BMCB and HR confirmed the council's support of the proposal and looked forward to receiving the revised proposal.

The meeting moved on to discuss wider aspects of the Avonlie Solar Farm.

Actions for Tree Replanting proposal:

1. SH to revise planting proposal and forward to NSC
2. On receipt of the revised proposal, BMCB and HR committed to responding by email to confirm the discussions had at today's meeting

From: Ryan, Helen
To: "Steven Reid"; Nicola Smith
Cc: Sarah Hillis; McBean, Bruce
Subject: RE: Avonlie Solar Farm - Planting Proposal
Date: Friday, 8 November 2019 3:02:36 PM
Attachments: image001.png
image002.png
image003.png
image004.png
image006.png
image008.png

Hi Steve

Council is supportive of the Planting Proposal.

Regards, Helen

Helen Ryan
Manager Development & Environment

Narrandera Shire Council
PH: (02) 6959 5510
Fax: (02) 6959 1884
Email: council@narrandera.nsw.gov.au

From: Steven Reid [mailto:steven.reid@res-group.com]
Sent: Friday, 8 November 2019 11:43 AM
To: Ryan, Helen; 'Nicola Smith'
Cc: 'Sarah Hillis'; McBean, Bruce
Subject: RE: Avonlie Solar Farm - Planting Proposal

Thanks Helen,

Can you the confirm the council would therefore be supportive of the proposal?

Many thanks,
Steve

Steven Reid MRICS
Development Project Manager, APAC

M +61 431 191 017

steven.reid@res-group.com

From: Ryan, Helen <Helen.Ryan@Narrandera.nsw.gov.au>
Sent: Friday, 8 November 2019 10:16 AM
To: 'Nicola Smith' <nicola.s@nghconsulting.com.au>
Cc: 'Sarah Hillis' <sarah.h@nghconsulting.com.au>; Steven Reid <steven.reid@res-group.com>; McBean, Bruce <Bruce.McBean@Narrandera.nsw.gov.au>
Subject: RE: Avonlie Solar Farm - Planting Proposal

Hi Nicola

Thanks for forwarding the *Avonlie Solar Farm Sandigo-Boree Creek Road Planting Proposal*. Our engineering team has reviewed the plan and agrees that it reflects the discussions from last week's on-site and follow-up meetings.

If you have further enquiries regarding this matter, please contact Council's Development & Environment section quoting folder number 5279 (phone 02-6959 5510 or email council@narrandera.nsw.gov.au

Regards

Helen Ryan
Manager Development & Environment

Narrandera Shire Council
PH: (02) 6959 5510
Fax: (02) 6959 1884
Email: council@narrandera.nsw.gov.au

Narrandera Shire Council acknowledges the traditional owners of the lands of Narrandera Shire, the Wiradjuri people.

From: Nicola Smith [mailto:nicola.s@nghconsulting.com.au]
Sent: Wednesday, 6 November 2019 5:04 PM
To: McBean, Bruce; Ryan, Helen
Cc: Sarah Hillis; Steven Reid
Subject: Avonlie Solar Farm - Updated Planting Proposal

Hi Bruce and Helen,

Please find attached the planting proposal for Sandigo – Boree Creek Road on behalf of RES for the Avonlie Solar Farm.

The original proposal has been updated to incorporate comments discussed during the site visit and following meeting on Thursday 31st October 2019. Changes include there is no less than 30 m spacing in between the upper stratum species with a mix of Grey Box and Kurrajong, and a single middle stratum species in between each with approximate 15 m spacing. This has reduced the number to approximately 20 grey box, 20 kurrajong and 40 mid stratus species.

Please provide comment to the attached and don't hesitate to contact me further where required.

Best regards,
Nicola

NICOLA SMITH
ENVIRONMENTAL CONSULTANT
M. Phil (Phys Geog), B. Sc.
Please note I do not work Mondays
T. 02 6923 1537 **M.** 0410 411 660
E. nicola.s@nghconsulting.com.au
Suite 1, 39 Fitzmaurice St
(PO Box 5464) Wagga Wagga NSW 2650

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WWW.NGHCONSULTING.COM.AU

From: Steven Reid <steven.reid@res-group.com>
Sent: Tuesday, 29 October 2019 11:23 AM
To: McBean, Bruce <Bruce.McBean@Narrandera.nsw.gov.au>
Cc: Ryan, Helen <Helen.Ryan@Narrandera.nsw.gov.au>; Nicola Smith <nicola.s@nghconsulting.com.au>; Sarah Hillis <sarah.h@nghconsulting.com.au>
Subject: RE: Avonlie Solar Farm - traffic info

Hi Bruce, thanks for the quick response.

I like the idea of meeting on site first.

Let's meet at the Sandigo/Muntz road intersection for **10:30am on Thursday 31st Oct**. That should be sufficient time for me to get across from my Wagga flight.

In attendance will be myself and Sarah Hillis from our planning consultants, NGH Environmental.

Can you check with Helen if she would be free for us to come in after a complete our discussion on the revegetation proposal? Perhaps 12pm at the Council offices? Or whenever suits. I am around that afternoon.

Thanks,
Steve

Steven Reid MRICS
Development Project Manager, APAC

M +61 431 191 017
steven.reid@res-group.com

From: McBean, Bruce <Bruce.McBean@Narrandera.nsw.gov.au>
Sent: Tuesday, 29 October 2019 7:11 AM
To: Steven Reid <steven.reid@res-group.com>
Cc: Ryan, Helen <Helen.Ryan@Narrandera.nsw.gov.au>
Subject: RE: Avonlie Solar Farm - traffic info

Hi Steven,

I will be available to meet you on Thursday. I can meet you at the council chambers or onsite, whichever suites best. Helen may have some other commitments and find it more difficult to get onsite (though she can confirm this). Perhaps the most appropriate steps would be for you, the consultant and I to visit the site then meet with Helen after at the chambers?

Kind regards,
Bruce

Bruce McBean
Works Coordinator

Narrandera
Shire Council

MOB: 0432 231 706
Email: bruce.mcbean@narrandera.nsw.gov.au
Website: www.narrandera.nsw.gov.au

From: Steven Reid [mailto:steven.reid@res-group.com]
Sent: Monday, 28 October 2019 5:39 PM
To: McBean, Bruce
Cc: Ryan, Helen
Subject: RE: Avonlie Solar Farm - traffic info

Hi Bruce,

Hope you are well? I am proposing to come to Narrandera this Thursday. We have noted one section of the Biodiversity Management Plan (BMP), which needs to be approved by the state planning department for commencement of road upgrades, has a requirement to consult with Narrandera Shire Council on one point linked to revegetation along parts of Sandigo road. This has been overlooked and we are very keen to get NSC's input this week if possible. I am proposing to bring the planning consultant who compiled the EIS and discuss with the correct people in NSC the proposal. I've inserted the screenshot of the requirement below for information.

~~**BD11**~~ **BD12**	Preparation and implementation of Biodiversity Management Plan in consultation with Narrandera Shire Council would include protocols for: • Protection of native vegetation to be retained. • Best practice removal and disposal of vegetation. • Staged removal of hollow-bearing trees and other habitat features such as fallen logs with attendance by an ecologist. • Weed management. • Unexpected threatened species finds. • Rehabilitation of disturbed areas. • Rehabilitation and revegetation of linear corridors along Sandigo-Boree Creek Road to enhance connectivity value outside of the development footprint.	Prior to and during construction	O	

This is not an absolute requirement, but we do need to understand NSC's view of the concept of revegetating on a infill basis along the fence line of Sandigo road, on the basis it is council land.

I thought you might be best placed to discuss, on the basis the land is council road reserve. Can you let me know if you would be best placed to discuss this with RES? I've cc'd Helen, from a planning perspective. Let me know if you and Helen would be the correct people to discuss with?

Many thanks,

Steve

Steven Reid MRICS
Development Project Manager, APAC

M +61 431 191 017
steven.reid@res-group.com

From: McBean, Bruce <Bruce.McBean@Narrandera.nsw.gov.au>
Sent: Friday, 2 August 2019 9:22 AM
To: Steven Reid <steven.reid@res-group.com>
Subject: FW: Avonlie Solar Farm - traffic info

Apology Steven,

One of the road cross sections in previous email was a DWG instead of PDF. Please find a PDF attached.

Bruce

From: McBean, Bruce
Sent: Friday, 2 August 2019 9:20 AM
To: 'steven.reid@res-group.com'
Cc: Geddes, Julian; Pearson, Andrew; Ryan, Helen
Subject: Avonlie Solar Farm - traffic info

Hi Steven,

I have been asked to provide you some info about traffic and road asset data near the Avonlie Solar Farm. We don't have a great deal of information but I have attached what we do have.

Please find attached the traffic data for Muntz Rd and Sandigo Rd. Both counts are several years old. By

comparing the few roads where we have done sequential counts I can advise that our traffic volumes generally are not changing significantly over time. I don't see any reason why these 2 road would be much different now versus at the time of the counts.

Muntz Rd is Class 7 and Sandigo Rd is Class 4 in our road hierarchy. Attached are cross sections of these 2 types of roads.

Any questions about the roads, please feel welcome to call me. I believe my colleagues will be getting back to you shortly about stormwater and flood data.

Kind regards,
Bruce

Bruce McBean
Works Coordinator

Narrandera
Shire Council

MOB: 0432 231 706
Email: bruce.mcbean@narrandera.nsw.gov.au
Website: www.narrandera.nsw.gov.au

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B.5 DPIE REQUEST FOR INFORMATION POST APPROVAL

Avonlie Solar Farm
Post Approval Review

Planning, Industry & Environment

Document: Biodiversity Management Plan
Revision: v2.2 dated 27 November 2020
Reviewed: by Callum Firth on 2 February 2020

BMP, Condition 8, Schedule 3	**Sufficient (Yes/No/Partial)**	**Document reference and comment**	**Action Required**	**Company Response**
Following any construction or upgrading on the site, the Applicant must: (a) restore the ground cover of the site as soon as practicable;	Partial	Section 1.7 states that a target the management of biodiversity impacts is that revegetation of disturbed areas will have at least 70% groundcover across 85% of the site following construction and during operation. The trigger for revegetation maintenance will be <70% groundcover across 85% of the site following construction and during operation. Section 8.3 states that a quantitative assessment of groundcover will occur 6 months after completion of groundcover reseeding. If groundcover is less than 70% cover during this time, corrective actions will be required. This will include consideration of soil conditions such as compaction, frequency of traffic movements, low seedbank storage, lack of soil moisture and nutrient imbalance. If soil chemistry is the growth limiting factor, soil testing will be used to determine any need for amelioration. Section 10.6 states that areas temporarily disturbed for the Project will need to be rehabilitated and revegetated **as soon as practicable**. Temporarily disturbed areas include grassland disturbed for piling installation, temporary laydown areas and cable trenches. The aim of the rehabilitation and revegetation is to stabilise the disturbed area. As temporary disturbance areas are limited to exotic understorey, the trigger for rehabilitation will be <70% groundcover across 85% of the site following construction and during operation.	Propose a more specific timeframe for the restoration of groundcover following construction, upgrading or final earthworks.	A sentence has been added to section 1.7 to identify a timeframe. Timeframe stipulated is to have groundcover achieved within 6 months, essentially prior to the 6 months survey noted in section 8.3. The change is also reflected in section 10.6.

1

Avonlie Solar Farm
Post Approval Review

Planning, Industry & Environment

Document: Biodiversity Management Plan
Revision: v2.2 dated 27 November 2020
Reviewed: by Callum Firth on 2 February 2020

BMP, Condition 8, Schedule 3	**Sufficient (Yes/No/Partial)**	**Document reference and comment**	**Action Required**	**Company Response**
		The restoration of groundcover has been committed to 'as soon as practicable'. Although this is what the condition states, a more specific timeframe needs to be committed to.		
(b) maintain the ground cover with appropriate perennial species; and	Partial	Section 10.6.2 indicated that native species will be sowed by machine or by hand. The weed management protocol set out in the below implies the maintenance of appropriate perennial species. Maintaining the groundcover with appropriate perennial species is not committed to specifically. No species list is provided.	Include a grass species seed list (highlighting appropriate perennial species).	A seeding rate and a list of native grass species from BioNET VIS for PCT 76 and 80 have been added to 10.6.4.
(c) manage weeds within this ground cover.	Yes	Section 8.3 states that areas of high and low threat exotic plants will be recorded and controlled on a seasonal basis. Section 10.3 states that the Project Manager or HSE Advisor will collaborate with adjoining landholders as required to control animal pests and exotic plant species that may traverse property boundaries. Section 10.3.2 outlines the weed management procedure. This includes what are defined as exotic plant species, weed inspections, weed treatment and herbicide application record.		

Avonlie Solar Farm
Post Approval Review

Planning, Industry & Environment

Document: Biodiversity Management Plan
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Reviewed: by Callum Firth on 2 February 2020

BMP, Condition 8, Schedule 3	**Sufficient (Yes/No/Partial)**	**Document reference and comment**	**Action Required**	**Company Response**
		Section 10.6.1 states that the rehabilitation and vegetation protocol will include spraying exotic plant growth occurring on topsoil stockpiles with a knockdown herbicide before spreading topsoil. More than one application of herbicide may be required. Apply the last application of herbicide not less than 4 weeks before spreading the topsoil or as per manufacturer's instructions.		
BMP, Condition 9, Schedule 3	**Sufficient (Yes/No/Partial)**	**Document reference and comment**	**Action Required**	**Company Response**
The Applicant must not clear any native vegetation or fauna habitat located outside the approved disturbance areas described in the EIS.	Yes	Section 10.1.1 states that Vegetation will be protected by exclusion zone fencing (fencing/para-webbing/bunting or similar) and signage. Exclusion fencing will be positioned by surveyors in the field along defined boundaries for vegetation to be retained. Section 10.1.4 sets out the protocol for the removal of trees outside of the approved clearing limits. If the removal of a tree outside the approved clearing limits is required (and is not permitted in the EIS), DPIE will be contacted for advice and a modification to the consent may be required. The vegetation exclusion zones are provided in Appendix E.		

Avonlie Solar Farm
Post Approval Review

Planning, Industry & Environment

Document: Biodiversity Management Plan
Revision: v2.2 dated 27 November 2020
Reviewed: by Callum Firth on 2 February 2020

BMP, Condition 8, Schedule 3	**Sufficient (Yes/No/Partial)**	**Document reference and comment**	**Action Required**	**Company Response**
BMP, Condition 10, Schedule 3	**Sufficient (Yes/No/Partial)**	**Document reference and comment**	**Action Required**	**Company Response**
Within two years of commencing the development under this consent, the Applicant must retire biodiversity credits of a number and class specified in Table 1 and Table 2 below, unless the Secretary agrees otherwise. The retirement of these credits must be carried out in accordance with the NSW Biodiversity Offsets Scheme and can be achieved by: (a) acquiring or retiring 'biodiversity credits' within the meaning of the Biodiversity Conservation Act 2016;	Partial	Table 7-2 commits to retiring 76 ecosystem credits for PCT 80 and 140 species credits in total. This is consistent with Tables 1 and 2 of condition 10 of the consent. This table also commits to compliance with the NSW Biodiversity Offsets Scheme. The BMP does not indicate how the biodiversity credits will be retired specifically. It states, "retire the biodiversity credits as specified in the BDAR and Schedule 3, condition 10."	-In Table 7-2, change wording from "within two years of commencing construction" to "within two years of commencing the development". -Please include a paragraph on which mechanism the biodiversity credits will be retired through.	-wording in Table 7-2 has been updated. -Expectation is to pay into the NSW Government offset fund and is reflected in the BMP.
(b) making payments into an offset fund that has been developed by the NSW Government; or	-	-		
(c) funding a biodiversity conservation action that benefits the entity impacted and is listed in the ancillary rules of the biodiversity offset scheme. (See Tables 1 and 2)	-	-		

4

Avonlie Solar Farm
Post Approval Review

Planning, Industry & Environment

Document: Biodiversity Management Plan
Revision: v2.2 dated 27 November 2020
Reviewed: by Callum Firth on 2 February 2020

BMP, Condition 8, Schedule 3	**Sufficient (Yes/No/Partial)**	**Document reference and comment**	**Action Required**	**Company Response**
BMP, Condition 11, Schedule 3	**Sufficient (Yes/No/Partial)**	**Document reference and comment**	**Action Required**	**Company Response**
Prior to commencing the development, the Applicant must prepare a Biodiversity Management Plan for the development in consultation with BCD, and to the satisfaction of the Secretary.	No	Consultation with BCD following Mod 1 has not occurred.	Provide evidence of consultation with BCD for this BMP.	Andrew Fisher of BCD was spoken to on 19/02/2021 regarding the type of consultation required for the BMP. NGH provide the updated BMP to BCD on 03/03/2021. BCD provided a response on 16/03/2021. BCD are satisfied with the changes that have been made to the document.
This plan must: (a) include a description of the measures that would be implemented for:	Partial	Section 8.2 states that employee induction will involve fauna handling protocols. Table 8-1 lists monitoring activities including inspections of vegetation and fauna after excavation	Include a summary of the ground disturbance permit procedure.	Section10.7 added to BMP with a ground disturbance permit procedure.

5

Avonlie Solar Farm
Post Approval Review

Planning, Industry & Environment

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Revision: v2.2 dated 27 November 2020
Reviewed: by Callum Firth on 2 February 2020

BMP, Condition 8, Schedule 3	**Sufficient (Yes/No/Partial)**	**Document reference and comment**	**Action Required**	**Company Response**
(i) protecting vegetation and fauna habitat outside the approved disturbance areas;		which include adaptive response actions such as stopping work or increasing exclusion fencing. Section 10.1 provides a flow chart which outlines the vegetation clearing protocol. It includes how adjacent vegetation that is not to be disturbed will be managed and protected. Section 10.1.1 states that Vegetation will be protected by exclusion zone fencing (fencing/para-webbing/bunting or similar) and signage. Exclusion fencing will be positioned by surveyors in the field along defined boundaries for vegetation to be retained. Section 10.1.4 sets out the protocol for the removal of trees outside of the approved clearing limits. If the removal of a tree outside the approved clearing limits is required (and is not permitted in the EIS), DPIE will be contacted for advice and a modification to the consent may be required. The vegetation exclusion zones are provided in Appendix E.		Added appendix B 'ground disturbance permit form'.
(ii) managing the remnant vegetation and fauna habitat on site;	Yes	Table 8-1 lists monitoring activities including inspections of vegetation and fauna after excavation which include adaptive response actions such as stopping work or increasing exclusion fencing.	Include a figure which clearly illustrates where the remnant vegetation and habitat exists.	A figure showing the vegetation exclusion zones is provided as Figure 10.5 to 10.8.

6

Avonlie Solar Farm
Post Approval Review

Planning, Industry & Environment

Document: Biodiversity Management Plan
Revision: v2.2 dated 27 November 2020
Reviewed: by Callum Firth on 2 February 2020

BMP, Condition 8, Schedule 3	**Sufficient (Yes/No/Partial)**	**Document reference and comment**	**Action Required**	**Company Response**
		Section 10.1.1 states that Vegetation will be protected by exclusion zone fencing (fencing/para-webbing/bunting or similar) and signage. Exclusion fencing will be positioned by surveyors in the field along defined boundaries for vegetation to be retained.	(e.g. intersection of Sandigo and Muntz Road, Figure 4-1 in modification report)	
(iii) minimising clearing and avoiding unnecessary disturbance of vegetation that is associated with the construction and operation of the development;	Yes	Section 2.1 states that the Project has been designed to minimise clearing of native woodland vegetation and threatened species habitats. In this regard, the development footprint comprises of 534 ha of the 802-ha subject land, primarily to minimise biodiversity impacts. Table 8-1 lists monitoring practices during construction for the unnecessary disturbance of vegetation and subsequent adaptive response actions.		
(iv) minimising the impacts to fauna on site and implementing fauna management protocols; • avoiding the removal of hollow-bearing trees during spring to avoid the main breeding period for hollow-dependent fauna;	Yes	Section 4, Table 4-1 lists an EIS commitment: "Hollow-bearing trees would not be removed during breeding and hibernation season (Winter to summer) to mitigate impacts on Superb Parrots, Major Mitchell Cockatoo and Corben's Long-eared Bat". Table 4-1 is to be implemented by the Project Owner and project contractors.		

7

Avonlie Solar Farm
Post Approval Review

Planning, Industry & Environment

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Reviewed: by Callum Firth on 2 February 2020

BMP, Condition 8, Schedule 3	**Sufficient (Yes/No/Partial)**	**Document reference and comment**	**Action Required**	**Company Response**
		Section 10.1.3 outlines the hollow-bearing tree removal procedure. This minimises the impact on animals when removing hollow-bearing trees however does not mention avoiding the removal during spring.		
• rehabilitating and revegetating temporary disturbance areas with species that are endemic to the area;	Partial	Section 10.6 states that as temporary disturbance areas are limited to exotic understorey, the trigger for rehabilitation will be < 70% groundcover across 85% of the site following construction and during operation. Section 10.6.2 indicated that native species will be sowed by machine or by hand. The weed management protocol set out in the below implies the maintenance of appropriate perennial species. A specific seed list is not committed to specifically	Include species list which highlights those species that are endemic to the area.	Native grass species from BioNET VIS for PCT 76 and 80 have been added to 10.6.4.
(v) maximising the salvage of vegetative and soil resources within the approved disturbance area for beneficial reuse in the enhancement or the rehabilitation of the site; and	Yes	Section 10.1.5 states that felled timber greater than 600mm (primarily tree trunks) will generally be removed from site. Some felled timber greater than 200mm and less than 600mm will be used as CWD for habitat enhancement and to maximise the salvage of resources within the disturbance area for beneficial reuse.		

8

Avonlie Solar Farm
Post Approval Review

Planning, Industry & Environment

Document: Biodiversity Management Plan
Revision: v2.2 dated 27 November 2020
Reviewed: by Callum Firth on 2 February 2020

BMP, Condition 8, Schedule 3	**Sufficient (Yes/No/Partial)**	**Document reference and comment**	**Action Required**	**Company Response**
(vi) controlling weeds and feral pests; and	Yes	Section 10.3 outlines the pest and weed management protocol. It provides details for the management of foxes, rabbits and feral cats. It also details the pesticide application process.		
(b) include details of who would be responsible for monitoring, reviewing and implementing the plan, and timeframes for completion of actions.	Yes	Section 8.1 provides an organisational structure diagram which depicts the reporting lines for the construction and operation phases. It also states that the Project Owner is **ultimately responsible** for the development and maintenance of all management plans including the overarching environmental strategy listed in the table of commitments for both the construction and operational phases of development. The EPC Project Manager is responsible for ensuring onsite works occur in accordance with the BMP during construction. The O&M Project Manager is responsible for ensuring onsite works occur in accordance with the BMP during operation. The Project Manager will maintain a compliance register for the Project to ensure audits and reporting requirements are met within scope and within set timeframes.		
Following the Secretary's approval, the Applicant must implement the Biodiversity Management Plan.	Partial	The Project Owner is **ultimately responsible** for the development and maintenance of all management plans.	Include a commitment to implement this BMP.	Sentence added to section 1.5.

9

Avonlie Solar Farm
Post Approval Review

Planning, Industry & Environment

Document: Biodiversity Management Plan
Revision: v2.2 dated 27 November 2020
Reviewed: by Callum Firth on 2 February 2020

BMP, Condition 8, Schedule 3	**Sufficient (Yes/No/Partial)**	**Document reference and comment**	**Action Required**	**Company Response**
Note: If the biodiversity credits are retired via a Biodiversity Stewardship Agreement, then the Biodiversity Management Plan does not need to include any of the matters that are covered under the Biodiversity Stewardship Agreement.	-	-		

B.6 BCS COMMENTS ON BMP POST APPROVAL

From: ROG South West Region Mailbox
To: Nicola Smith
Cc: Steven Reid; Simon Stirrat; Callum Firth
Subject: BCD Response RE: 17-439 - RES Avonlie SF - Updated BMP following Mod 1
Date: Tuesday, 16 March 2021 3:57:48 PM
Attachments: image002.png
image003.png

Hi Nicola,

Thank you for submitting post Modification 1 updates to the Avonlie Solar Farm Biodiversity Management Plan.

DPIE- BCD is satisfied with the changes that have been made to the document.

As the stated expectation is that biodiversity credits will be retired via payment into the Biodiversity Conservation Fund, we recommend that the proponent should contact the Biodiversity Conservation Trust early to arrange this.

Regards

Andrew Fisher
Senior Team Leader, Planning – South West

Biodiversity and Conservation | Department of Planning, Industry and Environment
T 02 6022 0623 | **M** 0427 562 844 | **E** andrew.fisher@environment.nsw.gov.au
PO Box 1040, 512 Dean St, Albury, NSW 2640
www.dpie.nsw.gov.au
Contact the South West Planning Team about biodiversity and Aboriginal cultural heritage planning and regulation matters by emailing rog.southwest@environment.nsw.gov.au.

NSW GOVERNMENT | Planning, Industry & Environment

The Department of Planning, Industry and Environment acknowledges that it stands on Aboriginal land. We acknowledge the traditional custodians of the land and we show our respect for elders past, present and emerging through thoughtful and collaborative approaches to our work, seeking to demonstrate our ongoing commitment to providing places in which Aboriginal people are included socially, culturally and economically.

From: Nicola Smith <nicola.s@nghconsulting.com.au>
Sent: Wednesday, 3 March 2021 5:59 PM
To: ROG South West Region Mailbox <rog.southwest@environment.nsw.gov.au>
Cc: Steven Reid <steven.reid@res-group.com>
Subject: 17-439 - RES Avonlie SF - Updated BMP following Mod 1

Hi Andrew,

As per our discussion on 19th February 2021 regarding consultation requirements with BCD on the BMP updates for the Avonlie SF following Modification 1, please find the link below with the final Rev 3 in track changes and without.

The updates to the BMP are consistent with the approval for Modification 1. The updates are in response to the request for information from DPIE, which is also included in the link detailing the changes within the document.

Avonlie SF BMP

We would appreciate a quick turnaround of the document review and response.

Please don't hesitate to contact me where required.

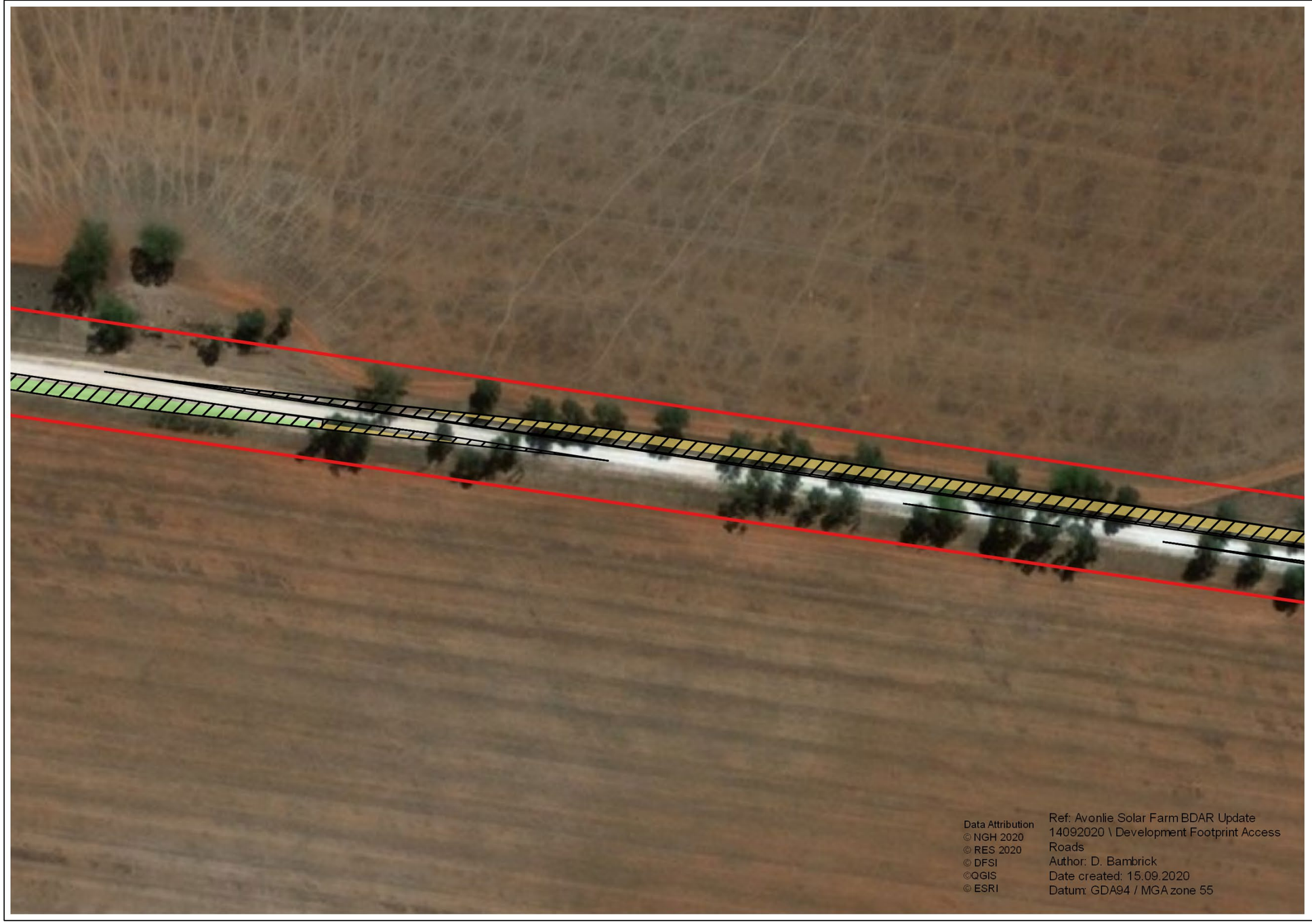
Best regards,
Nicola

NICOLA SMITH
SENIOR ENVIRONMENTAL CONSULTANT
M. Phil (Phys Geog), B. Sc.

Please note I do not work Mondays
T. 02 6923 1537 M. 0410 411 660
E. nicola.s@nghconsulting.com.au
35 Kincaid Street
(PO Box 5464) Wagga Wagga NSW 2650

NSW - ACT - QLD - VIC
WWW.NGHCONSULTING.COM.AU

APPENDIX C ROAD DESIGN UPGRADE



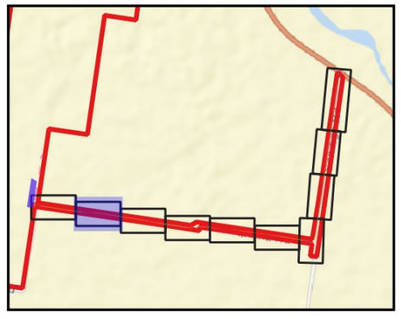
Avonlie Solar Farm BDAR Development Footprint Access Roads

Legend

- Development Site
- Development Footprint
- Cadastre

Imapcted Vegetation

- PCT 80 - Grazed Understory
- PCT 80 - Good
- PCT 80 - Immature Overstory
- PCT 80 - Low
- Planted Native
- Planted Old Man Salt Bush



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Ref: Avonlie Solar Farm BDAR Update 14092020 \ Development Footprint Access Roads
Author: D. Bambrick
Date created: 15.09.2020
Datum: GDA94 / MGA zone 55

NGH

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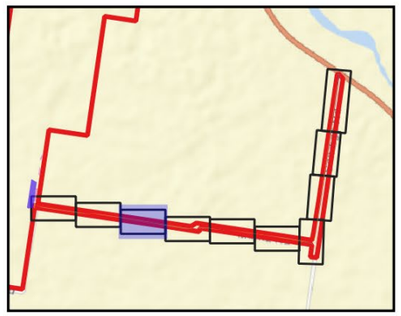

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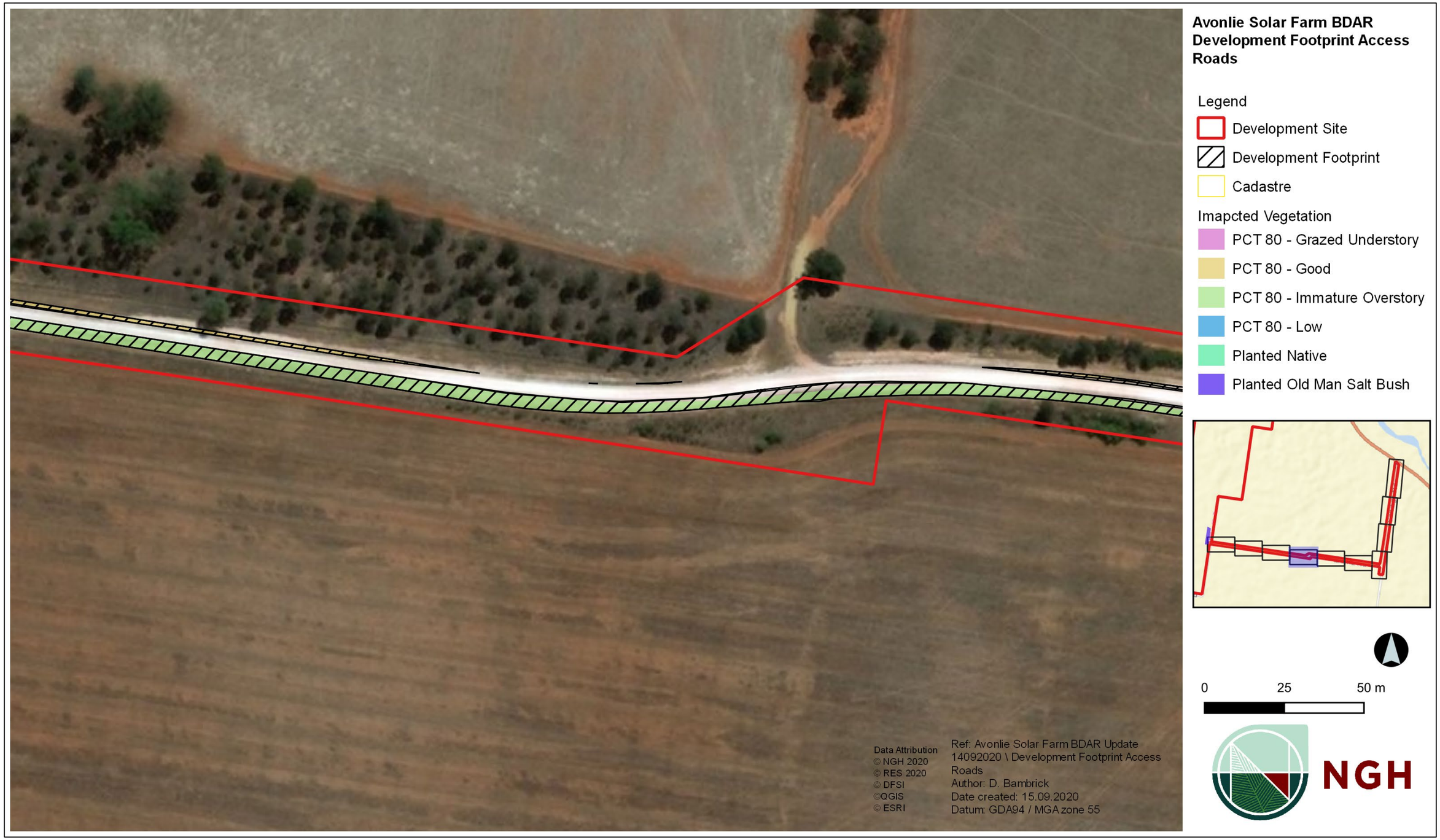
Avonlie Solar Farm BDAR
Development Footprint Access
Roads
Legend
Development Site
Development Footprint
Cadastre
Imapcted Vegetation
PCT 80 - Grazed Understory
PCT 80 - Good
PCT 80 - Immature Overstory
PCT 80 - Low
Planted Native
Planted Old Man Salt Bush
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50 m
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14092020 \ Development Footprint Access
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Author: D. Bambrick
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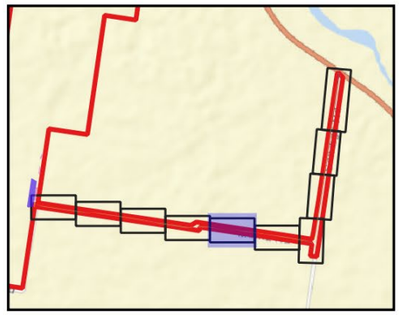

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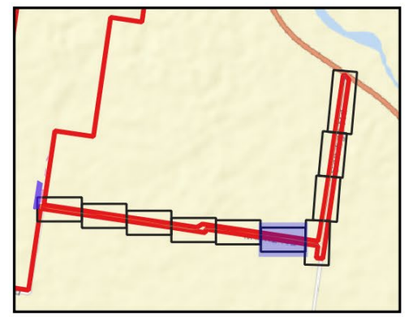

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Planted Old Man Salt Bush
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Planted Native
Planted Old Man Salt Bush
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Planted Native
Planted Old Man Salt Bush
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Planted Native
Planted Old Man Salt Bush
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C.1 IMPACTS REQUIRING OFFSETS ALONG SANDIGO-BORRE CREEK ROAD


Avonlie Solar Farm BDAR
Impacts Requiring Offset Access Roads
Legend
Development Site
Roads
Impacts requiring offsets
1: PCT 80 - Good
2: PCT 80
Good - Immature Overstory
3: PCT 80
Mod - Grazed Understory
4: PCT 80 - Low
5: Planted Native
6: Planted Old Man Saltbush
Superb Parrot/
Major Mitchell Cockatoo
Paddock Tree Credit Value
0.5
0.75
1.0
Threatened Flora Polygon
Areas not requiring assessment
0
25
50 m
NGH
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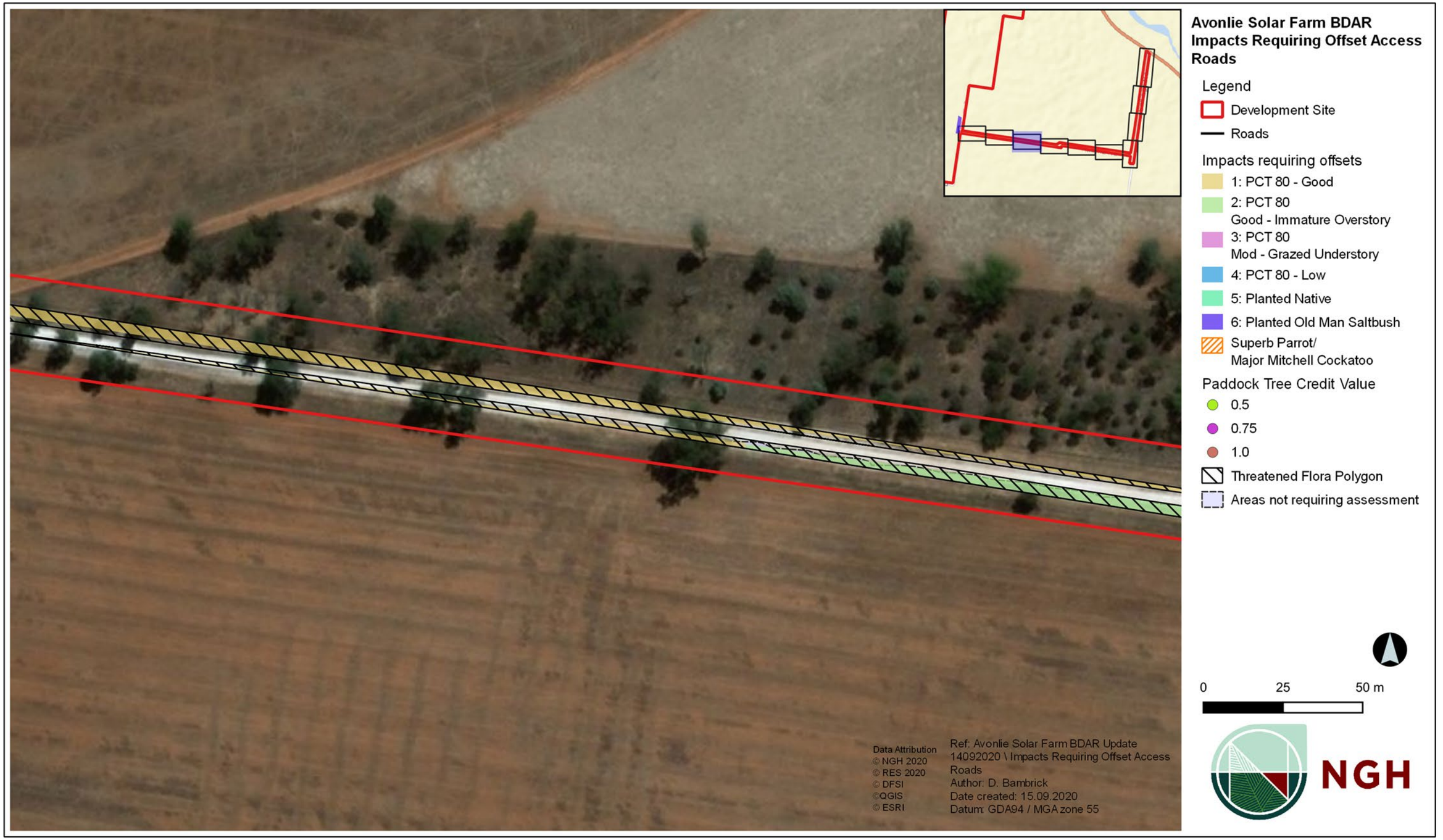
14092020 \ Impacts Requiring Offset Access Roads
Author: D. Bambrick
Date created: 15.09.2020
Datum: GDA94 / MGA zone 55


Avonlie Solar Farm BDAR
Impacts Requiring Offset Access Roads
Legend
Development Site
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0.75
1.0
Threatened Flora Polygon
Areas not requiring assessment
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50 m
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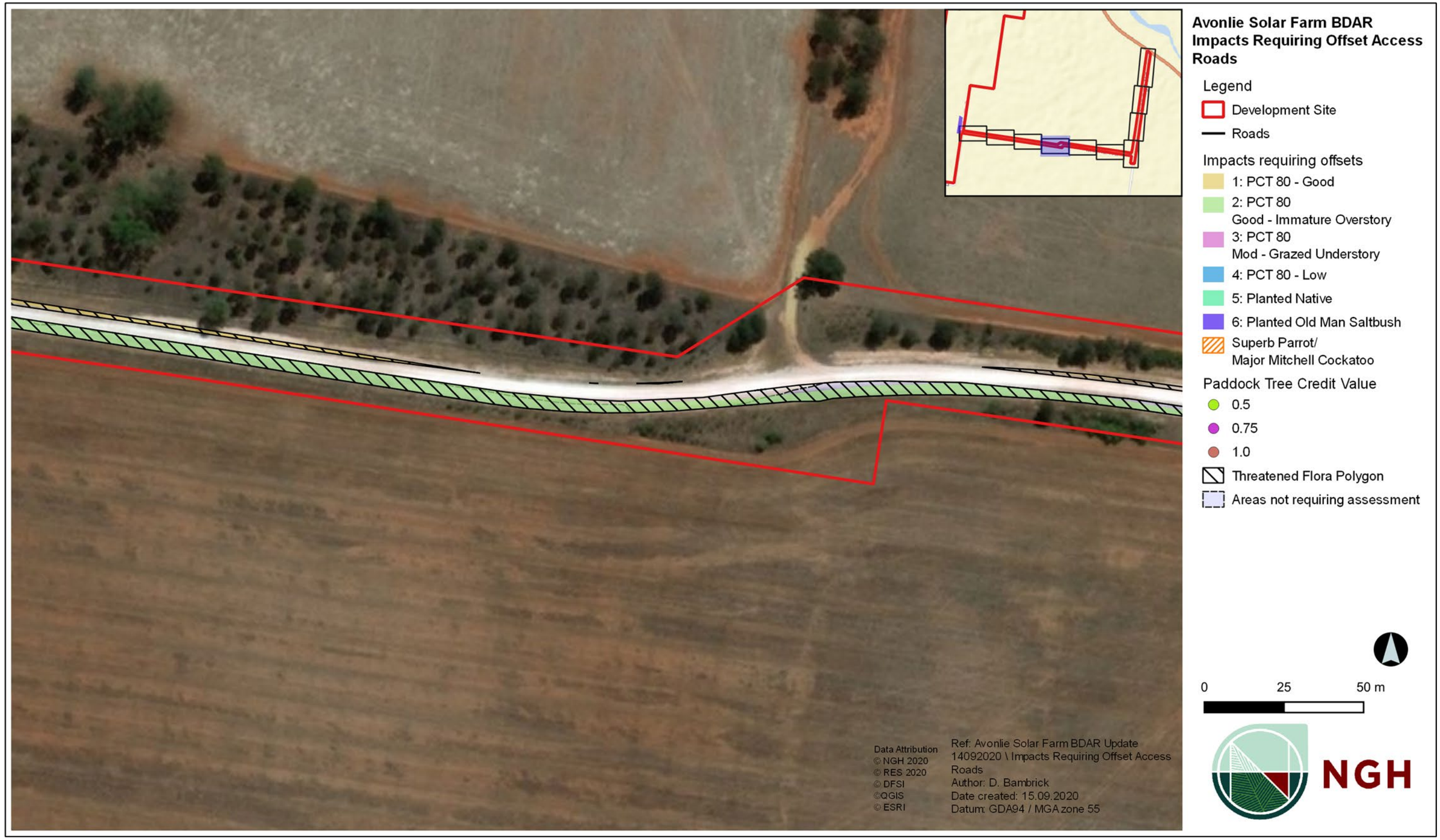
Author: D. Bambrick
Date created: 15.09.2020
Datum: GDA94 / MGA zone 55


Avonlie Solar Farm BDAR
Impacts Requiring Offset Access Roads
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Development Site
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Impacts requiring offsets
1: PCT 80 - Good
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Major Mitchell Cockatoo
Paddock Tree Credit Value
0.5
0.75
1.0
Threatened Flora Polygon
Areas not requiring assessment
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50 m
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1.0
Threatened Flora Polygon
Areas not requiring assessment
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0.75
1.0
Threatened Flora Polygon
Areas not requiring assessment
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Avonlie Solar Farm BDAR Impacts Requiring Offset Access Roads

Legend

- Development Site
- Roads

Impacts requiring offsets

- 1: PCT 80 - Good
- 2: PCT 80 Good - Immature Overstory
- 3: PCT 80 Mod - Grazed Understory
- 4: PCT 80 - Low
- 5: Planted Native
- 6: Planted Old Man Saltbush
- Superb Parrot/ Major Mitchell Cockatoo

Paddock Tree Credit Value

- 0.5
- 0.75
- 1.0

- Threatened Flora Polygon
- Areas not requiring assessment

0 25 50 m

NGH


Avonlie Solar Farm BDAR
Impacts Requiring Offset Access Roads
Legend
Development Site
Roads
Impacts requiring offsets
1: PCT 80 - Good
2: PCT 80
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3: PCT 80
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Superb Parrot/
Major Mitchell Cockatoo
Paddock Tree Credit Value
0.5
0.75
1.0
Threatened Flora Polygon
Areas not requiring assessment
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25
50 m
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Avonlie Solar Farm BDAR
Impacts Requiring Offset Access Roads
Legend
Development Site
Roads
Impacts requiring offsets
1: PCT 80 - Good
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Mod - Grazed Understory
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Paddock Tree Credit Value
0.5
0.75
1.0
Threatened Flora Polygon
Areas not requiring assessment
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25
50 m
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Major Mitchell Cockatoo
Paddock Tree Credit Value
0.5
0.75
1.0
Threatened Flora Polygon
Areas not requiring assessment
0 25 50 m
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14092020 \ Impacts Requiring Offset Access Roads
Author: D. Bambrick
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Datum: GDA94 / MGA zone 55
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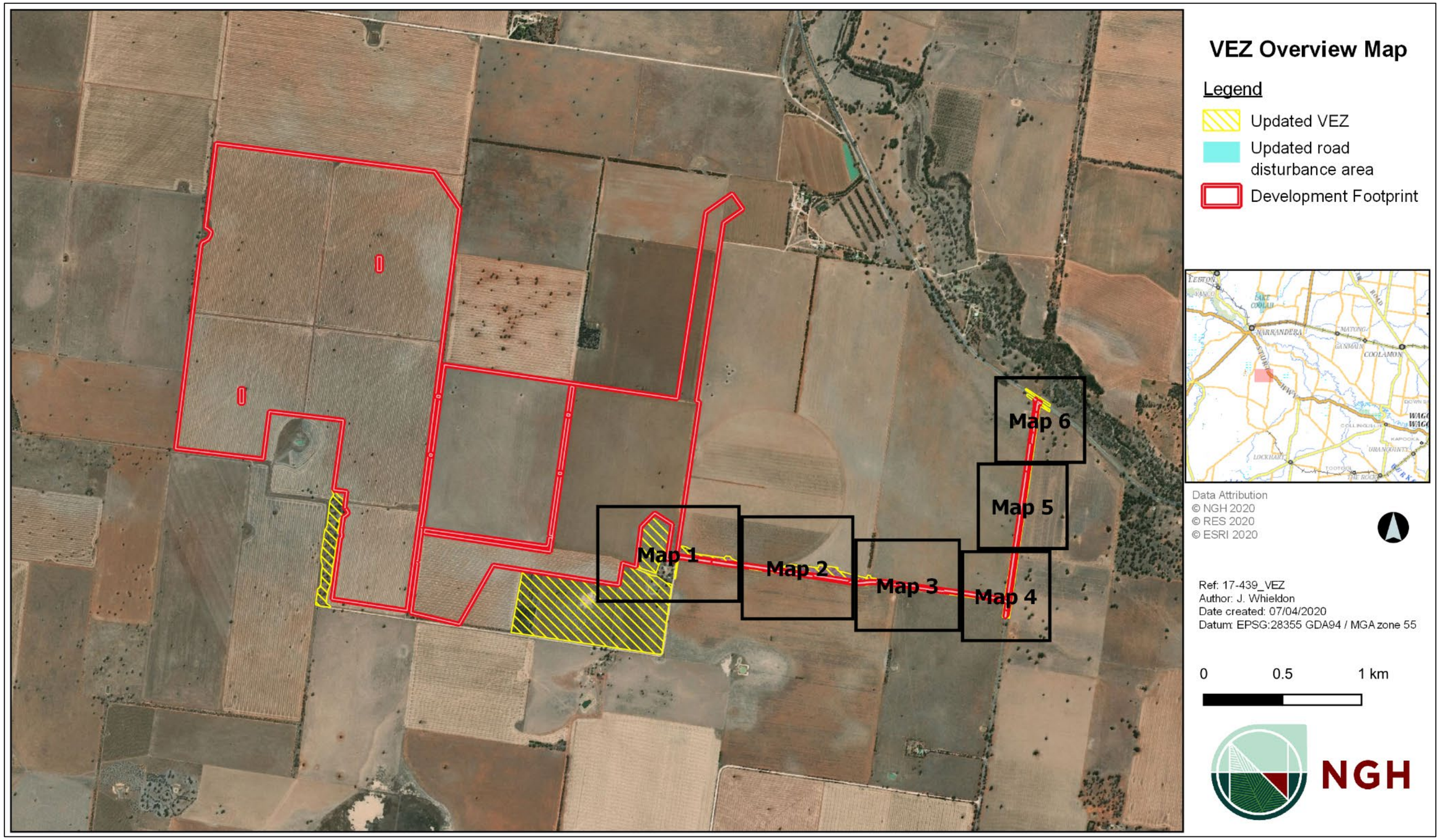
APPENDIX D SANDIGO BOREE CREEK ROAD PLANTING PROPOSAL

APPENDIX E VEGETATION EXCLUSION ZONES


VEZ Overview Map
Legend
Updated VEZ
Updated road disturbance area
Development Footprint
Map 1
Map 2
Map 3
Map 4
Map 5
Map 6
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Ref: 17-439_VEZ
Author: J. Whieldon
Date created: 07/04/2020
Datum: EPSG:28355 GDA94 / MGA zone 55
0
0.5
1 km
NGH

VEZ - Map 1

Legend

- Updated VEZ
- Updated road disturbance area
- Development footprint

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Ref: 17-439_VEZ_20200311
Author: J. Whieldon
Date created: 11/12/2019
Datum: EPSG:28355 GDA94 / MGA zone 55

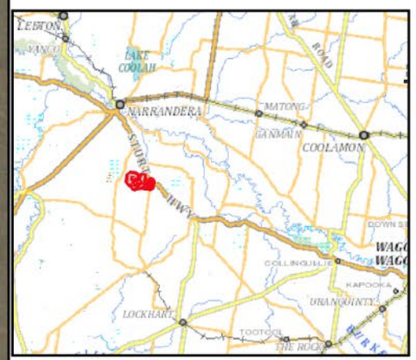
0 0.5 1 km

NGH

VEZ - Map 2

Legend

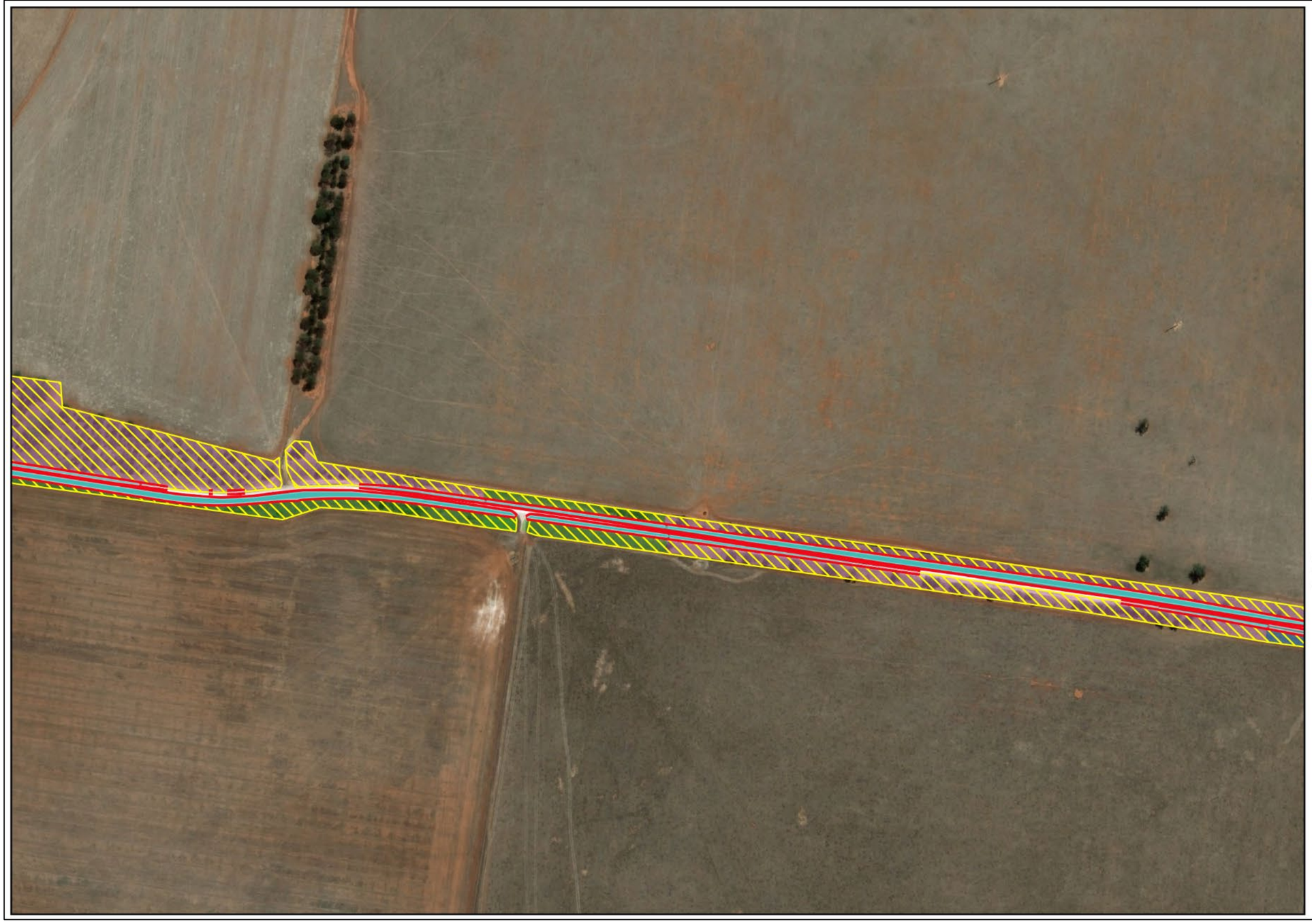
- Updated VEZ
- Updated road disturbance area
- Development footprint



Ref: 17-439_VEZ_20200311
Author: J. Whieldon
Date created: 11/12/2019
Datum: EPSG:28355 GDA94 / MGA zone 55

0 0.5 1 km

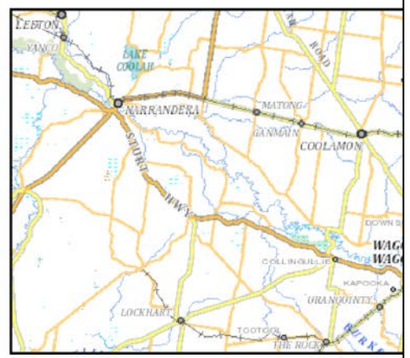
NGH



VEZ - Map 3

Legend

- Updated VEZ
- Updated road disturbance area
- Development footprint



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Ref: 17-439_VEZ_20200311
Author: J. Whieldon
Date created: 11/12/2019
Datum: EPSG:28355 GDA94 / MGA zone 55

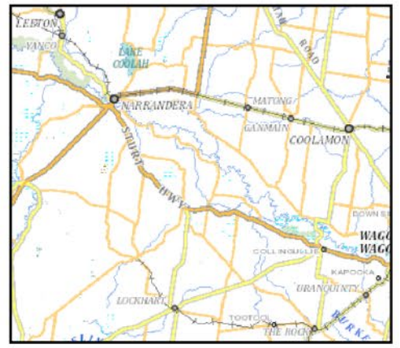
0 0.5 1 km

NGH

VEZ - Map 4

Legend

- Updated VEZ
- Updated road disturbance area
- Development footprint



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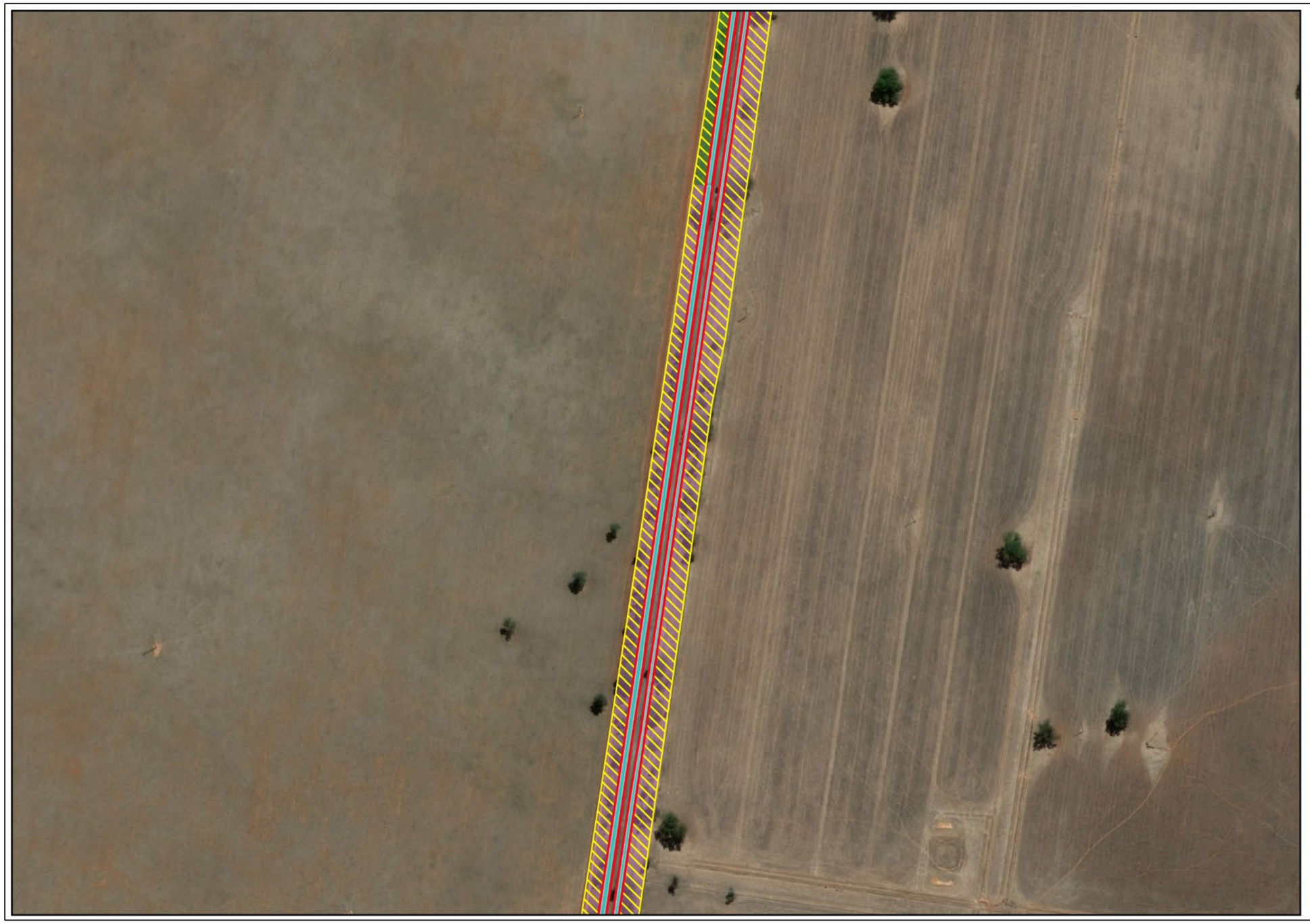
Ref: 17-439_VEZ_20200311
Author: J. Whieldon
Date created: 11/12/2019
Datum: EPSG:28355 GDA94 / MGA zone 55

0 0.5 1 km

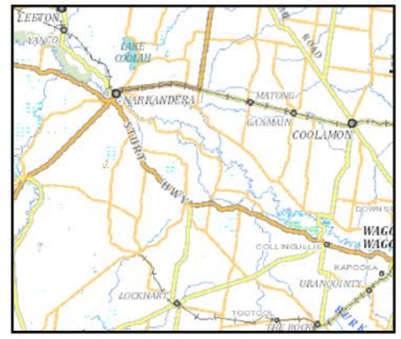
NGH



VEZ - Map 5

Legend

- Updated VEZ
- Updated road disturbance area
- Development footprint



Ref: 17-439_VEZ_20200311
Author: J. Whieldon
Date created: 11/12/2019
Datum: EPSG:28355 GDA94 / MGA zone 55

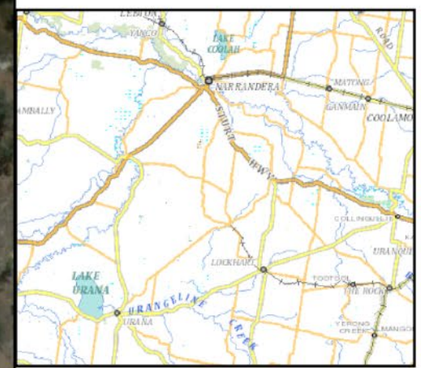
0 0.5 1 km

NGH

VEZ - Map 6

Legend

- Updated VEZ
- Updated road disturbance area
- Development footprint



Ref: 17-439
Author: J. Whieldon
Date created: 07/04/2020
Datum: EPSG:28355 GDA94 / MGA zone 55

0 0.5 1 km

NGH

APPENDIX F SAMPLE REGISTER

F.1 GROUND DISTURBANCE PERMIT FORM

Project: Sebastopol Solar Farm	**Project No:**
Requested By:	
Habitat Clearing Start Date:	**Expected Completion Date:**

HABITAT CLEARING LOCATIONS – ATTACH DRAWINGS / SKETCHES IF NECESSARY

Location	Comments

APPROVALS

This section will be completed by Ecologist and HSE Advisor for clearing of trees, logs, rocky features, and other habitat features, with reference to constraints mapping.	
Has the limit of clearing been clearly delineated?	☐ Yes ☐ No
All trees / vegetation / habitat to be retained identified and exclusion zones fenced off?	☐ Yes ☐ No
State how identified:	
Have habitat trees been identified and appropriately marked?	☐ Yes ☐ No ☐ N/A
State how identified:	
Are specific targeted surveys required?	☐ Yes ☐ No
State how survey was completed, including results:	
Is there a risk of weed infestation or spread?	☐ Yes ☐ No
Are any animals present? (If *Yes*, relocation required)	☐ Yes ☐ No
Are any active nests/burrows present? (If *Yes*, relocation required)	☐ Yes ☐ No
If soil disturbance is to occur, has an ERSED Plan been created, and have these controls been installed?	☐ Yes ☐ No
Have relevant workers been given toolbox talks on limit of clearing, fauna handling procedures and any other SHE Controls?	☐ Yes ☐ No
Can habitat features be re-used for habitat enhancement?	☐ Yes ☐ No
Can the habitat feature be re-used immediately?	☐ Yes ☐ No
If not re-used immediately, where will it be stockpiled*?	
Comments:	

Inspection completed by Ecologist (if required): Ecologist Signature Required	**Date:**
Approval by HSE Advisor: HSE Advisor Signature Required	**Date:**

* Stockpiles must not be placed within the dripline (extent of foliage cover) of any native tree.

SIGN-OFF (ONCE WORKS COMPLETED)

Have the conditions of the permit been met? HSE Advisor Signature Required	**Date:**