BERRIMA CEMENT WORKS - MOD 14

Solid Waste Derived Fuels & Delivery Variation Project
Biodiversity Development Assessment Report waiver

Prepared for:

Boral Cement Limited
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BASIS OF REPORT

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EXECUTIVE SUMMARY

SLR Consulting Australia Pty Ltd (SLR) has been engaged by Boral Cement Limited (Boral) to prepare the biodiversity assessment to support the modification application for the Boral Cement Works at Taylor Avenue, New Berrima. An initial desktop review of the site indicated that minimal biodiversity value was likely to be present and as such, SLR was engaged to undertake a Biodiversity Development Assessment Method waiver.

This assessment determined that the Project would not involve the removal of native vegetation and therefore not trigger the need for any offset requirements. After site inspections it was determined that there was limited native vegetation within the site, with no threatened ecological communities or breeding habitat for threatened fauna species. A patch of degraded native vegetation occurs within the site, and could represent potential foraging habitat for locally occurring threatened fauna species; however, this patch is to be avoided as part of the current Project design.

Accordingly, SLR requests a waiver, pursuant to s.7.9 of the *Biodiversity Conservation Act 2016*, for the need to prepare a Biodiversity Development Assessment Report (BDAR) for the proposal.

We would appreciate if the Secretary of the Department of Planning, Industry and Environment and the Minister for Energy and the Environment would review our Biodiversity Assessment and consider our request to waive the BDAR requirements for the project.

CONTENTS

DOCUMENT REFERENCES

TABLES

CONTENTS

PHOTOS

APPENDICES

1 INTRODUCTION

1.1 Background

SLR Consulting Australia Pty Ltd (SLR) has been commissioned by Boral Cement Limited (the applicant) to prepare a biodiversity assessment in accordance with the Secretary's Environmental Assessment Requirements (SEARs) to inform the Statement of Environmental Effects (SEE) to support the modification application for the Boral Cement Works (DA-401-11-2002-i-Mod-14) at Taylor Avenue, New Berrima (the Project) in the Wingecarribee local government area (LGA).

The primary objective of this assessment is to describe and assess the biodiversity values of the site, determine whether the Project is likely to have a significant impact on threatened species or ecological communities listed under the NSW *Biodiversity Conservation Act 2016* (BC Act) and identify and quantify any associated biodiversity offsetting requirements. A desktop review of the site indicated that minimal biodiversity value was likely to be present and as such SLR has prepared a preliminary biodiversity assessment.

This assessment has determined that the proposal will not involve the removal of any native vegetation and has been designed to avoid all existing remnant or planted native vegetation. A patch of plant community type (PCT) *PCT1284 Turpentine - Smooth-barked Apple moist shrubby forest of the lower Blue Mountains, Sydney Basin Bioregion* (PCT 1284), with an estimated vegetation integrity (VI) score of 21.4, is located at the intersection of the new haul road and Argyle Street; the design of the proposed new haul road has been amended (as an avoidance measure) to avoid the patch. On that basis that all vegetation is being avoided preliminary credit calculations do not return any offset requirement.

SLR is requesting that the Secretary of the Department of Planning, Industry and Environment (DPIE) and the Minister for Energy and the Environment consider waiving the requirements of the BC Act, as set out in the SEARs for the SEE (DA-401-11-2002-i-Mod-14). This determination is referred to herein as a 'BDAR waiver'.

1.2 Project description

The Cement Works remain heavily reliant on coal as the primary fuel source for the kiln, with associated environmental and cost implications. The proposed Project would increase the use of Solid Waste Derived Fuels (SWDF), diverting a waste product from landfill to become a valuable component of the cement manufacturing process.

The use of SWDF will help to improve the plant's energy costs, allowing the Cement Works to remain competitive relative to imported products. The successful use of SWDF at the site coupled with the recently approved Modification 13 for a Chloride Bypass System at the kiln, allowing improved management of naturally occurring volatile components from the SWDF has led to Boral seeking to increase the consumption of SWDF at the kiln.

The Project would enable the previously approved use of SWDF to be operationally viable, with the use of SWDF currently constrained by the site's ability to receive, handle and store SWDF prior to use in the kiln. To efficiently fuel the kiln with SWDF an ongoing regular supply is required, with site operations and approvals not currently allowing this to occur. To facilitate the use of SWDF in the kiln modifications to the current approval is required to:

- Increase the permissible delivery times
- Increase the maximum permitted deliveries to site

- Increase on-site storage capacity.

The Project proposes a new haul road access from the Cement Works west to the Old Hume Highway, allowing raw material delivery vehicles to bypass residents to minimise the potential for impact. The avoidance of sensitive receivers would enable raw material delivery duration and frequency without a negative impact. Increased storage would improve operational efficiencies within the site, while allowing for variable supply.

The Project would improve the environmental performance of the site, through the reuse of waste material, diverting it from landfill and reducing the requirement for coal as a fuel source. The Project would also reduce vehicle movements through New Berrima in proximity to local residents along Taylor Avenue. These changes would help future proof the site, with the transition from coal as the primary fuel source to SWDF.

1.3 Site description

The Boral Cement Works (the site) is located south of New Berrima in the Southern Highlands, NSW in the Wingecarribee local government area (LGA). The site, identified as Lot 1 DP 582277, Lot 2 DP 774598, Lot 22 DP 582276 and Lot 100 DP 882139 is approximately 135 ha and is wholly owned by Boral. Access to the site is via Taylor Avenue, which connects the with the Hume Motorway approximately 2.5 km to the west. The site is within the Sydney Basin Interim Biogeographic Regionalisation for Australia (IBRA) and the Moss Vale IBRA subregion.

1.4 Legislative context

The *Biodiversity Conservation Act 2016* (BC Act) requires that an SSD or SSI application must be accompanied by a biodiversity development assessment report (BDAR), unless the Planning Agency Head (or delegate) and the Environment Agency Head (or delegate) determine that the proposed development is not likely to have any significant impact on biodiversity values. In this regard, the SEARs for the project include a requirement for "an assessment of the proposal's biodiversity impacts in accordance with the Biodiversity Conservation Act 2016, including the preparation of a Biodiversity Development Assessment Report (BDAR) where required under the Act, except where a waiver for preparation of a BDAR has been granted".

The BC Act includes the Biodiversity Offset Scheme, which provides for biodiversity assessment and biodiversity offsetting of a range of developments in NSW according to a method, known as the Biodiversity Assessment Method or 'BAM' (DPIE 2020). The Biodiversity Offsets Scheme (BOS) applies to:

- Local development assessed under Part 4 of the EP&A Act that is likely to significantly affect ecological communities or threatened species listed under Schedules 1 and 2 of the BC Act, as determined by application of a five-part-test of significance in accordance with Section 7.3 of the BC Act.
- State significant development and state significant infrastructure projects, unless the Secretary of DPIE and the Minister for Energy and the Environment determine that the project is not likely to have a significant impact.
- Development activities that have the potential to impact Areas of Outstanding Biodiversity Value (AOBV) as listed under Part 3 of the BC Act.
- Development activities that have the potential to impact areas mapped as having 'high biodiversity value' as indicated by the NSW Biodiversity Values Map (OEH 2019).
- Development activities that involve clearing of native vegetation that exceeds the Biodiversity Offset Scheme thresholds (BOS thresholds) as determined by the BC Regulation.

The proponent is seeking a BDAR waiver on the basis of no significant impact on biodiversity values.

1.5 Scope of the Assessment

With respect to the site, SLR has completed a preliminary review of the biodiversity values, involving:

- Desktop review of available mapping, reports, literature and data, including searches for previous records of threatened species within the locality (10 km radius) of the site.
- A preliminary site inspection completed by SLR Ecologist (Jarrid Beeton) on 15 August 2021, involving:
  - Identification of native vegetation, noting the extent and condition of plant community types, as well as the presence, condition and extent of any threatened ecological communities.
  - General fauna habitat assessment, searches for evidence of fauna habitation.
  - Identification of potential habitats and resources for threatened species; and
  - Identification of key or characteristic flora and fauna species.
- An additional site inspection completed by SLR Ecologist (Sarah Hart) on 15 October 2021, involving:
  - Walked traverses of two proposed haul road alignment options within the site.
  - Completion of one BAM plot within a patch of native vegetation potentially affected by the proposed haul road; noting the extent and condition of plant community types, as well as the presence, condition and extent of any threatened ecological communities.

This report provides an assessment of the biodiversity values of the site, as defined under Sections 1.5and 7.9 of the BC Act, as well as Clauses 1.4 and 6.1 of the *Biodiversity Conservation Regulation 2017* (BC Regulation). This report has been prepared in accordance with the requirements of the DPIE (2021a) BDAR waiver guideline. Consideration of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is also provided.

1.6 Staff Qualifications and Roles

SLR Ecology currently holds a Scientific Licence pursuant to the NSW *National Parks & Wildlife Act 1974* to pick, kill or harm native flora and fauna for scientific purposes (licence number SL100176), as well as Animal Research Authority, which authorises field staff to trap, capture, harm, hold and release animals protected under the BC Act. The roles and qualifications of all staff responsible for preparation of this assessment are listed in **Table 1**.

Table 1 Staff Roles and Qualifications

Personnel	Qualifications and Training	Role
Jarrid Beeton Project Consultant – Ecology	Bachelor of Environmental Science and Management, University of Newcastle Diploma Conservation and Land Management, NSW TAFE Horticulture (Parks and Gardens), NSW TAFE	Field investigation
Sarah Hart Senior Project Consultant – Ecology	Master of Science (Zoology and Ecology), James Cook University 2015 Bachelor of Science (Zoology), James Cook University 2013 Certificate of Native Plant Identification Sydney University 2019	Field investigation Report preparation

Personnel	Qualifications and Training	Role
Jeremy Pepper Technical Director – Ecology	Bachelor of Science (Hons Class 1) University of NSW 1996 Cert II Bushland Regeneration, TAFE NSW Cert III Horticulture (Arboriculture), TAFE NSW Biodiversity Assessment Method accredited assessor (#BAAS17104)	Project management and report review

2 BIODIVERSITY VALUES

2.1 Threatened Species, Populations and Communities

A search of the NSW BioNet Atlas (DPIE 2021b) (licenced search conducted on the 29 September 2021) detected 22 threatened species previously recorded within a 10 km radius of the site, comprising of seven plants, 11 birds and four mammals. A list of the threatened species returned by the BioNet Atlas Search is included in **Appendix A**.

Four individuals of *Eucalyptus macarthurii* (Camden Wollybutt), which is listed as Endangered under the BC Act and under the EPBC Act, were recorded along the old rail corridor easement during the initial site inspection. No other threatened plants or animals were recorded during the site inspection, and given the disturbed nature of the site and surrounds, and the evidence of historical and ongoing maintenance and disturbance within the site, it is unlikely that any threatened species occur. The proposed alignment has been moved slightly to the south of the existing powerline easement to avoid all biodiversity values identified from the site inspection and will follow the existing powerline and road easement.

2.2 Flora and Vegetation

2.2.1 Regional Vegetation Mapping

According to the available regional scale vegetation mapping data, *Southeast NSW Native vegetation Classification and Mapping - SCIVI VIS_ID2230* (DPIE 2021c), the site is mapped as containing only a few small disjunct patches of native vegetation. These patches include:

- PCT 1330 *Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion* (PCT1330).
  - Wholly subset of Critically Endangered Ecological Community (CEEC) White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions under the BC and EPBC Act.
- PCT 1284 *Turpentine - Smooth-barked Apple moist shrubby forest of the lower Blue Mountains, Sydney Basin Bioregion* (PCT 1284).
  - Partially contains the CEEC Sydney Turpentine-Ironbark Forest in the Sydney Basin Bioregion under the BC Act and EPBC Act.

The patch of vegetation in the middle of the existing workings contains some planted native trees, being mainly *Casuarina glauca, Angophora subvelutina* and *Acacia decurrens*; these species align with PCT 1284, but collectively do not qualify as the Sydney Turpentine-Ironbark Forest TEC under the final determination, as the site lies outside of the distributional extent of the TEC. Additionally, the patch is less than one hectare and in low condition, so does not meet the EPBC Act definition for the listed threatened ecological community.

2.2.2 SLR Survey Results

After the SLR site inspection on the 25 August 2021 by SLR Ecologist Jarrid Beeton, it was determined that the dominant species on site do not align with the regional vegetation mapping, with many of the characteristic canopy tree species of the mapped PCTs, notably *Eucalyptus melliodora* (Yellow box), *E. bridgesiana* (Apple box), *E. blakelyi* (Blackely's Red Gum) or *E. dives* (Broad-leaved Peppermint), absent from the site.

Native plant species recorded on the site include *Eucalyptus macarthurii*, *Acacia decurrens*, *Themeda triandra* and *Pteridium esculentum*. This collection of species is a best fit with PCT 1284. This area of native vegetation has been avoided by the redesign of the alignment to exclude all impacts to native vegetation (**Photo 1**).

Photo 1 Existing powerline easement for original proposed alignment.

The remaining vegetation across the majority of the undeveloped portions of the site contain open areas of exotic grass (see **Photo 3**). A There was also a mix of exotic grasses and forbs including: *Bromus catharticus* and *Pennisetum clandestinum*. A large portion of the alignment to the east have previously been cleared and are currently being used as an existing road (**Photo 4**).

After the avoidance of the large trees to the west along the existing powerline and railway easement a second site inspection determined that there was an area of native vegetation at the intersection onto Argyle Street. SLR Ecologist, Sarah Hart completed one BAM plot (**Photo 2**) in the area of remnant native vegetation, which consisted of *Eucalyptus scoparia, Angophora subvelutina, Acacia decurrens* and dominated by *Casuarina glauca*. The understory was mainly exotic with *Rubus fruticosus* (Blackberry), *Cirsium* spp. *Bromus* spp. And *Carex* spp., with one native grass throughout the plot, *Microleana stipoides*. The area had a low function score with no mature tress (>80cm diameter at breast height), there were no hollows in the tree or fallen logs within the plot.

Photo 2 BAM plot photo in degraded native vegetation patch.

Photo 3 Disturbed grassland along existing powerline easement of original proposed alignment.

Photo 4 Existing Road towards the east of the proposed alignment

2.2.3 Vegetation Integrity

Vegetation Integrity (VI) is defined under Section 1.5 of the BC Act as "the degree to which the composition, structure and function of vegetation at a particular site and the surrounding landscape has been altered from a near natural state". Using section 9.2.1 of the Biodiversity Assessment method (BAM) 2020 (DPIE 2020) the determination for offsetting is dependent on the VI score being in one of three categories

a. ≥15, where the PCT is representative of an EEC or a CEEC

b. ≥17, where the PCT is associated with threatened species habitat (as represented by ecosystem credits) or represents a vulnerable ecological community

c. ≥20, where the PCT does not represent a TEC and is not associated with threatened species habitat.

The category that is relevant on this site is "c" as the vegetation is not associated with threatened species or the habitat of threatened species.

Data collected from the BAM plot is presented in **Table 2** and **Table 3.** The final VI score for the patch is 21.3, as shown in **Table 4**. As the VI score is greater than 20, the removal of this vegetation would require offsetting under the BAM (category c above). Based on this result, and the potential offset requirement under the BAM, the proponent investigated alternate haul route alignments with the aim of reducing or avoiding impacts on native vegetation and associated biodiversity values. .

Table 2 PCT 1284 Composition and Structure Data

Data	Trees		Shrubs		Grasses		Forbs		Ferns		Other	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Plot Data	4	85.5	0	0	2	3.2	0	0	0	0	0	0
Benchmark*	9	73	15	52	6	8	8	4	5	15	13	20

* Benchmark data as produced by BAM calculator 28 October 2021

Table 3 PCT 1284 Function Data

Data	Regeneration	Stem Class	Large Trees	Hollows	Leaflitter	Fallen Logs	HTW
Plot Data	Absent	2	0	0	53	0	20
Benchmark*	Present	5	3	-	66	14	0

* Benchmark data as produced by BAM calculator 28 October 2021

Table 4 Summary of Credit Calculator Output for PCT 1284

Zone	Composition	Structure	Function	Vegetation Integrity
Plot	10.8	44.3	20.3	**21.3**
Benchmark	100	100	100	100

As produced by BAM calculator 28 October 2021, using plot data from site inspection

2.3 Fauna Habitat

The site has been historically used as farming land for grazing cattle and is largely developed for the current facilities to operate. Ares of vegetation remaining with the site include a narrow belt of mature trees, comprising eucalypts and acacias, along the western end of an existing powerline easement. Overall however, there is limited native or natural vegetation within the site and natural features that could offer habitats for native fauna.

Woodland habitat provides a wide range of food and shelter for vertebrate fauna. Trees from the family Myrtaceae (mostly *Eucalyptus* spp.) generally dominate the canopy layer along the easement and are associated with a larger patch of vegetation to the north. As the woodland trees may supply direct (foliage, nectar, exudates) and indirect food (arthropods) for a range of vertebrates, particularly birds and arboreal mammals, the patch would not be removed from the site.

Tree hollows (formed in dead trees (stags) and over-mature trees) provide nesting and roosting habitat for hollow-dwelling fauna and are important habitat components of native forests. A small number of stags are present, with examples shown in **Photo 5** and **Photo 6** (both containing medium sized hollows of 5-10 cm diameter). Importantly, construction of the Project will not require clearing of any hollow- bearing trees or mature trees and therefore impacts on hollow-dwelling fauna will be negligible.

There are no caves, karsts or overhangs on the site, and hence no potential roosting sties for cave-dwelling bats. Additionally, the site does not contain waterways or farm dams that could support aquatic habitat. The native trees across the site provide a small degree of potential foraging habitat for individuals of locally occurring threatened species of bats and birds. There were no threatened fauna species identified on the site and none of these will be impacted by the Project.

Photo 5 Example of stag with few hollows along the existing powerline easement.

Photo 6 Example of stag along the existing powerline easement (2).

3 IMPACT ASSESSMENT

3.1 General

An assessment of the potential impacts of the Project on biodiversity is provided in **Table 5.** Impacts are categorised as direct or indirect as described in DPIE (2018), which states:

> *"Direct impacts are those that directly affect habitat of species and ecological communities and of individuals using the study area. They include, but are not limited to, death through predation, trampling, poisoning of the animal/plant itself and the removal of suitable habitat. When applying each factor, consideration must be given to all of the likely direct impacts of the proposed activity or development. When applying each factor, both long-term and short-term impacts are to be considered.*
>
> *Indirect impacts occur when project-related activities affect species, [populations] or ecological communities in a manner other than direct loss […]. Indirect impacts can include loss of individuals through starvation, exposure, predation by domestic and/or feral animals, loss of breeding opportunities, loss of shade/shelter, reduction in viability of adjacent habitat due to edge effects, deleterious hydrological changes, increased soil salinity, erosion, inhibition of nitrogen fixation, weed invasion, noise, light spill, fertiliser drift, or increased human activity within or directly adjacent to sensitive habitat areas. As with direct impacts, consideration must be given, when applying each factor, both long-term and short-term impacts are to be considered. to all of the likely indirect impacts of the proposed activity or development."*

There will be no direct and two low indirect impacts to biodiversity values for any of the categories described by DPIE as listed in **Table 5**

Table 5 Assessment of direct and indirect impacts

Impact	Extent of impact due to the Project
Direct impacts	
Removal or modification of native vegetation	**None**: there will be no removal of any native vegetation.
Loss of individuals of a threatened species	**None**: there will be no loss of individuals of a threatened species.
Removal or modification of threatened species habitat other than native vegetation (micro-habitat features)	**None**: there will be no removal or modification of threatened species habitat other than native vegetation (micro-habitat features).
Death through trampling or vehicle strike	**None**: there will be no deaths through trampling or vehicle strike as the native vegetation that is remaining does not support a connecting corridor to a large patch of vegetation.
Death through poisoning	**None**: there will be no additional chemicals used as part of the Project
Fragmentation	**None**: there will be no removal of any native vegetation.
Indirect impacts	
Predation by domestic and/or feral animals	**None**: there will be no removal of any native vegetation and all existing fencing will remain in place to deter feral animals from entering the existing cement facility.

Impact	Extent of impact due to the Project
Loss of shade/shelter	**None**: there will be no removal of any native vegetation.
Loss of individuals through starvation	**None**: there will be no removal of any native vegetation.
Loss of individuals through exposure	**None**: there will be no removal of any native vegetation.
Edge effects (noise, light, traffic)	**Low**: The Project will create more traffic through the existing road although this corridor of vegetation is not connected to a larger patch that any species would utilise. The native vegetation is remaining in place.
Deleterious hydrological changes	**None**: there are no aquatic or hydrological changes in the Project.
Weed invasion	**None**: The Project will not increase the exotic species more than what is existing. The only vegetation that is being removed would be exotic species and potentially reducing the invasion.
Increased human activity within or directly adjacent to sensitive habitat areas	**Low**: The Project will create more traffic through the existing road although this corridor of vegetation is not connected to a larger patch that any species would utilise. The native vegetation is remaining in place.
Prescribed impacts	
The impacts of development on the following habitat of threatened species or ecological communities: (i) karst, caves, crevices, cliffs and other geological features of significance, (ii) rocks, (iii) human made structures, (iv) non-native vegetation.	Whilst human-made structures and non-native vegetation are present at the site most of these features are either not considered to provide important habitat to threatened species or communities or will not be altered by the Project. The site does not contain any of the other relevant habitat features for threatened species or ecological communities.
The impacts of development on the connectivity of different areas of habitat of threatened species that facilitates the movement of those species across their range.	The Project will not impact on the habitat connectivity of threatened species for the purposes of maintaining their lifecycle.
The impacts of development on movement of threatened species that maintains their lifecycle.	The Project will not impact on the movement of threatened species for the purposes of maintaining their lifecycle.
The impacts of development on water quality, water bodies and hydrological processes that sustain threatened species and threatened ecological communities (including from subsidence or upsidence resulting from underground mining or other development).	The Project will not impact on the water quality, water bodies and hydrological processes such that threatened species or communities are not sustained.
The impacts of wind turbine strikes on protected animals,	No wind turbines are proposed as part of the Project.
The impacts of vehicle strikes on threatened species of animals or on animals that are part of a threatened ecological community.	The Project would be not result in vehicle strikes on any animals, including any threatened species of animals or on animals that are part of a threatened ecological community.

3.2 EPBC Act Matters

The purpose of the EPBC Act is to ensure that actions likely to cause a significant impact on 'matters of national environmental significance' undergo an assessment and approval process. Under the EPBC Act, an action includes a proposal, a development, an undertaking, an activity or a series of activities, or an alteration of any of these things. An action that 'has, will have or is likely to have a significant impact on a matter of national environmental significance' is deemed to be a 'controlled action' and may not be undertaken without prior approval from the Australian Minister for the Environment.

A search of the Protected Matters Search Tool (DAWE 2021) reveals that a total of 51 threatened species (10 birds, two fish, three frogs, 9 mammals, 26 plants, one reptile) and 15 migratory species (and/or their habitats) and five threatened ecological communities listed in the EPBC Act are predicted to occur within a 10 km radius of the site. No other EPBC Act matters are of relevance to the biodiversity of the site.

The site provides only very marginal potential foraging habitat for highly mobile threatened and migratory species of bat and birds. Based on the results of the current investigation, it is not likely that the Project will have a significant impact on any matters of national environmental significance listed under the EPBC Act. Referral of the development application to the Commonwealth Department of the Environment and Energy is not warranted.

3.3 Key threatening processes

The 36 Key Threatening Processes (KTPs) that are listed on the BC Act and/or EPBC Act as of October 2021 and are applicable to terrestrial environments, are listed in **Table 6**.

Taking into consideration the nature and condition of the site and the nature of the Project, no KTPs will be exacerbated as a result of construction or operation of the Project.

Table 6 Key threatening processes

Key Threatening Process	BC Act	EPBC Act equivalent	Exacerbated due to Project
Aggressive exclusion of birds by noisy miners (*Manorina melanocephala*)	√	√	No
Alteration of habitat following subsidence due to longwall mining	√	x	NA
Alteration to the natural flow regimes of rivers, streams, floodplains & wetlands.	√	x	**No**: The proposed haul road alignment will not alter the natural flow of any watercourses.
Bushrock removal	√	x	**No**: the proposed haul road alignment will not require any bush rock removal
Clearing of native vegetation	√	√	**No**: there will be no removal of any native vegetation.
Competition and grazing by the feral European rabbit	√	√	No
Competition and habitat degradation by feral goats	√	√	No

Key Threatening Process	BC Act	EPBC Act equivalent	Exacerbated due to Project
Competition from feral honey bees	√	X	No
Forest Eucalypt dieback associated with over-abundant psyllids and bell miners	√	x	No
Herbivory and environmental degradation caused by feral deer	√	x	No – the Project will not increase the presence of deer throughout the study area.
High frequency fire	√	x	No
Human-caused climate change	√	√	Negligible – with mitigation measures in place for movement of vehicles and no vegetation clearing, the Project will not increase any human-caused climate change.
Importation of red imported fire ants into NSW	√	√	No
Infection by *Psittacine circoviral* (beak & feather) disease affecting endangered psittacine species	√	√	No
Infection of frogs by amphibian chytrid fungus causing the disease chytridiomycosis	√	√	No
Infection of native plants by *Phytophthora cinnamomi*	√	√	No
Introduction and Establishment of Exotic Rust Fungi of the order Pucciniales pathogenic on plants of the family Myrtaceae	√	x	No
Introduction of the large earth bumblebee (*Bombus terrestris*)	√	x	No
Invasion and establishment of exotic vines and scramblers	√	x	No
Invasion and establishment of Scotch broom	√	x	No
Invasion and establishment of the Cane Toad	√	√	No
Invasion of native plant communities by bitou bush & boneseed	√	x	No
Invasion of native plant communities by exotic perennial grasses	√	(only N. Aust)	No
Invasion of the yellow crazy ant (*Anoplolepis gracilipes*)	√	(only Christmas Island)	No
Invasion, establishment and spread of Lantana (*Lantana camara)*	√	x	No
Invasion by escaped garden plants, including aquatics	√	√	No
Invasion of native plant communities by African Olive (*Olea europaea* L. subsp. *cuspidata*)	√	x	No
Loss of hollow-bearing trees	√	x	No – there will be no removal of trees

Key Threatening Process	BC Act	EPBC Act equivalent	Exacerbated due to Project
Loss and/or degradation of sites used for hill-topping by butterflies	√	x	No
Novel biota and their impact on biodiversity	x	√	No
Predation and hybridisation of feral dogs	√	√	No
Predation by the European Red Fox	√	√	No
Predation by feral cats	√	√	No
Predation by the Plague Minnow (*Gambusia holbrooki*)	√	x	No
Predation, habitat degradation, competition and disease transmission by Feral Pigs (*Sus scrofa*)	√	√	No
Removal of dead wood and dead trees	√	x	No (hollow-bearing trees avoided through design measures)

3.4 Areas of Outstanding Biodiversity Value (AOBV) and Critical habitat

Areas of Outstanding Biodiversity Value (AOBV) and Critical habitat are declared under both the BC Act and EPBC Act respectively.

AOBVs in NSW (BC Act) include:

- Gould's Petrel - critical habitat declaration
- Little penguin population in Sydney's North Harbour
- Mitchell's Rainforest Snail in Stotts Island Nature Reserve
- Wollemi Pine.

The following species are listed on the EPBC Act Register of Critical Habitat:

- Wandering Albatross (*Diomedea exulans*) - Macquarie Island
- Ginninderra peppercress *(Lepidium ginninderrense)* - Northwest corner Belconnen Naval Transmission Station, ACT
- Black-eared Miner (*Manorina melanotis*) - Gluepot Reserve, Taylorville Station and Calperum Station
- Shy Albatross (*Thalassarche cauta*) - Albatross Island, The Mewstone, Pedra Branca
- Grey-headed Albatross (*Thalassarche chrysostoma*) - Macquarie Island.

No critical habitat or AOBVs relevant to the study area would be affected by the Project.

3.5 Addressing the BDAR waiver biodiversity values

BDAR waiver impact assessment requirements, as set out in Table 2 of the *How to apply for a biodiversity development assessment report waiver for a Major Project Application* (DPIE 2021d), are addressed in **Table 7** below.

Table 7 Assessment of impacts on biodiversity values[#]

Biodiversity Value	Relevant (✓ or NA)	Impact Assessment
Vegetation abundance 1.4(b) BC Regulation Meaning the "*occurrence and abundance of vegetation at a particular site*". The assessor is required to consider the following: "*Where vegetation is present on the development site, provide a map on digital aerial photography or the best available imagery of the development site showing: native vegetation (including grasslands and other non-woody vegetation types) and non-native vegetation; and the area of land that is directly impacted by the proposed development, including related infrastructure such as roads, pipelines, access tracks, temporary material stockpiles, asset protection zones and powerlines, if applicable. Describe how the proposed development avoids impacts on native vegetation and identify the likelihood and extent of any remaining impacts including removal of isolated or cultivated native plants*".	✓	The site contains native vegetation, although within the proposed alignment there will be no removal of native vegetation.
Vegetation integrity 1.5(2)(a) BC Act *Meaning the "degree to which the composition, structure and function of vegetation at a particular site and the surrounding landscape has been altered from a near natural state*." The assessor is required to "*describe the vegetation integrity and any impacts on vegetation integrity of identified plant communities*."	✓	A BAM plot was conducted in the patch of native vegetation closest to the proposed alignment. This produced a VI score of 21.3. Therefore, it was agreed that the area would be avoided and designs were updated to be closer to the existing road and railway corridor.
Habitat suitability 1.5(2)(b) BC Act Meaning the "*degree to which the habitat needs of threatened species are present at a particular site*". The assessor is required to "*Identify any threatened species or ecological communities or their habitat on the development site. Describe how the proposed development avoids impacts on habitat suitability and identify the likelihood and extent of any remaining impacts including the impacts of development on the following habitat of threatened species or ecological communities: (i) karst, caves, crevices, cliffs and other geological features of significance (ii) rocks (iii) human made structures (iv) non-native vegetation (prescribed under clause 6.1(1)(a) of the BC Regulation). Impacts may include the removal or modification (eg. noise, light etc) of the habitat of threatened species or ecological communities.*	✓	As described in **Section 2.3,** the native vegetation provide a small degree of potential foraging habitat for individuals of locally occurring threatened species of birds. Although there was no evidence of any threatened species breeding habitat within the proposed alignment. This includes the absence of karsts, caves, rocks or outcrops, water and creeks (Prescribed impacts are addressed in **Table 5**)

Biodiversity Value	Relevant (✓ or NA)	Impact Assessment
Threatened species abundance 1.4(a) BC Regulation Meaning the "*Occurrence and abundance of threatened species or threatened ecological communities, or their habitat, at a particular site*". The assessor is required to "*Describe how the proposed development avoids impacts on threatened species abundance and identify the likelihood and extent of any remaining impacts including impacts of vehicle strikes on threatened species of animals or on animals that are part of a threatened ecological community (prescribed under clause 6.1(1)(f) of the BC Regulation)*".	✓	As described in **Section 2.3,** the native vegetation provides a small degree of potential foraging habitat for individuals of locally occurring threatened species of birds. Although there was no evidence of any threatened species breeding habitat within the proposed alignment. This includes the absence of karsts, caves, rocks or outcrops, water and creeks (see **Table 5**)
Habitat connectivity 1.4(c) BC Regulation Meaning the "*Degree to which a particular site connects different areas of habitat of threatened species to facilitate the movement of those species across their range. Identify whether the development site contributes to habitat connectivity*". The assessor is required to: "*Describe how the proposed development avoids impacts on habitat connectivity and identify the likelihood and extent of any remaining impacts of development on the connectivity of different areas of habitat of threatened species that facilitates the movement of those species across their range (prescribed under clause 6.1(1)(b) of the BC Regulation)*."	NA	As described in **Section 3.1,** the site is positioned in an urban industrial setting and would not play any important role in connecting different areas of habitat of threatened species to facilitate the movement of those species across their range.
Threatened species movement 1.4(d) BC Regulation Meaning the "*Degree to which a particular site contributes to the movement of threatened species to maintain their lifecycle*". The assessor is required to: "*Describe how the proposed development avoids impacts on threatened species movement and identify the likelihood and extent of any remaining impacts of development on movement of threatened species that maintains their lifecycle (prescribed under clause 6.1(1)(c) BC Regulation)*."	NA	As described in **Section 3.1**, the site would play no important or measurable role in the movement of threatened species to maintain their lifecycle.
Flight path integrity 1.4(e) BC Regulation Meaning the "*Degree to which the flight paths of protected animals over a particular site are free from interference*". The assessor is required to address the following: "*Identify whether flight paths of protected animals occur over the development site. Protected animals are animals of a species listed or referred to in Schedule 5 of the BC Act. They include any species of birds, mammals, amphibians or reptiles that are native to Australia or that periodically or occasionally migrate to Australia. Describe how the proposed development avoids impacts on flight path integrity and identify the likelihood and extent of any remaining impacts. Note: The impacts of wind turbine strikes on protected animals are prescribed under clause 6.1(1)(e) of the BC Regulation. It is, therefore, unlikely that a BDAR waiver would be issued for a proposed wind farm*."	NA	As described in **Section 3.1,** the site is not of any significance or relevance to the flight paths of aerial or mobile threatened species (i.e. birds and bats). The proposal would not interfere with the flight path of any threatened species over the site.

Biodiversity Value	Relevant (✓ or NA)	Impact Assessment
Water sustainability 1.4(f) BC Regulation Meaning the "*Degree to which water quality, water bodies and hydrological processes sustain threatened species and threatened ecological communities at a particular site*". The assessor is required to: "*Describe how the proposed development avoids impacts on water sustainability and identify the likelihood and extent of any remaining impacts of development on water quality, water bodies and hydrological processes that sustain threatened species and threatened ecological communities (including from subsidence or upsidence resulting from underground mining or other development) (prescribed under clause 6.1(1)(d) of the BC Regulation)*".	NA	As described in **Section 3.1,** water sustainability is not relevant to the site or the Project application.

From Appendix A of DPIE 2021d.

4 CONCLUSION

In summary, none of the BOS triggers apply to the site or the Project. Furthermore, based on the findings of this report, it can be concluded that the Project is not likely to have a significant impact on biodiversity values, pursuant to s.7.3 of the BC Act. Accordingly, the BAM does not apply to the project application and hence a BDAR is not required to accompany the Project application. On this basis, SLR requests a waiver, pursuant to s.7.9 of the BC Act, for the need to prepare a BDAR as set out in the SEARs for the SEE (DA-401-11-2002-i-Mod-14).

5 REFERENCES

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APPENDIX A

BioNet Atlas Species List

Table 8 BioNet atlas 10km species search (DPIE 20201b)

Scientific Name	Common Name	BC Act	EPBC Act
Birds			
Artamus cyanopterus cyanopterus	Dusky Woodswallow	V	-
Callocephalon fimbriatum	Gang-gang Cockatoo	V	-
Calyptorhynchus lathami	Glossy Black-Cockatoo	V	-
Hieraaetus morphnoides	Little Eagle	V	-
Oxyura australis	Blue-billed Duck	V	-
Petroica boodang	Scarlet Robin	V	-
Petroica phoenicea	Flame Robin	V	-
Rostratula australis	Painted Snipe	E	E
Rostratula australis	Australian Painted Snipe	E	E
Stictonetta naevosa	Freckled Duck	V	-
Tyto novaehollandiae	Masked Owl	V	-
Flora			
Eucalyptus aggregata	Black Gum	V	-
Eucalyptus macarthurii		V	-
Grevillea raybrownii		V	-
Kunzea cambagei	Cambage Kunzea	V	V
Leucochrysum albicans var. *tricolor*	Hoary Sunray	-	V
Persoonia glaucescens		E	V
Phyllota humifusa		V	V
Mammals			
Myotis macropus	Southern Myotis	V	-
Petauroides volans	Greater Glider	-	V
Phascolarctos cinereus	Koala	V	V
Pteropus poliocephalus	Grey-headed Flying-fox	V	V

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