

Mr Zaed Aznam
ITP Development
Project Manager – Planning
PO Box 6127
O'Connor, ACT 2602



By email on 12/8/2021 to zaznam@itpau.com.au

**Re: Biodiversity inspection report – West Wyalong 5MW Solar farm, Wargin Road,
West Wyalong, NSW, 2671.**

Dear Zaed,

Thank-you for the opportunity to assist with the project. Please be advised that in this engagement, I am assuming the role of your Ecological Consultant and Biodiversity Assessment Method (BAM) Accredited Assessor. I confirm that I am listed on the Biodiversity Assessment Method (BAM) Accredited Person database.

Desk-top review

Database searches concluded that the likely Plant Community Type (PCT) adjacent to the area is either PCT 177 (Blue mallee – Bull mallee – Green mallee very tall mallee shrubland of the West Wyalong region), PCT 76 (Western Grey box tall grassy woodland on alluvial loam and clay soils) in the NSW south western slope bioregion. Aerial photography confirmed that as at 30/3/2021 the entire site is likely cleared of native shrubs and trees, but native grasses may persist under trees.

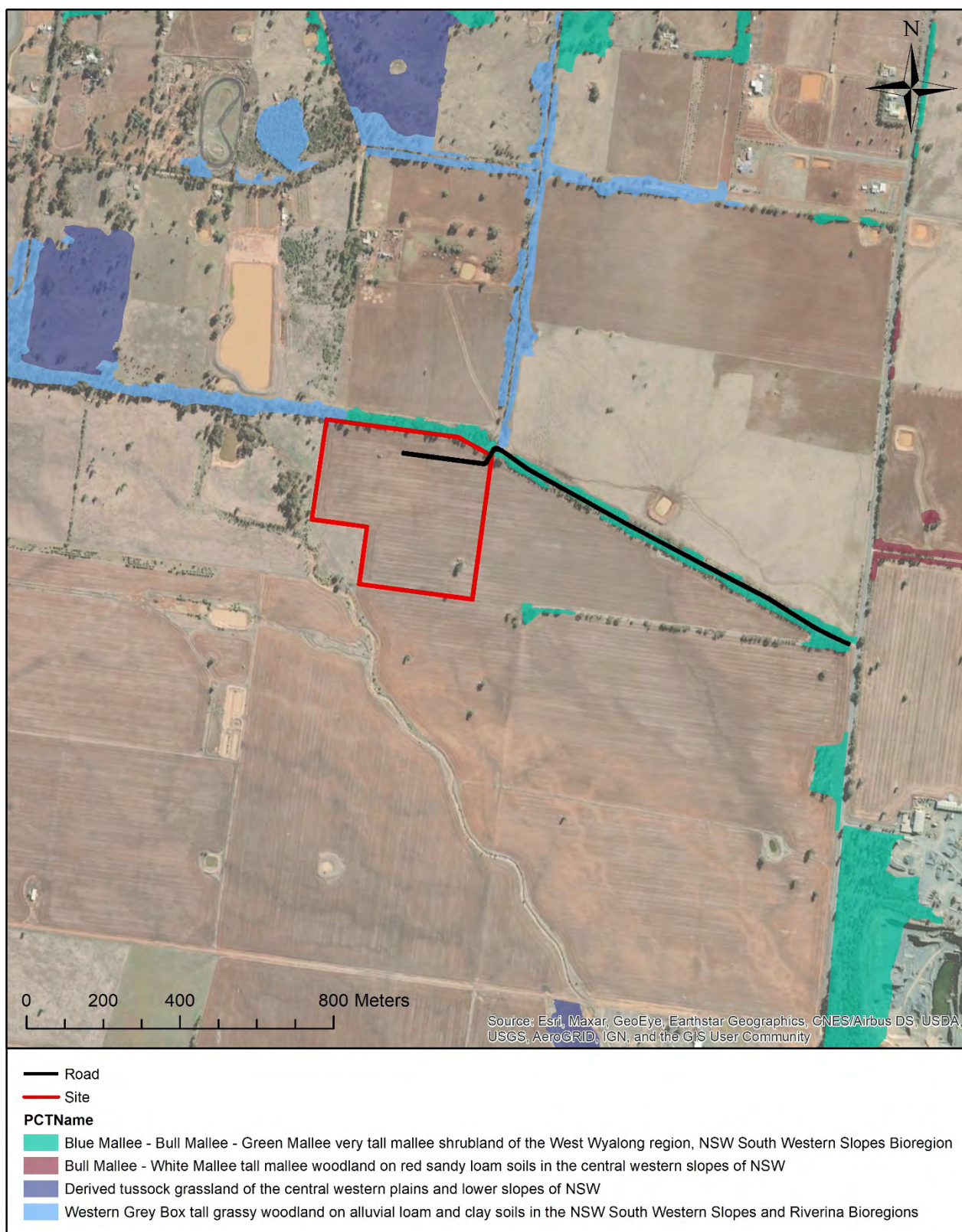
EPBC Protected Matters Online Search Tool

Consultation with the EPBC Protected Matters Online Search Tool searched a 10km radius of the site area for threatened **Flora** and **Vegetation Communities** returning 4 threatened species and 4 threatened communities. Of which there were 4 Vulnerable, and 3 Endangered species whose habitat may occur within that specified geographic range. **Table 1** considers their likelihood of occurring in the proposed site. Consultation with the same online database for threatened **Fauna** in the same geographic range returned 11 Vulnerable, 22 Migratory, 6 Endangered and 9 Critically Endangered species records. **Table 2** considers their likelihood of occurring in the proposed site.

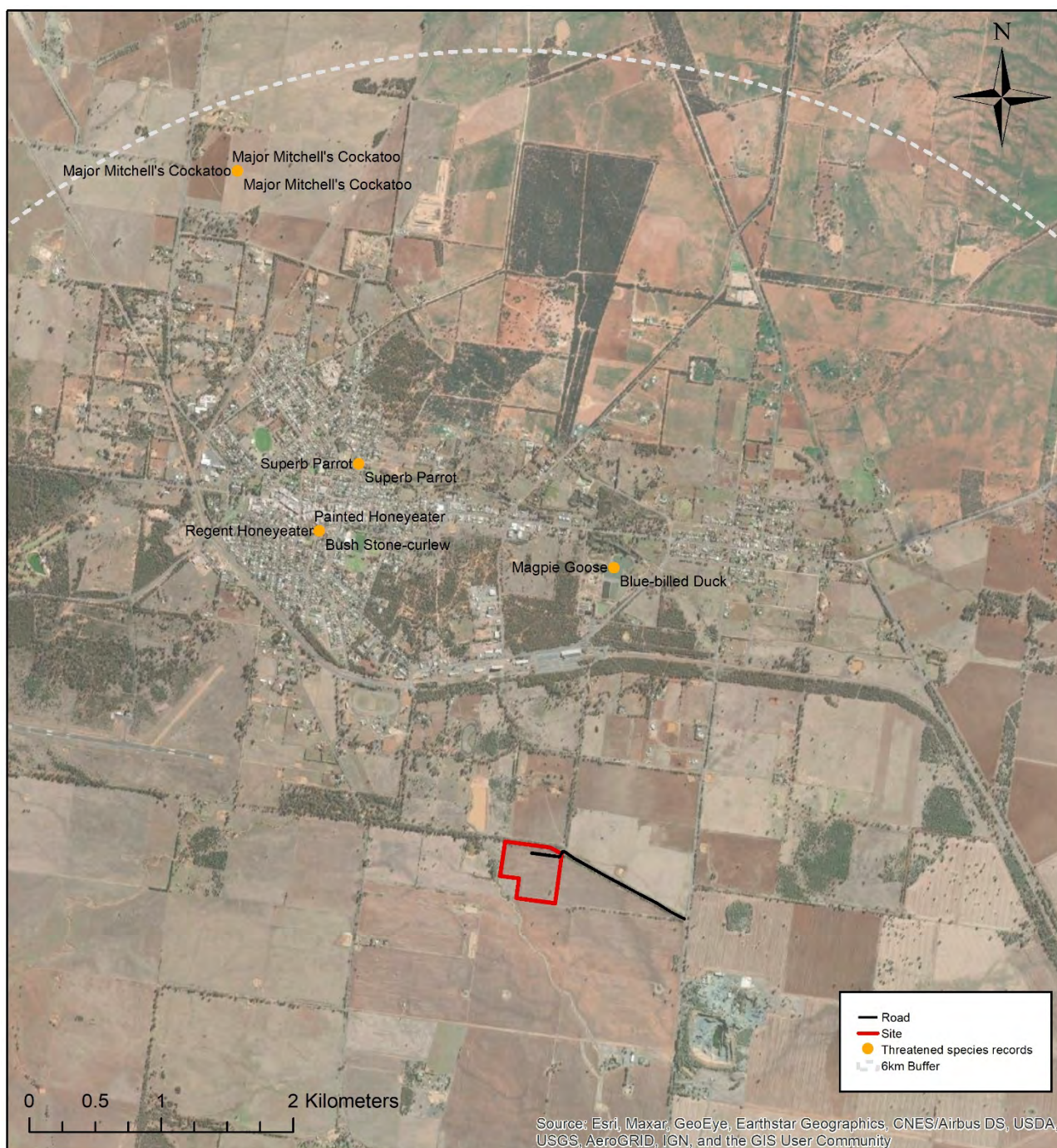
NSW BioNet (The Atlas of NSW Wildlife)

Consultation with NSW BioNet (The Atlas of NSW Wildlife) for listed **Flora** considered threatened in NSW, returned 3 species recorded within 10km by 10km radius of the site (**Map 1**). Spiny Peppercress (*Lepidium aschersonii*) and Yellow Gum (*Eucalyptus leucoxylon subsp. Pruinose*) listed as Vulnerable and A spear-grass (*Austrostipa wakoolica*) listed as Endangered. These species were not recorded on site during the inspection period and are considered not present due to a lack of suitable habitat and structure.

Consultation with the same online database for threatened **Fauna** in the same geographic range returned 7 species records, 5 Vulnerable and 2 Endangered. **Table 3** considers their likelihood of occurring in the proposed site.



Map 1: Plant Community Types surrounding the site (PCT), NSW BioNET. Data download, 11/08/21



Map 2: Recorded threatened species. NSW BioNET (10km x 10km search). Data download, 11/08/21

Biodiversity Values Map and Threshold Tool

The Biodiversity Offsets Scheme Threshold is a test used to determine when is necessary to engage an accredited assessor to apply the Biodiversity Assessment Method (the BAM) to assess the impacts of a proposal. It is only used for local developments (development applications submitted to councils) and clearing that does not require development consent in urban areas and areas zoned for environmental conservation (under the State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017).

The Biodiversity Conservation Regulation 2017 sets out threshold levels for when the Biodiversity Offsets Scheme will be triggered. The threshold has two elements:

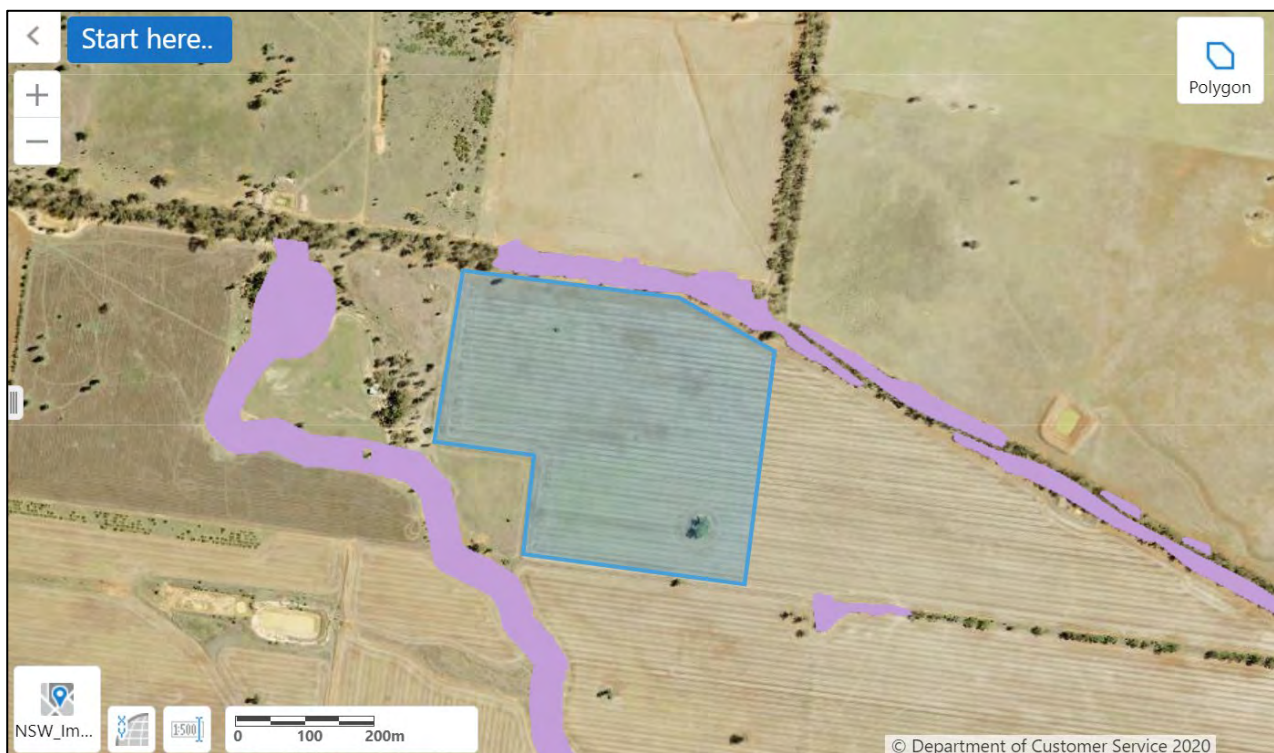
1. Whether the amount of native vegetation being cleared exceeds a threshold area, or
2. Whether the impacts occur on an area mapped on the **Biodiversity Values map** published by the Environment Agency Head (or delegate).

If clearing and other impacts exceeds either trigger, the Biodiversity Offset Scheme applies to the proposed development including biodiversity impacts prescribed by clause 6.1 of the Biodiversity Regulation 2017.

If the Biodiversity offsets scheme is *not* triggered, the test of significance detailed in section 7.3 of the Biodiversity Conservation Act 2016 must be used to determine whether a local development is likely to significantly affect threatened species.

Proponents will need to supply evidence relating to the triggers for the Biodiversity Offsets Scheme Threshold and the test of significance when submitting their application to the consent authority. This tool can be used as a guide to decide whether or not you as the proponent (or agent of the proponent) would be required to enter the Biodiversity Offsets Scheme.

A search of the Biodiversity Values map conducted on 12/08/21 revealed that the proposed site entry point on the north east boundary will intersect some areas identified on the 'Biodiversity Values Map' administered by the NSW Government (**Map 3**).



Map 3: Biodiversity Values map search results – 12/8/2021

Koala Assessment

In 2018, the then Office of Environment & Heritage (now DPIE) produced 'A review of koala tree use across New South Wales' which assessed evidence of koala tree use, for whatever purpose, across New South Wales. The study was intended as a platform to inform the predictive modelling of koala tree species and to contribute to a koala habitat suitability information base and importantly, the data collected for the seven (7) Koala Management Areas (KMAs) (after Phillips 2000 & DECC 2008) 'allows for a bottom-up consideration of a fundamental driver of koala habitat selection – local tree use patterns and tree associations' (OEH, 2018).

The assessment site at West Wyalong is in **the Western Slopes and Plains (KMA 6)** in which the study identified 19 tree species regularly used by Koalas, including 13 eucalypts (24% of 54 with >9 BioNet VIS records) and six (6) non-eucalypts. All eucalypts used were from *Symphyomyrtus* sub-genus (Trees or mallees; bark smooth, exfoliating in small or large flakes or ribbons, or persistent, shortly fibrous-flaky, fibrous, or shortly fibrous and heavily impregnated with kino). One species was designated as a regional high use species, River red gum (*E. camaldulensis*) and seven other species (six eucalypts from the red gum and box sections and white cypress-pine (*Callitris glaucophylla*) were designated high use species.

Pre-inspection database searches revealed *zero* sightings of Koala (*Phascolarctos cinereus*) within a 10 km buffer of the site. Whilst koala have not been previously sighted in the area it does not mean that koalas are not present in the area and lack of sightings could be explained by a lack of survey effort. It is entirely feasible that Koala could be using the Riparian vegetation corridor along Yiddah creek to the west of the site, or the roadside vegetation corridor along Duffs Road to the north of site, however none have been recorded in these zones previously.

Current On-Ground Conditions

The designated zone for the establishment of the panel array is currently under crop. I confirm that the proposed area for development will not see the loss of >1 ha of native grass or any dead or alive remnant trees. The following observations have also been made:

1. If any threatened native fauna (woodland birds) are present in the surrounding connected native vegetation (in particular *Superb Parrot*) they have not been previously recorded in this zone and the nesting period for these species is closed (both typically breed between June and December) meaning that the possibility of harming a fledgling is unlikely if the development is implemented outside this period.
2. The site is a highly modified paddock, currently sown with Canola, there are nil native grasses present with an obvious history of cultivation.
3. No threatened species, scats or other evidence of the use of this zone or the development site were recorded during the survey effort.
4. No Koalas, scats or other evidence of use of this zone or the development site were recorded during the survey effort.
5. The connected native vegetation on the northern boundary (identified on the Biodiversity Values map) is likely high conservation value and should be retained, avoided and/or have any impacts minimized in these areas.

Summary of Findings

Red-Gum contends that the project requires no loss of native grass and zero remnant native trees if the vegetation on the roadside along the northern boundary is avoided. Therefore, the proposed activities are unlikely to have an adverse effect on the foraging ability or the life cycle of threatened species that may be opportunistically using the site or surrounding areas.

Given the zero loss of native vegetation, the development will not endanger or have a significant effect on any existing native vegetation, habitats within the site, or fauna species that may be using the site. This project will not displace any rare or threatened species. While the proposed works are unlikely to introduce noxious weeds, vermin, feral species or genetically modified organisms into an area, the movement of vehicles, plant, equipment and people on and off the subject site/s has the potential to introduce such impacts. Wherever possible, removal of weeds should be undertaken prior to seed developing, which for most species occurs during the warmer months (i.e. summer).

The typical home ranges of Koalas are from 2 ha of connected vegetation to hundreds of hectares. Koala feed almost exclusively on a few preferred tree species which are of primary and secondary importance. The occurrence of both primary and secondary tree species varies widely on a regional, local and even a seasonal basis, meaning that koalas are unevenly distributed across their range. In the study area, one species was designated as a regional high use species, river red gum (*E. camaldulensis*) and seven other species (six eucalypts from the red gum and box sections and white cypress-pine (*Callitris glaucophylla*)) were designated high use species.

A few existing scattered trees are due to remain on site, therefore not designated for removal/loss and there are connected vegetation zones surrounding the site which represent areas of viable Koala habitat – particularly to the west along Yiddah creek and north along Duffs Road. The site is highly unlikely to be traversed or used by the species who are much more likely to stay within the connected canopy of the riparian vegetation corridor along Yiddah creek to the west of the site, or the surrounding roadside vegetation corridors.

I am of the opinion that the activities as proposed will not have a significant effect on any threatened species and ecological communities and/or their conservation as noted within this assessment.

Recommendations

By way of a clearing process that minimizes the risk to threatened species that may be opportunistically using the site, I recommend:

- I. Construction limits and exclusion zones clearly identified prior to work, especially along the northern boundary;
- II. A visual inspection is conducted by environmental staff before construction commences to identify any areas of site that might be supporting native fauna;
- III. Vehicle movements around the site will be restricted to the construction footprint and away from any existing trees and flagging exclusion fencing to be installed.
- IV. Soil disturbance by vehicle and pedestrian access is to be kept to a minimum outside the construction footprint.
- V. Any weeds removed (particularly those bearing seeds) are to be disposed of appropriately at the nearest waste management facility.

Regards



Mr Damian Wall

Managing Director

BAppSc, MEnvMgt, GradCert CHM, MAACAI

Attachment 1: Database Search Results v Likelihood Tables

¹ Five categories for the 'likelihood of occurrence' of species has been used. The categories are based on recorded sightings listed in credible databases, the presence or absence of suitable habitat, other features of the site, results of the field survey and professional judgement. The 5 categories are:

| | |
|--------------------|--|
| 'Yes' | The species/community was or has been observed on the site. |
| 'Likely' | A medium to High probability that a species uses the site |
| 'Potential' | A suitable habitat for a species occurs on the site, but there is insufficient information to categorise the species as 'likely' or 'unlikely' to occur. |
| 'Unlikely' | A Very Low to Low probability that a species uses the site. |
| 'No' | Habitat on the site and in the vicinity is unsuitable for the species. |

Table 1: EPBC Protected Matters Database results – Flora (10km x 10km)

| Species | Preferred Habitat | EPBC Act Status | Likelihood ¹ |
|---|--|-----------------------|-------------------------|
| White Box-Yellow Box Blakely's Red-Gum Grassy Woodland and Derived Native Grassland | | Critically Endangered | Unlikely |
| Grey Box (<i>Eucalyptus microcarpa</i>) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia | | Endangered | Unlikely |
| Poplar Box Grassy Woodland on Alluvial Plains | | Endangered | Unlikely |
| Weeping Myall Woodlands | | Endangered | Unlikely |
| <i>Austrostipa metatoris</i> – A spear-grass | Grows in sandy areas of the Murray Valley; habitats include sandhills, sandridges, undulating plains and flat open mallee country. | Vulnerable | Unlikely |
| <i>Austrostipa wakoolica</i> - A spear-grass | Floodplains of the Murray River tributaries, in open woodland. | Endangered | Unlikely |
| <i>Lepidium monoplacoides</i> - Winged Pepper-cress | Occurs on seasonally moist to waterlogged sites, on heavy fertile soils. Does not tolerate grazing disturbance. | Endangered | Unlikely |
| <i>Tylophora linearis</i> | Grows in dry scrub and open forest. | Endangered | Unlikely |

Table 2: EPBC Protected Matters Database results – Fauna (10km x 10km)

| Species | Preferred Habitat | EPBC Act Status | Likelihood ¹ |
|--|--|-----------------------|-------------------------|
| Birds | | | |
| <i>Anthochaera hrygia</i> – Regent Honeyeater | Dry open forest and woodlands on inland slopes and valleys particularly Box Woodlands. | Critically Endangered | Unlikely |
| <i>Hirundapus caudacutus</i> - White-throated Needletail | Feed, drink and rest on the wing in large groups. May rest at night in forested country. | Vulnerable | Unlikely |
| <i>Falco hypoleucos</i> - Grey Falcon | Usually restricted to shrubland, grassland and wooded watercourses of arid regions | Vulnerable | Unlikely |
| <i>Lathamus discolor</i> – Swift Parrot | Forests and woodlands dominated by winter flowering eucalypts | Critically Endangered | Unlikely |
| <i>Rostratula australis</i> – Australian Painted Snipe | Margins of densely vegetated swamps and wetlands | Endangered | No |
| <i>Numenius madagascariensis</i> Eastern Curlew | Found in Australia in August (migratory), feed on crabs and molluscs in intertidal mudflats. | Critically endangered | No |
| <i>Botaurus poiciloptilus</i> – Australasian Bittern | Found in wetlands with tall, dense vegetation, favours permanent freshwater habitats. | Endangered | No |
| <i>Calidris ferruginea</i> – Curlew Sandpiper | Occur on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons | Critically Endangered | No |
| <i>Polytelis swainsonii</i> – Superb Parrot | Mainly inhabits forests and woodlands dominated by eucalypts. | Vulnerable | Potential |
| <i>Grantiella picta</i> – Painted Honeyeater | Inhabits Boree/ Weeping Myall (<i>Acacia pendula</i>), Brigalow and Box-Gum Woodlands | Vulnerable | Unlikely |
| <i>Leipoa ocellata</i> - Malleefowl | Inhabit mallee communities, preference to tall, dense and floristically-rich mallee found in higher rainfall areas. | Vulnerable | Potential |
| <i>Pezoporus occidentalis</i> - Night Parrot | Spinifex grasslands in stony or sandy areas and samphire and chenopod associations on floodplains, salt lakes and clay pans. | Endangered | Unlikely |
| Mammals | | | |
| <i>Dasyurus maculatus</i> – Spot-tailed Quoll | Mature wet forest habitat in areas with rainfall 600 mm/year. | Endangered | No |
| <i>Nyctophilus corbeni</i> – Corben's Long-eared Bat | Mallee, bulloke, Allocasuarina and box eucalypt dominated communities, but more common in box/ironbark/cypress-pine. | Vulnerable | Unlikely |
| <i>Pteropus poliocephalus</i> – Grey-headed Flying-fox | Requires foraging resources and roosting sites. | Vulnerable | No |
| <i>Phascolarctos cinereus</i> – Koala | Temperate, sub-tropical and tropical forest, woodland and semi-arid communities dominated by Eucalyptus species | Vulnerable | Unlikely |
| Reptiles | | | |
| <i>Aprasia parapulchella</i> – Pink-tailed Worm-lizard | Small rocks (15–60 cm basal area) shallowly embedded in the soil. | Vulnerable | No |
| Fish | | | |
| <i>Macquaria australasica</i> - Macquarie Perch | Found in both river and lake habitats; especially the upper reaches of rivers and their tributaries | Endangered | No |
| Migratory Marine Birds | | | |
| <i>Apus pacificus</i> – Fork-tailed Swift | Spend most their life airborne. Build their nests on cliffs. | Migratory | No |
| Migratory Terrestrial Birds | | | |
| <i>Hirundapus caudacutus</i> – White-throated Needletail | Feed, drink and rest on the wing in large groups. May rest at night in forested country. | Vulnerable | Unlikely |
| <i>Motacilla flava</i> – Yellow Wagtail | Found in short grass, bare ground, swamp margins, sewage ponds and town lawns. | Migratory | Unlikely |
| <i>Myiagra cyanoleuca</i> – Satin Flycatcher | Tall wet eucalypt forests of SE Australia. | Migratory | No |

| Species | Preferred Habitat | EPBC Act Status | Likelihood ¹ |
|---|--|-----------------------|-------------------------|
| <i>Rhipidura rufifrons</i> – Rufous Fantail | Rainforest, dense wet forests, swamp woodlands and mangroves, preferring deep shade. | Migratory | Unlikely |
| Migratory Wetland Birds | | | |
| <i>Calidris ferruginea</i> – Curlew Sandpiper | Occur on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons | Critically Endangered | No |
| <i>Gallinago hardwickii</i> – Latham's Snipe | Freshwater swamps and marshes as well as salt marshes and mud flats | Migratory | No |
| <i>Actitis hypoleucos</i> – Common Sandpiper | Found in coastal or inland wetlands, both saline or fresh. | Migratory | No |
| <i>Calidris acuminata</i> - Sharp-tailed Sandpiper | Prefers the grassy edges of shallow inland freshwater wetlands. | Migratory | No |
| <i>Calidris melanotos</i> – Pectoral Sandpiper | Prefers the grassy edges of shallow inland freshwater wetlands. | Migratory | No |
| <i>Numenius madagascariensis</i> - Eastern Curlew | Found in Australia in August (migratory), feed on crabs and molluscs in intertidal mudflats. | Critically endangered | No |
| <i>Tringa nebularia</i> - Common Greenshank | Inland wetlands and sheltered coastal habitats of varying salinity. | Migratory | No |
| Listed Marine Birds | | | |
| <i>Apus pacificus</i> – Fork-tailed Swift | Spend most their life airborne. Build their nests on cliffs. | Migratory | No |
| <i>Ardea ibis</i> – Cattle Egret | Shallow water and open dry grassy habitats | Migratory | Unlikely |
| <i>Tringa nebularia</i> - Common Greenshank | Inland wetlands and sheltered coastal habitats of varying salinity. | Migratory | No |
| <i>Rostratula benghalensis (sensu lato)</i> – Painted Snipe | Generally inhabits shallow terrestrial freshwater (occasionally brackish) wetlands | Endangered | No |
| <i>Hirundapus caudacutus</i> – White-throated Needletail | Feed, drink and rest on the wing in large groups. May rest at night in forested country. | Vulnerable | Unlikely |
| <i>Motacilla flava</i> – Yellow Wagtail | Found in short grass, bare ground, swamp margins, sewage ponds and town lawns. | Migratory | Unlikely |
| <i>Myiagra cyanoleuca</i> – Satin Flycatcher | Tall wet eucalypt forests of SE Australia. | Migratory | No |
| <i>Calidris ferruginea</i> - Curlew Sandpiper | Occur on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons | Critically Endangered | No |
| <i>Gallinago hardwickii</i> - Latham's Snipe | Freshwater swamps and marshes as well as salt marshes and mud flats | Migratory | No |
| <i>Haliaeetus leucogaster</i> - White-bellied Sea-Eagle | Surface waters along coasts, islands, inlets also along larger inland rivers and lakes. | Migratory | No |
| <i>Merops ornatus</i> - Rainbow Bee-eater | Occurs in open woodlands, shrublands, grasslands and forests including riparian areas. | Migratory | Unlikely |
| <i>Lathamus discolor</i> - Swift Parrot | Forests and woodlands dominated by winter flowering eucalypts | Endangered | Unlikely |
| <i>Actitis hypoleucos</i> - Common Sandpiper | Found in coastal or inland wetlands, both saline or fresh. | Migratory | No |
| <i>Calidris acuminata</i> - Sharp-tailed Sandpiper | Grassy edges of shallow inland freshwater wetlands. | Migratory | No |
| <i>Calidris melanotos</i> – Pectoral Sandpiper | Prefers shallow fresh to saline wetlands. | Migratory | No |
| <i>Chrysococcyx osculans</i> - Black-eared Cuckoo | Found in drier country where species such as mulga and mallee form open woodlands | Migratory | Unlikely |
| <i>Rhipidura rufifrons</i> – Rufous Fantail | Rainforest, dense wet forests, swamp woodlands and mangroves, preferring deep shade. | Migratory | No |
| <i>Numenius madagascariensis</i> - Eastern Curlew | Found in Australia in August (migratory), feed on crabs and molluscs in intertidal mudflats. | Critically endangered | No |

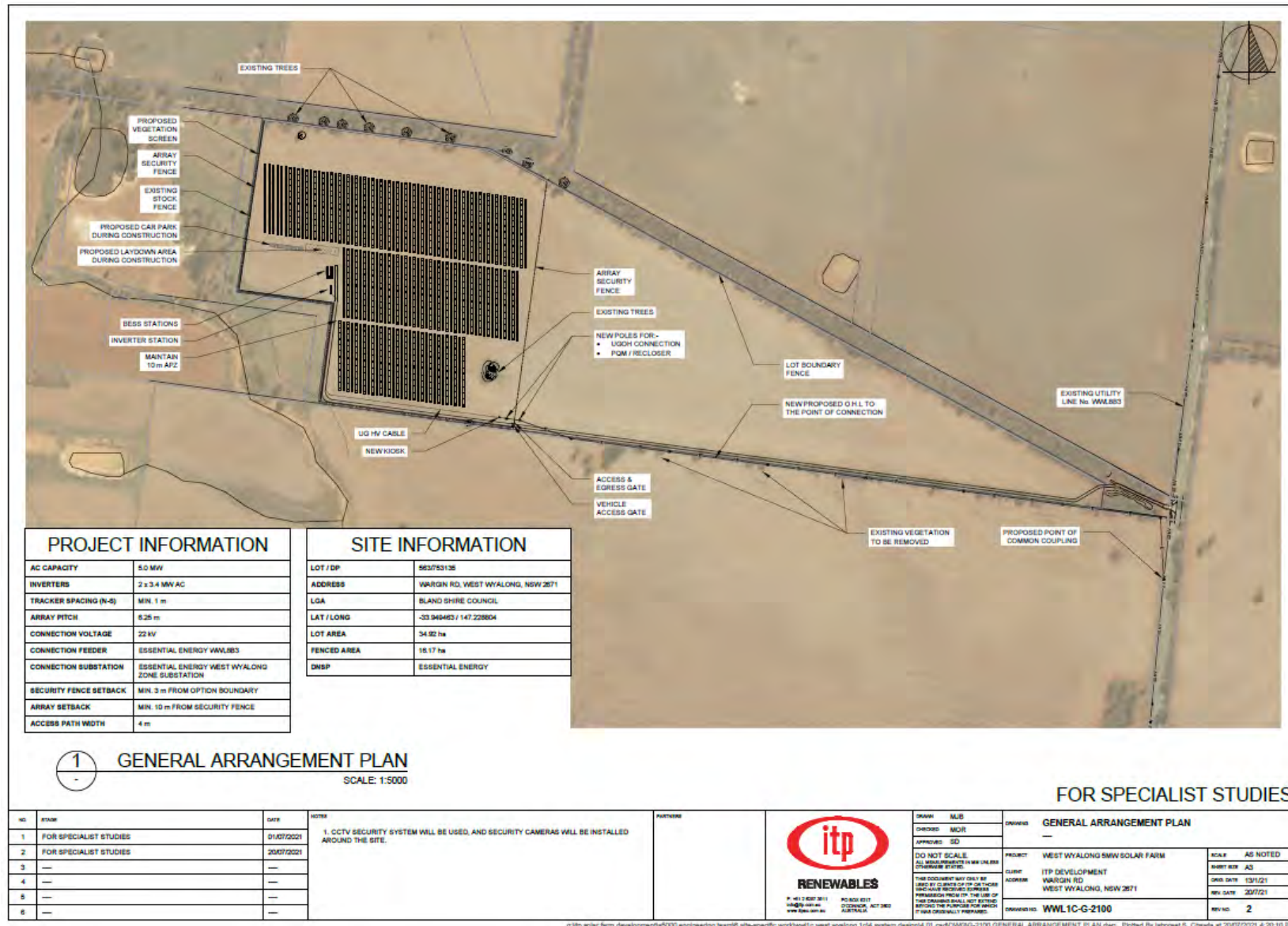
Table 3: BioNet Atlas of NSW Wildlife – Fauna (10km x 10km)

| Species | Preferred Habitat | BC Act Status | Likelihood ¹ |
|---|---|-----------------------|-------------------------|
| Aves | | | |
| <i>Anseranas semipalmata</i> - Magpie Goose | Mainly found in shallow wetlands with dense growth of rushes or sedges. | Vulnerable | Unlikely |
| <i>Oxyura australis</i> - Blue-billed Duck | Deep water in large permanent wetlands and swamps with dense aquatic vegetation. | Vulnerable | Unlikely |
| <i>Burhinus grallarius</i> - Bush Stone-curlew | Largely confined to grassy woodlands and farmland. | Endangered | Potential |
| <i>Polytelis swainsonii</i> – Superb Parrot | Inhabit Box-Gum, Box-Cypress-pine and Boree Woodlands and River Red Gum Forest. Nest in the hollows of large trees. | Vulnerable | Potential |
| <i>Anthochaera phrygia</i> - Regent Honeyeater | Dry open forest and woodlands on inland slopes and valleys. | Critically Endangered | Potential |
| <i>Lophochroa leadbeateri</i> - Major Mitchell's Cockatoo | Treed and treeless inland habitats, always within easy reach of water. | Vulnerable | Potential |
| <i>Grantiella picta</i> - Painted Honeyeater | Inhabits Boree/ Weeping Myall and Box-Gum Woodlands | Vulnerable | Unlikely |

Table 4: BioNet Atlas of NSW Wildlife – Flora (10km x 10km)

| Species | Preferred Habitat | BC Act Status | Likelihood ¹ |
|--|---|---------------|-------------------------|
| <i>Lepidium aschersonii</i> - Spiny Peppercress | Found on ridges of gilgai clays dominated by Brigalow, Belah, Buloke and Grey Box. In the south has been recorded growing in Bull Mallee. | Vulnerable | Unlikely |
| <i>Eucalyptus leucoxylon</i> subsp. <i>Pruinose</i> - Yellow Gum | Occurs at the bases of sandy rises and on loamy clay flats on the floodplains of the Murray River and its tributaries. | Vulnerable | Unlikely |
| <i>Austrostipa wakoolica</i> - A spear-grass | Floodplains of the Murray River tributaries, in open woodland. | Endangered | Unlikely |

Attachment 2: Proposed Design. Source: ITP Development, 2021



Attachment 3: Photos



Photo 1: Roadside vegetation, view of the start of Duffs roads, taken from Wargin road.



Photo 2: Existing access to site, just off Duffs Road.



Photo 3: Typical ground cover across site, 2 scattered trees.



Photo 4: Scattered tree on the southern boundary of site, unlikely to be removed/lost.



Photo 5: Existing scattered tress to be retained.



Photo 6: Western edge of site, typical ground conditions.



Photo 7: Western edge of site, typical ground conditions.



Photo 8: Northwest corner of site, existing scattered tree to be retained.



Photo 9: Northern edge of site, Duffs Road to the left on the other side of existing fence.



Photo 10: Northern edge of site, Duffs Road to the right on the other side of existing fence, existing access gate circled.