




CONSTRUCTION BIODIVERSITY MANAGEMENT SUB-PLAN

St Marys Intermodal

Pacific National

SSD 7308

Rev #	Name	Organisation	Signed	Date
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Amendment Record Sheet

Rev	Date of Rev	Author	Summary of Change
00	22/05/2020	Jamie Fermio & David Stubbs	Initial draft for review
01	26/06/2020	Jamie Fermio & David Stubbs	Updated in response to DPIE comments
02	08/07/2020	Tim Stubbs	Update in response to DPIE comments
03	18/11/2020	Tim Stubbs	Updated to reflect Modification 2 and 3.
04	13/01/2021	Tim Stubbs	Updated to reflect Modifications 1 and 4
05	01/02/2021	Tim Stubbs	Updated to reflect MOD 1 approval

Jamie Fermio (Bachelor of City Planning (Hons) is experienced in the development of approval documentation and management plans for major infrastructure project including Rozelle Interchange and Cabramatta Loops project.

David Stubbs (Bachelor Environmental Science & Management/Forestry and Masters Environmental Management) is experienced in biodiversity management on major infrastructure projects including Northern Beaches Hospital Roads Project and Pacific Complete Woolgoolga to Ballina.

This document was prepared for the sole use by McMahon Services Group and the regulatory agencies that are directly involved in this project, the only intended beneficiaries of our work. No other party should rely on the information contained herein without the prior written consent of McMahon Services Group 2017.

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Glossary/Abbreviations

Abbreviation	Expanded Text
BMSP	Biodiversity Management Sub-Plan
BDAR	Biodiversity Development Assessment Report
BC Act	<i>Biodiversity Conservation Act 2016</i> (NSW)
CBMSP	Construction Biodiversity Management Sub-Plan
CEMP	Construction Environmental Management Plan
CoC	Conditions of Consent
CTPMSP	Construction Traffic and Pedestrian Management Sub-Plan
CWMSP	Construction Waste Management Sub-Plan
EIS	Environmental Impact Statement
EEC	Endangered ecological community
EP&A Act	Environmental Planning and Assessment Act 1979 (NSW)
EPA	Environmental Protection Authority
EPL	Environmental Protection License
ERSED	Erosion and sediment control
GPS	Global Positioning System
Microbat	Microchiropteran bat
Minister, the	Minister of the NSW Department of Planning and Environment (or delegate)
OEH	Office of Environment and Heritage (NSW)
PCT	Plant Community Type
WIRES	Wildlife Information Rescue Service (NSW)

1. Introduction

1.1. Background

The St Marys Freight Hub EIS (Urbanco 2019) and Response to Submissions Report (RtS) and the associated Biodiversity Development Assessment Reports (BDAR) prepared by EcoLogical dated 24 April 2019 and 13 September 2019 assessed the impacts of construction and operation of the Project on biodiversity values, including endangered ecological communities and threatened flora and fauna species.

The EIS and RtS identified the potential for direct and indirect impacts to biodiversity values during construction of the Project. Direct impacts include the removal of 1.51 hectares of native vegetation within the intermodal site boundary, impacts to one threatened flora species and impacts to one fauna species listed under the *Biodiversity Conservation Act 2016* (BC Act). These direct impacts will be offset via ecosystem and species credits in accordance with the Project's Conditions of Consent (CoC) and requirements of the BC Act.

Notwithstanding, the EIS and RtS identified that potential indirect, or inadvertent impacts to biodiversity values (such as removal of vegetation outside the site footprint) as a result of construction of the Project could be minimised through the implementation of mitigation and management measures.

Please refer to Section 2 of the CEMP for the Project Description.

1.2. Context

This Biodiversity Management Sub-plan (CBSMP or this Plan) forms part of the Construction Environmental Management Plan (CEMP) for the St Marys Intermodal Project (the Project).

This BMP has been prepared to address the requirements of the Project's Conditions of Consent (CoC), the St Marys Freight Hub Environmental Impact Statement (EIS), the Revised Management and Mitigation Measures (RMMM) listed in the St Marys Freight Hub Response to Submissions Report and all applicable guidance and legislation. The BMP has been updated in response to Modification 2 SSD-7308 approved 21 September 2020 and Modification 3 SSD-7308 approved 29 October 2020, Modification 4 to SSD 7308 approved 17 December 2020 and Modification 1 SSD-7308 approved on 29 January 2021.

1.3. Scope

The scope of this Plan is to describe how McMahon Services proposes to minimise impacts to biodiversity values during construction of the Project. Operational biodiversity management measures do not fall within the scope of this Plan and therefore are not included within the processes contained within this Plan.

2. Purpose and Objectives

2.1. Purpose

This CBMSP has been prepared to outline and describe how McMahon's will, during the construction of the Project, comply with the Project's Conditions of Consent (CoC) and manage and minimise impacts to biodiversity values. Additionally, it outlines how McMahon's will minimise environmental risks and achieve environmental outcomes on the Project by providing a structured approach to ensure appropriate revised management mitigation measures (RMMs) and controls are implemented.

2.2. Environmental Objectives

The key objective of this CBMSP is to ensure all CoC, RMMs and licence/permit requirements relevant to biodiversity values are described, scheduled and assigned responsibility as outlined in:

- The EIS prepared for St Mary's Intermodal,
- The Response to Submissions Report prepared for St Mary's Intermodal,
- Conditions of Consent granted to the Project on 7 May 2020,
- Modification 2 SSD-7308 approved 21 September 2020
- Modification 3 SSD-7308 approved 29 October 2020
- Modification 4 SSD-7308 approved 17 December 2020
- Modification 1 SSD-7308 approved 29 January 2021
- All relevant legislation and other requirements described in Section 3.1 of this Plan.

2.3. Environmental Performance Outcomes and Targets

The desired overarching environmental performance outcome for biodiversity management is that impacts to biodiversity values are minimised as far as practicable during construction. The key performance outcomes for biodiversity management that McMahon Services will achieve are identified in Table 1.

Table 1 Performance outcomes

No.	Performance Outcome	Document Reference	How Addressed
1	Ensure controls and procedures are implemented to minimise impacts to flora and fauna as a result of construction and to comply with relevant legislation and other project requirements described in Section 3.2 and Section 0.	CoC C5	Implement the management and mitigation measures identified in Table 9. Undertake training, monitoring and inspections, auditing and reporting as detailed in Section 7.
2	No vegetation clearing outside of the construction footprint.	RMMM CoC B17	Undertake Vegetation Clearing Procedure (refer to Section 6.1) Implement Table 9
2	Protect, enhance and conserve areas of ecological significance within the site which are to be retained.	RMMM CoC B17	Undertake Vegetation Clearing Procedure (refer to Section 6.1)

			Undertake weed management (refer to Section 6.3) Implement Table 9
3	Maximise retention of existing locally-endemic native species as far as practicable.	RMMM CoC B17	Undertake Vegetation Clearing Procedure (refer to Section 6.1) Implement Table 9
4	Minimise potential for the introduction and spread of weeds.	RMMM CoC B17	Implement weed management protocol (refer to Section 6.3) Implement Table 9
5	Prevent and minimise the risk of injury and mortality of fauna	CoC B17	Undertake Vegetation Clearing Procedure (refer to Section 6.1) Implement Table 9

3. Environmental Requirements

3.1. Relevant Legislation

3.1.1. Legislation

Legislation relevant to biodiversity management for this Project includes:

- *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) (Commonwealth)
- *Biodiversity Conservation Act 2016* (BC Act)
- *Environmental Planning and Assessment Act 1979* (EP&A Act)
- *Protection of the Environment Operations Act 1997* (POEO Act)
- *Biosecurity Act 2015* (BS Act)
- *Pesticides Act 1999* (PC Act)

Relevant provisions of the above legislation are explained in the legal and compliance tracking register included in Annexure A of the CEMP.

3.1.2. Additional approvals, licenses, permits and requirements

3.1.3. Guidelines and Standards

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

- Australian Standard AS4373-2007 Pruning of amenity trees
- Australian Standard AS4970-2009 Protection of Trees on development sites
- NSW WorkCover Code of Practice for the Amenity Tree Industry (1998)
- NSW Weed Control Handbook (DPI, 2018)

3.2. Conditions of Consent

The requirements of the Development Consent relevant to this Plan are shown in Table 2, with cross reference to indicate where each requirement is addressed within this Plan.

Table 2 CoC relevant to this Plan

CoC No.	Requirement	Document Reference	How Addressed
A1	In addition to meeting the specific performance measures and criteria in this consent, all reasonable and feasible measures must be implemented to prevent, and, if prevention is not reasonable and feasible, minimise any material harm to the environment that may result from the construction and operation of the development.	Table 9 Section 7 Section 8	Implementation of management and mitigation measures in Table 9. Training, monitoring and inspections, auditing, reporting and continuous improvement undertaken in accordance with Sections 7 and 8.
B11	Prior to the commencement of construction, the Applicant must submit a Construction Environmental Management Plan (CEMP) to the Certifier and to the Planning Secretary for approval. The CEMP must include, but not be limited to, the following: (f) Biodiversity Management Sub-Plan	This Plan	Approval and implementation of this Plan.
B17	The Biodiversity Management Sub-Plan must address, but not be limited to, the following: (a) be prepared by a suitably qualified expert; (b) include measures to minimise impacts on flora and fauna on the site, including measures to ensure the protection and appropriate management of all resident protected fauna, in addition to specifying protection measures for native vegetation identified for retention; (c) include measures to ensure biodiversity values not intended to be impacted are protected including mapping of protected areas; (d) detail measures to maximise the retention of locally-endemic native species existing on the site and removal of weeds and non-indigenous vegetation	Section 5 Table 9 Section 6 Section 7	Implementation of vegetation clearing procedure. Implementation of weed management protocol. Best practice biodiversity management measures outlined in Table 9.

3.3. Revised Management and Mitigation Measures

Please refer to Table 3 for a list of the revised management and mitigation measures for the Project.

Table 3 Revised management and mitigation measures relevant to this Plan

Requirement	Document Reference	How Addressed
13. Biodiversity		
Detailed design of the Freight Hub will aim to further reduce environmental impacts on native flora and fauna where possible.	Table 9 Section 7 Section 8	Implementation of management and mitigation measures in Table 9. Project Environmental Impact Statement and Response to Submissions Report. Training, monitoring and inspections, auditing, reporting and continuous improvement undertaken in accordance with Sections 7 and 8.
Areas of ecological significance identified for conservation will be marked and fenced to ensure protection and conservation during construction.	Table 8 Section 6 Section 7 Section 8	Implementation of mitigation measures CBMSP5, CBMSP6, CBMSP8, CBMSP12, CBMSP13, CBMSP14, CBMSP15, CBMSP17, CBMSP26 and CBMSP34. Implementation of vegetation clearing procedure. Training, monitoring and inspections, auditing, reporting and continuous improvement undertaken in accordance with Sections 7 and 8.
Clearing of native vegetation is to be contained within the construction footprint.	Table 8 Section 6	Implementation of mitigation measures CBMSP5 and CBMSP8. Implementation of vegetation clearing procedure.

<p>The Construction Environmental Management Plan and Operational Environmental Management Plan is to include a section on managing native vegetation and include the following details:</p> <ul style="list-style-type: none"> • impact avoidance and mitigation • staff/contractor inductions • clearing procedures and protection zones • weed control • pest management monitoring 	<p>This Plan Table 8 Section 6 Section 7</p>	<p>Approval and implementation of this Plan.</p> <p>Implementation of mitigation measures in accordance with Table 8 and Section 6.</p> <p>Vegetation clearing procedure and weed management protocol undertaken in accordance with Section 6.</p> <p>Training, monitoring and inspections, auditing, reporting and continuous improvement undertaken in accordance with Sections 7 and 8.</p>
<p>Landscaping treatments are to use endemic tree, shrubs and grass species in the sensitive vegetation zones and planting/revegetation will adopt procedures that will not adversely impact on the existing native vegetation.</p>	<p>Section 5 Table 9 Section 6 Section 7</p>	<p>Implementation of vegetation clearing procedure.</p> <p>Implementation of weed management protocol.</p> <p>Best practice biodiversity management measures outlined in Table 9.</p>
<p>Manage, protect and conserve the areas of ecological significance which are to be preserved.</p>	<p>Table 8 Section 6 Section 7 Section 8</p>	<p>Implementation of mitigation measures CBMSP5, CBMSP6, CBMSP8, CBMSP12, CBMSP13, CBMSP14, CBMSP15, CBMSP17, CBMSP26, CBMSP 33 and CBMSP34.</p> <p>Implementation of vegetation clearing procedure.</p> <p>Training, monitoring and inspections, auditing, reporting and continuous improvement undertaken in</p>

		accordance with Sections 7 and 8.
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3.4. Consultation

The CoC do not require the project to undertake consultation with agencies during the development of this Plan. Refer to Section 5 of the CEMP for consultation requirements relating to the CEMP and all other sub-plans. The Plan will be made publicly available on the Project website.

4. Existing Environment

The following sections summarise existing terrestrial and aquatic flora and fauna within and adjacent to the project including species, communities and habitats based on information contained in the Biodiversity Development Assessment Report prepared by EcoLogical dated 24 April 2019 and Biodiversity Development Assessment Report prepared by EcoLogical dated 13 September 2019 prepared for the site.

For the purposes of the CBMSP, the 'site footprint' is defined as the area bounded in red and identified as the site footprint in Figure 1.

4.1. Endangered ecological communities

The project footprint has largely been cleared of native vegetation and comprises urban exotic species, although approximately 1.51 hectares of remnant and regrowth vegetation is present around drainage lines and watercourses and is approved to be removed as part of the project.

Little Creek is located approximately 30 metres north of the project footprint within the site precinct, and South Creek is located approximately 200 metres west of the project footprint. Remnant and regrowth native vegetation is concentrated along the banks of Little Creek and a drainage basin/ dam which forms part of the northern section of the project footprint.

Native vegetation within the project footprint has been categorised into three Plant Community Types (PCTs) which form part of endangered ecological communities (EEC). The PCTs are described in Table 4 and shown in Figure 1.

In accordance with CoC B27, the required ecosystem credits for the removal of the PCTs within the project footprint will be retired (or satisfied by payment to the Biodiversity Conservation Fund) prior to vegetation clearing.

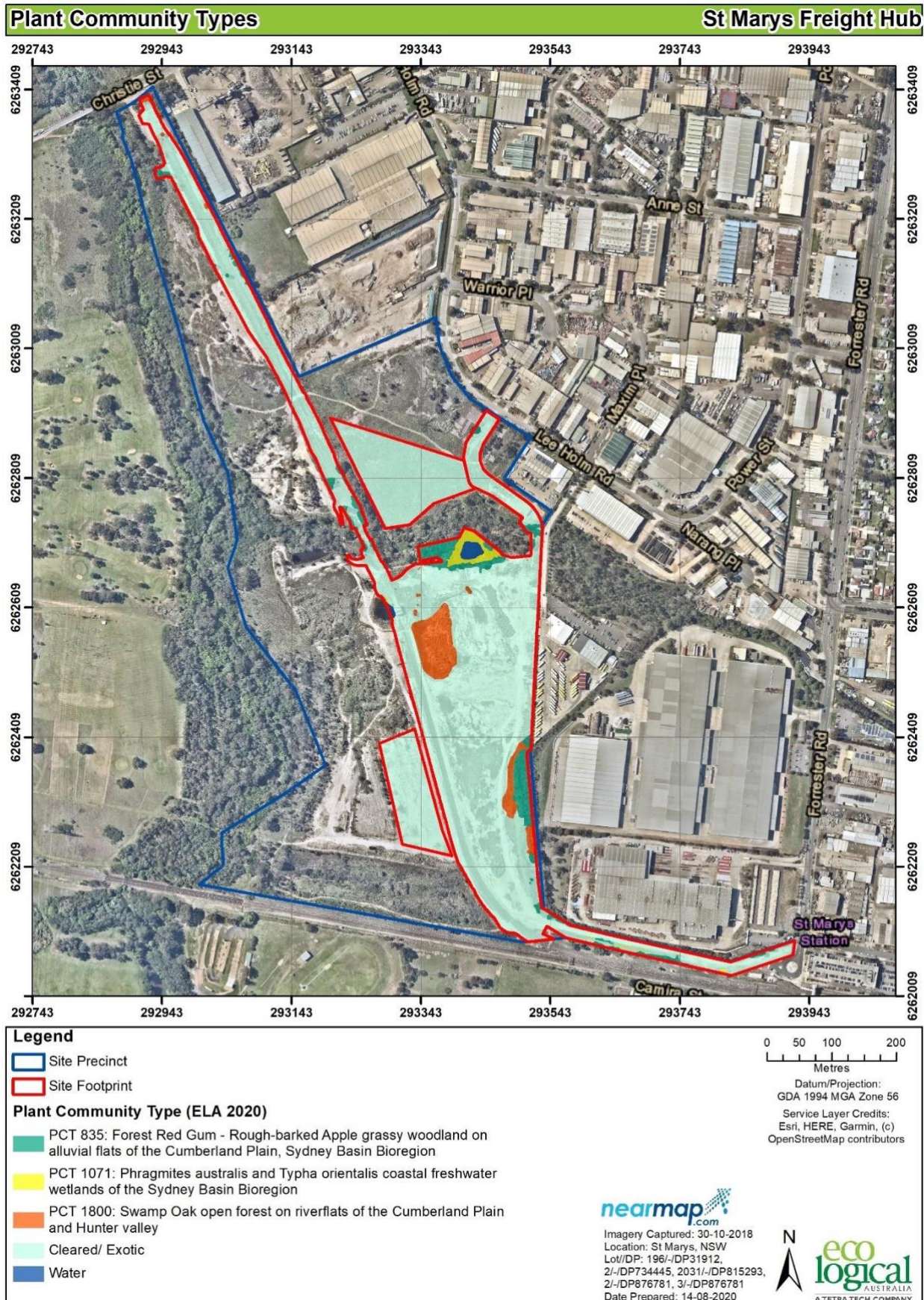
Table 4 Plant Community Types and EECs within the project footprint

PCT	Area (ha)	Location	Endangered ecological communities	BC Act Listing Status	EPBC Act Listing status
PCT 835- <i>Forest Red Gum-Rough-barked Apple grassy woodland on alluvial flats of the Cumberland Plain, Sydney Basin Bioregion,</i>	0.67	Along drainage lines and riparian corridors within the project footprint	River-Flat Eucalypt Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	EEC	Not listed
PCT 1800- <i>Swamp oak open forest on riverflats of the Cumberland Plain and Hunter Valley</i>	0.77	Located in central areas of the project footprint which have been previously disturbed	River-Flat Eucalypt Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and	EEC	Not listed

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			South East Corner Bioregions		
PCT 1071- <i>Phragmites australis</i> and <i>Typha orientalis</i> coastal freshwater wetlands of the Sydney Basin Bioregion	0.20	Adjacent to drainage basin/ dam	Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	EEC	Not listed

Figure 1 Mapped PCTs within the site




Source: BDAR prepared by EcoLogical (August, 2020)

4.2. Threatened or otherwise significant flora species

One threatened flora species, Juniper-leaved Grevillea (*Grevillea juniperina* subsp. *juniperina*) has also been recorded within the project footprint and is described in Table 5. Impacts to the Juniper-leaved Grevillea as a result of vegetation clearing within the project footprint require species credit offsets in accordance with CoC B30. There are also recorded areas of Juniper-leaved Grevillea within the riparian corridor to the north of the project footprint (refer to Annexure A for recorded locations).

Table 5 Threatened flora species within and adjacent to the project footprint

Common name	Scientific name	EPBC Act	BC Act	Likelihood of occurrence	Image
Juniper-leaved Grevillea	<i>Grevillea juniperina</i> subsp. <i>juniperina</i>	Not listed	Vulnerable	Known (species recorded within and adjacent to the project footprint during targeted surveys)	 <p>(Source: NSW OEH)</p>

4.3. Threatened or otherwise significant fauna species

Three threatened microchiropteran bats (microbats) have been recorded within the project footprint including the Southern myotis (*Myotis macropus*), Eastern false pipstrelle (*Falsistrellus tasmaniensis*) and Eastern Freetail-bat (*Micronomus norfolkensis*) (refer to Table 6). There is also potential for the Eastern Bent-winged bat (*Miniopterus schreibersii oceanensis*) to be present within the project footprint, although species call recordings could not be confidently attributed to the species due to overlapping calls with other species. The species were identified from Anabat surveys undertaken by EcoLogical (2019) between 11-16 February 2019.

The Biodiversity Development Assessment Report (BDAR) (EcoLogical, September 2019) identifies that culverts within the project footprint may provide potential roosting habitat for microbats. Culverts are located along the north-eastern and north-western boundaries of the project footprint adjacent to the drainage basin/dam and the riparian corridor along Little Creek. The Anabat survey locations are shown in Annexure A.

The Eastern Bentwing-bat, Yellow-bellied Sheath-tail-bat and Little Bentwing-bat are known to utilise culverts and similar manmade structures temporarily during winter months as roost sites. The Southern Myotis is also known to utilise culverts for breeding in the Sydney region and was recorded during the Anabat surveys undertaken in February 2019 foraging in the riparian corridor around the drainage basin/dam in the northern section of the site.





Although no microbats were observed in culverts at the time of survey, it is possible they are temporarily utilised as a roost throughout the year for different microbat species. It is noted that there are also two similar culverts adjacent to the project footprint which provide higher quality roosting habitat.

A road and culvert will be constructed adjacent to an existing culvert along the north-eastern boundary of the site. Although the existing culvert will be retained, the BDAR (September 2019) identified that these works

may have indirect impact potential roosting habitat and disrupt potential breeding for the Southern Myotis and winter roosting for species such as the Eastern Bent-winged bat and Little Bentwing-bat that may be present within the existing culvert.

No other threatened fauna species have been identified within the project footprint.

Table 6 Threatened microchipteran bat species within the project footprint






Common name	Scientific name	EPBC Act	BC Act	Likelihood of occurrence	Image
Eastern False Pipistrelle	<i>Falsistrellus tasmaniensis</i>	Not listed	Vulnerable	Known (call recorded within project footprint)	 (OEH, 2020)
Eastern Coastal Free-tailed Bat	<i>Micronomus norfolkensis</i>	Not listed	Vulnerable	Known (call recorded within project footprint)	 (OEH, 2020)
Eastern Bent-winged Bat *	<i>Miniopterus schreibersii oceanensis</i>	Not listed	Vulnerable	High (possible call recorded within project footprint)	 (OEH, 2020)
Southern Myotis	<i>Myotis macropus</i>	Not listed	Vulnerable	Known (call recorded within project footprint)	 (OEH, 2020)







* Potential for species to be present (unconfirmed)



4.4. Weeds

Several weeds have been identified within the project footprint. Under the *Biosecurity Act 2015*, land managers and users of land have a responsibility for managing the biosecurity risk of weeds. Priority weeds listed on the NSW WeedWise database and the applicable biosecurity duty under the *Biosecurity Act 2015* including four weeds of national significance that have been recorded within the project footprint are identified in Table 6.

Table 7 Priority weeds recorded within site footprint

Common name	Scientific name	Biosecurity Act Duty	Weed of national significance	Image
African lovegrass	<i>Eragrostis curvula</i>	General biosecurity duty*	No	
Lantana	<i>Lantana camara</i>	Prohibition on dealings**	Yes	
Moth Vine	<i>Araujia sericifera</i>	General biosecurity duty*	No	
Crofton weed	<i>Ageratina adenophora</i>	General biosecurity duty*	No	
Bridal creeper	<i>Asparagus asparagoides</i>	Prohibition on dealings**	Yes	

Common name	Scientific name	Biosecurity Act Duty	Weed of national significance	Image
Green cestrum	<i>Cestrum parqui</i>	General biosecurity duty* Prohibition on sale/movement in NSW	No	
Broad-leaf Privet	<i>Ligustrum sinense</i>	General biosecurity duty*	No	
Narrow-leaf Privet	<i>Ligustrum sinense</i>	General biosecurity duty*	No	
Mickey Mouse Plant	<i>Ochna serrulata</i>	General biosecurity duty*	No	
African Olive	<i>Olea europaea subsp. cuspidata</i>	General biosecurity duty* Prohibition on sale/movement in NSW	No	
Black locust	<i>Robinia pseudoacacia</i>	General biosecurity duty*	No	

Common name	Scientific name	Biosecurity Act Duty	Weed of national significance	Image
Blackberry	<i>Rubus fruticosus sp. agg</i>	Prohibition on dealings**	Yes	
Fireweed	<i>Senecio madagascariensis</i>	Prohibition on dealings**	Yes	

* **General biosecurity duty:** All plants are regulated with a general biosecurity duty to prevent, eliminate or minimise any biosecurity risk they may pose. Anyone who deals with any plant, or knows (or ought to know) of any biosecurity risk has a duty to ensure the risk is prevented, eliminated or minimised so far as is reasonably practicable. Source: NSW Weed Control Handbook (DPI, 2018)

** **Prohibition on dealings:** These plants must not be sold or imported into NSW. Source: NSW Weed Control Handbook (DPI, 2018)

5. Environmental Aspects and Impacts

Key aspects of the Project that could result in impacts to flora and fauna beyond those approved under the CoCs, if such impacts are unmanaged and unmitigated, are summarised in Table 8. In the absence of appropriate mitigation measures, there is potential for additional impacts to flora and fauna beyond those captured under the Development Consent.

Impacts approved under the Development Consent include the removal of vegetation, species and habitat that will be offset via ecosystem or species credits in accordance with the requirements of CoC B27-B32.

Table 8 Construction activities, potential impacts and mitigation measures

Construction activity	Potential impact on biodiversity	Management measures/mitigation measures required
Clearing of vegetation within project site	Inadvertent removal of native vegetation outside of the site footprint, possibility of removing threatened species, fines incurred.	<ul style="list-style-type: none"> Exclusion fencing to be established prior to vegetation clearing to delineate vegetation clearing boundaries and any areas of native vegetation to be retained within close proximity to construction works Awareness of exclusion areas to be communicated in site induction Vegetation clearing procedure including pre-clearing surveys
	Trampling of threatened flora species including <i>Grevillea juniperina</i> subsp <i>juniperina</i> (Juniper-leaved Grevillea) in areas of retained vegetation (within the site footprint or outside of the site footprint) from construction plant, equipment, vehicles and staff.	<ul style="list-style-type: none"> Vegetation clearing procedure Exclusion fencing around vegetated areas to be retained/protected with signage including an image of Juniper-leaved Grevillea around locations with known presence of this species Awareness of species and exclusion area communicated in site induction
	Fauna mortality from being struck by machinery, vehicles, plant or accidental entrapment	<ul style="list-style-type: none"> Vegetation clearing procedure Fauna handling procedure
	Removal of dead wood and trees containing arboreal and ground hollows not identified in EIS.	<ul style="list-style-type: none"> Pre-clearing surveys would identify these features and determine whether salvage and relocation to adjacent vegetated areas is possible
	Sedimentation and contaminated and/or nutrient rich run-off from exposed soils to waterways.	<ul style="list-style-type: none"> Erosion and sediment control measures
	Spread of weed seed and pathogens from machinery and equipment to and from the site.	<ul style="list-style-type: none"> Weed management protocol
Construction activities	Indirect impacts and disturbance to native fauna species from noise, dust	<ul style="list-style-type: none"> Directional lighting to be used when required Air quality management measures

	or light spill generated from construction activities.	<ul style="list-style-type: none"> Noise and vibration management measures
	Potential for spread of rubbish to vegetation outside site footprint.	<ul style="list-style-type: none"> Waste management measures
	Increase in pest species populations from availability of food and rubbish left at construction sites.	<ul style="list-style-type: none"> Waste management measures
	Increased risk of fire and loss of flora and fauna species from fire sparks from machinery and electrical works	<ul style="list-style-type: none"> Awareness of hot work risks and total fire ban procedures to be communicated in site induction
	Leakage/spills of hydrocarbons, fuels, oils and other chemicals from machinery and equipment conveyed by stormwater runoff into waterways	<ul style="list-style-type: none"> Erosion and sediment control measures
New road/culvert construction along north-eastern section of the site footprint	Disturbance to specialist breeding and foraging habitat and indirect impacts to potential breeding habitat of Southern Myotis and roosting habitat of several microchiropteran bats within existing culverts adjacent to the new road and new culverts.	<ul style="list-style-type: none"> Microbat survey prior to works adjacent to culverts Microbat Management Plan (as required)

6. Environmental Control Measures

Table 9 Environmental Control Measures

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference	Evidence
General						
CBMSP1	Training will be provided to all Project personnel, including relevant sub-contractors on flora and fauna requirements from this plan through inductions, toolboxes and targeted training. Training will occur as described in Section 7.2 of this Plan.	Training materials	Prior to construction Construction	Environment Manager / Supervisor/ Project Manager	Best practice	Induction records
CBMSP2	Training will also include bushfire hazards and risks. Although bushfire risk is low, there is a risk of ignition of adjoining vegetation during hot works.	Training materials	Prior to construction Construction	Environment Manager / Supervisor/ Project Manager	Best practice	Induction records
CBMSP3	On days declared "total fire ban", no hot works will be undertaken outside. Other than for emergency works, there will be no high-risk activities or plant and equipment to be used for: <ul style="list-style-type: none"> Grass or vegetation reduction works (mowing/slashing) Aborist works (chainsaw) Vehicle operations in long grass 	Training materials	Prior to construction Construction	Environment Manager / Supervisor/ Project Manager All site personnel	Best practice	Induction records

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ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference	Evidence
CBMSP4	An appropriately qualified and experienced project ecologist will be appointed prior to the commencement of construction	This Plan	Prior to construction	Environment Manager / Project Manager	Best practice	Letter of engagement
CBMSP5	The extent of the construction footprint will be clearly marked and the movement of vehicles and plant outside of this area will be avoided. Any trees, native vegetation and/or identified habitat features to be retained onsite will be protected through the use of clearly marked exclusion zones. Clearing of native vegetation is to be contained within the construction footprint	Detailed design	Prior to construction Construction	Environment Manager / Project Manager Design Manager	CoC B17	Pre-clearing survey report Post-clearing survey report Design reports ECM
CBMSP6	All exclusion zone fencing shall include 'no-go zone' signage.	This Plan Weekly Site Inspection Template Table 17 of CEMP form F627	Prior to construction Construction	Environment Manager / Project Manager	Best practice	Photographs Weekly site inspections ECM
CBMSP7	In the event that threatened species or endangered ecological communities are unexpectedly identified during construction, works will stop in the immediate vicinity of the find and the Unexpected Threatened Species	Training materials This Plan	Construction	All personnel	Best practice	ECM

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference	Evidence
	Procedure in Section 6.4 will be followed.					
Pre-clearing (refer to Vegetation Clearing Procedure in Section 6.1).						
CBMSP8	<p>The project ecologist is to undertake a pre-clearing survey at least 10 days prior to vegetation clearing to:</p> <ul style="list-style-type: none"> Confirm the vegetation and habitat to be cleared as part of the Project is limited to the approved clearing limits. Identify (in consultation with the Site Manager/Project Manager through a site walk) areas that must be cleared and any areas that can be retained based on detailed design Identify environmentally sensitive areas (such as areas of vegetation to be retained) which are to be delineated and demarcated Identify the presence and location of any habitat features (including tree hollows and/or potential bat roosts) 	<p>This Plan</p> <p>Vegetation Clearing Procedure</p>	Prior to vegetation clearing	<p>Environment Manager / Project Manager</p> <p>Project Ecologist</p>	CoC B17	Pre-clearing survey report

CONSTRUCTION BIODIVERSITY MANAGEMENT SUB-PLAN

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference	Evidence
	<ul style="list-style-type: none"> Identify any previously unidentified threatened flora and fauna species. Identify any native wildlife that can be captured and relocated and identify a suitable area for relocation (if possible) Identify any dead wood and trees containing arboreal and ground hollows which can be relocated to areas of retained vegetation The species and location of any weeds 					
CBMSP9	<p>A pre-clearing survey report must be submitted within 10 days of completion of the pre-clearing survey. The report must include (at a minimum):</p> <ul style="list-style-type: none"> Location, number and species of trees/other vegetation marked for removal Photographs and location of any marked habitat trees Records of all fauna encounters Location and species of any weeds 	<p>This Plan</p> <p>Vegetation Clearing Procedure</p>	Prior to vegetation clearing	<p>Environment Manager / Project Manager</p> <p>Project Ecologist</p>	CoC B17	Pre-clearing survey report



CONSTRUCTION BIODIVERSITY MANAGEMENT SUB-PLAN

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference	Evidence
CBMSP10	<p>Based on the results of the pre-clearing survey, trees will be marked (using spray paint on their trunks in a visible location):</p> <ul style="list-style-type: none"> • 'H'- Habitat tree. If hollow-bearing or habitat trees are identified as requiring removal the two-staged clearing process is to be implemented and the clearing supervised by an ecologist. • 'G'- Ecologist has assessed the tree and it is ready for removal. • 'R'- Ecologist has assessed the tree and it requires pre-inspection immediately prior to, and during removal. 	<p>This Plan</p> <p>Vegetation Clearing Procedure</p>	Prior to vegetation clearing	<p>Environment Manager / Project Manager</p> <p>Project Ecologist</p>	CoC B17 RMMM	<p>Pre-clearing survey report</p> <p>Photographs</p>
CBMSP11	If hollow-bearing or habitat trees are identified as requiring removal the two-staged clearing process is to be implemented in accordance with the Vegetation Clearing Procedure (refer to Section 6.1) and the clearing is to be supervised by an ecologist	<p>This Plan</p> <p>Vegetation Clearing Procedure</p>	Prior to vegetation clearing	<p>Environment Manager / Project Manager</p> <p>Project Ecologist</p>	CoC B17 RMMM	<p>Pre-clearing survey report</p> <p>Post-clearing survey report</p>
CBMSP12	At least 7 days prior to clearing or removal of any vegetation, exclusion fencing (such as para-webbing or	This Plan	Prior to vegetation clearing	Environment Manager / Project Manager	CoC B17 RMMM	Pre-clearing survey report

CONSTRUCTION BIODIVERSITY MANAGEMENT SUB-PLAN

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference	Evidence
	bunting) will be erected to delineate the limits of the vegetation clearing. 'No-go zone' signage shall be placed on the fencing to clearly identify the exclusion zone. The fencing will include periodic reflective strips or other reflective elements along its length.	Vegetation Clearing Procedure				Logbook and photographs ECM
CBMSP13	Exclusion fencing around areas of <i>Grevillea juniperina</i> subsp. <i>juniperina</i> (Juniper-leaved grevillea) to be retained and protected shall include signage which details the species name and an image of the species to be avoided.	This Plan Vegetation Clearing Procedure SWI 150 Weekly Site Inspection Template Table 17 of CEMP form F627	Prior to vegetation clearing	Environment Manager / Project Manager	CoC B17 RMMM	Weekly site inspections Logbook and photographs ECM
CBMSP14	Any tree hollows and woody debris to be retained shall be clearly marked so that salvage and relocation to retained vegetated areas can occur.	This Plan Vegetation Clearing Procedure	Prior to vegetation clearing	Environment Manager / Project Manager	Best practice	Post-clearing survey report
CBMSP15	All exclusion fencing established around environmentally significant areas shall be maintained throughout construction.	This Plan SWI 150	Construction	Environment Manager / Project Manager	CoC B17 RMMM	Weekly site inspections

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference	Evidence
		Weekly Site Inspection Template Table 17 of CEMP form F627				Logbook and photographs ECM
Vegetation clearing (refer to Vegetation Clearing Procedure in Section 6.1).						
CBMSP16	Clearing of vegetation will be timed to avoid periods when rain is forecast in accordance with Chapter 4.4.2 of 'the Blue Book'.	This Plan	Prior to vegetation clearing	Site Supervisor/Foreman	Best practice	Post-clearing survey report Logbook and photographs
CBMSP17	Trees to be retained shall be protected during construction in accordance with AS4970-2009 Protection of trees on development sites which requires the establishment of Tree Protection Zones (TPZs). Fencing around TPZs shall be established in accordance with AS4687 and include signage clearly identifying the TPZ. TPZs will be established prior to the commencement of construction and maintained until completion of construction.	This Plan SWI 150 Weekly Site Inspection Template Table 17 of CEMP form F627	Prior to construction Construction	Environment Manager / Project Manager	Best practice CoC B17	Weekly site inspections Pre-clearing survey report
CBMSP18	Vegetation clearing will follow the two step process outlined in the Vegetation	This Plan	Vegetation clearing	Project Ecologist	Good practice CoC B17	Post-clearing survey report

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference	Evidence
	<p>Clearing Procedure (refer to Section 6.1) summarised as:</p> <ul style="list-style-type: none"> Remove marked non-habitat vegetation () a minimum of 24 hours prior to habitat tree removal to allow fauna to vacate on their own accord. An ecologist shall be present during removal of all marked habitat trees ( and H). Immediately prior to felling, habitat trees will be inspected by the ecologist and any fauna relocated to adjacent habitat. Immediately prior to felling, habitat trees will be knocked with an excavator bucket (or other similar machinery) to encourage fauna to evacuate the tree under the supervision of an ecologist. Remove habitat trees carefully using low impact methods to avoid injury to fauna. Felled trees must be left on the ground for a short period to allow any trapped fauna to escape. 	Vegetation Clearing Procedure			RMMM	

CONSTRUCTION BIODIVERSITY MANAGEMENT SUB-PLAN

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference	Evidence
	<ul style="list-style-type: none"> Felled hollow-bearing trees must be inspected by an ecologist immediately to check for injured or immature fauna. 					
CBMSP19	Only an ecologist or licenced fauna handler may touch or move fauna. If fauna is present, avoid it and allow it to move through the worksite. If fauna does not relocate or is injured, contact the ecologist, fauna handler, WIRES or local veterinary surgery as soon as practical to assist in relocation.	<p>This Plan</p> <p>Vegetation Clearing Procedure</p>	Vegetation clearing	Project Ecologist	Good practice CoC B17 RMMM	Post-clearing survey report
CBMSP20	Records are to be kept of all fauna rescue events including locations (including GPS coordinates) to where fauna has been relocated.	<p>This Plan</p> <p>Vegetation Clearing Procedure</p>	Vegetation clearing	Project Ecologist	Good practice CoC B17 RMMM	Post-clearing survey report
CBMSP21	<p>Following the completion of vegetation clearing, the project ecologist is to undertake a post-clearing survey and prepare a post-clearing report which includes:</p> <ul style="list-style-type: none"> Photographs of the cleared areas Confirmation of the number of trees and species cleared 	<p>This Plan</p> <p>Vegetation Clearing Procedure</p>	Construction	Project Ecologist	Best practice	Post-clearing survey report

CONSTRUCTION BIODIVERSITY MANAGEMENT SUB-PLAN

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference	Evidence
	<ul style="list-style-type: none"> Records of any fauna rescue events including relocation data 					
CBMSP22	Surfaces disturbed as a result of vegetation clearing will be stabilised as soon as possible following the disturbance to prevent erosion and minimise sedimentation to adjacent waterways.	<p>This Plan</p> <p>Construction Soil and Water Management Plan (CSWMP)</p> <p>Weekly Site Inspection Template Table 17 of CEMP form F627</p>	Construction	Site Supervisor/Foreman	Best practice	Weekly site inspections
Threatened species						
CBMSP23	<p>An experienced bat ecologist is to undertake targeted surveys for microchiropteran bats at any existing culverts that will be impacted, including from construction works directly adjacent to culverts, at least two weeks prior to these works occurring.</p> <p>This survey must include a combination of echolocation call recording and dawn/dusk surveys to confirm if the culverts are used for roosting and be</p>	<p>This Plan</p> <p>Microbat survey methodology</p>	Prior to construction	Project Ecologist/Specialist	CoC B17	<p>Microbat survey report</p> <p>Microbat Management Plan (as required)</p>

CONSTRUCTION BIODIVERSITY MANAGEMENT SUB-PLAN

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference	Evidence
	undertaken during favourable weather conditions.					
CBMSP24	If microchiropteran bats are recorded roosting within culverts during the survey, a Microbat Management Plan which details measures to minimise impacts to microbats during construction will be prepared and implemented prior to any works occurring which may directly or indirectly impact roosting habitat in culverts.	This Plan Microbat survey methodology Microbat survey report	Prior to construction	Project Ecologist/ Environment Manager	CoC B17	Microbat survey report Microbat Management Plan (as required)
CBMSP25	If microchiropteran bats are recorded roosting within culverts, impacts to culverts should be avoided as far as practical during the breeding season of Southern Myotis (November-March).	This Plan	Construction	Project Ecologist/ Specialist	CoC B17	Detailed design
CBMSP26	Personnel will stay out of the exclusion zones at all time unless to carry out works supervised by an ecologist, or works where the Project Ecologist has advised in writing that supervision is not required for the works.	This Plan SWI 150	Construction	All personnel	Best practice	Written advice from Project Ecologist
CBMSP27	Vehicles will not be parked and stockpiles will not be located within tree drip lines.	This Plan SWI 150	Construction	All personnel	Best practice	

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference	Evidence
Weed management						
CBMSP28	The presence and location of any priority or environmental weeds is to be confirmed by an ecologist prior to vegetation clearing in accordance with the Vegetation Clearing Procedure (refer to Section 6.1).	This Plan	Prior to vegetation clearing	Project Ecologist	CoC B17 RMMM	Pre-clearing survey report
CBMSP29	Targeted weed management and control methods will be implemented as recommended by the project ecologist.	Vegetation Clearing Procedure Weed Management Protocol Weekly Site Inspection Template Table 17 of CEMP form F627	Construction	All personnel	Best practice	Weekly site inspections
CBMSP30	Weeds will be managed in accordance with the Weed Management Protocol in Section 6.3.	This Plan Weed Management Protocol	Construction	Site Supervisor/Foreman	CoC B17 RMMM	Weekly site inspections

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ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference	Evidence
		Weekly Site Inspection Template Table 17 of CEMP form F627				
CBMSP31	Weed control measures will be inspected during weekly site inspections and additional controls implemented as required.	<p>This Plan</p> <p>Weed Management Protocol</p> <p>Weekly Site Inspection Template Table 17 of CEMP form F627</p>	Construction	Environment Manager/ Project Manager	Best practice	Weekly site inspections
CBMSP32	Clean machinery, vehicles and footwear used in weed control before moving to a new location within the site and exiting the site.	<p>This Plan</p> <p>Weed Management Protocol</p> <p>Weekly Site Inspection Template Table 17 of CEMP form F627</p>	Construction	All personnel	Best practice	Weekly site inspections
CBMSP33	Plant and equipment brought on to site must be cleaned and free of deleterious	This Plan	Construction	All personnel	Best practice	Weekly site inspections

CONSTRUCTION BIODIVERSITY MANAGEMENT SUB-PLAN

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference	Evidence
	plant material, mud and other material that may harbour weed seeds.	Weed Management Protocol Weekly Site Inspection Template Table 17 of CEMP form F627				
Revegetation						
CBMSP33	Locally indigenous species will be included in the post construction fauna habitat and vegetation works to promote fauna habitat where required in the landscaping specification and plans.	Landscape Plan Vegetation Management Plan	Construction	Environment Manager Project Landscape Architect	CoC B17	Landscape Plan Vegetation Management Plan
CBMSP34	Where vegetation within the development footprint is to be retained, vegetation management measures will be implemented, including weed removal, native plantings and relocation of specific habitat resources such as bush rocks, hollow logs, hollow tree trunks and branches where required in the landscaping specifications and plans.	Landscape Plan Vegetation Management Plan	Construction	Environment Manager Project Landscape Architect	CoC B17	Landscape Plan Vegetation Management Plan

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ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference	Evidence
CBMSP35	Landscaping treatments are to use endemic tree, shrubs and grass species in the sensitive vegetation zones and planting/revegetation will adopt procedures that will not adversely impact on the exiting native vegetation	Landscape Plan	Construction	Environment Manager	RMMM 13.5	Landscape Plan

6.1. Vegetation clearing procedure

Table 10 outlines vegetation procedure which will be implemented prior to any vegetation clearing within the project footprint. Progressive site stabilisation will be implemented when any vegetation clearing occurs in accordance with the requirements of Section 1.3 of the CSWMSP and the Primary Erosion and Sediment Control Subplan (PESCP)

Table 10 Vegetation clearing procedure

Timing	Action
STEP ONE	
At least 10 days prior to vegetation clearing	<p>At least 10 days prior to any vegetation clearing, a project ecologist will be engaged and undertake a pre-clearing survey to:</p> <ul style="list-style-type: none"> • Confirm the vegetation and habitat to be cleared as part of the Project is limited to the approved clearing limits. • Identify (in consultation with the Site Manager/Project Manager through a site walk) areas that must be cleared and any areas that can be retained based on detailed design • Identify environmentally sensitive areas (such as areas of vegetation to be retained) which are to be delineated and demarcated • Identify the presence and location of any habitat features (including tree hollows and/or potential bat roosts) • Identify any previously unidentified threatened flora and fauna species. • Identify any native wildlife that can be captured and relocated and identify a suitable area for relocation (if possible) • Identify any dead wood and trees containing arboreal and ground hollows which can be relocated to areas of retained vegetation • The species and location of any weeds <p>Following the pre-clearing survey, the project ecologist will prepare a pre-clearing report which details:</p> <ul style="list-style-type: none"> • Location, number and species of trees/other vegetation marked for removal • Photographs and location of any marked habitat trees • Records of all fauna encounters • Location and species of any weeds <p>Based on the results of the pre-clearing survey, trees are to be marked (using spray paint on their trunks in a visible location):</p> <ul style="list-style-type: none"> • 'H'- Habitat tree. If hollow-bearing or habitat trees are identified as requiring removal the two-staged clearing process outlined below is to be implemented and the clearing supervised by an ecologist. • 'O'- Ecologist has assessed the tree and it is ready for removal.

	<ul style="list-style-type: none"> • ‘○’- Ecologist has assessed the tree and it requires pre-inspection immediately prior to, and during removal. Two-staged clearing process is to be followed. <p>Any weed affected areas are to be successfully treated prior to the commencement of disturbance.</p>
STEP TWO	
At least 7 days prior to vegetation clearing	<ul style="list-style-type: none"> • At least 7 days prior to vegetation clearing, exclusion zones will be established around vegetation and trees which are to be retained and to delineate the limits of clearing. Exclusion fencing must: <ul style="list-style-type: none"> • Be para-webbing or bunting or similar fencing • Have ‘no-go zone’ signage in prominent, visible locations to clearly identify the exclusion zone • Have periodic reflective strips/other reflective elements along it’s length • Identify and mark any tree hollows and woody debris to be retained <p>ERSD controls will be established in accordance with the sites Primary Erosion and Sediment Control Plan (PESCP)</p>
STEP THREE	
24 hrs prior to vegetation clearing	<ul style="list-style-type: none"> • Confirm all exclusion zones are clearly delineated and any fencing/signage is in visible and in good condition • Suitably licensed wildlife carer and/or ecologist to undertake relocation of known fauna to pre-determined habitat (as required)
STEP FOUR	
During vegetation clearing	<p>Vegetation clearing and removal cannot commence until Steps 1-3 have been completed.</p> <p>Following completion of Steps 1-3, a two-stage vegetation clearing process will be implemented.</p> <p>Stage 1- Non-habitat tree removal</p> <ul style="list-style-type: none"> • Non-habitat vegetation removal must be undertaken a minimum of 24 hours prior to habitat tree removal to allow fauna to vacate the habitat on their own accord. <p>Stage 2- Habitat tree removal</p> <ul style="list-style-type: none"> • Immediately prior to felling, the habitat tree is to be knocked with an excavator bucket (or other similar machinery) to encourage fauna to evacuate the tree under the supervision of an ecologist. • The ecologist shall capture and/or remove fauna that has the potential to be disturbed, injured or killed to predetermined habitat identified for fauna release. • The trees may then be felled carefully by lowering to the ground with minimal impact. Methods and equipment for felling trees should be discussed between

	<p>the ecologist and the operator to ensure a balance between operator safety and animal welfare.</p> <ul style="list-style-type: none"> Felled trees must be left on the ground for a short period to allow any trapped fauna to escape. Felled hollow-bearing trees must be inspected by an ecologist immediately to check for injured or immature fauna. If any animal is injured, contact the relevant wildlife rescue agency (e.g. WIRES) or local vet surgery as soon as possible. Records are to be kept of all fauna rescue events including locations (including GPS coordinates) to where fauna has been relocated.
STEP FIVE	
Post vegetation clearing	<p>Following the completion of vegetation clearing, the project ecologist is to undertake a post-clearing survey and prepare a post-clearing report which includes:</p> <ul style="list-style-type: none"> Photographs of the cleared areas Confirmation of the number of trees and species cleared Records of any fauna rescue events including relocation data (GPS coordinates of relocation area). <p>Topsoil should be stripped and stockpiled for future site rehabilitation consistent with the PESCP. Any weed contaminated topsoil is to be appropriately stockpiled and be successfully treated or be lawfully disposed offsite in accordance with the CWMSP</p>

6.2. Microbat survey methodology

At least two weeks prior to any construction commencing that would impact any culverts within the site footprint, including works directly adjacent to culverts, an experienced bat ecologist shall undertake surveys to determine the presence of any resident microbats. At a minimum, the survey/s shall identify:

- Microbat species present
- Locations of roosting microbats
- Total number of individuals and groups per occupied roost site
- Description of occupied roost sites

Surveys for the presence of microbat roosting must be undertaken to cover to period of roosting (where possible) and include diurnal inspections of the nominated sites to assess the potential for culverts to support roosting bats. Roosting behaviour for threatened microbat species identified within the site footprint is detailed in Table 11. The surveys shall also identify any habitat features that may require further targeted inspection, including any evidence of microbats and/or microbat use. The surveys will include a combination of echolocation call recording and dawn/dusk surveys to confirm if the culverts are used for roosting. Surveys will be carried out during favourable weather conditions. A report shall be prepared to determine the results of the surveys.

If roosting microbats are determined to be present, a Microbat Management Plan shall be prepared in consultation with the project ecologist. The Microbat Management Plan shall identified measures to minimise impacts to resident microbats during construction and will be prepared and implemented prior to any direct or indirect impacts to culverts where roosting microbats are present.

Table 11 Threatened microbat species roosting behaviour

Common name	Scientific name	Roosting behaviour
Eastern False Pipistrelle	<i>Falsistrellus tasmaniensis</i>	Primarily tree roosting species that prefers wet sclerophyll and coastal mallee forests (Churchill, 2008). Mating occurs in late spring- early summer and hibernates in roosts in winter months (OEH, 2017).
Eastern Coastal Free-tailed Bat	<i>Micronomus norfolkensis</i>	Primarily tree roosting species that is also known to roost in buildings (Churchill, 2008).
Eastern Bent-winged Bat *	<i>Miniopterus schreibersii oceanensis</i>	Breeding typically occurs over summer month in a small number of caves in NSW. Bats disperse to non-breeding winter and hibernation roosts between March and August (Churchill, 2008). Winter roosts are found in a range of subterranean structures such as old railway tunnels, culverts, bridges, stormwater drains and caves.
Southern Myotis	<i>Myotis macropus</i>	Breeding season from October to March. Roosts are found in hollow bearing trees (generally within 200 m of permanent water) and subterranean structures such as old railway tunnels, culverts, bridges, stormwater drains and caves (Churchill, 2008; Campbell, 2014).

* Potential for species to be present (unconfirmed)

Source: BDAR September, 2019 and NSW OEH

6.3. Weed management protocol

This procedure provides detail for the management of priority weeds and environmental weeds within the site footprint. Priority weeds are weeds identified under the *Biosecurity Act 2015*, whilst environmental weeds are generally introduced species that threaten the integrity of natural habitats. Under the *Biosecurity Act 2015*, everyone has a general biosecurity duty to prevent, eliminate or minimise any biosecurity risks associated with weeds regulated under the Act.

It is noted that several weeds have been identified as occurring within the site footprint, however the presence and location of any priority and environmental weeds is to be confirmed by an ecologist prior to vegetation clearing in accordance with the Vegetation Clearing Procedure (refer to Section 6.3).

To control weed infestations during construction, the following will be implemented:

Weed assessment

- Weeds requiring removal and/or management within the site footprint will be identified during pre-clearing surveys (refer to Section 6.3) and/or during regular site inspections.
- Weed areas specified for targeted management and/or removal will be flagged.

Weed management

- Any required targeted weed management and control methods will be determined in consultation with the project ecologist. Targeted weed management may involve hand removal of weeds or application of pesticide, herbicide application and/or mechanical removal and application of pesticides. Weed material must not be mulched or retained onsite
- Equipment used for treating weed infestation(s) will be cleaned prior to moving to a new area within the site footprint to minimise potential for transfer of weed seed
- Soil stripped and stockpiled from areas containing known weed infestations are to be stored on cleared land away from native vegetation. Stockpiles should be banded and covered to minimise potential of weed seed washing away.
- Weed contaminated spoil or other weed material must be disposed of at a waste facility licensed to accept the waste.
- Securely cover loads of weed-contaminated material to prevent weed plant material or seeds falling and blowing off vehicles between the construction site and the disposal location.
- Plant and equipment brought on to site must be cleaned and free of deleterious plant material, mud and other material that may harbour weed seeds.
- Stabilise or rehabilitate affected areas once weed management is complete.

Pesticide application

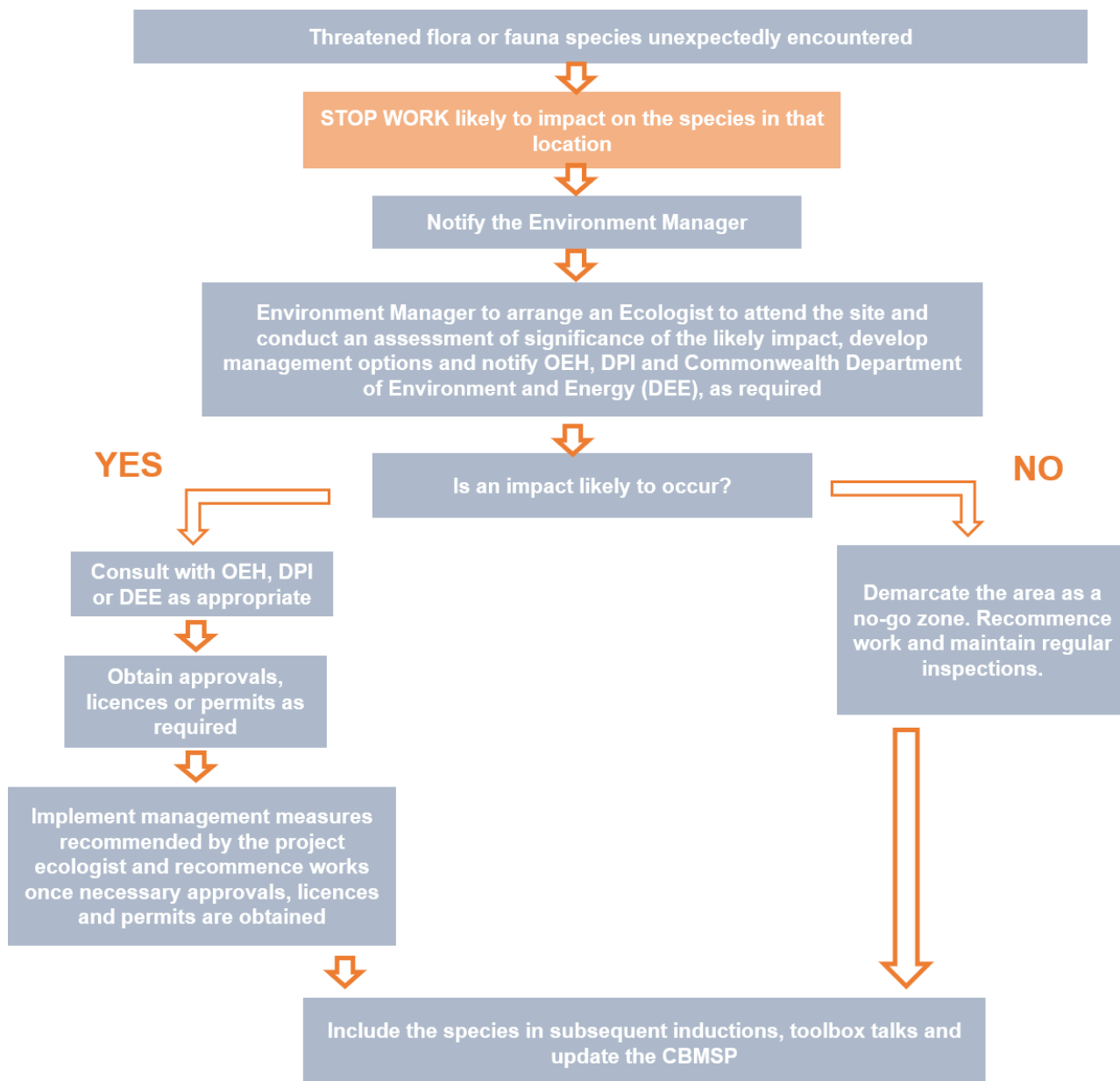
- Pesticide use must be undertaken in accordance with the *Pesticides Act 1999*.
- Only pesticides registered for use near water may be used near waterways and aquatic environments
- Avoid applying pesticides:
 - On hot days when plants are stressed
 - After the seed has set
 - Within 24 hours of rain or when rain is imminent
 - When winds will cause drift of pesticides into non-target areas
- Records of pesticide application should be kept and include details on who applied the pesticide, date of application, type and amount of pesticide used, where the pesticide was applied and weather conditions during pesticide application.

Weed monitoring

- The success of weed control will be inspected during weekly site inspections and additional weed control will be implemented as required (such as when a new weed outbreak is identified).

6.4. Unexpected threatened species procedure

The unexpected threatened species procedure details the actions to be taken when a threatened flora or fauna species or endangered ecological community is unexpectedly encountered onsite. All site personnel are to be inducted on the unexpected threatened species procedure.



7. Compliance Management

7.1. Roles and Responsibilities

The McMahon team's organisational structure and overall roles and responsibilities are outlined in Section 4.2 of the CEMP. Specific responsibilities for the implementation of environmental controls are detailed in Section 6 of this Plan.

7.2. Training

All personnel, including employees, contractors, sub-contractors and utility staff working on site will undergo site induction training including awareness of flora and fauna management training. The induction training will address:

- Existence and requirements of this CBMSP;
- The significance of the native vegetation to be retained
- Locations of all endangered ecological communities, potential habitat areas and all occurring and potentially occurring threatened species locations
- Vegetation clearing procedure and no-go zones
- Weed management practices
- Fauna handling and rescue processes
- Obligations under relevant legislation and guidelines and penalties associated with environmental breaches
- Incident response, management and reporting

Targeted training in the form of toolbox talks or specific training will also be provided to personnel as required, such as if a unexpected threatened species or priority weed is identified.

Further details regarding staff induction and training are outlined in Section 5.1 of the CEMP.

7.3. Monitoring and Inspections

Compliance with the requirements of this CBMSP, its implementation and effectiveness will be monitored through:

- Regular inspections of worksite and activities,
- McMahon Environmental Inspections which occur weekly (or more depending on works/weather conditions),

Requirements and responsibilities in relation to inspections are documented in Section 9 of the CEMP. Regular monitoring and inspections will be carried out during construction in accordance with Section 9 of the CEMP. Inspection and monitoring requirements relevant to biodiversity for the Project are identified in Table 11.

Table 12 Inspection and monitoring requirements relevant to biodiversity

Item	Frequency	Standards	Records	Responsibility
Pre-clearing survey	Prior to vegetation clearing	Inspection to be undertaken by a qualified ecologist	Pre-clearing survey report	Environment Manager Project Ecologist
Post-clearing survey	After vegetation clearing	Inspection to be undertaken by a qualified ecologist	Post-clearing survey report	Environment Manager Project Ecologist
Site Inspections	Weekly	Implementation of this Plan Success of weed control (i.e. outbreaks are suppressed and new outbreaks are being managed)	Environmental Inspection Checklist Log book and photos as relevant	
Visual surveillance	Daily	Exclusion fencing and TPZ fencing is secure and structurally sound and signage is easily visible Trapped or injured fauna Waste is covered and secured	Log book and photos as relevant	

7.4. Auditing

Audits (both internal and external) will be undertaken to assess the effectiveness of environmental controls, compliance with this Plan, CoC, RMMs and other relevant approvals, licenses and guidelines.

Audit requirements are detailed in Section 13 of the CEMP.

7.5. Reporting

Reporting requirements are documented in Section 13.1 of the CEMP.

8. Review and Improvement

8.1. Corrective and Preventative Actions

Corrective and preventative actions that will be applied to this plan are outlined in Section 15 of the CEMP.

8.2. Review and Revision

The review and revision process for the CEMP and sub-plans (including this plan) is outlined in Section 16 of the CEMP.

Annexure A Targeted surveys and species polygons (EcoLogical, August 2020)

