STOCKDILL DRIVE BESS
EPBC ACT REFERRAL

Assessments of Significance

1.1 Listed Threatened Species and Ecological Communities

Two threatened ecological communities and 36 threatened species were identified by the EPBC Act Protected Matters Search Tool (PMST) as being within five kilometres (km) of the Proposed Action Area. These are listed in **Table 1** Table **2** respectively, along with a description of the likelihood that each matter occurs in or within 5 km of the Proposed Action Area.

Table 1 Listed Threatened Ecological Communities identified by the PMST

Community	Status	Likelihood of occurrence
Natural Temperate Grassland of the South Eastern Highlands	Critically endangered	Not present (surveyed)
White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically endangered	Known (surveyed)

Table 2 Listed Threatened Species identified by the PMST

Species (scientific name)	Status	Likelihood of occurrence
BIRDS		
Regent Honeyeater (*Anthochaera phrygia*)	Critically endangered	Low
Australasian Bittern (*Botaurus poiciloptilus*)	Endangered	Nil
Curlew Sandpiper (*Calidris ferruginea*)	Critically endangered	Nil
Grey Falcon (*Falco hypoleucos*)	Vulnerable	Low
Painted Honeyeater (*Grantiella picta*)	Vulnerable	Low
White-throated Needletail (*Hirundapus caudacutus*)	Vulnerable	Low
Swift Parrot (*Lathamus discolor*)	Critically endangered	Low
Eastern Curlew, Far Eastern Curlew (*Numenius madagascariensis*)	Critically endangered	Nil
Superb Parrot (*Polytelis swainsonii*)	Vulnerable	Low
Australian Painted Snipe (*Rostratula australis*)	Endangered	Nil
FISH		
Trout Cod (*Maccullochella macquariensis*)	Endangered	Nil
Murray Cod (*Maccullochella peelii*)	Vulnerable	Nil
Macquarie Perch (*Macquaria australasica*)	Endangered	Nil

Species (scientific name)	Status	Likelihood of occurrence
FROGS		
Green and Golden Bell Frog (*Litoria aurea*)	Vulnerable	Nil
Booroolong Frog (*Litoria booroolongensis*)	Endangered	Nil
Yellow-spotted Tree Frog, Yellow-spotted Bell Frog (*Litoria castanea*)	Critically endangered	Nil
INSECTS		
Golden Sun Moth (*Synemon plana*)	Critically endangered	Low
MAMMALS		
Large-eared Pied Bat, Large Pied Bat (*Chalinolobus dwyeri*)	Vulnerable	Nil
Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (south-eastern mainland population) (*Dasyurus maculatus maculatus* (SE mainland population))	Endangered	Low
Greater Glider (*Petauroides volans*)	Vulnerable	Nil
Brush-tailed Rock-wallaby (*Petrogale penicillata*)	Vulnerable	Nil
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) (*Phascolarctos cinereus* (combined populations of Qld, NSW and the ACT))	Vulnerable	Nil
Grey-headed Flying-fox (*Pteropus poliocephalus*)	Vulnerable	Nil
PLANTS		
Yass Daisy (*Ammobium craspedioides*)	Vulnerable	Nil
River Swamp Wallaby-grass, Floating Swamp Wallaby-grass (*Amphibromus fluitans*)	Vulnerable	Nil
Black Gum (*Eucalyptus aggregata*)	Vulnerable	Nil
Basalt Pepper-cress, Peppercress, Rubble Peppercress, Pepperweed (*Lepidium hyssopifolium*)	Endangered	Nil
Hoary Sunray, Grassland Paper-daisy (*Leucochrysum albicans subsp. tricolor*)	Endangered	Low
Pale Pomaderris (*Pomaderris pallida*)	Vulnerable	Nil
Tarengo Leek Orchid (*Prasophyllum petilum*)	Endangered	Nil
Button Wrinklewort (*Rutidosis leptorhynchoides*)	Endangered	Nil
Small Purple-pea, Mountain Swainson-pea, Small Purple Pea (*Swainsona recta*)	Endangered	Nil
Austral Toadflax, Toadflax (*Thesium australe*)	Vulnerable	Nil
REPTILES		
Pink-tailed Worm-lizard, Pink-tailed Legless Lizard (*Aprasia parapulchella*)	Vulnerable	High
Striped Legless Lizard, Striped Snake-lizard (*Delma impar*)	Vulnerable	Low

Threatened ecological communities and species with a likelihood of occurrence of nil or low from **Table 1** and **Table** 2 have been assessed as such based on the following information:

- *Natural Temperate Grassland of the South Eastern Highlands*
  It is unlikely that grassland in the Proposed Action Area is *Natural Temperate Grassland of the South Eastern Highlands* (NTG) given the presence of remnant woodland trees in and around the Proposed Action Area, evidence of past tree clearing, the landscape position of the site relative to the known historic extent of NTG, and the prevalence of box gum woodland in areas surrounding the site.

- Threatened bird species
  The Proposed Action Area is located outside the vegetated river corridors which support extensive habitat for threatened woodland bird species. The Proposed Action Area contains one large remnant hollow-bearing tree (which will not be removed as part of the Proposed Action). No woodland or forest structure is present, and an understorey shrub structure is absent. The site therefore provides limited habitat features suitable for threatened bird species.

- Threatened fish and frog species
  Aquatic vegetation and permanent rivers suitable for threatened fish and amphibian species are absent within the Proposed Action Area.

- Golden Sun Moth
  The Golden Sun Moth (GSM) is considered unlikely to occur in the Proposed Action Area due to the lack of nearby recorded sightings and the unfavourable slopes of the site (steeper southerly aspects versus the preferred northerly aspects). Although GSM is increasingly being observed in derived native grasslands in the ACT, GSM is usually associated with NTG, which does not occur in the Proposed Action Area.

- Threatened mammal species
  There is limited habitat available for threatened mammal species in the Proposed Action Area. Large remnant hollow-bearing trees may provide habitat and foraging resources for hollow-dependant fauna species, but there is an absence of woodland forest structure and habitat features such as shrub layers and logs.

- Threatened flora species
  Threatened flora species are considered unlikely to occur in the Proposed Action Area due to the past grazing history of the site and the absence of flora species sensitive to grazing. In addition, all threatened shrubs such as the Pale Pomaderris, and readily detectable species such as the Hoary Sunray, have been confirmed absent from the site.

- Striped Legless Lizard
  The Striped Legless Lizard (SLL) is considered unlikely to occur in the Proposed Action Area due to a lack of suitable habitat. It is associated with NTG on fertile plains, which does not occur on the site.

Based on the above assessment, a majority (35) of threatened species and one threatened ecological community identified by the PMST are unlikely to occur or utilise the habitats present within the Proposed Action Area. The following species are known to occur in or have a moderate - high likelihood of occurrence within the Proposed Action Area:

- *White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland* (BGW)

- Pink-tailed Worm-lizard (PTWL).

Table 3 and **Table** 4 provide impact assessments of these MNES against the criteria in the *Significant Impact Guidelines 1.1* (SIG 1.1) (DoE, 2013) for their respective listing type (threatened ecological community or species). A significant impact to BGW is considered likely, but direct impacts to potential PTWL habitat in the Proposed Action Area will be avoided and a significant impact to the species is considered unlikely.

Table 3 Significant impact assessment for *White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland*

Significant impact criteria	Response
An action is likely to have a significant impact on a critically endangered or endangered ecological community if there is a real chance or possibility that it will:	
reduce the extent of an ecological community	The Proposed Action will reduce the extent of low-moderate quality derived native grassland that is associated with BGW by up to 5 ha within the Proposed Action Area. It is expected that the area to be removed will be a mix of low- and moderate-quality derived native grassland. The grassland in the Proposed Action Area is part of a larger continuous patch of the CEEC in the surrounding landscape. The Proponent intends to offset potential significant residual impacts to BGW by contributing to the New South Wales (NSW) Biodiversity Conservation Fund.
fragment or increase fragmentation of an ecological community, for example by clearing vegetation for roads or transmission lines	The derived native grassland in the Proposed Action Area is part of a larger continuous patch of BGW in the surrounding landscape. The removal of up to 5 ha of derived native grassland will increase fragmentation of BGW in the region.
adversely affect habitat critical to the survival of an ecological community	The removal of up to 5 ha of low-moderate quality derived native grassland is unlikely to adversely affect habitat critical to the survival of BGW. The grassland in the Proposed Action Area is part of a larger continuous patch of BGW in the surrounding landscape, through which the CEEC will persist.
modify or destroy abiotic (non-living) factors (such as water, nutrients, or soil) necessary for an ecological community's survival, including reduction of groundwater levels, or substantial alteration of surface water drainage patterns	The area of derived native grassland likely to be removed for the BESS is located downslope from adjacent areas of BGW in the Proposed Action Area, sloping towards Stockdill Drive. As such, its removal is unlikely to significantly impact adjacent areas of BGW, which are part of the larger continuous patch of the CEEC in the surrounding landscape located upslope or across Stockdill Drive. The project Construction Environmental Management Plan (CEMP) and Environmental Management Plan (EMP) are expected to include appropriate measures to be implemented to ensure that there are no substantial changes to surface water flows or groundwater levels likely to influence the condition of the BGW. This is considered to be appropriate for managing any potential abiotic changes from the Proposed Action.
cause a substantial change in the species composition of an occurrence of an ecological community, including causing a decline or loss of functionally important species, for example through regular burning or flora or fauna harvesting	The Proposed Action is considered unlikely to result in a substantial change in the species composition of the local occurrence of the CEEC. The project EMP will require preparation of a CEMP and will detail long-term management strategies and responsibilities. In particular, the CEMP and EMP are expected to provide management principles and guidance to ensure that adjacent areas of BGW are managed to minimise the risk of invasive species (particularly weeds) during construction and operation. If the Proponent elects to offset potential significant residual impacts to BGW onsite, the Proposed Action will likely involve active management of the CEEC to increase the species diversity of the CEEC and improve its ecological function.

Significant impact criteria	Response
cause a substantial reduction in the quality or integrity of an occurrence of an ecological community, including, but not limited to: -- assisting invasive species, that are harmful to the listed ecological community, to become established	The Proposed Action is considered unlikely to cause a substantial reduction in the quality or integrity of the CEEC. In particular, the project CEMP and EMP are expected to provide management principles and guidance to ensure that adjacent areas of BGW are managed to minimise the risk of invasive species (particularly weeds) both in the interim period and in the long-term. If the Proponent elects to offset potential significant residual impacts to BGW onsite, the Proposed Action will involve active management of the CEEC to improve its quality and integrity. This will likely involve weed control as well as increases to the CEEC's species diversity and habitat features.
-- causing regular mobilisation of fertilisers, herbicides or other chemicals or pollutants into the ecological community which kill or inhibit the growth of species in the ecological community,	The Proposed Action is unlikely to cause regular mobilisation of fertilisers, herbicides or other chemicals or pollutants into adjacent areas of BGW. The project CEMP and EMP are also expected to include measures for managing runoff from the site.
interfere with the recovery of an ecological community.	The Proposed Action is unlikely to interfere with the recovery of BGW in areas adjacent to the Proposed Action Area. The project CEMP and EMP would include measures for managing these impacts, including restricting access routes to the Proposed Action Area so as to limit the spread of weeds. If the Proponent elects to offset potential significant residual impacts to BGW onsite, the Proposed Action will involve active management of the CEEC to support its recovery in the region.

The Proposed Action will require the removal of up to 5 ha of low-moderate quality derived native grassland associated with BGW. A significant impact on the CEEC is considered likely as the Proposed Action will lead to a reduction in extent of the CEEC.

Table 4 Significant impact assessment for the Pink-tailed Worm-lizard

Significant impact criteria	Response
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:	
lead to a long-term decrease in the size of an important population of a species	The Proposed Action will not result in the long-term decrease in the size of a population of the species. While PTWL has been assumed present in the Proposed Action Area, the potential habitat identified will not be directly impacted by the Proposed Action. The siting of the BESS will be strategically located to avoid all impacts to potential PTWL habitat.
reduce the area of occupancy of an important population	The Proposed Action will not reduce the area of occupancy of the species as the project will be designed to avoid potential PTWL habitat in the Proposed Action Area.
fragment an existing important population into two or more populations	The Proposed Action will not fragment an existing population of the species, as direct impacts to potential PTWL habitat identified in the Proposed Action Area will be avoided. PTWL has been confirmed present in nearby areas of similar habitat and is known to be widespread in the landscape.

Significant impact criteria	Response
adversely affect habitat critical to the survival of a species	The Proposed Action will not adversely affect habitat critical to the survival of the species, as direct impacts to potential PTWL habitat identified in the Proposed Action Area will be avoided.
disrupt the breeding cycle of an important population	The Proposed Action is unlikely to disrupt the breeding cycle of the population of the species, as direct impacts to potential PTWL habitat identified in the Proposed Action Area will be avoided.
modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The Proposed Action is unlikely to modify, destroy, remove, isolate, or decrease the availability or quality of PTWL habitat, as direct impacts to potential habitat identified in the Proposed Action Area will be avoided.
result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	The Proposed Action is unlikely to result in the spread of invasive species into potential PTWL habitat. The project CEMP and EMP will include outcomes-based principles and requirements for the management of invasive species (particularly weeds and exotic fauna) that may be harmful to the PTWL. This will be a focus of the CEMP in particular.
introduce disease that may cause the species to decline, or	The Proposed Action is unlikely to result in the introduction of disease that may result in the decline of the species.
interfere substantially with the recovery of the species.	The Proposed Action is unlikely to substantially interfere with the recovery of the species, as direct impacts to potential habitat identified in the Proposed Action Area will be avoided.

The Proposed Action will not have any direct impacts on PTWL. As a result, a significant impact on the species is considered unlikely.